We can't keep heating like this: A fairer deal for heat networks

BRIEFING PAPER

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Around 900,000 UK households are part of a heat network, sharing a single source of energy with other households. They have been hit hard by the current energy price crisis, and pose both a challenge and an opportunity to decarbonisation efforts. This paper summarises the existing state of heat networks and proposes additional measures the government could introduce to support households within them.

KEY POINTS

- 1 in 25 households is part of a heat network, and in 1 in 12 in social housing.
- Heat networks have been treated as business-to-business sales, and so members have not as much protection as other households:
    - In some cases, bills have increased 700%
    - This has hit the worst-off particularly hard – one pensioner in Lambeth who saw their heating and hot water bill increase from £700 to £3,500.
- Existing heat networks face three challenges:
    - Poor energy efficiency and high maintenance costs
    - Most networks are not metered, leading to excessive energy use and unnecessary costs
    - A lack of regulatory protection from Ofgem, with heat networks currently in line with housing service charges

RECOMMENDATIONS

- In order to secure a fairer deal for heat networks, the Government should:
    - Improve the bill support scheme, with more generous help, pegged to domestic energy prices, targeted help for schemes in deficit, and a cap on service charges
    - Accelerate the transition to metered networks, removing exemptions, increasing grant funding, and encouraging the uptake of support
    - Improve regulation, with a target for Ofgem to start regulation by April 2024, and incentives for heat networks to improve efficiency
    - Dismantle old networks, mandating operators to run feasibility studies and providing funding for households in dismantled networks to transition to heat pumps.

The latest government figures[1], based on 2014 data[2], estimated that 480,000 homes were on a heat network. We believe that this figure is now as high as 900,000 homes. This means 1 in 25 households are part of a heat network, a figure which doubles to 1 in 12 in the socially rented sector. Yet this group have been persistently neglected by the government in its efforts to mitigate the impact of the energy crisis. As a result, many households are seeing their bills rise dramatically, with increases up to 700% being reported. There are some encouraging signs that the Government is beginning to grasp the scale of the problem, and additional support is coming. Yet it is not enough – particularly for the least well off who are disproportionately affected. More fundamental change is needed – not just more money, but a regulatory overhaul – if heat networks are to operate in a fairer and more efficient manner. This paper summarises the existing state of heat networks and proposes additional measures the government could introduce to support households.

UP TO 900,000 HOUSEHOLDS ARE IN A HEAT NETWORK, SHARING AN ENERGY SOURCE WITH OTHER BUILDINGS

Heat networks are a small but growing part of energy supply. They connect multiple homes – and potentially industrial sites – to a single source of energy, which distributes heat through the different buildings. This approach has several advantages. Heat networks can link to a single source of low carbon energy, enabling low carbon solutions to be rolled out at scale with less disruption. Secondly, they can connect industrial and residential sites – utilising waste energy from energy creating activities, such as maintaining data centres, to heat homes. In addition, they can bulk purchase commercial energy passing on those savings to end users.

Currently around 900,000 households receive their heat from heat networks.[3] This is more than double the number of users 10 years ago, and likely to grow further. The government have made heat networks a key part of their net zero transition plans – proposing that up to 20% of total heat demand could come through heat networks.[4] Backing this up, the government has launched the Heat Networks Investment Project a £320 million fund providing some of the capital required to develop new heat networks.[5]

The quality of heat networks currently being installed, however, is in stark contrast to the quality of the existing stock.[6]

Figure 1: Proportion of properties within tenure in community heat networks[i]
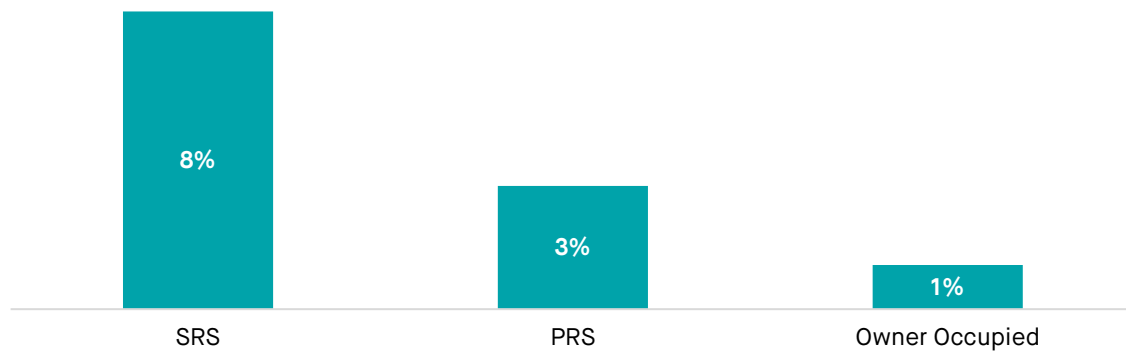
SRS   8%   PRS   3%   Owner Occupied   1%

