Consultation

Heat networks regulation: fair pricing protections

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We are consulting on a fair pricing framework for heat networks, including its structure, objectives, principles, and a 'fairness test' for implementation. We are also consulting on cost allocation proposals, analytical methods for price and profit comparisons, options for publishing price data centrally, and on our approach to price investigations. This builds on our joint consultation with the Department for Energy Security and Net Zero (DESNZ) on implementing heat networks regulations for consumer protection (2024 implementing consumer protections consultation).

We would like views from people with an interest in heat networks and particularly welcome responses from:

- heat network operators
- heat network suppliers
- energy services companies
- housing providers
- consumer groups
- asset owners
- metering and billing agents
- trade associations

We would also welcome responses from other stakeholders and the public.

This document outlines the scope, purpose and questions of the consultation and how you can get involved. Once the consultation is closed, we will consider all responses. We want to be transparent in our consultations. We will publish the non-confidential responses we receive alongside a decision on next steps on our website at ofgem.gov.uk/consultations. If you want your response – in whole or in part – to be considered confidential, please tell us in your response and explain why. Please clearly

mark the parts of your response that you consider to be confidential, and if possible, put the confidential material in separate appendices to your response.

Any enquiries related to the text of this publication should be sent to Ofgem at:

10 South Colonnade, Canary Wharf, London, E14 4PU.

This publication is available at www.ofgem.gov.uk. Any enquiries regarding the use and re-use of this information resource should be sent to: psi@nationalarchives.gsi.gov.uk

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Executive Summary

The Energy Act 2023 named Ofgem as the regulator for heat networks in England, Scotland, and Wales (Great Britain). Our Forward Work Plan outlines the work we are doing in 2025 and 2026, including our ongoing preparations for our new regulatory responsibilities for heat networks and the commencement of the new regime in January 2026. We are developing a proportionate regulatory framework which aims to protect consumers, while supporting investment in the sector and government targets for net zero.

The focus of this consultation is to provide further details of our proposed heat networks pricing protections, building on the proposals included in the 2023 consumer protection consultation, the 2024 government response, the 2024 implementing consumer protections regulation consultation, and the contents of the Heat Networks (Market Framework) Regulations 2025 Statutory Instrument (HNMFGBR SI).

This consultation discusses approaches for implementing the proposed fair pricing protections through guidance (the fair pricing guidance) and seeks further input from stakeholders to support its development. Some areas of our pricing policy will require further engagement with stakeholders. We plan to consult on the fair pricing guidance later this year, with the initial guidance set to be published by the end of 2025. Since pricing protections will be phased in and further policy development is needed, the pricing guidance will be iterative.

This approach will allow stakeholders to contribute to the guidance design and prepare for the implementation of regulatory rules from January 2026. It is important to note that more complex and data-driven regulatory activities in pricing (such as potential price investigations) will require further engagement and data and will not start before January 2027 at the earliest.

The consultation outlines a fair pricing framework for heat networks, including its structure, objectives, principles, and a 'fairness test' for implementation. It also covers cost allocation, proposing that fines, penalties or other redress provided to consumers should not be passed to customers. Benchmarking methods for price comparison are proposed to identify disproportionate pricing, with three different benchmarking approaches: external, comparator, and historical benchmarks. Profitability analysis is suggested to monitor excessive profits, starting with a light-touch approach but potentially becoming more detailed as further data is available.

The consultation also discusses central price transparency to help consumers make informed decisions and proposes options for publishing price data. Finally, it discusses

the approach to price investigations to address disproportionate consumer prices noting that, given the scale of the market, we will usually focus on the cases where there is the greatest consumer detriment.

There are some important interactions between our price protection proposals and other heat network-related areas, these include:

Heat Network Zoning: DESNZ consulted on heat network zoning in Proposals for heat network zoning 2023 - GOV.UK. We are working with the DESNZ zoning team to seek to ensure the proposed pricing protections align well with zoning policy in England for consumers and the heat network sector. We are keen to ensure that roles and responsibilities are clear, and the frameworks work in parallel with each other. For example, we want to ensure that policies such as DESNZ's proposals for community benefits and managing of windfall profits for heat networks within zones are coordinated with the broader proposals outlined in this consultation.

Interactions with housing regulations: As part of our 2024 consultation, we explored proposals that interact with housing regulations. For example, we considered the unbundling of individual heat charge from other service charges and rent. The pricing protections are an area where there are interactions with the existing arrangements in the housing sector. We are working with the relevant government departments to explore the interactions and the best way forward.

This consultation does not include proposals in relation to direct price regulation, such as a price cap or profit regulation. However, we are aware of qualitative evidence and concerns that market characteristics may be leading to higher prices. In the 2024 government response it was confirmed that direct price regulation would not be introduced but that this should be kept under review, and that we continue to consider all options for how to protect consumers effectively in a way that is sustainable for the sector.

1. Introduction

Section summary

In this section we provide background information and context for this consultation. We discuss the high-level objectives of the fair pricing policy, offer an overview of the consultation content, and outline the timing and next steps following the consultation.

This section also explains the consultation process and how you can respond to questions about our proposals.

1.1 This is Ofgem's first dedicated consultation on fair pricing protections for heat networks. Previously, different areas of pricing policy were consulted on as part of the wider joint DESNZ and Ofgem consumer protections consultations. This document makes references to these previous consultations and government responses:

1.2 The '2020 consultation' refers to the Heat networks: building a market framework consultation published in 2020, which informed the provision in the Energy Act 2023. The subsequent government response is referred to as the '2021 government response.'

1.3 The '2023 consultation' refers to the Heat networks regulation: consumer protections consultation published in August 2023, which informed the Heat Networks Market Framework Regulations SI (2025 HNMFRGBR SI). The subsequent government response is referred to as the '2024 government response.'

1.4 The '2024 consultation' refers to the Heat networks regulation: implementing consumer protections consultation published in November 2024, which will inform the future Heat Networks Market Implementation Regulations SI (HNMIR SI) and authorisation conditions.

1.5 At each reference point within this document, please refer to the relevant links for the webpage where you can access these previous publications.

1.6 In the 2023 consultation, we sought feedback on our approach to pricing protections, where we said that we would introduce the following protections:

- mandated price transparency
- pricing structure and cost allocation rules

- pricing investigations and powers to introduce rules and guidance

1.7 In the 2024 consultation, we sought feedback on a high-level pricing framework, proposing:

- a general obligation to set fair and not disproportionate prices, implemented through an outcomes-based authorisation condition (AC) and accompanied by guidance
- the framework would include a consumer objective, principles and outcomes, with a 'fairness test' for implementation

1.8 In this consultation we build on what was proposed in previous consultations but we do not revisit matters that were settled through those. The focus is on areas where we require additional stakeholder views, notably to finalise a draft fair pricing guidance which we will consult on later in the year.

1.9 DESNZ is also planning to consult further to establish a Heat Network Technical Assurance Scheme (HNTAS), to implement mandated technical standards and there will be further Ofgem consultations on the detailed authorisation conditions and policy issues, such as step-in, that require additional policy development ahead of implementation.

1.10 Finally, a digital service is currently being developed, and will be the primary interface between Ofgem and heat network organisations and will support regulatory activities, including pricing.

Context

1.11 Heat networks are expected to play a crucial role in decarbonising heat in buildings. Heat networks take heating, cooling or hot water from a central source and deliver it to premises such as public buildings, shops, offices, hospitals, universities, and homes. They are also an important part of securing the UK's energy independence through local, low carbon heat sources and reducing the cost of living through efficient, affordable heating in densely populated areas. Government analysis shows that heat networks could provide about 20% of total heat by 2050. They currently provide about 3%.

1.12 The government therefore expects the sector to grow rapidly in the coming decades, and we are committed to facilitating that growth, whilst ensuring good consumer outcomes and standards across the sector.

1.13 However, the existing heat networks sector is fragmented, and consumers do not always receive a good deal from being connected to them. A combination of poor technical design, variations in customer service and consumer protection,

and the large number of individual entities, as well as their diversity makes the introduction of utility-style regulation a unique challenge.

1.14 The Competition and Markets Authority (CMA) 2018 market study did not find evidence of systemic high prices across the market, compared to those paid by consumers on gas or electricity, nor did it identify at that time an urgent need for intervention to reduce prices. The CMA did recognise there were some pockets of higher pricing. It recommended that the sector regulator should monitor that prices are not excessive and require all heat networks to comply with 'principles-based' rules or guidance on pricing.

1.15 However, we recognise that energy price rises since the CMA study was published in 2018 may have significantly changed this market, and not all the findings from 2018 may still be relevant today. We have also received more recent anecdotal evidence of high prices in the market.

Objective

1.16 Our fair pricing policy proposals, together with the wider heat networks regulatory proposals, seek to achieve good consumer outcomes, such as reliable heat and good customer service, delivered for consumers at a fair and transparent price. In developing the fair pricing framework and achieving this outcome, we must first consider that costs and prices will vary depending on network, technical and commercial characteristics. Secondly, as the heat networks sector is developing, the approach to pricing must be dynamic, flexible, and proportionate to support investment and market growth while addressing emerging challenges and protecting consumers.

1.17 Our fair pricing protection proposals aim to improve transparency and give us specific powers to protect consumers from disproportionate pricing and monopoly power through an outcome-based approach (the fair pricing framework).

1.18 Our focus will be on addressing pricing issues where these arise while keeping any burdens on heat networks to a proportionate level. This will minimise the impact of heat networks passing additional costs onto final consumers, while providing consumers with protections from disproportionate prices.

1.19 In addition to protecting against instances of disproportionate pricing, our fair pricing proposals, along with our monitoring initiatives, will help us identify if there are systemic issues of disproportionate pricing in the market. This will also inform future policy development.

What are we consulting on

1.20 We are inviting stakeholder input on our proposals for the heat network fair pricing framework.

1.21 Our proposals in this consultation cover the following:

Fair pricing framework

We outline proposals for the fair pricing framework including: the high-level structure of the framework, its objective, principles and outcome, and a 'fairness test' to support its implementation. We also discuss segmentation considerations across the framework.

We also discuss how the principles could be further developed in guidance, providing definitions and identifying specific areas where the guidance could set minimum expectations or best practice.

Cost allocation

We discuss cost allocation (which refers to how heat suppliers allocate costs to the various charges they levy on consumers, and how prices are structured more generally) and set out our proposal that fines, penalties or other redress provided to consumers must not be passed through to customers. However, we will monitor the market and consider whether further intervention is required if evidence of consumer detriment emerges. We also discuss best practice guidance on cost allocation and pricing structures.

Price comparison and benchmarking methods

We discuss benchmarking methods for comparing the prices charged by heat networks, which can help to identify potential cases of disproportionate pricing. Building on previous consultations, we propose to continue developing three main benchmarking approaches:

- external benchmarks
- comparator benchmarks
- comparison to heat networks' own past prices

Profitability analysis

We discuss how the use of profitability analysis methodologies (which measure levels of profit or returns) can help identify cases of excessive profit. We propose to start with a more light-touch approach to monitoring margins, but also discuss how more sophisticated profitability assessments could be carried out as data collection increases.

Central price transparency

We discuss the issue of lack of information about heat networks charges in the public domain and how that limits consumers' ability to make informed decisions in relation to

heat networks. We set out three different options for enhancing price transparency in the sector through centralised publication of price related data.

Price investigations

We discuss our approach to future price investigations, which relates to the power we will have to take action where prices for consumers appear to be disproportionate. Our ability to undertake price investigations will rely on further engagement with stakeholders and having adequate data, and will not start before January 2027 at the earliest.

Timings and next steps

1.22 We are proceeding with an ambitious timetable to provide consumers with protections as soon as possible while balancing this with the time needed to gather data and evidence to ensure protections are effective.

1.23 We will therefore introduce consumer protections, including pricing protections, over time.

1.24 The regulatory regime, including the general obligation to price fairly and not disproportionately and the related general cost allocation rules, will commence from January 2026. This will give us time to consult and publish the necessary authorisation conditions and guidance on fair pricing before the regime begins.

1.25 While the general obligation to price fairly and not disproportionately will take effect from January 2026, data-driven and complex regulatory activities will start at a later date. In particular, we plan to use data gathered from registration, regular monitoring and other sources to further refine our proposed analytical tools (such as price benchmarking and profitability assessments) during 2026. As noted above, we do not expect price investigation activity to start before January 2027 at the earliest.

1.26 This approach to regulatory commencement will also provide the time necessary for the sector to prepare for the policies regarding price protections we are introducing, and implementing the necessary changes that will be required to comply with them.

1.27 In terms of next steps, we will use the feedback received from this consultation and further stakeholder engagement to finalise a draft guidance on fair pricing protections. We will consult on the draft in summer 2025, with the first version of the guidance to be published in December 2025.

Your response, data and confidentiality

Consultation stages

1.28 The consultation will be open until 09 07 2025. Responses will be reviewed and the response to the consultation will be published alongside the consultation on the fair pricing guidance in summer 2025.

How to respond

1.29 We want to hear from anyone interested in this consultation. Please send your response to heatnetworksregulation@ofgem.gov.uk.

1.30 We've asked for your feedback in each of the questions throughout. Please respond to each one as fully as you can.

1.31 We will publish non-confidential responses on our website at www.ofgem.gov.uk/consultations.

Your response, your data and confidentiality

1.32 You can ask us to keep your response, or parts of your response, confidential. We'll respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000, the Environmental Information Regulations 2004, statutory directions, court orders, government regulations or where you give us explicit permission to disclose. If you do want us to keep your response confidential, please clearly mark this on your response and explain why.

1.33 If you wish us to keep part of your response confidential, please clearly mark those parts of your response that you do wish to be kept confidential and those that you do not wish to be kept confidential. Please put the confidential material in a separate appendix to your response. If necessary, we'll get in touch with you to discuss which parts of the information in your response should be kept confidential, and which can be published. We might ask for reasons why.

1.34 If the information you give in your response contains personal data under the General Data Protection Regulation (Regulation (EU) 2016/679) as retained in domestic law following the UK's withdrawal from the European Union ("UK GDPR"), the Gas and Electricity Markets Authority will be the data controller for the purposes of GDPR. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. Please refer to our Privacy Notice on consultations, see Appendix 8.

1.35 If you wish to respond confidentially, we'll keep your response itself confidential, but we will publish the number (but not the names) of confidential responses we

receive. We won't link responses to respondents if we publish a summary of responses, and we will evaluate each response on its own merits without undermining your right to confidentiality.

General feedback

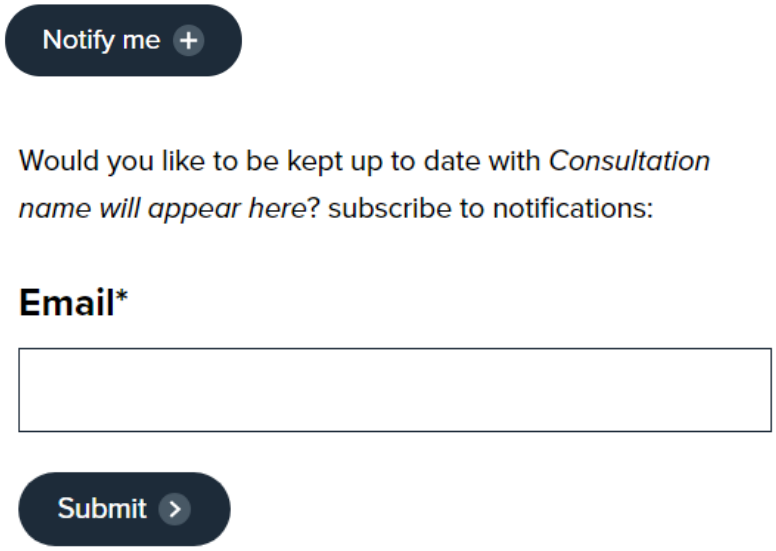
1.36 We believe that consultation is at the heart of good policy development. We welcome any comments about how we've run this consultation. We'd also like to get your answers to these questions:

1. Do you have any comments about the overall process of this consultation?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Were its conclusions balanced?
5. Did it make reasoned recommendations for improvement?
6. Any further comments?

1.37 Please send any general feedback comments to stakeholders@ofgem.gov.uk

How to track the progress of the consultation

1.38 You can track the progress of a consultation from upcoming to decision status using the 'notify me' function on a consultation page when published on our website. Choose the notify me button and enter your email address into the pop-up window and submit. ofgem.gov.uk/consultations



1.39 Once subscribed to the notifications for a particular consultation, you will receive an email to notify you when it has changed status. Our consultation stages are:

Upcoming > **Open** > **Closed** (awaiting decision) > **Closed** (with decision)

2. Fair pricing framework

Section summary

In this section we outline proposals for the fair pricing framework including: its high-level structure, objective, principles and outcomes. We also present a revised fair pricing authorisation condition, and an outline of a 'fairness test' to support its implementation.

Furthermore, we discuss how the principles could be further developed in guidance, providing definitions and identifying specific areas where the guidance could set rules or best practice.

Finally, we discuss segmentation and data requirement considerations across the framework.

Questions

Fair pricing framework

Q1. Have we identified the right set of fair pricing consumer objective, principles and outcomes and are these properly defined? If you disagree with this proposal, please specify what changes you would like to see and provide a justification.

Q2. Do you agree with our proposals to develop the fair pricing guidance in relation to the principles (please note that questions on cost allocation proposals, including guidance, are asked separately under Chapter 3: Cost allocation). In particular:

a) have we identified the right areas to be covered by the guidance implementing the fair pricing principles (see paragraph 2.53 for a summary of the areas we are proposing to develop in guidance under each principle)? If you disagree with this proposal or think other areas should also be included, please specify what changes you would like to see and provide a justification.

b) Do you agree with the specific proposals to develop each of these areas in guidance? If you disagree, please specify what changes you would like to see and provide a justification.

Q3. Do you agree with the proposed 'fairness test'? In particular:

a) Do you agree with the high-level features of the fairness test (principle based, reasonableness, case-by-case basis, and objectivity)?

b) Do you agree with our proposals to implement the fairness test discussed in Appendix 1: Fairness test?

Q4. Does the revised authorisation condition, 'fair pricing', reflect the policy intent?

Market segmentation

Q5. In relation to market segmentation (please note that we are asking in relation to the considerations discussed in paragraphs 2.58-2.61, segmentation considerations in relation to price benchmarking are considered under Chapter 4: Price comparison and benchmarking methods):

a) Have we identified the right characteristics for market segmentation, and are these correctly defined?

b) Do you agree with the segmentation approach discussed for each of these characteristics?

Data requirements

Q6. Of the information listed in Table 3 below, what do heat networks already regularly collect and can be easily reported?

Q7. Of the information listed in Table 3 below, which items would be more challenging for heat networks to report?

Q8. Of the cost drivers listed in Table 7 (in Appendix 3), which items would be more challenging for heat networks to report?

Q9. Should certain types of heat networks have more limited data reporting requirements? If so, which heat networks should these reduced requirements apply to, and what data should they be exempt from reporting?

Background

2.1 In the 2024 consultation we consulted on a proposed high-level framework for pricing regulations. The key elements of this proposal were:

- that there should be a general obligation on heat networks to set fair and not disproportionate prices, accompanied by guidance setting out minimum expectations, principles and good practice
- that this general obligation would be implemented through outcomes or principles-based authorisation conditions, which would form the basis for our fair pricing protections
- that these authorisation conditions would be kept under review

2.2 We also proposed a high-level design of the fair pricing framework with the following elements:

- a consumer objective
- a set of principles to be developed through rules and guidance
- a set of consumer outcomes

2.3 We said that this framework would include a 'fairness test' element to support its implementation.

2.4 Finally, we explained that at this stage of the fair pricing policy development, the authorisation conditions needed to be high level to allow us the required flexibility to keep developing the policy through guidance. We also stated that as we keep this policy under review, the balance between prescriptive rules and guidance may change over time, if appropriate.

Framework

2.5 For this consultation, we have taken forward the high-level pricing framework proposed in the previous consultation, taking into account the feedback received from stakeholders both through the consultation and further discussions with industry participants. It is worth noting the broad support from stakeholders for the high-level pricing framework. However, whilst supportive in principle, many respondents told us that more detail on the framework was required.

2.6 In this consultation we intend to provide further clarity on the fair-pricing framework. We are taking an iterative approach to its development and we will consult again on some of these proposals as we refine them. At this stage, we are consulting on a more detailed framework, including a proposed set of objectives, principles and outcomes.

2.7 At a high level, we are also explaining how we see the principles being developed into guidance, discussing expectations, and the areas the guidance could cover. We will be consulting on fair pricing guidance in Autumn 2025 and this consultation is an opportunity to provide input into its development.

2.8 The framework develops the general obligation on heat networks to provide fair and not disproportionate prices which will be included in the Authorisation Conditions (ACs). In the previous consultation (the 2024 consultation) we proposed a draft AC for this obligation ('Fair Pricing' condition, number 04). In this consultation we are proposing a revised version of that AC with minor changes to wording as enforcement is more widely covered in the regulatory framework:

4.1 An authorised person must ensure that the charges it imposes are fair and are not disproportionate.

4.2. This authorisation condition shall be interpreted in accordance with guidance published by the Authority.

4.3. Before this general authorisation condition [4] comes into force, the Authority shall publish the guidance referred to in paragraph [4.2].

4.4. The guidance referred to in paragraph [4.2] shall:

4.4.1. make provision about how the Authority is to determine; and

4.4.2. give examples of some of the methods that may be used by the Authority to determine, whether charges are fair and not disproportionate.

