

Decision Pathway – Report

PURPOSE: For reference

MEETING: Cabinet

DATE: 03 September 2019

TITLE	Bristol Heat Networks (Heat network expansion and utilisation of the floating harbour to provide low carbon heat).		
Ward(s)	Central and Lawrence Hill		
Author: Paul Barker		Job title: Energy Infrastructure Programme Manager	
Cabinet lead: Cllr Kye Dudd		Executive Director lead: Colin Molton	
Proposal origin: <i>BCC Staff</i>			
Decision maker: Cabinet Member Decision forum: <i>Cabinet</i>			
Purpose of Report: Bristol City Council 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 carbon energy centres. This report seeks to progress two city centre heat networks; <div><div>1.</div><div>The Old Market Network- for this, additional funds are sought to enable the completion of the network and in particular the installation of a Water Source Heat Pump at the current Castle Park Depot site. This will supply low carbon heat to the network in support of the goal to achieve carbon neutrality by 2030.</div></div> <div><div>2.</div><div>Redcliffe Network- additional funds (to those approved September 2018) to extend the Redcliffe Network to enable new connections that have come forward since the original approval was sought.</div></div>			
Evidence Base: Bristol City Council 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 BCC Energy Service is therefore seeking £6.21 million of prudential borrowing to match grant funding and development connection fees in order that the Bristol Heat Network can achieve this. 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. For the Old Market network, this is proposed in the first phase through the installation of a 3MW Water Source Heat Pump (WSHP) utilising heat from the floating harbour as part of a energy centre/mixed use development on the current Castle Park Depot site. The WSHP would receive government Renewable Heat Incentive (RHI) income guaranteed for 20 years totalling £12.5 million. However, as the RHI is due to close in March 2021, the WSHP requires			

installation & commissioning before this date. (The site for the heat pump is also of interest for wider development, BCC Energy Services are working across a number of departments to ensure that the installation of the energy centre can be future proofed to allow for this).

All works described in this report and the Bristol Heat Network will be used as assets to support the City Leap offer from the Council.

Approval is therefore sought to carry out the following capital projects:

1. Progress Phase 1 of Old Market Network including installation of a WSHP Energy Centre at Castle Park Depot at a total capital cost of £18.18m (see breakdown in Finance section).
2. Expand the Redcliffe heat network to connect additional buildings at a total capital cost of £8.06m.

To deliver these projects approval is sought for allocation of £6.21m from BCC funding for the scheme which currently stands at £11.25m in the Capital programme. This funding is from Prudential Borrowing (PB) and includes the reallocation of £1.55m previously allocated to the St Paul's heat network scheme which has been significantly delayed (this is also PB).

1. This approval, along with previous approvals will enable the delivery of £26.23m of investment in the council's heat networks with the remaining £13.6m coming from government grant funding, Heat Network Investment Programme (HNIP), and connection fees.
2. The requested funding supports the delivery of the next phase of the council's heat network where:
 - Connection to new developments are required
 - Income generation targets and Government grant funding is at significant risk
 - The integration of heat networks with digital (B-net) and/or highway infrastructure projects will take place
 - Decarbonisation of the heat networks will continue in line with carbon neutrality targets

Grant Funding Status

- a. **Old Market Network** In addition to BCC funding from PB and the connection charges, the remaining funding will come from government grant funding (HNIP). Important note,
 - i. We will apply for HNIP grant funding for the Old Market Network
 - ii. The Castle Park WSHP will receive RHI subsidy (you cannot apply for both and the RHI revenue provides a significant financial benefit over HNIP).
- b. **Redcliffe Heat Network:** In addition to BCC funding from PB and the connection charges, the remaining funding will come from government grant funding (HNIP).

