Department for
Business, Energy
& Industrial Strategy

Recovering the costs of heat networks regulation

Closing date: 16 February 2022

December 2021

Any enquiries regarding this publication should be sent to us at:
heatnetworks@beis.gov.uk

Contents

General information

Why we are consulting

This consultation seeks views on the government's proposed approach to recovering the costs of heat networks regulation. The proposal is for Ofgem and Citizens Advice's total ongoing costs of regulating and performing consumer advocacy functions in the heat networks, gas, and electricity markets to be spread evenly across heat network, gas, and electricity consumers. The consultation also sets out considerations and seeks views on the design and operation of the proposed approach to cost recovery, which will be administered by Ofgem as future heat networks regulator.

The consultation document includes an analytical annex which provides an overview of our latest estimates of the cost of regulating the heat networks market and new estimates on the associated consumer-level bill impacts of the options assessed.

Consultation details

Issued: 29 December 2021

Respond by: 16 February 2022

Enquiries to:

Heat Networks Team
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Consultation reference: Recovering the costs of heat networks regulation

Audiences:

This consultation will be of interest to the heat networks industry and those with a broader interest in the decarbonisation of heat, including industry trade associations, energy supply companies, electricity and gas distribution network operators, local authorities, housing associations, and consumer advocacy groups.

Territorial extent:

Great Britain.

How to respond

We are seeking responses to this consultation via email, preferably in Word document or PDF format. Please email your responses to heatnetworks@beis.gov.uk.

Email to: heatnetworks@beis.gov.uk**.**

Write to:

Heat Networks Team
Department for Business, Energy and Industrial Strategy
1 Victoria Street
London SW1H 0ET

When responding, please state whether you are responding as an individual or representing the views of an organisation.

Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome.

Confidentiality and data protection

Information you provide in response to this consultation, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Data Protection Act 2018 and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential please tell us, but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. See our privacy policy.

We will summarise all responses and publish this summary on GOV.UK. The summary will include a list of names or organisations that responded, but not people's personal names, addresses or other contact details.

Quality assurance

This consultation has been carried out in accordance with the government's consultation principles.

If you have any complaints about the way this consultation has been conducted, please email: beis.bru@beis.gov.uk.

Introduction

The Heat Networks Market Framework will implement heat networks regulation within this Parliament. In our Heat Networks: Building A Market Framework consultation we proposed Ofgem as the preferred choice for heat networks regulator, with the majority of responses supportive of this position. However, several respondents expressed concerns regarding the costs of the regulator performing its functions and how this would affect costs on heat networks and consumers, as well as questions regarding the suitability of Ofgem as regulator. In response to feedback on the consultation, we continued engagement with industry and consumer groups to revisit our options appraisal comparing Ofgem with other options. This included a detailed cost comparison with Heat Trust, the voluntary consumer protection scheme for heat networks.

This comprehensive exercise reaffirmed our view that Ofgem is the most desirable option. It brings experience of setting and enforcing consumer protection rules from regulating the energy market, could use its role as gas and electricity regulator to ensure heat networks are considered as part of an integrated net zero energy system, and will require lower set-up costs than a new organisation. Ofgem's experience also means it offers the quickest route to regulation. Ofgem also maintains the support of most of our stakeholders. We therefore announced the appointment of Ofgem as heat networks regulator in the Government Response to the Heat Networks: Building A Market Framework consultation, which accompanies the publication of this consultation. We also reaffirmed our view, backed by consultation responses, that the Energy Ombudsman is best placed to take on the role as the independent ombudsman service for heat network consumers. In the energy sector, Ofgem appointed the Energy Ombudsman to the role of independent ombudsman service, and we are considering whether the same process of appointment would be appropriate for heat networks. Finally, we announced the appointment of Citizens Advice as the consumer advocacy body for heat networks in England and Wales.

Our current central estimate is that total ongoing costs of regulating the market would be £6.5m per year.[1] If these costs fell solely on heat network regulated entities, then assuming regulated entities would then recover those costs through heating bills, it would effectively be heat network consumers only funding the costs of regulation. Our current provisional estimates are that this approach to cost recovery would result in heat network consumers paying an extra £10 or more per consumer bill per year to fund regulation. In comparison, we estimate that gas and electricity consumers pay less than £2 per consumer per year towards regulation.

[1] Average over the 10-year appraisal period.

The impact of regulatory fees on consumer bills

Though Ofgem sets a fee on gas and electricity licensees to fund the costs of its regulatory activities, these licensees will typically recover those costs through the billing of its consumers, as they will do for other fixed and variable costs.

For the purposes of this consultation and the accompanying analytical annex, we assume that heat network regulated entities would also recover the costs of regulation through heat network consumer bills. Many heat suppliers, particularly those in the social housing sector, operate their heat networks on a cost recovery model, which makes this assumption even more compelling.

As a result of this cost passthrough, the estimated impact on consumer bills is a central consideration for determining the best approach to heat networks regulation cost recovery.

We found that without an alternative cost recovery mechanism, none of the options for regulator which we assessed can bring the cost of regulation down to an affordable level on a per heat network consumer basis and down to a similar level to what gas and electricity consumers pay for regulation. We conducted modelling work with Heat Trust to see whether a different organisation could regulate the market more cost-effectively. We concluded from this exercise that Heat Trust would regulate the market in a way and at a cost similar to Ofgem, reinforcing our view that a small consumer base in the market is driving the high estimated regulatory cost per consumer. Whereas Ofgem can spread its gas and electricity regulatory costs across approximately 55 million gas and electricity consumers, under the default option above it would be spreading its heat networks regulatory costs across approximately 475,300 heat network consumers in Great Britain given the nascent state of the market.

If we were to add an extra £10 or more to each heat network consumer bill per year, the bill increases would be too high and create risks to the competitiveness of the market and issues of affordability for heat network consumers and suppliers.

We are therefore proposing to introduce a cost recovery regime which ensures that **Ofgem and Citizens Advice's total ongoing costs of regulating and performing consumer advocacy functions in the heat networks, gas and electricity markets are spread evenly across heat network, gas, and electricity consumers**.[2] Our current provisional estimates suggest that this would amount to heat network consumers paying approximately on average £1.40 per consumer per year in the central case. If applied to our estimate of the average heat network consumer bill, this represents a 0.23% increase.[3] We also estimate that this amounts to an additional £0.10 per gas and electricity consumer per year from what they currently pay

[2] Ofgem recovers its own regulatory costs and the costs of Citizens Advice performing its functions in the energy sector through its gas and electricity licensee regulatory fee collection regime. We envision that under our proposal for heat networks regulation cost recovery, Ofgem would also recover the costs of Citizens Advice performing its functions under the Heat Networks Market Framework in England and Wales.
[3] The 2017 HNCS estimates that the average annual heat network bill is £600. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/665447/HNCS_Results_Report_-_FINAL.pdf.

for Ofgem's gas and electricity regulation and Citizens Advice's consumer advocacy functions. If applied to our estimate of the average gas bill, this represents a 0.02% increase.[4] As a result, under our approach heat network, gas, and electricity consumers would all pay a similar amount for the same levels of protection (estimated at £1.40 per consumer per year on average) which will be administered by the same bodies in Ofgem and Citizens Advice. As the heat network market expands it will contribute a greater proportion of Ofgem and Citizens Advice's total costs.

Consumer protection is a reserved matter for heat network regulation across Great Britain and so, under our proposed approach, Ofgem would recover its costs from enforcing heat network consumer protection rules in England, Scotland, and Wales. Other elements of the market framework, such as statutory powers and step-in rights, will apply to England and Wales. Decarbonisation will apply to England only. The cost of Ofgem's regulatory activities in these areas will therefore relate to heat networks in England and Wales or England only. The Scottish Government passed the Heat Networks (Scotland) Act which establishes a regulatory framework in Scotland. We are working closely with the Scottish Government in developing our GB-wide consumer protection rules and the associated recovery of costs. Citizens Advice will perform its consumer advocacy function in England and Wales. It will be for the Scottish Government to determine the body it wants to perform the consumer advocacy role under its regulatory framework.

