



Appendix A

Business Case for the creation of 2 Heat Networks – Special Purpose Vehicles (Limited Companies)

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1. Executive Summary

Bristol is a leading UK city in the journey to Net Zero with a declared goal of achieving Net Zero by 2030. Reducing the city's carbon emissions to virtually zero will require the eradication of the use of fossil fuel gas ('natural gas'), oil and coal for heating, cooking or industrial processes across the city.

To help achieve this, it is essential that Bristol City Council (BCC) commits to further expansions of its existing heat networks to serve new commercial and residential developments across the city with low carbon heat, whilst continuing to offer the benefits of connections to its own housing stock and property portfolio.

BCC has already completed Redcliffe Phase 1, supplying 700+ social housing homes with heat from a heat network. In Sep 18 and Sep 19 BCC Cabinet approved the continued development of the Bristol Heat Network, including expansion of the Redcliffe network and installation of the Old Market heat network and associated applications for Heat Network Investment Project (HNIP) grant funding from central government. This Cabinet approval included de facto approval for the creation of a Special Purpose Vehicle (SPV) to hold the funds subject to this Business Case. The Cabinet document is included in the appendix.

BCC has now been awarded £10.2m of HNIP/Department for Business, Energy and Industrial Strategy (BEIS) funding which needs to be drawn down by 31st March 2020 but to do this a BEIS requirement is for receiving BCC to set up an SPV to receive and spend the funds.

Alongside this work, City Leap and the Energy Service has developed a new heat network strategy to deliver savings to customers through disaggregating heat generation, pipework and retail into separate entities in order to create competition in heat retail and heat generation. To realise this strategy Cabinet is requested to support the formation of two SPVs.

Both SPV entities are intended to be financially viable without City Leap progressing and will be set up on a 'thin' SPV basis, with no direct employees and all operations and management undertaken by the existing BCC Energy Services team. The financial model remains consistent with the numbers presented in the Sept 19 Cabinet paper.

Limited operational risks will sit with BHL as a result of the creation of the SPVs as all management, funding and operational performance management will be undertaken by BCC via a Management and Operations Agreement.

2. Business Case Introduction

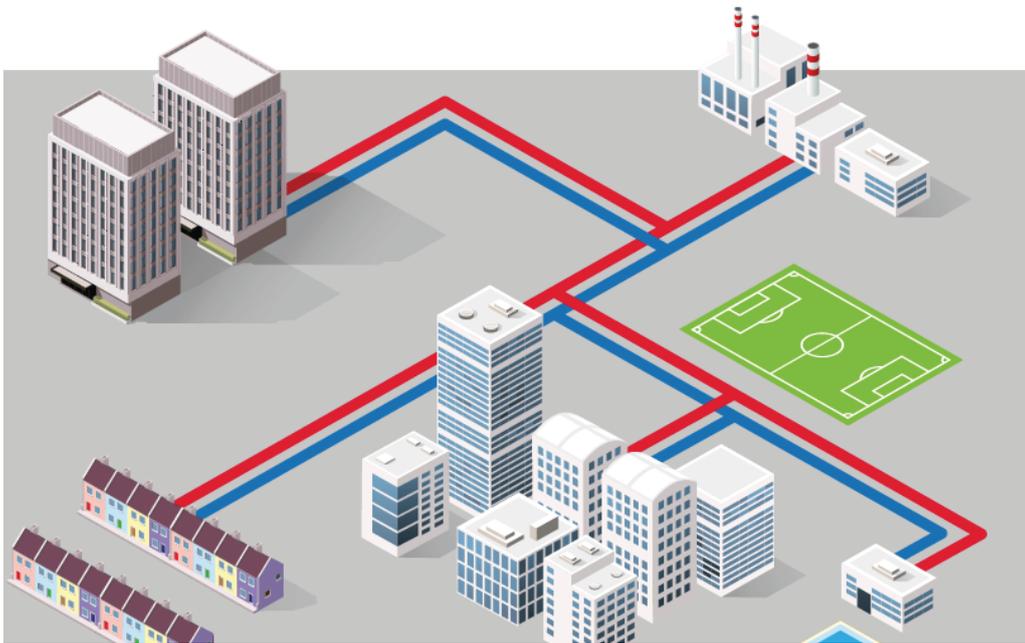
The purpose of this document is to set out the business case for the creation of 2 SPV's, by the 31st March 2020 in order to support the development of BCC and City Leap's Heat Network strategy. This document will recap on the rationale for Heat Networks, the City Leap Heat Network commercial strategy and case for the creation of the SPV's.

