THE NEW STATESMAN

The Report

The Missing Utility Delivering heat ownership into local hands

Martin McCluskey MP Rolling out the benefits of heat networks nationwide

Simon Kerr Why regional heat utilities can be seen as devolution in practice

The Bee Network Turning heat into a shared public service for Manchester

Sponsored by

EnergiRaven

A view from parliament



Martin McCluskey MP
Minister for Local Energy and Jobs

"I want to see the benefits of heat networks rolled out across the country"

Again this winter, we're seeing the effects of exposure to fossil fuels.

It is the government's duty to tackle this structural problem through every means at our disposal. Growth of our heat network industry is part of that commitment.

Heat networks can provide the lowest-cost, low-carbon solution for heating, reducing our reliance on imported fossil fuels by harnessing local, recoverable heat from a range of already-existing sources.

Following Russia's invasion of Ukraine, gas prices in the UK were on track to rise by over 200 per cent. By comparison, customers on heat networks in Denmark saw prices increase by just 18 per cent.

Heat networks can also generate heat at off-peak times and then store it, cutting costs and emissions. This flexibility, and the use of energy that would otherwise go to waste, makes heat networks a powerful tool for boosting energy resilience.

Developing these infrastructure projects also supports ambitions to reindustrialise the UK, bringing skilled jobs to communities across the whole country.

One of my very first visits upon joining DESNZ was to see the construction of a district heat network in Cardiff. I spoke to the engineers, met trainees preparing to enter the workforce doing highly technical work in clean energy, and saw how this industry is boosting the local economy.

I've been an advocate ever since. I want to see these benefits rolled out across the country, and the industry has expanded steadily during my year at the department.

We have confirmed funding allocations of more than £200m to 20 low-carbon heat network projects, from the creation of a new strategic heat main in London, which could serve up to a million residents and create up to 2,000 high-quality jobs, to town-centre schemes in Sunderland, Stockport, Oldham and Milton Keynes.

We will be supporting the sector in three ways. First, providing funding set out in the Warm Homes Plan to get new low-carbon heat networks off the ground, as well as improving existing ones. Devolution of the Warm Homes Fund will give mayors, local government and communities greater autonomy to shape how this funding is invested, supporting wider plans for local energy, housing, skills, infrastructure and economic growth.

Second, the work of regulating this growing sector, benefitting industry and investors, as well as ensuring consumers enjoy the same protections as they would using gas or electricity.

Third, backing heat network zoning, putting devolution into action at a scale that effectively serves dense urban areas and offers an attractive option to customers and investors alike.

At least ten of the biggest English towns and cities will get government support to establish their own heat network zones, with more to follow in the future.

By 2035 we want heat networks to meet 7 per cent of heat demand in England – doubling the current level. By 2050, we want them providing a fifth of all heat.

This is ambitious, but it can be done, and the rewards on offer are great. A system where energy bills are affordable and stay that way. Where regions are empowered to make the right decisions for their area. And where heat demand is met through local, secure and affordable sources, with lower emissions and less reliance on the whims of global gas markets. ●

HOUSE OF COMMONS/LAURIE NOBLE

A view from industry



Simon Kerr
Head of heat networks, EnergiRaven

"Regional heat utilities are energy devolution in practice"

An affordable home should remain affordable to heat throughout its life, with household budgets better protected from the geopolitical shocks that have seen distant conflicts turn into unaffordable winters.

As fossil heating retreats, we need to ask what will replace the gas utility, both beneath our streets and on our bills.

The electricity grid will do much of that work, although electrifying transport, heating and industry will require substantial investment in generation, cables and connections. Rather than build the transition around hopes of cheap electricity, we should make better use of the energy we already buy, produce and currently waste.

Denmark's own heat networks owe more to pragmatism than to the designs of clairvoyant tree-huggers. After the oil shocks of the 1970s, the Danes hedged their bets with both gas grids and heat networks, driven by cost and security. In urban areas, heat networks have proved more resilient and often cheaper because they can draw on different heat sources. That flexibility is now proving its worth.

The contrast became particularly clear during the energy crisis following Russia's invasion of Ukraine. Danish district-heating prices rose by 18 per cent, while UK domestic gas prices were on track to rise by over 200 per cent.

Both put pressure on household budgets, but on markedly different scales. Infrastructure beneath our streets helps determine how much of a distant shock reaches our bills.