Further Information

1. Heat networks are central to achieving the Mayor's goal for Bristol to be a carbon neutral city by 2030, in addition to helping to tackle fuel poverty by providing heat to residents at lower prices. The heat network will also provide the Council with a revenue stream from the sale of heat and power to connected residential and commercial buildings as part of its commercialisation agenda. The expansion of the heat network forms part of City Leap, which was approved by Cabinet in May 2018, with approval to procure a Joint venture partner given in April 2019.
2. **Water Source Heat Pump (WSHP) installation.** To meet the 2030 carbon neutral goal, it is vital to decarbonise the heat network using renewable and low carbon sources of which there are limited sources available within the City Centre. One such source of renewable heat is the floating harbour through the use of water source heat pumps (WSHP), which can extract heat from the water to supply the network. This is likely to be the first of many WSHPs that will be installed within the City centre to provide low carbon heat.
3. Through this investment BCC will receive revenue through the Renewable Heat Incentive (RHI) in the region of £12.5m over 20 years. To obtain this revenue the WSHP must be commissioned by March 2021, therefore there is a critical need to progress this development. If the deadline is not met, the IRR for the Old Market

heat network will be significantly impacted.

4. For WSHP projects of this size, the lead times for manufacture can be long (up to 12 months); therefore there is an urgent need to place the order as soon as possible, to enable installation ahead of the RHI deadline. The procurement for the heat pump is being carried out so that it will be ready to award as soon as possible following approval from Cabinet to proceed.
5. This Energy Centre is required to supply heat to the Old Market Heat Network which includes the Castle Park View development. Castle Park View will initially be supplied by a temporary gas boiler solution on this site. However, this will need to be replaced by this Energy Centre to ensure BCC meets its carbon targets in addition to maintaining the schemes reputation, including giving credibility to BCC's Planning policy that requires connection to a low carbon heat network.
6. Castle Park Depot is currently operated by Parks who are planning to move to alternative locations in order to release the depot site, as it has been identified for its development potential. The BCC Energy Service have been working with Property, Planning services, Housing, Parks, Culture and City Design in order that an Energy Centre (ground floor) and office/residential development (upper floors) can be accommodated on this site. A consultant has been procured to assess the options of combining an energy centre with wider development; these have been presented to the Growth and Regeneration EDM/Board. Throughout the process, BCC Energy Services will work collaboratively to ensure the energy centre build is future proofed to enable a mixed use development, in line with the findings of the appraisal in order to maximise the use of the site.
7. In order to meet the deadline above we need to progress with procuring the design, build and commissioning of the energy centre prior to the details of the wider development being confirmed, this may mean that the Energy Centre makes use of the existing Parks depot building/confines and is then moved to its desired location within the development as this progresses.
8. **Redcliffe Network – Further expansion:** The additional funding is required to extend the Redcliffe Network to meet the timescales of developments coming forward. This provides backing to the Council's planning policy for new developments to connect and also supports the business case for the network.

Cabinet Member / Officer Recommendations:

That Cabinet:

1. Authorise the Executive Director for Growth and Regeneration in consultation with the Cabinet Member for Energy, to procure the purchase of and enter into contracts for the delivery of a Water source heat pump led energy centre at Castle Park Depot.
2. Approve the allocation of £6.21m (funded from prudential borrowing) for the next phase of the works, along with the re-allocation of £1.55m from the St Paul's Heat Network Scheme (prudential borrowing).
3. Authorise the Executive Director for Growth and Regeneration, in consultation with the Cabinet Member for Energy, the Cabinet Member for Finance, and the Chief Finance Officer, to apply for and accept government revenue and capital grant funding of up to (but not limited to) £11.8m including Renewable Heat Incentive funding, and Heat Network Investment Project capital grant funding from the Department of Business, Energy & Industrial Strategy.
4. Authorise the Executive Director for Growth and Regeneration, in consultation with the Cabinet Member for Energy, to procure and enter into contracts for delivery of all goods, works and services (including associated operation and maintenance contracts) referenced in Appendix A to this Cabinet Report to the value of £26.23 million.
5. 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. This report is planned for November 2019.
6. Note that the total value of the delegated authority from this and previous cabinet reports, which including Grant funding (if awarded) and prudential borrowing and connection charges total £26.23m. This increase is due to additional grant funding being sought in addition to an increase in connection fees expected.