4.5. Before the Authority publishes the guidance referred to in paragraph [4.2] the Authority shall consult:

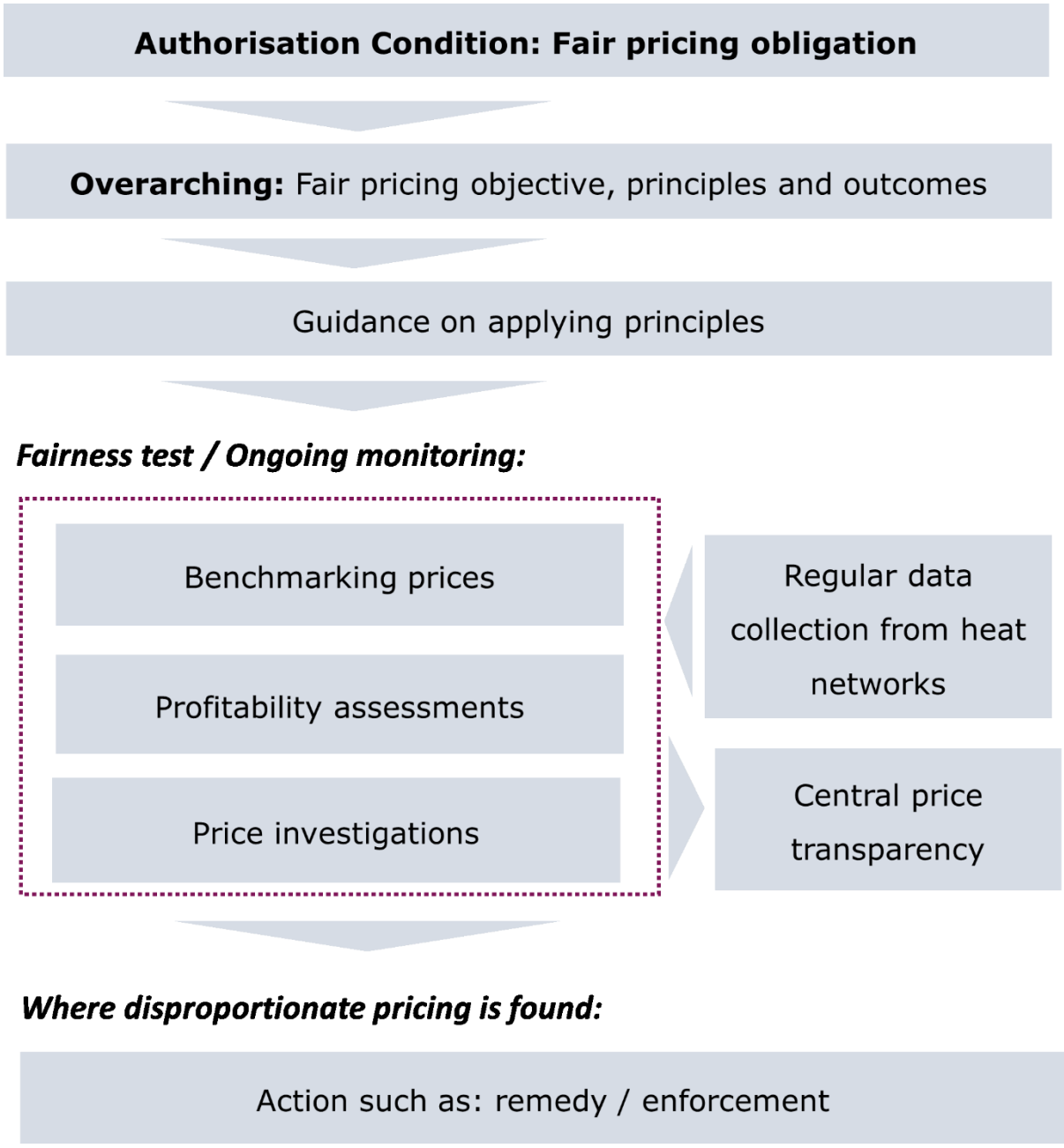
4.5.1. authorised persons; and

4.5.2. such other persons as the Authority thinks it appropriate to consult.

4.6. The Authority may from time to time revise the guidance referred to in paragraph [4.2] and before issuing any such revised guidance the Authority shall consult such persons as specified in paragraph [4.5] setting out the text of, and the reasons for, the proposed revisions.

2.9 Figure 1 below shows the structure and key elements of the framework:

Figure 1: Fair pricing framework



2.10 Table 1 below shows the consumer objective and set of principles and outcomes. The principles and outcomes are discussed in the following sub-sections. We also consider how we might develop those principles into guidance.

Table 1: Fair pricing framework objective, principles and outcomes

Objective	**Principles**	**Outcomes**
Consumers pay fair and not disproportionate prices	• cost-reflective pricing • cost efficiency • fair and reasonable returns • affordability • regulatory control • price transparency	• consumer outcomes • industry outcomes

Principles

Cost-reflective pricing

Definition

2.11 Cost-reflective pricing means that prices should be reflective of the underlying cost of providing heat (which would include the cost of building, operating and maintaining the heat network, and serving customers) and consumption levels of consumers. Additionally, consumers should pay for the additional costs they impose on the system (for example fuel costs, billing costs, metering costs and others and that result from serving a customer), as well as a contribution to the fixed costs of the system, ensuring long-term efficient use and sustainability of the system.

Guidance

2.12 Generally, we would expect heat networks to adhere to this principle when designing their pricing strategies, and they should be able to explain how their prices meet this principle if asked. Guidance on cost-reflective pricing could cover the following areas:

Data accuracy and meter readings

2.13 Heat suppliers must use the most accurate data available to them when calculating charges.

2.14 Data accuracy would require the use of accurate meter readings, when these exist, to calculate charges.

2.15 It is important to clarify that the fair pricing framework does not impose an obligation to install meters. Currently, metering is regulated under the Heat Network Metering and Billing regulations. We expect new metering requirements to be introduced through the Heat Network Technical Assurance Scheme (HNTAS), which as noted in chapter one will be subject to future consultation by DESNZ.

Apportionment of costs

2.16 When meter readings are not available, suppliers should use reasonable proxies for unmetered usage. We discuss common practices in Chapter 3: Cost allocation (Paragraph 3.20).

Cost-reflective tariff structure

2.17 Tariff structure should align with the cost-reflective pricing principle set out here. Tariff design is discussed in more detail in the Cost reflectivity section in Chapter 3: Cost allocation.

2.18 We seek stakeholders' views on any other areas that we should provide guidance on in relation to this principle.

Cost efficiency

Definition

2.19 Underlying costs should be efficient while providing an appropriate quality of service. We expect networks to take steps to create cost efficiencies where feasible. For example through:

- implementing technical efficiencies
- competitive fuel procurement
- outsourcing contracts where beneficial
- other operational efficiencies

2.20 Heat networks should make choices based on long-term efficiencies. Networks should not overlook larger scale investments such as technical efficiency and decarbonisation improvements seeking to cut short-term costs, and ensure there is sufficient financing to cover such improvements where appropriate.

Guidance

2.21 Guidance on cost efficiency could cover the following areas:

Network efficiency

2.22 Heat networks should aim to operate efficiently to minimise costs. However, this principle does not introduce obligations in relation to technical efficiency. For detailed technical standards and best practices, please refer to the Heat Network Technical Assurance Scheme (HNTAS), which is being jointly developed by the DESNZ and the Scottish government. We acknowledge that different heat networks will have different levels of technical efficiency which would drive legitimate differences in pricing, and we would take this into account when considering whether prices are fair and not disproportionate.

Maintenance, service and customer service costs

2.23 We expect heat networks to carry out maintenance and service activities to prevent costly breakdowns and avoidable reductions in efficiency levels, such as routine inspections, efficiency monitoring, cleaning and servicing of equipment. Heat networks will also typically incur costs related to customer service, such as billing and metering, customer support and other administrative costs. These costs may depend on factors such as age and technology of the heat network, total number of customers and proportion of vulnerable consumers, and we would take this into account when considering whether prices are fair and not disproportionate.

2.24 In terms of best practice, we expect heat networks to carry out these activities in a cost-efficient manner and be transparent in cost reporting. If these services are outsourced, we would expect heat networks to ensure value for money by, for example, testing the market and comparing prices and service quality from different providers. Heat networks should be able to justify their decision to outsource and choice of service provider.

Fuel procurement and hedging

2.25 Regarding fuel procurement and hedging, a trade-off can exist between the level of risk (for example, price risk, volume risk and shape risk) that sits with the network in a procurement contract, and the price paid. For example, a network seeking longer-term price certainty may choose to pay a premium in return for fixing the fuel price for longer.

2.26 In terms of best practice, we would expect heat networks to have a clear strategy in their approach to risk, and to aim to put in place contracts that strike an appropriate balance between price and risk. We recognise that the appropriate procurement strategy may vary depending on the characteristics of the network, for example:

- heat network operators or suppliers which are larger entities, for example operating multiple networks or with significant other activities, may have the financial resilience to take on a larger degree of risk
- domestic consumers may value price stability more than commercial consumers, who may accept a higher degree of volatility (or vice versa: some commercial consumers may have a strong preference for predictability or stability)
- smaller networks may have less bargaining power

- some networks may make use of third-party intermediaries (TPIs). See below for expectations on procurement best practices.

2.27 In the previous consultation, responses showed that a wide range of different procurement and hedging strategies are being used, which may be appropriate given different circumstances and characteristics of heat networks. However, it is important that these strategies are employed with the aim of securing fair prices for consumers. The majority of respondents were in favour of Ofgem providing general guidance on procurement. In practical terms, a best practice procurement approach would include:

- clearly documenting the procurement strategy and justification for the procurement strategy being appropriate for the network's customers, including considering different options for contract terms and period of renewal
- seeking multiple quotes from suppliers or TPIs
- regularly monitoring the level of fees charged by a TPI (and how this compares to fees charged by other TPIs)
- improving transparency in the procurement approach by requesting individual cost lines from TPIs if these are not provided (particularly for larger networks)

2.28 We welcome examples from stakeholders on what good practice or guidance could be applied across the sector or to specific segments.

Restricted cost passthrough

2.29 We could introduce limitations to the passthrough to consumers of certain costs. Under cost allocation rules (see paragraph 3.7) we are proposing a restriction on passing on fines, penalties and other redress provided to consumers, to ensure that consumers are not unfairly burdened with costs arising from supplier non-compliance.

2.30 We welcome stakeholders' views on whether additional costs should also be restricted.

Capital cost recovery

2.31 This refers to the recouping over time of the initial investment made in the development and infrastructure of the heat network. This includes the costs associated with designing, constructing, and commissioning the network. These costs are typically recovered through connection fees and within charges for the

sale of heat to customers. Guidance considerations in relation to capital cost recovery are discussed under cost allocation rules (see paragraphs 3.17-3.22).

2.32 We welcome examples from stakeholders on what good practice or guidance could be applied in relation to cost-efficiency across the sector or to specific segments.

Corporate risk

2.33 The efficiency of underlying costs includes efficient recovery of capital expenses which is reflective of the corporate risk. Consumers should be protected from taking on a disproportionate level of corporate risk. Examples of disproportionate level of corporate risk include (but not limited to) improper recovery of significant initial capital costs in the development phase, or improper recovery of capital expenditures recovered from sinking funds. Such examples of temporal mismatch of capital cost between consumers who are paying and consumers who are benefitting from the improvements can introduce inefficiencies in the recovery of capital expenses over time.

2.34 We welcome examples from stakeholders on what good practice or guidance could be applied in relation to efficient management of corporate risk across the sector or to specific segments.

Fair and reasonable returns

Definition

2.35 Prices charged by heat networks can include some level of profit, to provide owners and investors with a fair return on their investment. However, heat networks should not leverage their monopoly status to earn returns in excess of what could be expected in compensation for the risks associated with the investment (unless this is merited, in the short term, by exceptional performance).

Guidance

2.36 We do not propose to provide specific guidance on appropriate levels of return, as this will differ based on wide range of complex factors including performance, risk profile, ownership model, and will also vary over time. However, as discussed in Chapter 5: Profitability analysis, we will monitor profitability across the sector, and may investigate cases where profit levels are higher than what we would expect. We will also have regard to how heat networks' profit levels compare to an estimate of the cost of debt and equity in the market or the "weighted average cost of capital".

Affordability

Definition

2.37 Heat networks should strive to maximise consumer benefit in their pricing decisions, while also making a fair and reasonable rate of return and recovering their costs. In particular, they should have regard to affordability for consumers. These considerations should be applied throughout the entire pricing process, from the design of the pricing strategy to the charging methodology.

2.38 It is also important to clarify what this principle is not about. In particular:

2.39 We do not intend to place obligations for heat networks to charge consumers differently based on their economic circumstances. We understand that some cost drivers that might create affordability issues for consumers will be partially outside of the heat network's control, especially in the short-term, (such as high wholesale gas prices or some network inefficiencies that would require large investments to address), and therefore, we do not expect heat networks to be able to tackle all affordability issues.

2.40 This principle should not disincentivise heat networks from making cost-effective choices based on long-term efficiencies such as technical efficiency and decarbonisation improvements.

2.41 However, there are other areas where heat networks will have more control, and affordability should be an important consideration in those.

Guidance

2.42 We have identified the following areas which could be included in the guidance:

Cross-subsidisation

2.43 We understand that cross-subsidisation among consumers of a heat network might happen depending on the pricing strategy. We are not proposing to set direct restrictions on cross-subsidisation, however, individuals or groups of consumers should not face disproportionate prices as a result.

Shock bills

2.44 In some exceptional circumstances, unusual or unexpected high bills might be unavoidable. However, we would expect heat networks to plan ahead and strive to minimise its likelihood and impact.

2.45 Likelihood: heat networks could make an effective use of sinking funds and financing (when this is an option available to heat networks) to minimise the risk of shock bills. By setting aside reserves or borrowing money, they can cover unexpected costs avoiding unusually high bills. However, the use of sinking

funds and financing needs to be reasonable, for example, minimising the financial burden on consumers, and the temporal mismatch between consumers who are paying and consumers who are benefiting from the improvements. We invite stakeholders to share their insights on best practices for the use of sinking funds and financing.

2.46 Impact: we expect heat networks to be proactive in managing the impact on consumers of shock bills if they occur. For example, by:

- communicating the expected costs to consumers in a clear and timely manner to help them anticipate and plan their bills
- offering flexible payment plans, such as instalment options, to help consumers manage the unexpected high bill

2.47 It is worth noting that our wider consumer protection proposals, including the proposals on back-billing rules that would prevent suppliers from issuing back-bills for heat used more than 12 months prior to the date of the bill, would also help mitigate the likelihood and impact of 'shock bills'. This proposal has some dependencies on the unbundling of the individual heat charge from wider charges, such as service charges or rent. For more information on these proposals please see the 2024 consultation.

2.48 With regard to debt repayment, we confirmed our position in our aforementioned joint consultation with DESNZ that suppliers must proactively offer repayment plans appropriate to consumers' ability to pay, and they must consider alternative payment options such as pre-payment meters or third-party deductions from social security benefits (where appropriate). Furthermore, we are proposing that where a consumer is identified as rationing heat usage or self-disconnecting, the network should consider reassessing or reducing the consumer's debt repayment plan and refer them to third party debt advisors.

Regulatory control

Definition

2.49 The organisation subject to regulation must have oversight and control over regulatory outcomes even when management is outsourced. The organisation will be held directly accountable for the actions or omissions of the outsourced party.

Guidance

2.50 We would expect heat networks could achieve this, for example, through supply chain visibility and common goals, ensuring responsible parties can manage operational costs and tariff design, and tendering criteria for contracting out.

Price transparency

Definition

2.51 Heat networks should communicate their prices to consumers in a way that is accessible and easy to understand.

Guidance

2.52 We think that price transparency is an important principle that should guide heat networks' activity in relation to pricing. However, detailed guidance on transparency in relation to communicating prices to consumers will be developed as part of the 'billing and transparency' proposals, which we will consult on separately. We are also consulting on proposals to publish some pricing information, and these are discussed in Chapter 6: Central price transparency.

Guidance summary

2.53 The following list summarises the areas we have identified for development in guidance under each principle:

- cost-reflective pricing:
  - data accuracy and meter readings
  - apportionment of costs
  - cost-reflective tariff structure
- cost efficiency:
  - network efficiency
  - maintenance, service and customer service costs
  - fuel procurement and hedging
  - restricted cost passthrough
  - capital cost recovery
  - corporate risk
- fair and reasonable returns:
  - no specific guidance at this stage
- affordability:
  - cross-subsidisation
  - shock bills
- regulatory control:
  - regulatory control
- price transparency:
  - no specific guidance suggested in this consultation

Outcomes

2.54 We aim for the pricing framework to achieve or facilitate the following outcomes:

Consumers outcomes:

- the framework helps prevent disproportionate pricing: consumers pay prices for their heat that are not disproportionate
- the framework incentivises efficiency: consumers pay prices which reflect the costs of an efficiently run heat network
- consumers receive an appropriate quality of service
- the framework enhances transparency and consumer confidence in the sector: consumers can understand the charges and are confident they are fair
- the framework is forward looking and seeks to protect future consumers: consumers will keep paying fair prices in future through appropriate investment in the networks and industry development
- consumers should not be unduly disadvantaged compared to other consumers on alternative heat sources

Industry outcome:

- the framework does not discourage growth of the heat network sector

Segmentation

2.55 These principles should apply generally across all networks. However, some specific rules and guidance will apply to certain segments of the market. For example, guidance on apportionment of usage-driven costs would only be relevant for non-metered networks. Segmentation considerations are discussed in the subsection 'Market segmentation' below.

Fairness test

2.56 The fairness test helps us to apply and implement the fair pricing authorisation condition and principles effectively and consistently (see Figure 1 above). Its features include:

- principle-based: 'fair' and 'disproportionate' prices, are not predefined (for example by setting out acceptable return levels). When deciding whether prices meet the fairness test, we will use the principles (for example cost-reflective pricing, cost efficiency, affordability) and the concept of reasonableness.

- reasonableness: alongside the principles, this framework must be interpreted in line with the standard that could reasonably be expected of a 'prudent' regulated entity that follows our general authorisation conditions and is well-run.
- case-by-case basis: assessments would take relevant circumstances into consideration.
- objectivity: to ensure assessments are as objective as possible we would:
  - develop and use statistical and economic models (for example price benchmarking, profitability assessments)
  - set specific steps informed by defined criteria and guided by best practice in economic regulation

2.57 Appendix 1: Fairness test sets out some questions for consideration when operationalising the fairness test, including what and how tools could be applied.

Market segmentation

2.58 Market segmentation involves considering whether and how rules and requirements may need to be adapted for different types of heat networks in the market, to ensure that the application of the regulation is relevant and proportionate.

2.59 In the August 2023 consultation there was support amongst respondents for a segmented approach to regulating the market. We have continued to consider how the regulatory approach can be designed to be fit-for-purpose and proportionate for different types of heat networks.

2.60 Segmentation could apply in different ways to account for the diversity of the market. For instance, in the case of data collection, it may be appropriate to introduce reduced reporting requirements for certain networks, such as those with a small number of customers, to ensure that the regulatory burden remains proportionate. Regarding cost allocation, different rules or best practice guidance may be necessary depending on the cost structure of a network and whether properties are metered.

2.61 In Table 2 below we have set out key heat network characteristics that could be relevant for segmentation in relation to pricing requirements, and explained their relevance as well as where in this document we have discussed this further. We welcome views on our current thinking on how the regulatory approach can be made applicable and proportionate for different segments of the market.

Table 2: Segments to be considered for pricing requirements

Characteristic	**Description**	**Segmentation approach**
Size	Number of customers network supplies heat to; or volume of supply	We are considering how to make data submission requirements proportionate for smaller heat networks. See the sub-section on data requirements. Heat network size is likely to impact cost and therefore price. We are therefore considering controlling for size in some of our price benchmarking methods. See Chapter 4: Price comparison and benchmarking methods.
Metered versus non-metered	Whether customers are metered or unmetered	We propose to implement distinct best practice guidelines for cost allocation based on whether heat networks are metered or unmetered. See Chapter 3: Cost allocation.
Profit versus non-profit	Profit or not-for-profit status	We are considering how to make data submission requirements proportionate for non-profit heat networks. See the sub-section on data requirements. Given their non-profit status, certain analyses, such as the in-depth profitability assessments discussed in Chapter 5: Profitability analysis, may not be directly applicable. However, key financial metrics, including earnings before interest and tax (EBIT) margins, will still be collected to ensure transparency and facilitate benchmarking.
Function (or regulatory role)	Operator or supplier or both	We do not propose differentiating regulatory requirements based on function. In any case, responsibility for compliance with price

Characteristic	Description	Segmentation approach
		regulation sits either with the heat network (and building) owner (for example a local authority, social housing provider, freeholder) or a long-term concession holder (an ESCo).
Housing tenure	For example, owner occupied freehold versus leasehold), private rented (freehold versus leasehold), social housing	We will examine potential interactions between price regulation and housing legislation. For heat networks where heat charges are bundled into rent or service charges, this may impact our ability to implement cost allocation rules and carry out price benchmarking. See Chapter 4: Price comparison and benchmarking methods and Chapter 5: Profitability analysis.
Commercial arrangements	For example, investor owned, community schemes, Right to Manage	We are considering whether heat networks with certain commercial arrangements, in particular properties with Right to Manage arrangements, should be subject to lighter requirements, for example in relation to data reporting.
Network built pre-regulation versus post-regulation	Whether the network was built before or after fair pricing regulations come into force	We expect that new networks, built after the introduction of pricing regulation, will establish data collection processes as part of the authorisation process. However, some existing networks may not have processes in place to collect and report certain types of data. We are considering how to make data submission requirements proportionate for existing heat networks, or whether to allow a transition period for existing heat networks to

Characteristic	Description	Segmentation approach
		develop the necessary data collection and reporting processes. See the sub-section on data requirements. With regards to cost allocation, we will seek to ensure that any cost allocation rules do not prevent networks under reasonable circumstances from fairly recovering historical costs incurred before fair pricing regulations came into force.
Type of network	District versus communal heat networks	We are exploring whether cost allocation practices should vary based on the type of heat network, particularly in relation to capital cost recovery. See Chapter 3: Cost allocation. Heat network type is likely to impact cost and therefore price. We are therefore considering controlling for this in some of our price benchmarking methods. See Chapter 4: Price comparison and benchmarking methods.
Zoning location	Location of a heat network inside or outside a zone	Whether a heat network is operating within a zone.
Level of vulnerability	Proportion of consumers who are vulnerable	The potential impact on vulnerable consumers may be one aspect to consider in prioritising regulatory actions.
Domestic versus non-domestic	Serves domestic or industrial or commercial properties	At this stage we have not identified a need to differentiate price regulation based on whether heat networks serve domestic or non-domestic customers. However, we welcome stakeholder views on this, particularly in relation to

Characteristic	Description	Segmentation approach
		larger non-domestic customers.
Shared Ground Loops	Whether the network operates a Shared Ground Loop (where consumers are connected to a common heat source but also have individual heat pumps)	We understand that networks operating shared ground loops may have different charging structures to other heat networks, for example charging a fixed fee for access. While these networks will still be included in ongoing monitoring and benchmarking if included in the scope of regulation, different approaches may be required to account for different charging mechanisms and services provided.
Pricing methodology	For example, whether the heat network prices according to a 'cost recovery' or 'cost avoidance' approach	We received several responses to the previous consultation seeking clarity on how the proposed fair pricing framework will apply to heat networks that price according to a 'price promise' or 'cost avoidance' methodology. Under this approach, prices are set with reference to a counterfactual. Our view is that the proposed ongoing monitoring approaches including benchmarking, profitability assessments and price investigations can and should apply to all heat networks including those with different pricing approaches. The fairness test will explore the extent to which prices are 'fair' according to the principles outlined, for example comparator benchmarking will test if prices are comparable to other networks with technically similar characteristics, and this comparison can be

Characteristic	Description	Segmentation approach
		made regardless of the pricing methodology applied.

