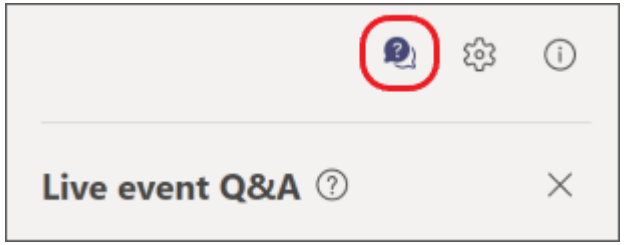
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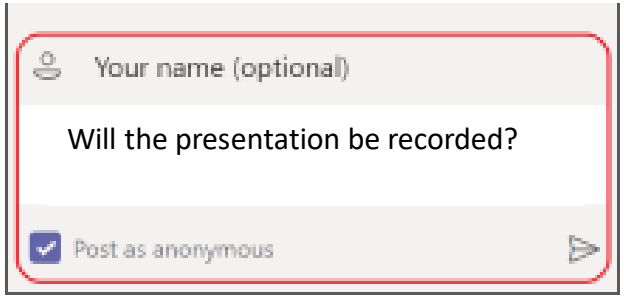
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Welcome

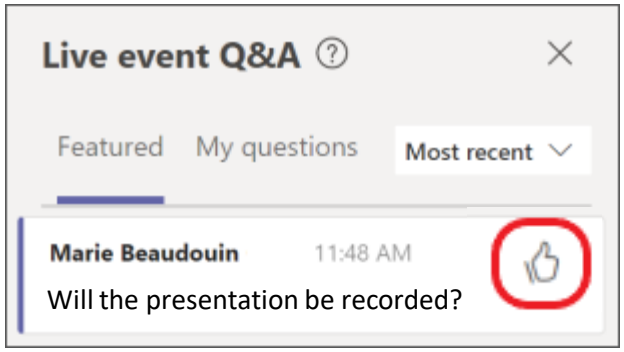
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Select the Q&A icon at the top of the pane when the pane is open to close it.



You can select to post your question with your name or anonymously. Any questions that remain unanswered and that relate to the GHNF specifically will be answered via our FAQ document.



To like someone else's question, select the thumbs-up icon next to it.

Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

	Session	Speaker
14:30 – 14:40	Introduction to market transformation commitments	Lauren Bright, Triple Point
14:40 – 14:55	Enhancing deliverability and achieving cost reduction	Ian Guest, Energetik
14:55 – 15:10	Supply chain engagement	Stuart Allison, Vattenfall
15:10 – 15:15	Ask the audience	Samantha Shea, Gemserv
15:15 – 15:25	Reducing transaction costs and time through standardised contracts	Tom Bainbridge, Lux Nova
15:25 – 15:30	Role of heat network zoning	Tom Roberts, Asteros
15:30 – 16:00	Discussion and Q&A	Ken Hunnisett, Triple Point

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Introduction to market transformation commitments

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NET ZERO BY 2050.

The UK is the first major economy in the world to pass laws to end its contribution to global warming by 2050.

The benefits of the transition are far greater than carbon savings alone.

The message is clear: Action is needed now to meet this target.

But we know heat networks are complex and take time to construct.

In order for the sectors supply chain capacity and capability to meet the current targets we will need to increase activity tenfold.

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The commercial opportunity represented by the rapid expansion of heat network deployment and low/zero carbon heat generation in our transition to net zero is enormous.

Realising the opportunity requires...

- **Increases in supply chain capacity and agility**
- **New market entrants**
- **The need to educate and engage local communities and supply chains.**
- **The need to invest in UK research and development**

What gets us there?

- **Engaged and knowledgeable government support**
- **Exemplar projects**
- **Mutually supportive policy frameworks**
- **Grant funding**
- **Robust and transparent procurements**

Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

GHNF

£288m of grant funding available over 3 years to support;

- New low carbon heat networks and the decarbonisation and expansion of existing
- Commercialisation and Construction or Construction only projects
- Eligible projects in England
- Public, private and third sector organisations

BHIVE

PCR-compliant procurement platform – Dynamic Purchasing System

- Open to public sector heat network owners/developers in England and Wales to obtain private sector investment and services
- **Asset finance** and **equity investment**
- Can be used to finance a **new heat network**, **expand an existing heat network** or to **sell** part or all of an existing operational network

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Project commitments will enable growth within the supply chain, help to address the heat network sector skills gap and allow the sector to share in learnings and innovation across a portfolio of projects.

Infrastructure

- Fair and open procurements
- Engaging local communities and supply chains
- Adding to a reliable and resilient energy system

Skills

- Identify opportunities to address the sector skills gap
- Fair and open recruitment
- Stimulating new jobs in the UK and training opportunities

Innovation

- Identify ways for projects to enable investments in research and development
- Sharing of learnings and innovations with the wider market

Applicants will be required to provide different levels of information depending on the size of project/s they bring forward. Please refer to the MTC Guidance available on the gov.uk website and discuss with your Relationship Manager if you have questions.

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The market transformation commitments form part of the GHNF application process and will be assessed alongside other areas of the application form. These commitments then become part of the grant funding agreement and the delivery of them will form part of the GHNF monitoring regime.



The application stage MTCs (Proposed Action Plans) will be assessed, and then monitored, through the following questions and methodologies.

	Question	Type
	PROJECT SUMMARY	
A	Short project description	Description
B	Project Milestones	Data
C	Current procurement status	Data
D	Breakdown of project outline costs	Data
	INFRASTRUCTURE	
1	Contracting strategy and procurement process	Commitment
2	Strategy for community engagement	Commitment
3	Low carbon footprint in supply chain	Approach
4	Reliability and resilience for energy system	Commitment
5	Investment and growth in project's local economy	Approach
	SKILLS	
6	Addressing the supply chain skills gap	Approach
7	Project recruitment and hiring strategy	Commitment
8	UK apprenticeships, trainees, and scholarships	Data & Description
9	Number of new jobs: Local, UK, and Rest of the world	Data & Description
	INNOVATION	
10	Investment in UK R&D	Data & Description
11	Continuous improvement	Approach

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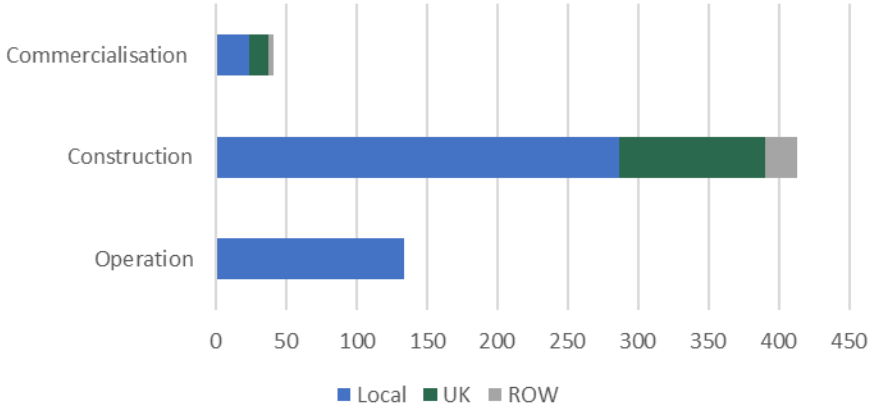
The impact of the applications to GHNF will be widespread.

Applicants are making commitments across:

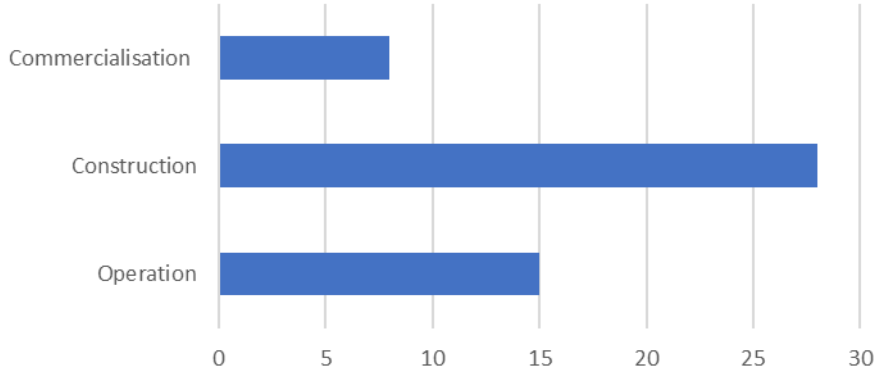
- Investment in UK based R&D
- Job creation
- Apprenticeships
- Embodied carbon
- Meaningful pre-engagement with the market
- Fair contracting terms
- Open procurement
- Clear strategies for community engagement

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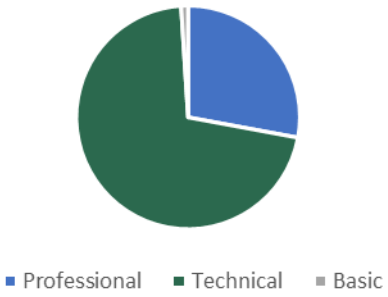
Expected FTE job creation by large projects



Expected apprenticeship creation by large projects



Expected FTE job creation by large projects by job type



Almost 600 jobs and over 50 apprenticeships could be created across projects that have applied for GHNF support in Rounds 1 & 2.

Most jobs will be created locally.

Note these are aggregated across applications and will be refined as projects progress..

Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

MTC Guidance and fund materials can be downloaded from gov.uk website

Green Heat Network Fund - MTC Guidance

www.tp-heatnetworks.org

Support from Relationship Managers is available to you – speak with us early on!


Lauren Bright


Amy Fry


Libby Carr

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Enhancing deliverability and achieving cost reduction

energetik

Tackling the climate emergency





European Investment Bank

SUPPORTED BY
MAYOR OF LONDON

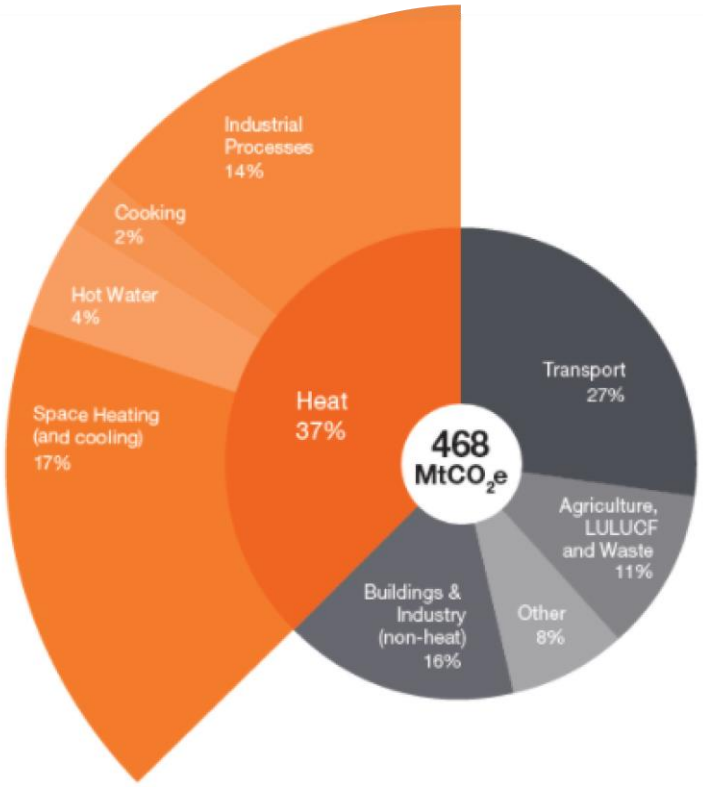
London Energy Efficiency Fund

EUROPEAN UNION
Investing in Your Future
European Regional Development Fund 2007-13

ENFIELD Council

The challenge we all face

- UK Government commitment to reach net zero carbon by 2050
- **Enfield Council aims to be carbon neutral by 2030 (organisation), with a goal of the borough being carbon neutral by 2040.**
- Poor local air quality affecting public health – estimated 9400 premature deaths in London from NOx and PM2.5
- Rising energy costs and reliance on fossil fuels, especially in current energy market climate…
- The population forecast to be living in UK cities is set to rise to 92.2% by 2030.
- Heat networks expected to increase from current 2-3% to 18% by 2050 if we're to achieve net-zero (CCC). Regulation is coming (2-3 yrs), as are mandatory heat network connection zones (5 yrs)



Who are we?

We're 100% owned by Enfield Council. We'll eventually supply thousands of homes and businesses in north London with low carbon heating and hot water through a series of high quality heat networks.

Very low carbon heat networks built to a high specification, and to expand

Established to provide better value energy that's reliable and environmentally friendly

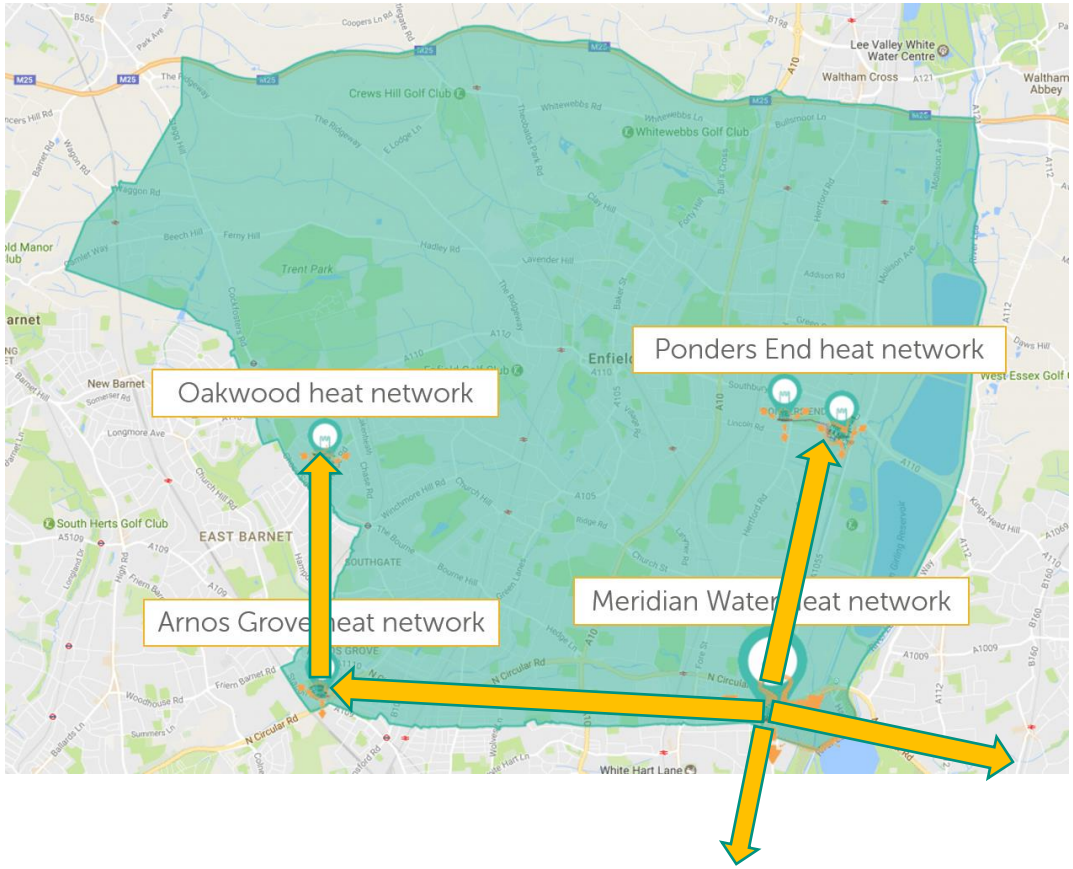
We're Council owned, so our profits stay in the borough are re-invested in Enfield

Small highly experienced team – 100+ years' experience



15,000+

Our networks



4 networks, future proofed by design - networks all designed to expand and interconnect to other developments

We aim to connect all Energetik heat networks to the Meridian Water Heat Network, further reducing carbon emissions across the borough

Working with Haringey / Hackney to connect and supply them, creating a strategic North London heat network to share the benefit from the low carbon heat source

Meridian Water Heat Network – Energy Centre

- Agreement in place with NLWA for low carbon heat supply signed December 2020
- Lease in place with LEL for land on EcoPark to build energy centre on
- Construction of energy centre and heat network commenced in March 2021, complete in May 2023



