

Fuel Poverty Action response to BEIS consultation

Heat networks: ensuring sustained investment and protecting consumers

Q1. Do you agree that a heat networks market framework should support the use of low carbon heat sources? Please explain

Yes.

1. Your rationale for introducing heat networks is the need to decarbonise heat, as made clear in the ministerial foreword, executive summary, and “policy context” statement of this consultation document. We fully endorse that intention: mitigating climate change is the most urgent imperative of our time.

Therefore any heat networks approved from now on should be based on renewable energy sources, or at least designed to be convertible to renewable energy; this includes the appliances in homes and both internal and external pipes.

2. If it can't be done with at least the potential and likelihood of swift decarbonisation, the proposal to use a heat network at all must be reconsidered. It has been shown that costs can plummet where DH replaces electric heating, and that it can offer very good value for council tenants where it is subsidised, and we know of suppliers with well-designed, well-run DH schemes designed to produce warmth rather than profits. But we are concerned that the Clean Growth Strategy projection of 17% of heat demand in homes to be met by heat networks by 2050 is sometimes being regarded as a quota to be filled.

A thoroughly researched and publicly debated case must be made for DH in general and in specific situations where it is to be installed, comparing it to alternatives in relation to carbon emissions, air quality, reliability, overheating, use of space, and costs, present and future, including realistic provision for conversion to fossil free energy sources. Heat networks in practice have proved to be far from trouble free, and given what so many people have experienced, it is not reasonable to expect consumers to embrace, live with, and pay for, technology for which no convincing evidence or argument has yet been presented. Any such argument should be open to robust challenge and debate, to avoid a situation where a case is made on faulty information. The same, of course, should apply to other technologies, including gas boilers and electric heating as well as hydrogen, biogas and heat pumps. Without this there are not really any “low regret” options, although the people with the regrets may not be the government.

We are concerned that although you consider these other technologies, you do not even mention energy efficiency measures as an alternative way of decarbonising heat. You refer to it in passing (at 77) but the possibility of highly insulated new-build homes, or massively retrofitting insulation, does not seem to be integrated in your calculations.

3. Monitoring and effective sanctions to ensure that carbon targets are actually fulfilled are an absolutely vital part of this policy.

We have repeatedly seen green promises that look like a cynical add-on to get planning permission. In Myatts Field North in Lambeth, planned-for solar panels never materialised. At Pembroke Park in Hillingdon, we saw a biomass boiler installed which never worked properly and caused residents years of misery; it took a long struggle to get it replaced, and the system now runs (much better) on gas. In all of the places where boilers are oversized, pipework poorly insulated, or systems unbalanced, intrinsic inefficiencies mean that the projected carbon savings are unrealised.

We endorse London Energy Transformation Initiative's submission on decarbonising heat networks, and in particular the disclosure of energy use and efficiency data to ensure that networks in practice help deliver operational zero.

Sanctions are equally important to ensure that the intended carbon savings materialise in practice.

4. Public endorsement of green policies

In our work with residents on housing estates with heat networks, we find many people deeply suspicious that they are being forced to pay more than their neighbours, and money that they cannot afford, for something to benefit the climate. The recent [CMA Market Study](#) confirmed that this is true: where planning permission drives the choice of heat networks, there is "a risk that whilst the benefits of the heat network, such as carbon savings, accrue to society as a whole, the additional costs will be borne by the customers of heat networks through higher property prices or heating bills." (4.9)

The editorial in January's "Heat and the City" notes that the Committee on Climate Change "*reported that the public do not understand the need to move away from fossil fuelled (gas) systems. **How can politicians create the space for those decisions if voters do not support them? And can we afford to wait another five and half years to make them?***"

Recent [UKERC research](#) says that to win public support for decarbonisation might require not-for-profit utilities, since increasing the financial burden on the public without first addressing their concerns only stood to result in further distrust and could potentially jeopardise public support for the energy transition.

In any case, having presented heat networks as a carbon-saving technology, failure to bring carbon savings -- *and affordable prices as well* -- serves to increase [public cynicism about "green" policies](#), making it ever harder to bring about the transition that is so desperately needed.

5. Subsidies

To the degree that heat networks are designed for gas fired CHP, government financial support is subsidising the use of fossil fuels.

Q3. To what extent do you agree with our characterisation of demand risk?

Q4. How could government and industry address demand risk, especially connection risk and consumption risk?

We **strongly disagree** with your characterisation of demand risk and the proposed solutions to address it. We consider the two questions together below.