The Energy Ombudsman's costs of performing its functions under the Heat Networks Market Framework are not currently included in this approach to cost recovery because it will be part-funded by case fees charged to heat network regulated entities to resolve consumer complaints. In this way a proportion of the Ombudsman's costs will be recovered from those heat suppliers generating consumer complaints, rather than all heat suppliers. This approach will incentivise heat suppliers to take measures to reduce the volume of consumer complaints on their schemes. A similar approach is taken in the energy sector. We will explore further the possibility of the Energy Ombudsman being part-funded by our proposed approach to cost recovery. This could be desirable if, for example, it ensures that smaller regulated entities in the heat networks market pay proportionate case fees resulting from unresolved consumer complaints. We would also need to ensure that it would not result in a significant increase on the cost of regulation on energy consumers. This thinking is at an early stage and so this consultation focuses on recovering Ofgem and Citizens Advice's costs.

We consider that our proposed approach's impact on heat network, gas, and electricity bills is considerably outweighed by the significant benefits of regulating the heat networks market. The Climate Change Committee estimates that around 18% of UK heat, up from 2% currently, will need to come from heat networks by 2050 if the UK is to meet its carbon targets cost-effectively. The Heat Network Consumer Survey 2017 found that while most heat network consumers receive a service comparable to gas and electricity consumers, a significant minority suffer detriment resulting from high prices and unreliable heat supply. Regulation will help to facilitate the growth and decarbonisation of the market needed to 2050 and introduce

[4] The 2020 QEP estimates that the average annual gas bill is £510 https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics; Tables QEP 2.3.5 and 2.2.5.

consumer protection rules to ensure heat network consumers receive the same standards as other regulated markets. Our proposed approach to cost recovery would unlock the full benefits of regulation by enabling Ofgem to devote the necessary resources to enforcing consumer protection and decarbonisation rules.

This consultation document sets out the four options we considered for cost recovery. It also includes an analytical annex which provides an overview of our latest estimates of the cost of regulating the heat networks market and new estimates on the associated consumer-level bill impacts of the four options assessed as part of our appraisal. Consultation respondents can therefore refer to the annex and use it to inform their consultation response.

Finally, the consultation sets out considerations and seeks views on the design and operation of the proposed approach to cost recovery. This includes our proposal for regulatory fees to be based on the number of consumers supplied by a heat network regulated entity in the same way that gas and electricity licensees' payments operate. We are also seeking initial views on whether to introduce a de minimis threshold which would mean heat networks below a certain size not paying a regulatory fee, thereby reducing the administrative burden on Ofgem. Our thinking on the design and operation of the approach to cost recovery is in its early stages and consultation responses will inform our policy proposals as they develop. There will be opportunities for stakeholders to engage with more developed thinking on cost recovery in future, including when we introduce heat network regulations and when Ofgem consults on its cost recovery principles at the set-up phase (see Diagram 1 below).

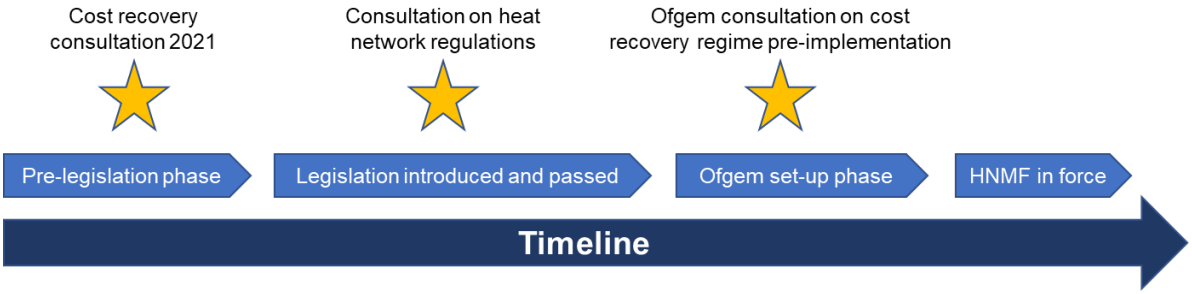


Diagram 1 – Timeline of consultations on cost recovery

The proposals

The case for an alternative cost recovery approach

As it is a nascent market the consumer base is currently small at approximately 475,300 heat network consumers in Great Britain. In comparison, we estimate there are 55 million gas and electricity consumers. Though Ofgem's costs of regulating the heat networks market will be smaller than its costs of regulating the gas and electricity markets, the respective costs will not be directly proportional to the size of the consumer bases owing to fixed costs which will not change with changes in the number of consumers. As a result, our current provisional estimates suggest that were heat network regulatory costs to be spread across heat network consumers only, this would amount to an extra £10 or more per heat network consumer bill per year. The analytical annex provides further information on how we have calculated this estimate on consumer bill impact.

We agree with the heat network industry's concerns that an extra £10 or more on a heat network bill per year could create risks to the market's competitiveness against other higher carbon alternatives, such as individual gas boilers. This could introduce barriers to the growth and decarbonisation of the heat networks market, with knock-on impacts on Government's ambitions for decarbonising heat in buildings.[5] We also recognise that it would make bills unaffordable for some heat network consumers, particularly heat network consumers currently paying disproportionately high prices for their heating.[6] The approach would go against one of our main aims: ensuring heat network consumers are paying a fair price.

We have therefore concluded that we need an alternative approach to cost recovery which ensures that heat network consumers pay a similar amount for regulation as gas and electricity consumers on a per consumer basis. The section below sets out the options we considered and the option we are proposing as the most desirable approach.

Cost recovery options appraisal

We identified three alternative cost recovery approaches which would ensure that heat network consumers pay a similar amount for regulation as gas and electricity consumers on a per consumer basis:

- **Option A (counterfactual):** Ofgem and Citizens Advice's total ongoing costs of regulating the heat networks market spread across heat network consumer bills only.

[5] The Climate Change Committee estimates that around 18% of UK heat, up from 2% currently, will need to come from heat networks by 2050 if the UK is to meet its carbon targets cost-effectively.
[6] The Heat Network Consumer Survey 2017 found that while most heat network consumers receive a service comparable to gas and electricity consumers, a significant minority suffer detriment resulting from high prices.

- **Option B:** Ofgem and Citizens Advice's total ongoing costs of regulating the heat networks market to be spread across heat network and gas consumer bills (i.e. not electricity bills).
- **Option C (our preferred approach):** Ofgem and Citizens Advice's total ongoing costs of regulating the heat networks, gas, and electricity markets to be spread evenly across heat network, gas, and electricity consumer bills.
- **Option D:** Government part-funding heat networks regulation to bring the cost per heat network consumer down to an affordable level.

Estimated implication of socialising costs – cost per consumer across the energy sectors[7]

The table below sets out our estimates of the impacts on heat network, gas, and electricity consumer bills of the options described above. We estimate that gas and electricity consumers currently pay £1.30 per consumer per year towards the cost of regulation.[8] Heat network consumers are assumed to not currently be paying anything given the market is currently largely unregulated. The figures in bold below show the estimated amount each type of consumer would pay towards regulation under that option on a per consumer per year basis. The figures in brackets show the estimated increase from what each type of consumer currently pays, again on a per consumer per year basis.

Table 1 – Estimated impact of Options A-D on consumer bills

Markets	A) Heat networks	B) Heat networks & Gas	C) Heat networks, Gas & Electricity	D) Exchequer funding
Heat network	**£10.30** (+£10.30)	**£1.50** (+£1.50)	**£1.40** (+£1.40)	**£1.30** (+£1.30)
Gas	**£1.30** (£0)	**£1.50** (+£0.20)	**£1.40** (+£0.10)	**£1.30** (+£0)
Electricity	**£1.30** (£0)	**£1.30** (£0)	**£1.40** (+£0.10)	**£1.30** (+£0)

[7] Please see Table 10 in the analytical annex for more details around these costs.
[8] Please note that Ofgem does not publish its costs on a per consumer basis, so these estimates have been calculated by BEIS and the approach has been agreed with Ofgem.

Option A (counterfactual) – Ofgem and Citizens Advice's total ongoing costs of regulating the heat networks, gas and electricity markets spread across heat network consumer bills only

As mentioned above, adding an extra £10 or more to each heat network consumer bill per year would create risks to the competitiveness of the market and issues of affordability for heat network consumers and suppliers. We therefore do not consider this to be an option and are simply treating it as a counterfactual for the purposes of our analysis contained in the annex.