energetik

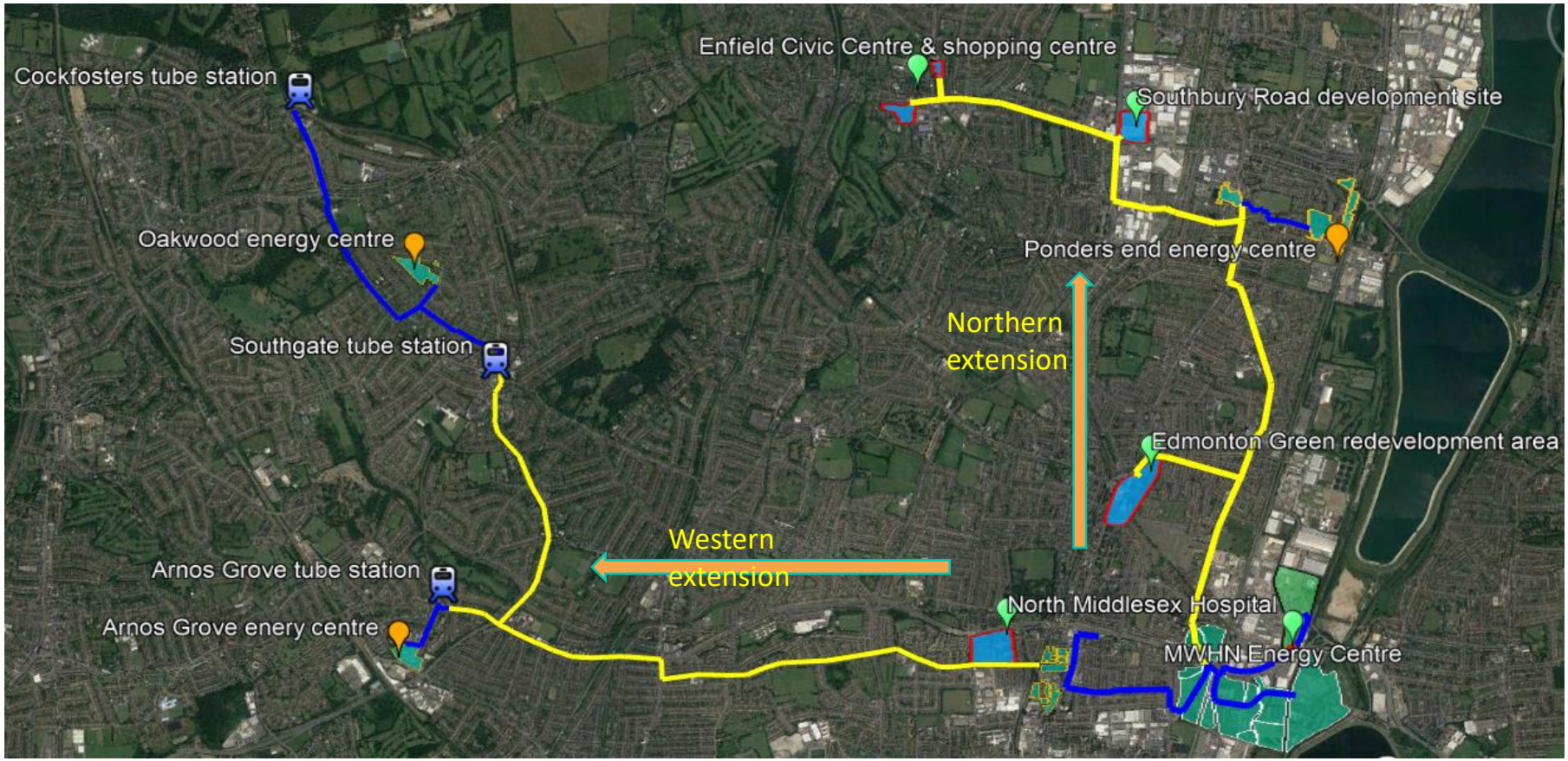
Energetik Pipe Store







Extension and decarbonisation

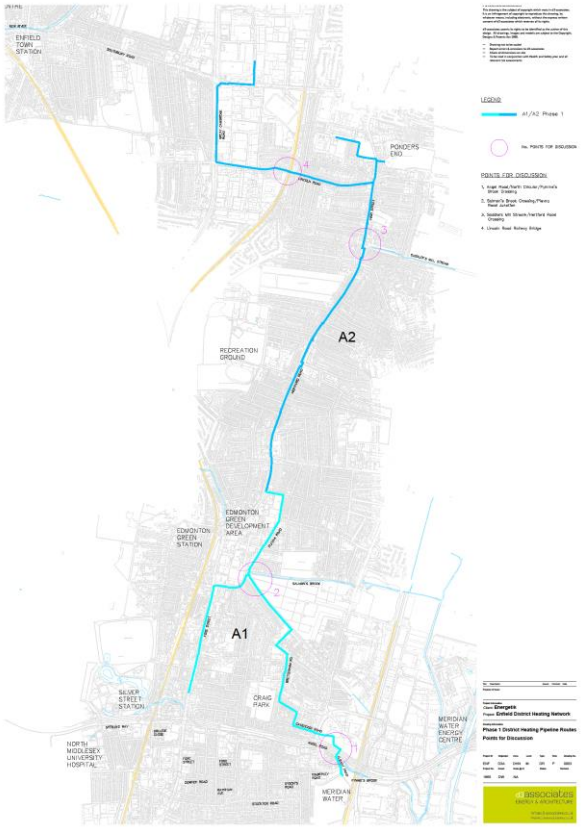


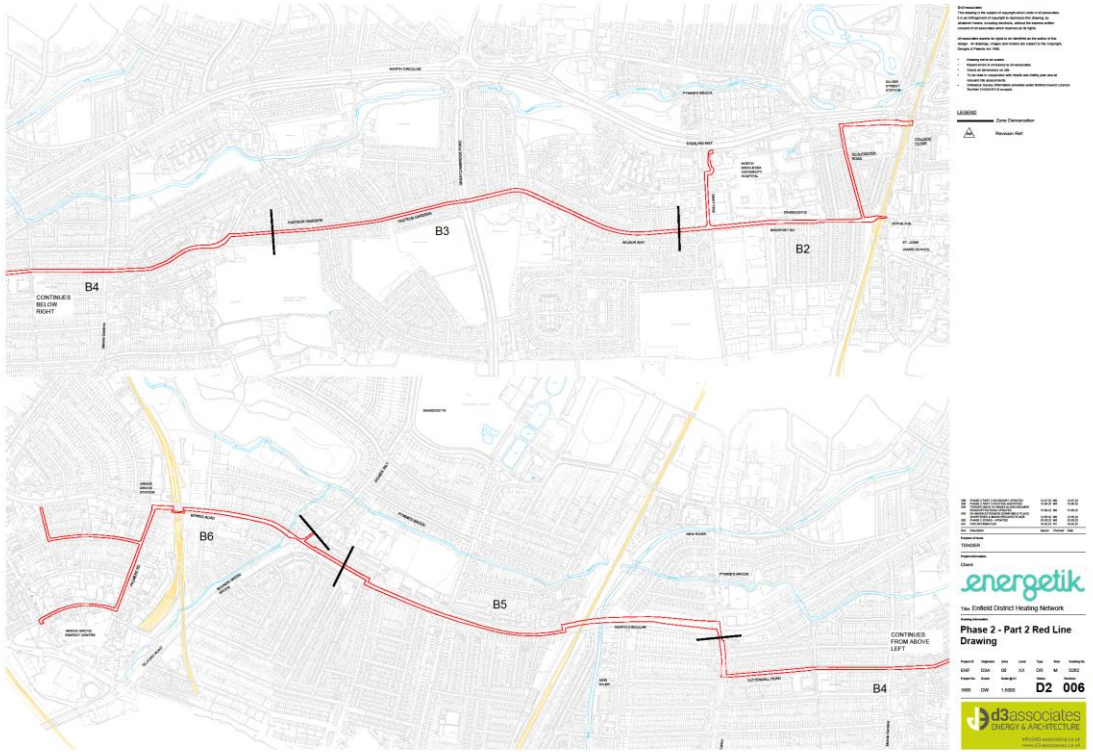
Energetik Pipe Stores





Energetik Network Contract Zones – 12 Zones





energetik



Thank you

Triple Point
HEAT NETWORKS
INVESTMENT MANAGEMENT

Enabling growth through effective supply chain engagement



Confidentiality: C2 - Internal

100%
Owned by the Swedish State

7.1 million
Electricity customers

1.0 million
Electricity network customers

1.8 million
Heat customers

2.4 million
Gas customers

18,883
Employees

VATTENFALL

Vattenfall's geographical footprint

Sweden	Germany
Finland	The Netherlands
Norway	Belgium
Denmark	France
Poland	United Kingdom



Confidentiality: C2 - Internal

Raising our climate ambition

Our ambitions to reach our 2030 commitment[1]



2X electricity
distributed in our grid



>125 TWh fossil-free
electricity produced[2]



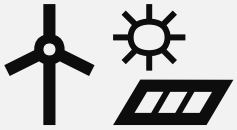
+30% customers
with low or no carbon heat



-50% CO_2 reductions
in procurement of goods & services



25X more e-mobility
charge points in operation



4X commissioned
solar and wind capacity added[3]

[1] Baseline 2020
[2] Fossil-free generation amounted to 93.0 TWh in 2021
[3] Not considering future ownership structure of added wind and solar production

Confidentiality: C2 - Internal

Vattenfall's heat business in the UK



Midlothian and Edinburgh

- Vattenfall has a 50:50 **joint venture with Midlothian Council**
- First connections for 3k homes and **construction commences early 2023**
- Plans for around **12k new homes** to be connected in next 10 years, with further expansion into Edinburgh.
- **Fossil free heat supplied from EfW plant**, and plans to include heat from mine water and local industry.

