Leeds CITY COUNCIL

Report author: George Munson
Tel: 270294

Report of Director of Resources and Housing

Report to Executive Board

Date: 17th April 2019

Subject: District Heating: Phase 2 Extension to the City Centre

Capital scheme number: 32463/PH2/000

Are specific electoral Wards affected? If relevant, name(s) of Ward(s): Little London and Woodhouse	☒ Yes	☐ No
Are there implications for equality and diversity and cohesion and integration?	☒ Yes	☐ No
Is the decision eligible for Call-In?	☒ Yes	☐ No
Does the report contain confidential or exempt information? If relevant, Access to Information Procedure Rule number: 10.4.3 Appendix number: 1	☒ Yes	☐ No

Summary of main issues

1. The council has now almost completed construction of Phase 1 of the district heating network (DHN) approved by Executive Board in July 2017. This supplies lower cost, low carbon heat from the Recycling and Energy Recovery Facility (RERF) to households and businesses in Leeds through a network of super insulated underground pipework. The heat from the RERF will be switched on in May but flats at Saxton Garden are already being heated via the gas boilers connected to the network. Agreements to supply heat to both the College of Music and the Leeds Playhouse are progressing well with the aim to have heat on by the end of the year.

2. There is now a strong opportunity to construct Phase 2 of the DHN to the city centre, to add additional customers and connect many of the Council's most important buildings including the Town Hall, Art Gallery, Civic Hall and Museum. The energy delivered via district heating is estimated to deliver CO2 savings of 60% to the buildings concerned. The extension also enhances the opportunity to extend the network to the South Bank in future phases.

3. The council intends to undertake construction alongside the proposed Leeds Public Transport Improvement Programme (LPTIP) works on the Headrow and Housing Infrastructure Fund (HIF) works around Eastgate in order to minimise disruption and

costs (please also refer to the LPTIP report on today's agenda). The opportunity is therefore time-limited.

4. To ensure that Phase 2 is affordable over the asset life, the council has applied for support from the Government's Heat Network Investment Fund (HNIP). A condition of the HNIP funding is that projects must be held outside the national accounts therefore the council intends to set up a special purpose vehicle (SPV) to own the new assets, charging a use of service charge to Leeds PIPES for transporting hot water. The SPV will be wholly owned by the Council.

5. Supporting the aspirations set out in the Best Council Plan 2019-20 – 2020/21, the Phase 2 DHN will provide a range of significant economic, social and environmental benefits to the city of Leeds, including:

    - Reducing CO_2 emissions associated with the RERF and contributing to our ambitious CO_2 reduction targets in support of the recently declared "Climate Emergency" (detail included in a separate report to be discussed at Executive Board);

    - Improving air quality by making ageing gas boilers redundant;

    - Supporting fuel poverty by reducing fuel bills by circa 10% for residential customers;

    - Creating construction, operation and maintenance jobs and retaining wealth in the local economy; and

    - Supporting the expansion of superfast broadband across the city centre by installing empty telecommunication ducts across the route of the DHN.

Recommendations

1 Executive Board are requested to note the contents of this report including its appendices, and:

1.1 Note that complementary district heating works estimated at £400k are required to be carried out alongside improvements planned through the LPTIP programme with the funding to be transferred from within the existing capital programme contingency;

1.2 Subject to HNIP funding being secured approve the additional injection of £5.281m into the Capital programme to deliver the Phase 2 DHN;

1.3 Approve authority to spend for construction of the Phase 2 DHN of £5.681m funded through £3.193m supported prudential borrowing and £2.489m of grant from the Government's Heat Network Investment Project (HNIP). As this is subject to the approval of the HNIP grant from the Department for Business, Energy and Industrial Strategy (BEIS), delegate authority to the Director of Resources and Housing to negotiate an alternative package;

1.4 Delegate authority to the Director of Resources and Housing to vary the current Design & Build contract with Vital Energi to include these works;

1.5 Authority to establish a local authority company should HNIP funding be secured, on terms that are agreed by the Director of Resources and Housing, and in consultation the Executive Member for Resources and Sustainability, City Solicitor and the section 151 officer;

1.6 Support the connection of council buildings to the district heating network, including the Town Hall, Civic Hall, Museum, St George House and Library/Art Gallery.

1 Purpose of this report

1.1 The purpose of this report is to:

- Inform Members of the progress of the district heating project since the Executive Board paper in July 2017;
- Seek approval to construct Phase 2 of the network, subject to securing funding from HNIP and other conditions being met.