Data requirements

2.62 Table 3 presents a consolidated summary of the data that we propose to collect from heat networks during the initial registration and on a regular basis thereafter. We expect to utilise reporting data where it is already being reported into the expected Technical Assurance platform overseen by the Code Manager. This is an initial view, based on the various data requirements set out throughout this document, and may evolve based on responses to this consultation and over time.

2.63 We anticipate that most heat networks will be required to provide most of the information outlined in Table 3. However, we will explore how to minimise the compliance burdens of responding to data requests, as well as how to minimise burdens for smaller and non-profit networks, which may include a more limited data request. We welcome views on the information which can be most easily provided and which data points may be more challenging to report.

2.64 We also welcome views on which types of heat networks should be exempt from regular data reporting requirements, and which specific data points these networks should be exempt from reporting on. Exempt networks may still be required to provide data on an ad hoc basis, such as during a price investigation, an audit or in response to a one-off Request for Information (RfI).

2.65 We propose to collect data on prices and charges at quarterly intervals. We will also collect data on the following at initial registration, and then annually:

- cost drivers
- cost allocation
- financial metrics

2.66 We note that as the large majority of cost driver characteristics do not change over time, the resource requirement will largely relate to the first data collection, with ongoing monitoring being less burdensome. Some of the initial data requirement will be covered by data collection as part of the heat network authorisation process at registration.

2.67 We are likely to start collecting regular reporting data in late 2026 subject to the digital service functionality being available. We would collect data backdated to a common start date for monitoring.

Table 3: Proposed data items

Data type	Detail	Collection frequency
Charges	• standing charges for heat • unit rates for heat • connection charges • any other charges, for example one-off charges	Quarterly
Prices	• total annual charges across all consumers • number of customers (to calculate mean annual customer bill) • annual network demand (to calculate mean price per unit of heat delivered) • reference prices: prices for consumers at reference usage levels	Quarterly
Cost allocation	• overview of costs recovered through standing charges, • overview of costs recovered through unit charges • connection charging methodology	Annual

Cost drivers	A subset of the cost drivers considered in Table 7 which are expected to change year to year could be collected annually, such as: • network supply heat price • annual network demand • annual network generation • operating temperature • other efficiency measures • number of customers	Annual
Cost drivers	A subset of cost-drivers could be collected at the time of registration or subsequent RfI or in the event of any changes, such as: • network length • type of network • function • profit or non-profit • technology type • ownership or commercial arrangements • network built pre-regulation versus post-regulation • zoning location • metered versus non-metered	Collected at the time of registration or subsequent RfI, and updates to be provided in the event of any changes

Financial data	Data for collecting EBIT margins: • revenue • operating costs (expenses directly associated with running the heat network) including but not limited to fuel costs, operations and maintenance, administrative expenses, and depreciation	Annual

3. Cost allocation

Section summary

Cost allocation refers to how heat suppliers allocate costs to the various charges they levy on consumers, and how prices are structured more generally. Currently, suppliers use diverse pricing structures — including different combinations of connection charges, standing charges, unit rates, and other fixed charges – and allocate different costs to these charges. These differences may complicate price benchmarking.

Given this, we set out there is potentially a case for us to set prescriptive rules on how heat suppliers should allocate their costs when setting charges in the 2023 consultation. However, imposing prescriptive cost allocation rules also has potential downsides, including limiting the ability of heat suppliers to adopt pricing structures that suit their diverse customer bases and business needs; as well as the extra regulatory and resource burden of reporting, monitoring and enforcement. Therefore, we propose to impose only one prescriptive rule initially: Guaranteed Standards of Performance (GSOP) payments, compensations, fines, penalties and other redress provided to consumers should not be passed through to customers. However, we will monitor the market and consider whether further intervention is required if evidence of consumer detriment emerges. We also propose to provide best practice guidance on cost allocation and pricing structures.

Finally, we propose an authorisation condition that reflects our policy proposals on cost allocation.

We are seeking feedback and input on our proposed approach.

Questions

Q10. Do you agree with our proposed prescriptive rule that GSOP payments, compensations, fines, penalties and other redress provided to consumers should not be passed through to customers?

Q11. Do you agree with the draft best practice guidance provided? Is there anything that should be added? Should any of the best practice guidance be strengthened to prescriptive rules?

Q12. Do you think that the best practice approach to cost allocation should differ for different types of heat networks, or different types of suppliers? If so, for which types and how?

Q13. Does the authorisation condition, 'cost allocation', reflect the policy intent?

Q14. What other feedback do you have on the proposed approach to cost allocation?

Background

3.1 Cost allocation refers to how heat suppliers allocate costs to the various charges they levy on consumers, and how prices are structured more generally in terms of the costs going into standing charges vs unit rates (if metered).

3.2 Engagement with stakeholders has highlighted that there is often a lack of clarity regarding what costs are recovered through standing charges and unit rates. There is also variation in pricing structures, with some suppliers applying a single unit rate while others use multiple unit rates based on consumption thresholds (for example rising block tariffs); and some suppliers have more than one fixed charge, for example monthly standing charges and capital replacement charges.

3.3 There is also variation in pricing structures among unmetered schemes - for example heat charges are sometimes bundled into rent or building service charges. Through our 2024 consultation and impact assessment, we are exploring proposals to eventually require heat networks to unbundle individual heat charges once metering is installed in accordance with technical standards.

3.4 Heat suppliers may also levy charges to connect new customers (or secondary networks) to an existing network. These charges may be paid by end consumers or by a secondary network operator.

Previous Consultations

3.1 In the 2023 consultation we explained that setting cost allocation rules could help address the issues of varying methodologies, and sought views on how cost allocation could be approached in the heat network market. In particular, we considered setting rules on what costs should be recovered through fixed and variable charges, to help ensure a consistent base of pricing data for future benchmarking.

3.2 There were mixed views on the need for more prescriptive rules versus guidance. Some respondents noted that rules will aid price comparison and investigation, allowing for robust consumer protection. Concerns were raised over the ability of heat networks to comply with rules; potential stifling of innovation; and the need for different cost recovery approaches for heat suppliers in different circumstances. Respondents were in broad agreement that any rules or guidance for cost allocation need to consider the diversity of the market, and that a uniform cost allocation approach may not be possible or desirable.

3.3 The balance of standing charges versus variable charges has also been under discussion more widely in the energy retail market. In February 2025 we consulted on the introduction of a zero standing charge option within the retail price cap, alongside the existing tariffs that include a standing charge. Our primary aim is to create more choice for how consumers pay for their energy. However, we also recognise that the question of balancing standing and variable charges is complex.

3.4 We anticipate that the principles we adopt as part of our wider review of energy retail tariffs could potentially also be applicable to heat networks consumers. However, we recognise that heat networks have distinct cost structures, and that any changes to existing charging arrangements will have distributional impacts. Therefore, we intend to tailor our approach to reflect the specific characteristics of heat networks. If we determine that further proposals are needed for heat networks, we will consult on this following our wider review.

Proposal

3.5 The diversity of heat networks in terms of their business models, ownership, scope of operations, and physical and technical characteristics impacts their cost structures and optimal cost allocation. Any cost allocation rule or guidance should consider this, recognising that a 'one-size-fits-all' approach may not necessarily be feasible or produce optimal outcomes.

3.6 We consider that heat suppliers should have the flexibility to recover costs in a way that aligns with their specific circumstances. However, suppliers must adhere to the pricing principles outlined in Fair Pricing Framework to ensure fair and transparent pricing for consumers.

3.7 At this stage, we propose to introduce only one prescriptive rule, which will be incorporated in the authorisation conditions (a draft of this AC can be found at the end of this chapter):

Fines, penalties and other redress provided to consumers should not be passed through to customers

3.8 This will ensure that consumers are not unfairly burdened with costs arising from supplier non-compliance. Moreover, it aligns with established practices in other regulated utility sectors, where penalties are intended to drive service improvements rather than impose additional costs on consumers.

3.9 Retaining diverse pricing structures in the market will mean that challenges remain around comparing prices across heat networks. This is particularly

relevant for our plans to use price benchmarking to identify cases of disproportionate pricing (covered in Chapter 4: Price comparison and benchmarking methods). However, our view is that this challenge can be largely overcome through the approach taken to defining price for the purposes of benchmarking - for example comparing all-in prices for a defined level of usage, rather than individual tariff components. This is discussed in more detail in the 'price definition' section in Chapter 4.

3.10 We also recognise that certain approaches to cost recovery could result in inconsistent outcomes for different groups of consumers. For example, if some fixed or shared costs are recovered through variable per-unit charges, then this will result in cross-subsidisation, where high-usage consumers are in effect cross-subsidising low-usage consumers (high-usage consumers are covering a disproportionately high share of the fixed cost base), and vice versa.

3.11 If our ongoing market monitoring provides evidence that certain cost allocation practices are causing consumer detriment, such as disproportionate prices for certain groups of consumers, we will consider implementing additional prescriptive cost allocation rules in the future to safeguard consumer interests.

3.12 We also plan to monitor cost allocation practices by collecting data on pricing structures. This data could include:

- standing charges for heat, and cost lines recovered through these charges
- unit rates for heat, and cost lines recovered through these charges
- connection charges, and methodology for setting these charges

Best practice guidance

3.13 Stakeholder engagement has indicated that some heat suppliers would benefit from clear guidance on best practice in cost allocation and tariff structure. We are therefore developing best practice guidelines.

3.14 Our view is that the fair pricing principles (see the 'principles' section in Chapter 2: Fair pricing Framework) provide a good starting point to inform best practice for cost allocation. In this section, we provide some further high-level guidance focusing specifically on cost allocation.

3.15 We welcome stakeholder views on this guidance including whether anything should be added, or anything removed; and on whether any aspects of this guidance should be formalised as rules instead. We are also seeking feedback on how best practice guidance (or rules) might differ for different types of heat networks or suppliers (as discussed in the market segmentation section).

3.16 Based on the feedback we receive on the questions in this section, we may publish best practice guidance for cost allocation, which will likely evolve over time.

Cost reflectivity

3.17 Prices should be cost reflective, meaning that they reflect the underlying cost of providing heat (which would include the cost of building, operating and maintaining the heat network, and serving customers) and consumption levels of consumers. Additionally, consumers should pay for the additional costs they impose on the system (for example fuel costs, billing costs, metering costs and others that result from serving a customer), as well as a contribution to the fixed costs of the system, promoting long-term efficient use of the system and its long-term sustainability.

3.18 For metered networks, this is likely to mean:

- costs that are largely fixed in relation to heat consumption could be allocated to a standing charge. These costs could include maintenance and repairs, asset depreciation (that is, capital costs should typically not be recovered through unit charges), administrative overheads, billing costs and financial obligations such as leasing
- costs that are largely variable with heat consumption could be allocated to a unit charge. These costs could include fuel costs and efficiency losses

3.19 Prices should also be set in a way that results in an equitable distribution of upfront capital costs over time. We invite stakeholder views on how the recovery of upfront capital costs of District Heat networks should account for changes in customer numbers over time as more buildings connect to these networks. A key concern is that early users could bear a disproportionate share of upfront capital costs, effectively subsidising later users as the customer base expands. One approach could involve heat networks forecasting their customer numbers and using these projections to allocate capital costs, avoiding excessive financial burden on early adopters. We also welcome feedback on other potential guidelines, such as setting limits on the percentage of capital costs recoverable within a given year.

3.20 For unmetered networks, costs should be allocated on a basis that provides some proxy of usage, such as number of bedrooms or property size.

3.21 Connection charges should be no lower than the incremental cost of connecting a new building to the heat network (the cost of the connection assets and associated works).

3.22 HN entities should follow the billing guidance, including having an up-to-date billing methodology statement that clearly explains how charges are set. This could include illustrative examples of how the methodology can be applied to arrive at a final bill. This document can be shared with consumers if questions or complaints about pricing are raised.

Authorisation condition

3.23 Following from the above considerations in relation to prescriptive rules and best practice guidance for cost allocation, we are proposing the following authorisation condition:

An authorised person must ensure cost allocation practices are consistent with the cost allocation guidance to ensure consistency with Fair pricing principles. This authorisation condition shall be interpreted in accordance with guidance on cost allocation published by the Authority; and

An authorised person must not recover any penalties, fines, compensations, GSOP payments or redress, whether voluntary and/or involuntary, in lieu of payments made directly to consumers or in lieu of penalty, that it has paid (for example financial penalties arising from breach of heat network authorisation condition) from its customers through its charges unless specified otherwise in guidance.

3.24 We seek stakeholders' views on whether this AC captures the policy intent.

4. Price comparison and benchmarking methods

Section summary

Benchmarking is a method for comparing the prices charged by heat networks to reference points ('benchmarks') which can help to identify potential cases of disproportionate pricing.

We intend to continue developing three main benchmarking approaches: external benchmarks, comparator benchmarks, and comparison to heat networks' own past prices. In a diverse market with different price and cost structures, cost recovery approaches, business models, and technical characteristics, we think it will be beneficial to use several complementary benchmarking methods, and develop these iteratively to build an evidence base.

At this stage, the proposed methods will help inform the data that needs to be collected to implement benchmarking, but we will continue to refine these methods through real-world testing.

We seek views on the proposed approaches to price comparison, benchmarking and data requirements.

Questions

Q15. Do you agree with our proposed approach for defining heat network prices in a comparable way? Are there any other ways to define price that we should consider?

Q16. Do you agree with our proposal to use gas boilers and heat pumps as external reference benchmarks?

Q17. Do you agree with the proposed method for calculating a heat pump benchmark, including the key input parameters outlined? Are there any additional factors that should be considered to ensure a robust heat pump benchmark?

Q18. Do you agree with the proposed approach to comparator benchmarking, and our list of potential cost drivers set out below and in Appendix 3: Cost driver? Are there any relevant cost drivers that we haven't considered?

Q19. What is your view on the ease with which data could be reported on the four *'High Importance'* cost drivers set out in paragraph 4.33? What information do heat network operators and suppliers already collect, and what would be challenging to provide?

Q20. What is your view on the ease with which data could be reported on the remaining *'Medium Importance'* cost drivers set out in paragraph 4.33? What information do heat network operators and suppliers already collect, and what would be challenging to provide?

Q21. What is your view on our proposal to publish a high-level methodology for each benchmark (once data is collected and methods have been tested), to provide an accessible overview of the approach?

Q22. Do you have any other feedback on the proposed approach to price comparison and benchmarking?

Background

4.1 The motivation for benchmarking is to compare the prices paid by heat network consumers to reference points, to identify outlier cases that could indicate disproportionate pricing.

4.2 In the 2023 consultation we set out our preference to continue developing three benchmarking methods (out of seven):

- external benchmarks (option 2): comparison to a counterfactual technology, for example, a gas boiler or heat pump
- comparator benchmarks (option 4): comparison to heat networks with similar characteristics that drive costs
- comparison to own past prices (option 7): comparison to own past prices over time, controlling for input cost fluctuations

4.3 Respondents were mostly supportive of our proposed benchmarking approaches, with these three options gathering the most support.

4.4 We remain of the view that there is a benefit to using multiple benchmarking methods in combination:

- external benchmarking is relatively straightforward to implement and can help to identify high prices that could indicate disproportionate pricing through comparison to the external reference points
- own past price benchmarking is similarly relatively straightforward to implement and provides an additional check by identifying cases of significant price increases (allowing for outside factors such as increases in input fuel costs)
- comparator benchmarking is a relatively more complex and data-intensive method but has the potential to provide a more accurate filter for cases of potential disproportionate pricing while controlling for legitimate differences in heat network costs and pricing structures

4.5 The strengths and weaknesses of each of these methods are summarised in Table 4 in the implementation sub-section.

4.6 Our intention is, therefore, to implement all three benchmarking approaches, and use the methods in combination to identify cases of potential disproportionate pricing. The performance of the heat network's price against all three benchmarking approaches will be one input into any decision to open a price investigation, alongside consideration of other relevant information (see Chapter 7: Price investigation). Figure 2 gives an overview of the three benchmarking approaches.

4.7 We received several responses to the previous consultation seeking further clarity on how our proposed pricing protections would apply to heat networks following a 'price promise' or 'cost avoidance' pricing methodology. Under this approach, prices are set with reference to a counterfactual. Our view is that benchmarking can and should apply to all heat networks including those with different pricing approaches. For example, comparator benchmarking will test if prices are comparable to other networks with technically similar characteristics, and this comparison can be made regardless of the pricing methodology applied.

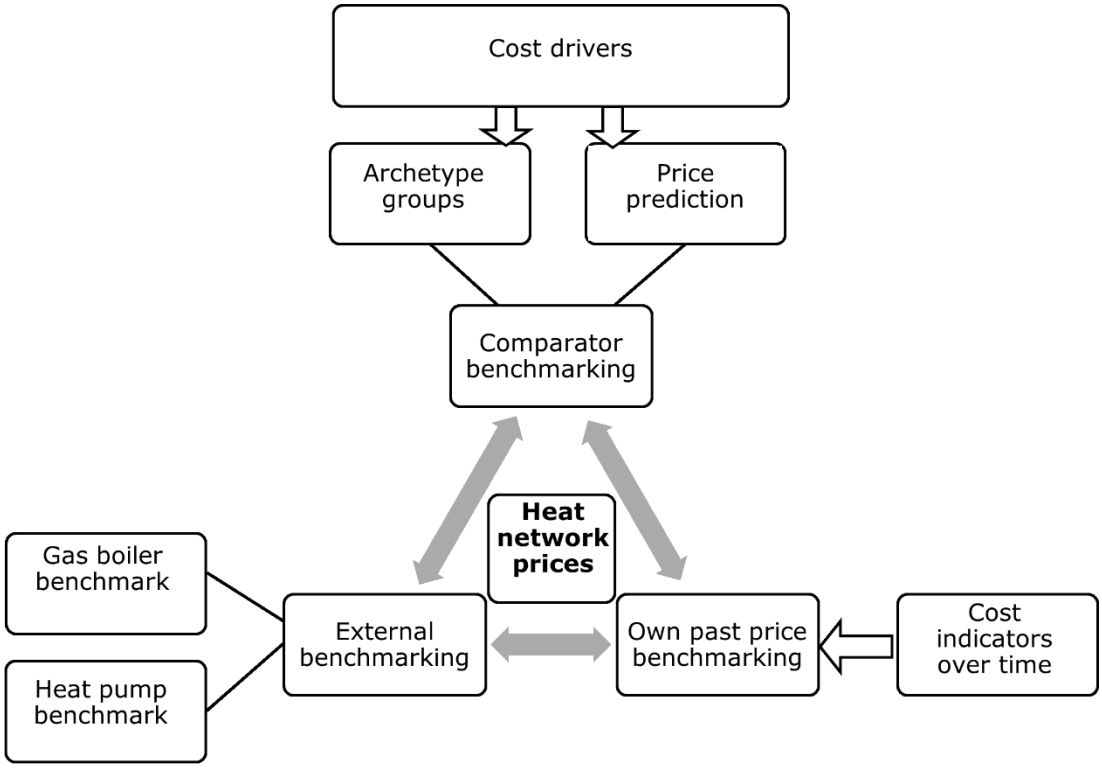
4.8 In the following sections we first consider how heat network prices should be defined, as this is relevant for all three approaches. We then set out, at a high level, proposed methods for each of the benchmarking approaches. Finally, we discuss considerations for implementation, including timing and data requirements.

4.9 Once we have started collecting consistent monitoring data, we will be able to test our benchmarking approaches using real-world data and refine them accordingly. The implementation of the proposed methodologies set out below is subject to obtaining sufficiently robust data.