Before considering each option below, it is important to understand how Ofgem's cost recovery regime for gas and electricity currently works:

Ofgem's cost recovery regime for gas and electricity

Ofgem currently has a single cost recovery regime for recovering regulatory fees from electricity and gas transmission and distribution licensees. The costs recovered include Ofgem's costs of regulating the gas and electricity markets and a proportion of Citizens Advice's costs of performing consumer advocacy work in the energy sector.

Ofgem's Licence Fee Cost Recovery Principles set out the principles determined by Ofgem for calculating the appropriate proportion of regulatory fees paid by a gas or electricity licensee. These principles state that a fee on a licensee is based on the proportion of consumers connected to the licensee relative to either the total number of gas and electricity consumers or to the total number of consumers connected to the relevant fuel type (i.e. gas or electricity). This means that the larger gas and electricity suppliers with a larger number of consumers will pay a larger regulatory fee. Smaller suppliers pay a smaller fee, though Ofgem sets a minimum licence fee of £500 to streamline the fee collection process and ensure it does not expend administrative resource processing very small payments from the smallest suppliers. To ensure Ofgem can calculate fees accurately, licensees are required to make annual formal returns to inform the regulator of their latest number of consumers. Fees are collected biannually. Assuming gas and electricity licensees recover the cost of the regulatory fee from consumers through bills, this approach to calculating fees means that the impact on a per consumer basis should be relatively equal across gas and electricity.

Option B – Ofgem and Citizens Advice's heat networks regulation costs spread across heat network and gas consumer bills (i.e. not electricity bills)

We considered the option of spreading costs across heat network and gas bills. Though this option would bring similar benefits of affordability for heat network consumers as Option C below, we consider that it would not bring the same operational benefits.

Table 1 above and the analytical annex below show that we estimate that this option would mean heat network consumers paying £1.50 per consumer per year in the central case, with a £0.20 per consumer per year increase on what gas consumers currently pay for regulation. Like Option C, it would ensure heat network consumers pay a similar amount for regulation to what gas and electricity consumers currently pay, though the amount is slightly higher than the Option C estimate given this approach would spread costs across a smaller consumer base. This option also ensures a minimal increase in gas bills, though the increase is marginally higher than Option C.

The issue with this option is that it would not integrate into Ofgem's existing cost recovery regime as well as Option C. It could require Ofgem to administer two separate regimes – one to collect regulatory fees from gas and electricity licensees towards the cost of gas and electricity regulation, and another to collect regulatory fees from heat network regulated entities and gas licensees towards the cost of heat networks regulation. This would create additional administrative burden and increase costs for Ofgem and therefore consumers.

Option C – Ofgem and Citizens Advice's heat network, gas and electricity regulation costs spread across heat network, gas, and electricity consumers (our preferred approach)

Under this option, heat networks regulation would be folded into this cost recovery regime. This would enable Ofgem to treat its activities and Citizens Advice's activities associated with regulating the gas, electricity, and heat network markets as a single expenditure. It could then recover that overall expenditure from heat network regulated entities as well as gas and electricity licensees.

We consider this option to be the most desirable. It would ensure heat network, gas and electricity consumers pay a similar amount for the same levels of protection administered by the same bodies in Ofgem and Citizens Advice. We estimate that this approach would mean heat network, gas and electricity consumers paying £1.40 per consumer per year. This would represent a £0.10 per consumer per year increase on what gas and electricity consumers currently pay for regulation. If applied to our estimate of the average gas bill, this represents a 0.02% increase.[9]

In addition, folding heat networks into Ofgem's existing cost recovery regime would mean that Ofgem would not need to spend money establishing a standalone, ringfenced heat network cost recovery regime, which is what would be required for Option B. This option would therefore lower Ofgem's costs compared to spreading costs across heat network regulated entities only. Such a lowering of Ofgem's ongoing costs would benefit heat network consumers and minimise the cost impact on gas and electricity consumers.

[9] The 2020 QEP estimates that the average annual gas bill is £510 https://www.gov.uk/government/statistical-data-sets/annual-domestic-energy-price-statistics; Tables QEP 2.3.5 and 2.2.5.

Option D - Government part-funding heat networks regulation

This option would involve Government part-funding Ofgem's costs of regulating the heat networks market to the extent that the remaining cost spread across heat network consumers is at an affordable level on a cost per consumer basis. Our estimates in the central case suggest that Government's average annual funding would need to be £5.6m to bring the cost per heat network consumer down to a level similar to what gas and electricity consumers currently pay for regulation.

We do not consider this option to be suitable. Firstly, it relies on the continuous availability of Exchequer funding, and were this unavailable at any point in future this would mean the costs of heat networks regulation being spread across heat network consumers only. In addition, of the three options considered, this option offers the least flexibility in the event of Ofgem underspend or overspend on heat networks regulation in a certain year. As an example, if in a given year there was an increase in compliance issues in the market which meant Ofgem had to spend more on market monitoring and compliance activities than the average year, this could mean the pre-determined Government funding not being enough to keep the remaining cost borne by heat network consumers at an affordable level. In comparison, Option C is much more adaptable to year-on-year changes to Ofgem's regulatory spend as costs would be spread across a larger consumer base.

1. **Do you agree with the approach of introducing a cost recovery regime which ensures that Ofgem and Citizens Advice's total ongoing costs of regulating the heat networks, gas and electricity markets are spread evenly across heat network, gas, and electricity consumers (Option C)?**

2. **Having considered our estimates in the Analytical Annex below, do you agree that our approach would ensure that the costs of regulation are affordable for heat network consumers and businesses?**

Policy considerations for our proposed cost recovery approach

We are also seeking initial views on the policy design and operation of our preferred approach to cost recovery. This thinking is at an early stage, but we are keen to seek stakeholder views now to inform our considerations going forward. Stakeholders will have further opportunities in future to provide views on heat networks regulation cost recovery. Currently Ofgem is required to consult with gas and electricity licensees before it makes changes to its cost recovery principles, and we expect that consultation with the heat networks market would take place on design proposals for folding heat networks into the existing cost recovery regime.

Approach to setting regulatory fees on heat network regulated entities

Under our preferred approach to cost recovery (see Option C above), Ofgem will collect regulatory fees from heat network regulated entities like it does already for gas and electricity licensees. Ofgem will need a methodology for determining the size of the regulatory fee which a heat network regulated entity needs to pay. In this section we are seeking initial views on the key principle which should inform the size of the fee.

As set out above, Ofgem's cost recovery principles for gas and electricity licensees are based on the proportion of consumers connected to the licensee relative to either the total number of gas and electricity consumers or to the total number of consumers connected to the relevant fuel type (i.e. gas or electricity). Given our proposal is to fold heat networks into Ofgem's existing cost recovery regime for gas and electricity, there are benefits to taking the same approach for heat network regulated entities where their fee would be **based on the number of consumers they supply**. This would enable the costs of Ofgem and Citizens Advice's regulatory activities across heat networks, gas and electricity to be evenly distributed across heat networks, gas and electricity. It would also be adaptable to changes in the energy market – for example, when the heat network market expands and the gas market contracts as heat in buildings decarbonises, this approach would avoid the cost per gas consumer increasing to unaffordable levels over time. This is because, if we base fees on the number of consumers, the gas market would gradually start to pay a lower proportion of Ofgem and Citizens Advice's regulatory costs due to declining consumer numbers and the heat networks market would start to pay a higher proportion due to increasing consumer numbers. Though the overall proportions would change, the cost per heat network, gas, and electricity consumer would remain stable and affordable due to our proposed approach. Finally, this approach would be feasible to implement as Ofgem will collect information on the number of consumers serviced by a heat supplier through the authorisation regime.[10] Ofgem could also require heat suppliers to regularly report their number of consumers, as is currently required of gas and electricity licensees.

If we adopt this approach, we will need to introduce a methodology in Ofgem's Cost Recovery Principles so that the fee collected from heat network regulated entities is based on the proportion of consumers supplied by an entity relative to the total number of consumers across heat networks, gas and electricity. A similar methodology would need to be introduced for gas and electricity licensees.

We have considered other approaches for setting regulatory fees on heat network regulated entities:

- **Number of schemes:** Basing the regulatory fee on the number of schemes notified by a regulated entity under the authorisation regime.

