

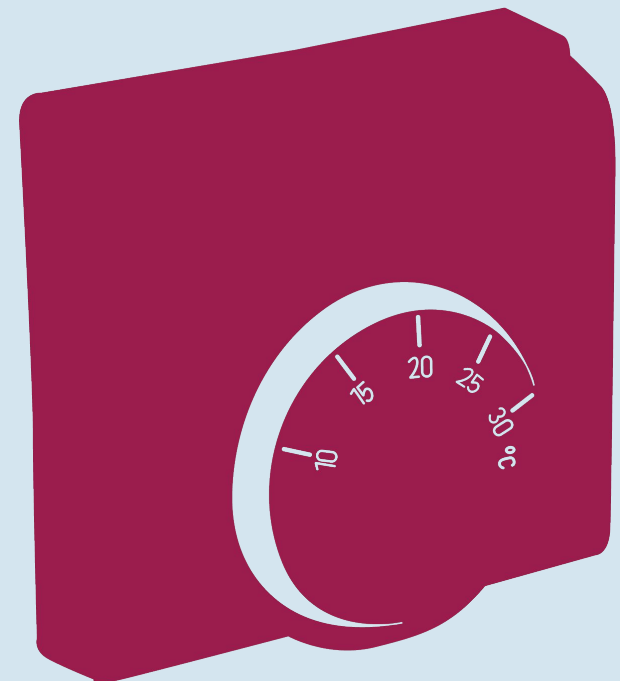
Keeping warm: the future of heat

Policy paper - July 2019



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What we want

By December 2019



The government should establish an independent commission to determine the fairest way to pay for the energy transition, including the shift to low carbon heat



Government consultation on a fully costed plan to support the rollout of low-carbon heating systems



Government consultation on a detailed heat decarbonisation strategy

By July 2022



Preparation for the low-carbon heat transition is underway and being implemented



Ofgem has carried out a review of gas network charging arrangements to ensure they are fit for the future, in a similar manner to the ongoing electricity charging reviews

3



Legislation in the Energy White Paper to extend Ofgem's remit to include heat networks



Heat networks are regulated by Ofgem



Legislation in the Energy White Paper to establish a statutory consumer advocate for heat



A statutory consumer advocate for heat networks has been established



The government should consult on clear pathway for energy efficiency support for all homes post-2022



New policies for improving energy efficiency have been implemented and are functioning well

What's the problem?

It is widely acknowledged that we need to begin to decarbonise the heat we use - but there is still no UK-wide strategy for how we will do it. Changing the way we heat our buildings will be a fundamental transition for the vast majority of homes and businesses. Some of these changes will be intrusive - requiring alterations to the fabric of buildings, interruptions to energy supply and new technologies to get used to in the way we keep warm and cook.

Heating and hot water are together responsible for around 20% of UK greenhouse gas emissions¹. According to the Committee on Climate Change, these emissions must be “reduced by over 20% by 2030, with a near complete decarbonisation by 2050” if the UK is to meet its legal obligations under the 2008 Climate Change Act². On 12th June 2019, Prime Minister Theresa May announced that the UK will eradicate its net contribution to climate change by 2050, otherwise known as Net Zero³.

To date the majority of emissions reductions have come from the electricity generation sector. Whilst this has been a positive step toward meeting our carbon budgets, it is now time for other areas of our economy to decarbonise.

For a long time the decarbonisation of the way we heat our homes and businesses was put in the ‘too difficult box’ and largely ignored.

“There is still no serious plan for decarbonising UK heating systems and no large-scale trials have begun for either heat pumps or hydrogen.”

Net Zero, The Committee on Climate Change, May 2019

What's the problem?