London

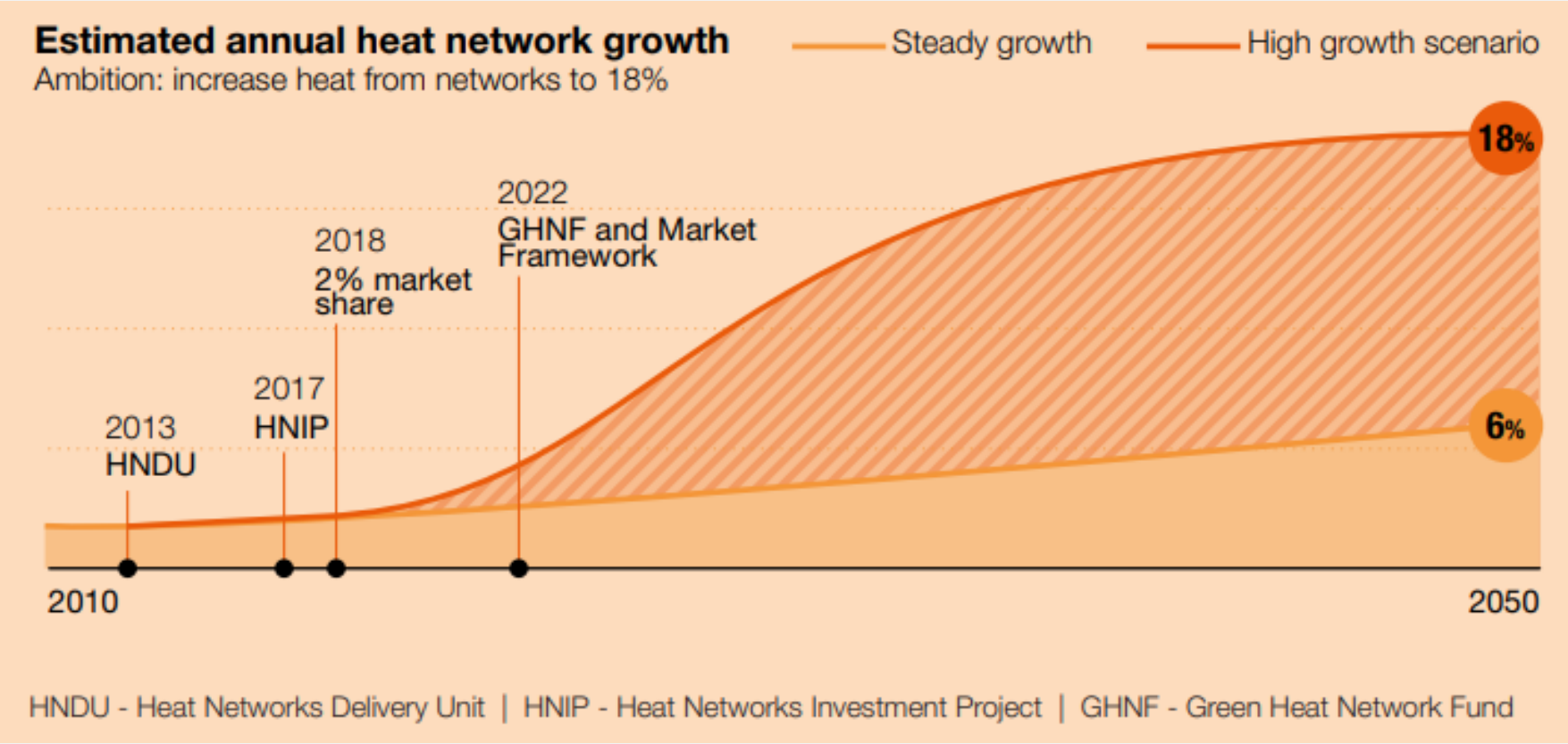
- Vattenfall is serving the major **regeneration project at Brent Cross Town**, delivering **heating and cooling networks** powered by heat pumps and clean electricity.
- **Riverside Heat Network** in South East London with Cory Riverside Energy, potential for largest Heat Network in UK

Bristol

- With Bristol City Council and Ameresco Ltd. Vattenfall formed **Bristol City Leap**, a 20 year Partnership to decarbonise and transform the city's energy infrastructure
- Vattenfall acquired **two existing heat networks** and are integrating the local team in Jan 2023, now serving customers as the networks are expanded
- Concession from Council passes **right/obligations to expand the networks** to achieve net zero targets

Confidentiality: C2 - Internal

Significant growth in heat networks is necessary to meet UK's climate targets



Confidentiality: C2 - Internal

Government continues to support growth

New Policy Support:

Zoning

Heat Network Zoning will help scale heat networks, required for UK to meet net zero.

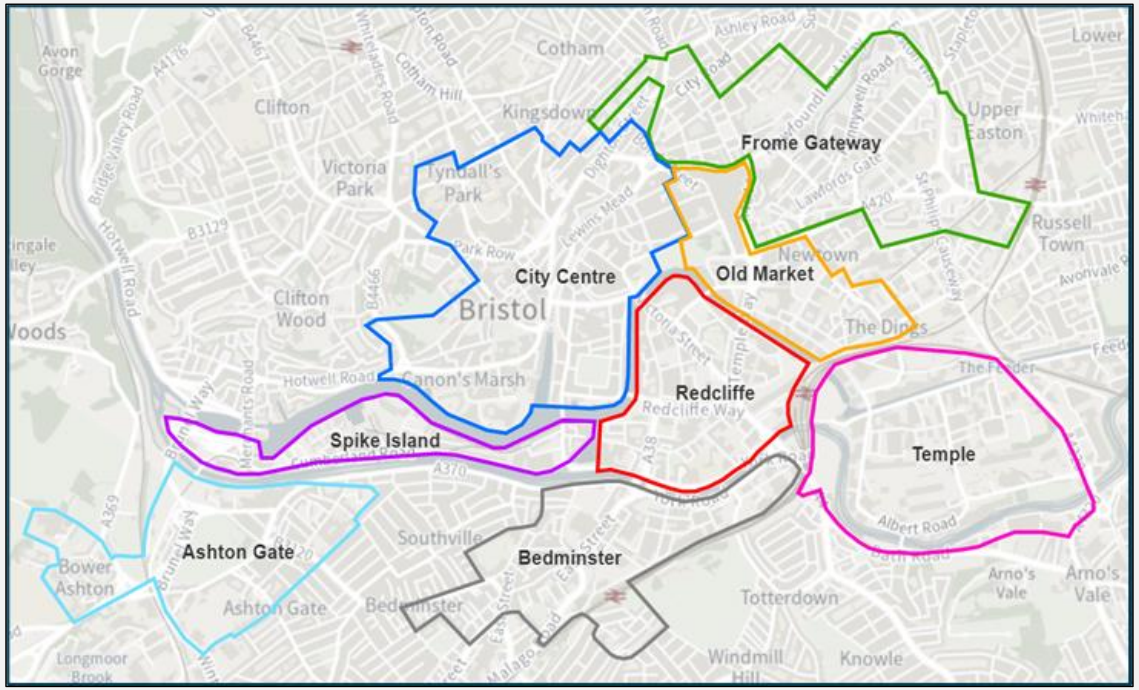
Introduction of heat regulation

Energy Security Bill appoints regulator to ensure customers are better protected

Continued funding to stimulate investment5

UK Gov is investing £338 million 2022 - 2025 into a Heat Network Transformation Programme to scale up deployment

Bristol City Leap Partnership creates platform for significant growth



- Net zero by 2030 and **ratcheting CO_2 commitments**
- Investment plans for **£300m+** into heat networks
- Substantial delivery via **supply chain within Bristol**
- Local **green industry job** creation targets
- **£61.5m social value** within city
- Development to date **supported by stimulus funding:** HNIP and PSDS and EU Replicate funding

Confidentiality: C2 - Internal

The Heat Network Supply Chain



Growth is clearly needed

- Today, there are only a **few quality specialist providers** who can package risk
- Significant **reliance on imports**, with small UK manufacturing base



As the market grows it's critical that we:

- **Send signals about scale and ambition** to develop companies and encourage new entrants
- **Think local**: We need depth locally to set up right for the long-term
- Focus on talent **attraction development and retention** throughout value chain

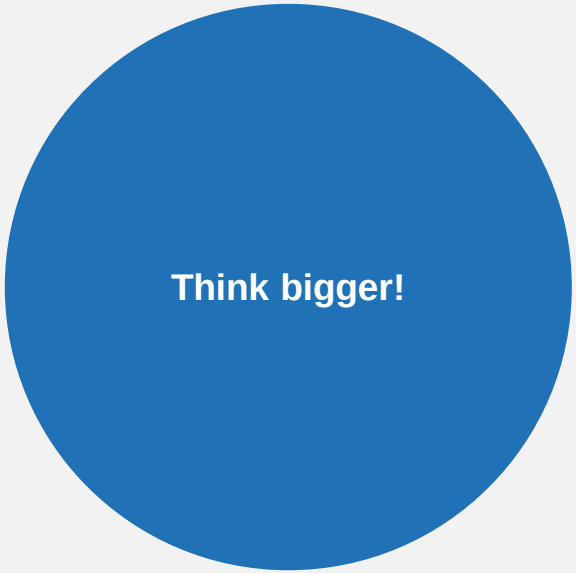


Our approach

- **Early contractor engagement** and foster a good dialogue locally
- Get risk allocation and incentives right in **contracts**
- Let contract at **scale**, both **value** and **term**

Confidentiality: C2 - Internal

Learnings from last 4 years



It’s not just standalone projects. This is long-term asset deployment needed to deliver the transition



“Use it or lose it” when it comes to stimulus funding – (sometimes we’ll need to structure programmes to fit the money available)



New entrants needed to build capacity as the market grows

Confidentiality: C2 - Internal

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INVESTMENT MANAGEMENT

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Join the conversation by scanning the QR code or go to Slido.com with the code **#2303815**



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What one word would you use to describe your vision for the heat network market?

slido



What is the greatest barrier to the growth of the heat network market?

slido



What actions can help to speed up the delivery of heat networks?

slido



What is needed to grow the capacity of the sector?

slido



How can we bring the supply chain together to transform the market?

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Reducing transaction costs through standardised contracts

Standardised Operation and Maintenance Sets (SOMS)

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- As part of HNIP, appointed to draft template contracts for use by anyone in the sector developing a district heating scheme
- Objective to produce of set of documents that would help reduce transaction costs for developers of projects (and other stakeholders) and help raise standards across the industry
- We created a suite of templates that should serve as a useful starting point for drafting of a number of key agreements present in many projects
- Under GHNF, we have updated the template documents to reflect changes such as Brexit, some tidying and some industry feedback
- The suite of contracts can be found at: https://tp-heatnetworks.org/heat-contract-templates

Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

A reminder – the SOMS are a set of contract template heat contracts covering:

- delivery of district heating infrastructure;
- operation and maintenance of that infrastructure;
- connection and adoption to heat networks;
- energy off-take;
- lease of energy centre/plant room and easement for pipes; and
- use of heat pipes (unbundled pipe business)

Note: the suite of contracts does not cover project ownership or partnership models

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Two approaches to district heating procurement have been assumed (from a sponsor perspective):

A. **Works packages:** A project sponsor (perhaps a local authority) establishes its own energy company which outsources works packages for delivery of infrastructure, and its operation and maintenance and other business services.

