

Heat Network Technical Assurance Scheme (HNTAS)

What's next in Heat Network Technical Standards

October 2024

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Non of this is DESNZ policy and will be subject to consultation

It represents Work In Progress and direction of travel



Introducing technical standards regulation

- In 2020, BEIS consulted on developing a regulatory market framework for heat networks to protect consumers, support market growth and develop low carbon networks
 - [Strong support received from respondents](#) to introduce mandatory minimum technical standards, and for heat network suppliers to demonstrate compliance with technical standards through an accredited certification scheme.
 - Support received for regulatory standards to build on CIBSE's CP1(2020) voluntary standards
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- Changes coming:
 - Regulation to launch in 2025, requiring certification based on outcomes (KPIs)
 - Including new build networks (~50,000 residential connections each year)
 - And existing networks (~14,000 networks with ~500,000 residential customers)
 - Communal and district networks
 - Minimum (regulatory) technical requirements, including metering and water quality
 - Other changes coming include consumer protection and zoning

Why regulate technical standards?

Poorly designed, constructed and operated heat networks often have poor outcomes

- Technical standards regulation aims at:
 - improving network performance
 - improving consumer outcomes
 - enhancing reliability
 - lowering the cost of heat
 - reducing carbon emissions



Improving performance and reliability

- Some common issues which mandatory technical standards will address include:
 - Uncontrolled flows and bypasses causing energy inefficiencies
 - Poor water quality causing corrosion and failures
 - High return temperatures causing reliability issues
 - Overly complex heat network systems causing reliability issues

Addressing each of these has the potential to lower long term costs

- For new build systems, regulation aims at avoiding these issues from the outset
- For existing systems, regulation aims to rectify these issues over time



Poor water quality causes corrosion

HNTAS vision, aim, objectives and core principles

VISION

Enable low emissions, and reliable and affordable heat to be delivered to UK communities via heat networks

AIM

Develop a heat network technical assurance scheme that ensures a minimum level of performance and reliability for heat networks in the UK

OBJECTIVES

- Reduce carbon emissions by making heat networks more efficient
 - Improve affordability by reducing capital and operational costs
- Improve consumer experience with improved reliability and quality of heat supplied
 - Improve reputation and investor confidence in heat networks
- Build evidence by better reporting of information about technical quality

CORE PRINCIPLES

Outcomes orientated

Preventative

Proportionate

Deliverable

Adaptable

Enforceable



HNTAS Core principles

Core Principle	Definition
Outcome Orientated	Focused on performance outcomes rather than process.
Preventative	Focused on preventing performance issues from arising through identification of issues, rather than taking punitive approach
Proportionate	Balance the effectiveness of assurance process against the cost of compliance
Deliverable	Based on established processes, that fit with existing contractual and delivery processes, taking into account market capacity and regulatory framework
Adaptable	Able to adjust approach as market moves down the experience curve and adapt to wider changes at a regulatory and industry level
Enforceable	Sets out clear rules and consequent required actions in the case of non compliance that are able to be enforced.





Proposed regulatory framework

- Under the Energy Act 2023, Ofgem will be the regulator of heat networks
- Ofgem can license a Code Manager to maintain the Scheme Code documents which include:
 - Technical specification
(**what** heat networks must comply with)
 - Assurance procedures
(**how** compliance is demonstrated)
 - Assessor requirements
(**who** can assess compliance)