[10] See page 36 of the Heat networks: building a market framework consultation for more information on the general authorisation regulatory model.

- **Number of district / communal heat networks:** Establishing a methodology which would enable different fee charges according to the number of district schemes and the number of communal schemes supplied by a regulated entity.

However, compared with basing fees on the number of consumers as happens in gas and electricity, we consider that these alternative methodologies would not be as reliable for ensuring that the costs of regulation are evenly distributed across heat network consumers. They are also different from the approach taken for gas and electricity licensees, which would create administrative challenges for Ofgem when seeking to ensure that the costs of regulation are evenly distributed across the three consumer types. We therefore currently prefer basing regulatory fees on a heat network regulated entity's number of consumers.

If we were to base fees on number of consumers, we would need to consider how distribution of fees would work across domestic and non-domestic consumers. For example, if a one-bedroom flat and a leisure centre were both classed as a single end consumer, it may not be suitable for both to pay the same amount towards regulation given the differences in heat demand and number of people using the heat.

We have also considered whether fees should be calculated and collected at the heat networks regulated entity level (an entity's total number of consumers across all its heat networks) or at the scheme level (the total number of consumers on a single heat network). We propose that fees should be calculated and collected at the entity level. As part of the general authorisation process Ofgem will have access to information on all heat network regulated entities and all of a given entity's heat networks.[11] Combined with information on an entity's total number of consumers, Ofgem will have the data needed to collect at the entity level. This is also likely to allow for a more streamlined fee collection process as Ofgem would be calculating and collecting fewer fees than if it did this at the scheme level. Collecting fees at the scheme level would likely introduce additional administrative burden and cost for Ofgem. As mentioned above, we would need to consider the distribution of fees across domestic and non-domestic consumers.

We are also considering whether introducing a minimum regulatory fee, like the one in place for gas and electricity licensees, would reduce administrative burden for Ofgem. This is also a relevant consideration for the possibility of a de minimis threshold, which we discuss in the section below. Ofgem will provide further details on any minimum regulatory fee at the consultation phase of the design of cost recovery principles for heat networks.

3. **Do you agree that the regulatory fee which a heat network regulated entity paid should be based on the number of heat network consumers it supplies? Do you agree that this should be calculated and collected at the entity level?**

[11] See page 36 of the Heat networks: building a market framework consultation for more information on the general authorisation regulatory model.

De minimis threshold for collecting fees from heat network regulated entities

We estimate that there are currently around 14,000 heat networks in the UK. Around 12,000 are communal heat networks serving one building and around 2,000 are district heat networks serving multiple buildings.

This means that under our preferred approach to cost recovery, Ofgem would need to collect fees from a significantly larger number of heat network regulated entities (c.2,800 based on our estimates for the number of heat suppliers in GB) compared with the number of gas and electricity licensees which it currently collects fees from (c.100 entities across gas and electricity).

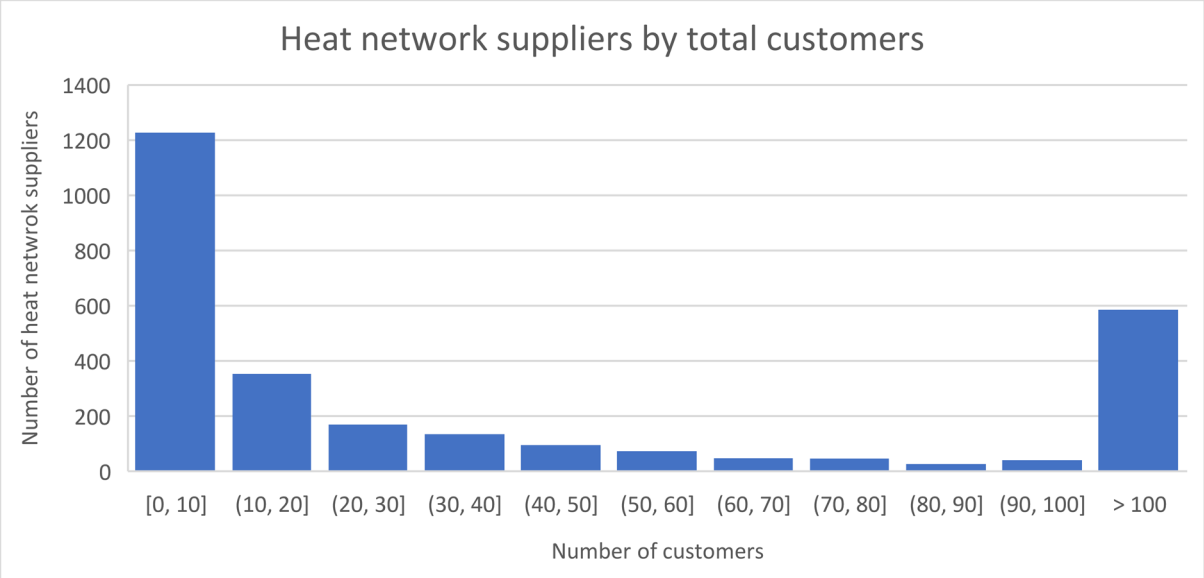
It could therefore be administratively burdensome and costly for Ofgem to have to calculate, collect and chase for fees across so many organisations. We are therefore consulting on whether to introduce a de minimis threshold which would exempt certain heat network regulated entities from paying a regulatory fee. We are at an early stage of policy development and need to consider how a threshold would be set. Given we are gathering early views, we have not included cost analysis on a threshold in the analytical annex. If we implement a threshold, Ofgem would consult on its design as part of the consultation process for amending its cost recovery regime for gas and electricity licensees.

We are considering several approaches which could be used to set a de minimis threshold:

- **Number of end consumers:** exempting regulated entities supplying less than a certain number of domestic and non-domestic consumers from paying a regulatory fee. This approach provides the benefit of aligning with Ofgem's likely methodology for setting regulatory fees (i.e. based on number of consumers). It would also provide Ofgem with the clearest sense of the number of consumers which would and would not be paying towards the cost of regulation, ensuring the threshold is set at a level which means regulatory fees are affordable to consumers. We would need to consider how this would work across domestic and non-domestic consumers.
- **Number of heat networks:** exempting entities supplying heat through or operating fewer than a given number of schemes. We consider this to be a less reliable indicator of the number of consumers captured by a de minimis threshold given schemes can vary greatly in the number of consumers they supply.
- **Heat delivered:** exempting entities delivering below a given number of kilowatt-hours of heat. This would have the benefit of accounting for the differences in heat demand between domestic and non-domestic consumers. However, this would be challenging to measure reliably across a high number of entities and is also not the most accurate indicator available of size of heat network and number of consumers given differences in generation, fuel input, and heat efficiency.

Using the 2018 Heat Metering and Billing Regulation data from OPSS,[12] the chart below shows the distribution of heat network suppliers by the total number of consumers across all the networks owned by a supplier. The total number of consumers includes both domestic and non-domestic end customers, for example a network which services a block of 50 flats and a leisure centre would have a total of 51 end customers.

Chart 1: Distribution of heat network suppliers by total end consumers[13]



We have set out below some considerations for and against a de minimis threshold. The 'Against' column includes early thinking on how the processing of regulatory fee payments could be streamlined without the introduction of a de minimis threshold.

When considering the option of a de minimis threshold, we would encourage respondents to have the following points in mind:

- Regardless of whether we opt for a de minimis threshold for regulatory fees, all heat network regulated entities will need to notify to Ofgem to receive authorisation to operate in the market under our general authorisation model. **All heat network regulated entities will need to meet regulatory requirements**, including consumer protection rules for all domestic and microbusiness consumers. Therefore, a de minimis threshold for regulatory fees would not exempt any heat network regulated entities from the requirements set by regulation, including entities exempted from regulatory fee payment by the threshold if introduced.
- Even if we opt for a de minimis threshold, it is likely that all heat network regulated entities will still need to pay a fee to cover the cost incurred by Ofgem for processing its authorisation. However, this payment would only need to happen at the point a regulated entity notifies for authorisation, whereas regulatory fee payment would have to happen on a regular basis (likely to be at least biannual or annual).

[12] https://www.gov.uk/government/publications/energy-trends-march-2018-special-feature-article-experimental-statistics-on-heat-networks.
[13] This analysis includes both domestic and non-domestic consumers.

