Heat Networks Prospectus

City of Sunderland Low Carbon

Introduction

Sunderland is committed to playing its part in tackling the global climate change emergency, and its low carbon ambitions form a key part of the themes within the City Plan, helping Sunderland become a Dynamic, Healthy and Vibrant Smart City.

Sunderland is a city on the up, with pioneering work in the world of digital and emerging technologies, and significant urban redevelopment. Sunderland is reinventing itself as a connected and low carbon city of the future today, and this is happening at an ambitious pace.

And now we're looking to accelerate our decarbonised heat ambitions.

Sunderland is seeking an experienced district heating funder/operator to commercialise and develop a low carbon heat network for central Sunderland, through an innovative contractual delivery model. Further detail in relation to Sunderland's contractual approach to delivering the heat network is set out in Contractual Delivery Approach later in this document.

This is an important next step for Sunderland, driven by its ambitious carbon reduction targets and a City Council determined to embrace low carbon and digital technology

to create opportunities for residents and organisations – and make Sunderland a world-class place to live, work and play.

Through collaboration with an expert funder/operator, we believe we can make a significant contribution to the council's ambitious carbon reduction targets. The commitment is clear from our side – we want to ensure that our city is at the absolute forefront of low carbon technology – harnessing it to create greater opportunities for our people and businesses – and that is something we know this approach can deliver.

This is a hugely exciting opportunity to reimagine the way in which we heat our buildings and we're delighted to reach out to the market to explore the art of the possible.

We believe that this procurement will provide an outstanding opportunity to develop proposals for a world leading smart district heating network for the City of Sunderland, with the goal of delivery at pace and expansion to the wider area.

Sunderland the place

Sunderland is a beautiful coastal city, with miles of sandy beaches and acres of green parkland, a vibrant and dynamic place to live, work and play.

Right at the heart of North East England, Sunderland is a city with a proud past fuelled by passionate, welcoming people. Its unique charm seamlessly blends tradition and heritage, with forward thinking and innovation.

Named Smart City of the Year 2020, Sunderland is growing its reputation as a digital trailblazer, furthered by its long term strategic partnership with Boldyn Networks; a place that is not just embracing, but actively exploiting the many benefits that connectivity and technology can bring to its people and businesses. The use of connected technology is now actively being used to provide insight and help reduce carbon emissions.

A changing city

Once a world-renowned force in shipbuilding and coal mining, Sunderland has reinvented its economy, with heavy industry traded for the weightless world of digital; and glassmaking replaced with advanced manufacturing, most famously as the home of Nissan, Europe's most productive car plant.

The city's friendly people run centres of service for some of the world's biggest brands including Ocado, EE and Barclays.

Fuelled by its world-class university and with four more on the city's doorstep, its smart minds have helped companies such as Tombola and Berghaus grow into global powerhouses. And Sunderland has an increasingly diverse range of start-ups taking root in and around the city, with entrepreneurs enthused and inspired by the supportive business community that works together to help each other.

And just like its economy, the cityscape in Sunderland is transforming.

Regeneration is at the heart of the city's plans with hundreds of millions of pounds of investment, from both the public and private sector, delivering a reimagined city. From the coastline to the city centre, you'll find new homes, offices and leisure venues

strengthening the foundations of Sunderland as an increasingly attractive place to live, work and play.

The opening of the Northern Spire bridge in 2018 signalled the start of Sunderland's transformation. This has been quickly followed by the major regeneration of Riverside Sunderland, a new urban quarter in the centre of Sunderland that will comprise 1m sq ft of office space – establishing up to 10,000 jobs and 1,000 new homes, as well as new leisure spaces, venues and a new high-level footbridge linking the development sites north and south of the River Wear.

A new International Advanced Manufacturing Park (IAMP) is also taking shape close to Nissan, with construction underway on the U.K's first battery Gigafactory in a city renowned for its ability to make things. A stone's throw away, Hillthorn Business Park has been backed with £60m of investment from Legal & General – added to their £100m contribution to Riverside Sunderland.

Millions are also being pumped into the seaside, which is becoming a magnet destination for day-trippers looking to enjoy its natural beauty and magnificent places to play and appreciate.