This document is the follow on from the September 19 Cabinet approval for the continued development of the Heat Network Programme and the HNIP grant application. The Cabinet paper stated: *'Note that, if accepted, the Heat Network Investment Project grant award must be held by a special purpose vehicle rather than the Council, and that a further report will come back to Cabinet for approval to establish such special purpose vehicle.'*

2.1 The background

Heat networks, also known as district heating, are systems for distributing heat generated in a centralised location via a network of pipes for domestic and commercial space heating and water heating.

As the heat network is agnostic to the type of heat generation installed, it can supply heat from a variety of energy generation technologies from Gas combined heat and power (CHP) to water source heat pumps as well as biomass and waste heat from industrial processes. This ensures heat networks are a 'no regrets' infrastructure able to deliver heat whatever the heat generation technology available.



Heat networks using low or zero carbon energy technologies are amongst the cheapest methods of cutting carbon emissions. With regards to the Bristol Heat network, various low and zero carbon heat sources will be incorporated including water source heat pumps (WSHP) supplying heat from the floating harbour, Gas CHP and the currently operating biomass boiler as part of the operating Redcliffe Phase 1 heat network. The wider network will also be investigating other heat sources such as heat from mines and sewers.

BCC is developing heat networks across the city to deliver affordable, low-carbon heat and energy across the city. The Heat Network will eventually cover central Bristol and other areas across the city, powered by low and ultimately zero carbon energy centres.

BCC has invested over £6m in its heat networks to date and supplies over 1,000 properties with low carbon heat. A comprehensive city-centre heat network will be a crucial aspect of the action required if Bristol is to achieve its carbon neutral ambitions and also represents a significant investment opportunity as part of the City Leap programme.

Prior to the City Leap Energy Partnership being in place, it is critically important that the council continues to support the build out of the heat network in order to meet the connection timeframes of new developments, ensure long term financial viability of the network and progress along the zero carbon pathway.

The Bristol heat network must also be able to supply low or zero carbon heat to connected buildings at a cost equivalent to, or lower than, mains gas so that existing buildings are incentivised to connect to the heat network.

Although only 2% of heat in the UK is currently supplied by heat networks, this is rapidly increasing, particularly in cities. They are supported by UK government who have recognised that around 20% of heat could be supplied by heat networks across all five future energy supply scenarios contained in the Clean Growth Strategy, which was published by Central Government in 2017. Major European cities like Vienna and Copenhagen have installed heat networks supplying over 95% of homes. Consequently, Copenhagen is on track to be carbon neutral by 2025.

In the UK, many cities have either installed or are looking to install heat networks. London currently has the greatest number of heat networks with London boroughs such as Enfield and Islington taking a lead. A number of large towns are also installing heat networks. For example, Gateshead has completed a £25 million heat and power network supplied from a Gas CHP energy centre.

2.2 The Heat Commercialisation Strategy

Commercially sensitive information in exempt Appendix I

3. The Business Case Request

This business case requests the formation of 2 SPV's described above. These SPV's will initially sit under Bristol HoldCo and hold the assets associated with the development of the Old Market and Redcliffe heat networks and associated energy centres.

3.1 SPV operating strategy

The SPV's will operate as asset holding structures and will not have any employees. All operational management of the SPV's will be undertaken via a management and operations services contract with the BCC Energy Services team.

As a minimum, the management services contract will cover the provision of project management services to construct the assets, operational services to operate and maintain the assets, commercial, financial and administration services to hedge, meter, bill, collect and generally administer the SPV.

See Management Case section below for more details.

3.2 Commercial Structure

Commercially sensitive information in exempt Appendix I

3.3 Heat Network delivery to date

The Energy Services team has already delivered the first phase of the Redcliffe Heat Network which has been in operation since 2016, supplying over 700 social housing flats. The next phase of the

Redcliffe network is now in the delivery phase, which will include the supply of heat to a number of commercial buildings.

Heat network pipes have also been installed on key infrastructure as part of the Temple heat network build out, in order to supply heat to new developments within Bristol's Temple Quarter Enterprise Zone (TQEZ). This includes the University of Bristol's new flagship Temple Quarter campus.

The Energy Services team are also implementing further feasibility and design work across a number of heat networks in the city, including the strategic heat main which will enable zero carbon heat from 'energy from waste plants' to be connected to the city centre heat network.