A regional transmission utility buys heat and pipes it to networks across council boundaries. Greater upfront investment and coordination can deliver social and economic benefits for generations; the pipes remain useful as the machinery feeding them changes. A decision made today therefore need not dictate the source of a home's heat decades from now.

Heat networks let electricity do more than one job, as energy used by a data centre can also warm homes. Heat pumps lift recovered heat to the required temperature, while thermal stores save it for later and shift some electricity demand away from expensive, busy periods. This is what engineers call sector coupling, making each unit of energy go further.

These regional heat utilities are energy devolution in practice, giving local councils and communities a stake in how their heat is sourced and supplied. With the right powers and government-backed development finance, regions could organise energy security and decarbonisation collectively, sharing ownership and retaining benefits locally while lowering heating costs.

EnergiRaven proposes regional heat utilities under public stewardship, with majority public ownership and a duty to secure the lowest sustainable cost of heat. Commercial discipline and the cost-recovery principle would pay for maintenance and renewal, while transparent tariffs and effective redress would ensure that public purpose survives contact with the customer.

By starting where the economics are strongest, we can build an alternative to gas that complements the electricity system, earns its place in household budgets and keeps homes affordable through the winters ahead.

ENERGIRAVEN

Which opportunity created through regional heat networks most excites you?

From accelerating the energy transition to empowering communities, the promises are manifold



Tom Morrison
Liberal Democrat MP
for Cheadle

The opportunity that excites me most is the chance to take back control of how we heat our homes – and cut household bills while we do it.

When Putin invaded Ukraine, energy bills soared for families across Cheadle and Greater Manchester, exposing just how vulnerable we are to volatile international energy markets and events far beyond our control.

Regional heat networks can help change that. By working alongside existing technologies, we can capture valuable heat that would otherwise be wasted and pipe it directly into people's homes and businesses. It is a truly local, efficient and clean way to tackle our heating challenges.

It will mean lower, more stable bills, warmer homes and a serious cut in carbon dioxide emissions.

It also means creating skilled green jobs here in the north-west, supporting our local economy and building greater energy security within our own communities.

Stockport is already leading the way, demonstrating what can be achieved with local ambition and a clear commitment to a cleaner energy future.

As vice president of the Association for Decentralised Energy, I will keep pushing the government to give heat networks the investment, support and regulation they need to fulfil their potential.

Cleaner, cheaper, homegrown heat is within our reach. Let's seize this opportunity and make it a reality for communities across our region.



Søren Berg Lorenzen
Head of planning,
TVIS

Regional heat networks, such as those in Denmark's Triangle Area, offer significant opportunities to make better and more efficient use of available heat sources across an entire region.

These heat sources, including industrial waste heat and heat from combined heat and power (CHP) plants, can provide considerably more heat than can be used locally. However, by connecting a number of urban centres across a wider region through an interconnected network of district heating pipelines, the heat that is already available can be put to much better use. Costly investments in additional heat production capacity can be avoided, thereby lowering the overall cost of heating across the entire region.

And if surplus heat from industries, data centres, power stations, waste incineration plants and other facilities is not utilised, it will have to be cooled away anyway, ultimately ending up in the atmosphere or in nearby rivers or seas. By making effective use of it, we reduce the need to burn fossil fuels for heating purposes.

Connecting multiple urban centres to a variety of different heat sources greatly improves the overall security of heat supply. With proper and efficient load dispatching, lower heat prices can also be achieved for consumers throughout the region.

All in all, regional heat networks are a great example that when we join forces and work together across boundaries, we can create better solutions for all.



Dr Gemma Bone Dodds
Founder and chair,
Lothian Heat CIC

East Lothian has enormous amounts of current (and future planned) waste heat, while people are cold and suffering in their homes.

If the transition will be just, then success will be seeing East Lothian as a heat exporter connecting the region's energy resources alongside a meaningful role for communities in developing and owning them.

Excess industrial heat, renewable electricity from offshore wind and thermal storage, could serve local towns en route to Edinburgh, who will struggle to find abundant cheap heat for their needs within the city.

Our feasibility study estimated more than £900m in socio-economic benefits over 50 years compared with individual air-source heat pumps. It can also prevent curtailment of wind.