Figure 2: Overview of the three benchmarking approaches

Price definition

4.10 Each of the three proposed benchmarking approaches relies on defining a price (or prices) charged by each heat network, to be compared to the relevant benchmark. As outlined in Chapter 3: Cost allocation, charging structures in the market are highly diverse, and we are not currently proposing to impose consistent pricing structures. This can present challenges for price comparison. Below we explain how we will define prices in a way that enables benchmarking.



4.11 We propose to define prices for the different types of the authorised network as follows:

- communal network: Prices charged to end-consumers
- communal network supplied by a district network operated by the same entity: Prices charged to end-consumers— for the purposes of price comparison, the communal and district network can be considered as a single entity, though the authorisation will identify these as distinct activities undertaken by the entity
- communal network supplied by a district network operated by a different entity (for example through bulk supply arrangement): Prices charged to end-consumers — in this example, we would expect to explore the extent to which secondary networks' prices are driven by charges through the bulk supply arrangement, and the degree to which the secondary network has control over these input prices (more discussion in paragraphs 2.49-2.50)
- district network supplying secondary networks operated by different entities (for example through bulk supply arrangement): Prices charged to secondary networks

4.12 The methods set out in this chapter could be applied to both heat network operators (for example an operator of a primary network supplying secondary networks through bulk supply arrangements) and heat network suppliers (for

example an entity responsible for both operation and supply of a communal network). We propose in the first instance to apply benchmarking to both operators and suppliers, and to primary and secondary networks, and where appropriate to investigate any differences that arise between the two. We welcome views on how benchmarking approaches may need to be differentiated for heat network operators versus suppliers, or primary versus secondary networks. For connection charges, we understand that there are varying practices in the amount of capital costs that are recovered through connection charges. We will seek to collect data on connection charges to gain a better understanding of how these are set and how they impact end consumers. However, in the first instance, our focus for benchmarking will be on the charges paid by consumers in their heating and hot water bills.

4.13 For ongoing heat consumption charges, individual elements (for example standing charges and unit rates) are unlikely to be comparable across heat networks or to external benchmarks, due to the diversity of cost allocation practices (and the existence of both metered and unmetered networks). Therefore, to ensure that prices can be compared across heat networks and external benchmarks, our view is that the price definition should capture the total effective price faced by consumers, rather than considering each charging element separately. There are different options for calculating such a measure of price.

4.14 The price for a given heat network could be defined as the average amount paid per consumer per year, across all customers of that network, that is, the total charges recovered by the heat network in a given year, divided by the number of customers. This has the advantage of taking into account all charging elements and providing a single measure of price. However, this measure may not be comparable across heat networks because it will be impacted by differences in average consumption levels across networks. For example, a heat network whose consumers use more heat on average will appear more expensive than one whose consumers use less heat, even if their charges are the same. Also, by looking at average prices, this approach may mask pricing issues arising from differences in cost allocation practices, for instance, pricing structures that result in disproportionate prices for consumers with relatively low or high usage.

4.15 Alternatively heat charges could be defined for several reference consumers, for example, a ‘low’, ‘medium’, and ‘high’ usage consumer (the reference usage levels may also need to take into account different connection capacities in the

cases where capacity is an element of the charging methodology). This approach has the advantage of allowing the benchmarking to assess whether a heat network may be overcharging certain consumer segments. However, this method will involve additional data collection, and raises additional methodological questions, for example how a 'low' and 'high' level of usage is defined.

4.16 We intend to continue developing both approaches, and to consider which definition is appropriate for each benchmarking method. We will design collection of price data in a way that is flexible to the definition of price.

4.17 Finally, we note that price comparison relies on being able to observe the prices charged by each heat network. Currently, this may not be possible in cases where heat prices are bundled into rent or service charges, for example in leasehold properties. We are consulting on options for requiring heat charges to be unbundled from rent or service charges, however, this may require changes to existing legislation and would take time to implement changes to existing contractual arrangements, as highlighted in the 2024 consultation. Depending on the implementation of legislation, it may be the case that heat networks are required to report their heat charges (separate from other elements of service charges) to us as part of ongoing monitoring, which may also be required in the transition period before full unbundling of bills is implemented.

4.18 In the following sections we discuss methods for each of the three approaches proposed for benchmarking prices.

External benchmarking

4.19 An external benchmarking approach compares heat network prices to the price that a customer would pay if they were using an alternative heating technology, for example a gas boiler or a heat pump. Looking at how different heat networks' prices relate to an external reference point can help to identify potential cases of disproportionate pricing.

4.20 In this section we consider the use of external benchmark points for our ongoing monitoring of the market. In Chapter 6: Central price transparency, we consider options for publishing external benchmarks as information for consumers.

Method

4.21 We propose to develop two external benchmark reference points: a gas boiler benchmark, and a heat pump benchmark.

4.22 A gas boiler benchmark is informative as a starting point because the vast majority of homes are currently heated using gas boilers, and most heat networks currently use gas as their fuel source.

4.23 We recognise that a gas benchmark will become less relevant as wider heating decarbonisation takes effect. Many newer heat networks are already using or considering a low carbon heat source, such as air-source or water-source heat pumps. It is therefore essential to also establish a robust heat pump benchmark to facilitate meaningful cost comparisons.

4.24 We considered developing comparisons to other counterfactual technologies, such as electric panel heaters and electric storage heaters, as consulted on by the Heat Trust in 2019 (not being progressed further at this time). Our view is that the gas and heat pump benchmarks are the most relevant comparisons at this time for the majority of heat network consumers, although we will keep alternatives under consideration.

4.25 We are aware not all heat networks might be comparable to a gas or heat pump counterfactual, and this is something we will take into account when analysing results. In applying benchmarks, we aim at making like-for-like comparisons and energy source is one of the considerations.

4.26 In Appendix 2: External benchmark we set out more detail on our proposed method for calculating external benchmarks, and suggested data sources.

Comparator benchmarking

4.27 A comparator benchmarking approach compares heat networks' prices to the prices of other networks with similar characteristics. The aim is to compare prices while controlling for features that are likely to impact cost (for example heat source and network size) and which are largely outside the networks' control. These features are known as 'cost drivers'. High prices compared to other heat networks with similar characteristics may indicate that heat networks are pricing disproportionately relative to the market, due to either cost inefficiencies, or excess profits.

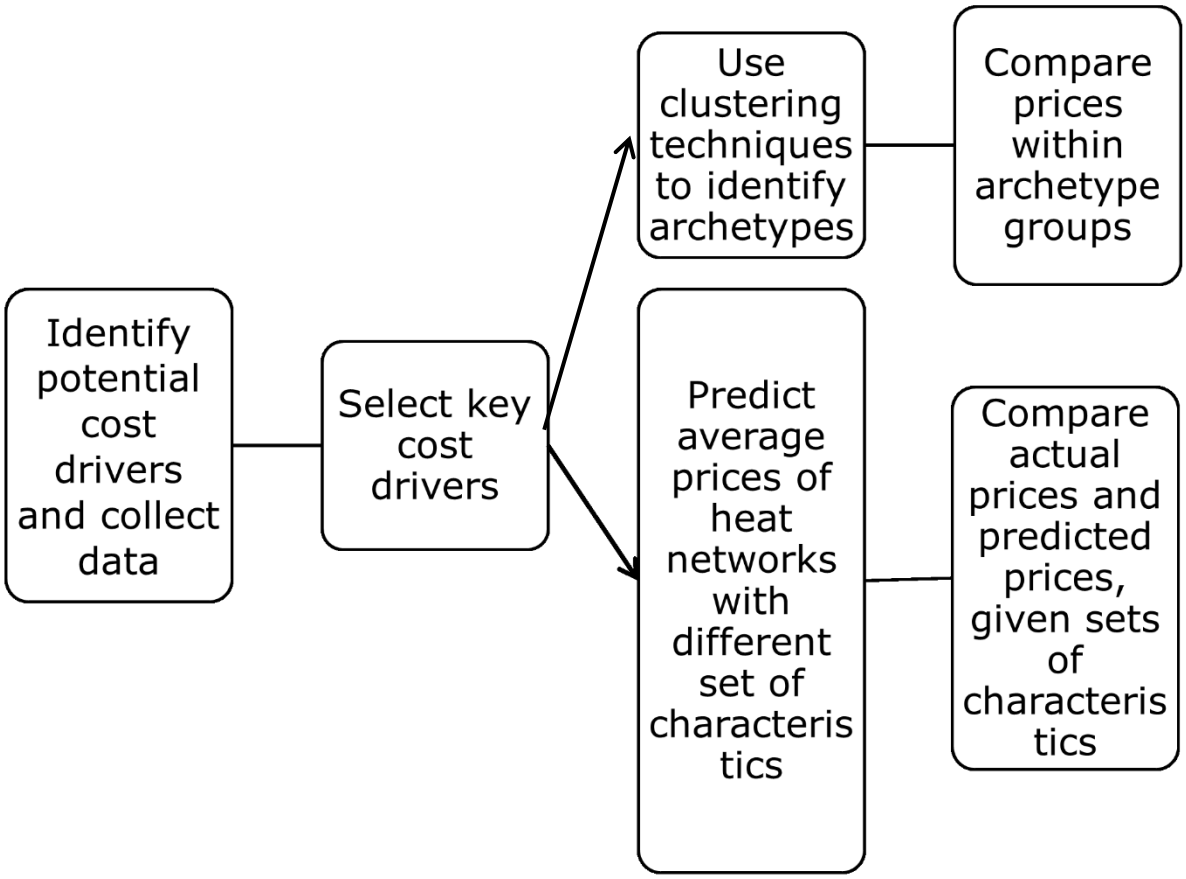
4.28 Comparator benchmarking could be implemented through two approaches (Figure 3):

- archetype comparisons: grouping networks with similar features, and comparing prices within each archetype group
- predicted prices based on observed characteristics: using price and cost driver data across the market to estimate (using techniques such as linear

regression), for each set of characteristics, what price an average heat network would charge, and then comparing actual prices to these predicted or estimated prices

4.29 In the following sub-sections, we provide a long list of potential cost drivers—identifying relevant cost drivers is important for both approaches. We then provide further detail on these two approaches.

Figure 3: Flow chart illustrating the two approaches of comparator benchmarking



Cost drivers

4.30 Cost drivers are features of heat networks that are likely to impact cost (for example heat source, network size), and which can be used to define archetype groups, or controlled for in a regression model (to allow for differences in prices based on these features). Cost drivers should ideally meet the following criteria:

- there should be a clear engineering or economic rationale for why a cost driver is an important determinant of heat network costs

- cost drivers should ideally be largely outside heat network control once the network is operational
- there should be reliable data available on the selected cost drivers
- selected cost drivers should ultimately lead to a statistically robust econometric model

4.31 In the 2023 consultation we set out a list of heat network characteristics that we expected to be relevant for 'segmenting' the market. This list included both variables expected to have an impact on costs; and characteristics relevant for applying regulatory rules and guidance. We have added several possible cost drivers to the list since the previous consultation, and several variables for further consideration. We note that while some variables may not be suitable for use as cost drivers, they may still be relevant for segmenting the market in other ways (for example setting different cost allocation guidelines, or setting differential data reporting requirements), and these are discussed in the Market segmentation sub-section in Chapter 2: Fair pricing framework.

4.32 In Table 7 in Appendix 3: Cost drivers, we set out a long list of the potential cost drivers for inclusion in a benchmarking model, and a discussion of their relevance and importance for comparator benchmarking. The list has been developed from stakeholder engagement and the results of initial cost analysis (see Appendix 4 Cost modelling), and the assessment is based on the criteria outlined in paragraph 4.30 above.

4.33 As a summary, the cost drivers we expect to be key for data collection and to consider for inclusion in a benchmarking model are:

High importance

- technology and fuel type (for example, combined heat and power (CHP), gas boiler or heat pump, waste heat)
- fuel input price (p/kWh)
- network pipe length (metres)
- annual network demand (kWh)

Medium importance

- annual network generation (kWh)
- network generation (for example, 3rd, 4th, 5th generation)
- type of network (district versus communal)
- network age (years since first operational)
- utility supplied (only heat versus heat and hot water)

- metered versus unmetered
- operating temperature (Celsius)
- number of customers, or number of properties supplied
- function (whether a regulated entity is an operator or supplier or both, and whether the network is supplied from a primary network via bulk supply agreement)
- cost recovery approach and level of costs not passed on to consumers
- geographic location

4.34 The list of cost drivers set out above and in Appendix 3: Cost drivers sets out our initial thinking, intended to inform data collection. At this stage, we do not have sufficient real-world heat network data on prices and these potential cost drivers to identify the key cost drivers. Therefore, we have made use of a test dataset and carried out some initial cost modelling to explore and develop these methods, which is outlined in Appendix 4: Cost modelling.

4.35 Once data is collected, we will iterate and test the cost models to arrive at a shortlist of key cost drivers. The model specification is likely to evolve as the market evolves and more data becomes available.

4.36 While we intend to gather data on a range of potential cost drivers, this does not mean that we would use all cost drivers in our final benchmarking model. We would test different modelling specifications and assess whether adding additional cost drivers would increase the robustness of the model.

4.37 We then discuss the two approaches of comparator benchmarking: archetype approach and the price prediction approach.

Archetype approach

4.38 Archetype analysis relies on defining types of networks with similar features and comparing prices within each archetype group. Heat networks with high prices compared to others with similar characteristics could potentially be charging disproportionate prices and could warrant further investigation.

4.39 Archetype groups could be defined using engineering and market knowledge, for example, using groupings such as: 'small communal heat networks'; 'large district heat networks supplied by waste heat'; '5th generation heat networks with individual heat pumps' etc.

4.40 Data science techniques such as 'clustering' could also be used to inform archetype groups, by helping to identify groups within which we would expect to see similar levels of cost (and therefore similar prices). The use of clustering

methods to identify archetypes would involve higher resources to implement and potentially higher data requirements, compared to using engineering and market knowledge alone.

4.41 At this stage, we do not have sufficient real-world heat network data on prices and cost drivers to support the development of the archetype approach, or to identify the archetype groups. Therefore, we have made use of a test dataset and carried out some initial cost modelling to investigate the possible methods that could be used to identify archetype groups, which is outlined in Appendix 4: Cost modelling.

4.42 Note that the archetype groups identified using the test dataset are illustrative, to explore appropriate methods for the heat network market– the archetype groups identified using real-world heat network data may differ.

4.43 Using this method to identify potential disproportionate pricing relies on identifying groups of networks which have similar cost structures: this could be challenging, and we note that there could still be legitimate reasons for differences in heat network prices within archetype groups. However, as a relatively simple and easily understandable approach, this method may have value as an initial screening for further investigation.

Price prediction approach

4.44 This method uses statistical techniques such as linear regression to estimate, for a given set of characteristics, what price an average heat network would charge and then compares actual prices to these predicted or estimated prices. Heat networks with actual prices higher than predicted prices could potentially be charging disproportionate prices and could warrant further investigation.

4.45 Benchmarking using regression modelling is widely used in regulatory applications such as to set utility network cost allowances. For example, Ofgem uses this approach to identify efficient cost levels for gas and electricity networks, and Ofwat uses this approach for water companies.

4.46 In this case we would be modelling price rather than cost, however it is still important to control for differences between heat networks that drive legitimate differences in cost, since these factors will in turn impact prices.

4.47 The approach would involve these steps:

1. collect data on prices and data on key factors expected to drive costs (cost drivers; see the cost drivers sub-section in Chapter 4: Price comparison and benchmarking methods and Appendix: 3 Cost drivers)

2. estimate a model of how these factors relate to prices in practice
3. predict prices of heat networks with different sets of characteristics
4. identify heat networks with higher prices than expected given their characteristics

4.48 Further detail on the technical specification of a general regression model for this application is given in Appendix 5: Regression modelling specification.

Own past price benchmarking

4.49 Under this method, the current price charged by a given heat network would be compared to past prices, to identify significant increases.

Method

4.50 We propose to track heat network prices over time, controlling for external changes in costs that might drive legitimate price changes.

4.51 Of the cost drivers identified above, input fuel costs are likely to have the largest impact on changes in costs over time and can be adjusted for using a deflator price index. For example, for a gas-fuelled network, a benchmark 'expected' price increase can be calculated by observing the increase in input gas costs over the relevant period, and the proportion of the price linked to input gas costs. If the 'actual' price increase exceeds the expected price increase, this could indicate potential disproportionate pricing. Similarly, a significant decrease in input costs which is not passed through to network prices could also indicate potential disproportionate pricing.

4.52 A deflator price index could be constructed using the observed input price paid by each network over time, or alternatively to limit data collection burdens, could be based on average gas or electricity wholesale costs.

4.53 For the remainder of costs, for example operations and maintenance, a deflator index can be calculated based on either economy-wide inflation or estimates for sectoral inflation.

4.54 In some cases, one-off expenditures such as equipment repair or replacement may be passed through to consumers as one-off price increases, depending on the approach to cost recovery. For this reason, own past price benchmarking will focus on identifying unjustified price increases that persist over time. Networks will have the opportunity to provide explanations for one-off price increases as part of data collection.

4.55 Adjusting for input cost changes will also need to take account of different billing and cost recovery approaches, and the timing and length of renewal of fuel procurement contracts, so that prices are being compared to costs in the relevant time period.

4.56 We will consider these issues further as the method is developed and through testing once initial data collection has been completed.

Implementation

4.57 Each of the methods described above has different levels of complexity, testing needs and data requirements (see Table 4 below). We welcome views on each of the methods considered.

4.58 For this reason, we propose the following staggered phasing for implementation of the three benchmarking methods.

4.59 We would start with external benchmarking which could be implemented relatively quickly. The method has been developed (a public gas boiler benchmark already exists, and a heat pump benchmark is used in the National Zoning Model), and these existing benchmarks provide a source for input assumptions.

4.60 We would then develop own past price benchmarks as we build a longer time series of price data.

4.61 As more comprehensive and consistent data becomes available, we would develop comparator benchmarking approaches, potentially starting with the simpler archetype method, and then more complex benchmarking techniques.

4.62 We will publish the high-level methodology for each benchmark once the approach has been developed and tested on real-world data. We will aim to provide an accessible overview of our approach that can be easily understood by heat networks, as well as consumer groups and other stakeholders.

Table 4: Strengths and weaknesses of each proposed benchmark

Benchmarking method	**Strengths**	**Weaknesses**
External benchmarking	• relatively simple to implement • easy to interpret, useful for communicating results	• less closely related to disproportionate pricing - the relative levels of prices above each benchmark can be compared, but excludes controls for legitimate cost differences • the two key reference points (gas boilers, heat pumps) may not be an appropriate comparison for all heat networks
Comparator benchmarking: Archetypes	• relatively simple to implement (at the most basic level using engineering and market knowledge only) • easy to interpret, useful for communicating results	• less robust than price prediction: may exclude key drivers of differences in prices
Comparator benchmarking: Price prediction (for example using regression analysis)	• this method is the most directly related to disproportionate pricing: predictive model produces concrete, like-for-like price predictions for comparison to actual prices • widely implemented in other regulatory settings	• more difficult to interpret • takes more time and resource to develop • requires more data
Own past price benchmarking	• relatively simple to implement • may be possible to implement at a higher frequency than other approaches (for example quarterly) • can identify sudden price increases which may be a high priority for consumer protections	• cannot identify cases where prices have always been high, and stay high • results may be sensitive to the way in which changes in input fuel costs are controlled for

Data requirements

4.63 Implementing benchmarking will require data on:

- heat network prices, as described in the pricing sub-section above: Prices need to be collected for the appropriate time period, for example, to match prices to the relevant comparison costs. We will consider whether to collect a time series of prices which will allow for calibration of the proposed deflator indices

- data on gas boiler and heat pump costs, as described in Appendix 2: External benchmarks with regular updating to account for changes in comparator costs
- data on heat network cost drivers: This is likely to include all 'High' and 'Medium' importance cost drivers from the list in the cost drivers sub-section in Chapter 4: Price comparison and benchmarking methods, and may include other data points from the longlist outlined in Appendix 3: Cost drivers
- input fuel costs (actual per network, or estimated based on average wholesale costs)

4.64 We welcome views on which data points can be most easily reported by heat networks.

4.65 We are aware that the heat networks market is nascent and expected to grow materially to meet the government's Net Zero objectives. Currently, data collection and reporting processes are highly variable across the sector. We will establish clear guidance for data reporting which can be refined over time. New heat networks (those becoming operational after the regulation comes into effect) are expected to represent most of the market over the medium to long term, and these networks should be able to implement the required processes for data collection and reporting at the outset. We welcome views on ways to make data collection requirements proportionate for existing networks, to the extent that existing networks may face additional burdens from transitioning to different or new data collection and reporting processes.

5. Profitability analysis

Section summary

Profitability analysis measures regulated entities levels of profit or returns, in some cases comparing these to a reference level of return. Profitability analysis can help determine whether heat networks with higher prices are also earning excess profits (albeit higher prices may also be the result of other factors).

At this stage, we propose light-touch monitoring of Earnings Before Interest and Tax (EBIT) margins across all heat network operators and suppliers.

As data collection improves and standardised regulatory reporting is introduced, more sophisticated profitability assessments could be carried out. This could involve estimating metrics such as Return on Capital Employed (ROCE), and comparing these to the Weighted Average Cost of Capital (WACC).

However, these more in-depth profitability assessments can be resource intensive. Therefore we propose to apply these only in cases where potential pricing concerns have been identified through the benchmarking process. If the profitability analysis then identifies that a heat network is also making excess profits, a closer price investigation may be triggered (see Chapter 7: Price investigations).

We are seeking views on the proposed approach to ongoing monitoring of EBIT margins and profitability analysis.

Questions

Q23. Do you agree with the proposal for ongoing monitoring of profitability through data collection on EBIT margins for all heat networks?