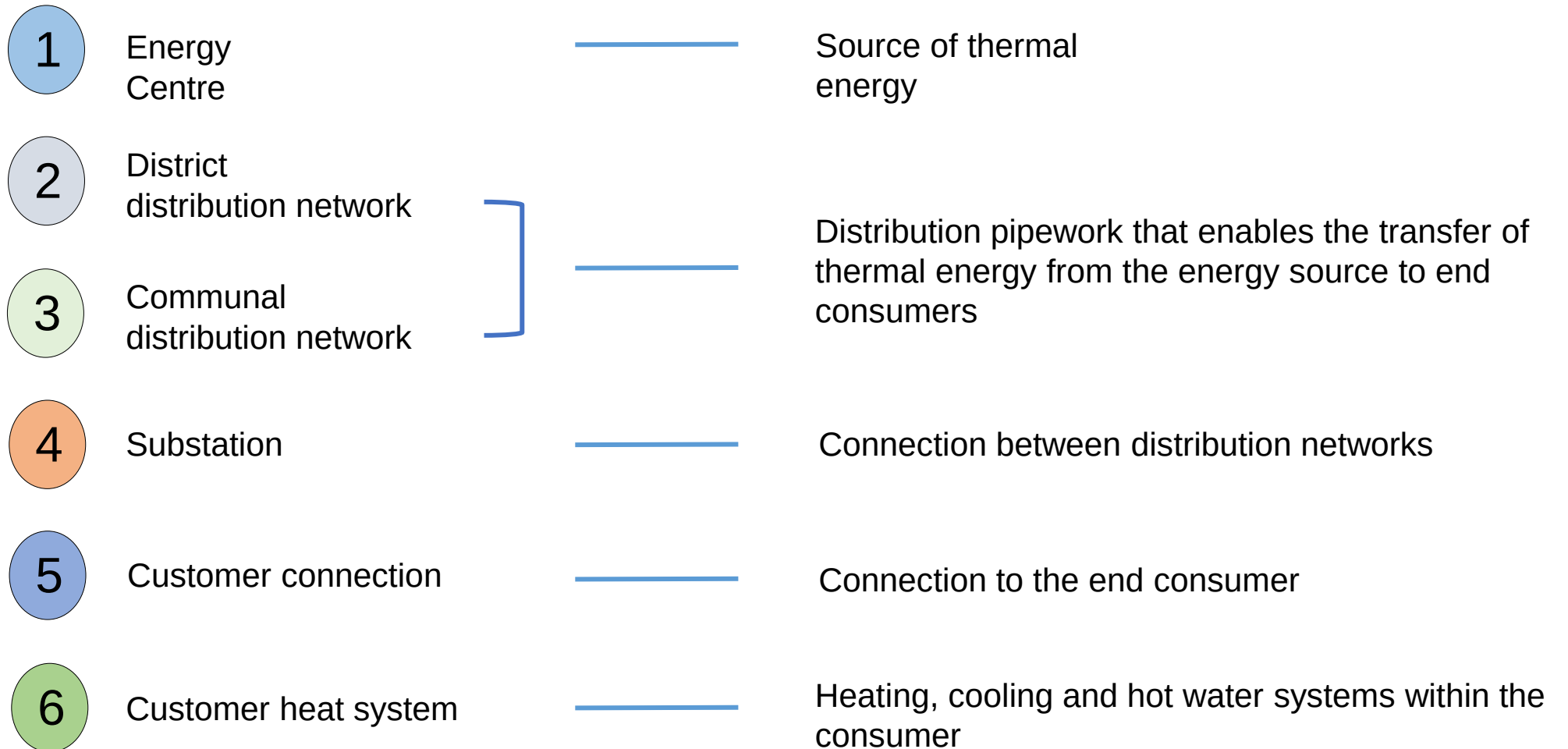
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Scheme characteristics