With excellent links to the wider region and indeed to London, Sunderland is a connected city, a place that welcomes the world, both through its internationally significant university, which has some 20,000 students, and as a business location, with 80 internationally-owned companies originating in 20 territories and employing more than 25,000 people.

The level of ambition in the city is growing every day. Sunderland is rapidly delivering against its promise to become a healthy, vibrant and dynamic city, something that leaders in the city believe can be furthered through the development of city scale low carbon district heating.

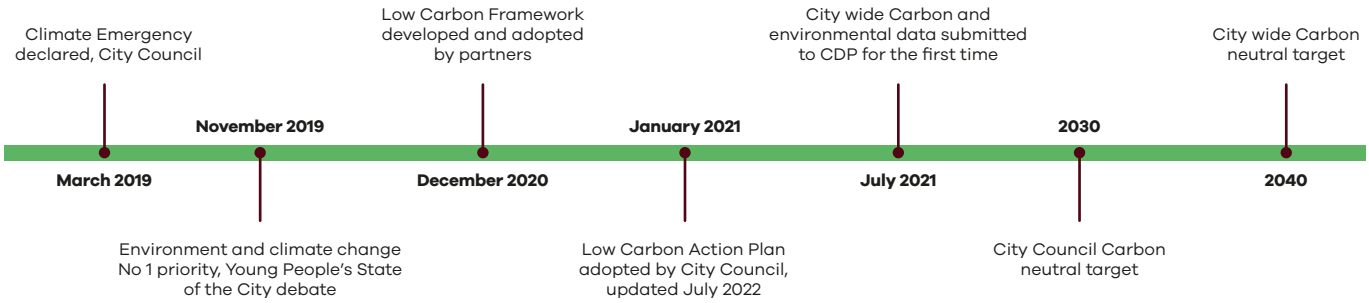
City of Low Carbon

In March 2019, Sunderland City Council acknowledged the scale of this challenge by declaring a Climate Emergency at Full Council, recognising the immediate action required, and agreed to the following motion:

"In recognition of the threat posed to our environment by climate change Sunderland City Council will declare a climate emergency. Numerous local authorities around the country have declared climate emergency and it is important for the council to show it takes the issue seriously.

Recent weather and changes in ecosystems show that we are already seeing changes as a result of climate change so it is important to join other councils in giving the issue suitable attention and clearly setting out how we will meet our targets on cutting emissions."

Sunderland's Low Carbon Commitment



Partners across the city, such as the NHS, University of Sunderland, Sunderland College, NE Chamber of Commerce, signed up to a Sunderland Low Carbon Framework ("the Low Carbon Framework") in December 2020 that will drive down emissions and seek to make the city carbon neutral by 2040. A range of people and organisations have all helped shape the Low Carbon Framework, which sets out ways in which we can all do our bit to reduce our carbon footprint, and play a part in the fight to limit the global temperature rise to below 1.5°C.

Sunderland's Low Carbon Framework is supplemented by individual Action Plans developed and delivered by partners across the city. Sunderland City Council's Low Carbon Action Plan includes the council's own ambition to be carbon neutral by 2030. The City Centre Heat Network is listed as a key project within the Low Carbon Action Plan under Strategic Priority 4; Renewable Energy Generation and Storage, develop renewable/district heating schemes.

These Low Carbon ambitions are interwoven into more recent Supplementary Planning Documents, such as that for Riverside Sunderland, a sustainable new urban quarter for Sunderland and a development that sits at the heart of the proposed City Centre Heat Network.

Heat Network background

Having previously benefitted from the Heat Networks Delivery Unit (HNDU) funding, enabling the potential of district heat networks to be explored in Sunderland, identifying the key opportunity areas for district heating and developing a longer-term vision to support Sunderland's growth and low carbon transition using decentralised energy. This previous work providing an evidence base for the development of district heating network schemes in Sunderland, informing both policy and prospective delivery.

With the support of WSP (technical consultant), Teno Energy (financial consultant), Pinsent Masons LLP (legal consultant) and the Coal Authority (specialist advisor) the council prepared an Outline Business Case and 'Techno Economic model' for a mine source heat network for Sunderland City Centre, recognising that a district energy scheme could deliver multiple benefits including jobs and employment, a catalyst for regeneration and growth, heat decarbonisation and improving energy security.