B. **Concession**: a project sponsor (such as a local authority or developer undertaking a regeneration scheme) fully outsources the business of heat supply (granting a concession), including delivery of infrastructure (although delivery of infrastructure can be addressed in a number of ways); and

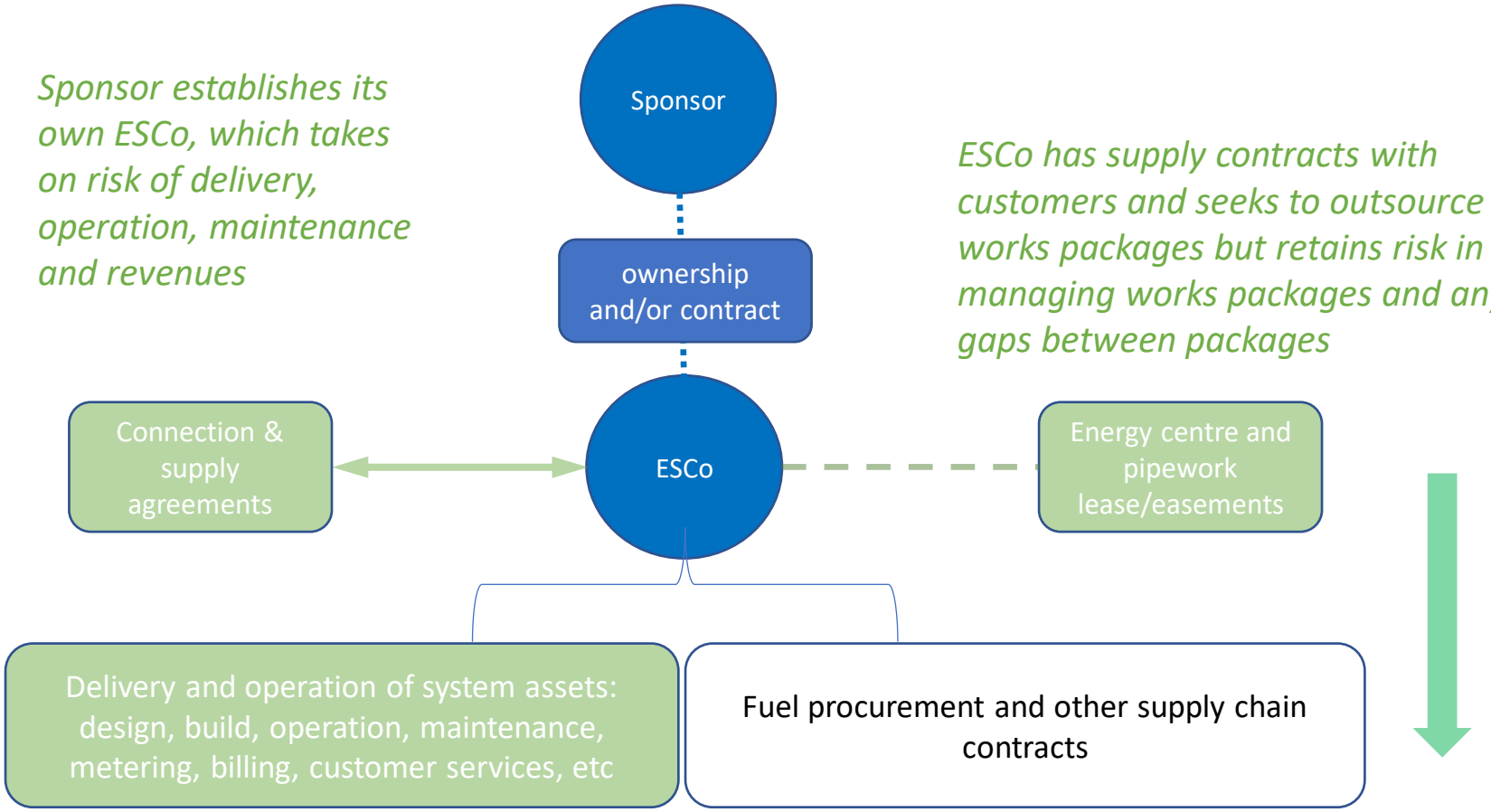
The concessionaire itself under model B might have sufficient resources in-house or might choose to use elements of delivery model A

[NB other approaches are possible but a number of the contract templates developed will be useful irrespective of the approach taken]

Models A and B are illustrated in the next 2 diagrams

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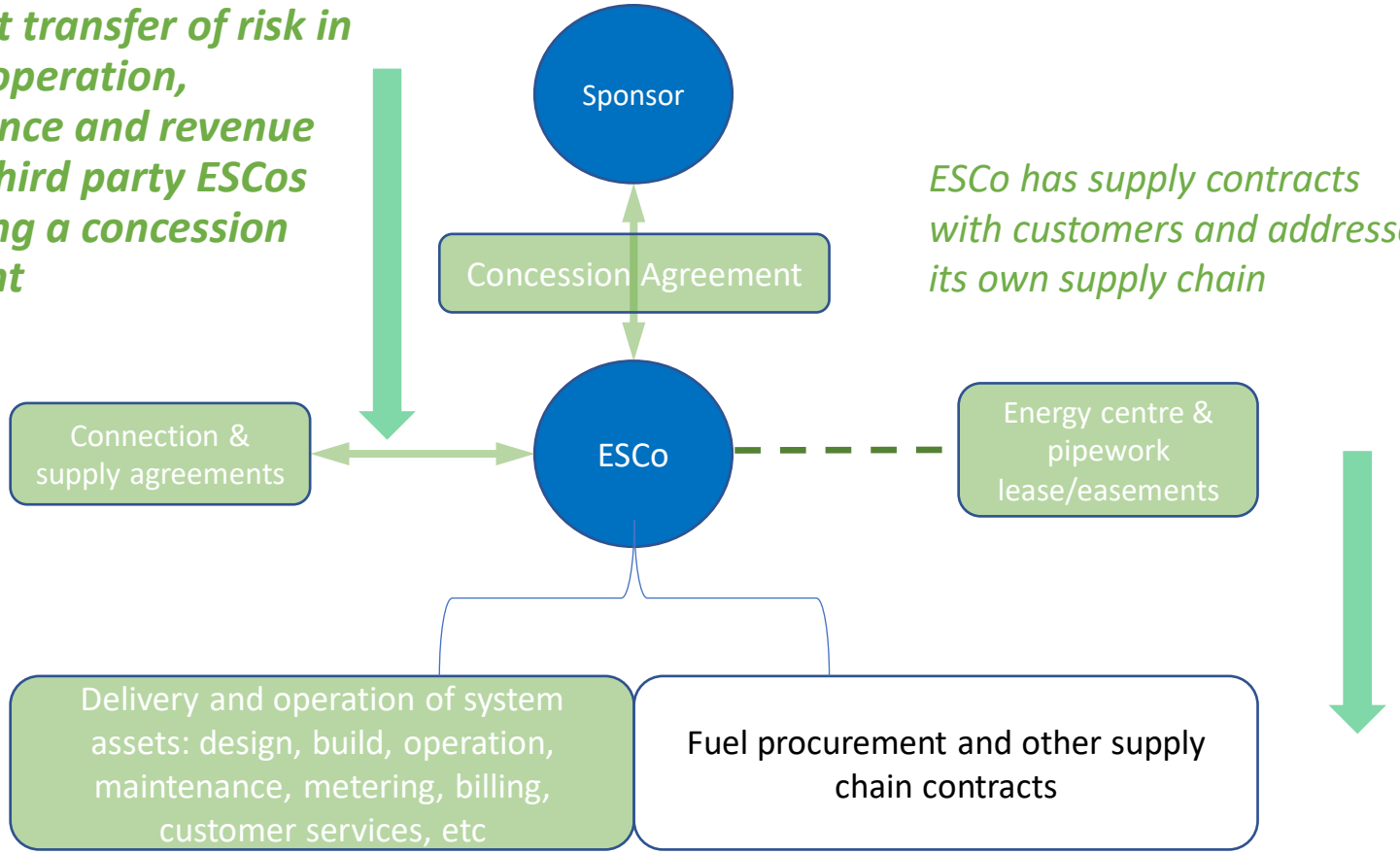
Sponsor establishes its own ESCo, which takes on risk of delivery, operation, maintenance and revenues



ESCo has supply contracts with customers and seeks to outsource works packages but retains risk in managing works packages and any gaps between packages