2 Background information

2.2 The Executive Board paper of July 2017 set out the strategic context and ambition for district heating within Leeds. Executive Board approved a number of recommendations that enabled the project team to start construction of the first phase of the flagship district heating network.

2.3 Despite facing technical and non-technical challenges, construction has made excellent progress, with all underground pipes successfully installed, heat now being delivered from commissioning boilers and steam from the RERF due to be available on the 17th May 2019. Phase 1 of the network includes the main energy centre (adjacent to the RERF) which will provide up to 20MW of low carbon heat. A new energy centre has been constructed at Saxton Gardens, containing four 11MW gas boilers and 1.4 MW of modular boilers to provide back up in case of planned or unplanned maintenance at the RERF and supplemental heat during periods of peak demand. Flat changeovers have commenced with both energy centres due to be completed by September 2019 and all flats connected by September 2020.

2.4 In addition, good progress has been made with customers, specifically:

- A Heat Sales Agreement due to be signed shortly with one major customer;
- Signed Heads of Terms with two customers;
- Detailed commercial offers provided or under development for 7 potential customers

2.5 Regular enquiries are now being received from new developments and the project team is confident that the pipeline identified customers will rapidly turn into further signed Heat Sales Agreements once the DHN is fully operational.

2.6 In addition to the £5.8m of ERDF funding and £4m of LGF funding secured for Phase 1, the project has attracted an additional £1.4m of ECO funding for the network and £0.7m of ERDF funding for external wall insulation of the Shakespeares. The Council has also taken the opportunity to secure savings on the installation of sprinkler systems within all newly connected blocks, by coordinating the works through Vital Energi. Nearly 2000 council flats will benefit.

2.7 There is now an opportunity to attract additional funding from HNIP to support the construction of Phase 2, to deliver heat to our most significant council buildings in

the city centre and enable a future Phase 3 extension to the south bank. The following section will describe this opportunity in more detail.

2.8 The Phase 2 DHN will build on the benefits delivered by Phase 1, with the key benefits being:

- Reducing fuel bills by c10%;
- Supporting new developments to reduce costs and achieve challenging CO_2 standards;
- Maximising CO_2 emission reduction opportunities associated with the RERF to contribute to our citywide CO_2 reduction targets;
- Improving air quality in the city by removing old, inefficient gas boilers and replacing them with low carbon, renewable heat generated at the RERF;
- Creating construction, operation and maintenance jobs;
- Retaining greater wealth within the local economy.

3 Main Issues

3.1 In order to make the DHN successful in the long term, it is essential to secure customers. There are good opportunities to attract additional Phase 1 customers over time, but these are unlikely to lead to sufficient demand to utilise the available heat from the RERF and therefore use the DHN to its full capacity.

3.2 It is therefore essential to construct strategic extensions to secure additional heat demands. The network has been designed to enable expansion in a number of directions, and modelling undertaken shows that there are three potential extensions:

- City centre with an approximate demand of 22 GWh/22% of available heat
- South Bank west with an approximate demand of 21 GWh/21% of available heat
- South Bank east with an approximate demand of 5 GWh/5% of available heat

3.3 The city centre is the priority area of development for the following reasons:

- The construction of the city centre extension is essential to enable a future phase into the west of the South Bank area, which will see very significant levels of development and hence connection opportunities.
- Development is time-sensitive: LPTIP will upgrade key highways in the city centre including the preferred Phase 2 route up the Headrow. Once LPTIP is complete, installation of DH pipes will not be possible for a minimum of 5 years. Working alongside LPTIP will also deliver cost reductions between the projects and reduce disruption in the city centre, providing an exemplar of joined up working. LPTIP works on the Headrow will commence in Summer

2019, therefore any delays to the DHN programme will potentially require an alternative route to be found for the pipework in the City Centre.

- Development of the DHN will also help unlock future housing development via the Housing Infrastructure Fund (HIF). Executive Board recently gave approval for the submission of a business case to the HIF to unlock housing delivery in the city centre, and a planned new bridge to the Southbank will be DHN-enabled. HIF also intends to undertake works on and around Eastgate and this again presents opportunities for exemplary joined up working.

- The city centre contains a number of council-owned buildings that will act as key heat off-takers. Connecting to the DHN will provide low-carbon heat to these buildings and contribute to the council's carbon reduction targets in support of the recently declared "Climate Emergency". The Council will benefit from reduced energy bills and greater cost certainty going forward

- There has been significant interest in connecting from several potential customers from a variety of backgrounds and building types. This is important, as it helps deliver a balanced and sustainable heat load profile.