The council subsequently secured funding from Green Heat Networks Fund (GHNF) – Transition Scheme funding from the Department for Business, Energy and Industrial Strategy (BEIS – now Department for Energy Security & Net Zero) for commercialisation and pilot boreholes associated with a prospective mine source district heating scheme for Sunderland City Centre.

Subsequent volatility in the construction market, particularly steel prices, has meant the price of drilling casing has been prohibitively costly, whilst the market has since stabilised sufficiently to allow the procurement of a drilling contractor, tender returns remain more than the current GHNF award. The City Council continue to work with The Coal Authority to determine whether anything of meaningful value can be achieved within budget, in parallel we are in dialogue with The Department for Energy Security and Net Zero regarding funding options to further this research area.

The original conclusion from the council's outline business case was that the council would deliver the heat network through a public sector delivery model (with the council funding and owning the scheme through a new special purpose vehicle). However, recognising prospective changes to legislation, as part of the forthcoming Energy Bill, and ongoing market developments within the wider U.K. heat network industry, the council identified a need to explore and develop a new contractual delivery approach (discussed further in Contractual Delivery Approach below).

In addition, Sunderland are one of 28 pilot cities working with The Department for Energy Security and Net Zero on Heat Network Zoning, gaining early insight into what Zoning could mean for the city.

City of Ambition

Following decades of advancement in manufacturing and digital, progression is now part of the city's DNA. Sunderland continues to carve an enviable reputation for innovation, nurturing talent and developing skills to advance the city on an international platform.

Sunderland businesses and strategic partners embrace technology, and increasingly as the need for secure low carbon energy increases, the city is striving to be at the forefront of this developing industry and exploit the opportunities that will arise as a result. Through the proactive assistance offered by the city council's Business Investment Team and other support networks operating across Sunderland. It's a critical part of the local authority's vision to make Sunderland a place in which businesses thrive, grow, and create high-value employment opportunities for Sunderland's people.

And the city's leaders believe the world-leading infrastructure, incredible business locations and exciting way of life Sunderland can offer will help the city build on its impressive track record when it comes to inward investment. Matched with the capabilities of its further and higher education provision, the city will drive the skills

of its people, to ensure Sunderland businesses that are based here enjoy access to an unrivalled talent pool.

Sunderland are using redevelopment and digital to unlock new opportunities for residents - to enable social mobility and inclusion. It is also ensuring that digital enables the city to realise its low carbon goals, helping people live, and businesses operate, in more sustainable ways.

The council is driving towards carbon neutrality by 2030, and 2040 as a city, working with businesses and people to ensure the city lives, works and plays in ways that are sustainable and minimise its carbon footprint - low carbon and digital technology will be key to achieving this.

Heat Network, the vision

The City Centre Heat Network is significantly important in terms of the City Plan, Low Carbon Action Plan and Low Carbon Framework, providing low carbon heat to, amongst others, three major strategic partners; South Tyneside and Sunderland NHS Foundation Trust, University of Sunderland and Gentoo (our largest Social Housing provider) as well as Sunderland City Council's new headquarters at City Hall.

Originally envisaged as an initial public sector led City Centre network, with key public sector anchor loads at the heart of the project, it's now clear that potential expansion could reach much further and extend well beyond what could feasibly be delivered by the public sector. Bolstered by redevelopment, carbon reduction declarations, and combined with emerging national policy and Sunderland's insight as one of 28 Heat Network Zoning Pilot cities, the ambition is to deliver low carbon district heating throughout Central Sunderland.

With Sunderland City Centre at the core, redevelopment opportunities along the River Wear corridor, including Riverside Sunderland, and the municipality owned Port of Sunderland to the east, our objective is to exploit low carbon heat sources wherever possible and deliver resilient district heating for the city.