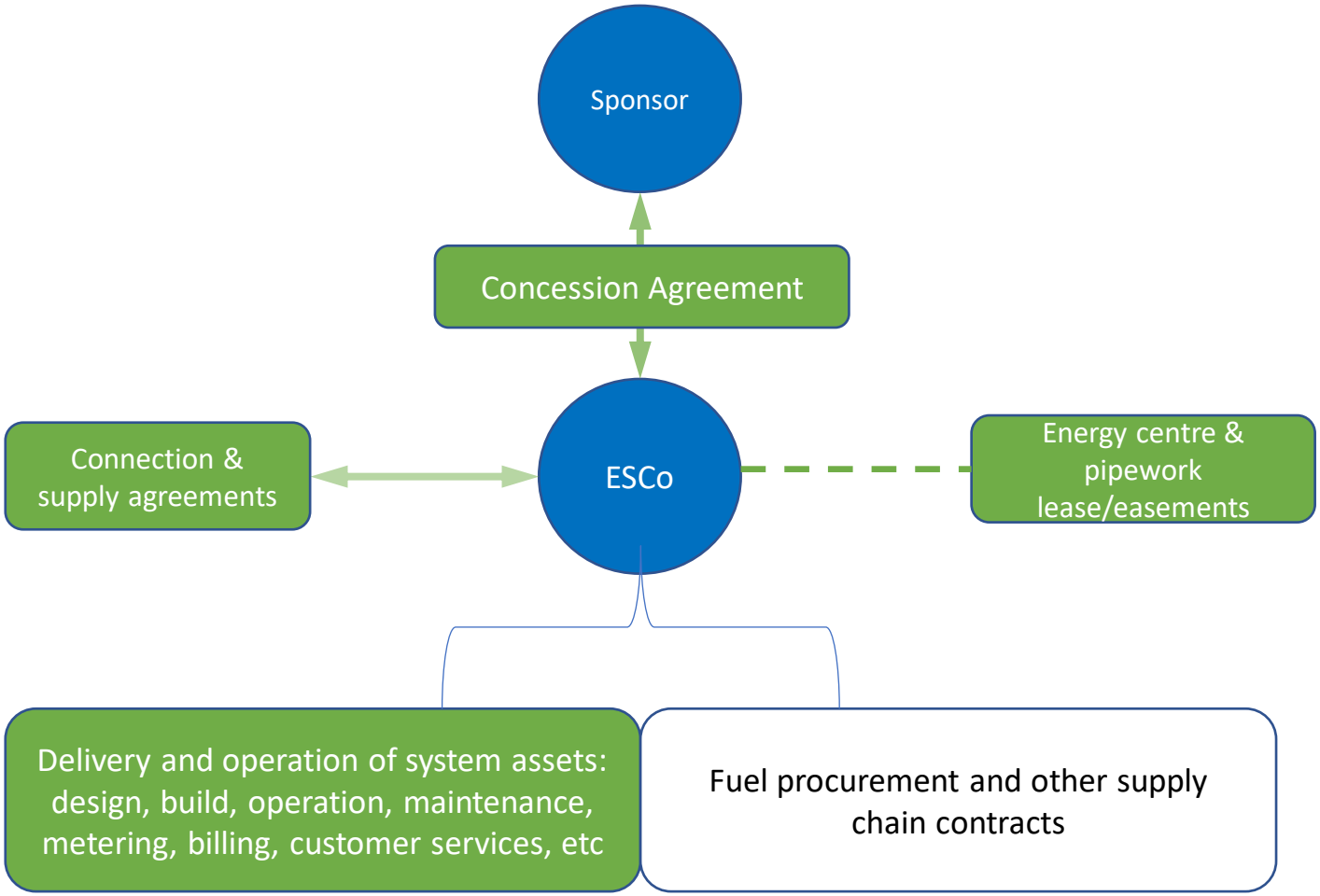
Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

Sponsor seeks to achieve a significant transfer of risk in delivery, operation, maintenance and revenue risk to a third party ESCos by granting a concession agreement



ESCo has supply contracts with customers and addresses its own supply chain

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Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

Two key approaches to procuring district heating infrastructure have been assumed (from an ESCo perspective):

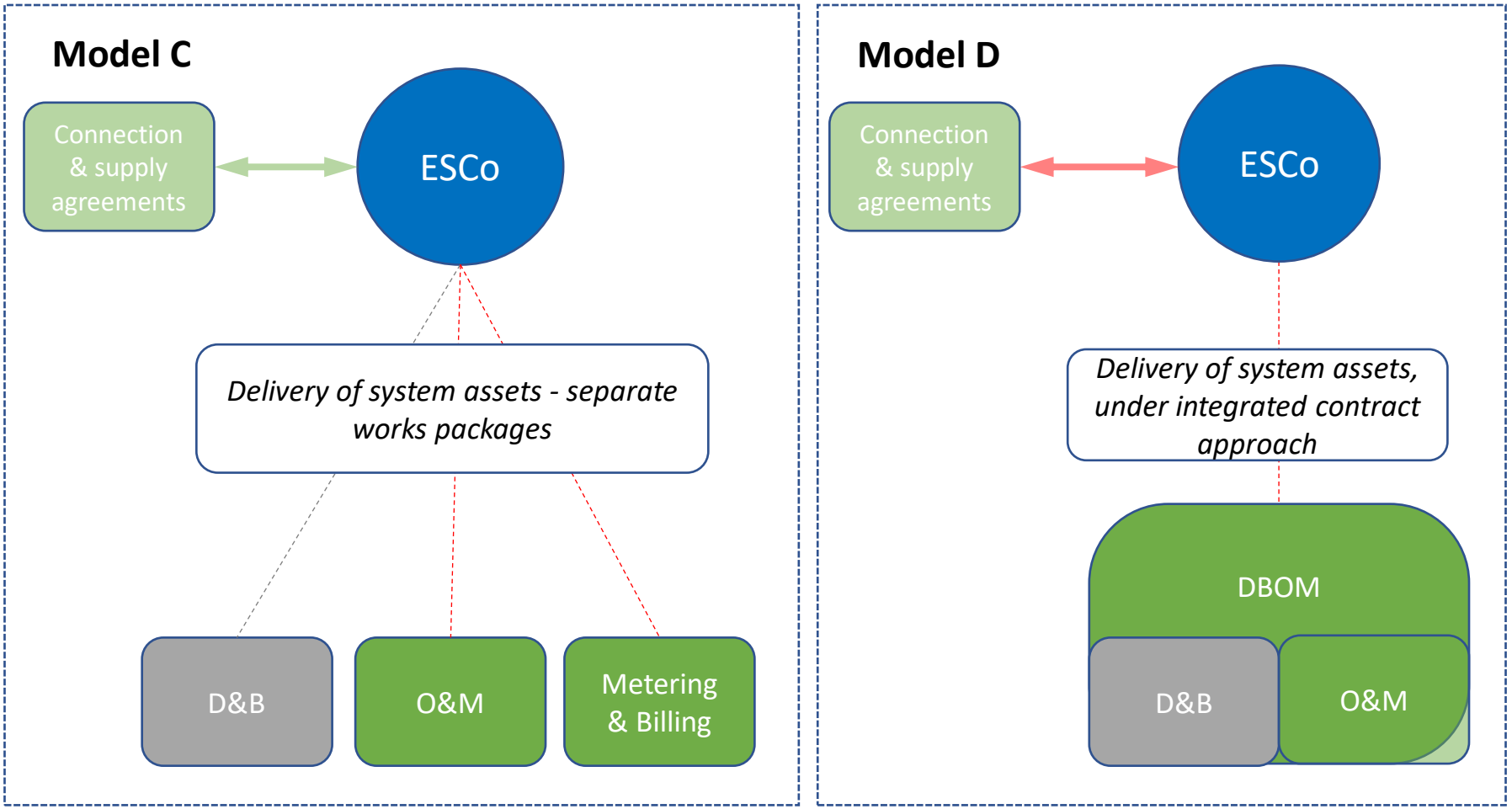
C. **Separate works packages:** ESCo outsources separate works packages for delivery of infrastructure and its operation and maintenance (and, potentially, other business services)

D. **Integrated works contract**: ESCo outsources, under a single contract, the delivery of infrastructure and its operation and maintenance (and, potentially, other business services)

