

The background of the cover is a photograph of a large, ornate metal safe door. The door is closed, showing a series of vertical bars or ribs that are highly decorative, with intricate scrollwork and patterns. The lighting is dramatic, with strong highlights and deep shadows, emphasizing the texture and form of the metal.

Preparing to decommission the GB gas distribution system

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Key Messages

Reaching the UK's 2050 net zero target requires transitioning the majority of homes from natural gas cooking and heating to a low-carbon alternative. Electrification is likely to be the most cost-effective pathway, necessitating the decommissioning of large portions of the gas network. This briefing reviews current plans for gas network decommissioning and the extent to which the industry, regulator, and government are preparing for the consequences of declining gas demand.

The key conclusion from this review is that there remain significant unanswered questions about how this transition will be managed and funded, and how the regulatory framework for the gas distribution network will need to be changed. The longer action to resolve these questions is delayed, the less time there will be to address these issues before the 2050 net zero deadline. Without adequate planning, full impact of these costs could land on a dwindling number of vulnerable gas customers who cannot afford to electrify.

Planning is currently underway for the next gas distribution network price control, which will cover the period from April 2026 to March 2031. Within this period, there is an opportunity to integrate more detailed preparations for declining gas demand and eventual decommissioning of parts of the network. The analysis in this briefing leads to six recommendations:

- **Review the regulatory framework.** The government's review of Ofgem's mandate and remit should revisit the regulator's purpose in the context of the energy transition. It could be prudent to enable Ofgem to modify future price control methodologies to better integrate the costs and wider implications of decommissioning. This could also include asking gas network companies to develop plans for disconnection and decommissioning.
- **Provide more guidance to Ofgem.** The government could also provide more direction to Ofgem about decommissioning planning, e.g. by enabling Ofgem to create a network decommissioning fund.
- **Use the next gas network price control.** Ofgem has an opportunity to scrutinise the gas distributors' business plans for the next price control to assess their preparation for potential reductions in demand during the next price control, and over the longer-term.
- **Estimate decommissioning costs, and who could pay them.** The government and Ofgem should work with industry to develop detailed estimates of decommissioning costs and examine options for how these costs could be paid for. This includes the implications of different stakeholder groups bearing these costs.
- **Review experience from other energy infrastructures.** To inform this assessment of costs, the government and Ofgem could review the experience of how decommissioning of other energy infrastructures such as nuclear power, coal mines, and oil and gas platforms is financed, and draw lessons for gas network decommissioning.
- **Lead public discussions about decommissioning.** The government could also be more proactive about increasing awareness of the need to transition from gas heating and the potential for gas network decommissioning – both with industry stakeholders and with the wider public.

Background

Decarbonising household heating is essential to meeting the United Kingdom's 2050 net zero target. Less than [5% of heating](#) comes from low carbon sources, while around [21 million homes](#) are heated by natural gas delivered via the country's gas network, contributing to [18% of the country's annual emissions](#). Decarbonising heating has been identified as one of the biggest obstacles to reaching net zero given the scale of change needed and the number of households affected.

The government has not yet made a final determination on how precisely heating will be decarbonised, but the [Department for Energy Security and Net Zero](#) (DESNZ) has targeted installing 600,000 heat pumps per year by 2028. Modelling by the [UK Energy Research Centre](#) (UKERC) has shown electrification through heat pumps and heat networks to be the most cost-effective near-term method. [DESNZ](#) has stated electrification will be the "primary means of decarbonisation" this decade, with [government](#) confirming "most properties will ultimately switch to heat pumps." This evidence suggests vast sections of the gas distribution network will need to be decommissioned in the coming decades.

Despite the scale of this issue and the impact it will have on households, there has been very little publicity about the need for decommissioning the gas network and a lack of analysis about the steps required for this change. In Great Britain, the Office of Gas and Electricity Markets (Ofgem) and DESNZ have begun thinking about how to prepare for this transition, but the extent of these efforts is unknown, and the findings are not public.