The city's largest redevelopment site Riverside Sunderland, a 32-hectare mixed use development, will deliver a new high level pedestrian footbridge linking development north and south of the River Wear, strengthening connections between the City Centre via Keel Square and the former Vaux site to the Stadium of Light via Sheepfolds. The bridge has been designed to accommodate district heating pipes along its 300 metre span, providing opportunity for a single district heating scheme to serve both sides of the river.

Building upon our pioneering reputation, we intend to effectively deliver a Central Sunderland 'Heat Network Zone' ahead of Heat Network Zoning legislation coming into effect.

The City Council acknowledge that the UK heat network industry is evolving and are excited by the direction and interest in city scale projects. In seeking a private sector funder/operator to help commercialise the opportunity here in Sunderland, we're looking for a like-minded organisation/consortium with experience of delivering decarbonised heat to customers at a fair price.

The Sunderland Central heat network is a significant infrastructure project with scope for ongoing expansion and ongoing evolution, and an indefinite operation period. Such infrastructure projects should serve as a catalyst for wider development and societal opportunities, it's paramount that these opportunities are realised to the utmost at every stage.

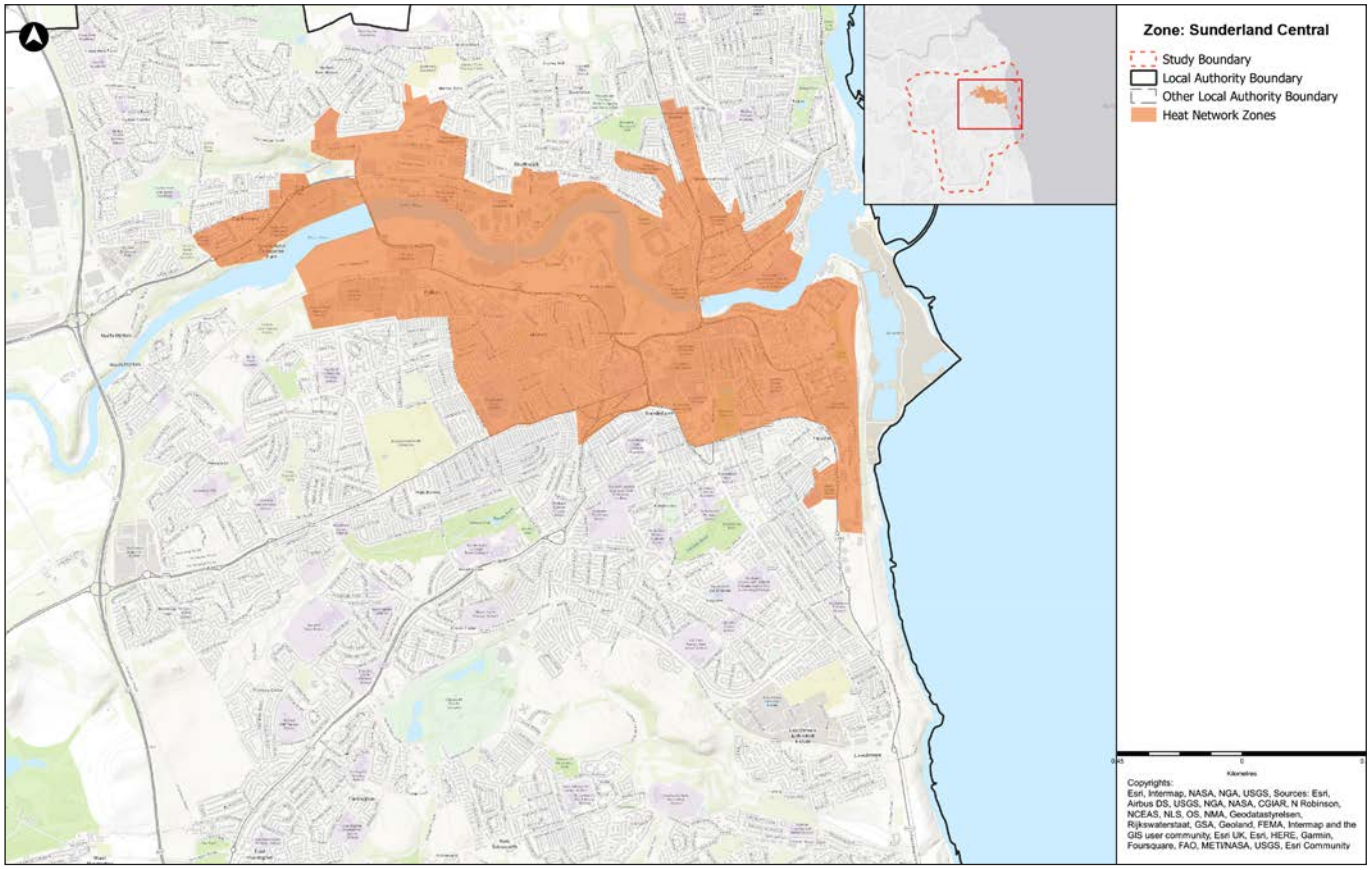
Through participating in this opportunity, we want all parties to be aligned in our vision, securing resilient low carbon heat for Central Sunderland, delivering a smart customer focused solution that can enhance development and maximise opportunities for the people of Sunderland.