Source: Department for Levelling Up, Housing & Communities, Energy Performance of Buildings Data: England and Wales

Heat Networks are present across the UK – but are disproportionately in London and the South East, which accounted for 43% of all heat networks in 2017.[7] The majority of heat networks were built prior to 1980. Peak construction occurred between 1967 and 1975 during the local authority led housing construction boom – when 105,000 heat networks were built. This means that networks are now likely to be in properties with the council or a housing association as the freeholder – and so in the socially rented sector (SRS), although this will also include properties bought under right to buy. Overall, 4% of properties are in a heat networks. However, this doubles in the SRS to 8% of homes. Of these tenants, around half will be benefit recipients.

Figure 2: Breakdown of properties in community heat networks by tenure

SRS 35%, PRS 18%, Owner Occupied 15%, NA 32%

■ SRS ■ PRS ■ Owner Occupied ■ NA
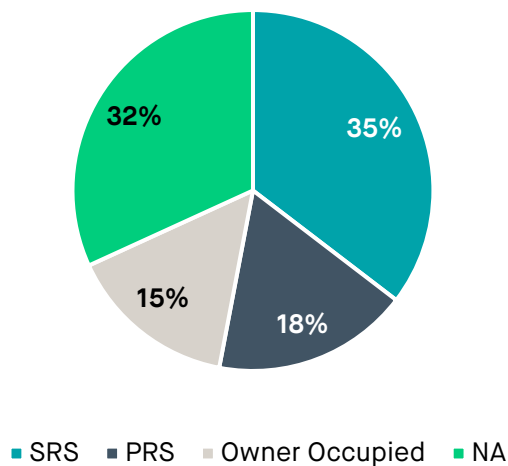
Note: NA refers to properties where the tenure was unknown at the lodgment date and where the tenure was unknown by the energy assessor. Source: Department for Levelling Up, Housing & Communities, Energy Performance of Buildings Data: England and Wales

[i] These percentages have been calculated using EPC open data. This is an experimental approach and subject to revision.

HEAT NETWORKS PRESENT THREE POLICY CHALLENGES

Existing heat networks face three key challenges: i) They have inconsistent quality and maintenance, ii) a significant proportion are unmetered and iii) they are poorly regulated. The combination of these three issues will causes immediate and long terms challenges for the Government.

Quality and maintenance

Heat networks are on average significantly less efficient than domestic boilers. Efficiency, in this context, refers to the proportion of fuel that gets to the intended output, such as a radiator. In a domestic home, boilers are typically around 85% efficient. In heat networks this drops to around 35-40% in older networks, and around 65% in newer ones.[8] To give access to heating to all households throughout the day, heat networks have to keep the central boiler on constantly. Furthermore, older networks often have poor insulation on their pipes, resulting in heat being lost between the central boiler and individual households. This is why when you go to a flat on an old heat network the corridors are often incredibly warm.

Maintenance costs are also much higher, driven by a combination of old networks and specialist technology. Their age means that networks break down more, and the specialist nature of heat networks mean these issues can then go unresolved for many weeks. Customers are left with poor service and higher costs, and maintenance costs can be upwards of £400 a year for each household.[9]

Metering

Unmetered networks distribute energy to properties for a fixed period of time a day. Properties can adjust their heat usage through their radiators. However, in unmetered networks this has no direct effect on the amount a household is charged – instead, households are charged a proportion of the total amount of energy used. Although only 57% of heat networks have no meter overall, this rises to 85% in the socially rented sector and 82% in the private rented sector.