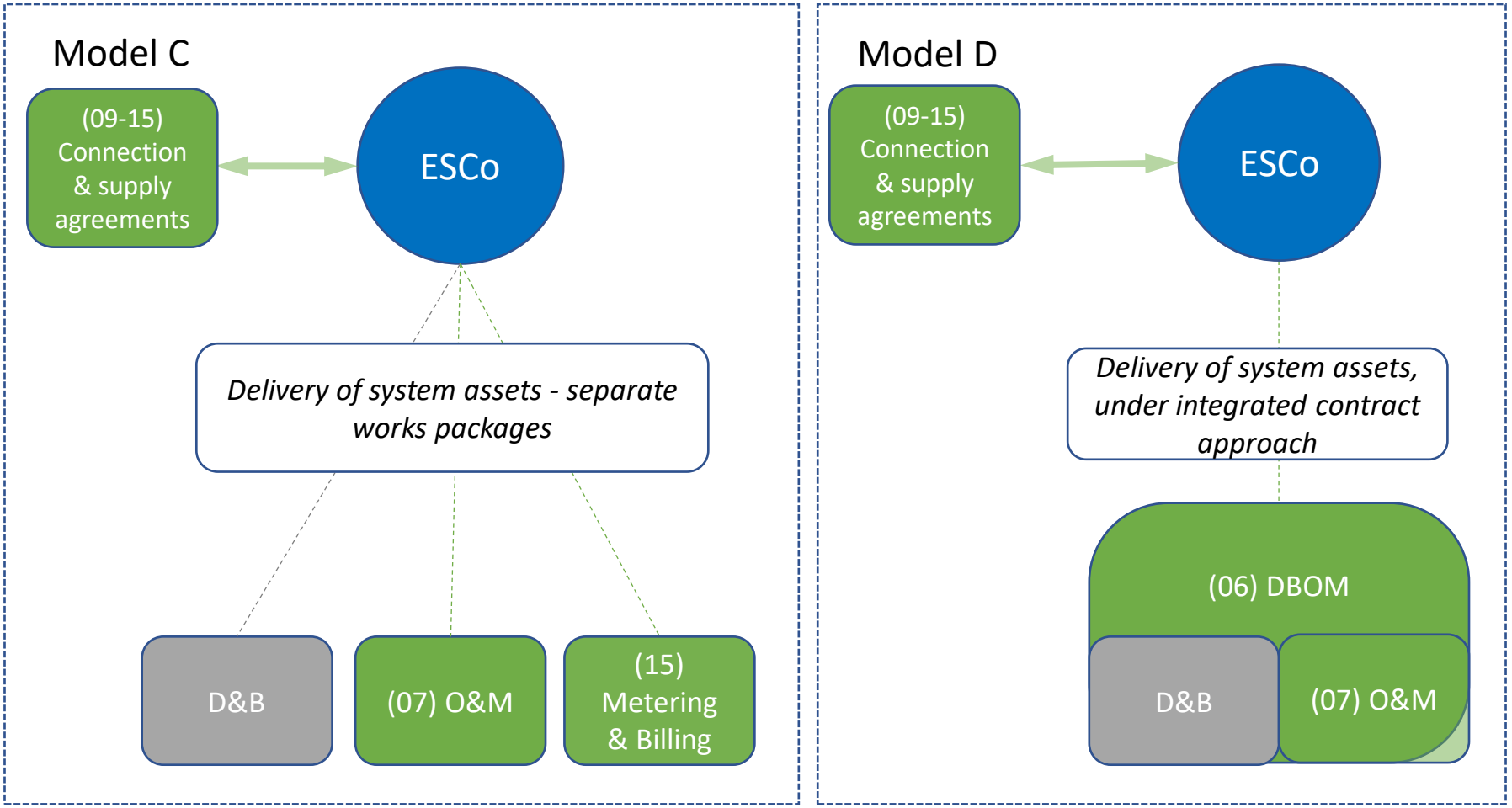
[NB other approaches are possible]

Models C and D are illustrated in the next 2 diagrams

Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT



Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT



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Complex connections

- Sometimes, a master developer of a large property development requires the ESCo network to extend connections to multiple buildings, built over time (potentially, over multiple phases) and the parties recognise that those buildings may be built out by different plot/building developers and/or subsequently owned by different building owners
- In that situation, a framework agreement can:
  - enable separate building connections;
  - give parties visibility of the agreements for supply that customers will need to enter into;
  - address transfer of ownership and/or risk in certain parts of networks built out at the development (adoption)
- This is captured in the template Framework Supply Agreement

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Framework Supply Agreement

- The template Framework Supply Agreement, Connection Agreement and Adoption Agreement work together
- The Framework Supply Agreement also serves as an umbrella for a suite of template heat supply agreements that are used for individual buildings or customers (including customers within a building let to a number of tenants)
- Simpler connections will not need the umbrella Framework Supply Agreement and can use the relevant lower level agreement shown in the next diagram

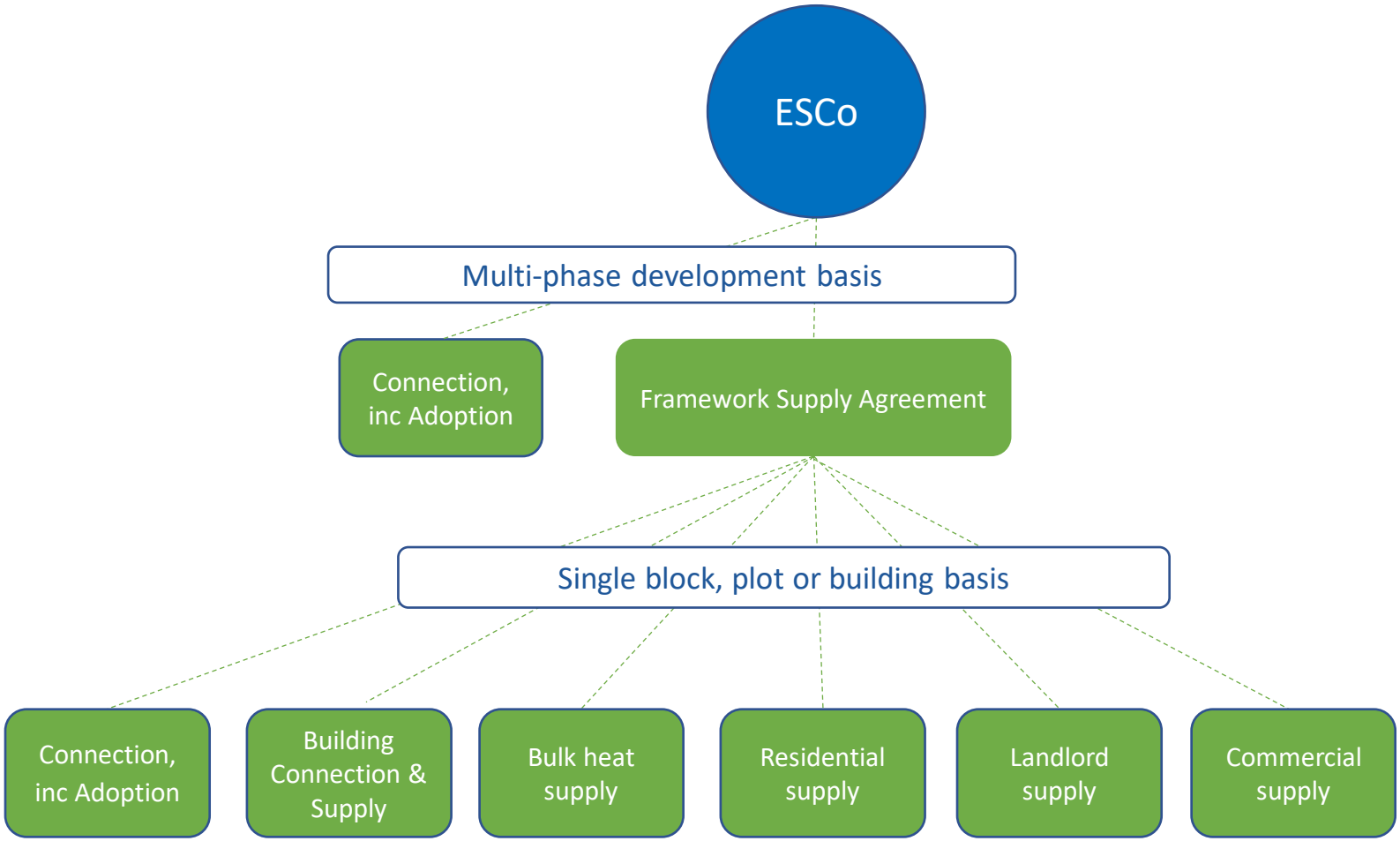
Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

Lower level supply agreements

- The Framework Supply Agreement may serve as the umbrella over a suite of lower level supply agreements
- Each of the lower level supply agreements can also be used for less complex connection-supply arrangements
- Each is designed for use in a particular customer scenario – eg:
  - building connection & supply
  - bulk heat supply
  - landlord heat supply
  - commercial heat supply
  - residential heat supply

The connection, adoption and supply agreement templates and how they fit together is illustrated in the next diagram

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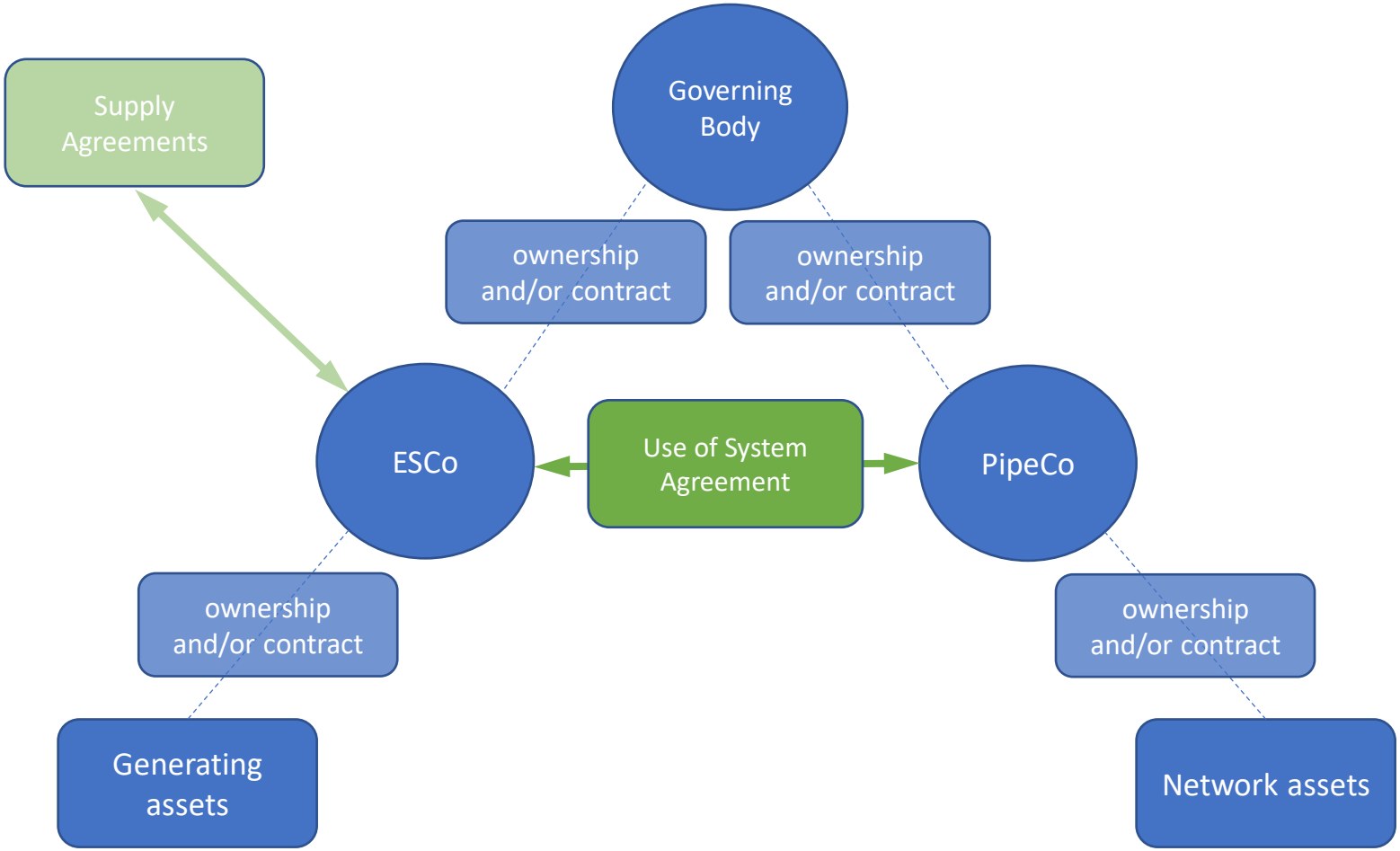
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Use of system agreement