The opportunity

- Commercialisation and delivery of a low carbon district heating network for Sunderland Central
- Initial City Centre phase benchmarked at 33GWh anchor load
- Further estimated c.120GWh prospectively mandated connections through Heat Network Zoning (identified through Heat Network Zoning Pilot by means of emerging high-level methodology, estimated demand and 'zone' extent subject to change, no rights or powers shall be assigned in advance of zoning legislation being introduced)
- Commitment from Sunderland City Council to connect City Hall in Phase 1, followed by other Council owned buildings within Sunderland Central 'Zone' by 2030 (base load commitment for City Hall and other prospective council buildings, subject to technical and contractual terms)
- Futureproofed high level bridge design allowing crossing of River Wear

Introductions to other strategic partners and developers through the Joint Development Agreement (JDA) process, as described in the Contractual Delivery Approach below:

- Existing and expanding digital network infrastructure with scope for cooperative approach with Boldyn Networks to further exploit digital opportunities
- Collaboration opportunities with various redevelopment projects within Sunderland Central area
- Mine water geothermal development and research option - The Coal Authority consider there to be significant low carbon heat potential in the flooded roadways of the former Wearmouth Colliery, owing to the quality of mining records, depth and extensive network, including relatively modern roadways constructed in rock. The council continue work with The Coal Authority, DESNZ and the drilling market regarding pilot wells, while 2023 tendered costs for production wells were within expected future project capital budget range.



Sunderland Central - Indicative potential extent and location as identified through the Heat Network Zoning Pilot (HNZP). The HNZP model is currently unrefined (i.e. developed from centrally held/estimated data) and undergoing further development, as well as ongoing quality assurance, and will mature in due course. The indicative Sunderland Central 'zone' is taken as a point-in-time output from ongoing HNZP development activities, therefore is not definitive and is very likely subject to change. No rights or powers shall be assigned or assumed in advance of the introduction of zoning legislation.

Contractual delivery approach

At the time the council's original Outline Business Case was concluded, the intention was for the council to bring forward the project through a 'public-sector delivery model' (with the council owning and funding the project through a wholly owned special purpose vehicle).

However, in the time since the Outline Business Case was produced, a number of external and internal factors have emerged which have encouraged the council to reconsider the optimum delivery approach for the project.

This has included:

- **Market Developments -** through consultation with the Department of Energy-Security and Net Zero; other local authorities; and private sector developers, operators and energy services providers, it is has become clear that new and innovative approaches to bringing-in private sector finance, expertise and resource are starting to be more widely used in the market. The council wishes to

implement a procurement approach in line with current best practice to deliver maximum benefit to the council and the city.