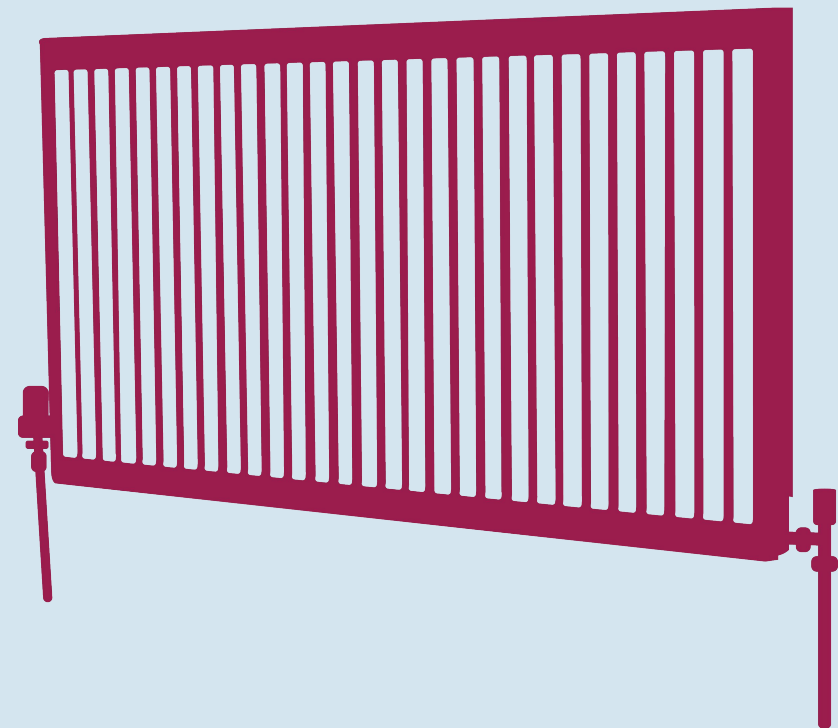
Over the last few years this issue has risen up the agenda. Government has begun to consider the tricky question of how we decarbonise the heating systems of over 28 million homes.

If consumers are not at the heart of these plans it will fail. The transition to low carbon heat will need to be managed and delivered an effective and efficient way. Regulation and consumer protection must be intrinsic to these plans: for example if 1 in 20 homes will be on a heat network by 2030⁴, people in these homes should expect and receive the same standards and levels of service as people who heat their homes using electricity or gas. They should have access to information and advice, as well as support if things go wrong.

The transition to low carbon heating in homes will not be cheap: it's going to add up to £10 billion a year to annual heating costs in the net-zero scenarios⁵. Making homes more energy efficient will be crucial to offset some of these costs. It will require significant coordination across Government, with well defined targets and actions.

Without a strategy for decarbonising heat in homes it is unclear what should happen and when, as well as who should pay and how.

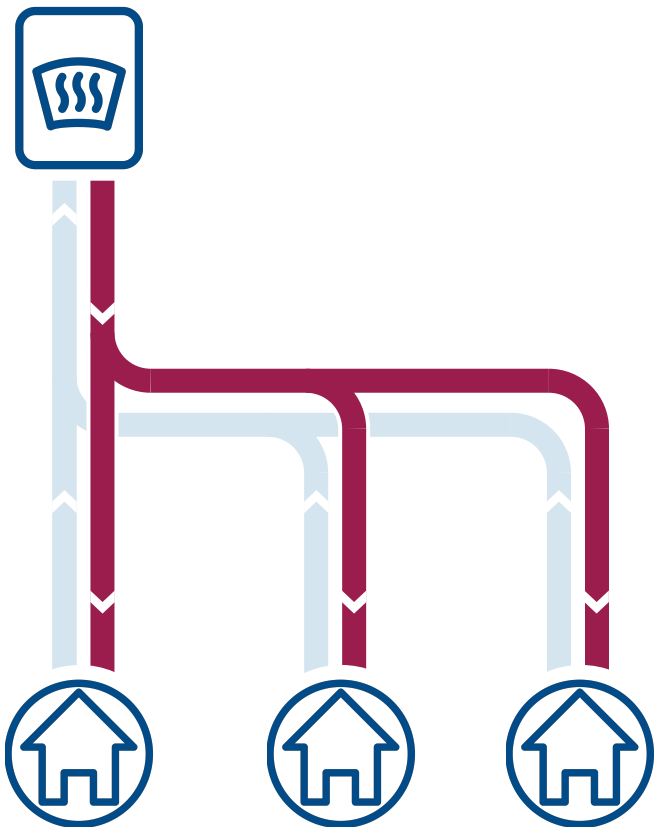
These questions must be answered to avoid inefficient, and potentially more expensive, decisions being taken.