Additionally, there are significant questions surrounding the strategic planning needed for decommissioning, and little is known about the timeline or costs of the transition. An [Arup](#) report suggested decommissioning could cost between £46-74 billion, even if significant portions of the network are retained for hydrogen transmission. The longer planning for this change is delayed, the less time there will be to fund the transition, and the greater the likelihood that these costs will be recovered through gas bills borne by a dwindling customer base.

This Policy Brief aims to summarise current progress towards developing an approach to decommissioning and make recommendations for next steps in this transition.

Methodology

This briefing is based on a UCL MSc dissertation assessing the current progress towards decommissioning the GB gas network. Thematic analysis was used to analyse publicly available documents related to decommissioning, including government reports, Ofgem publications, and a selection of heating-related Parliamentary Select Committee inquiries. Annual reports and business plans from the four GB gas distributors (SGN, Cadent Gas, Northern Gas Networks, Wales & West Utilities) were also analysed. Finally, semi-structured interviews with key representatives of government and climate-related organisations provided supplementary information.

This analysis is divided into four primary areas of consideration: the role of regulation, the timeline for decommissioning, the costs of the transition, and who might bear them.

Key Results

Regulation

Despite its ambitious targets for heat pump deployment, DESNZ has done little to publicly acknowledge decommissioning, saying [in 2023](#) that it had only a “limited understanding of the costs and feasibility of decommissioning.” More [recently](#), the organisation stated that decommissioning is something that must be “assessed and appropriately prepared for.”

In contrast to DESNZ, [Ofgem](#) has begun to publicly plan for potential decommissioning, both by identifying re-opener funds¹ within its price control that could fund disconnection and by proposing to accelerate depreciation of the network’s regulatory asset value. Yet Ofgem determined that it could not implement any decommissioning plans until the government delivered clear guidance. This lack of alignment between DESNZ and Ofgem contributes to ongoing uncertainty for the industry, with [Wales & West Utilities](#) asking the government to provide guidance on heat decarbonisation as soon as possible. [Northern Gas Networks](#), meanwhile, continues to operate under a business-as-usual approach, demonstrating a growing division in the positions of the gas network companies.

One key element of this transition will be determining whether the gas network is de-energised systematically or on a home-by-home basis. Disconnections are currently ad hoc, but given regional variations in net zero timelines, some regions of GB are likely to be ready for disconnection earlier than others. There is the potential for scale economies if a systematic approach is undertaken, reducing the overall costs of transition. It is not clear who would lead such planning, however.

Ultimately, this discussion raises broader questions about the regulatory system’s ongoing suitability. Ofgem’s price control is designed to ensure the continued delivery of gas to customers. To what degree is this system, and regulated competition more broadly, suitable for an industry in managed decline? A recent report by [UKERC](#) suggested that retaining the current regulatory system could necessitate a fragmented decommissioning process. As [DESNZ](#) revisits Ofgem’s remit and mandate, accounting for how the gas system is likely to evolve seems increasingly necessary.

Timeline

While several thousand households disconnect from the gas network each year, [Ofgem](#) maintains that “systematic” disconnection will not occur until after 2031. If a comprehensive disconnection program started in the early 2030s, this date might still be consistent with achieving net zero. Given current progress, however, some industry insiders are pessimistic about the speed of disconnection, suggesting instead that widespread decommissioning before the 2060s or 2070s would be unlikely.

One factor affecting the speed of transition is the gas distributors’ actions. All have worked to highlight the ongoing importance of their assets, with [Cadent Gas](#) stating that its “network will be required beyond 2050.” [SGN](#) maintains that no part of its network can be de-energised before 2050 without harming consumers. All four distributors have also engaged in advocating for hydrogen heating, as this would enable continued use of their networks. All but one hydrogen heating trial has since failed. The government is expected to make clear

its stance on hydrogen heating in 2025, which could shed more light on the speed with which decommissioning might proceed.