Q24. How challenging would it be for heat network operators and suppliers to provide the data outlined for calculating EBIT margins? What barriers, if any, might affect the accuracy and completeness of the data?

Q25. As data collection improves, do you agree that more in-depth profitability assessments, for example using Return on Capital Employed (ROCE), should be conducted for networks identified as outliers through benchmarking?

Q26. Do you have any other feedback on the proposed approach to profitability assessment?

Background

5.1 Profitability analysis can be used to assess whether a regulated entity is earning excess profits, by comparing actual profit levels to a benchmark that reflects the profit expected in a competitive market. If heat networks are able to

consistently achieve profits exceeding a competitive level, it may signal that they are overcharging consumers by leveraging their market power. This market power stems from their natural monopoly status, as highlighted in the 2024 consultation.

5.2 Profitability analysis can be applied across the whole heat network market or used to investigate specific cases of high prices identified through price benchmarking. While benchmarking highlights disproportionate pricing concerns, profitability analysis helps establish the underlying cause, that is whether higher prices are driven by excess profits or other factors (for example, inefficiencies or other cost-related factors not controlled for in the benchmarking). Distinguishing between excess profits and inefficiencies is important, as this can help inform what potential action, such as compliance measures or enforcement, may be taken in response (see Chapter 7: Price investigations).

Which profit metric to assess

5.3 There are different approaches to assessing profit levels, with varying levels of complexity and reliability.

5.4 EBIT margins are usually relatively straightforward to calculate and are often reported in company accounts. The CMA's 2018 heat networks market study used EBIT margins to assess the profitability of 23 companies whose primary business activities centre on heat network operations and who had submitted unabridged financial accounts to Companies House. EBIT was calculated as an average over the two most recent years of available financial data for each company.

5.5 However, it is important to recognise the limitations of EBIT analysis. In general, EBIT can fluctuate significantly year-on-year due to operational changes, investment cycles, or temporary market conditions. As a result, a single period of high EBIT does not necessarily indicate excess profits or anti-competitive behaviour.

5.6 An alternative metric which may be better suited for estimating profitability in capital intensive sectors is the Return on Capital Employed (ROCE). ROCE measures EBIT relative to the capital employed (the capital base used to generate profits) which arguably has a clearer economic interpretation, as mentioned in the CMA energy retail market investigation. However, its calculation is resource-intensive and depends on high-quality data.

5.7 More details on profitability estimation can be found in Appendix 6: Profitability.

Proposal

5.8 We propose that initially, a light-touch monitoring framework should focus on collecting and reviewing EBIT margins for all heat networks, alongside the benchmarking exercise described in Chapter 4: Price comparison and benchmarking methods. This approach aligns with the method used by the CMA in its heat networks market study.

5.9 EBIT margin monitoring will help establish a baseline understanding of profit levels across the sector. This baseline will serve as a reference point for identifying regulated entities whose profitability appears significantly higher than the industry average.

5.10 However, given the limitations around EBIT margins outlined above, we will treat this data with caution and not use it mechanistically. Instead, EBIT analysis would be used to flag some heat networks for further investigation. It would serve as a screening mechanism to help identify potential issues in specific cases, which can then be examined in more detail through a deeper regulatory review. This would be subject to detailed investigation of other factors (for example, to check if observed EBIT margins suffered from identifiable distortions, such as the influence of non-heat network activities). This will ensure that profitability assessments are appropriately focused on the financial performance of heat network operations.

5.11 Where benchmarking, EBIT margin monitoring and additional refinements flag persistent pricing concerns for individual heat networks, these cases could be further examined using a more in-depth profitability analysis— for example by comparing ROCE to a benchmark WACC. This will help ensure that regulatory resources are directed towards the cases that warrant the most scrutiny while maintaining proportionality in oversight efforts.

5.12 In the longer term, as data collection practices improve and standardised regulatory reporting is introduced, it may become feasible to expand the scope of profitability assessments beyond EBIT margins and apply ROCE tests more widely. The feasibility and practicality of this will need to be assessed as data evolves, and as we understand more about the efficacy of our price benchmarking and EBIT margin monitoring tools.

5.13 We acknowledge that respondents were largely unsupportive of this type of test (which was implicit in 'Option 5' of our 2023 consultation. However, some respondent concerns stemmed from the perception that we would introduce a profit 'cap'. To be clear, we are not proposing to introduce a hard-and-fast cap

on profits. Rather, we are proposing this test as part of our overall 'filtering' approach to identifying potential consumer detriment arising from disproportionate pricing. We would expect a reasonable degree of variation around any profit benchmark and would only consider potential intervention, if appropriate, where it is clear that profits are excessive on a sustained basis, and where other evidence indicates that this is a consequence of disproportionate pricing behaviour (as opposed to, for example, higher returns which might be earned for a short period as a result of particular innovations that enhance efficiency or provide other consumer benefits).

5.14 We also confirm that this test would only be relevant for for-profit heat networks.

Data requirements

5.15 To support ongoing monitoring of profitability, we propose to collect EBIT margins as part of a regular data collection process for heat networks. This will facilitate continuous monitoring of financial performance across the industry, enabling trend analysis over time and helping to identify potential outliers that may require further investigation.

5.16 To calculate EBIT margins effectively, we propose collecting these core financial indicators:

- revenue
- direct costs (or cost of sales), which covers all directly attributable costs in delivering energy to the consumer (such as fuel costs)
- operating costs, which covers day to day expenses necessary to maintain, operate and administer a heat network (such as maintenance and administration expenses)
- depreciation or amortisation, accounting for the gradual reduction in asset value over time

5.17 The data above would allow us to calculate EBIT margins. However, it is possible that the resulting calculated margins could vary across the sector due to, for example, varying levels of asset base or capital intensity. To enhance comparability, we may therefore consider also requesting additional balance sheet data on:

- fixed assets: Capturing the long-term infrastructure investments supporting heat network operations
- long-term debt: Reflecting financial liabilities that may influence EBIT margins

5.18 This data could allow us to perform some simple, high-level sense-checks which could help to explain any volatility we may observe in EBIT margins, and may therefore help inform our view as to whether to proceed to a price investigation for any given heat network.

5.19 Although these data points could be gathered from statutory accounts where available, we propose to collect them directly from heat networks to ensure consistent reporting. We will also provide regulatory instructions and guidance (often referred to as "RIGs" in other regulated sectors) providing detailed guidance on how to measure these data points.

5.20 We welcome stakeholder feedback on this approach and the most appropriate indicators for the heat networks sector.

5.21 For cases where benchmarking or EBIT monitoring highlights potential concerns, further assessment may be required. In such cases, additional data necessary to calculate ROCE would be collected through targeted bilateral engagement with relevant heat network operators. Additional financial data requirements may include:

- long-term assets
- working capital
- cash holdings

5.22 To conduct a comprehensive economic profitability assessment, additional adjustments to financial accounting data may be required. This could include information on the modern equivalent value of existing assets, the useful economic life of assets, any impairments, and intangible assets that may be relevant for analysis, such as customer lists, training costs, and brand value.

5.23 By structuring the data collection and assessment process in this way, we ensure that resource-intensive profitability analysis is applied selectively, focusing on cases where there is strong evidence of potential excess profits or disproportionate pricing. This approach balances the need for robust regulatory oversight with the importance of managing data collection burdens. This is discussed further in the sub-section on data requirements in Chapter 4: Price comparison and benchmarking methods.

Implementation

5.24 We will publish our approach to profitability assessment after data collection, iteration and testing.

5.25 Ongoing monitoring will involve price benchmarking and reviewing EBIT margins for all heat networks. This will help identify trends and provide an initial understanding of variations in profit levels.

5.26 Heat networks that significantly deviate from industry norms will be flagged for further scrutiny. This will ensure that only those with potential profitability concerns are subject to deeper analysis. For flagged heat networks, we will conduct a more detailed profitability assessment, considering additional financial indicators such as the assessment of ROCE and comparison to WACC.

5.27 Given the data requirements for profitability assessment, we would not be able to start this activity from January 2026, as we will need to wait until we start collecting pricing data through our monitoring activity later in 2026. In any case, any pricing investigation activity would not start before January 2027 at the earliest.

6. Central price transparency

Section summary

We are aware that consumers of heat networks might not have sufficient information to understand heat network charges. The lack of information about heat network charges in the public domain limits the ability of consumers to make informed decisions and challenge their bills. Through the provision of centralised pricing data, alongside billing requirements, heat network consumers would be able to better understand their heat network charges and how they compare to equivalent schemes in the industry, and thus more empowered to challenge their bills based on evidence.

Given the monopoly nature of the heat network market, consumers are unable to switch heat network suppliers. Making pricing information available to consumers will allow them to compare and challenge prices, which in turn might drive companies to lower prices and become more efficient.

We are seeking views on the two options that had the most support from the respondents of the 2023 consultation and on another option proposed by stakeholders. We are also seeking views on how these options can be combined and phased in.

Questions

Q27. What are your views on the three options? Please comment on each option in terms of the price information to be centrally published, how the price information is presented and what prices are compared to.

Q28. Do you think the options have the right balance between providing a good level of transparency, burden on consumers to interpret the information, risks of misinterpretation by consumers, disclosure of commercially sensitive information, and risk of price convergence?

Q29. Do you support focusing on one option or a combination of options in paragraph 6.69?

Q30. Do you support the phasing in of the options described in paragraph 6.70?

Q31. Do you support the adoption of different options for different heat network groups described in paragraph 6.71?

Q32. Do you agree that central price transparency measures are unlikely to put additional administrative burden on heat networks in addition to data reporting for benchmarking? Do you have concerns on the administrative burden from any options?

Q33. Do you think it is appropriate to link central price transparency with benchmarking?

Background

6.1 We are aware that consumers of heat networks might not have sufficient information to understand heat network charges. The lack of information about heat network charges in the public domain limits the ability of consumers to make informed decisions and challenge their bills.

6.2 Central price transparency refers to the extent to which price information is openly available and accessible from a central source. In practice, central price transparency means that prices are clearly presented and easily accessible to the public. Through the provision of centralised pricing data, alongside billing requirements, heat network consumers would be able to better understand their heat network charges and how they compared to equivalent schemes in the industry, and thus more empowered to challenge their bills based on evidence.

6.3 The centralised pricing information may include:

- basic information such as heat consumption, standing charges and unit charges, which enables consumers to understand the charges
- industry trends, which enable consumers to understand the trends in charges
- market statistics on prices, which enable consumers to compare prices between different heat network schemes

Benefits and challenges of central price transparency

6.4 In the 2024 consultation, we proposed the publication of centralised pricing information and billing transparency that provide consumers with both individual bill transparency and greater transparency across the sector. This is beneficial for a range of reasons:

- enabling existing consumers or their representatives to compare prices against an average price or range of prices for similar networks, could create pressure on networks to lower prices, given reputational risk
- required billing formats would direct consumers to information sources in order to carry out these comparisons
- knowing the prices and expected costs upfront allows consumers to plan ahead, to avoid unexpected expenses and manage expenses
- informing the sector and stakeholders of wider trends seen across the market, depending on the information published could provide the market with signals to improve such issues before the need for intervention

6.5 The first two points are the main purpose of central price transparency– facilitate comparison to create downward pressure on prices charged by heat networks. The outcomes of price transparency are limited by the monopoly nature of the heat network market, that consumers are unable to switch. Making pricing information available to consumers will allow them to compare and challenge prices and make decisions, which in turn might drive companies to lower prices and become more efficient.

6.6 We believe that price transparency requirements across the heat network market will be in consumers' best interest. At the same time, it is important to consider the burden on consumers to interpret the information, the risk of consumers misinterpreting the information, and the importance of not disclosing commercially sensitive information (and thus the effect on market competition).

6.7 We acknowledge the risks of publishing price information on market competition. For example, heat networks may have more information on prices of other heat networks, potentially increasing the risk of heat network prices converging at a higher level. In general, we do not consider this risk to be significant enough to outweigh the potential benefits of price transparency. The risk will depend on the price information being published for each option. We discuss this risk when exploring each option in the next section.

6.8 The respondents also highlighted the administrative burden placed on the industry to provide information to comply with the proposed price transparency requirement. However, this section focuses on the additional administrative burden on top of providing information for heat network registration, ongoing monitoring and price benchmarking. We are of the view that the information requirement on heat networks for implementing the options outlined below is unlikely to bring additional administrative burden (on top of information required for price benchmarking; see Chapter 4: Price comparison and benchmarking methods).

6.9 Some respondents were concerned that publishing pricing information could lead to confusion and consumers making complaints of disproportionate pricing due to inappropriate comparison of pricing between heat networks with very different characteristics.

6.10 Costs can vary significantly with the nature and size of a scheme in heat networks. As a result, price comparisons between different schemes are not always meaningful and could lead to consumers incorrectly perceiving prices as unfair, when in fact price differences are driven by differences in network

characteristics. Therefore, one of the objectives of this proposal is to provide easily accessible pricing information for consumers to make appropriate price comparisons.

Options in previous consultations

6.11 Feedback from the 2020 consultation showed a strong support for the proposed transparency requirement, especially regarding pricing.

6.12 The 2023 consultation set out the options of developing a central database by making available:

- a full HN register with key characteristics
- a segmented average and range
- an across market average and comparison indicators
- information on the best and worst performers across the market
- a 'do nothing' and a voluntary register

6.13 We have considered the pros and issues or challenges and have asked stakeholders for their views on these options.

6.14 Out of the four options set out in the 2023 consultation, Option 2 (a segmented approach where aggregate prices would be published by segments such as age or technology) and Option 3 (where prices would be published for the whole market and compared to gas and low-carbon counterfactual technologies) gathered the most support from respondents.

6.15 We have discounted two options previously proposed:

6.16 A full register of prices of heat networks with key characteristics at a network level was not supported by most respondents. Respondents noted that whilst this option does provide the most transparency, it has two potential shortcomings:

- it might be difficult for consumers to interpret the register and make appropriate comparisons
- the register might contain commercially sensitive data, which could affect competition in the market

6.17 Providing information on the best and worst performers across the market received the least support from respondents. Respondents expressed their concerns that the option would not address price transparency, and that the option would require the design of complex standardisation of comparison methodologies.

6.18 A system with RAG rating to indicate how suppliers perform relative to benchmarks has also been suggested by a respondent. The respondent highlighted that this option does not reveal granular data and reduces the risk of confusion over the information presented. In this consultation, we therefore seek to explore whether and how this option could give a good balance between the level of information and avoiding confusion.

Interactions

6.19 The updated billing and transparency proposals set out in the 2024 consultation considered requiring heat networks to provide clear and accurate billing for consumers to understand what they are paying and are likely to pay in the future. Together with centralised pricing information proposed in this section, these proposals will allow consumers to not only understand their own bills but also how their charges compare to other heat networks and the wider energy market.

6.20 Depending on the form of data or metrics being made public as a part of central price transparency measures, it may involve making some price benchmarking results publicly available. However, it is important to note that benchmarking is only one element of the fairness test (see Fairness test in Chapter 2: Fair pricing framework for details), assessment on profitability and cost allocation will be considered as a whole for any further information request, investigation or enforcement.

Proposal

6.21 In this consultation, we are further exploring:

- option 1: segmented approach (grouped comparison)
- option 2: across market average and comparison to gas and low carbon alternatives (pooled market average comparison)
- option 3: a system with RAG rating

6.22 Note that we do not see these options as mutually exclusive– Regardless of the chosen options, the implementation will likely be phased in, considering the timing of data availability and dependencies on data collection programmes outside fair pricing such as registration and monitoring.

6.23 It is also possible to combine these options. For instance, the results of grouped comparison (Option 1) can be represented by RAG ratings (Option 3) indicating whether the prices are above or below the benchmarks.

6.24 A more developed approach can be adopting different options for different groups: for example, more pricing statistics such as averages or ranges may be provided for a group with many larger for-profit heat networks, while less granular comparison such as counterfactuals and averages may be sufficiently informative for a group dominated by smaller not-for-profit networks with similar efficiency performance.

Options

Option 1: Grouped comparison

6.25 In this option, the comparison of prices is within groups of heat networks. Heat networks would be allocated to different groups by their characteristics such as size of network, age of network and technology. Pricing statistics such as averages and ranges of prices, or an anonymised list of prices could be provided for each group. The approach aims to provide consumers with a like-for-like comparison with prices charged by their heat network.

6.26 In the 2023 consultation, this option received the highest level of support from respondents. Respondents viewed this option as allowing for fairer comparison of prices charged by similar heat networks whilst avoiding sharing commercially sensitive information.

6.27 To further explore this option, we set out its key elements:

Heat network characteristics to be considered for grouping

6.28 Network characteristics (such as efficiency, age, technology) and the key characteristics identified through the modelling of cost drivers and archetypes (such as length and density of network and energy consumption; see Chapter 4: Price comparison and benchmarking methods and Appendix 3: Cost drivers) can be included for grouping.

Price information to be made centrally available

6.29 The price information can range from a list of anonymised prices to summary statistics indicating the central measure (for example, averages, median), or the spread of prices in the group (for example, min-max range, interquartile range, standard deviation).

How price information is communicated

6.30 Depending on the information to be made public, the information can be best presented in static formats such as lists, tables, charts or scatter plots with each dot representing one heat network. More interactive tools such as providing the measures as users input the characteristics of heat networks can also be appropriate.

Prices for comparison

6.31 This option aims to provide sufficient information for consumers to compare the prices of their own heat network with the prices of other similar networks.

6.32 Figure 4 and Figure 5 show examples of how the price information (by groups) in this option could be presented.

Figure 4: Example of price information by groups (Option 1) (Source: Ofgem Retail Market Indicators)

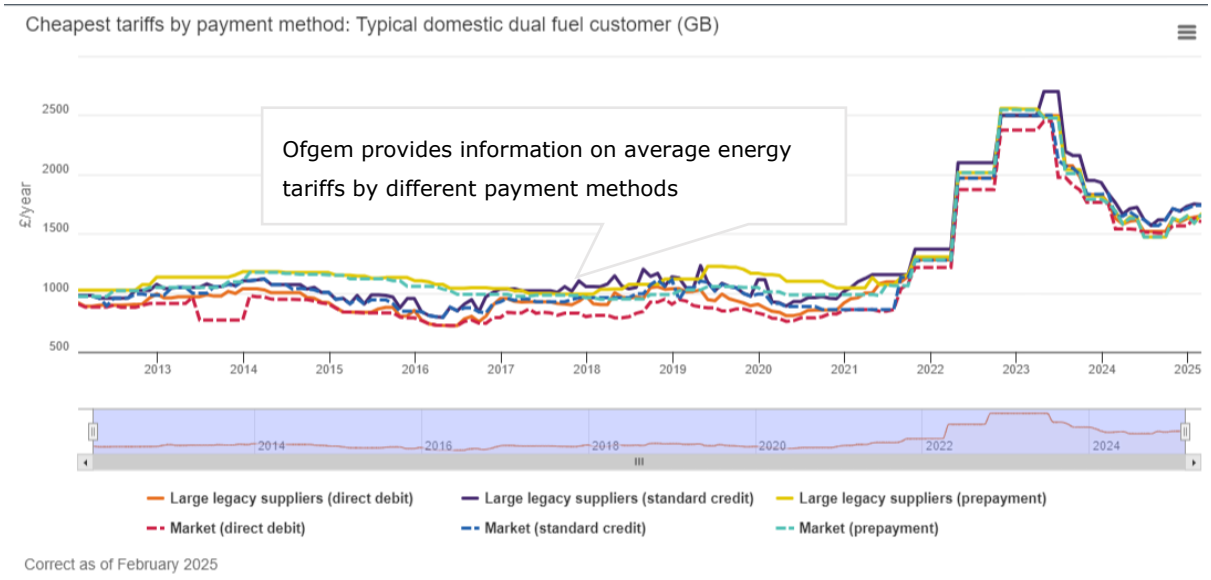
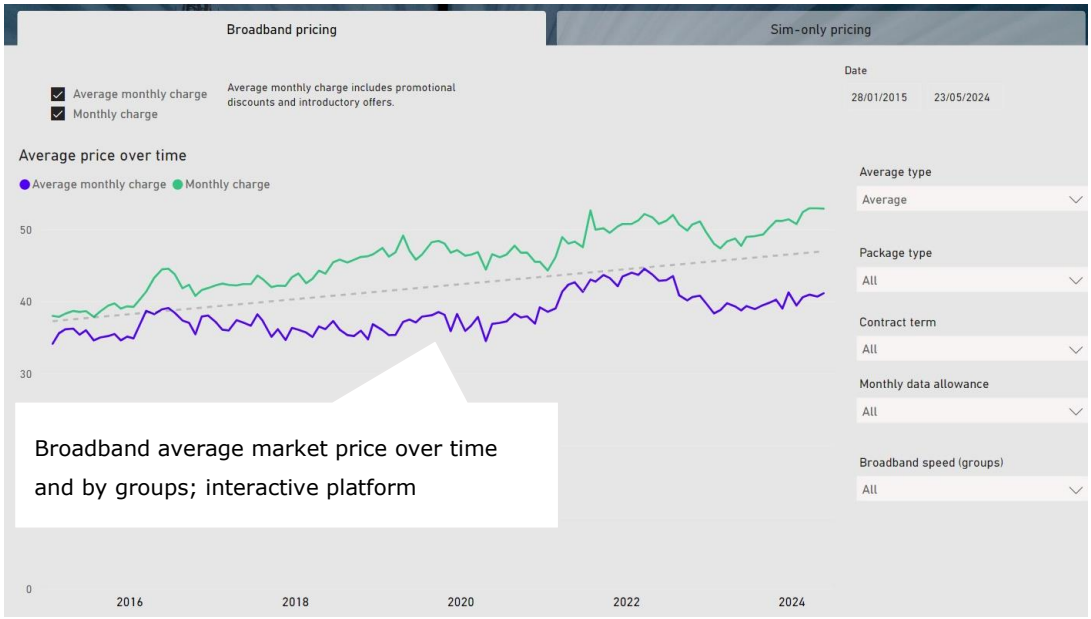


Figure 5: Example of price information by groups (Option 1) (Source: Communications Market Report 2024: Interactive data)



6.33 This option also presents some challenges:

Identifying groups for valid price comparison

6.34 There may not be a consensus on the heat network characteristics used for grouping (see discussion on archetypes in Chapter 4: Price comparison and benchmarking methods) and the boundary of the groups, even if these decisions are data driven and informed by expert judgement (on engineering and economics).