- An existing contract is in place for the construction of this extension. The extension is in the scope of the contracts held by Vital Energi for the design/build and operation/maintenance of the network. Construction of Phase 2 was paused to await further funding opportunities but it was always intended to go ahead in the future.

3.4 Grant funding for up to fifty per cent of the construction is now anticipated to come from the Heat Networks Investment Project (HNIP), a government funding programme intended to facilitate growth of heat networks in England and Wales. A total of £320 million of capital funding will be provided to fund projects. The scheme has just launched and it is essential that the council's application is included in round 1, to enable a successful collaboration with the LPTIP scheme.

Programme

3.5 The table below sets out the key project milestones associated with the completion of Phase 1 and construction of Phase 2.

Project Milestone	**Date**
Spine commissioning commences	April 2019
Steam available from the RERF	May 2019
Energy centres fully operational	September 2019
HNIP funding award	May 2019
Phase 2 mobilisation	June 2019
HNIP grant agreement signed	July 2019
Phase 2 construction commences	July 2019
Phase 2 commissioning	November 2020
Phase 2 completion	December 2020

3.6 Given the significant cost savings to be achieved via the opportunity to undertake work whilst LPTIP improvements are taking place, it is proposed that the Council

commits to the parallel district heating installation, independent of the outcomes of the HNIP bid. The costs associated with the minimum extension, which would avoid delays to the programme due to the diversionary routes that will be put in place to accommodate LPTIP, are £400k.

DHN Design Proposals

3.7 Phase 2 of the DHN will incorporate a range of above and below ground infrastructure and equipment that will be located across the Headrow and Civic Quarter sections of the city centre. The key assets of Phase 2 will be:

- Approximately 2.4 km of super-insulated underground pipework to extend Phase 1 of the network into the city centre. Appendix 2 shows the route of the extension and some of the key customers.

- Internal pipework and plate heat exchangers (PHeX) in the connected council buildings to replace existing gas boilers.

- Empty telecommunications ducting installed along the route of the network to enable the installation of superfast broadband across the city centre. A procurement exercise will take place in 2019/20 to attract commercial use of the asset.

3.8 There will be a requirement to secure both planning permission and highways permits for the extension to the DHN. A pre-application discussion has taken place with the Local Planning Authority and securing planning permission is seen as low risk. Discussions with highways have also taken place, building on experience gained on Phase 1, and with the LPTIP and HIF teams who also plan to undertake works on the highways.

3.9 The DHN extension will connect to a range of public and private sector customers. Connections in Phase 1 form a 'base load' that facilitates the proposed expansion. The table below sets out the initial Phase 2 customers with whom the council is in detailed discussions.

Connection	Type	Annual Energy Demand	Connection Status
Council Connections			
Civic Hall	Commercial	1182 MWh	Confirmed
Central Library & Gallery	Commercial	783 MWh	Confirmed
Leeds Town Hall	Commercial	1064 MWh	Confirmed
Leeds Museum	Commercial	356 MWh	Confirmed
St George House	Commercial	280 MWh	Confirmed
Additional Connections			
Customer 1		C3000 MWh	Letter of commitment + HoT's negotiations
Customer 2		c250 MWh	Site survey
Customer 3		c4000 MWh	Letter of

		support

Council Building Connections

3.10 As part of phase 2 the Council intends to connect five of its own buildings. The costs for the plate heat exchangers and the pipework up to the buildings is included in the overall capital for the scheme.

3.11 To optimise the heating systems, further survey work will be undertaken to see if additional measures should be installed. Any improvements will help to further improve the energy efficiency of the buildings, reducing their carbon emissions and will have to be funded via the normal corporate building maintenance fund.

Environmental, Health and Social Benefits

3.12 The DHN will ensure that the RERF generates both electricity and heat. This will increase the overall efficiency of the energy recovery process at the RERF maximising the energy production capacity at the facility.

3.13 The RERF already achieves a CO_2 savings of 62,000 tonnes per year. The DHN will help maximise CO_2 emissions reductions associated with the RERF and contribute to the citywide CO_2 reduction targets. Using the heat generated at the RERF will provide carbon savings through reducing the consumption of gas or electricity. Depending on the ratio of RERF to gas boiler use, a range of 0.079kg CO2/kWh to 0.109kg CO2/kWh is expected, compared to 0.216kg CO2/kWh for gas.