Costs

Estimated Costs: Thus far, only [Arup](#) has provided a comprehensive estimate of disconnection and de-energisation costs, ranging from £46-74 billion based on the extent of the network retained for hydrogen distribution. These figures show the scale of the problem. What they do not include, however, is the current regulatory asset value of the distribution network, estimated to reach £4 billion in 2050 if all infrastructure investments in the network stop in 2026. The distributors plan to continue investing in their networks until at least 2031, meaning this figure is expected to increase rapidly. As many of these investments have been deemed necessary by the Health and Safety Executive, a broader assessment of the minimum level of maintenance necessary for safety purposes will likely be required before the rate of new investment can be reduced.

Precedent: Decommissioning is a necessary step for some other energy infrastructures, which could provide useful lessons for gas network decommissioning. In line with the “polluter pays principle,” developers and/or operators of oil and gas drilling sites have a statutory duty to decommission their assets once they are no longer in use. There is also an independent regulator, overseen by DESNZ, responsible for ensuring this work is conducted appropriately.

Nuclear plants commissioned today must establish decommissioning funds prior to the building of these assets, but the government covers the decommissioning costs for older plants where these funds were not established – or have been used for other purposes. Unlike in nuclear or oil and gas, operators of coal mines are only responsible if their assets cause damage to private property. Rather than compensating owners for this damage, they are responsible for returning the assets to their state prior to any damage. Where no current coal mining license exists, the government bears responsibility for this remediation work.

These three cases illustrate that when private owners are given suitable notice to begin collecting funds for decommissioning, they often bear responsibility for decommissioning their assets. Where these costs were not originally factored into operation, however, the government often steps in to ensure this work is carried out safely.

Who Could Pay?

In discussing who might pay for decommissioning the gas network, [Ofgem](#) has proposed a range of options including: “government/taxpayers, investors, a smaller number of consumers who remain on the network in future, current customer while the user base remains at its peak, [and] third-party entities who purchase assets for repurposing.” Each of these options needs to be assessed carefully:

Taxpayers: [Northern Gas Networks](#) anticipates decommissioning costs will be “funded by regulatory or other public funding sources.” The government’s support in other areas of the net zero transition potentially sets a precedent for this. Following Denmark’s example, there have been some suggestions the government should [renationalise](#) the gas network, enabling systematic and planned decommissioning. The recent discourse about renationalisation of rail, water, and steel highlights a broader discussion

concerning the role of private companies in infrastructure sectors. The risk of this approach is that government-funded decommissioning could require significant tax increases.

Gas Network Investors: Investors in the gas network could take responsibility for transition costs. Due to the current regulatory structure, however, these investors expect to generate consistent profits and could ask for higher returns to offset stranding risk, driving up consumer costs. Recouping funds from this group would thus require a delicate balance to ensure continued delivery of gas whilst minimising the impact on customer bills.

Remaining Gas Customers: Once the system is de-energised, the remaining customers could be charged the costs of decommissioning. However, as addressed by [Sustainability First](#), the last customers on the system are likely to be those least able to transition and therefore unable to bear the full costs of decommissioning. The government might be forced to intervene in such a reality regardless, and likely at a higher cost than if it were involved earlier in the transition.

Current Gas Customers: Customers could begin paying for decommissioning now. The rationale is that, if these charges begin while the network is still at its peak size and level of use, the costs will be spread over the largest customer base possible. The challenge, however, is that gas bills remain elevated above historical averages and are not expected to decline in the near term. Discussions about bill rebalancing between gas and electricity could lead to further increases in gas bills, leaving little room for decommissioning fees. While this approach would encourage households to electrify, disconnections could accelerate quickly, resulting in the situation outlined in “Remaining Gas Customers.”