- **Resource -** the council does not have the internal resource available to drive forward and commercialise the project itself (even with the support of its appointed professional team). To truly catalyse the project and maximise the chance of the network being delivered in time to contribute towards the council's ambitious net-zero goals, the council believes it is critical to bring in early engagement and expertise from an experience funder/operator.
- **Cost -** the council has a challenging capital programme with competing priorities for investment across the city. The council is eager to implement an approach which allows the capital funding burden of this project to be met by the private sector, delivering a low cost of capital, whilst maximising deployment and value for money across the city.
- **Procurement time and cost -** a potential barrier to effective delivery of city-wide heat networks is the cost and time burden of complex procurement processes, carried out at a late stage in the project development cycle. The council has sought to establish a procurement route which is robust, yet efficient, bringing onboard a credible funder/operator at an early stage, whilst allowing the detailed, technical, commercial and legal arrangements for the project to be finalised alongside the establishment of the technical and commercial viability of the scheme.
- **Regulatory Framework -** as the district heating sector moves into a more regulated environment with the introduction of the market framework and zoning regime under the Energy Bill 2023, the role of the local authority in the delivery of citywide heat networks is likely to change. The council wishes to ensure the project is future proofed in line with legal developments with the council having an appropriate level of involvement in governance, regulation and delivery.

With the above developments in mind the council has made the decision to procure this opportunity through the Joint Development Agreement approach (described below).

Joint Development Agreement

Following completion of the procurement process, the preferred bidder ("ESCO") will be appointed by the council under a joint development agreement (JDA). Under the JDA the ESCO will be provided with a 12 month exclusivity period to carry out the commercialisation of the project including:-

- **Technical -** establishing the technical feasibility of the project and developing the design of the first phase to a construction-ready position. The council has provided the initial technical work undertaken by WSP throughout the feasibility and outline business case stages of the project. The ESCO will be free develop its own scheme serving the initial anchor load customers, based on the reference design provided or such other alternative technical solution the ESCO considers appropriate.

- **Commercial/Financial -** establishing the commercial viability of the scheme through developing the financial model for the project. This will include finalisation of the connection fees and tariffs for the anchor load customers in line with the pricing approach submitted by the ESCO during the procurement process. The ESCO will also be expected to secure funding for the initial phase of the project in line with the funding approach bid-back during the procurement process. This could include GHNF funding with either the ESCO or the council taking responsibility for the application for grant support.
- **Legal -** finalising the terms of the delivery contracts for the project, including a project governance agreement (PGA) to be entered into between the council and the ESCO following completion of the commercialisation phase and connection and supply agreements between the council and the other anchor load customers. The council has provided a key principles schedule which sets out the key contractual terms to be included in the PGA and connection and supply agreements. The JDA sets out the process the parties will comply with to finalise the full contractual suite, in line with the key principles.
- **Final Business Case -** development of the final business case to be presented to the council and the ESCO's own internal board/investment committee for approval in order to secure the final investment decision to progress to the delivery phase of the project.

Under the JDA the ESCO will be expected to provide the resource, key personnel and funding to deliver the commercialisation phase, whilst providing regular reports and updates to the council acting through a project board and its appointed programme lead. The council will assist to the extent possible with co-ordination of other public sector stakeholders and any other reasonable support or input that the ESCO requires to successfully progress the commercialisation activities.

For further information on the council's expectations during the commercialisation period, please refer to the draft JDA which has been issued alongside this document and the full draft procurement pack.

Delivery Contracts

Following a successful financial investment decision having been made under the JDA, the council will enter into a connection and supply Agreement with the ESCO in relation to any Council buildings identified within the first phase of the project. In addition, it is anticipated that each of the anchor load customers will also enter into connection and supply agreement with the ESCO (subject to their own internal governance processes). The forms of connection and supply agreements will be agreed between the ESCO and the council/the relevant anchor load customers during the commercialisation phase. The council has issued key principles alongside the draft JDA, setting out the key contractual terms which will be included in each of the connection and supply agreements.

In addition to the connection and supply agreements, the council and the ESCO will enter into a Project Governance Agreement (PGA). The council has an important role in the project as the steward of the City and has a legitimate interest in ensuring

that customers within the city (including the council itself) receive a high standard of service. This is particularly important given that the heat network is an effective monopoly with very little realistic prospect of customers disconnecting and putting in place alternative building-level solutions. The council wishes to ensure (in the absence of regulation) that customers receive a high level of service and fair, transparent pricing which does not exceed the cost of each customers' realistic counterfactual. In addition, the council has a statutory requirement to ensure that the project delivers its anticipated carbon reduction/growth targets.