- Most UK district heating schemes operate have a single entity that owns/operating all heat production plant and main distribution network and acts as heat supplier to customers too
- Regulated electricity and gas markets have the activities of production, distribution and supply separated (or "unbundled"). This separation facilitates competition in production and supply over regulated geographic monopoly networks. Government is currently looking at potential regulatory models for district heating
- There are many ways unbundling could, *in principle*, apply. A small number of projects in the UK already have, or are developing with, some degree of unbundling but there is no consistent approach yet emerging.
- One approach is to establish a "pipes" business, separate from production and supply. Our template "use of system agreement" is for use in this scenario. However, it will only serve as a starting point for development of the documentation actually needed for a particular unbundled project. It will need more tailoring and development for use with a project than the other templates in the SOMS suite.

A use of system agreement structure is illustrated in the next diagram

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Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

Each template agreement:

- starts with its own guidance note; and
- comprises full legal drafting, with a combination of:
  - footnotes;
  - embedded drafting notes; and
  - square-bracketed options

Across the suite of templates, a common base template has been used for consistency of structure, approach and terminology

"Plain English" has been used for the template Residential Supply Agreement

Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

General points:

- Whilst the contract suite is focused on heat, they may be used for cooling. In addition, optional wording has been included to accommodate electricity networks and supply
- Given the limited scope for distribution or supply of electricity for domestic consumption without committing a criminal offence (unless licensed under the Electricity Act or falling within an exemption), electricity supply has not been provided for in the documents dealing with domestic supply
- The contract suite has been drafted anticipating either public or private sector use but public sector bodies should take into consideration any public accounting impacts when entering into any agreements

Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

Points to note:

- Each template agreement will require tailoring to fit the specific commercial structure and risk allocation of the particular project and parties although we anticipate the Residential Supply Agreement will generally require least and the other supply agreements will generally require a more
- All will require populating with technical details (eg around network design) and commercial details (pricing, in particular)
- Key drivers of structuring (and risk allocation) tend to include: where demand risk lies; how the project is being funded and how overall scheme governance and sustainability are going to be incorporated
- A view will need to be taken on which templates – or parts of templates – to use to fit that structure and to deliver an appropriate risk allocation from top to bottom in the chosen project structure
- The templates are provided for information only and we exclude all liability, to the maximum extent permitted by law for any reliance placed on them
- Anyone using these templates should use competent professionals to advise them and to help undertake the required tailoring

Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

For information on possible future revision of the documents please contact:

consult@luxnovapartners.com

Department for
Business, Energy
& Industrial Strategy

ASTEROS

City Deep Decarbonisation Programme (CDDP4) and Heat Networks Advanced Zoning Delivery Programme

ASTEROS

Programme Aims

1

CONSTRUCTION START & PIPELINE

Working with a number of CDDP4 and Advanced Zoning Cities to identify the potential opportunities for accelerating the scale and pace of zonal heat network delivery

2

READINESS FOR ZONING

Supporting a number of Cities in the potential acceleration of heat network delivery, aligned with Zoning policy

3

LEAVING A STRATEGIC LEGACY

Capture lessons learnt, establish standardised outputs, and provide feedback to policy development from key stakeholders

Workstreams

ASTEROS

CDDP4 Workstreams

WP1 Client Support Activities and Programme Management

WP2 Technical Workstream

WP3 Financial, Legal & Commercial Workstream

- WP3 - Financial, Legal & Commercial Workstream
  - Supplier workstream
  - Funding workstream
  - Procurement Workstream
  - Zonal Commercial & Delivery Workstream
  - Legal workstream

- Opportunity for suppliers and stakeholders to engage in the development of zonal Heat Network delivery
- If you're interested in being involved please follow the link below
- https://forms.office.com/e/nxg2DLRA7e

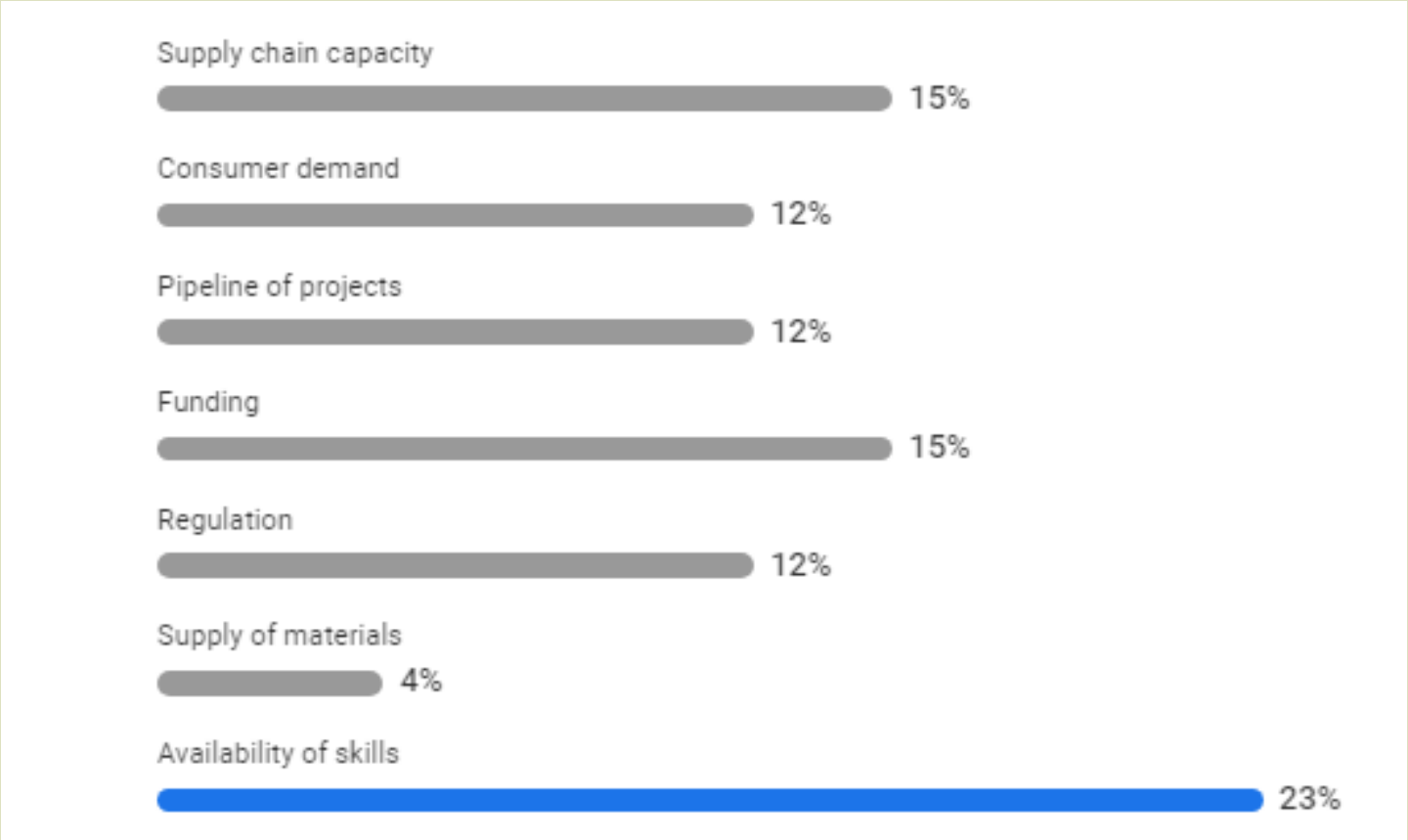


Triple Point HEAT NETWORKS INVESTMENT MANAGEMENT

Discussion and Summary



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