What is a heat network?

Heat networks are systems where heat is delivered directly to the home, normally in the form of heated water. Unlike the gas and electricity market, heat networks are currently unregulated.

In Great Britain today, 450,000-500,000 people live on a heat network. The proportion of households on a heat network is expected to increase to 1 in 20 by 2030.



- 1 An energy centre produces heat. This could be through fossil fuels, like gas or oil, renewable sources, like biomass or a heat pump. Some heat networks capture the heat produced by industrial processes or electricity generation.
- 2 Heat in the form of hot water is delivered through a local network of insulated pipes. Another set of pipes returns cooler water to the energy centre.
- 3 A heat exchanger transfers the heat from the heat network to the network of pipes in the home. This is used to heat radiators and provide hot water, for example for baths and showers.

Our roadmap for heat

1

Consult on a detailed Heat Decarbonisation Strategy

Any undue delays to the decarbonisation of the way we heat our homes and businesses risk making the UK's climate targets more difficult and expensive to meet.

Major decisions need to be made in the mid 2020s about the future of the gas grid that will require comprehensive analysis, consultation and debate. The UK government and Ofgem, which sets the power and gas network price controls, must also agree now a toolkit to support local decision-making around heat, given the heating solution for off gas grid homes versus homes close to industrial clusters which could soon produce hydrogen could be very different.

The decarbonisation of heat will require localised solutions and different parts of the country will need to respond differently. Therefore, it is critical that the Government consider now who pays, when and how to avoid the unfair distribution of costs.



2

Heat networks should be regulated

In July 2018, the Competition and Markets Authority (CMA), recommended that heat markets should be regulated. Heat network customers are frequently unaware of what they are paying or what their bills cover and are unable to switch heat suppliers to get a fairer deal. The development of effective regulation that will allow some element of competition to be injected into what is otherwise a monopoly market will be critical to further rollout of heat networks.

Contacts we receive through our consumer service show that heat network consumers are experiencing varying levels of consumer detriment due to a lack of regulation in the sector. The most common contacts we receive are around resolving billing errors, understanding standing charges and seeking information and advice.

Having a regulated heat market was considered essential for most heat network customers who responded to our research conducted last year⁶. With 1 in 20 households expected to be on a heat network by 2030, we need a regulatory regime that is fit for purpose. The Government must bring the heat networks sector under regulation by bringing forward legislation in the forthcoming Energy White Paper to extend Ofgem's remit in this area.

3

There should be a statutory consumer advocate for heat network consumers

Heat is an essential service, yet currently, consumers experiencing problems with their heat network have no clear path for advice or redress.

Research undertaken by Citizens Advice has shown that heat network consumers in vulnerable circumstances believe they are getting a worse deal and are unable to do anything to change it⁷. In order for heat consumers to have an independent voice and to benefit from the full protections, advice and rights of other areas of the energy market, a statutory consumer advocate must be established.

The Government should introduce primary legislation to extend the Consumers, Estate Agents and Redress Act 2007 to provide statutory protection for consumers who are supplied by heat networks. This should include representation, research and the provision of tailored information and advice as well as the investigation of complaints from vulnerable designated consumers or those relating to disconnection.

