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## Summary of responses on “Heat Networks: Code of Practice for the UK” consultation

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This document is a summary of responses received by CIBSE and the ADE during the consultation on ‘Heat Networks: Code of Practice for the UK’. We are grateful to all organisations that provided comments. This document reflects the main views expressed by respondents, but it does not provide a direction of travel on the final proposals.

Key decisions taking into account these responses will be made by the end of January 2015 regarding the development of the Code of Practice. However, we would like to keep organisations that responded up to date on the progresses.

### **Executive summary**

With recent research outlining the potential for heat networks to supply up to 14% of heat by 2030, it is an opportune time to develop and implement minimum performance guidelines for district heating. As new entrants respond to the growth in district heating schemes, the industry is increasingly worried about its reputation being damaged by poor quality schemes.

Therefore, the industry’s representative, the ADE, and the standard setter on building services engineering, CIBSE, have jointly developed a quality assurance scheme which will ensure that heat networks operate effectively and meet client and end user expectations.

The draft Code of Practice was developed with inputs from a Steering Committee of experts from across industry, heat customers and Government. The draft Code of Practice was issued in September 2014 for a 6-week consultation period. It is a complementary document to both the Independent Heat Customer Protection Scheme and the Heat Networks Technical Guide from BRE Trust.

The Code of Practice will provide minimum requirements for how to conceive, design build and operate heat networks in a format that avoids limiting technical innovation. It will apply to heat networks designed to supply new developments, networks that are retrofitted to supply existing buildings and networks’ extensions.

Key themes and responsibilities that are running alongside the document to improve the efficiency of heat production are the importance of correct sizing of the heat mains and pipework, the need to ensure low heat losses by low return temperatures and variable flow control, and the opportunity for integration of low carbon heat sources.

It is envisaged that in the absence of legislation, adoption of the Code of Practice will be voluntary, but may become a condition of procurement contracts.

The partnership will look to provide training, accreditation and registration of Heat Networks Professionals to support the supply chain. There are considerable benefits from up-skilling the current workforce through training in the skills required for the future heat networks city-wide schemes. A certification scheme will help organisations to promote their products, where they are built against quality Standards collectively recognised by the industry.

## Numerical summary of consultation responses

We received 28 responses to the consultation (we counted one response where we received several comments from the same organisation). Overall, a majority of organisations that responded to the consultation belonged to consulting engineers organisations.

Number of responses received	28
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### Types of organisations

Turnkey solution provider	6
Manufacturer	1
Consultant	17
Operation and maintenance	2
Government body	1
Others	2

## Overall appreciation

The first paragraph of this summary reflects comments on the scope, style and consistency of the technical guidance of the Code of Practice. Following this, we set out an overview of responses to the training course proposal. Finally, issues raised by organisations are gathered together under a range of technical themes (e.g. return temperatures, future proofing etc.).

## Scope and style of the document

### Length

Some responses highlighted that the Code is a long document, which was seen as a barrier to accessibility. The length of the document reflects the significant number of technical challenges and specificities of district heating projects, which must be understood from feasibility up to operation if an efficient supply of heat is to be provided to customers.

### Structure

A number of organisations mentioned that the Code's structure is clear and flows well. A response suggested that all sections of the Code should be brought together to reflect CIBSE's Technical Manuals normal structure.

### Relevance of the document for small schemes and small organisations

Some organisations felt that the Code was not appropriate for communal heating and smaller networks. The Code sets out minimum standards to achieve a specific output in order to ensure the overall quality of new schemes or schemes extensions. Additional comments suggested that small networks may apply abridged requirements if preferred.

### Scope: contractual work

Some organisations suggested that the requirements set under the Objective 3.6 (Achieving a low-cost network) should be linked to contractual arrangements in situations where meeting the minimum standards entails the active participation of another organisation (this may be the developer, local authorities etc...).

## Technical guidance and references

Some organisations provided additional technical input to complement that of the Code, in particular for modern heat interface units and polymer pipe products. The list of references was also supplemented with the full list of reference of the International Energy Agency for District Heating and Cooling and the Greenhouse Gas Emissions Guide published by DECC.

## Training course

We asked views on the optimal duration of a training course based on materials taken from the Code of Practice. A small majority of organisations mentioned their preference for a training course taking place over 2-3 days, for an average price ranging from £250 to £350 per day. Some organisations either did not want training or felt that the Code was not specific enough to run a training course.

About the scope of the training, a number of organisations mentioned that the training should be modular and should be structured around three themes: firstly preparation up to design and procurement, then construction up to operation and maintenance and finally customers' expectations. Some organisations felt that a minimum qualification level in building services engineering should be required for people to be allowed to attend the course. Also, some comments flagged that the accreditation of district heating schemes would be useful to sign-off schemes built against the proposals of the Code of Practice.

## Main technical issues raised in the responses

### Low return temperatures

Some responses suggested the technical guidance under the Objective 1.3 (to define appropriate service levels for the heat supply) may be misleading since variable flow rate control does not necessarily result in lower return temperatures.

A number of organisations raised a question about whether the Code effectively supported the transition towards '4<sup>th</sup> generation DH networks' with very low flow temperatures (down at 55°C). Others however raised the issue of *Legionella* risk mitigation normally addressed by higher temperatures. This apparent conflict needs to be considered by the Committee.

### Low heat losses

A number of people raised an issue about whether the 15% heat losses figure was too high or too low and if it should be proportionate to pipe length.

One response suggested that the theme of return temperatures should be treated under the feasibility stage rather than the design stage because of its impact on potential customers and heat delivered.

### District heating efficiency

A number of organisations mentioned that CHP is a common feature of efficient district heating schemes but that it is not always the best generation solution. It was recommended that "prime mover" or "low carbon heat source" should be used instead of "CHP".

One organisation sought for more detail on electrical aspects of combined heat and power (CHP) and remarked that little detail was provided in the document.

### Economics of schemes

Some responses suggested that the monopoly status of heat networks needs to be balanced by different tariffs for high and low users or a guaranteed discount compared to alternatives. Some organisations raised a question about whether the 'Customers expectation' stage should be replaced by a link to the Independent Heat Customers Protection Scheme proposals, which aims to establish a

common standard in the quality and level of protection for household customers and micro-businesses.

### **Future proofing of schemes**

A number of organisations suggested that future proofing of schemes should be a broad theme which needs to be considered in each stage of a project. Examples were provided, such as considering neighbouring heat loads at the feasibility stage which may help to diversify the heat demand, and making space available for future heating plants to minimise potential additional costs through multiple temporary Energy Centres.

### **Overheating**

Some organisations touched on the overheating issue, which is occurring in certain locations and may lead to a loss of well-being. It was recommended that the Code should have greater emphasis on the need to work with the building design experts to ensure there is sufficient ventilation in premises to avoid the risk of overheating.

### **CO<sub>2</sub> emissions calculation**

A few responses raised an issue about whether several CO<sub>2</sub> emission factors should be used or if a common set of emission factors should be used for both existing and new buildings to avoid confusion between calculations. One organisation suggested that marginal CO<sub>2</sub> emission factors figures should be used for calculations.

### **Assessment of schemes built against the Code of Practice**

A number of the responses recommended further clarification on whether compliance with the Code of Practice is “all or nothing” and if organisations would be denied compliance for a single requirement missed out.

### **Next steps**

A meeting of the Steering Committee took place on 8<sup>th</sup> January 2015 to run through all the comments. The final proposals are being developed and a full consultation response will be issued within the following months

The launch of the final Code of Practice is expected in the first quarter of 2015.