



## Department for Business, Energy and Industrial Strategy

### Consultation on heat network zoning

### Submission from CIBSE

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## THE RESPONDENT

### **The Chartered Institution of Building Services Engineers (CIBSE)**

The Chartered Institution of Building Services Engineers, CIBSE, is the professional engineering institution that exists to ‘support the Science, Art and Practice of building services engineering, by providing our members and the public with first class information’

CIBSE is unusual amongst built environment professional bodies because it embraces design professionals and also installers and manufacturers and those who operate and maintain engineering systems in buildings, with an interest throughout the life cycle of buildings.

CIBSE has over 20,000 members, with around 75% operating in the UK and many of the remainder in the Gulf, Hong Kong and Australasia. CIBSE is the sixth largest professional engineering Institution, and along with the Institution of Structural Engineers is the largest dedicated to engineering in the built environment. Our members have international experience and knowledge of life safety requirements in many other jurisdictions.

CIBSE publishes Guidance and Codes providing best practice advice and internationally recognised as authoritative, including **CP1 Code of Practice**. The CIBSE Knowledge Portal makes our Guidance available online to all CIBSE members, and is the leading systematic engineering resource for the building services sector. It is used regularly by our members to access the latest guidance material for the profession. Currently we have users in over 170 countries, demonstrating the world leading position of UK engineering expertise in this field.

## CONSULTATION RESPONSE

### Consultation questions

***1. Do you have views on how local area energy mapping and planning can best support heat network zoning?***

We agree about the potential usefulness of local area energy mapping and planning; this should offer benefits not only for heat networks and heat mapping in general, but also for planning other infrastructure work (including works to the local electricity network for electrical vehicles, and tree planting), in order to minimise disruption, costs, and embodied carbon. We recommend referring to the work of the Joint Utilities Group and the Trees Design and Action Group on this.

***2. Do you agree or disagree that the scope of the proposed zoning policy should prioritise district heat networks with cooling permitted but not required? If you disagree, please explain your reasoning.***

Focusing on heating only risks missing opportunities, including those from heat exchange between users. We recommend considering cooling jointly, and exploring this in more detail while developing the more detailed methodology for identifying suitable zones.

**3. Is there anything else we should consider with regards to cooling in the context of the zoning policy?**

As per 2: there should be opportunities for heat exchange between users, with some requiring cooling from the network i.e. potentially supplying heat to the network.

**4. Do you agree or disagree that there should be no minimum threshold for heat supply or heat demand?**

We agree.

**5. Do you agree or disagree that some functions should be carried out centrally? If you disagree, please indicate why.**

Yes, to provide clarity and reasonable consistency, and crucially, provide resources which local authorities may not otherwise have. There may also be a role for a central verification or quality assurance scheme, for example to check and possibly verify performance criteria such as energy costs for consumers, energy performance, carbon performance, and air quality emissions.

**6. Is there specific data you think should not be collated and managed at a national or central level?**

It is important that data on the performance of DH schemes should be collated and managed at a national level (possibly by aggregation of local databases which would have local uses too), so check trends, identify best practice, gather learnings etc.

**11. Are there additional functions that we should consider for the national regulator with regards to zoning? If yes, please describe these and explain why.**

At the very least, the regulator should have the powers to investigate performance, and to check against minimum criteria (including energy costs, carbon performance, energy performance, and air quality), and against the performance on the basis of which the network was implemented. In addition, and as per (5), it may be useful for the national regulator to provide a central quality assurance (or similar) function, or at least to provide the criteria and rules for others to provide that function.

**13. Do you agree or disagree that a standardised national methodology would help to A) enable a transparent approach for identifying and designating heat network zones,**

***B) increase overall efficiency, C) drive consistency, and D) improve understanding for stakeholders?***

Yes.

***14. Do you agree or disagree with an ‘approved document’ approach whereby the methodology can be updated without legislative amendments? Would you recommend alternative approaches?***

Yes. CIBSE would be very happy to support the development of the methodology.

***15. Do you agree or disagree with our proposal for how zone identification should be undertaken?***

It is not explicitly stated that the designation would only happen subject to comparison with other options, to ensure the networks are the lowest cost option, and a truly low carbon one: the aim of the method should not be to determine where networks can be implemented, but where they should, as the lowest cost and carbon option. We assume, on the basis of the rest of the document, that this is the case. This must be checked from the early stages, and checked at every stage of the zoning process, to update assumptions along the way.

For the avoidance of doubt, constraints must include conservation areas and other heritage considerations – in many cases this may be an argument in favour of heat networks, as they may in these cases provide a favourable alternative to façade interventions, but in some cases they may place limitations.