- If we opted for a de minimis threshold, we would ensure this is set at a level which means that the cost per consumer remains affordable for heat network regulated entities which do still have to pay a regulatory fee. We suspect that this can be achieved given, under our proposed approach, Ofgem's regulatory costs will be spread across 55 million+ energy consumers. Ofgem would however need to test various thresholds to ensure enough revenue can be recovered from the remaining segment of the market.

DE MINIMIS THRESHOLD FOR HEAT NETWORKS FEE COLLECTION	
For	Against
Reduces administrative burden and cost of the fee collection regime. It could avoid Ofgem chasing outstanding payments from small heat network entities, which could be particularly beneficial if the cost of chasing these payments ends up being larger than the value of the outstanding payments eventually received. It would also reduce the regulatory burden on small heat network entities. Collecting fees from all heat network regulated entities would maximise the number of outstanding payments. These outstanding payments might then have to be put on paying entities instead to ensure Ofgem's costs are fully covered. This creates uncertainty for Ofgem and Citizens Advice regarding their revenue and uncertainty for entities regarding the fee they will be charged. Though this issue may still exist with a de minimis threshold, it would be to a lesser extent. Given Ofgem and Citizens Advice's regulatory costs will be spread across 55 million+ energy consumers, a de minimis threshold exempting some heat network regulated entities from fee payments is unlikely to have an impact on the affordability of heat network, gas, or electricity bills.	Given the estimated large number of small heat suppliers in the market (see Chart 1 above), a threshold could exempt a large proportion of heat suppliers from paying the regulatory fee. However, Ofgem could set the threshold at a level which ensures enough suppliers pay the fee. A de minimis threshold would introduce the risk of misreporting of number of consumers to avoid having to pay regulatory fees. There could also be challenges for Ofgem in identifying multiple subsidiary companies which fall under the same parent company, and which should therefore not be exempt from fee payment. The authorisation requirement, along with likely requirements on heat network entities to report to Ofgem on a regular basis, present engagement points at which Ofgem could request the payment of fees by all heat network entities. Ofgem would have records of all heat suppliers given the authorisation requirement will apply to all heat networks. A minimum regulatory fee like the one already in place for gas and electricity licensees could streamline the fee collection process without a de minimis threshold in place. Given it is likely that all heat network regulated entities will need to pay a fee to

DE MINIMIS THRESHOLD FOR HEAT NETWORKS FEE COLLECTION	
A de minimis threshold based on the number of consumers should be feasible operationally. Under our cost recovery proposal, heat network regulated entities will already need to inform Ofgem of the number of consumers they supply to inform regulatory fee calculations. Heat suppliers are also already required by law to notify the number of final consumers on their schemes under the Heat Network (Metering and Billing) Regulations.	cover the cost incurred by Ofgem for processing authorisations, it may be that regulatory fee payments by all regulated entities would not add as much administrative burden. However, authorisation payments are likely to be a one-off for many regulated entities. In contrast, regulatory fees will need to be collected annually or biannually, increasing the administrative burden.

Table 2

Our current thinking as summarised in Table 2 is that although there could be financial and administrative benefits to implementing a de minimis threshold, there could be approaches to regulatory fee collection which reduce the administrative burden without the need for a threshold. Examples of how this could be done include use of authorisation and self-reporting requirements to collect fees, as well as combining regulatory fee payments with payments to cover Ofgem's authorisation costs.

We welcome views from respondents on whether there are other factors to consider when deciding whether to introduce a de minimis threshold. If there is support for a de minimis threshold, we can explore in more detail how this could be implemented. There would be further opportunities for consultation on this issue, including when Ofgem consults on the amendments to its Cost Recovery Principles brought about by the folding of heat networks into its existing cost recovery regime.

4. **Do you think we should introduce a de minimis threshold to reduce the administrative complexity of Ofgem collecting fees from heat networks, with the cost per consumer remaining affordable for entities which do have to pay?**

Consultation questions

1. **Do you agree with the approach of introducing a cost recovery regime which ensures that Ofgem and Citizens Advice's total ongoing costs of regulating the heat networks, gas and electricity markets are spread evenly across heat network, gas, and electricity consumers (Option C)?**

2. **Having considered our estimates in the Analytical Annex below, do you agree that our approach would ensure that the costs of regulation are affordable for heat network consumers and businesses?**

3. **Do you agree that the regulatory fee which a heat network regulated entity paid should be based on the number of heat network consumers it supplies? Do you agree that this should be calculated and collected at the entity level?**

4. **Do you think we should introduce a de minimis threshold to reduce the administrative complexity of Ofgem collecting fees from heat networks, with the cost per consumer remaining affordable for entities which do have to pay?**

Next steps

This consultation will run until 16 February 2022. Once the consultation closes, we will analyse responses and use these to inform our policy approach to heat networks regulation cost recovery. Responses to the consultation will inform the drafting of provisions in our heat networks legislation, which Government will introduce as soon as parliamentary time allows.

After the consultation closes, we will publish the Government's response to the consultation, which will set out our approach to heat networks regulation cost recovery.

Annex: Total regulatory cost and bill impact estimates

This annex provides an overview of the methodology used to estimate the cost of regulating the heat networks market and an indication of associated consumer-level bill impacts of each of the three cost recovery options set out in the consultation. This analysis aims to provide stakeholders reading the consultation with a better sense of the quantified impact of the proposed policy options.

The cost estimates presented in this annex provide an update to those presented in the first-stage Impact Assessment (IA),[14] which was published alongside the Heat Networks Market Framework (HNMF) consultation in February 2020. However, as the HNMF is still at primary legislation stage, with more specific requirements enacted in secondary legislation as the policy evolves, **these estimates should be viewed as indicative**.

As the policy options considered in the consultation relate to the recurring costs of regulation only, the cost estimates in this annex only include the costs of Ofgem, the Energy Ombudsman and Citizens Advice of performing its functions under the HNMF. In addition, owing to further policy development on step-in rights, technical standards and decarbonisation, the costs associated with these areas are not included in the estimates.

This annex is structured in the following way: summary of preferred regulatory approach; estimated regulation costs; and cost recovery options analysis.

Summary of preferred scope and approach to regulation

Following our first-stage consultation in February 2020, we determined that the preferred regulatory model for the heat networks market was general authorisation with an optional licence for rights and powers. Under this option, every heat network must be authorised to operate in the market. An authorised entity will need to comply with consumer protection rules for domestic and microbusiness consumers under the HNMF. In addition, heat network developers or operators that want additional statutory undertaker rights (e.g., classification as a statutory undertaker for streetwork permits) must apply for a licence.

The proposed heat network regulatory structure is a tripartite structure consisting of Ofgem as the core regulator, Citizens Advice as the consumer advocacy body and the Energy Ombudsman as the independent dispute resolution body. We expect the three organisations to work collaboratively, sharing expertise and market intelligence, to regulate the heat networks market efficiently. The proposed roles and responsibilities are detailed in Table 1 below:

[14] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/863855/heat-networks-market-framework-consultation-impact-assessment.pdf.

Table 1: Proposed governance structure of the HNMF

Body	Responsibility in the HNMF
Ofgem	• Administering the authorisation and licensing regimes • Market monitoring, compliance and enforcement work to enforce consumer protection rules, including audits • Technical standards, market exit arrangements and decarbonisation[15] • Policy development
Citizens Advice	• Advocacy and advice for heat network consumers • Administer an Extra Help Unit to support consumers in vulnerable circumstances • National awareness campaigns • Reporting systemic issues to the tripartite group
Energy Ombudsman	• Provide heat network consumers with access to its independent dispute resolution service • Work with regulated entities to advise on how to reduce volumes of complaints • Reporting systemic issues to the tripartite group

The cost estimates in this annex reflect the preferred scope and approach to regulation as set out above. As such, the cost estimates include the resource requirements for all three organisations in the proposed regulatory structure.

Heat networks regulation cost estimates

A standard cost model approach has been used to estimate the regulatory costs of the preferred option. An overview of the methodology used is set out below:

- **Step A:** Estimate the current size of the heat networks market in scope of regulation.
- **Step B:** Identify regulatory activities and estimate the resource required by the three regulatory bodies.

[15] This is an expected area of remit for Ofgem, however, the costs associated with these have not been included in the cost estimate presented in this annex due to the stage of policy development.

- **Step C:** Profile and scale resource requirements to account for implementation timeframes and market growth.

A range of cost estimates, including a low and high scenario, have been calculated over a ten-year appraisal period. This period has been chosen due to the early stage of policy development, uncertainties associated with estimating costs in the future and for consistency with the first stage IA.

Step A: Estimate the current size of the heat network market in scope

Table 2: Summary of the heat network market in scope of HNMF

Total	UK	GB	England and Wales	Serving domestic and microbusiness customers[16]
Number of heat suppliers	2,800	2,800	2,600	1,500
Number of heat networks	14,000	13,900	13,100	10,200
Number of district networks	2,100	2,100	2,000	1,600
Number of communal networks	11,900	11,800	11,100	8,500
Total number of consumers	477,000	475,300	449,900	438,000

Note: Figures may not sum due to rounding

The geographical scope of the HNMF varies according to the policy area. All heat suppliers in England and Wales are expected to apply for authorisation. The Scottish Government has introduced their own licensing regime under the Heat Network Scotland Act. Under the HNMF, licensing will be optional if a heat network wants to apply for rights and powers. We have excluded the granting of licences to heat suppliers in Scotland as this is a devolved matter and set out in separate impact assessments published by the Scottish Government.

Consumer protection for heat networks is a reserved matter GB-wide and will apply to all networks which serve domestic and microbusiness consumers in England, Scotland, and

[16] Consumer protection rules under the HNMF will apply to all domestic and microbusiness consumers in Great Britain. This column therefore estimates the number of those consumers.

Wales. Though we are still considering our policy on whether certain consumer protections should apply to some non-domestic consumers, for this analysis heat networks which serve non-domestic and non-microbusiness consumers only are not in scope to comply with consumer protection rules. The consumer protection column in Table 1 provides the estimated number of heat suppliers, heat networks and consumers that are in scope of the consumer protection elements of the HNMF.

To estimate the size of the market in scope of the HNMF requirements, we have applied the geographical scope of the proposed regulation to the 2018 Heat Metering and Billing Regulations dataset which contains notification data from around 14,000 heat networks.

- 2,600 heat suppliers are estimated to apply for authorisation and licensing, with all heat suppliers[17] applying for authorisation and around 100 Heat suppliers estimated to apply for licensing.[18]
- A total of 1,500 heat suppliers, 10,200 heat networks and 438,000 customers are estimated to be in scope of the consumer protection elements of the HNMF.

This is the best available evidence on the current heat networks market. However, there are some key uncertainties over the completeness and quality of the data, which is discussed in the 'Key uncertainties and limitations' section below.

It has not been possible to identify non-domestic heat networks which only serve micro-businesses in the data. These have therefore been excluded from this analysis. However, evidence from Heat Trust membership suggests that microbusinesses account for a small proportion of total heat network consumers.

Step B: Identify regulatory activities and resourcing estimates required

To identify the regulatory activities of the regulatory bodies under the HNMF, BEIS worked closely with the tripartite group, Heat Trust and the heat networks industry. These activities are based on a high-level specification provided by BEIS for the purpose of these estimates. An overview of the outputs from this process can be found in Table 3 below.

[17] Heat suppliers have been identified using the name of the organisation which submitted the return under HMBR.
[18] This is based on the number of suppliers in scope of authorisation and licensing. It has been assumed that heat suppliers who own more than ten networks with at least one district network are likely to apply for licensing.

Table 3 – Summary of areas of regulatory costs

Costs categories	Description	Cost range (£m)	Source
Authorisation and licencing*	The management and processing of all authorisation and licencing applications. All 2,600 heat suppliers in England and Wales will need to be authorised and some developers may apply for a license. The resource required is expected to reduce once existing suppliers are authorised.	0.2 - 0.4	Ofgem
Monitoring and regulatory development	Monitoring the heat network market to inform regulatory development and compliance and enforcement work. Developing market insights and heat networks regulation.	0.4 - 0.7	Ofgem – G&E market
Compliance and enforcement*	The management of compliance and enforcement cases. Assumptions on the number of cases are based on scaling the number of cases seen in the gas and electricity (G&E) market with the number of heat suppliers in scope of regulation. Heat network cases are assumed to be smaller and less complex than those in the G&E market, informed by consultation with Ofgem's compliance and enforcement teams.	2.9 – 5.4	Ofgem – G&E market
Auditing	Conducting internal and external auditing on regulated entities. This is based on Ofgem's risk-based approach to auditing as opposed to auditing all schemes.[19] It is assumed that auditing will be a means to identify compliance issues in the market.	0.7 - 1.9	Ofgem - RHI
Data solution	Ongoing operating and maintenance of the regulator's data solution. The data solution will aim to automate the authorisation process and be used to assist with marketing monitoring, as well as compliance and enforcement activities.	0.4	Ofgem – E-Serve / BEIS

[19] A risk-based audit approach is one which links with the organisation's overall risk management framework with an aim to address the highest priority task.

Costs categories	Description	Cost range (£m)	Source
Legal*	Legal resource required to support compliance and enforcement cases. Informed by Ofgem's current legal to policy full-time equivalent (FTE) ratio.	0.3 - 0.9	Ofgem
Overheads and other costs*	Costs associated with IT, Information Security, HR, Finance, Communications, Operations, Advisory Boards, Memberships, Office, Rates, Insurance, Depreciation, and Contingency.	0.01 - 0.05	Ofgem – G&E market
Citizens Advice advocacy costs*	Providing independent advice and advocacy to heat network consumers, which includes establishing an Extra Help Unit for consumers in vulnerable circumstances. This includes reporting systemic consumer issues to the tripartite group to tackle underlying causes, based on the number of consumers in scope and level of complaints from the wider energy market.	1.1	Citizens Advice
Energy Ombudsman service costs*	Providing an independent dispute resolution service to heat network consumers through either facilitated case resolution or a full ombudsman decision at a cost of £170 and £400, respectively. This case fee covers all operating costs from the Energy Ombudsman. The number of cases is informed by the ratio of consumers to ombudsman cases seen in networks registered to Heat Trust, scaled up to the number of heat networks in scope of the HNMF.	0.5	Energy Ombudsman

Note: Figures have been rounded to 1 decimal point. Figures will not sum to those later presented in Table 7, due to the impact of step C.

The members of the tripartite group used the outputs on market size from step A to estimate a range of required resource, which have been used as the key inputs to this cost modelling. This includes the number of full-time equivalent (FTE) staff by seniority, consultancy, and overhead costs. These estimates were then further refined following scrutiny from BEIS and key stakeholders including industry and other regulatory bodies.

The ONS statistics on average Civil Service pay have been used to calculate the cost of the required FTE.[20] These costs were then inflated by 21.8% to account for non-wage costs, in line with guidance from the RPC.[21]

To further investigate the robustness of these estimates, a comparison exercise was carried out against other regulators and cost estimates of regulating the heat networks market provided by Heat Trust. The outputs from these comparison exercises suggested that the estimated regulation costs from the tripartite group were slightly lower when compared with other regulatory bodies and their costs were also similar to those proposed by Heat Trust.

Step C: Profile and scale resource requirements to account for timeframes and market growth

The outputs from steps A and B provide an indication of costs if all activities were carried out simultaneously. However, the required resource across the tripartite group is expected to vary over time with the implementation timeframe and changes to the heat network market. To better reflect this, we have accounted for these factors in our analysis.

Implementation timeframe

To better reflect when the different elements of the regulation are expected to be implemented, the costs associated with specific regulatory activities have been profiled in line with the indicative timeframes set out in Table 4.

Table 4: Indicative HNMF timeframe

Year	Activity
Year 1	Ofgem prepare to perform their functions under the HNMF, this includes starting market monitoring and processing some applications for authorisation and licensing.
Year 2	Energy Ombudsman and Citizen Advice begin to perform their functions under the HNMF. All heat network suppliers in England and Wales will be required to apply for authorisation to operate in the market. Heat suppliers will have the option to apply for additional licensing for rights and powers. The regulator is expected to face recurring costs related to authorisation and licensing, market monitoring, regulatory development, data solution and IT, legal, training and development and other costs (HR, finance, information security, etc.).