Energy efficiency is crucial to plans for the future of heat

Making homes energy efficient is a precondition of moving to low carbon heating systems.

For new homes, the government must proceed at pace with the promised 2019 consultation into Building Regulations if it to deliver its ambition to halve the emissions of new buildings by 2030⁸. In particular, the update should include consequential improvements for existing homes to capitalise on opportunities to improve the energy efficiency of the existing housing stock.

Given that 90% of homes that will still be inhabited in 2050 are already built today, the government must also introduce policies to retrofit existing homes with appropriate energy efficiency measures. These are needed if the government is to meet its two strategic targets for energy efficiency for:

- all fuel poor homes reach EPC Band C by 2030
- all homes to reach EPC Band C by 2035

As well as to ensure homes are ready for new low-carbon heating systems.

To deliver the volume of energy efficiency improvements needed will require a step change in activity. According to the National Infrastructure Commission (NIC), 21,000 improvements a week need to be installed, to meet the 2035 target, whereas only 9,000 per week are installed today⁹.

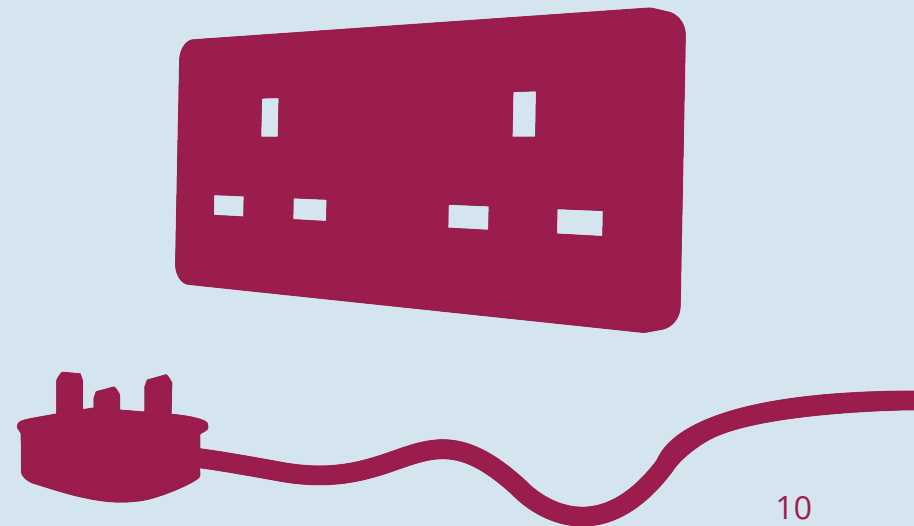
Lack of trust can be a significant barrier to the uptake of energy efficiency measures. A 2015 study for Citizens Advice found a patchwork of different protections exist for domestic consumers as they seek to heat and insulate their homes¹¹. The Each Home Counts Quality mark should address some of these issues, but more progress is needed to give consumers confidence. As new energy technologies and services are introduced, protections can vary greatly and can be difficult for people to navigate who to go to for help and support when things go wrong.

We recommend the government carries out a review of the protections for people purchasing different types of energy products and services currently on the market, and ensure they are aligned, simplified and potentially made mandatory, so people can confidently engage in the future energy market.

4

Energy efficiency solutions for different housing types

- **For low income households in fuel poverty**, England is the only nation without a public fuel poverty scheme alongside the Energy Company Obligation (ECO). The government needs to increase funding from the £640m provided annually under ECO to the £1.2bn a year to 2030 recommended by the NIC. To overcome the immediate shortfall in funding and prepare the ground for future schemes, the government should introduce the Fuel Poverty Challenge Fund¹⁰.
- **For households not in fuel poverty**, there is an absence of effective policies to increase the installation of energy efficiency measures in England and Wales. The government must introduce cost-effective policies that encourage these households to improve the energy efficiency of their home. This includes Incentives, over and above bill savings, to motivate consumers to act, as well as better help towards the upfront cost of energy efficiency measures.
- **For privately-rented housing**, the government should progressively tighten the Minimum Energy Efficiency Standards (MEES) for landlords in England and Wales. From 1 April 2018, require landlords to bring their properties to EPC Band E or above. Government has set out its intention to tighten this over time. It must now put forward a timetable to deliver this. This should align with the Fuel Poverty target of Band C by 2030. It must also look to tighten the cost-cap for landlords, which means that around half of landlords in substandard properties will do not have to meet the minimum standard.



