

Raven-i

The End of Gas Heat Utilities Legislation

How New Legislation Can Help UK Heat Networks Form Successful Heat Utilities

With fuel poverty hitting crisis levels and new climate legislation on the way, the UK's days of gas heating are clearly numbered. This transition is driving the growth of more sustainable and affordable heat networks - creating lucrative opportunities to develop commercial heat utilities.

For most of us in the UK, gas heating is all we've ever known. Around 85% of UK homes rely on a gas boiler, driven by its historically cheap and abundant supply combined with well-established infrastructure. But while this fossil fuel has kept us warm, its near-ubiquitous nature has also locked a large share of our energy system into an expensive, highly polluting heat source.

Without immediate action, the situation will only get worse. Record gas prices have already driven millions of households into fuel poverty, while our net-zero target requires us to adopt heating with a far smaller carbon footprint. It's undeniable that solving these problems requires a bold vision and a lot of hard work. In fact, according to the Office of Budget Responsibility, *'...achieving Net Zero by 2050 in domestic heating is perhaps the greatest challenge of all the sector transitions'*.

But as we've proven time and time again, British ingenuity shines brightest when the odds seem stacked against us. While decarbonising our heating may seem daunting, it also creates lucrative opportunities to embrace greener, fairer, and more affordable solutions – such as district heat networks.

Heralding a New Era of Sustainable Heating

However you look at it, the writing is well and truly on the wall for natural gas. In 2021, the International Energy Agency stressed that no new gas boilers should be sold after 2025, and the UK's climate advisers recommend we ban all gas boilers by 2033 to minimise our contributions to climate change.

In response, England, Scotland, and Wales all plan to phase out gas boilers in the coming years, and heat networks are crucial to this transition. The Department for Energy Security and Net Zero previously estimated heat networks will need to supply around 20% of UK heating to reach Net Zero by 2050, based on connecting all public buildings in urban areas. However, more recent workings have found that achieving this goal will actually require heat networks to supply up to 60% of UK heating.



Figure 1: "UN City designed by 3XN in Copenhagen, Denmark is a great president for a sustainable buildings; with its vast solar panel-covered roof, seawater cooling system, and rain-water-flushed sanitation it is pushing to be energy producers rather than energy consumers." FORESIGHT Climate and Energy Business (2017) *A Big Green House*. Available at: <https://www.connect4climate.org/article/big-green-house-un-city-copenhagen> (Accessed: 19 August 2024).

This expanded role will create remarkable investment opportunities in the heating sector while reducing costs and emissions for end users. In the government's own words: *'Heat networks are vital to making Net Zero a reality in the UK. In high density urban areas, they are often the lowest cost, low carbon heating option'*.

The UK's New Green Heating Legislation

Our recent change in government has yielded the continuation of key climate policies and the realisation of some core pre-election promises. For example, Scotland's ban on household gas and oil heaters took effect on April 1st, 2024, meaning people building new homes must now install heating with no direct emissions, such as a heat pump or a heat network. This legislation is an important precursor to Scotland's anticipated ban on polluting gas boilers in all properties by 2028.

It's a similar story in England, where the Future Homes Standard comes into effect in 2025. It prohibits the installation of gas boilers in new houses, instead requiring low-carbon heating such as a heat pump or heat network. The standard aims to ensure England's new homes produce 75-80% fewer carbon emissions than those built under current regulations. In the next step, England and Wales aim to ban all new gas boilers in homes by 2035.

The new Labour government is also bringing several environmental pre-election promises to life. Of note is the upcoming launch of Great British Energy, a state-owned clean power company that aims to make energy cheaper and greener while creating new jobs. To support its decarbonisation goals, Labour has also repealed the UK's ban on onshore wind farms and plans to double our capacity to around 30GW by 2030. To further diminish our reliance on natural gas, the government announced it will not approve any new oil and gas exploration licenses in the North Sea.

Collectively, these moves send a clear message: while fossil fuels have been instrumental in the UK's past, we're committed to building a carbon-free future.

Key Changes to Heat Network Regulations

With heat networks primed for rapid growth, there are incoming changes to how they are governed and regulated. One key announcement is that from 2025, the Office of Gas and Electricity Markets (Ofgem) will become the official regulator of heat networks across Great Britain. This move aims to ensure heat network customers are protected by regulations and standards similar to those of electricity and gas customers.

In 2025, the Department for Energy Security and Net Zero will also introduce a Heat Network Technical Assurance Scheme (HNTAS) that mandates minimum technical standards for existing and new heat networks across Great Britain. The HNTAS will enhance the transparency of heat network performance and the accountability of companies involved in heat network planning, construction, management, and maintenance.

From Local Heat Networks to Large-Scale Heat Utilities

Regardless of the political landscape, our transition from gas heating to more sustainable technologies like heat networks will continue gaining momentum. However, to build a thriving low-carbon economy, we need to think of heat like any other utility.

Today, most UK heat networks are small-scale residential 'block heating' systems supplied by localised combined heat and power plants, heat pumps, or gas or electric boilers. But as they increase in size and number, heat networks can become investable assets with operation lifespans of up to 40 years. In the next step, they can be aggregated into large-scale 'heat utilities' that utilise low-cost heat from various renewable and industrial sources.

In many ways, heat utilities are similar to those that already supply our electricity, water, and gas. Their responsibilities include:

- procuring low-cost heat for consumers
- identifying and securing renewable and waste heat
- negotiating the price and volume of purchased heat
- transporting and storing excess heat
- meeting strict delivery timelines to local (often municipality-run) heat networks

Heat utilities are a new concept in the UK, but they've been highly successful (and profitable) in Denmark. There, they are run as professional corporate enterprises, formed either by a conglomerate of local heat networks or private companies in charge of other utilities such as electricity, gas, or water. Heat networks have been a bedrock of Denmark's national energy system for decades, with around 70% of Danish buildings connected to low-cost, low-carbon district heating.

Heat Utilities: A Pathway to a Green Heating Future

With record energy costs, upcoming legislation, and our net-zero target all spelling the end for natural gas, now is the UK's chance to pioneer a sustainable national heating system. By investing in district heat networks, we can continue our proud heritage of building visionary infrastructure while making heating greener and cheaper for millions of homes.

Following in Denmark's footsteps, we can also develop clusters of heat networks into professional, large-scale heat utilities. This approach can unlock a range of renewable and industrial heat sources, stimulate new investment, bolster our energy security, and fulfil our climate ambitions. But perhaps most importantly, embracing this sustainable path forward can help us make fuel poverty - just like natural gas itself - a relic of the past.



Figure 2: Woodland bluebells, Cornwall, England. Photo Credit: Paul Nash

Future-proofing Heat. For Good.



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