A lack of metering limits the incentive for households to restrain their energy use. As a result, households consume at least 20% more energy than if they were using a metered connection – with some estimating that this could be as high as 50%.[10] Some councils present this as an upside of heat networks. Islington Council argues that consumers don't have to worry about turning on the heat and they get 16 hours each day – so the cost per hour of energy is lower than comparable properties.[11] Yet this argument takes no account of whether households *want or need* so much heating (let alone whether so much energy use is a good thing from an environmental or security perspective). For those that would prefer to use less energy (and to pay less in total), such arguments are rather like being force fed a dozen donuts and told you are getting a bargain because they were on offer.

Figure 3: Proportion of heat network that is metered
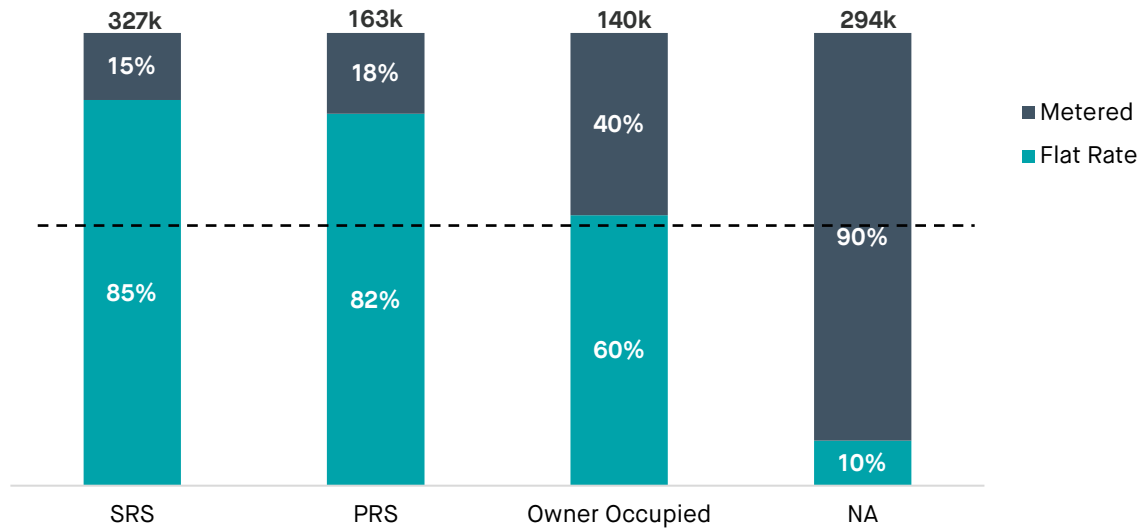
Source: Department for Levelling Up, Housing & Communities, Energy Performance of Buildings Data: England and Wales

Regulation

This upward pressure on energy bills is felt more keenly due to the poor regulation. Heat network operators have a monopoly over the energy supplied to households. The limited competitive pressures mean that regulation is crucial. However, heat networks are not currently regulated by Ofgem. Instead, they are regulated in line with service charges. This means that landlords are required to collect costs from tenants and that any increase in cost must be passed on fully to tenants. There is no incentive to purchase energy at cheap prices or to increase the efficiency of its networks.

There is some existing support for households. Government can require organisations receiving grants to sign up with the Heat Trust. This provides crucial oversight, supporting tenants when quality standards are low – such as when outages occur. Ombudsman services can provide additional consumer protection to households. However, from a customer perspective it is unclear where to get support – with heat networks falling between the energy and housing ombudsman.[ii] In addition, all current oversight is significantly limited as it fails to challenge fundamental problems around metering, efficiency, and effective procurement. Households are also ultimately responsible for covering the costs of the overall heat network so when the Heat Trust does impose fines for low quality, the households still end up paying in the long run.

[ii] If the housing is owned by a Housing Association or Local Authority it is the responsibility of the housing ombudsman otherwise it is the energy ombudsman.