5

New homes must be ready for low carbon heat

We should not be building homes today that we expect to have to retrofit with energy efficiency measures within the next 10 years. Doing so will add an unnecessary cost to the net-zero carbon transition and potentially to those who can least afford to bear the burden. New homes built today should be made transition ready: built to a high standard of energy efficiency and be able to adapt to easily to low-carbon heating systems.

We welcome the new proposals announced by the Chancellor in the Spring Statement for a new Future Homes Standard that will deliver a “world-leading energy efficiency standard” and low-carbon heating for new homes by 2025¹². The original Zero Carbon Homes target provided a clear trajectory to deliver new homes with much higher levels of energy efficiency. The Fabric Energy Efficiency Standard (FEES) element of the overall standard would have delivered a 25% reduction in regulated emissions over and above the standards set out in the 2006 Part L building regulations¹³. A huge amount of research was undertaken by the Zero Carbon Hub to understand how higher levels of energy efficiency could be delivered.

Citizens Advice recommends the Government revisit this work, and ensure the new Future Homes Standard delivers the same level of energy efficiency improvement previously committed to in the Zero Carbon Homes target. In addition, the energy efficiency element of the Future Homes Standard should be adopted earlier than 2025 to ensure homes are ready for new, low-carbon heating technologies.

The 2020 update to Part L of the building regulations should set a clear trajectory for moving to homes being assessed for their operational (as-built) energy performance rather than their design energy performance. This will ensure that carbon savings are truly being made and that homes, and their heating systems are performing as intended. In addition, more stringent enforcement of Part L is needed to support higher levels of building performance.

Coordinate, incentivise and regulate to support the rollout of rollout of low-carbon heating systems

By 2050 over 90% of homes will need to have a low-carbon heating system of some form¹⁴. With a little over 30 years to transform over 30 million homes we need to act now to build up skills, supply chains and new energy service models as well as ramp up the number of low-carbon installations.

This means we need to make some choices today about the technologies we install and where we install them. Research and development to date suggests that heat networks are an efficient and cost-effective option for heat-dense areas. Heat networks can offer an immediate carbon-saving due to their higher efficiencies and that their central heating equipment can be replaced over time with lower carbon alternatives.

Heat pumps are another option identified by the Committee on Climate Change (CCC) as cost-effective in delivering low-carbon heat. But despite support via the Renewable Heat Incentive (RHI), take-up has been poor. Given some of the adaptation challenges heat pumps pose for consumers, further work is needed to explore to what extent hybrid heat pump systems (with a gas or LNG backup boiler) might be an interim measure for both on and off-gas consumers which would allow UK carbon budgets to be met.

The high upfront cost of heat pumps means that the RHI as currently structured is ineffective to mobilize greater take-up of heat pumps and hybrid systems. The scheme is due to close to new applicants in 2021 and in order to ensure existing skills are not lost and to support greater levels of installation of individual low-carbon heating systems it is critical that work begins on developing a credible successor.

Serious consideration should be given to the use of up-front capital grants as research suggests these are much more effective at driving uptake.