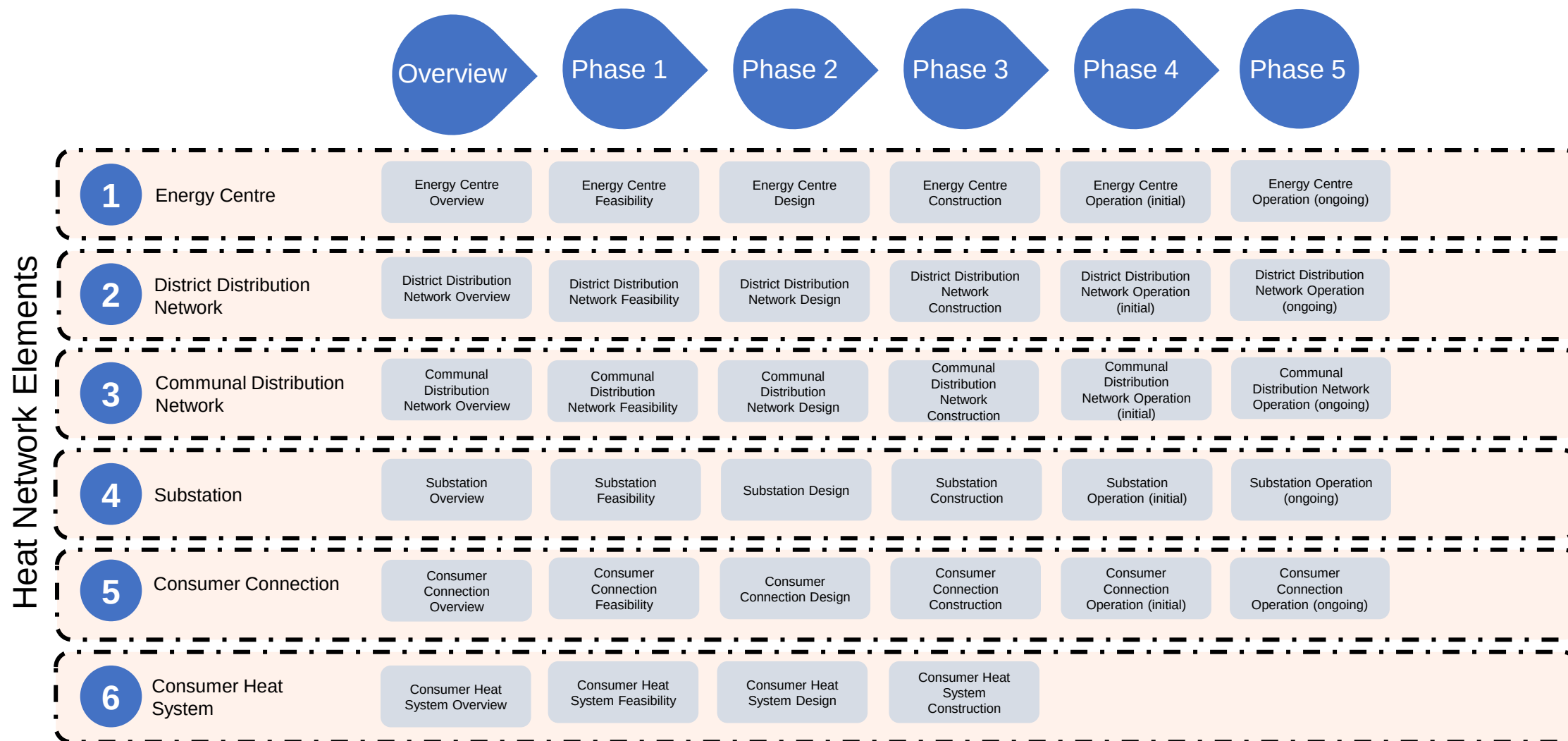




Six distinct elements within the assurance scheme



Technical specifications for each element at each phase



KPIs/ tech standards mainly based on CIBSE CP1(2020) with other industry standards and engagement inputs



Stakeholder engagement

- Extensive series of technical sub-working groups to focus on the development of normative/code documents
- 25 technical sub-working group workshops, bringing together stakeholders such as manufacturers, housing associations, Local Authorities, consultancies, developers, contractors, ESCOs, trade associations, and professional bodies
- Engagement will continue with consultation in winter 2024
- HNTAS pilot programme will run from autumn 2024 to spring 2025



Scheme characteristics

- Performance based assurance scheme – independent assessment of claims made by a responsible party as to whether minimum standards:
 - Will be achieved – Validation
 - Have been achieved – Verification