That gives us a strong reason to consider heat at regional scale and assess its value over the lifetime of the infrastructure. I believe that the benefits will pay for themselves more than twice over.

For this to happen, we, and other community organisations like ours, need development funding and partnerships with local councils and others such as GB Energy and the National Wealth Fund to bring together owners and decision-makers to participate in good design.

The opportunity is to build an essential service in which local people can shape investment, retain value and secure affordable heat for the long term and to ensure that no heat is wasted and no home is cold.



Peter Maagøe Petersen
Partner,
Viegand Maagøe

Regional heat networks are, for me, the obvious way to supply private households with cheap and sustainable heating.

Regional heat networks will allow for multiple heat providers to supply waste heat for the same grid, for example, power plants, waste incineration plants, industries and data centres. Such heat sources are very cheap and all wasted today.

While regional heat networks should be established and owned free of commercial interests, the operation of the networks should be a commercial energy market, where the cheapest waste heat source at any time will be granted access, thus securing the private households the cheapest possible heating year after year. Further, as energy prices are expected to be more volatile in the future, regional heat networks offer the opportunity to build heat supply from multiple and competing energy sources (electricity, waste, biomass). Finally, heat networks allow for storing energy from periods with low energy prices to periods with high energy prices, which will be a cornerstone in the future flexible energy system.

The big question is, of course, who should take the risk to establish such large-scale infrastructure projects? I always recommend to assess the full socio-economic cost:benefit ratio of such investments.

Such analysis will show that society has overwhelming gains and – therefore – should back the investments in public/private partnerships.

How a regional heat plan could transform Greater Manchester

By connecting heat network zones, the city can put discarded heat to work - warming homes and turning wasted energy into a shared public service

By Adam Juel Fabricius

Across Greater Manchester, useful heat leaves the baked-bean factory in Wigan, bakeries and data centres without ever reaching a radiator, while households pay to produce warmth all over again.

Bringing the two together is an infrastructure challenge that ought to appeal to a region with considerable experience of making connections work.

A neighbourhood heating scheme, like a bus route, becomes more useful when it belongs to a regional network. EnergiRaven's proposed Manchester Heat Highway, or Bee Network for Heat, would connect major regional heat sources to local heating networks serving homes and businesses.

The regional heat utility TVIS in Denmark shows what this can mean for customers. Owned by four councils, it buys heat from several local producers and supplies nine district heating companies, which look after their customers' needs and connections. TVIS's 2020 to 2025 comparison shows that heating costs in the four district-heating schemes assessed were lower and considerably more stable than those of individual boilers and heat pumps.

For 2025, the four schemes averaged the equivalent of approximately £1,470 a year for a standard Danish household, compared with £2,660 for an individual air-to-water heat pump. That is a difference of about £1,190 a year, or 45 per cent.

District heating was also around 40 per cent cheaper than gas. For a household struggling to afford warmth, those differences matter.

Resilience comes partly from having several sources and a professional buyer able to compare them. Industries gain a market for heat they would otherwise discard, incentivised to offer competitive prices when the utility has alternatives.

It can then buy from the most economical available sources, with stored heat and backup equipment keeping the service dependable.



Excess heat from existing and planned sources could meet 85 per cent of the city's household heating needs

Supply choice, backed by contracts that pass the benefit to customers, is what a regional heat main makes possible.

EnergiRaven analysis with Danish waste heat and transmission specialist Viegand Maagøe suggests that excess heat from existing and planned sources could meet around 85 per cent of Greater Manchester's household heating needs, with large heat pumps supplying the remaining 15 per cent. Electricity would still be needed to pump the water and raise its temperature, but using heat already being produced would reduce the energy consumed solely to heat buildings.

Greater Manchester currently spends approximately £1bn a year on gas, money that largely leaves the regional economy. The proposal could reduce spending and support energy security, local suppliers and infrastructure.

Modelled savings against today's gas and electric heating mix are £8.83bn over 20 years, with heat costs 38 per cent lower.

Local councils would own and operate the district networks serving homes and businesses. A separate transmission utility, jointly owned by the councils it supplies, would buy heat from different producers and deliver it to those local networks.

Heat can be transported over distance and is remarkably indifferent to borough boundaries. Its planners should look beyond them too. Heat network zones should become the building blocks of a connected system.