THE GOVERNMENT RESPONSE TO THE ENERGY CRISIS HAS BEEN INADEQUATE FOR THOSE IN HEAT NETWORKS

When the energy crisis hit this moved a system that was ineffective to breaking point. Households in heat networks did not receive the same energy bill support as other consumers. Under the Energy Price Guarantee, energy consumer energy bills were capped at £2,500 for a typical household.[12] Yet heat networks were not included as their energy is purchased on a business-to-business basis and then distributed to consumers later. Heat networks instead received support through the Energy Bill Relief Scheme.[13] This aimed to limit the cost of commercial energy through subsidy – and then mandated that this reduction of cost was passed onto the end consumers. However, the scheme failed to limit the commercial cost of energy to the intended level. This left commercial energy prices above domestic energy prices.[iii] In addition, it is not clear that these have been passed on fully, with tenants potentially mounting a legal challenge against providers for high prices.[14]

Households were initially insulated from this rise in prices. Heat networks which purchased energy at a fixed rate for a 1-2 year period were able to get through last winter without the facing higher costs. The majority of these fixed terms ran out in April this year. Households also typically pay for their energy upfront through their service charge on a billing cycle from April to April. It is therefore only now that households are seeing the impact of increased energy costs reflected in their bills.

They are facing massive increases. For those lucky households that live in heat networks where the energy was purchased at a fixed rate, the increase is around 100%. For others though price rises can be 500%, with some reporting increases as high as 700%.[15] This is because the charge this year must not only cover the rise in costs this year but the significant losses that were made in the previous year.

The costs are going to disproportionately fall on the most vulnerable. SRS tenants are the most obviously in need of support and account for the majority of households in unmetered networks. Households must pay the heating element of the service charge – irrespective of whether they are on benefits. The 50% of tenants in the SRS on benefits will in particular struggle to pay for this from Universal Credit. The Heat Trust found a case of a pensioner on universal credit in Lambeth receiving an increase in their heating and hot water cost from £700 one year to £3,500 the next. It is simply not feasible this will be paid, resulting in increased pressure on other bills – such as rent – as tenants fall into arrears.

PRS tenants are facing similar challenges. Although landlords are ultimately responsible for paying the service charge, they must reclaim increased costs from tenants the following year.

[iii] After accounting for the efficiency of boilers

Leaseholders may be able to weather the increase better, but many are already facing severe financial pressures. 1.4 million households will have rising mortgages[16] and may not be able to absorb additional costs. Furthermore, leaseholders who purchased their properties through right to buy will likely have lower annual income and will be less able to manage higher service charges.

Support is needed urgently.

THE GOVERNMENT RECOGNISES THE ISSUE BUT IS NOT DOING ENOUGH

The Government has been active in addressing the issues facing heat networks.

Firstly, the Government has recently announced additional subsidies to decrease the cost of energy on heat networks.[17] This will amount to around £300 million in support. This aims to keep prices of energy to c.8p per kWh – significantly below current costs of around 15-20p per kWh. This subsidy will be retrospectively applied from April, allowing heat networks to keep annual service charges down.

Secondly, the government has placed pressure on heat networks to transition to metered connections. The Heat Network Metering and Billing Regulations (2014)[18] require all heat network operators to introduce metering where it is deemed viable from 2020.[iv] The government has introduced additional funding to support operators, who are able to bid into a £32 million fund[19] to upgrade their heat networks. In addition, there is the £320 million fund open to applications to new and current heat networks seeking to connect to renewable sources of energy.[20]

Finally, the Energy Bill currently making its way through parliament proposes to transfer regulation for heat networks to Ofgem. This would come into place from 2024-2025. Potential powers could include:

- Requiring providers to procure energy at competitive prices,
- Setting minimum standards for the energy efficiency of boilers
- Introducing fines where these are not met.

None of these, though, address the immediate challenges that households will face this year.

The proposed subsidy, although welcome, is not sufficient and maintains the disparity to domestic energy customers. The subsidy was set assuming that domestic energy prices would be around 12p, and that heat network efficiency was close to 65%. However, domestic energy costs are now c.10p/kWh for gas and boiler efficiency is often far lower than 65%.[21] The subsidy also does not require networks to rebill customers so, although there is the promise to reimburse customers in the future, many are still left facing significant bills now.

[iv] As defined by whether the energy savings from meters outweigh the cost of implementing them

Crucially, the subsidy also does not account for the large deficits for networks which did not lock in energy prices. Customers in such schemes will still have to pick up the bill for last year's increase in costs.