Future Investors: Over the past 20 years, the distribution network’s iron mains have been almost entirely replaced by plastic piping. These pipes might be repurposed, perhaps to hold hydrogen or fibre optic cables. There is significant uncertainty about what the residual value of this network could be. Forcing investors who purchase these assets to bear the full costs of decommissioning could make purchasing the network unattractive, leaving customers and/or the government to pay for decommissioning.

There is another option not raised by Ofgem, which is that these costs be spread across all energy customers, an approach [SGN](#) has recently championed. This strategy would mitigate the risk of a dwindling user base but would be regressive, unlike general taxation. Some combination of the options above might also be possible.

Conclusion and Recommendations

1. **Review the regulatory framework.** The government is currently consulting on Ofgem’s role, making this an opportune moment to assess how the regulatory system may need to change to enable net zero. This assessment should include whether the current price control approach is still suitable with a declining customer base, and how any changes to this system might impact customers, both today and in future. The government should also assess whether legislative change to Ofgem’s remit is required.
 - The government could consider how it might enable Ofgem to begin overseeing the phase-out of parts of the network and what actions might be considered low/no regret. This might include asking the gas distributors to develop specific

plans for disconnection and enabling a discussion between Ofgem and the distributors on what a feasible timeline for decommissioning could be.

2. **Provide more guidance to Ofgem.** Until Ofgem receives greater guidance, further progress towards decommissioning is likely to remain limited and hypothetical. [DESNZ](#) has indicated it will issue greater guidance on the use of hydrogen for heating in 2025. It could also use this moment to deliver explicit guidance to Ofgem on decommissioning, enabling concrete planning to begin, including for a decommissioning fund.
 - Managed gas decommissioning could reduce costs by limiting infrastructure investments sooner and providing more time to assess how the industry's workers could be deployed in new industries. The sooner action can be taken, the more likely it becomes that heat decarbonisation helps to meet the 2050 net zero target.
3. **Use the next gas network price control.** Ofgem has left a series of re-openers in place that could be used to begin funding the costs of de-energisation as soon as approved by the government, which has been encouraged by [Cadent Gas](#). Even if the government does not provide Ofgem with greater clarity, there are still steps the regulator can take to prepare for this transition.
 - Ofgem should pay close attention to the language in the business plans published by the gas distributors in December 2024. These demonstrate a considerable range of perspectives about the extent to which distributors are considering the potential for decommissioning, thus providing helpful clues on how quickly the distributors could be mobilised.
4. **Estimate decommissioning costs and who could pay them.** Understanding what decommissioning could cost and who could pay for it is essential to continued planning for this transition. While gas distributors like [SGN](#) have begun providing estimates for these costs, the government should undertake its own study.
 - The government should also explore the distributional effects of different stakeholders bearing these costs and generate a comprehensive plan for who could pay. The sooner this can be outlined, the greater the level of certainty for industry, Ofgem, and households. A clear plan could increase investor certainty in the gas network and help enable a smoother transition.
5. **Review experience from other energy infrastructures.** The treatment of nuclear power, coal mines, and oil and gas platforms at the end of their useful lives could provide valuable lessons for the handling of gas network decommissioning. A deeper examination of these industries' policies could provide an important evidence base for distributing the costs of decommissioning.
6. **Lead public discussions about decommissioning.** The government has committed to increasing education in electric technologies such as heat pumps, including by hiring the [Behavioural Insights Team](#) to design heat pump-related nudges. Yet 61% of consumers know only "a little" or less about the need to transition their heating systems, according to [DESNZ](#) surveys.
 - One of the major barriers in early hydrogen heating trials was a lack of consumer awareness of the need to transition. Heating systems are not often consciously considered by consumers, suggesting an educational campaign tied to the government's efforts on heat pumps could help. This could include expanding DESNZ surveys to include specific questions about awareness of gas network decommissioning, boiler replacement, and options for funding decommissioning.

¹ [Re-openers](#) are an uncertainty mechanism built into Ofgem's price control, allowing the regulator to adjust allowances, outputs, and delivery dates during a price control period if circumstances change.