Corporate Strategy alignment:

1. This report supports the Key Commitment to 'Keep Bristol on course to be run entirely on clean energy whilst improving our environment to ensure people enjoy cleaner air, cleaner streets and access to parks and green spaces.'

City Benefits:

1. Keep Bristol on course to be run entirely on clean energy by supporting the build out of low carbon heat networks
2. Improve our environment to ensure people enjoy cleaner air through supporting the further deployment of renewable heat generation.
3. Improve physical and mental health and wellbeing by making residents' homes warmer and cheaper to heat, reducing inequalities and the demand for acute services.
4. Tackle food and fuel poverty by reducing energy bills.
5. Create jobs, contributing to a diverse economy that offers opportunity to all and makes quality work experience and apprenticeships available to every young person
6. Achieve the above benefits in addition to enabling the site to come forward for further development

Consultation Details:

1. WSHP energy centre - Alternative sites have been explored with Property, however due to the amount of space needed and the requirement for the WSHP to be in close proximity to the floating harbour Castle Park Depot is a priority site.
2. WSHP energy centre – discussion has been had with the harbour master and Environment Agency who are happy at this stage with the proposal of a WSHP and associated abstraction requirements in this location

Background Documents:

1. [1 July 2014 Cabinet Report 'District Heating Phase 1'](#)
2. 7 June 2016 Heat Networks Phase 2
3. 9th May 2018 City Leap Cabinet report
4. [4th September 2018 Bristol Heat Network](#)
5. Old Market Feasibility Report

Revenue Cost	£Nil	Source of Revenue Funding	n/a
Capital Cost	<i>Old Market and Redcliffe: £26.23m</i>	Source of Capital Funding	<i>Previously approved prudential borrowing: £4,864,058</i> <i>Requested Prudential borrowing Old Market and Redcliffe: £6,213,558</i> <i>Total Heat Network Investment Project (HNIP) grant funding: £11,804,829</i> <i>Total Connection fees: £1,795,516</i> <i>Re-allocation from St Pauls: £1,554,993 (also prudential borrowing)</i>
One off cost <input type="checkbox"/> Ongoing cost <input type="checkbox"/> Saving Proposal <input type="checkbox"/> Income generation proposal <input checked="" type="checkbox"/>			

Required information to be completed by Financial/Legal/ICT/ HR partners:**Finance Advice:**

This report seeks approval to carry out further Heat Network capital projects in two areas of the city:

- 1) Old Market Network phase 1 progressed including installation of a Water Source Heat Pump (WSHP) Energy Centre at Castle Park Depot.
- 2) Expand the Redcliffe heat network to connect additional buildings.

To deliver these projects the report seeks approval to:

- For the **Old Market Network: Draw down and allocate £5.4m** of capital budget via Prudential Borrowing (PB). Energy Service projects have been earmarked £11.2m of PB as part of the approved PL19 capital programme.
- Also for the **Old Market Network: Redirect £1.6m** available funds previously allocated to the St Paul's heat network scheme (which originally had Cabinet approval in September 2018). This was also to be funded from prudential borrowing.

- For the **Redcliffe Heat Network: Draw down and allocate £0.8m** of capital budget via Prudential Borrowing (PB). Energy Service projects have been earmarked £11.2m of PB as part of the approved PL19 capital programme.

The two projects, including the WSHP, will involve total capital expenditure of £26.2m and will be funded from a mix of PB, grants and connection fee income, as illustrated in the following table:

Project	Old Market	Redcliffe	Total
	£'m	£'m	£'m
Total CAPEX	£18.2	£8.1	£26.2
Funded By:			
Grant funding - HNIP	£8.2	£3.6	£11.8
Connection charges	£0.6	£1.2	£1.8
PB - Approved by Cabinet - Sept 18	£2.4	£2.4	£4.9
PB - New Approval sought	£5.4	£0.8	£6.2
PB - New Approval (Re-allocation of funding for St Pauls)	£1.6	£0.0	£1.6
	£18.2	£8.1	£26.2

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).