Secondly, there are too many ways that existing heat networks can delay introducing meters. The existing legislation exempts all networks where leaseholders account for more than 10% of all homes. This will rule out a significant number of networks in London, where 55% of networks are based.[22] In addition, the heat metering bill required operators to do an initial feasibility study in 2020. Networks that were viable had to transition to metered networks whilst those that failed the feasibility test did not – at least until another feasibility test to be carried out in 2025. Given the poor maintenance and out of date installation methods there were high costs associated with introducing meters and so many metered networks were unviable.

However, since then energy prices have more than doubled.[23] This presumably means that the number of networks would be deemed viable under feasibility tests undertaken now will have shifted significantly. The Heat Network (Metering and Billing Regulations) 2014, though, place no immediate pressure on operators to change.[24] They also face no immediate economic pressure as higher costs are passed to consumers unable to switch. The £32 million HNES fund to fund the transition will also be insufficient to for all heat networks to move away from fixed networks.

Finally, legislation to introduce Ofgem as a regulator by 2025 leaves a significant gap in the meantime with limited consumer protection and few incentives for operators to increase efficiency.

POLICY RECOMMENDATIONS

Improve the bill support scheme

- **Increase support**: The level of government bill support should be pegged to domestic energy prices such that when domestic energy prices fall the scheme will ensure that commercial prices in heat networks fall by an equivalent amount. In addition, the support should lower the assumption of average efficiency for heat networks from 65% to 50% – reflecting the current performance of networks.
- **Targeted support for deficit schemes**: Schemes that did not lock in their prices last year need urgent help to clear past deficits – avoiding burdening customers this year. The government should selectively increase funding to heat networks in deficit.
- **Service Charge cap**: The increase in the heating element of service charges should be capped at a maximum of 100%. This will remove the extreme cases of bill increases for tenants.
- **Service Charge reissue**: Service charges and bills to customers should be reissued. This will reduce anxiety around increased costs – and also mean that any individuals leaving a property is not unfairly billed for costs this year that never emerged. In addition, it will reduce admin fees on service charges which often are a fixed percentage of total costs.

Accelerate the transition to metered networks

- **Remove exemptions:** Exemptions from requirements on networks to introduce metering should be removed. Furthermore, all networks should have to resubmit their feasibility studies for estates which were not viable to be moved onto meters. These should use the existing feasibility studies with updated energy prices, rather than repeating the full process again, and have to be completed by the end of summer.

- **Increase funding:** The existing £32 million grant is not enough to cover all heat networks. The full £320 million heat network investment fund should be made available to operators to introduce metering. Alternatively a cross-departmental fund from DWP, DLUHC and DESNZ should be used to top up the £32 million. The government is currently spending £300 million on direct subsidies to energy costs. This in contrast would quickly drive energy efficiency whilst lowering household bills – and lower the need for future government support.

- **Encourage uptake of grant:** To encourage usage, the proportion of grant that can be used on any project should decrease in proportion to the time taken for operator to set out their plans for metering reform. Local authorities will have to make up for the additional cost of upgrading the heat network. Where local authorities are not the operator then the government could instead impose fines on the directors for late implementation. This would avoid costs ultimately landing on households.

Improve regulation

- **Speed up the introduction of regulation**: Set a target for Ofgem to start regulation by April 2024. This will bring crucial oversight to the sector. If this is delayed, then all networks should have to sign up to the Heat Trust.

- **Introduce incentives on heat networks to improve**: As discussed there are currently limited incentives for heat networks to increase efficiency or procure energy effectively. Early regulation should focus on requiring minimum standards on quality – either defined by energy efficiency or by costs per dwelling. The regulator should also monitor energy procurement to ensure that networks are getting the best prices for households.

Dismantle old networks

- **Disconnection feasibility analysis**: Some networks may be too old to introduce metering. Lack of maintenance and old buildings make it expensive to upgrade the network more generally. These networks will be unable to meet new quality standards – saddling households with high costs in permanently inefficient networks. The government should instead mandate that operators have to run a feasibility study on whether networks are operationally feasible. Where they are not government should prioritise the dismantling of these networks.[v]

- **Heat pumps**: Households in dismantled networks would have access to grant funding to introduce alternative carbon efficient measures such as Heat Pumps. This will have the co-benefit of accelerating the transition to new technologies.

The Government's current approach is on course to deliver a crisis for the 900,000 households in heat networks. Implementing to right policies can head off that crisis and ensure that those consumers are protected from the immediate pressure on heat networks, while also offering longer term support for the transition to net zero.

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