Data comparability

6.35 The diverse tariff structures, variety of costs and how they are recovered among heat networks could make valid comparison and grouping challenging.

Data interpretation

6.36 Some network characteristics identified to be suitable for grouping so far (see modelling work in Appendix 4: Cost modelling), such as network density, may not be known to consumers. The implementation of this option will require having these characteristics or the groups available in public domain or in bills. The additional information might also increase the risk of consumers misinterpreting the data and making incorrect comparisons. This can potentially be remedied using consumer factsheets (see sub-section on Consumer Information).

Data availability

6.37 Some detailed data will not be available until the proposed Heat Network Technical Assurance Scheme is operational and provides structured data reporting.

Risk of price convergence

6.38 The publication of anonymised lists of prices by heat network groups might increase the risk of convergence of prices at a higher level within groups. This risk is lower when the number of heat networks in each group is higher.

Timing

6.39 This option would have to be phased in after data systems for registration, monitoring, HNTAS and billing transparency are established.

Option 2: Pooled market average comparison

6.40 This approach gives high-level market averages, enabling consumers to compare own prices with the heat network average, and to gas and low carbon alternatives. This could take a similar approach to the published data on the gas and electricity data portal, or could build on the Heat Trust cost calculator (see Figure 6).

6.41 In the 2023 consultation, this option received a higher level of support from respondents than the two discounted options (full register and best and worst performers). Respondents responded that this option is similar to the current approach undertaken by the Heat Trust and has the advantages of providing an easy-to-understand metric for consumers to determine fair pricing at a glance, and protecting commercial sensitivity of heat networks.

6.42 To further explore this option, we set out its key elements:

Price information to be made available

6.43 The price information made available can include average tariff prices (fixed and standard variable tariffs), cheapest available prices or profitability indicators (see gas and electricity data portal, for example). It can also be the annual heating and hot water cost for a similar-sized home if it had an individual gas boiler, or low carbon counterfactuals (see Heat Trust cost calculator, for example).

How price information is communicated

6.44 Depending on the information to be made public, the information can be best presented in static formats such as lists, tables or charts. More interactive tools such as website providing the pricing information as users input their postcode, the number of bedrooms, heat consumption and the cost of annual heat bill to refine the estimates can also be appropriate.

Prices for comparison

6.45 The market average of heat networks in itself provides the consumer the comparison of their own heat network prices to prices of the market. The provision of prices of equivalent consumption of using individual gas boiler or low-carbon counterfactuals enables consumers to compare these with prices charged by their heat network (also see external benchmarking in Chapter 4: Price comparison and benchmarking methods).

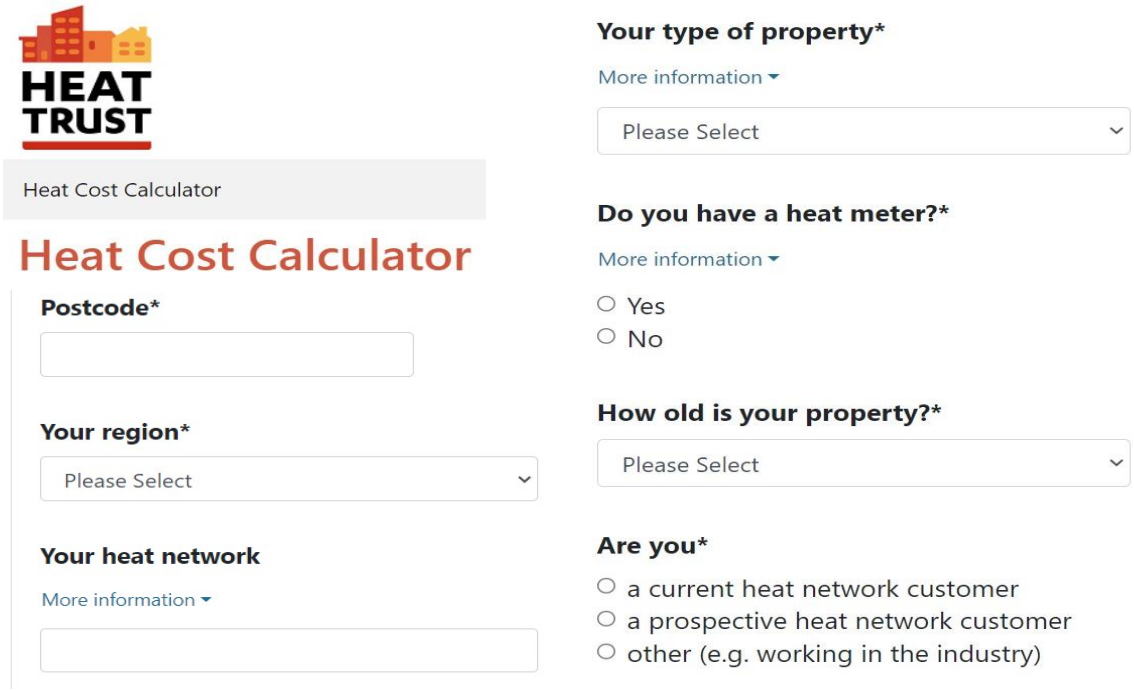
6.46 The implementation of this option appears to be more straightforward, given that there are similar tools in the wider sector (gas and electricity data portal, Heat Trust cost calculator). The risk of convergence of heat network prices at a higher level is likely to be low because the information published is limited to high-level market-wide statistics. However, some respondents expressed concerns that this option would not be able to fully address the requirement for price transparency within the heat network sector. There was also concern about how this option would take into account different business models in supply through heat networks.

6.47 Another concern of this option is the validity of the comparisons. First, the comparison with market averages might not be meaningful in the diverse market of heat networks; second, while the comparison with heat cost counterfactuals (of similar homes) removes the problem of various tariff structures and approaches of cost recovery, the heat cost counterfactual can be inappropriate (see external benchmarking in Chapter 4: Price comparison and benchmarking methods).

Timing

6.48 If the option is adopted and the approach is to build upon the existing Heat Trust cost calculator, the implementation will be reliant on data reporting in the registration phase and first years of monitoring. Given the data needs for development of market indicators and the data portal, there would be a lead time for this tool to be available. This would likely be earlier than the other two options but no earlier than January 2027.

Figure 6: Example of price information presented in Option 2 (Source: Heat Trust calculator)



Option 3: RAG ratings indicating comparison with benchmarks

6.49 This option, which has been recommended by a stakeholder in the 2023 consultation, provides RAG ratings to indicate how individual heat networks

perform relative to benchmarks (in terms of price and compliance). The option has the advantages of not requiring revealing granular data (thus retaining commercial sensitivity) and reducing the risk of consumers misinterpreting the information presented.

6.50 In the stakeholder's response, the following approaches have been proposed:

6.51 A RAG system against external benchmarks and compliance (for example, green representing fair pricing with no compliance issue, amber for some compliance issues, and red for compliance issues and network not acting to resolve them). This system could be presented in the format of a website where consumers can look up their heat networks and see the RAG ratings.

6.52 A scatter plot with each dot representing the price of each heat network (as used in the CMA Heat networks market study (December 2017); Figure 7), and a line showing the market average. The dots can be colour coded to show whether a heat network is above or below average.

6.53 An alternative simplified approach is a RAG system against benchmarks only, where the RAG indicates whether the price charged by the network is above or below the applicable benchmark (based on network characteristics; see Option 1).

6.54 To further explore this option, we set out its key elements:

Prices for comparison

6.55 The approach can compare against benchmarks (see Chapter 4: Price comparison and benchmarking methods) or market averages. The validity of these comparisons will depend on the benchmarks and whether a comparison with market averages is meaningful (see Option 2).

Price information to be made centrally available

6.56 Using a scatter plot will make public the (approximate) price levels of networks and the market average level and thus how they compare to the market average. A caveat is that this information may make the convergence of heat network prices more likely. However, the risk of heat network prices converging at a higher level is likely to be low due to the large number of heat networks.

6.57 The approaches using a RAG system have the advantage of not publicising granular price data but instead providing an easy-to-interpret rating to consumers. A point to note is that a RAG rating might give off a 'pass or fail' message that might create more confusion. For instance, suppose a RAG rating system is designed to show whether a price charged by the heat network is

higher or lower than the benchmarks. A red rating can alarm the consumers but to judge whether the pricing is disproportionate or not will require more information and analyses, such as in-depth profitability assessment and price investigation. A scatter plot with an average line can create similar problems on interpretation: any points above the average line might be interpreted as 'disproportionate' prices, while more information and analyses are required as many factors (such as network efficiency) can be driving higher prices. It is expected that these approaches involving RAG ratings will require very clear explanations for consumers to interpret the information correctly, which might in turn beat the purpose of having a relatively simple representation.

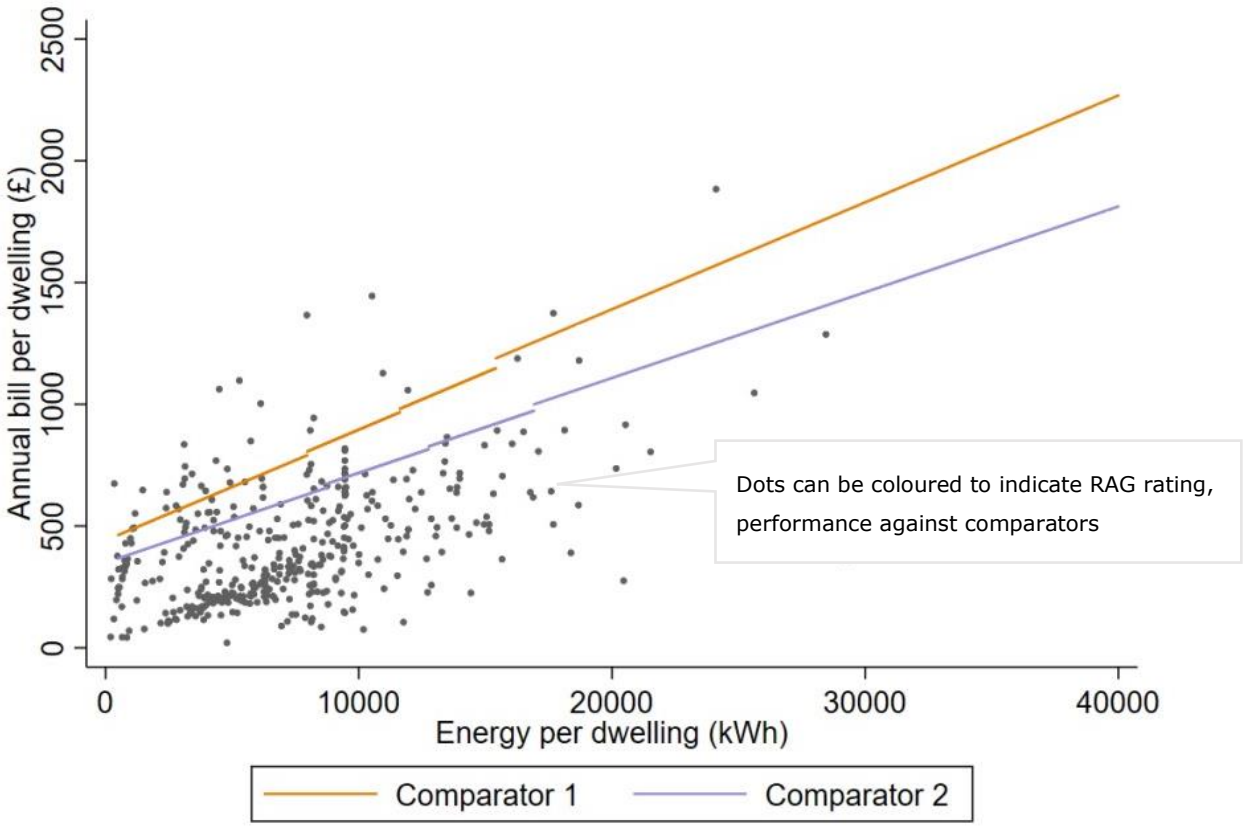
6.58 In addition, it would be inappropriate for the RAG system to give any indication on compliance issues as cases might be still live when the ratings are updated. We might consider publishing outcomes of completed investigations.

6.59 Another concern is that the RAG rating system does not fully address the requirement for price transparency as very little pricing information is disclosed.

How price information is communicated

6.60 Depending on the information to be made public, the information can be best presented in static formats such as lists, tables (heat network register of RAG ratings) or charts (scatter plot).

Figure 7: Example of price information presented in Option 3 (Source: CMA heat networks market study)



6.61 Table 5 and Table 6 summarise options and key questions, and the strengths and weaknesses of the options, respectively.

Table 5: Summarising options and key questions

Key questions and options	**Option 1: grouped comparison**	**Option 2: pooled market average comparison**	**Option 3: RAG rating on benchmarks**
Grouping or pooled	• network characteristics such as efficiency, age, technology • the key characteristics identified through the modelling of drivers and archetypes such as length and density of network and energy consumption	• no grouping	• no grouping

Key questions and options	**Option 1: grouped comparison**	**Option 2: pooled market average comparison**	**Option 3: RAG rating on benchmarks**
Price information to be made centrally available	• a list of anonymised prices • summary statistics indicating the central measure (averages, median) • spread of prices in the group (min-max range, interquartile range, standard deviation)	• average tariff prices (fixed and standard variable tariffs), cheapest available prices • profitability indicators (for example, Gas & electricity data portal • annual heating and hot water cost for a similar-sized home if it had an individual gas boiler, or low carbon counterfactuals	• scatter plot: price level of each network, the market average level • RAG rating: over or below benchmarks or averages
How price information is communicated	• static formats such as lists, tables, charts • scatter plots with each dot representing one heat network • interactive tools such as providing the measures as users input the characteristics of heat networks	• static formats such as lists, tables or charts • interactive tools such as providing the prices as users input their postcode, the number of bedrooms, heat consumption and the cost of annual heat bill to refine the estimates	• static formats such as lists, tables (heat network register of RAG ratings) • charts (scatter plot)
Prices for comparison	• compare prices of own heat network with prices of other similar networks	• compare own heat network prices to prices of the market • compare prices of own heat network with consumption of using individual gas boiler and low carbon counterfactuals	• compare against benchmarks • compare against market averages

Table 6: Strengths and weaknesses of the options

Options	**Strengths**	**Weaknesses**
Option 1: grouped comparison	• more likely to allow for like-for-like comparison • avoid commercial sensitivities around information • including efficiency characteristics could provide incentives to improve efficiency	• no grouping will be perfect so will need clear caveats about what comparisons can and cannot be made • may incentivise suppliers to increase their own prices if they are shown to be low outliers • data will not be available until HNTAS is operational and monitoring is in place
Option 2: pooled market average comparison	• easier for consumers to understand • provide overview of market trends • avoid commercial sensitivities around information • more straightforward to implement	• ability to compare prices could be limited as the characteristics of a network could explain differences from the average • do not fully address the requirement of price transparency within the heat network sector • do not take into account different business models in supply through heat networks
Option 3: RAG rating on benchmarks	<u>RAG</u> • avoid commercial sensitivities • easy for consumers to interpret <u>Scatter plot</u> • more granular information	<u>RAG</u> • could send a 'pass or fail' message unintentionally, resulting in higher risk of misinterpretation <u>Scatter plot</u> • may increase the risk of prices converging at a higher level • more difficult for consumers to interpret

<u>Consumer Information</u>

6.62 Due to the lack of public understanding of the information presented, we intend to supplement the central price transparency information with how the information needs to be understood.

6.63 Regardless of the options implemented, we are likely to provide consumer factsheets or infographics explaining how to use the various tools and how to interpret the information provided. These documents could build on the Heat Trust consumer information sheet.

6.64 It is equally important to provide explanations on the information and metrics for the simplified RAG rating option (Option 3) or the more complex grouped comparison option (Option 1) because the RAG rating option might be easily misinterpreted and the grouped comparison option will require network characteristics or grouping information to be available to, and correctly interpreted, by consumers.

6.65 If a combination of options is adopted, the information sheet could also state what each tool indicates, how they differ from each other, and how it might support or inform consumers to raise questions to their heat networks.

Data requirements

6.66 We aim to minimise the administrative burden on heat networks regarding the provision of central price transparency. We are of the view that the information requirement to heat networks for implementing the options outlined is unlikely to bring additional administrative burden (on top of information required for price benchmarking; see Chapter 4: Price comparison and benchmarking methods) because the data requirement (content and frequency) will likely align with registration and monitoring.

6.67 The stakeholder responses in the 2023 consultation favoured annual collection and publication of pricing data. Some respondents noted that annual data publishing is common in private and social housing, meaning there would be greater alignment with current industry practices. Given that the previous proposal of quarterly pricing information submission for monitoring has raised concerns among respondents about administrative burden, we are considering aligning data requirements in benchmarking and central price transparency so that no additional burdens will be exerted on heat networks.

Timing

6.68 We welcome views on whether it is appropriate to focus on one option for central price transparency. There could be some benefits to combinations of the options, these include:

6.69 A combination of options at the same time: The adopted combination can provide the advantages of multiple options– for example, a grouped comparison with market averages presented in a scatter plot can take the diversity of heat

network markets into account for a better comparison and make the interpretation easier.

6.70 A combination of options over time (phase in across options): Since each option requires different levels of data, it is likely that some options can be developed and become available earlier. It is expected that Option 2 pooled comparison with external benchmarks can be available earlier because it can build on the Heat Trust cost calculator and will require less granular data.

6.71 A combination of options for different heat networks: If heat networks are grouped by characteristics, it might be appropriate to implement different data requirements and subsequently different central transparency options. For example, a not-for-profit communal heat network might face fewer reporting requirements and a simplified option like market average and price ranges might be appropriate.

6.72 If a combination of options over time (phase in across options) is considered, a possibility can be starting with (phase 1: after registration) the publication of counterfactual pricing and consumer information, then (phase 2) publishing market averages, and (phase 3: expected to be after 2027 when more data are collected from ongoing monitoring) developing a more sophisticated approach involving grouping of heat networks by characteristics.

6.73 Given central price transparency implementation's reliance on data availability, and the challenges to heat networks to collect and report data, we think it is important to further engage stakeholders on these options as the options are phased in.

7. Price investigations

Section summary

We will have the power to take action where prices for consumers appear to be disproportionate. As discussed above, benchmarking and profitability assessments, as well as other information, for example from our monitoring and compliance activity, will inform our price investigations.

We are seeking views on our approach to price investigations but this area has dependencies on other elements of the pricing protections we are developing, for example the approaches to benchmarking, and we may further consult on our approach to price investigations.

Our ability to undertake price investigations will rely on further engagement with stakeholders and having adequate data, and will not start before January 2027 at the earliest.

Questions

Q34. Do you agree with the approach to price investigations set out so far? Please provide reasons and views to support your response.

Background

7.1 If tools such as benchmarking or other information, for example from our monitoring or compliance activity, indicate prices for consumers that appear to be disproportionate we will be able to open a price investigation, where appropriate.

7.2 If disproportionate pricing is found, an appropriate set of actions to address this will be considered. For example, we could use our order-making powers, or, where appropriate, we could impose scheme-specific pricing restrictions. We could also take wider actions using broader compliance or enforcement tools, for example requiring some form of performance review to identify interventions for long term cost reductions, impose consumer redress or issue penalties.

7.3 The 2023 consultation set out our initial thinking on our approach to price investigations, including on evidence, process and assessment. Stakeholders mostly agreed with our proposed approach for price investigations, and in this consultation we further build on the proposed approach.

Interactions

7.4 We will consider a range of factors and sources of information in deciding whether a price is disproportionate. The fair pricing principles and how we

approach benchmarking, as well as the other proposals explored in this consultation are expected to be key inputs to our assessment. As we further develop the proposals in this consultation, we will then consider how they will then inform our approach to price investigations. Due to this dependency, we will need to review our approach to price investigation once the other pricing proposals are further developed.

7.5 We are mindful that consumers have existing rights to challenge prices or costs that they perceive as unfair or unreasonable, for example some may have a route to the Tier 1 Tribunal if their heat is part of service charges. Our intent is that our approach to price investigations supports and reinforces these existing routes. We are doing further work to understand the interactions. In the Implementing Consumer Protection Consultation, we looked at the unbundling of the individual heat charge from other charges, for example rent or service charges. This proposal could affect the route that consumers have to challenge their heat charge. We will review our approach to price investigations depending on the outcome of these proposals. We want to ensure that responsibilities and the route consumers should take to raise issues with the heat charges are clear in any transition period and under the enduring framework.

7.6 Our powers to take action where prices appear to be disproportionate do not displace the application of competition law where appropriate, or vice versa. There could be circumstances where we conclude that it is more appropriate for it to proceed under the Competition Act 1998 or the Digital Markets, Competition and Consumer Act 2024. Reference to the specific framework that the suspected breach relates to will be made when taking any action. However, the obligation under the market framework regulations is that heat network prices must be fair and not disproportionate.