Other elements should also be included, such as stakeholder engagement, which must happen before designation – we would expect some level of public consultation, as residents could be significantly affected by the works themselves, and by future requirements to connect; we are surprised this is not mentioned here, ahead of zone designation.

We agree that CP1 could be used a resource here; we would be very happy to discuss with BEIS the potential evolution of CP1 to further support heat decarbonisation objectives, including zoning and carbon performance.

***19. Do you agree or disagree that the legislation should set out a list of statutory consultees who must be consulted before a heat network zone is designated?***

Yes. As per (15), this must include consumers, especially residents, who will be affected by the works themselves and by future obligations to connect. We also recommend considering including the Heat Trust as statutory consultee, to provide an important consumer protection angle.

**20. Do you agree or disagree that the option 3 level of ambition is a proportionate approach to deliver the policy objectives of heat network zoning? Please provide evidence to support your answer.**

No. In all 3 options, we are concerned about the inclusion, by default, of all new buildings. New buildings are expected to have very low heat demand (or they should, if Building Regulations achieve their objective), and have opportunities for very low carbon heating systems. While we very much understand the useful lever they can provide, we do not think they should be included by default among the consumers that are required to connect.

**21. Do you think it is likely or unlikely that buildings not required to connect will voluntarily connect to a heat network within a zone? Please explain your reasoning.**

This will all depend on what heat networks manage to achieve. As is well documented (e.g. by the 2018 CMA report), many networks currently operate inefficiently and/or at high costs for consumers. On the other hand, if the maximum potential of networks is realised, for example through the use of waste heat sources and/or heat exchange between consumers through ambient loop, then they may in some cases provide an attractive option to consumers, particularly those which have few other options (e.g. in conservation areas) or which could also provide heat to the network at some times of the day/year. This is a strong argument for placing ambitious performance requirements onto networks, in order to make them an attractive choice as well as one which will help carbon targets, instead of forcing them onto consumers. A useful reference case for this, both in terms of energy costs and carbon, would be an on-site air source heat pump: networks should be able to offer at least as good performance (and, arguably, better, in order to be attractive and to pay back in carbon terms the initial embodied carbon expenditure).

**22. Please indicate the kind of buildings you think are likely to connect voluntarily.**

See question (21): it is likely that this would, in many cases, be the buildings which have few other options, or only expensive ones e.g. in conservation areas, or those which can also at times provide heat to the network (e.g. those with a large cooling load, or other heat rejecting process).

**25. Do you agree or disagree that a process is necessary to assess, where requested, whether an individual building should be exempt from the requirement to connect to the heat network within a zone?**

Yes, a clear, transparent and objective process is required.

**26. Do you agree or disagree with the proposed exemption criteria that would be used to assess the viability of a particular building? If you disagree, please explain your reasoning.**

Yes, as listed, carbon performance and impact on consumers, including affordability, are essential criteria.

**35. Do you agree or disagree that heat networks developed in zones should be subject to a low carbon requirement?**

Yes. The whole purpose of heat zoning is to support heat decarbonisation, so this is obviously required. A requirement expressed in gCO<sub>2</sub>/kWh delivered heat seems appropriate, alongside the exemptions for buildings which may have even lower carbon heat options available. We also recommend including air quality criteria.

**36. Do you have a view on what level, or what mechanism, we should use to set a level of CO<sub>2</sub> emissions per kWh as appropriate?**

In general, the requirement should be technology agnostic. A starting point could be that heat networks should not be worse than an on-site air source heat pump; this should be examined not only on the basis of “day 1” carbon factors, but reasonable assumptions about future grid decarbonisation, for example as per National Grid ESO Future Energy Scenarios. As explained on other CIBSE responses, we express strong caution against the use of marginal factors, which rely on assumptions about plant operation which are difficult to guarantee and monitor, and may in many cases be optimistic and lead to worse carbon outcomes in practice. In addition, given the significant embodied carbon involved in building heat networks in the first place, and the fact that they could “lock” buildings into connection (as they would otherwise have installed their own plant), we recommend considering whether an additional ‘buffer’ could be applied to the comparison.

**37. Do you agree or disagree that the low carbon requirement should apply to all new connections in zones (including new connections of existing heat networks), but not to heat delivered to existing connections? If you disagree, please explain your reasoning.**

No. As expressed on several occasions in other consultations, existing heat networks must ultimately be required to decarbonise. The timescales may be different, but ultimately the same criteria should apply.

**END**

Please do not hesitate to contact us for more information on this response.