We understand the problem of competing with established utility networks where the investment was made decades ago and the customer base is huge, and the fact that the long-lived nature of heat networks increases uncertainty around future costs and revenue. You say, “As investors price these uncertainties into their investment decisions, this may lead to consumer costs being higher than they might need to be.”

The cost of financing networks does indeed put a crushing burden on many heat users. But we do not believe that that cost needs to be as high as it is, nor that it must be users who pay it, nor that the solution is for public money to effectively underwrite private investors’ risks as developers and supply companies, and subsidise both them and the providers of finance.

1. The risk is inflated by the fact that users cannot rely on a good, affordable service.

We do not believe you are taking into account how much risk is connected with the very poor service provided by many modern heat networks. If heat networks were indeed “a popular product” they should not require public finance to guarantee returns.

In much of Europe people are happy to be part of successful heat networks. In Aberdeen, where a heat network was started and residents were offered the choice of joining or not, everybody wanted in. In Shoreditch, Hackney, tenants fought for a heat network and won one in 2012, having witnessed how heating costs increased when a local communal system was replaced with individual gas boilers. In Myatts Field South, Lambeth, residents fought to keep the “communal” they had and loved (they lost it).

But while some people throughout the UK have a good experience, others live with constant outages of heating and hot water, bills that bear no relation to their usage, unbearable overheating, and horrendous tariffs and standing charges, among other problems. The [Task Force of stakeholders](#) convened by the DH industry’s trade body acknowledged the need for regulation of the industry, since heat networks are monopolies, which “*can lead to unreliable service, . . . poorly controlled and costly heating and . . . poor customer service*”. They recognised that for the industry to grow, “*customers need to have a consistently good experience, fair and transparent pricing, and an assurance that when things do go wrong they will receive effective and fair redress.*”

Instead, even with the backing of FPA and access to expert and influential bodies from ADE to BEIS, it is hard to get redress for the most basic problems.

At the same time, the bills many users face are clearly much higher than normal.

We have long been presenting to BEIS evidence of the totally unacceptable standards in the industry, via consultations, letters re individual estates, and in a series of meetings between affected residents and Guy Boulby and others in your offices. And we have since 2016 been putting to BEIS a proposal for cleaning up the industry’s reputation: public or private bodies must not be awarded contracts, funding, planning permission, or other support, if they have

failed to deliver in heat networks for which they are already responsible. See also below, Q12.

Regulation

Despite this being a consultation on “Ensuring Sustained Investment *and Protecting Consumers*” there are no questions about regulation and no mention of licensing. We understand that you plan to consider regulation further together with Ofgem. You propose that Ofgem take on regulation of heat alongside gas and electricity. We are not opposed to this but we want to note that there are important differences.

a. Heat network users have been very frustrated in trying to use existing mechanisms designed to mirror protections for gas and electricity customers: the Heat Trust and the Ombudsman. Heat network users are not just individual customers but residents of residential blocks and/or on housing estates, and many if not most of the problems they confront -- including the most intransigent problems -- affect the system, or large parts of it. It makes no sense for residents to be forced to seek redress individually for problems stemming from a generating centre, system balancing, or pipework, or from a contract between, for instance, an ESCo and a local authority. It does not work. The appropriate bodies to get a resolution are Tenants and Residents Associations. These, however, are not recognised in the process and in addition are not given the substantial support they need (including open information, support from technical experts, administrative support to record reported problems, and more). TRAs are also currently being progressively disempowered (eg losing use of community rooms) or replaced with unelected representatives handpicked by the landlord.

b. One of the worst problems with heat networks is reliability. We receive constant complaints about this, and all the many recent surveys have confirmed that outages are very significantly more common in heat networks than with gas or electric heating. Frequently, these outages are prolonged, lasting days, weeks or even months, and in some places design faults lead to a certain part of an estate being without hot water for months or even years. Even if outages are short, they may mean that, for instance, a resident can never get a shower in the morning before work, or an elderly person has no hot water when their carer comes, or residents are carrying hot water upstairs. This is truly unacceptable and there must be a remedy for it.

Outages can occur whatever the age of the system, but seem to be particularly common while an estate is still in its early stages, and new parts of the network are still being connected. There seems to be an assumption that such “teething problems” are less important because they are “temporary”. However, they can in some cases go on for years.

c. Compensation is designed for a situation where outages are relatively rare and under the Heat Trust do not kick in until the outage has passed 24 hours, or 12 hours in the case of multiple interruptions of service. This does not reflect the effect on residents’ lives of repeated short failures of heat or hot water, nor does it incentivise the heat supplier to do anything about it.

Finally, please note that although regulation is definitely better than no regulation, many gas and electric customers also have serious problems and find it difficult to get redress.