Social and affordable housing belongs in that plan from the outset, because an affordable rent is only part of the cost of living somewhere. New homes in these areas should be built to join the wider heat network, with a firm commitment to connect when it becomes available.

For the places supplying heat, the benefits could extend well beyond the income it brings.

Local firms could build and maintain the network, supporting skilled work and apprenticeships, while towns around the city would share in the value of supplying an essential regional service.

Industry would gain a lasting relationship with its neighbours through something as ordinary, and as necessary, as keeping their homes warm.

Edinburgh should also look beyond its city boundary. Industry in the Lothians could supply low-cost heat to the capital, helping to address heating bills and emissions while easing the challenge of finding space for individual heating equipment in dense streets and older buildings.

The Lothian Heat feasibility study already examines a regional network extending into Edinburgh. Connecting the city's customers with the region's heat suppliers could make the system more affordable for communities on both sides of the boundary.

London is already pursuing this regional logic through the London Strategic Heat Main. Led by Cory, it would carry recovered heat from its Riverside facilities in Belvedere to local heating networks across several boroughs.

London, Manchester, Edinburgh and other major UK cities should put these regional plans into practice. The resources differ from place to place; the task is to connect them so that heat now going to waste can find its way into local homes.

Adam Juel Fabricius is head of policy at EnergiRaven

BARDHOK NDOJI/SHUTTERSTOCK

Affordable Heat. For Good.

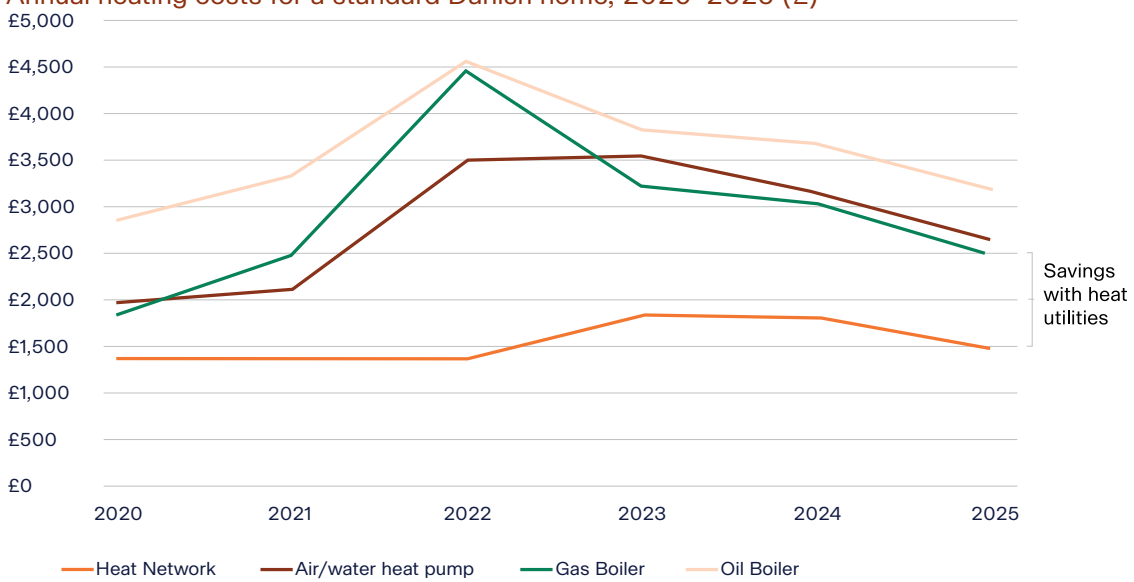
Affordable Heat.

In Denmark, homes served by district heating connected to TVIS, the multi-source heat transmission utility, had average heating costs in 2025 approximately 40% lower than gas boilers and 45% lower than individual air-to-water heat pumps. Their heating costs also remained relatively stable through the energy crisis following Russia's invasion of Ukraine.

Is it time Britain looked toward a different kind of energy infrastructure?

Lower heating costs. Greater energy resilience.

Annual heating costs for a standard Danish home, 2020–2025 (£)



Source: Adapted and restyled for clarity by EnergiRaven from information provided by TVIS, with costs converted from DKK to GBP. The district heating line represents a simple, unweighted average of the four municipal figures, including some networks not connected to TVIS.

EnergiRaven

Future-proofing heat. For good.