Heat networks approach within the UK Net Zero Carbon Buildings Standard

Corporation

CIBSE Decarbonisation of Heating and Cooling 2025 Conference

Heat Networks UKNZCBS

- Introduction to NZCBS (very high-level covering purpose, ambition, progress with pilot etc.)
- Summary of my involvement wrt. heat networks in the standard
- · Context of Stanhope experience with past and present projects with heat networks
- Key requirements for heat networks from the UKNZCBS
- Limit on carbon content of heat
 - Fossil fuel free
 - Decarb plans for existing networks
- Specific considerations of heat networks within UKNZCBS
 - New vs existing networks
 - Primary vs secondary/ tertiary losses
 - Approach for different technologies CHP, EfW, Ambient loops, Recovered (waste) heat
- Comparison to/ alignment with Government/ Planning policy (Heat Network Zoning Consultation DESNZ) or available funding mechanisms (Green Heat Network Fund - GHNF).

Stanhope



Television Centre



White City Place



Oxford North

What is the Standard?



Principles of the Standard

Overall Principles

- Clear, consistent definitions and trajectories for Net Zero Carbon Aligned buildings
- Collaboratively created by, and for, the built environment industry, and not owned by any one organisation or Institute
- Driving market transformation through industry engagement, uptake and support
- Ensuring that the Standard is easy to understand and use, with **ambitious but achievable** requirements
- Aligning asset-level requirements with the system-level changes needed for a NZC UK
- A Standard that is politically neutral

Technical Principles

- Informed by climate science (science-based)
- Including both operational and embodied carbon
- Prioritising energy efficiency and eliminating the performance gap by using measured performance data
- Prioritising the reuse of existing buildings and assets
- Adopting a whole life carbon approach
- Enhancing renewable energy generation
- Encouraging demand management, so that buildings can support electrification and grid decarbonisation

The Standard's Requirements



The Standard's Requirements - District Heating and Cooling Networks

Applies to buildings where heat or cooling is distributed via a central network serving multiple buildings or units The **carbon intensity** of the heat or coolth supplied by district systems must meet specified limits (in line with an ASHP at SCOP=2.8)

Energy used by the district heating or cooling network is reported, alongside associated carbon emissions

Systems that rely on fossil fuels must have a clear and documented plan to transition to renewable or low-carbon sources by 2040 **Documentation** must include detailed data on the carbon content, efficiency, and transition plans for district heating and cooling networks involved in the project







Carbon content performance equivalent to and all-electric heat network with:

Reasonable heat generation efficiency (COP)

Limited distribution losses (%) Reduced primary distribution/ pumping energy (% heat)

New vs Existing

But what about..?

How might targets evolve

Comparison to other schemes

Schemes	Carbon content of heat (CO2e/kWh)	
	Now	2030
UK NZCBS - Existing	95	22-47*
UK NZCBS - New	75	18-38*
Green Heat Network Fund	100	-
Heat Network Zoning Consultation (DESNZ)	-	44-147
RICS WLCA 2nd ed v2 – Energy from Waste EPD	20	D

*Green book grid factors (low) * 'Falling Short FES factors (high)

Standard progress and next steps

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