2. The cost is inflated by the way heat networks are financed, and by lack of expertise and control on the way they are designed and built. Resolving these issues is a fairer and more effective way to bring down costs to the customer than subsidising investors' risks.

a. Prices are a problem.

It has been shown that costs can plummet where District Heating (DH) replaces electric heating, and that it can offer very good value for council tenants where it is subsidised, and we know of suppliers with well-designed, well-run DH schemes designed to produce warmth rather than profits.

The BEIS survey found heat network consumers on average paying £100 less than people heating their homes in other ways. We are not entirely clear whether this is true for new heat networks or only for those built decades ago whose costs are often subsidised by social landlords. But in any case there is no disputing the fact that in some cases costs are extremely high, as documented for instance by Which and the CMA.

Bills are calculated taking into account not only the unit cost of producing the heat but the cost of maintaining the system, as well as billing and admin.

The inclusion of these costs is inappropriate for tenants who would not normally pay for a boiler or its maintenance. In addition, many tenants have good reason to believe that they are being taken for a ride by a heat supplier in a monopoly position. In 2018 one residents association at Stretford House, Manchester, challenged their prices and [won a 51% decrease](#) from Trafford Housing Trust. Not all residents are as well-equipped to take on their landlords, and they should not have to be.

Meanwhile for leaseholders and part-owners the unit cost of heat is often the least of their problems. They are subject to unexpected demands for tens of thousands of pounds to extend, replace, or (subject to legal battles) improve their heat network. Demands for tens of thousands of pounds each, on top of high standing charges for maintenance, go beyond what leaseholders can be expected to budget for and are not reasonable: freeholders and heat suppliers are in effect asking these individual householders to finance an infrastructure development in UK heating.

Even without these demands, standing charges can be exorbitant as they are intended to pay off the initial capital investment in the heat network, over a short period and at commercial finance rates: more than what it would cost to pay for the heat system if it were included in their mortgage, and much more than it would cost if it had been built with public funding financed at government borrowing rates.

b. Many solutions have been put forward, both technical and financial.

Organisations with relevant expertise have been putting forward solutions for years, which many customers are aware of and frustrated not to see in use.

On the technical front

The CMA's Heat Networks Market Study says, "a mechanism to enforce technical standards should be introduced which ensures that the networks are built, and operated, to a sufficiently high technical standard."

[District Heat Networks in the UK: Potential, Barriers and Opportunities](#) published in November 2018 by the Energy Technologies Institute offers a series of technical proposals, including one which they say can reduce HIU prices from £1500 to £200. Many heat customers take issue with the huge cost of HIUs in the UK – which is not an issue in other countries which use a different technology. So it is a source of great frustration when such proposals are not at the forefront of plans to reduce costs.

Similarly the size, temperature, and balancing of systems, and the competence of those chosen to install and maintain them, can make enormous difference to costs. You will also be aware of all the literature showing how smart data optimisation can dramatically reduce costs and improve energy efficiencies in heat networks.

On the financial side

The problems of high costs due to demand risk are a result of heat networks being planned and financed privately, using very expensive capital. A small pool of users is expected to finance an infrastructure revolution, by paying back capital expenditure at a rate much higher than mortgage rates or government borrowing costs, and within a short time frame.

"Heat and the City", the District Energy Vanguard's Newsletter has for years been pressing for an alternative approach. For instance the [November 2016](#) edition which looks at municipal or community ownership, and highlights the need for a major rethink at both national and municipal level. The most recent editorial considers "hard choices": "Without some form of direction these technologies are left to fight for market share in our liberalised energy market where consumer choice is paramount. This will not achieve the optimum carbon outcome within the thirty odd years left to hit the 80% target. It will require Government intervention. So says CCC Chief Executive [Chris Stark](#). It will be hard and politically fraught for politicians to overturn the 30 year old consensus on the liberalised energy market. But the scale of the challenge we face requires *"answers that the market unfettered will not deliver"*.

In our view the ideal would be for networks to be rolled out with public finance on a non-profit basis in a world where public finances are not starved of resources and decisions on the

best form of energy on any site are made in consultation with residents on the basis of cost, local resources, local environment including pollution, and climate change.

We are a long way from that now. But so long as DH is financed as it is at present, we do not believe that regulation, the adoption of CIBSE or better standards, realistic compensation to residents whose heating systems do not work, or any of the other measures we are pressing for will be sufficient to solve the fundamental problems.

More could be done with changes to the financing of DH. Many of these proposals are already under discussion, and some are reflected in your report. These do not require or rely on a fundamental change to the economy, and we believe they are urgent. While not addressing demand risk per se, they do address costs, both to investor and customer.