[20] Civil Service median salaries by grade, 2019 <link>
[21] RPC guidance on implementation costs, 2019 <link>
For simplicity, wage costs have been set constant across the appraisal period.

Year	Activity
Year 3	All heat suppliers in scope of the HNMF will be expected to comply with the framework requirements. The regulator is expected to face additional costs related to compliance and enforcement activities, including auditing, as well as the recurring costs highlighted above.

Market growth

To meet the government's net-zero ambition, the heat network market is expected to grow significantly. However, the rate at which the market grows is highly uncertain as it will be dependent on several external factors, including supply-led factors and consumer demand. In addition, how the market structure is expected to evolve over time is also uncertain.

Therefore, we have used a range of illustrative growth scenarios to estimate how the market could grow over time, based on the available evidence.

Starting from the current heat network deployment estimate provided in Section A, we have assumed a linear growth rate up to 2050. This is a simplifying assumption; in practice, the annual growth may not be linear and could fluctuate over time.

Table 5: Estimated heat network deployment under different growth scenarios

Heat network deployment	2050 (TWh)	Annual growth rate %	Source
Low	14	0%	Heat networks experimental statistics
Central	46	4%	Heat network Zoning IA[22]
High	81	6%	CCC's Sixth carbon budget[23]

These growth rates have then been applied across the appraisal period and used to derive future profiles on the number of heat suppliers, heat networks and consumers. These profiles have then been applied to the regulatory activities which are expected to increase with these factors, to scale the expected resource requirements and therefore implied costs. The

[22] Heat Network Zoning consultation-stage IA, 2021. Please note that we have used the expected growth rate from the preferred option. There is considerable uncertainty around the expected growth in heat network deployment as heat network zoning policy is still at consultation stage. Therefore, this growth rate should be viewed as illustrative.
[23] CCC's 6th Carbon Budget report, 2020 <link >

regulatory activities which have been scaled are marked with an asterisk in Table 3. These scaling metrics are simplistic and in practice resource requirements may not scale linearly, due to improvements in efficiency or changes in the market.

Scenarios

To better reflect the possible range of cost estimates based on the available evidence and the key uncertainties, scenarios have been developed. A total of nine scenarios have been constructed for this analysis by varying assumptions on regulatory costs and market growth, however for conciseness only the upper and lower bound of the estimated costs and central scenarios are presented in this annex. The assumptions behind these scenarios are presented in the table below.

Table 6: Summary of assumptions used in scenario analysis

Scenario	Assumptions
Low scenario	**Regulatory activities:** Under this scenario, we have assumed minimal checks would be required for the authorisation process and a full check for licence applications. A lower level of market monitoring has also been assumed. In terms of compliance and enforcement activities, cases are expected to be more straightforward, and therefore, require a lower level of FTE. It has also been assumed that 250 audits would be conducted annually. Finally, we have also assumed a lower resource requirement for database support, legal, advocacy, ombudsman services and overheads. **Annual growth rate:** Under this scenario, we have assumed the size of the heat networks market stays constant at the current level, with heat networks providing 14TWh of UK heat demand.
Central scenario	**Regulatory activities:** Under this scenario, we have assumed a higher level of checks would be required for the authorisation process and a full check for licence applications. A central scenario of monitoring resource has also been assumed. In terms of compliance and enforcement activities, we have assumed that cases would require a central level of FTE, and that 500 audits would be conducted annually. We have also assumed a central resource requirement for database support, legal, advocacy, ombudsman services and overheads. **Annual growth rate:** Under this scenario, we have assumed the size of the heat networks market grows at 4% per annum, with heat networks providing 46TWh of UK heat demand by 2050.

Scenario	Assumptions
High scenario	**Regulatory activities:** Under this scenario, we have assumed full financial checks will be required for both authorisation and licence applications. A high level of market monitoring has also been assumed. In terms of compliance and enforcement activities, cases are assumed to be more complex, and therefore, require a higher level of FTE. It has also been assumed that 750 audits would be conducted annually. We have also assumed a high resource requirement for database support, legal, advocacy, ombudsman services and overheads. **Annual growth rate:** Under this scenario, we have assumed the size of the heat networks market grows at 6% per annum, with heat networks providing 81TWh of UK heat demand by 2050.

Results

Table 7: Annual recurring cost to regulator over the 10-year appraisal period (£m constant 2020 prices)

Year (£m)	1	2	3	4	5	6	7	8	9	10	10-year average
Low scenario	£0.7	£3.0	£4.8	£5.2	£5.2	£5.2	£5.2	£5.2	£5.2	£5.2	£4.5
Central scenario	£0.9	£3.5	£7.0	£7.2	£7.3	£7.4	£7.6	£7.7	£7.9	£8.1	£6.5
High scenario	£1.1	£4.4	£9.5	£9.8	£10.1	£10.4	£10.7	£11.0	£11.4	£11.8	£9.0

Note: Figures may not sum due to rounding

The results from these scenarios can be seen in table 7, this analysis suggest the average annual operating costs of heat networks regulation would be between £4.5 - £9m, with a central estimate of **£6.5m**.

Table 8: Comparison with costs in the first-stage impact assessment

	Total recurring regulation cost over 10-year appraisal period (undiscounted)
First-stage impact assessment (central)	£74.8 million[24]
Updated estimates (central)	£64.6 million

Note: Figures may not sum due to rounding

As can be seen in Table 8, the estimated regulation cost has reduced from £74.8m to £64.6m from the updates set out in this annex. The key reasons behind the refinements to our cost estimates are explained below:

- **Size of the heat networks market:** The first-stage IA assumes that around 13,000 heat networks would be in scope. This number has now been revised down to 10,200, due to reviewing how networks were identified in the data and policy development. This revision has reduced the regulatory costs estimate.
- **Market growth:** The updated estimates now account for implementation timeframe and market growth, whereas the first-stage IA estimates were based on the current market size only. This inclusion of market growth has increased the regulatory costs estimate.
- **Tripartite regulatory costs:** The updated estimates now include advocacy costs from Citizen Advice and ombudsman costs from the Energy Ombudsman. This has increased the regulatory costs estimate.
- **Revised assumptions:** The updated estimates also reflect refined assumptions from discussion with the tripartite group and from engagement with key stakeholders.

Taken together, the net impact of these factors results in a reduction of regulation costs by around £10 million across the 10-year appraisal period, as the lower number of networks estimated to be in scope outweighs the effect of adding Citizens Advice and Energy Ombudsman costs and scaling costs over time in line with market growth.

Costs socialisation analysis

This section provides estimates of the potential impact of the three cost recovery options considered. The bill impact is compared against a counterfactual scenario whereby heat

[24] To make the costs comparable, the first-stage IA cost estimate has been undiscounted from £62.6 million Heat Network Market Framework, first-stage IA, 2019, table A43, pg. 49 <link>

network regulation costs are recovered from heat network consumers only. The four cost recovery options considered are listed below:

- **Option A (counterfactual):** Spread regulatory costs across heat network bills only
- **Option B:** Spread costs across heat network and gas bills
- **Option C (preferred option):** Spread costs across heat network, gas, and electricity bills
- **Option D:** Spread costs across heat network bills and government part-funding

To estimate the average potential bill impact under different cost recovery options, Ofgem and Citizens Advice's annual regulatory costs are divided by the number of consumers captured under a given option.

For this analysis, it is assumed that heat network, gas, and electricity suppliers pass 100% of the cost of regulation through to their entire consumer base.

Energy Ombudsman costs are expected to be recovered directly through fees from heat suppliers and therefore have not been included in the cost socialisation analysis below.

This analysis aims to provide respondents with a scale of the average impact per consumer of the options considered. The table below summarises the annual cost of regulation and the number of consumers in the heat network, gas, and electricity markets. The total regulatory cost and number of energy consumers presented in Table 9 is also assumed to remain constant in this analysis. In practice, the overall size of the energy market is expected to change over time to reflect factors such as population growth.

For simplicity, only the workings are set out for the 10-year annual average cost from the central scenario presented in Table 7, in order to provide a sense of the impact under the different cost recovery options. The result under the preferred option for all three scenarios is presented in Chart 1.