7.7 We will enforce in accordance with the guidance we publish on price investigations, and our wider enforcement guidelines as they apply. Consistent with the enforcement guidelines, if, on our own initiative or following a complaint, we identify potential disproportionate pricing, we will usually contact the heat network concerned, requiring it to provide costs and other relevant data, and asking it to explain the basis for its pricing (and any assumptions underpinning it). We set out our thinking on enforcement and a commitment to consult on the Enforcement Guidelines and Penalties Policy in the Heat networks regulation: authorisation and regulatory oversight.

Approach

7.8 There is a balance between being able to investigate promptly whilst ensuring enough time is provided for compliance processes and data-gathering to run their course.

7.9 We propose this will be reflected in our approach and related guidance on price investigations and disproportionate pricing. Using guidance allows for routine reviews and updates, which is appropriate given the sector will develop and we will gain further regulatory experience. Guidance will also help market operators in undertaking best practice, amplifying the impact of compliance and enforcement actions, while allowing us to consider the diversity in the sector.

7.10 Given the scale of the market, we will need to prioritise our price investigation work, and it is likely that interventions will usually be focused on the cases where there is the greatest consumer detriment. Our approach will be consistent with any enforcement guidelines that we publish, as referenced above.

7.11 Prior to January 2027, the earliest date we expect price investigations could be undertaken, we intend to publish guidance for Authorised Entities and other interested parties on our interpretation and approach to price investigations. This guidance will include how we typically expect to approach the question of whether a price is disproportionate. We seek further engagement on the guidance, but it is likely to cover the core areas of approach and evidence, process, and assessment.

Approach and evidence

7.12 In guidance we will set out some of the possible indicators of disproportionate pricing and the evidence we are likely to consider when establishing if compliance or enforcement action is appropriate. This could include considering data on network performance, and quality of service and complaints which is collected through ongoing monitoring.

7.13 Once it is finalised any guidance on price investigations is likely to reference the protections set out in this consultation. For example, one indicator of disproportionate pricing will be the range of benchmarks and any profitability assessment that is undertaken if relevant. We will also consider if regard has been given to the fair pricing principles and any cost allocation rules.

Process

7.14 We recognise that the sector's diversity means that even if there are indications of disproportionate pricing, these are usually likely to trigger initial discussions

and further evidence gathering, so that we can better understand the facts of the specific case in line with our general approach to compliance.

Assessment

7.15 Each case will be considered on its own facts. Similar to our publications for other markets, the guidance will set out we expect heat networks to establish a pricing strategy and be ready to provide evidence and justification for that strategy. It is likely to be important that a heat network can justify their prices on the basis of the costs, plus any reasonable return, and that it is clear how any shared costs have been allocated reasonably.

7.16 Our assessments will take into account the circumstances of any given case, and which benchmark or benchmarks are relevant may vary considerably depending on the characteristics of the heat network, the existence of potential comparators, as well as the information that is available to us as the regulator.

7.17 When considering compliance with outcomes and principles we will take into account whether a heat network could reasonably control for certain expectations, for example changes in wholesale gas prices.

7.18 In response to the 2023 consultation stakeholders raised a number of challenges with undertaking price investigations. This included the diversity of heat networks and potential lack of consistency on cost allocation across the sector which may limit our ability to make accurate comparisons. However, this is something that we would take into consideration in a price investigation. Other stakeholders requested that a standardised formula be used in any price investigations, and standard documents.

7.19 We think given the diversity of the sector it is important a case-by-case approach is taken and there could be issues with adopting a very prescriptive approach. We intend to use guidance to set expectations and an overall process, however, the documentation and data requests might vary from case to case, to allow us to consider the diversity in the market and the specifics of the case that is being investigated.

Data requirements

7.20 Guidance may include some general (non-exhaustive) examples of the types of information which we would consider relevant. We will not provide a full description of exactly what information we require because this would inevitably not capture every circumstance and would be at risk of becoming outdated.

7.21 Our expectation is that much of the data that will be required is likely to align to what is collected as part of regular monitoring. However, we would expect a heat network to be able to provide a range of information if we were to carry out a price investigation.

7.22 The following is a non-exhaustive list of the types of general information that is likely to be relevant for any price investigation:

- cost data and information
- price comparison and historical pricing
- performance and technical information
- cost calculation methodology
- complaints data
- return on investment and financing structure
- quality of service
- other revenue streams
- pricing strategy

Timing

7.23 Heat networks will have an Obligation under the Authorisation Conditions to price fairly and not disproportionately from January 2026. Price investigations will phase in from January 2027 at the earliest, due to the reliance on monitoring data and information.

7.24 We will further refine the approach to price investigations and reflect on the interactions with different parts of the framework for example the benchmarking approaches. It is likely the price investigation guidance will be further refined and not finalised until 2026 or 2027. This is to ensure it reflects insights from early monitoring, however we intend to engage with the sector and share updated thinking on our approach to price investigations to provide early indications on the direction of travel.

Appendices

Index

Appendix 1 – Fairness test

A1.1 To operationalise the fairness test and assess what and how tools are applied, we expect the questions we ask to include:

A1.2 To identify disproportionate pricing:

- how do the prices compare to alternatives (external benchmarking)?
- how do the prices compare to historical prices? (past-price benchmarking)?
- how do the prices compare to prices charged by similar networks (comparator benchmarking, for example, regression model)?
- how do profits (in percentage or GBP) or rate of return compared to similar networks?
- have high prices been persistent?

A1.3 To assess concerns:

- who are affected by disproportionate pricing?
- what are the sizes of groups affected by disproportionate pricing?
- how much are these groups affected by disproportionate pricing?

A1.4 To prioritise actions:

- has there been intentional breaching, signs of negligence, or a recurring pattern of poor behaviour?
- what is the tariff design and rationale?
- what is the structure of cost and capital recovery?
- is cross-subsidisation between groups present?
- is the tariff prohibitive to heat network uptake?
- are prices and billing transparent?

Appendix 2 – External benchmarks

A2.1 In this Appendix we set out further detail on our proposed methods and data sources for calculating external benchmarks.

Gas boiler benchmark

A2.2 The sector already has access to the Heat Trust calculator, which allows residential consumers to compare their heat network tariffs to conventional gas heating costs. The Heat Trust caveats that this benchmark is for informational purposes only and is not intended to

show whether the prices paid by heat network consumers are fair. Users can enter their postcode, property size (number of bedrooms), annual heat bill, and optionally, their yearly heat consumption in kWh. The tool then estimates the annual cost of heating and hot water using a gas central heating system, breaking it down into three key components:

- annual boiler installation cost over the lifetime of the boiler
- boiler insurance and repair cost
- cost of gas usage

A2.3 The calculator estimates gas costs based on Ofgem's domestic default tariff price cap and assumes an average boiler efficiency. It also factors in installation and replacement costs, as well as ongoing maintenance and insurance expenses. If actual heat demand is not provided, gas consumption is estimated using property type and energy efficiency data. These elements are combined to produce an alternative heating cost, which serves as a reference point for assessing heat network tariffs.

A2.4 We propose to base our gas benchmark on the method used by the Heat Trust in the first instance, and to consider possible data updates or methodological changes.

Heat pump benchmark

A2.5 For a heat pump benchmark, we propose as above to calculate annualised capital and installation costs alongside ongoing costs such as operation and fuel. Below we outline the key input parameters to consider alongside potential data sources. We note that a heat pump benchmark has been developed by DESNZ for the purposes of zoning using the National Zoning Model (NZM), covering domestic air source heat pumps; non-domestic air source heat pumps; and non-domestic water-source heat pumps, and using input assumptions developed as part of DESNZ's Clean Heat Analysis. The NZM includes assumptions on capital costs, operating costs, and the efficiency of heat pumps. We would review these assumptions and compare to other external sources as outlined below to consider how this may be utilised in our heat pump benchmark.

Capital expenditure and installation costs

A2.6 The benchmark should incorporate the capital and installation costs associated with heat pumps. As with the gas boiler benchmark, upfront

costs should be annualised over the expected lifetime of the heat pump. We will further consider accounting for grants which offset upfront costs. Potential data sources include the Boiler Upgrade Scheme (BUS), Climate Change Committee (CCC), and the Microgeneration Certification Scheme (MCS) installation database.

Maintenance and servicing costs

A2.7 The ongoing maintenance and servicing costs associated with heat pumps should be based on industry-standard estimates, such as those of the Energy Saving Trust.

Cost of electricity usage

A2.8 The cost of electricity usage can be calculated from annual heat demand, heat pump efficiency and electricity prices.

Annual heat demand

A2.9 For metered consumers, annual heat demand can be measured as the actual annual heat demand of a reference consumer. For unmetered consumers, heat demand can be estimated using proxies of consumption. For example, The Heat Trust's 'Consultation on formulas for an electric Heat Cost Calculator' suggests estimating demand using the National Energy Efficiency Data-Framework (NEED) 'multiple attributes table' which gives typical demand figures by region, property type, property age and property size (number of bedrooms).

Heat pump efficiency

A2.10 The benchmark must reflect real-world heat pump performance, accounting for variations between air source and ground source heat pumps. Heat pump efficiency can be represented using the Seasonal Coefficient of Performance (SCOP) using measured or estimated values. Data on estimated average SCOP values could be sourced from the Climate Change Committee (CCC).

Electricity prices

A2.11 A reference estimate for electricity prices could be based on the domestic default tariff price cap, accounting for regional differences in the cap.

Appendix 3 – Cost drivers

A3.1 Table 7 below sets out a longlist of the potential cost drivers for inclusion in a benchmarking model, and an assessment of their relevance and importance for benchmarking. The list has been developed from stakeholder engagement and the results of initial cost analysis (see Appendix 4: Cost modelling).

A3.2 The assessment is based on the list we have set out of desirable criteria for cost drivers:

- there should be a clear engineering or economic rationale for why a cost driver is an important determinant of heat network costs
- cost drivers should be largely outside heat network control once the network is operational
- there should be reliable data available on the selected cost drivers
- selected cost drivers should ultimately lead to a statistically robust econometric model

A3.3 This list will inform data collection, and we expect that final specification of the benchmarking model will involve iteration and testing on real-world data.

A3.4 We have categorised the 'importance' of the cost drivers as follows:

- high: expected (based on initial cost modelling and engineering evidence) to be an important driver of cost, which should be included in a benchmarking model
- medium: expected to have some impact on cost, but further investigation needed (For example, the relationship may be better captured by an alternative cost driver variable, or the explanatory power for costs may not be high enough to justify inclusion as a 'key' cost driver)
- to be investigated further: relationship with costs is unclear, or unclear if this variable meets the other criteria for inclusion in a benchmarking model (for example exogeneity); testing on real-world data required
- likely excluded: not expected to meet the criteria for inclusion in a benchmarking model

Table 7: Longlist of potential cost drivers for price comparison and benchmarking

Variable	**Description**	**Importance for inclusion in benchmarking model as a cost driver?**	**Discussion**
Technology type	Energy centre technology types could include combined heat and power (CHP), gas boiler or heat pump	High	Technology type is likely to drive production costs, in combination with the type of fuel used.
Fuel type	Fuel type could include gas, electricity, waste heat	High	Identified from cost modelling as a key cost driver, see Appendix 4: Cost modelling.
Fuel input price	The input price of fuel (£/kWh)	High [To be investigated further]	Identified from cost modelling as a key cost driver, see Appendix 4: Cost modelling. The choice between controlling for fuel type, versus fuel costs, will depend on the extent to which differences in costs between networks using the same fuel are 'legitimate', or are within the network's control, see discussion in paragraphs A3.6-8.
Annual network demand	Annual heat delivered to consumers (kWh/year)	High	Identified from cost modelling as a key cost driver, see Appendix 4: Cost modelling. All else equal, higher network demand leads to economies of scale (reduction in average fixed costs per unit of delivered heat), reducing the levelised cost of heat (LCOH).
Network length	Network pipe length in metres	High	Linear density (heat delivered per metre of pipe) was identified from cost modelling as a key cost driver, see Appendix 4: Cost modelling. All else equal, a larger network (a less dense network) leads to higher pipe capex costs per unit of heat delivered.
Type of network	District versus communal heat networks	Medium	May drive costs to the extent that economies of scale or cost structures may differ for district heat networks (and to the extent this is not captured in network size).
Network generation	Whether heat network is 3rd, 4th, 5th generation	Medium	May impact cost structures, and newer generation designs may operate more efficiently (also connected to technology type and operating temperature).
Age	Age of network since first built or age of energy centre	Medium	Older networks may operate less efficiently, although there may be other measures to capture this such as network heat losses and plant efficiency. We would expect to investigate the extent to which operators or suppliers have the capacity to control and improve efficiency.
Utility supplied	Only heat, or heat and hot water	Medium	Different service provision could involve different costs and cost structures.
Annual network generation	Annual heat delivered to the	Medium	As with network demand, higher generation may lead to economies of scale in the cost

Variable	Description	Importance for inclusion in benchmarking model as a cost driver?	Discussion
	network or produced at the energy centre (kWh/year)		per unit of heat (all else equal). May be more easily measured than network demand, especially for networks with unmetered consumers. However, measuring generation instead of demand could allow for inefficiencies along the network: we would expect to explore the extent to which operators or suppliers have the capacity to control and improve efficiency.
Operating temperature	The flow temperature the heat network operates at	Medium	Operating temperatures are a key aspect of heat network design and will determine both the capital cost of the network and the heat losses and pumping energy. The temperatures selected will also determine the efficiency of the heat source (especially for heat pumps). Heat losses may already be controlled for to some extent if generation is controlled for in the model, as opposed to delivered heat. We would expect to investigate the extent to which operators or suppliers have the capacity to control and improve efficiency.
Number of customers	Number of customers network supplies heat to	Medium	Expected to have lower impact on total costs than annual heat demand, although more customers may lead to additional costs for example from metering and billing.
Number of properties	Number of individual properties or households supplied by the network.	Medium	Alternative to number of customers.
Function	Heat operator or supplier or both; primary network supplying via bulk supply agreement, versus communal network	Medium [To be investigated further]	Suppliers will be responsible for additional activities related to direct relationship with end-consumers, for example metering and billing, which may incur additional costs. Communal networks supplied via bulk supply agreements may have limited control over input costs. Primary networks supplying secondary networks via bulk supply agreements likely to have different cost structures from district networks supplying consumers end-to-end.
Geographic location	Location in inner city urban versus less densely populated areas; or estimate of local land and labour costs	Medium	Heat network costs can be impacted by variations in the cost of labour and land (for example leasing land for energy centre). Civil costs to install the network will typically be higher in city centres.
Metered vs. non-metered	Whether customers are metered or unmetered	Medium	Metering may lead to additional costs associated with installing and maintaining meters, and billing. The scale of these costs to be investigated in comparison to other cost drivers.

Variable	Description	Importance for inclusion in benchmarking model as a cost driver?	Discussion
Other efficiency measures	For example, heat losses along the network, plant efficiency	To be investigated further	May drive costs to the extent that efficiency is not fully captured by network density and age. We would expect to investigate the extent to which operators or suppliers have the capacity to control and improve efficiency.
Profit / non-profit	Profit or not-for-profit status	To be investigated further	See discussion in paragraphs A3.9-10.
Bad Debt	Level of bad debt or proportion of customers in debt across the network	To be investigated further	Bad debt could drive higher costs across the network to the extent that debt is recovered through higher prices (this will depend on the pass-through mechanism).
Installed primary heat capacity	The installed primary heat capacity in kW	To be investigated further	A higher capacity, for the same annual demand, could involve additional capital costs, depending on whether these costs can be recovered through future customers connecting to the network. We would expect to consider the extent to which the installed capacity can be considered to be outside networks' control (versus being viewed as inefficient).
Load type	The mix between domestic and non-domestic customers and load in the network, and the presence of a domestic or non-domestic anchor load	To be investigated further	Domestic and non-domestic load may involve different cost structures (to the extent the higher consumption of non-domestic consumers is not controlled for already through annual heat demand). Some customers may also require certain operating temperatures (for example hospitals, industrial heat).
Age and type of properties supplied	Property age, and property type for example size, EPC rating, building type	To be investigated further	Properties of different ages and types (for example with different levels of energy efficiency) may impact costs (to the extent this is not captured by other efficiency measures discussed above), as well as operating temperatures.
Funding received or costs not passed on	For example, the level of grant funding received to cover capital costs, or ongoing costs funded separately and not passed on to the customer	To be investigated further	Networks with a higher level of costs funded or recovered separately from consumer charges (for example costs funded by councils) may have lower costs. We intend to investigate how to collect consistent data on costs not passed on, in order to enable appropriate comparisons.
Cost recovery approach	For example, if heat network smooths one-off costs (such as large maintenance bills) over time to avoid volatility in bills	To be investigated further	Likely to be relevant for comparison purposes, to ensure heat networks are being compared on a like-for-like basis. We intend to investigate how to collect consistent data on cost recovery approaches, in order to enable appropriate comparisons.

Variable	Description	Importance for inclusion in benchmarking model as a cost driver?	Discussion
Level of vulnerability	Proportion of consumers who are vulnerable	To be investigated further	Possibly leads to additional costs for example in case where vulnerable consumers may need additional service provision or more expensive contact methods.
Housing tenure	For example, freehold, leasehold, landlord, social housing	Likely excluded	Not expected to drive costs all else equal, (although this may be considered as part of market segmentation, see the market segmentation section: important for application of regulatory principles, for example interactions with housing legislation)
Network built pre-regulation vs. post-regulation	Whether the network was built before or after fair pricing regulations come into force	Likely excluded	If age is controlled for, pre- or post-regulation status would not be expected to drive cost differences (although this may be considered as part of market segmentation, see the section on market segmentation).
Zoning location	Location of a heat network inside or outside a zone	Likely excluded	Heat network zones are identified using the National Zoning Model, which evaluates the cost of low-carbon options for each building including a low-carbon heat network or an individual building air source heat pump for each building. We considered the relevance of controlling for zoning location in a benchmarking model, but we believe that the factors affecting the pricing outcome within zones are likely to be already accounted for using other variables.

A3.5 There are several factors which are expected to impact on costs or prices but require further consideration for whether it is appropriate to include these as cost drivers in a benchmarking model. We discuss four of these cases further below:

- fuel input price (p/kWh)
- profit versus non-profit
- cost recovery approach
- function

Fuel input price

A3.6 Including the fuel input price as a cost driver treats the input price of fuel as an external factor outside the network's control. From stakeholder engagement we have heard that this is not necessarily the case: heat networks can pay significantly different prices for the same fuel (for example gas), based on procurement strategies and the timing of contract renewal.

A3.7 As an alternative, we could include heating technology or fuel type as a cost driver. This would in theory allow us to identify if networks are procuring fuel at inefficiently high prices, relative to their peers with a common input fuel.

A3.8 We note that this approach may need to take account of the timing of contract renewal, to avoid inconsistent comparisons of networks which have renewed at different times, especially over periods of price volatility. This could be achieved by averaging heat prices over a longer time period.

Profit versus not-for-profit

A3.9 Profit status may impact prices - clearly, for-profit networks will charge a margin over costs, but there may also be systematic differences in cost efficiency between for-profit and not-for-profit heat networks.

A3.10 Controlling for profit status in a benchmarking model would 'allow' a divergence in prices between these two groups. This may be reasonable (for example, if driven by different requirements around a reasonable rate of return), but could also not be reasonable (for example, if driven by cost inefficiencies in one group). We intend to explore this further after data collection, and to evaluate differences in pricing between the profit and not-for-profit segments.

Cost recovery approach

A3.11 Networks can take different approaches to cost recovery, for example, some networks may smooth the pass-through of one-off costs (such as large maintenance bills) over time to avoid volatility in bills. Considering cost recovery approaches is likely to be important for comparison purposes, to ensure heat networks are being compared on a like-for-like basis.

A3.12 We intend to investigate how to collect consistent data on cost recovery approaches, in order to enable appropriate comparisons. For example, this may involve considering the profile of prices over a longer timeframe as well as in individual periods. Similarly, some networks may have a higher level of costs funded or recovered separately from consumer charges (for example costs funded by councils). To compare like-for-like, the level of costs that are funded separately from consumer charges could be included as a variable in the benchmarking model, to control for these differences.

Function

A3.13 Suppliers will be responsible for additional activities related to their direct relationship with end-consumers, for example metering and billing, which may incur additional costs. Communal networks supplied via bulk supply agreements may have limited control over input costs. Secondary networks supplied by primary networks via bulk supply agreements are likely to have different cost structures from district networks supplying consumers end-to-end. In specifying the benchmarking model, we will consider ways to account for these different structures in order to make like-for-like comparisons.

Appendix 4 – Cost modelling

A4.1 An analysis of heat network production cost data was carried out to support the development of the comparator benchmarking and to identify possible key cost drivers. At this stage, we do not have sufficient real-world heat network data on prices and cost drivers to support the development of the archetype approach and the price prediction approach. Therefore, we have made use of a test dataset (National Zoning Model data) and carried out some initial cost modelling to investigate the possible methods that could be used to identify archetype groups and to predict prices. This appendix presents the test dataset and the analyses carried out, together with key results and discussion.

A4.2 Although the analysis was conducted using the National Zoning Model data, the insights obtained from the analysis are not limited to geographic areas within 'zones'. Specifically, the analyses serve two purposes:

- inform data collection on cost drivers (by identifying key cost drivers)
- test various models (such as clustering, ordinary least squares, neural network) for comparator benchmarking, to prepare for analysing real-world heat network data

National Zoning Model data ('test dataset')

A4.3 The Department for Energy Security and Net Zero's (DESNZ) heat network National Zoning Model (NZM) identifies geographic areas (or 'zones') throughout England, within which a heat network represents the cost-optimal low-carbon heat supply option for a subset of

buildings. To identify these zones, the NZM first produces a least-cost heat network design for a large number of candidate zones, based on:

- available heat supply
- building heat demands
- road topology
- pipe sizing, routing and costs
- an assumed low-carbon alternative heating option (for example a standalone air-source heat pump per building)

A4.4 The final set of zones is found by quantifying the economic benefit of designating a zone versus a base-case alternative (in which the low-carbon alternative is installed in all buildings) and discarding zones which do not provide sufficient benefit.