for identifiable elements of a heat network

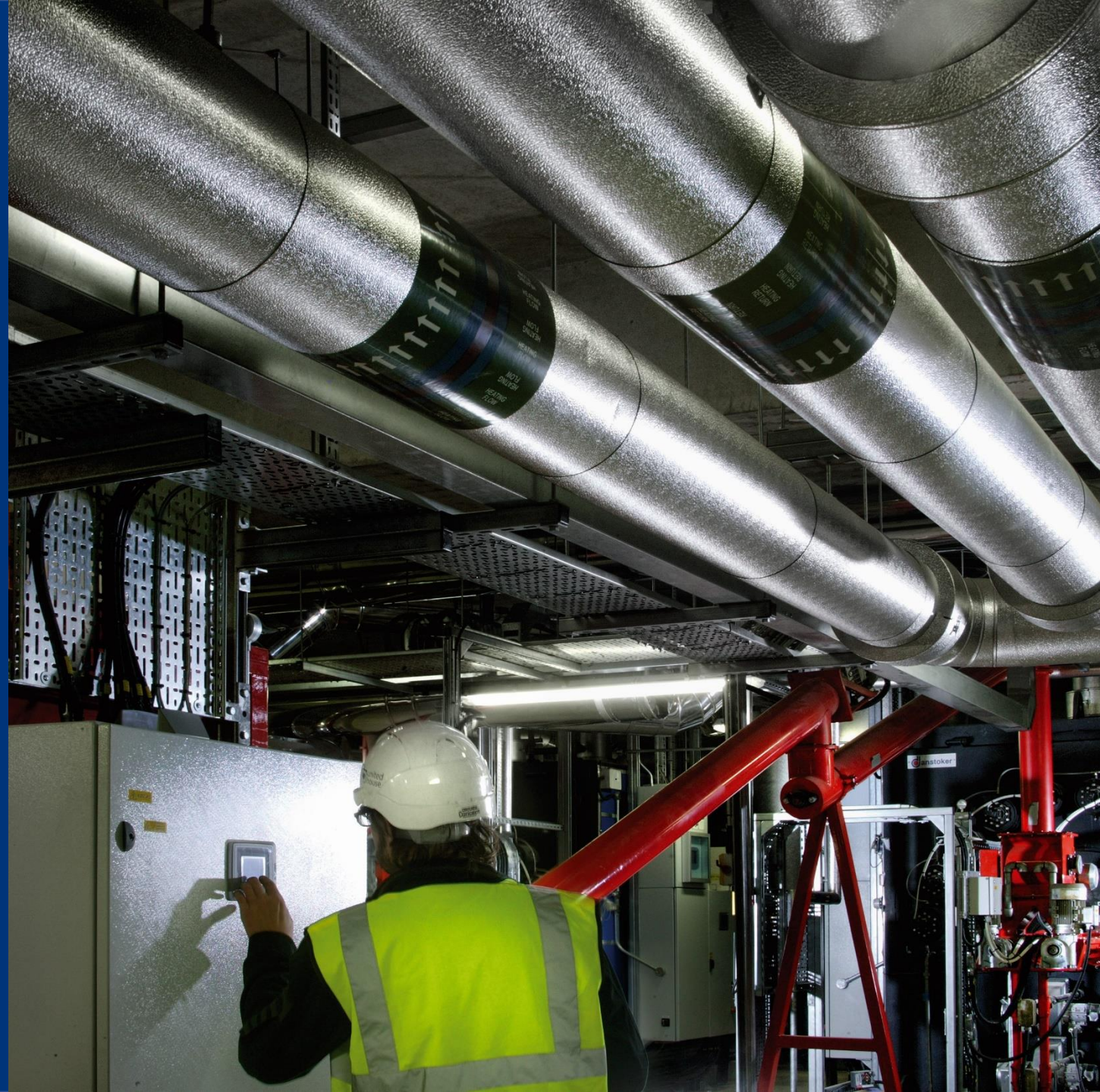
- In order to ensure that certain performance outcomes are achieved and maintained
- With Certification that performance outcomes have been achieved at the end of commissioning and at the end of an initial 2-year operation period





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Assessment and Certification (new build)





Rationale behind Assurance Scheme structure

- At the end of construction phase, Ofgem require binary yes/no decision at handover as to whether technical standards have been met to inform authorisation of supply of heat
 - Demonstration that heat network performance meets KPI thresholds (Outcome focus)
 - Certificate issued (ideally by independent 3rd party Certification Organisation)
- Risk that current market practices would lead to a proportion of networks failing to meet certification requirements at completion. Strong desire to ensure that networks do **not** fail to gain certification.
- Therefore, need structure in place to ensure right decisions are being made at the right times during the development of a heat network
 - Validation of design (that will deliver KPIs)
 - Verification of installation and commissioning (in line with design, workmanship etc to deliver KPIs and avoid key failures)