Table 9: Estimated annual cost of regulation and size of markets

	Heat networks[25]	Gas	Electricity	Total
Regulatory costs (£m)	5.9 (Excluding EO)	72[26]		78
Consumers (million)	0.6[27]	24[28]	31[29]	56

Table 10: Estimated implication of socialising costs – cost per consumer across the energy sectors

Markets	A) Heat network	B) Heat network & Gas	C) Heat networks, Gas & Electricity	D) Exchequer funding
Heat networks	£10.30	£1.50	£1.40	£1.30
Gas	£1.30	£1.50	£1.40	£1.30
Electricity	£1.30	£1.30	£1.40	£1.30

The result of this analysis on the different cost recovery options are summarised in Table 10 and discussed in more detail below:

[25] This estimate represents the 10-year average of ongoing costs to Ofgem and Citizens Advice under the central scenario and the number of heat networks consumers scales with market growth and will therefore differ from table 2. **This cost estimate excludes Energy Ombudsman costs which is estimated to be around £0.5m per annum under the central scenario (10-year average)**

[26] Ofgem's Licence fee income, 2019-20, <link>

[27] The number of heat network customers have been estimated based on OPSS data and the central growth scenario. It is presented as an average across the 10-year appraisal period.

[28] Regional and local authority gas consumption statistics,2020, <link>

[29] Regional and local authority electricity consumption statistics, 2020, <link>

Option A – Heat networks only (counterfactual): Heat network consumers are estimated to face a cost of around £10.30 annually, whereas gas and electricity consumers would both continue to pay significantly less, estimated at £1.30 annually.[30]

Option B – Heat networks and gas: Heat network & gas consumers would both pay £1.50 annually. Relative to Option A this corresponds to a decrease of around £8.80 for heat network consumers and an increase of £0.20 for gas consumers. There would be no impact on electricity consumers.

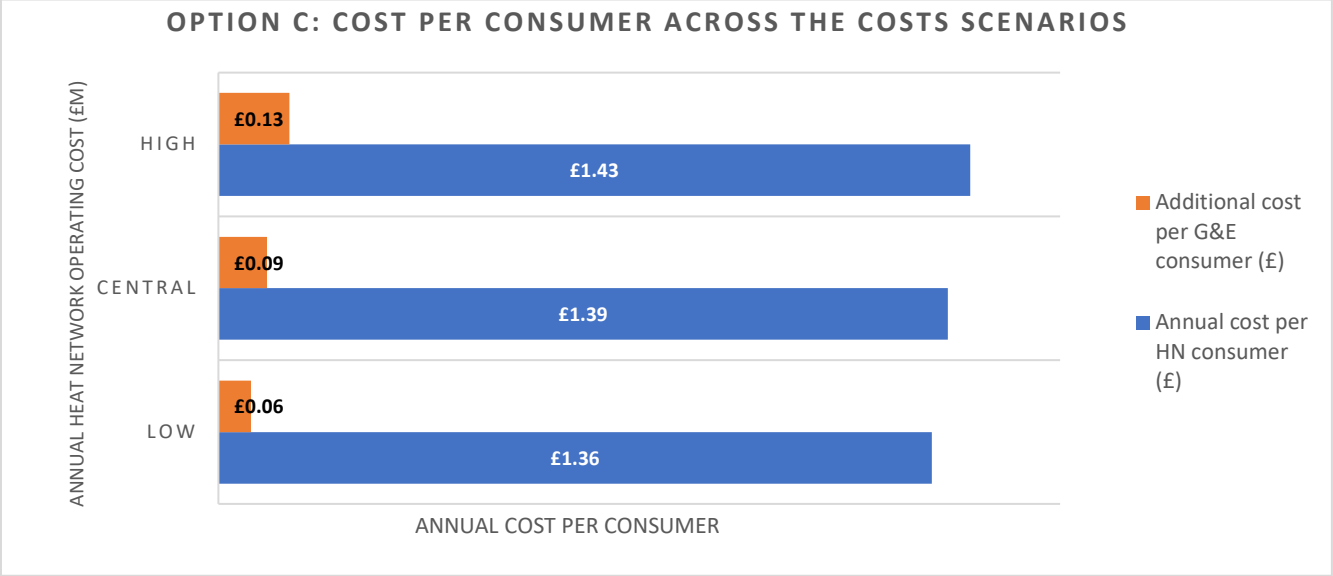
Option C – Heat network, gas, and electricity (preferred option): The average consumer level impact would be equal across all markets at £1.40; relative to Option A this corresponds to a decrease of £8.90 for heat network consumers and an increase of £0.10 for gas and electricity consumers.

Option D – Exchequer funding: Under this option the average consumer-level impact would also be equal across all markets at £1.30. This is slightly lower than Option C as it assumes sufficient funds come from the exchequer such that the cost per consumer is comparable across the energy markets. This corresponds to average annual exchequer funding of around £5.6m.

As discussed in the main document, we consider Option C of socialising across heat network, gas, and electricity consumers to be the most desirable option. As well as ensuring that heat network, gas and electricity consumers pay the same amount for the same level of protection, it also brings the benefit of aligning with Ofgem's existing cost recovery regime for gas and electricity licensees.

[30]Please note that Ofgem does not publish its cost on a per consumer basis, so these estimates have been calculated by BEIS and the approach has been agreed with Ofgem.

Chart 1: Annual cost per heat network consumer and additional cost per gas and electricity consumers under Option C



Note: Figures have been unrounded to show variation in costs across the scenarios.

Chart 1 shows the impact of a change in annual heat network regulation cost on cost per consumer under option C where regulation costs are socialised across the three markets under all scenarios. Across the 10-year appraisal period the average annual heat network regulation cost per consumer is expected to be between £1.36 –£1.43 which corresponds to an increase for gas and electricity consumers by an additional £0.06-£0.13.

Key uncertainties and limitations

The analysis presented in the annex provides an indicative cost estimate of regulating the heat network market and a sense of the average cost per consumer under different cost recovery options. However, there are several key uncertainties which should be considered alongside these results:

- **Stage of policy development:** There is considerable uncertainty associated with the final scope and approach to regulation, due to the policy being at primary legislation phase. There is inherent uncertainty in regulating a new market, for which it is difficult to find appropriate comparisons. Secondly, most of the details of the regulation will be defined at the secondary legislation stage.
- **Size of the heat networks market:** These cost estimates use inputs from the Heat Metering and Billing Regulations dataset, which contains data from network level notifications. Since this data was not collected for these purposes, several assumptions have been made to derive the number of heat suppliers, networks and consumers in scope. In addition, this data is self-reported and was collected in 2017, and hence may not reflect the number of heat networks operating now.

- **Estimated compliance and enforcement cases:** Linked to the points above, there is currently insufficient information to robustly estimate the future regulatory case load for the regulated heat networks market. Therefore, we have used the gas and electricity markets as a proxy. In practice the case load could vary significantly depending on how regulation is implemented and the response from the market. This is mitigated partially through the development of scenarios. However, significant uncertainty remains.
- **Market structure:** In addition to the size of the market, it is uncertain how the structure of the market may change over time. As the heat networks market grows it is possible that there could be consolidation as the market matures. This could mean that although the heat networks market may grow in terms of consumers, the number of entities in the market may contract, which could lead to regulatory efficiencies. However, larger heat suppliers can also add to the size and complexity of cases, therefore the net impact is uncertain.
- **Cost recovery:** Several simplifying assumptions have been made to provide indicative consumer-level cost impacts. The estimates represent the average annual cost per consumer over the appraisal period. This is sufficient to provide an indication of the impact of different cost recovery options considered in the consultation. In practice, costs may not be recovered evenly across all consumers. However, the difference between options is still expected to be at a similar order of magnitude given the size of the gas and electricity consumer base.

Summary and next steps

Given the data limitations resulting from the HNMF being at primary legislation stage, we have sought to monetise the impacts of cost socialisation as far as possible to inform respondents on the potential scale of impacts associated with the proposed options. In future impact assessments, we will conduct a cost-benefit analysis, including a quantitative assessment of potential benefits of regulation and conduct sensitivity analysis on the key uncertainties highlighted above.

As with any consultation stage analysis, the impact estimates are indicative and intended to provide a basis for further exploration of the likely real impact of the proposals. The response to this consultation will be used to refine the analysis presented in this annex.

This consultation is available from: www.gov.uk/government/consultations/recovering-the-costs-of-heat-networks-regulation

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