The PGA will include obligations on the ESCO in relation to the above areas, in addition to clear reporting requirements to allow the council to monitor the performance of the ESCO. Ultimately, where performance is not meeting the contractual requirements under the PGA (or in critical failure issues such as ESCO insolvency), the council will have the right to terminate, acquire the asset and put in place alternative delivery arrangements. In the absence of regulation or a statutory supplier of last resort, the council is the supplier of last resort for Sunderland Central and the PGA provides a contractual method through which the council will undertake this function.

For further information on the council's key requirements for the PGA bidders should refer to the PGA Key Principles document issued alongside this document and the draft JDA. There are two specific points to highlight:-

- The council does not envisage taking a 'golden-share' or other equity stake in the ESCO. The council's oversight in relation to the project will be contractual only through the PGA.
- The council does not consider the PGA to be a concession agreement. The PGA is intended to be a perpetual arrangement with the ESCO taking ownership and full risk in relation to the network. The only situation in which the council would take ownership of the asset would be through the supplier of last resort mechanism (discussed above).

Procurement

The JDA approach is effectively a form of two stage procurement. Following conclusion of the procurement process the council and ESCO will enter into the JDA. Following conclusion of the commercialisation phase (and subject to a final investment decision being approved by both parties) the council and the ESCO will enter into the PGA and connection and supply agreements and the ESCO will enter into connection and supply agreements with the other anchor load customers.

The procurement has been structured so as to ensure that the council and other public sector customers identified as the anchor loads are able to enter into the delivery contracts without a further procurement process being undertaken.

For this reason, many of the questions/evaluation areas within the ITT seek to assess and consider the ESCO's delivery capability and financial/commercial approach to operating and supplying heat, as opposed to focussing solely on commercialisation under the JDA. A number of the key principles and responses from bidders final tenders will be contractualised within either the JDA, PGA or connection and supply agreements.

It is critical for the council that the procurement process considers the entire project lifecycle and allows the council to assess the bidder most capable of delivering the project as a whole, to meet the council's objectives and requirements.

It is also worth highlighting that the process for appointing the ESCO partner is a competitive dialogue. The council is aware of market perception around the time and cost implications of competitive dialogue processes in this sector however is committed to running a process that is robust, yet efficient minimising time and resource commitments for the council and the bidders. Bidders will see from the procurement timetable set out within the draft ITT issued alongside this document that the council is targeting a focussed process with sufficient time for meaningful discussion around bidders' approaches but concluded within a sensible timeframe.

For more information in relation to the proposed procurement route please see the draft ITT issued alongside this document.

Contractual delivery map and governance

JDA Governance

- **Project Board** - 3 representatives from each party. Approval rights and review of progress. JDA sets out process for meetings e.g. voting, frequency and quorum
- **SCC Project Lead** - co-ordinates activities with SCC functions and makes recommendations to SCC Project Board reps
- **ESCO Project Team** - day-to-day responsibility for commercialisation and design activities
- **Reporting and Info** - meeting protocol, monthly status report and information sharing obligations

PGA Governance

- **Corporate controls** - no SCC shareholding in ESCO. Governance regulated through contractual arrangements
- **Business plan/budget** - SCC to review and comment on annual business plan and budget. ESCO to attend steering group meetings with SCC to report on progress against business plan
- **Reporting** - ESCO to report to SCC on performance of project and performance against key contractual obligations (e.g. KPIs, Carbon Targets etc)

Final investment decision made under JDA

JDA period of 12 months

Appointment of preferred bidder → **Joint Development Agreement** → **Project delivery** → **Project Governance Agreement** ⇢ PGA is perpetual agreement where ESCO takes ownership and risk of network

- SCC and ESCO agree terms of Project Governance Agreement (PGA) and the Connection and Supply Agreements
- ESCO agrees terms of Connection and Supply Agreements with other Anchor Load Customers
- SCC and ESCO seek approval from Cabinet/internal board to secure Final Investment Decision in order to progress to delivery phase of project

SCC enters into Connection and Supply Agreement with ESCO

ESCO enters into Connection and Supply Agreement with Anchor Load Customers

City of Sunderland

Low Carbon

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