In appendix A, table 2 and table 3 sets out in more detail a summary of the key financial details of the two projects. The financial modelling ensures the heat networks meet the Councils finance requirements and both projects as they stand meet this requirement, generating positive financial benefits.

Opportunities, risks and mitigations from these projects:

- 1) Grants: The projects assume 45% grant funding contribution. The Energy team have worked closely with the government on heat network projects, previously being successful in obtaining Heat Network Delivery Unit (HNDU) funding; they are keen on work continuing, so there is confidence in that funding can be secured. However there is also a risk that not all bids would be successful in securing the grant funding. The projects would require further viability assessments after the results of the grant funding bids are known. Further prioritisation would be required taking into account funding available, the return on investment, net revenue implications and other non-financial implications. Other possible funding streams may be available, including government loans and Salix funding, but only if they are financial viable, fully assess and delegated authority is given to explore these other financial mechanisms.
- 2) Delivery speed of the projects pose a risk to the £12.5m RHI funding for the WSHP (where applications to obtain funding is due to close March 2021) and the connection fee income which is funding the two projects. The connection fee income will also provide ongoing revenue to the Council, any significant delays in these projects may jeopardise the fee income, resulting in permanent losses of connections to the network and the associated income.
- 3) These projects are important parts of the Bristol Heat Network system and will be important assets under the City Leap initiative.

Finance Business Partner: Kayode Olagundoye, Interim Finance Business Partner, Growth and Regeneration, date 08/08/19

2. Legal Advice: When procuring goods, works and services pursuant to this report, the client officers must ensure the all applicable procurement regulations (including utilities regulations if these apply), and all energy-sector regulations are complied with. Client officers will need to seek legal advice throughout the process of implementing the recommendations contained in this report.

Wherever the Council grants a benefit to any undertaking, that benefit may constitute State aid which is prohibited. Again, client officers will need to seek legal advice to ensure no state aid is granted when implementing the recommendations in this report, or if it is granted an exemption is available.

In accordance with Bristol City Council's Financial Regulations, the Council may not establish any entity (including an SPV) until it has obtained Cabinet approval which has been granted following Cabinet's consideration of an appropriately detailed business case.

We understand that such information will subsequently be presented to Cabinet. The SPV referred to above cannot be established until Cabinet has granted such approval.

Legal Team Leader: Eric Andrews, Commercial and Governance Team, 14 August 2019

3. Implications on IT: There are no immediately identifiable IT implications in this proposal at this stage. As the development of the network progresses, there will be opportunities and requirements for management systems and data collection. These will be need to be developed and implemented at the appropriate time and in ways that help maximise the utilisation and effectiveness of the network and the accompanying infrastructure.

IT Team Leader: Ian Gale, 6th July 2019

4. HR Advice: "Staffing resource is required for the construction of the new energy centre, namely a Construction Manager and a project manager. There are no other HR implications evident at this stage but the position should be reviewed through the course of the project."

HR Partner: Celia Williams, 25th July 2019

EDM Sign-off	Patsy Mellor	19 th June 2019
Cabinet Member sign-off	Cllr Dudd	1 st July 2019
For Key Decisions - Mayor's Office sign-off	Mayor's Office	5 th August 2019

Appendix A – Further essential background / detail on the proposal	YES
Appendix B – Details of consultation carried out - internal and external	NO
Appendix C – Summary of any engagement with scrutiny	NO
Appendix D – Risk assessment	YES
Appendix E – Equalities screening / impact assessment of proposal	YES
Appendix F – Eco-impact screening/ impact assessment of proposal	YES
Appendix G – Financial Advice	NO
Appendix H – Legal Advice	NO
Appendix I – Exempt Information	NO
Appendix J – HR advice	NO
Appendix K – ICT	NO