HNTAS approach for new heat networks

Certification

Certificate 1



Certificate 2



Assessment

Gateways

1

2

3

4

PHASE 1:
FEASIBILITY

Stage 1
Concept
Design

PHASE 2:
DESIGN

Stage 2
Developed
Design

Stage 3
Technical
Design

PHASE 3:
CONSTRUCTION

Stage 4
Construction
Design

Stage 5
Installation

Stage 6
Commissioning

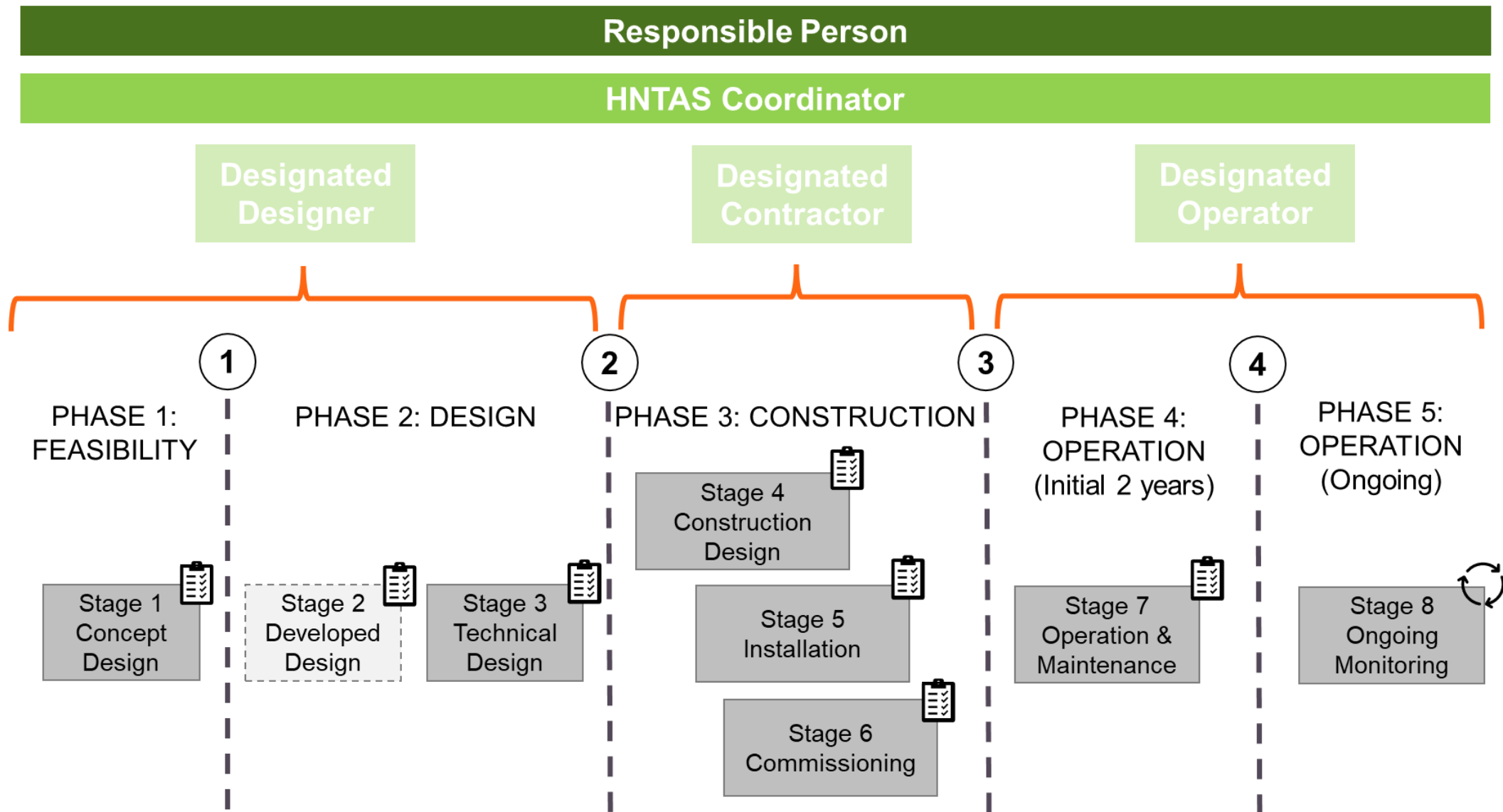
PHASE 4:
OPERATION
(Initial 2 years)