The strongest proposals for funding heat networks include municipal funding, or community funding. After all, in Denmark local authorities and communities own 56 percent of all generation assets and, for distribution assets, 91 percent. Failing that, the different parts of the system, with different costs and life-time could be separated, as with a PipeCo. Internal pipes could be the responsibility of developers or freeholders and could be paid for, transparently, as part of the price of each home, ie financed at *mortgage* rates. A Community Interest Company which could take over running a network once it's built, instead of an ESCo. Supply and maintenance of HIUs, and metering - major costs - could be provided by a non-profit body or at least removed from the monopoly.

We believe BEIS has a responsibility to address these proposals before underwriting private industry while promoting its expansion, haphazardly, for profit, with competing interests and minimal overall planning and coordination.

Q6. Which of the approaches set out to address connection risk (demand assurance, heat zoning, concession schemes) would you consider to be most effective and why? Demand Assurance, Heat Zones, Concession Schemes, Other.

Other.

a. Demand assurance

The ADE Task Force which [reported](#) in February 2018 proposes that public money underwrite private investors' risks, in exchange for some basic consumer safeguards. We believe the consumer protection should be there anyway: there is no trade-off.

In addition, ADE is opaque on the question of who will pay for the demand assurance they propose.

We agree with the Editorial in [Jan 2019 Heat and the City](#) which comments: *“two more substantial concerns are, firstly, would this encourage development of over-sized and poorly specified projects knowing that someone else is going to underwrite any revenue shortfall? Secondly, who is going to pay for this insurance? The way insurance generally works is that*

the insured party pays but that cost is spread across multiple premium payments over time. Will this just put up the cost of delivery when we really need to going in the other direction?

The editorial continues, “As with other insurance products this could be mitigated by spreading the cost over a wider pool of ‘heat consumers’ as possible, including gas and electric heat customers.” Assuming that the heat network represents good value in the first place, such “spreading” would indeed be less unjust than expecting the cost to be paid by the very small pool of heat network customers. However, many gas and electric customers are already struggling to pay their bills, and may well not accept being asked to underwrite the risks of private firms, sometimes multi-national corporations, for projects which may in the end be highly profitable, or which may be poorly conceived and designed and may in the end prove disastrous for users, investors, or both.

b. Zoning

Heat zoning, which seems to be successful in Paris, Gothenburg and other cities in Europe, is being seriously considered in Scotland under [Local Heat & Energy Efficiency Strategies](#) (LHEES). It seems a potential obstacle is the legality of obliging building owners to install a heat network, as is common in Scandinavia.

More basic is the question of whether zones will impose heat networks where they are not the most suitable option. The London Plan drafters appear to be struggling with this question. They have marked out Heat Network Priority Areas, and say major development proposals in these areas “should have a communal low-temperature heating system.” Yet they have not been able to resolve the contradiction between requiring heat networks and requiring clean air: the most common, and most economical source of heat is gas CHP which “is not expected” to meet the requirement for low emissions, “with the technology that is currently available.”

In 2012 Myatts Field North estate in Lambeth effectively had a heat network forced on them by GLA policy. The result, run by E.ON, has been disastrous¹ and is widely accepted as such. It is the residents who are suffering.

c. Concessions

Your document says in passing that with concessions, the local authority first “obtains support in the local community” (45). There is nothing about how such support would be obtained, and the wording is interesting: “support in the community” rather than “the consent of the community”. The advantages of having one body - eg a local authority - in charge of a whole area, and able to plan rational heat development there, is clear. But the risks of putting a whole area in the hands of one private, profit-incentivised company put “demand risk” in the shade.

¹ See our report with Dr Stuart Hodkinson, [Not Fit For Purpose. Residents’ Experiences of E.ON’s District Heating System on the Myatts Field North Estate and Oval Quarter development in Lambeth. London](#)

PFI funding provided a quick fix and complied with central government policy but has proved disastrous for hospitals and other public services. In the same way, concessions handing control to private companies to design, build and/or operate heat networks for profit can help to get these networks in operation – only to become a millstone around the neck of this and future generations.

Q7. What other approaches to addressing connection risk should we consider?.

In addition to the points made above, under Q4, we believe BEIS should support, financially and with expertise, the establishment of community-controlled heat networks.

Cooperatives, where users are from the beginning signed up to connection, are at least mentioned in the ADE report, and the CMA report. Shared Warmth says, *“It is possible that a customer ownership model, such as a co-operative, could provide demand assurance as heat network customers would also be heat network owners”*. The CMA notes *“The public sector plays a key role in providing heat networks in some countries. For example, in Denmark, the majority of suppliers are municipally owned or cooperatives”* Your consultation document notes that zoning would “ensure there is a group of customers willing to connect to the network”, but it appears to ignore the option of cooperatives, which would do the same.

Please remember that the majority of the UK population - [77% in 2017](#) - want energy in general in the public sector.

Q12. Do you agree that a minimum level of performance and quality standards should be mandated for existing networks as well as new networks? What would you expect this to include?

Agree.

Failing heat networks are making users' lives a misery. In response to the ADE report, residents on such housing estates told us they hoped for the best for new developments, but *“Whilst I appreciate many DH customers are reported as happy, that doesn't mean we should be ignored, brushed to one side or forgotten.”*

These problem networks present a major problem to the heat network industry as well, as recognised by ADE (see Q1). If, as claimed, they are a minority, and standards are now improving, the industry as a whole should have no problem bringing them up to standard, and bears a collective responsibility to do so.

Experience has shown that with expert intervention tariffs can be halved, and reliability greatly improved. An industry-wide rescue plan for failing schemes would provide the consistency and certainty that the ADE Task Force says is essential for industry growth. It would also ensure that the human guinea pigs in failed District Heating experiments get the redress they so desperately need.

One mechanism for rescuing failed schemes could be a supplier of last resort to step in when a heat network fails. FPA believes that this basic protection, normal for essential services like energy, should be extended to heat immediately, and should apply when a network fails to fulfil its obligations to customers at an acceptable standard, as well as if it fails to meet its financial obligations.

Q13. How could information on heat networks and related services be better provided to relevant consumers, both during property transactions and through billing?

1. The failure to inform buyers of the costs and nature of the heating system is very well documented, by Which, and most recently in great detail by the CMA. In the period of finding and buying a home this issue can easily get lost in fine print or casually presented comments by an estate agent, and many people have told us, for instance, that they know nothing about the heat network until they find materials sitting on their kitchen work top. There should be a mandatory procedure, with sanctions, for ensuring that buyers are fully informed *before* they have invested either financially or emotionally in a home.

This must include any potential extensions, replacements or improvements to their system for which they may be expected to pay. If this adds £20,000 to their assessment of the purchase price it may well jeopardise a sale, especially as the loan will not be paid off at their mortgage rate but much more quickly and at a much higher rate of interest. Transparency would thereby help to drive a move to better ways of financing heat networks.

2. In cases of regeneration or refurbishment of estates, existing tenants should be given an opportunity to make **an informed choice** about the heating system for their estate, with expert and genuinely independent advice and debate.

3. Billing.

The BEIS survey confirmed that heat customers are less likely than other energy users to receive bills, account summaries or statements detailing their charges with just 62% receiving this information, and still only 76% in Heat Trust schemes. Worse, only 36% of heat network customers said they were billed based on actual or estimated household use.

These figures are distorted by the fact that in old networks heat costs may be included in the rent. However, that is not the reason for many. New networks routinely fail to bill accurately or even in any way related to usage.

Although metering and billing are supposed to be regulated - the only facets of heat networks that are currently subject to regulation - we hear more complaints about metering and billing than anything else. Intransigent problems with remote readings from steel-framed buildings are compounded by sheer incompetence, lack of care, and/or faulty IT leading to customers' bills being confused with their neighbours', people being charged for heat used during the construction period before they moved in, long periods with no bills and no information, unaccountability (eg the recent unexplained addition of 5% VAT in Hale Village, Tottenham, or large, unexplained and rising charges for "preventative maintenance" in addition to other maintenance costs in New Festival Quarter, Poplar) and other outrages consistent with the appalling customer services that many heat users endure. Such practices are arguably already illegal. What is lacking is enforcement.

4. Comparisons

Gas and electric customers are offered a thousand ways to quickly and easily compare their own deals with alternatives. Heat customers cannot switch, but have an equal right to be able to make comparison, to help them secure a decent deal from their provider. This must include comparison with other heat networks and comparison with other forms of heating.

We endorse your call for measurable performance indicators and related minimum standards for service quality. These indicators should be fully explained and available to heat network users, including comparative information on reliability and customer services. They must also include costs to network users, including unit cost and standing charges which are particularly opaque. We note that ADE, in Shared Warmth, accepted that price comparisons between networks were both possible and necessary.

Comparisons with gas costs are equally important, but have been undermined by using inappropriate measures for the “counter-factual”, eg oversized boilers, overpriced insurance, failure to recognise that many people would not take out insurance for a new gas boiler, and failure to adjust for the fact that tenants are not normally responsible for boiler purchase or maintenance at all.

25 January 2019