Analysis by the CCC found that:

rebalancing residential heat pump subsidies towards upfront payments can reduce the overall subsidy costs and potentially widen scheme access by addressing the upfront cost barrier¹⁵

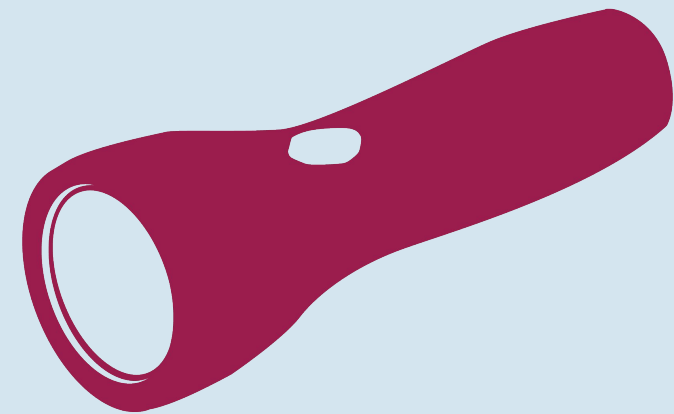
After calculating that it would cost the government £5.5 billion to support the heat pump deployment required to meet the 5th carbon budget, they found that nearly a billion pounds could be saved if consumers were instead offered a grant based on the cost of the heat pump minus the cost of a new oil boiler.

7

Ofgem should carry out a review of gas network charging arrangements to ensure they are fit for the future

In a net-zero world we will be moving from an energy system that heats our homes primarily with natural gas from our gas network to one which is much more diverse. The gas network may see a gradual decrease in the number of customers whom the costs of maintaining and operating the gas network can be spread across. This could have far-reaching consequences for the way in which costs are recovered for maintaining the network. We would want to avoid an outcome that results in low income or vulnerable consumers bearing a disproportionate cost for legacy gas infrastructure.

In order to protect customers from potentially rising costs Citizens Advice recommends Ofgem establish a wide-ranging gas network charging review which takes into account plausible scenarios for the future of the gas networks including the number of customers and options for cost recovery. The scenarios should include a consideration of the impact or inclusion of hydrogen networks within the charging regime.



Who pays?

Whatever route is taken to decarbonise heat it will be expensive. The CCC found that the costs of decarbonising heat are substantial at around 0.7% of GDP by 2050. This is also a major share of the total costs of decarbonisation (35-70%) which is estimated to be 1-2% of UK GDP by 2050¹⁶.

There are important questions, then, about who pays for heat decarbonisation. The government, responding to a recommendation by the Committee on Climate Change, has signalled that the Treasury will lead a review of how the costs of low carbon transition will be distributed, though the terms of reference for that review have not yet been published. It is essential that it is not simply an internal exercise, as the questions it will need to grapple with are not simply ones of economic efficiency - they also relate to public perceptions of fairness, and their understanding and willingness to make the changes needed to enable low carbon transition¹⁷.

Citizens Advice recommends the Treasury establish an independent commission to work through the challenges of the energy transition and provide recommendations to the Government on the way forward. It should be informed by the work of the Citizens' Assemblies initiated by six Parliamentary select committees.

Aside from the question of who pays, there is also a need to consider the timing of funding. To date, the high upfront cost and unfamiliarity with electric and hybrid heat pump technology has led to slow overall uptake, with just 18,000 installations in 2016 versus the estimated 30,000 minimum per year needed to 2020, and much faster deployment thereafter¹⁸. This is despite the support available through the taxpayer-funded Renewable Heat Incentive, which provides quarterly payments to cover the cost differential over seven years. Unsurprisingly, high up-front costs continue to deter less affluent consumers, just as they did for small scale low-carbon electricity generation under the Feed-in-Tariff scheme. And while third-party financing schemes have partly helped to democratise access to low-carbon heating systems, these schemes are complicated and have sometimes led to consumer detriment.

Difficult decisions will need to be made, and soon, about how best to fund the transition to a net-zero carbon future. It is crucial that this is managed through the development, and publication, of a clear heat decarbonisation strategy setting out unequivocally why this is needed - to tackle the most dangerous, long term and inevitable impacts of climate change.

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