Stage 7
Operation &
Maintenance

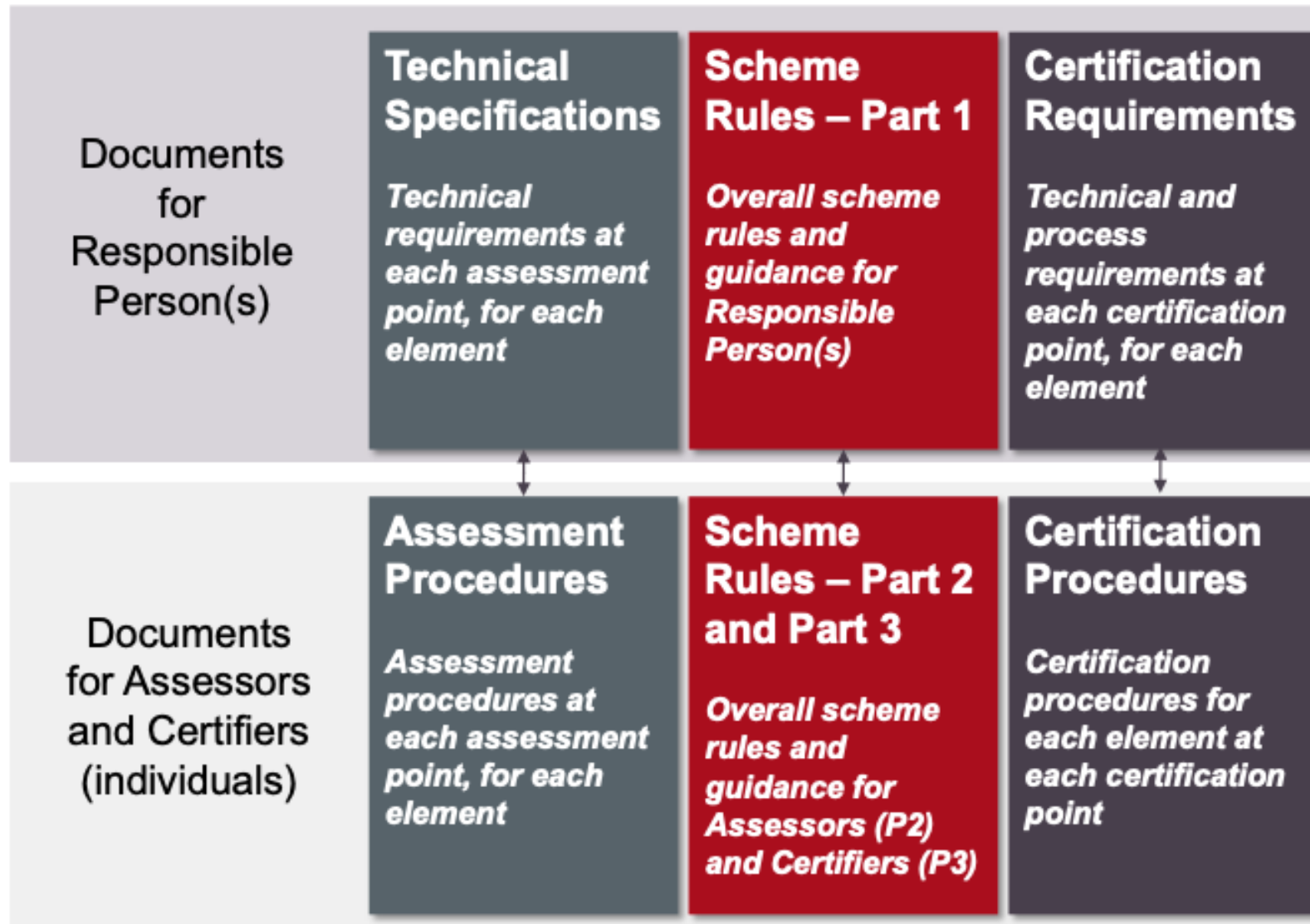
Stage 8
Ongoing
Monitoring



Duty holders



Normative Documents





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Operation and Maintenance (new build)