Each of the heat networks has been funded by a combination of BCC prudential borrowing, connection fees charged to new developments that are required to connect to the heat network and the HNIP grant funding.

3.4 Key Benefits

The fundamental reason for developing the Bristol heat network is to ensure Bristol meets the Mayor's net zero carbon target as part of the Council's response to the Climate Emergency

Setting the SPV's will enable the Bristol Heat Network to receive grant funding of £10.2 million to make the initial development of the networks financially viable.

Implementing the commercialisation strategy allows each of the entities in the new commercial model to have a different risk profiles, facilitating external investment.

The commercial strategy thus makes the investment opportunity more attractive to the type of private sector finance required to scale up the deployment of heat infrastructure and relieve the pressure on Government (ultimately the tax payer) to fund the decarbonisation of heat.

Other benefits. Installing heat networks can also support the following corporate strategy key commitments:

- Improve our environment to ensure people enjoy cleaner air through supporting the further deployment of renewable heat generation.
- Improve physical and mental health and wellbeing by making residents' homes warmer and cheaper to heat, reducing inequalities and the demand for acute services.

- Tackle food and fuel poverty by reducing energy bills.
- Create jobs, contributing to a diverse economy that offers opportunity to all and makes quality work experience and apprenticeships available to every young person.

Installing heat networks can also provide the following benefits for the City of Bristol:

- Reducing heating costs for all those connected to the heat network compared to alternates, addressing fuel poverty
- Reduce fuel bills for businesses connected to the network through lower prices
- Reduce energy consumption and operating costs for building occupiers, improving Bristol's competitiveness for attracting new businesses to the City.
- Increase the City's energy security and resilience.

4. The Financial Case

The sections below provide the P&L/Cashflow for the first 10 years of each SPV and the totals for years 11 to 40. The numbers are extracted from 40 year models used with the City Leap process and represent Phase 1 of the Old Market and Redcliffe networks.

The models demonstrate financial viability for both SPV's and in total cabinet has approved £12.7m of Prudential borrowing which along with the £10.2m HNIP Grant funding will cover the capital required for this stage of delivery.

The September 2019 Cabinet report stated *'The total capital expenditure (£26.2m) is partly funded from potential government grants (£11.8m). Government grant funding "Heat Network Investment Project grants" (HNIP) and "Renewable Heat Incentive" (RHI) income for the WSHP in the Old Market Heat Network will be applied for and connection fee income from privately owned buildings and commercial properties will be generated (£1.8m).'*

The numbers below reflect the latest view but remain substantially the same as the September Cabinet paper.

Commercially sensitive information in exempt Appendix I

4.1 Future expansion

The numbers above for the two SPV's are based on phase 1 of the Heat Programme. The wider ambition and opportunity set out in the City Leap prospectus includes further expansion of Old Market and Redcliffe network plus 4 additional networks and then expansion via a strategic heat main to potentially connect 1.5 TWh of annual demand.

This level of growth will require significant further capital investment from the City Leap programme. The economics unpinning the numbers for phase 1 are scalable with return increasing due to economies of scale and operational efficiencies.

4.2 Risk and Mitigations

Risk	Mitigations
BHL Risks	
- Performance Risk: <i>Risk that the SPVs under perform operationally and BHL directors need to step in to resolve</i>	All operational risk transferred to BCC Energy Services team via the Management and Operations Agreement
- Funding Risk: <i>Risk that the SPV runs out of capital or operational funds</i>	Before the need for the SPV arose, this risk sat with BCC and through the Management and Operations Agreement this risk will remain with BCC. BCC holds the risk of financial underperformance.

Commercially sensitive information in exempt Appendix I

5. Management case

5.1 Programme and project management plans

Below is an extract from the delivery programme. This programme is managed by the BCC Energy Services team and this will not change as a result of the SPV formation.

Commercially sensitive information in exempt Appendix I

5.2 Governance and management Structure

Current governance

The SRO for Heat Networks is Patsy Mellor as BCC Director for Management of Place who reports directly to the Executive Director for Growth & Regeneration.

In line with other BCC capital projects, exception highlight reports are provided to senior management on a monthly basis. In addition capital and revenue forecasting is provided on a monthly basis to the senior leadership team (CLB) for review.

Proposed additional governance

Following the setting up of the SPVs additional levels of governance will be required to ensure the SPVs are operating correctly and that BCC in-house delivery of the heat networks is being carried out correctly.