A4.5 The use of the data has been approved by DESNZ for analysis purposes, however this does not represent the final NZM results. More information on heat network zoning and the NZM can be found on the DESNZ website.

A4.6 We carried out three analyses on the NZM output dataset:

- identifying indicative archetypal groups of networks (using clustering methods based on unsupervised machine learning)
- regression-based cost prediction
- supervised machine learning-based cost prediction (a neural network)

A4.7 In each case we aimed to explore the relationships between cost drivers (technical characteristics of networks) and outcome costs (measured as the levelised cost of heat, LCOH p/kWh).

A4.8 As this analysis was performed on modelled data, and not on data collected from real-world networks, the results should be seen as a demonstration of the value of the methods, and evidence in support of collecting the relevant data from network operators. The results should not be seen as the final methods, which will be developed after seeking further feedback and through iteration using real-world data.

Regression analysis using National Zoning Model data

A4.9 We used NZM data to investigate specifications of regression models, and the variables with the largest impact on LCOH in the modelled dataset.

A4.10 Starting with 15 potential predictors of cost, highly co-linear combinations of variables were eliminated to leave five candidate predictors. Regression models were then trained on all combinations of these five candidate predictors, to identify the optimal subset:

A4.11 **Selected candidate predictors:**

i) Networked annual heat demand (kWh/yr)

ii) Network supply heat price (p/kWh)

iii) Networked linear heat density (kWh/m)

iv) Waste heat source (Y/N)

v) Networked building count

Long List of other predictors:

vi) Networked peak heat demand (kW)

vii) Networked address count

viii) Peaker plant peak heat output (kW)

ix) Peaker plant heat output (kWh/yr)

x) Fallback supply heat output (kWh/yr)

xi) Network length (m)

xii) Network pumping (kWh/yr)

xiii) Total supply heat output (kWh/yr)

xiv) Total supply peak heat output (kW)

xv) Fall back supply peak heat output (kW)

A4.12 We found that a relatively good model fit R^2 of around 75% could be achieved from including 3 predictors. There was only a small improvement in model fit from adding in other candidate predictors to the model. R^2 is a statistical measure which captures how well the regression model explains the variance of the dependent variable. While this is a useful reference measure, it should not be overly relied on for benchmarking models.

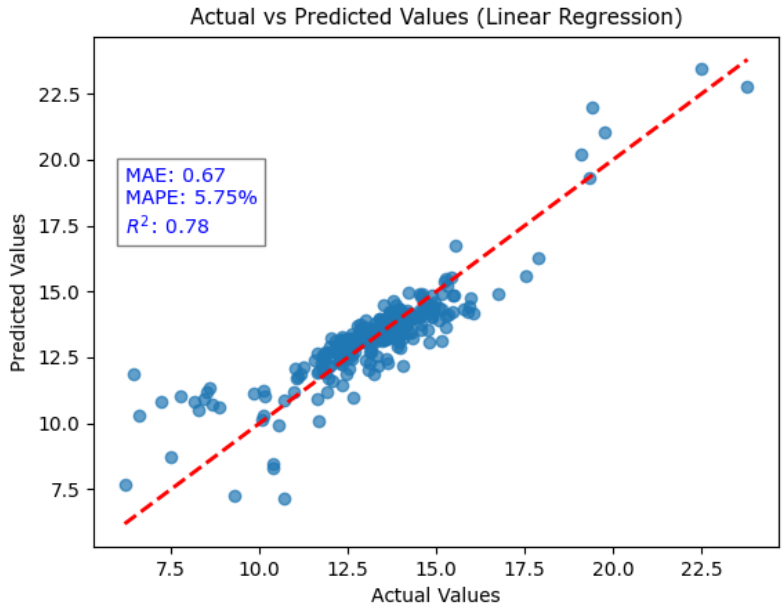
A4.13 The three key predictors were:

- annual network demand (kWh)
- network linear heat demand density (kWh/metre)

- network energy centre unit heat production cost (p/kWh)

A4.14 Figure 8 below plots predicted (Y-axis) against actual (X-axis) values for the final regression model. In a model with zero error, all the points would be on the red dotted line.

Figure 8: Actual values and predicated values in linear regression



A4.15 The results of regression modelling show that (holding other factors constant):

- higher input costs result in higher LCOH: increased fuel costs or reduced plant efficiency will increase the cost of each unit of delivered heat
- higher linear density results in lower LCOH: at higher densities, less distribution pipe capex is required to deliver each unit of heat
- higher annual network demand results in lower LCOH: higher network demand leads to economies of scale (reduction in average fixed costs per unit of delivered heat)

A4.16 This is an indicative analysis intended to demonstrate the application of the regression-based prediction method. We do not propose to use this specific regression specification.

Neural network cost model trained on National Zoning Model data

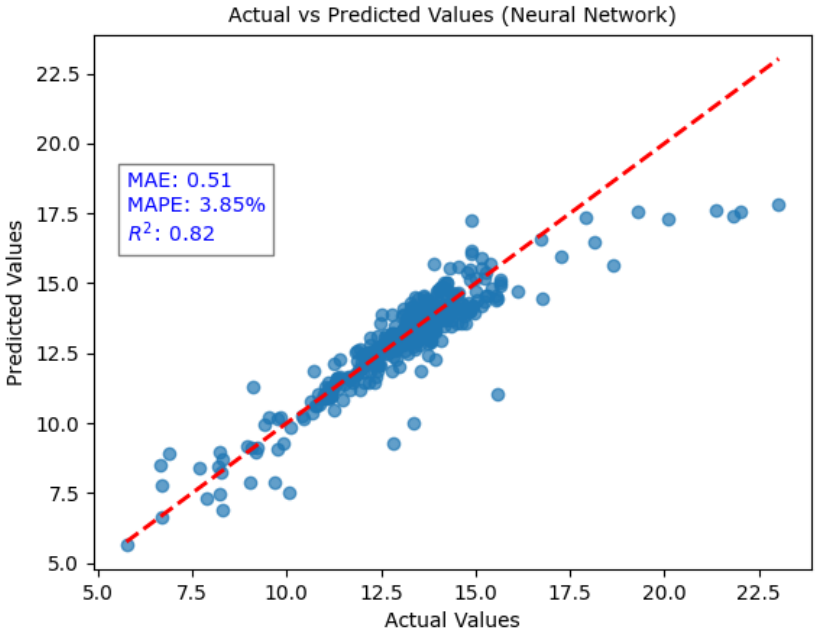
- In addition to the regression-based approach to predicting heat network LCOH from NZM data, we also trained a series of neural network models using the same three predictors: annual network demand (kWh)
- linear density (kWh/metre)

- heat production cost (p/kWh)

A4.17 Neutral networks are predictive models that work by building and then iteratively improving a model that relates predictors to the response variable. Neural networks are effective at representing complex and non-linear relationships because they combine a very high degree of freedom (thousands to millions of parameters) with mechanisms for iteratively adjusting these parameters to gradually minimise loss (prediction error). This strength comes at the price of complexity, meaning it can be difficult or impossible to explain precisely how a specific neural network achieves its predictions. It is also much more computationally expensive to train neural networks, than simple regression models.

A4.18 The neural network outperforms the regression model, with an R^2 of 82%, and a lower mean absolute error. The mean absolute error is the average absolute difference between predicted values and actual values. Figure 9 plots NN predictions against actual values. In a model with zero error, all the points would be on the red dotted line.

Figure 9: Actual values and predicated values in neural network



A4.19 This is an indicative analysis intended to demonstrate the application of the machine learning-based prediction method. We do not propose to use this specific model.

Archetypes identified from National Zoning Model data

A4.20 Using clustering methods on the NZM output data, we explored the use of archetypes to describe sets of heat networks.

A4.21 The goal of cluster analysis is to summarise a large population by separating it on the dimensions of interest into sub-groups of similar members (small within-group differences) which are significantly different from members of the other groups (large between-group differences). KMeans, BIRCH, Agglomerative, HDBSCAN, Spectral, and MeanShift algorithms were tested. The final clusters were generated using KMeans.

A4.22 The final clustering was based on the variation in three key cost drivers identified in the regression modelling described above:

- annual network demand (kWh)
- linear density (kWh/metre)
- heat production cost (p/kWh)

A4.23 The results of this analysis identified three representative archetype groups from the data, with combinations of these three cost drivers:

Table 8: Cost predictor average values across possible archetype groups identified from National Zoning Model data

Archetype group	**Cost predictor: Annual network demand (kWh)**	**Cost predictor: Linear density (kWh/metre)**	**Cost predictor: Heat production cost (p/kWh)**	**Cost outcome: LCOH (p/kWh)**
Group 1	High	High	Low/Medium	Medium
Group 2	Medium	Low	High (ASHP)	High
Group 3	Very high	Medium	Low	Low

A4.24 Group 1 contains networks serving relatively dense smaller areas outside urban centres, with relatively high demand per connection. 23% of these networks are supplied from waste heat.

A4.25 Group 2 contains lower-density larger networks with no access to waste heat. These exogenous factors which are outside the heat network's control, mean that networks in this group have higher costs.

A4.26 Group 3 contains bigger, medium-density networks serving large numbers of buildings in urban centres, and mostly benefitting from low-cost waste heat. Structural factors mean that networks in this group have lower costs.

A4.27 This is an indicative analysis intended to provide a straw man representation of the types of preliminary groups that could be developed. These groupings will be refined when more data is collected.

Appendix 5 – Regression modelling specification

A5.1 A linear regression model follows the general equation set out below:

$$y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \cdots + \varepsilon_i$$

Where:

- y_i is known as the 'dependent variable'. In this case, it would be the price charged by each heat network.
- X_{1i}, X_{2i}, X_{3i} … are known as 'explanatory variables'. In this case, they would be the cost drivers that have been selected as relevant exogenous drivers of heat network cost, for example heat source or network size of each network.
- β_0 is the intercept of the regression line, capturing elements of cost which are common to all heat networks and not separately observed.
- $\beta_1, \beta_2, \beta_3$ … are coefficients of the explanatory variables. These will be defined by the regression modelling, and are estimates of the impact that each cost driver has on price.
- ε_i is the error term for each heat network. This measures the difference between each heat network's modelled price and actual price, and will capture (i) differences in cost efficiency and profit levels across heat networks (which is the difference of interest for the purpose of benchmarking); and (ii) 'actual' error in the modelled relationship between cost drivers and cost, which could arise for example due to omitted variables. Heat networks with actual prices much higher than modelled prices could be charging disproportionate prices and their prices could be explored further.

A5.2 To estimate the regression, we would input data on heat network prices and cost drivers, and would use an estimation technique such as

Ordinary Least Squares (OLS) to estimate the values of the regression coefficients ($\boldsymbol{\beta_0}, \boldsymbol{\beta_1}, \boldsymbol{\beta_2}, \boldsymbol{\beta_3}$…) and the error terms.

A5.3 In specifying the regression model there is a trade-off between modelling costs accurately, and over-fitting the model. Over-fitting (including too many cost drivers) complicates the model, and can result in spurious relationships being identified between cost drivers and prices. The model specification should rely on engineering expertise on the underlying drivers of cost. A balance is also necessary between the granularity of the model and the data collection burden, meaning it is best to focus on a shortlist of key cost drivers.

A5.4 As part of iteration and testing to identify a robust specification of the regression model we would also explore the appropriate transformation of each of the variables in the model (for example dummy categories, non-linear transformations).

A5.5 Ordinary Least Squares regression analysis is subject to limitations, for example: the assumption of linearity; sensitivity to outliers; possibility of omitted variable bias; multicollinearity. Some of these limitations can be mitigated by carefully testing the model specification and using diagnostic tests. Other analysis could also be considered to increase the prediction power of the model, for example time series analysis. That said, in all cases results will need to be interpreted with care and allowing for possible model limitations.

A5.6 Other techniques such as machine learning can be used as an alternative to regression modelling, with the same aim of defining a relationship between prices and cost drivers. Similar to regression modelling, machine learning techniques require input data on prices and cost drivers across the market. A model is fitted to the dataset using algorithms that 'learn' from the input data. The resulting model can be used to estimate a modelled price for each heat network, which can be compared to actual prices to identify potential cases of disproportionate pricing. Machine learning models can potentially deliver a better model fit compared to regression modelling, as demonstrated in our investigative analysis of National Zoning Model data (see Appendix 4: Cost modelling). However, they may be more opaque, or more difficult to interpret.

Appendix 6 - Profitability

A6.1 This appendix provides supplementary detail on how profitability metrics might be assessed in the heat network sector, including a discussion of relevant metrics and their limitations. It is intended to support the profitability analysis outlined in Chapter 5 by setting out a summary of the relevant methodology for calculating EBIT, ROCE and WACC.

A6.2 At the simplest level, earnings before interest and tax (EBIT, also known as operating profit) margins can be used to assess profitability. EBIT reflects the profits earned from core operations, and is calculated as revenue net of operating costs, where operating costs include fuel costs, operations and maintenance, administrative costs and depreciation.

$$\text{Earnings Before Interest and Tax (EBIT)} = \text{Revenue-Operating costs (excluding interest and taxes)}$$

$$\text{EBIT margin} = \frac{\text{EBIT}}{\text{Revenue}}$$

A6.3 In cases where accounting profit has been reported, adjustments may be required to try and identify a measure of underlying 'economic' profit (as opposed to accounting profit). The CMA has sought to make such adjustments when undertaking market-wide profitability analysis in the past. At the same time, we will need to stay conscious of the regulatory resource burden that could be associated with attempting to make detailed adjustments to accounting data – particularly if we apply profitability assessment widely across the sector (as opposed to just for a few firms as part of a detailed investigation).

A6.4 The 2018 CMA market study found an average EBIT margin of 7% across the 23 heat networks considered, although this contained a wide range from negative 20% to positive 30%.

A6.5 EBIT margins can have limitations as a comparison measure in capital intensive sectors. EBIT margins are a measure of profit as a proportion of total revenue, and do not reflect the degree to which a business is making an efficient return on its capital investment (except to the extent to which depreciation is accurately captured in costs). Different accounting approaches can be used to take account of depreciation and

can have a large effect on calculated margins for businesses with a large amount of capital employed. In addition, EBIT does not take account of differing capital structures (balance of debt and equity).

A6.6 An alternative metric which may be better suited for estimating profitability in capital intensive sectors is the Return on Capital Employed (ROCE). ROCE measures EBIT relative to the capital employed, i.e. the capital base used to generate profits, which has a clearer economic interpretation, as highlighted in the CMA Energy Retail Market Investigation. Measuring ROCE relies on making adjustments to accounting data to arrive at a comparable and economically meaningful measure of capital employed. For example, this could involve revaluing the assets of different companies on an equivalent basis (for example modern equivalent asset value); and valuing intangible assets if not recorded on balance sheets.

$$\text{Return on Capital Employed (ROCE)} = \frac{\text{EBIT}}{\text{Capital Employed}}$$

A6.7 The resulting estimate of ROCE can then be compared to a benchmark Weighted Average Cost of Capital (WACC), which reflects the efficient cost of financing business operations. One possible approach to estimating WACC is to read across from the WACC allowance set for larger energy networks under the RIIO framework. However, this may require adjustments to account for factors such as the relative scale of operations and its implications for access to finance. Additionally, it may be necessary to assess whether different evidence is available for estimating industry-specific parameters within the overall Capital Asset Pricing Model (CAPM) framework used to estimate the cost of capital. While market-wide parameters should be transferable, sector-specific considerations may require further refinement. We welcome stakeholder views on this approach and will also carry out further work internally to ensure that the WACC estimation is appropriate for the heat networks sector.

Appendix 7 - Glossary

Term/Acronym	Explanation
Bulk supply	An operating model where heat is supplied from a district network in bulk to a building by one party and a separate party, usually the building owner then holds the responsibility for in-building network operation and contractual supply to end consumers within the building.
Capital replacement charge	A charge levied on consumers to cover the costs of replacing a heat network's assets, typically at the end of their operating life.
CAPM	The Capital Asset Pricing Model is a financial model used to determine the expected rate of return for an investment.
Clustering	The technique in data analysis of grouping data points into clusters based on similar characteristics.
Communal heat network	Has the meaning given in the Energy Act 2023: "a heat network by means of which heating, cooling or hot water is supplied only to a single building divided into separate premises or persons in those premises."
Cross-subsidisation	The practice of charging a higher price to one type of consumer in order to subsidise lower prices for other types of consumers.
Digital service	An online tool used by operators and suppliers to register a heat network, apply for authorisation, submit monitoring data and update information with Ofgem.
District heat network	Has the meaning given in the Energy Act 2023: "a heat network by means of which heating, cooling or hot water is supplied to two or more buildings or persons in those buildings."
EBIT	Earnings Before Interest and Taxes is a measure of a company's profitability. It calculates the earnings generated from operations before deducting interest expenses and income taxes.

ESCo	Energy Service Company
Existing heat network	A heat network that was commissioned and operational before the start date of the heat network regulation Initial Period.
Fuel procurement	The process of sourcing and purchasing the fuel used to generate heat within a heat network.
Heat network	A heat network enables the transfer of thermal energy by distributing a liquid or a gas for the purpose of supplying heating, cooling or hot water to a building or persons in that building. We consider that a relevant heat network generally consists of an energy centre or connection to a thermal energy source such as an upstream network, distribution pipework, heat meters and consumer HIUs.
Heat network operator	The person/organisation who owns the assets or has significant control over network infrastructure. The operator can invest, repair, maintain and operate the heat network.
Heat network supplier	The person/organisation who holds a heat supply contract (or equivalent) with heat network consumers for the supply of heat.
Heat Network Technical Assurance Scheme (HNTAS)	A scheme being introduced to help heat network operators demonstrate compliance with regulatory technical requirements.
Heat Trust	An independent, not-for-profit consumer advocacy organisation for heat networks in Great Britain.
Hedging	A risk management strategy used to protect against sudden price movements, typically through the fixing of costs via contracts or financial instruments.
kWh	Kilowatt hour(s) is a unit of energy measurement.
New heat network	A heat network that was commissioned and operational on or after the start date of the heat network regulation Initial Period.

Ofgem	Office of Gas and Electricity Markets. Independent regulator governed by the Gas and Electricity Markets Authority (GEMA).
Ofwat	The Water Services Regulation Authority
Regression	A statistical method used to estimate the relationship between a dependent variable and one or more independent variables.
ROCE	Return on Capital Employed is a financial ratio that measures a company's profitability and efficiency in using its capital.
Shared ground loop (SGL)	Where two or more properties are heated by individual ground source heat pumps connected to it.
Sinking fund	A reserve fund set aside for the replacement or repair of a heat network's assets.
Step-in	Obligations to ensure heat networks are managing and mitigating risks of financial failure, and arrangements are in place to ensure continued supply to consumers.
Vulnerable consumer(s)	Individuals who are deemed less able to protect or represent their interest and are more at risk of detriment due to their personal circumstances or situation.
WACC	Weighted Average Cost of Capital is a financial metric used to assess the return required by investors and to evaluate the profitability of projects.

Appendix 8 – Privacy notice on consultations

Personal data

The following explains your rights and gives you the information you are entitled to under the General Data Protection Regulation (GDPR).

Note that this section only refers to your personal data (your name address and anything that could be used to identify you personally) not the content of your response to the consultation.

1. The identity of the controller and contact details of our Data Protection Officer

The Gas and Electricity Markets Authority is the controller, (for ease of reference, "Ofgem"). The Data Protection Officer can be contacted at dpo@ofgem.gov.uk.

2. Why we are collecting your personal data

Your personal data is being collected as an essential part of the consultation process, so that we can contact you regarding your response and for statistical purposes. We may also use it to contact you about related matters.

3. Our legal basis for processing your personal data

As a public authority, the GDPR makes provision for Ofgem to process personal data as necessary for the effective performance of a task carried out in the public interest. i.e. a consultation.

4. With whom we will be sharing your personal data

(Include here all organisations outside Ofgem who will be given all or some of the data. There is no need to include organisations that will only receive anonymised data. If different organisations see different set of data then make this clear. Be a specific as possible).

5. For how long we will keep your personal data, or criteria used to determine the retention period

Your personal data will be held for (be as clear as possible but allow room for changes to programmes or policy. It is acceptable to give a relative time e.g. 'six months after the project is closed').

6. Your rights

The data we are collecting is your personal data, and you have considerable say over what happens to it. You have the right to:

- know how we use your personal data
- access your personal data
- have personal data corrected if it is inaccurate or incomplete
- ask us to delete personal data when we no longer need it
- ask us to restrict how we process your data
- get your data from us and re-use it across other services
- object to certain ways we use your data
- be safeguarded against risks where decisions based on your data are taken entirely automatically
- tell us if we can share your information with 3rd parties
- tell us your preferred frequency, content and format of our communications with you
- to lodge a complaint with the independent Information Commissioner (ICO) if you think we are not handling your data fairly or in accordance with the law. You can contact the ICO at https://ico.org.uk/, or telephone 0303 123 1113.

7. Your personal data will not be sent overseas (Note that this cannot be claimed if using Survey Monkey for the consultation as their servers are in the US. In that case use "the Data you provide directly will be stored by Survey Monkey on their servers in the United States. We have taken all necessary precautions to ensure that your rights in term of data protection will not be compromised by this".

8. Your personal data will not be used for any automated decision making.

9. Your personal data will be stored in a secure government IT system. (If using a third party system such as Survey Monkey to gather the data, you will need to state clearly at which point the data will be moved from there to our internal systems.)

10. More information For more information on how Ofgem processes your data, click on the link to our "Ofgem privacy promise".