Exceptions based reporting

...with an initial 'soft landing' for first two years

Exceptions based reporting

- Most network issues normally manifest in first few years
- Will often be snags present that are not closed out
- Seasonal commissioning normally required in order to stabilise long term performance
- Need to ensure correct O&M processes in place



Regular independent inspections

Model:

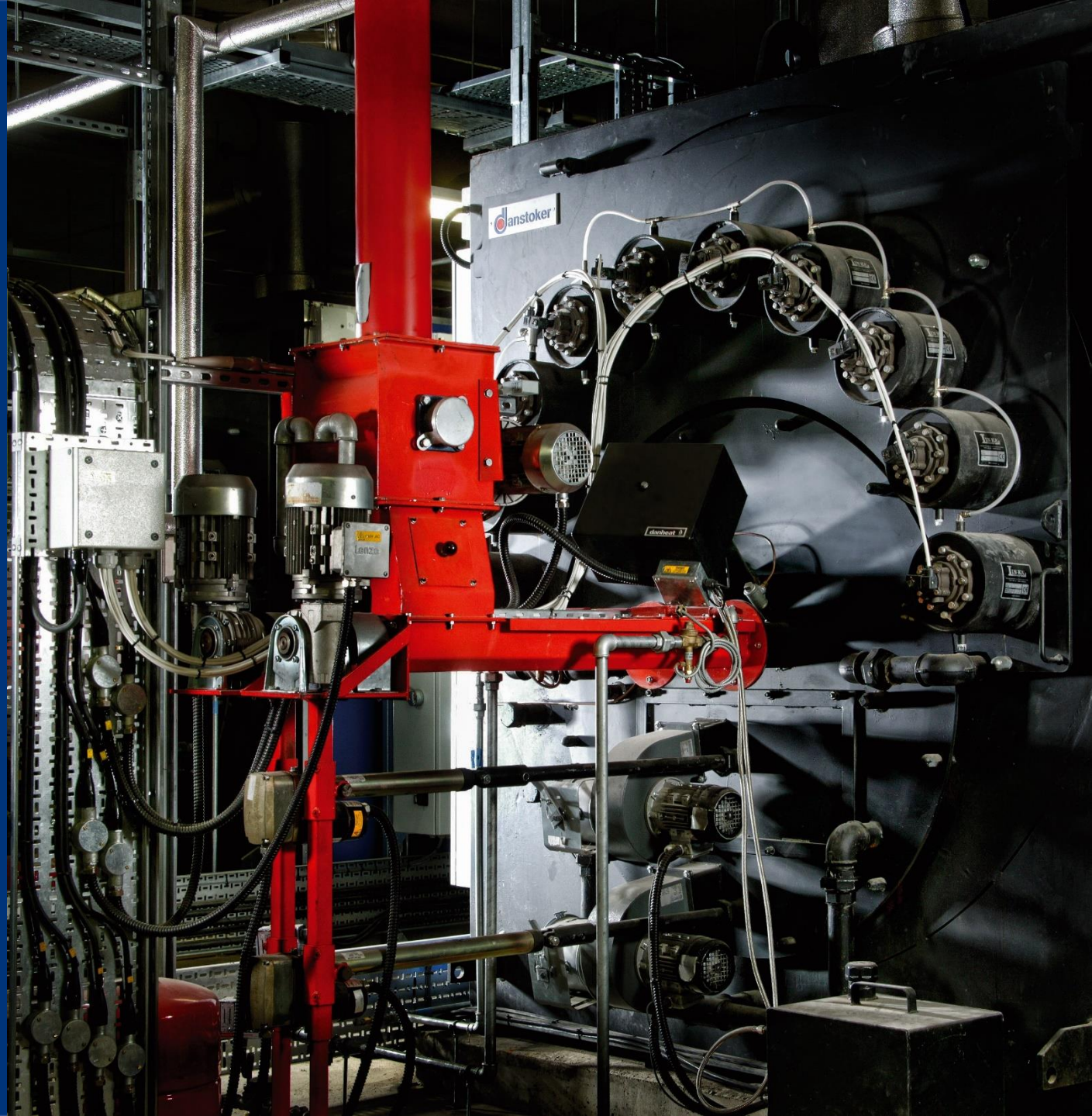
- Assessment milestones at 12 and 24 months after commissioning
- Assessors to carry out HNTAS inspections, covering both performance and process
- HNOs pay for assessment