Directors will be appointed to each SPV who will bring industry expertise in the construction and operation of heat generation and distribution assets.

The SPV governance will need to have appropriate touch points with the inhouse delivery team whilst providing a level of scrutiny to the delivery, operation and management of the heat network.

The table below lists the current team structure and support services required to deliver the heat networks.

Role/Position	Name	Description/Responsibilities
Management/Senior Management		
Executive Director Growth & Regeneration	Stephen Peacock	Sign off of contracts as per delegated authorities
Director Management of Place	Patsy Mellor	Senior Responsible Officer + Sign off of contracts as per delegated authorities
Head of Energy Service	Steve Ransom	
Energy Infrastructure team roles (delivery)		
Programme Manager Energy Infrastructure		Team manager and heat network programme manager
Project Manager		PM responsible for individual heat network delivery
Technical Manager		Review and sign off of technical designs
Construction Manager		Heat network construction - procurement, management and delivery (including health & safety)
Asset Manager		Operation & Maintenance - O&M contract management
External Support (not BCC)		
Commercial & Financial Advisor (Strategic)		Support with new commercial model including detailed financial modelling
Commercial Advisor (Connection contracts)		Connection agreement negotiations
Heat network design & PM		Design of heat network pipe install and NEC4 Construction contract Project Manager
Feasibility/Design/Techno economic modelling		Feasibility and design of heat network
BCC Support (non Energy Service)		
BCC Legal		General heat network legals
BCC Legal (Property)		Property lease agreements
BCC Legal (Construction)		Review of procurement and construction activities
BCC Finance		Review of project revenues and capital expenditure. Management accounts

Communications & PR		
Other		ICT, HR and other support services

Names of officers below third tier have been removed from the second column of the above table as personal data and are contained in exempt Appendix I

Additional SPV Governance

As a result of the creation of the SPV the main change required to the above is for the inclusion of the SPV director in the signatory list, this should be the last signatory and as described below the role of the director will be to ensure that the Energy Services team are fulfilling their duties in accordance with the Management and Operations Agreement.

5.3 Performance management

Within the BCC Energy Service projects are managed as follows:

Individual project managers within the EI team are responsible for project management of heat networks. The PM is responsible for general delivery and also building connection agreements, feasibility and design of the network. Once the project moves to the delivery phase, the works are handed over to the Construction Manager to manage appointment of appropriate contractors and construction contract project management resource (NEC4 Construction contracts) with the PM retaining responsibilities for connection liaison.

Project Managers carry out a combination of Agile and Prince2 project management practices with Gantt Chart and RAID logs being provided to the Programme Manager on a monthly basis for review. The Programme manager is responsible for reviewing project highlight reports and RAID logs and where projects are beyond tolerance these are raised at monthly Energy Service management meetings (capital and revenue forecasting) with the Head of Energy Services. Where tolerances are outside of energy service limits these are then raised with the Service Director for Management of Place for potential escalation to the Director of Growth and Regeneration.

In addition, capital and revenue financial forecasting is also carried out on a monthly basis. Responsibility for this forecasting lies with the Programme Manager which is uploaded for review by the Head of Energy Services, Management of Place leadership team and ultimately BCC Senior leadership team.

None of this will change as a result of the SPV creation as the Energy Services team will continue to undertake full operation and management responsibilities on behalf of the SPV via the Management and Operations Agreement.

5.4 Role of Directors

The SPVs are asset holding entities and the substantive work in managing and operating the generation assets and heat network, and related risks, is outsourced to BCC, pursuant to the relevant contracts.

As a result, the role of BHL and the SPV directors will be to monitor the overall performance of the BCC energy services team performing the relevant services.

However, as it is not possible to contract out all directors' duties, the directors would need to be able to demonstrate that they had sought advice on the contracts monitored their implementation to a relevant degree and considered the SPV's financial position at relevant points. This should all be recorded in an appropriate paper trail on an ongoing basis. By way of protection offered to those directors, typically, the articles would include an indemnity, and the SPV take out D&O insurance to cover that Director.

5.5 Other considerations

5.5.1 City Leap Cessation

If the City Leap programme does not proceed there are no implications associated with this business case.

5.5.2 TUPE Implications

There are no TUPE implications associated with these SPV's.

5.5.3 Communication and Publicity aspects

There are no communication or publicity aspects associated with these SPV's.

Appendices



Sep 2019 Cabinet
Decision Pathway - Hk

September 2019 Cabinet paper: