
ADE Response | Heat Network (Metering and Billing) Regulations 2014 Proposed Amendments

24th January 2020

Context

The ADE is the UK's leading decentralised energy advocate, focussed on creating a more cost effective, efficient and user-led energy system. The ADE has more than 160 members active across a range of technologies, they include both the providers and the users of energy equipment and services. Our members have particular expertise in heat networks, combined heat and power, demand side energy services including demand response and storage, and energy efficiency.

Overarching comment

The Association supports the deployment of more heat meters across the UK and welcomes the aim of this proposed amendment. However, the feasibility tool itself is too onerous and prescriptive, and will be time consuming and resource intensive to understand and action. In particular for local authorities and social housing providers, the expectations of the tool are too great, and the level of information required is high.

However, the ADE's primary concern is around the proposed 6-month implementation period, which is far too short. The Association is concerned about:

1. The supply chain's potential to deliver at this speed.
2. The knock-on impact on costs from an over-stretched supply chain, and the impact on BEIS cost assumptions.
3. The level of capital that heat suppliers will have to raise in such a short timescale.
4. The negative impact of a short implementation period on consumer experience and consumer protection.
5. The reputational risk of the above on the heat networks sector.
6. The impact of the above on the heat networks investment landscape.

The ADE instead proposes a 4-year implementation period.

Government is encouraged to engage with heat network metering and billing specialists, those who have already retrofitted meters and heat cost allocators, and local authorities and social housing providers, to better understand the retrofit picture.

Questions

Q1. Do you agree with adopting a system using building classes?

Yes – this will help to make the process less administratively intensive. There should be an ongoing review process to allow new or additional building types to be added to the building classes.

Q2. Do you agree that it is reasonable to assume that it would always be cost-effective to install individual heat meters in new buildings with a communal network?

Yes.

Q3. Would you suggest other categories of buildings which should be included in the 'Viable' or 'Exempt' classes? Are there other technical reasons we should consider for the 'Exempt' class? Please supply evidence to support your answer.

It may be sensible to add listed buildings to the exempt class.

Q4. Do you agree with the assumption that operating temperatures of a heat network above 90°Celsius significantly affect the accuracy of heat meters and the buildings should therefore be in the 'Exempt' class? Should this exclude networks which only reach operating temperatures above 90°Celsius for limited periods of time (less than 10%)?

Government should include high temperature networks within the Open Class. The accuracy of modern ultrasonic heat meters is not negatively affected by operation at high temperatures and can be retrofitted into high temperature networks. (The government should be mindful that the accuracy of some heat meters remains adversely affected above 90°C.) Indeed, the cost of heat meters that operate at temperatures up to and beyond 105°C has fallen over time.

However, the cost associated with installation of meters onto high temperature schemes can be higher – in particular, the cost of pipework, necessary fittings, and specialised labour. This is why BEIS is encouraged to include high temperature networks within the Open Class. This allows the installation costs to become a factor in viability.

However, high temperature *steam* systems should be exempt, as meters accuracy on these networks will be affected above 90°C.

Government should also note that some heat network operators, particularly communal network operators, may not know what temperature a network is running at, and therefore will not necessarily know which class it falls into (or indeed which meter to install). This will require a site visit. Lots of the required information cannot be known for existing networks from desks.

Q5. If you are a heat supplier, what percentage of buildings would you estimate to fall into the 'Exempt' class?

The ADE has no comment.

Q6. How could a heat supplier evidence that installing metering devices is not technically or otherwise feasible for a specific building if not already in the 'Exempt' class? Would you consider OPSS to be best placed to assess a possible exemption?

The heat supplier would evidence that the practical cost of installing a heat meter would not be cost effective. This can be carried out via the Cost Effectiveness tool and also demonstrating the constraints that limit the installation. The OPSS may also provide evidence if the installation of heat meter is not compatible with the system installation and design.

This should be done under advisement with technical experts.

Q7. If you consider metering and billing requirements to be a significant issue for social housing, please provide specific evidence that would justify a different approach to assessing feasibility of meter installation and billing based on consumption in these dwellings.

The Association welcomes the inclusion of a specific question on social housing. A large proportion of existing heat network stock is connected to (and often delivered by) social housing. At the moment, lots of social housing providers essentially subsidise the cost of heat network connections. For example, the administrative work done by council staff or social housing staff to support day-to-day running of the scheme may not be reflected in consumer bills, but rather is a cost absorbed by councils and social housing organisations. As such, this affects how viable meter installation is, and should be added to the £81/year metering and billing costs.

In these cases, the installation of meters could actually lead to an increased cost for these consumers. This is something that government should be mindful of. It may be sensible to consider these properties on a case-by-case basis where requested by social housing providers, with input from tenants needed.

Q8. Do you agree that the assumption of a 10-year lifetime for a meter and heat cost allocators is reasonable and should be used as the period over which the costs and benefits are calculated?

10 years is industry standard, though lifetimes with an average of 5 years also have been known. The ADE has also seen evidence that meters can have a longer lifetime, up to and beyond 15 years.

Q9. Do you agree with the proposed discount rate of 3.5% to calculate the net present value of costs and benefits?

The ADE acknowledges that this proposed change is to align with UK Government and EU Guidelines. However, whilst local authorities may have access to capital at a discount rate of 3.5%, in the private sector this cost can be much higher. The ADE would thus advise against using a blanket figure. This is particularly the case given that forthcoming government regulation is looking to drive diverse business models, including private sector driven networks.

Q10. Do you agree with the proposed tool's approach to estimating heat demand for buildings? Do you have suggestions for a different approach?

The ADE will not comment on technical aspects of this consultation. However, members have commented that whilst benchmarks are helpful, there may be a role for a tool that takes account of actual heat consumption. The concern is that the benchmarks differ from actual consumption.

Q11. Are you aware of additional characteristics which could be used to support the differentiation in the tool between existing buildings with regards to the capacity for energy efficiency?

The ADE has no comment.

Q12. Do you agree that the 20% figure for average heat demand savings should be applied to domestic units?

The ADE agrees that the 20% figure for average heat demand savings *from behaviour change* is appropriate and should be applied to domestic units. However, when visible metering is coupled with consumer behaviour change and demand management, network operators are able to optimise networks and make them more efficient. From this, the heat demand saving can be further reduced, up towards 50% and even beyond.

Q13. Do you agree that the 10% figure for average heat demand savings should be applied to non-domestic units?

The ADE agrees that the 10% figure for average heat demand savings *from behaviour change* is appropriate and should be applied to non-domestic units. However, when visible metering is coupled with consumer behaviour change and demand management, network operators are able to optimise networks and make them more efficient. From this, the heat demand saving can be further reduced, up towards 50% and even beyond.

Q14. Energy savings in the first year are estimated to be half of the savings in subsequent years, to take into account the assumption that behavioural change will not occur immediately. Do you agree with this assumption?

Yes, behaviour change happens over time. However, for behaviour change to count, ongoing effective communication is necessary. This is an additional cost that should be considered in the cost-effectiveness tool.

Q15. There is limited evidence available on the energy savings generated by the installation of heat cost allocators. However, we are not aware of any reason to expect a difference in performance compared to meters in reducing energy use. Do you agree that the same percentage of energy savings should be used for heat cost allocators?

In principle there is no reason that a well installed and properly used heat cost allocator will have different performance to a heat meter. Some ADE members have experience with installing heat cost allocators, even within the last few years. The ADE has seen evidence which suggests that the same percentage of energy savings is possible from heat cost allocators and heat meters, and thus recommends using the same energy saving.

Q16. Would you consider it useful if the tool allowed input of actual heat /cooling supplied to a building where a building level meter has been installed to calculate savings in multi apartments or multi-purpose buildings?

Yes. As much as possible, regulation should encourage and allow the use of actual data. The tool should allow actual heat supplied to be incorporated into the tool where available, rather than benchmark statistics.

Q17. Do you agree that we should use the price for different fuels to estimate the costs and therefore benefit of savings?

Yes, the appropriate fuel type should be used.

Q18. Are there any other comments you would like to add on the calculation of the benefit arising from energy savings in the cost-effectiveness assessment?

The ADE will not comment on technical aspects of the consultation.

Q19. Do you agree with the costs as provided in Table 4 above? Please provide evidence and comments and specify which cost you are referring to.

The ADE recommended that BEIS look to contract a specialist metering organisation to undertake a survey of costs in the market, rather than relying on historic evidence.

Assessment costs do not include travel time or administrative time – a cost which is borne by the heat network operator either from lost time or from being charged by an external resource for travel time. Costs are thus lower than they should be.

The tool does not allow for the consideration of economies of scale. When undertaking a one-off installation or small-scale installation, costs could be higher. An installer is estimated to be able to install 8 meters per day in a project-based setting; for a single installation, however, it may take up to half a day. The tool should thus allow for project costs.

The tool must also be reflection of median or average installation costs. The costs of the kit will remain relatively similar, but the costs of installation will differ widely based on situ-specific factors. In general, the ADE is of the view that installation costs are too low if you look at the best-case versus worse-case cost scenario. Whilst £372 is acceptable for a normal installation, for a difficult installation these costs could quickly rise. It may be sensible for government to allow industry to submit independent quotes for particularly bad cases, for example when large pipework upgrades would be needed. A price range could also work.

For non-domestic properties, again, the picture is more difficult. The cost range is large, and the cost of installation will differ from situation to situation. For example, the costs of installation will depend on the pipe size. Different sites will require different labour types with different costs.

The data gathering system supply and installation is thought to be about the right cost. However, missing from the cost accounting is the system in place to transport the data from the meters or heat cost allocators to the central data collector. Costs will differ depending on whether it's hardwired or M-Bus.

One member has suggested that costed notional buildings might help to make sense of the proposals.

Q20. Would you expect the cost profile for domestic and non-domestic units in a mixed purpose building to be the same? Are there other characteristics which would better indicate the cost of heat meters, such as floor space in m2?

Yes, the cost of installation will differ between domestic and non-domestic properties due to typical pipe sizes, specialisation required, the need for enhanced specification, and other factors will contribute to increases costs.

Q21. Would you expect significant regional difference in supply and installation costs, e.g. in remote locations or areas with less developed markets?

The ADE expects that different areas of the UK face different supply and installation costs. This is the case in other European countries.

Supply and installation costs should consider travel time for staff, which will be included in charges. This will provide a more accurate reflection of costs. Remote locations will be more time consuming and expensive to travel to.

In London, a London weighting should be applied for supply and, in particular, installation costs.

Q22. Do you agree with the proposed £81 operational costs, including billing? And do you agree that this should constitute the cost threshold of cost-effective billing per dwelling?

£81 is about right, although some members noted that this was only for quarterly billing, with yearly billing less expensive, and monthly billing more expensive. If government is looking to encourage monthly billing, a slightly higher cost might be more appropriate.

Q23. Do you have evidence for the cost of a complete metering and billing service per unit? If so, could you state if this includes or excludes the installation of the metering devices. Would this vary with geographic location? If this information is commercially sensitive and you prefer to send it in confidence, please send separately direct to our email address provided in the "How to respond" section and mark accordingly.

The ADE has no comment.

Q24. Do you agree with the assumptions made and the total cost for the familiarisation with the Regulations and dissemination of information?

The administrative costs of familiarisation with the new regulation does not include the time spent by other staff. 7.5 hours seems to be a fair assumption of time spent by one staff member.

The ADE is of the view that the cost assumed by BEIS is too low, particularly when compared to the cost assumed for notifying OPSS.

Q25. Are there any other costs to business not discussed that should be considered (for example engagement with customers and changes to billing systems)?

For the installation of meters in existing buildings, there are potentially additional costs associated with administration, project management, software usage, contractual and commercial changes.

There is also a cost associated with consumer engagement. Whilst introducing meters might be a regulatory requirement, it is still important that the consumer is engaged in the meter installation process and given time to understand the impact of metering and meter installation. This is particularly true where a consumer's bill might be expected to increase, e.g. for social housing tenants. Best practice would involve allowing time for engagement with consumers to explain the change and answer questions. This is particularly important given the natural monopoly structure of the heat networks market. For this reason, the 6-month implementation period is not suitable. This amounts to a cost to businesses.

Q26. In the accompanying Impact Assessment analysis, we use the above time estimates in Table 6 to calculate the administrative costs of undertaking the technical feasibility and cost-effective assessment. Do you agree with these assumptions?

£24 per hour is an underestimation, and again, this cost does not factor in travel time – a cost which is often passed on to the heat network operator. This is particularly for communal networks and social housing organisations undertaking technical feasibility assessments, they will have to hire in expertise which tends to be higher cost.

Q27. Do you agree that a six-month implementation period, which includes one complete summer period, is appropriate? If you disagree, please state what length of implementation period you consider reasonable and why.

No. A six-month implementation period is far too short. Instead, four years is a more appropriate time period, giving heat network operators more time to plan effectively, keep costs low and improve consumer experience. This would also allow for four summers.

The ADE has six primary concerns around the proposed implementation period:

1. The supply chain's potential to deliver at this speed.
2. The knock-on impact on costs from an over-stretched supply chain, and the impact on BEIS cost assumptions.
3. The level of capital that heat suppliers will have to raise in such a short timescale.
4. The negative impact of a short implementation period on consumer experience and consumer protection.
5. The reputational risk of the above on the heat networks sector.
6. The impact of the above on the heat networks investment landscape.

Generally, there is concern that the supply chain would not be able to meet this demand. In particular, the supply chain does not have enough skilled installers. From a feasibility perspective, it will take longer than 6 months for the supply chain to respond and deliver the necessary kit, infrastructure and skilled persons.

Some ADE members have raised concern that a demand like this could create negative ripples throughout the supply chain. The ramifications of this is likely to be a cost increase, which is not adequately reflected in BEIS' cost analysis.

Heat network operators need time to find the revenue to support deployment of heat network meters. For social housing providers and communal heat networks in particular, this will prove challenging. Accelerated timescales also increase costs. BEIS should be mindful that, particularly

in the absence of a policy and regulatory package that addresses demand risk and reduces the cost of investment, the cost of investing in meter installation is much higher than is found in other regulated utilities. Investment at this scale, particularly pre-regulation, will actually result in outcomes that defy the government's intended direction with policy: to increase low cost investment in the heat networks market.

It is best practice during meter installation to undertake a programme of consumer engagement, to ensure consumers understand why the installation is taking place, and what it means for them. This process alone could take up the bulk of 6 months, if not longer.

This all, in turn, creates a reputational risk for the heat networks sector. The heat networks sector is at a crucial turning point in its evolution and adding large costs at this time creates a compounding risk. As heat networks are regulated and become more common place, consumer awareness of heat networks will rise. If this is coupled with a risky, short implementation period, the risk is that the heat networks market attracts a negative public reputation.

Generally, the proposed implementation period amounts to a considerable added investment risk in the heat networks sector. The high cost of investment in the heat networks market compared to other regulated utilities has been identified by the Heat Networks Industry Task Force as the key barrier to deployment of heat networks in the UK.

Four years is a more appropriate time period, giving heat network operators more time to plan effectively, keep costs low, and improve consumer experience. Keeping costs low within industry will support industry to deliver decarbonised networks, consistent with government ambition. Indeed, within the Impact Assessment, BEIS appears to suggest a four-year implementation period:

- "It is estimated over 265,000 of these customers will have heat meters installed and around 22,000 will have heat cost allocators (HCAs) installed, between 2020 and 2024." (Paragraph 4)
- "This covers the four years from 2020 to 2024 during which metering devices are installed." (Paragraph 36)

Four years also allows time for planning and mobilising funding in year one, alongside consumer engagement, with three summers to then tackle retrofitting the portfolio. In particular for social housing network operators that are sometimes responsible for around 100 networks, having this time is needed. Four years allows network operators to spread the risk and reduce costs (thereby preventing these costs being passed to consumers).

Q28. Do you agree with the assumption that from October 2020 most newly installed metering devices should be remotely readable? If you disagree, please provide additional information.

Yes.

Q29. Should heat suppliers ensure that all installed meters and heat cost allocators accurately measure, memorize and display consumption?

Yes.

Q30. Should heat suppliers ensure, so far as possible, that all meters and heat cost allocators installed are (a) continuously operating, and (b) properly maintained and periodically checked for errors?

Yes. This is best practice per the Heat Trust Scheme Rules.

Q31. Do you agree that billing should be based on consumption for all installed meters and heat cost allocators where this is technically possible and economically justified?

Billing should be based on consumption when technically possible, economically justified *and* desired by the customer. There are some situations where billing should not be based on consumption. For example, when heating forms part of the building service charge, or when the heat network customer has entered into a 'heat as a service' contract.

Q32. Would you consider a requirement for billing based on consumption to prevent a Heating as a Service model?

Yes – it would prevent some heat as a service models. Appropriate derogation may be needed in these cases and should be expediated to allow innovation and development of these models. However, the regulations should move to allow heat as a service by default, where supported by the consumer.

For further information please contact:

Charlotte Owen
Policy Officer
Association for Decentralised Energy

Tel: +44 (0) 20 3031 8740

charlotte.owen@theade.co.uk