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Existing Networks



Existing heat networks

....will find it harder to meet minimum standards

- Two-stage transitional approach
 - Require minimum levels of metering and monitoring to be installed
 - Require reporting within a relatively short period
- Require meeting minimum threshold performance within a relatively short period
- Require heat network operators to submit an improvement plan to set out how they will achieve certification
- Require certification to minimum standards within set period (longer timeframe)
- Different approach proposed for networks required under current Heat Network (Metering and Billing) Regulations (HNMBR) to have customer-level metering
 - Longer transition for networks established before HNMBR took effect in end 2014, or otherwise exempted in HNMBR
- Prove in-use performance after 2 years operation based on real data



Tentative timeline for legacy networks

Networks required by HNMBR to install customer level meters

Milestone	Year	Requirement
Milestone 1	1	Register heat network
Milestone 2	3	Demonstrate meeting minimum metering & monitoring requirements, including dwelling metering Demonstrate meeting threshold performance
Milestone 3	3	Submit Heat Network Improvement Plan (to reach certification)
Milestone 4	6	Certification 1
Milestone 5	8	Certification 2 (O&M)

Networks not required by HNMBR to install customer level meters (e.g. 2014 or older)

Milestone	Year	Requirement
Milestone 1	1	Register heat network
Milestone 2	3	Demonstrate meeting minimum metering & monitoring requirements, with full plantroom and network monitoring and reporting. Demonstrate meeting threshold performance
Milestone 3	4	Submit Heat Network Improvement Plan (to reach certification)
Milestone 4	5	Metering & monitoring for all end user connections
Milestone 5	8	Certification 1
Milestone 6	10	Certification 2 (O&M)



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HNTAS digital portal

- Developing a HNTAS Digital Service for heat network suppliers to demonstrate and evidence compliance with upcoming technical requirements
- Heat Network Operators, assessors and certifiers to submit and review data, documents, assessment outcomes and certificates
- The Code Manager and other relevant parties can track heat network compliance with HNTAS, both at an individual and sectoral level
- Will interface with the Ofgem digital service, to enable a heat network's HNTAS compliance status to be shared with Ofgem. This information will be used by Ofgem to grant/maintain/retract authorisation



HNTAS Current Status

- Shadow Service Provider in place for pilot phase (competitive tender)
 - Gemserv supported by Fairheat
- New-build normative documents drafted
- Work underway to draft NDs for 'existing' heat networks
 - Including those currently 'in-progress' pre-authorisation
 - Also including End of Life
- 14 pilots in pipeline (~7 underway)
- 4 Pilot Assessor Organisations in place (competitive tender)
- Pilot training almost complete
- Heat Network Training Grants courses underway
- HNTAS formal training – ITT out for a sub contractor
 - Training courses in mid 2025
- Work underway to develop HN Technical Standard
 - Superseding CP1 (2020)



Next Steps

- Drafting of new-build normative documents, procedures and processes) to be completed in late 2024
 - DESNZ aims to publish these draft normative documents in late 2024 to early 2025
- HNTAS consultation, secondary legislation to follow
- Drafting 'existing' normative documents
- HNTAS piloting throughout 2024 into early 2025
- Develop HNTAS online platform
- Plans to develop a new HN Technical Standard by mid 2025
- HNTAS Implementation in 2025 and into early 2026
- Exploring incentives to support HNTAS



Potential opportunities for...

- **Heat consumers** – improved reliability and service levels
- **Owners, operators and ESCo's** – to improve performance and reduce operating cost
- **Assessors** – commercial market for services
- **Designers** – to have guidance in improving heat network performance in design
- **Social landlords and local authorities** – to provide reliable and affordable heat
- **Developers and Investors** – heat networks become more investable, offering commercial opportunity in this growth sector
- **Government** – to encourage growth in the sector and meet carbon emissions targets

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