3.14 The DHN will provide a contribution to reducing NOx emissions in and around the city centre as buildings connected to the network will not need to run NOx emitting gas boilers to generate heat. Gas boilers will only be used to provide back-up and supplementary heat to that supplied by the RERF, and as they will be new boilers they will be more efficient than the gas boilers currently used. New developments will not need to install gas boilers when they connect to the network.

3.15 Removing the reliance on the use of NOx emitting gas boilers will contribute towards reducing the health impacts of air pollution such as respiratory and cardiovascular diseases, and pregnancy issues in inner city areas where exposure to poor air quality is typically higher than elsewhere.

3.16 The DHN extension will provide employment opportunities during the construction and operation of the project, along with opportunities for apprenticeship and school/college learning opportunities. The extension of the network into the city centre is also highly strategic, as it enables a further connection into the South Bank. There are a number of large-scale residential and commercial developments that can be reached through a further extension and connections to these would not only make the DHN far more financially successful but would be of major benefit economically.

3.17 The installation of the underground pipework provides an opportunity to install empty telecommunications ducts along the length of the network which will help facilitate superfast broadband across the city. Phase 1 is fully equipped with

ducts, and this would be extended along the route of Phase 2. There is potential for use by both the council and private companies via a contractual arrangement, and the benefits are numerous. These include development of Leeds as a 'Smart City', creation of a more efficient network of fibre for CCTV, traffic management etc and delivery of affordable, high-speed internet to a significant number of inner city homes.

Business Case

3.18 For Leeds PIPES to be financially viable, it is critical that additional heat customers are connected. However, the level of customers required to breakeven is significantly below the potential heat capacity of the network.

3.19 Phase 2 supports Phase 1 in reaching the breakeven point. By construcing Phase 2, guaranteed customers in the form of council buildings are added, making the overall project more financially sustainable. In addition, there are a range of customers that may connect in Phase 2 and Phase 3, some of which would have a significant heat demand, that would improve the scheme's viability.

3.20 Further detail is provided in section 4.4 below.

Governance

3.21 To ensure that the project has robust governance and that the necessary growth is realised, annual updates regarding the performance of the DHN will be reported via the annual budget report and also via the annual Cutting Carbon report.

3.22 The funding agreement with HNIP will also need to be entered into following approval by the Director of Resources and Housing.

4 Corporate Considerations

4.1 Consultation and Engagement

4.1.1 The Executive Member for Resources and Sustainability has been kept updated on progress with Phase 1 construction and briefed on plans for Phase 2.

4.1.2 An extensive consultation process was undertaken prior to and during the Phase 1 construction. This successful process will be mirrored for Phase 2. Vital Energi will undertake consultation activities to ensure local Ward Members, the general public and other relevant stakeholders are involved and informed of the process. Information will be provided to local communities on the proposals.

4.1.3 Engagement with the Highways department will continue throughout detailed design and construction of the extension to the DHN to minimise the impact on the highway network.

4.1.4 Joint consultation with LPTIP and HIF will be undertaken where relevant.

4.2 Equality and Diversity / Cohesion and Integration

4.2.1 An equality impact assessment was completed as part of Phase 1 and has been updated for this proposed extension. The revised version is therefore attached as appendix 3.

4.2.2 The DHN will have a positive impact on equality as it will support the compassionate city equality objective by reducing fuel poverty, helping to increase life expectancy, improving mental health and wellbeing and reducing health inequalities.

4.3 **Council policies and Best Council Plan**

4.3.1 The extension of the DHN supports the aspirations set out in the Best Council Plan and the overall vision of becoming the best city and best council in the UK. In particular, the project helps deliver the Best Council Plan 2019/20 to 2020/21 priority on Sustainable Infrastructure with a focus on:

- Improving air quality, reducing pollution and noise; and
- Promoting a more competitive, less wasteful, more resource efficient, low carbon economy'.

4.3.2 In addition, the council is committed to reducing citywide carbon emissions. Significant progress has already been made, with a reduction of 43% from a 2005 baseline to 2019.

4.3.3 KPIs of the Best Council Plan 2019/20 – 202/21 will measure progress and achievements using – amongst others - carbon emissions across the city and level of CO_2 emissions from council buildings and operations. The extension of the DHN will help achieve positive results for these KPIs.

4.3.4 The council is working towards meeting air quality targets to ensure that it complies with national requirements. The DHN will provide a contribution towards reducing air pollution generated by heating systems in the city.

4.3.5 This scheme will also allow the council to demonstrate its ability to be enterprising and to act as an enabler for growth.

4.4 **Resources and value for money**

4.4.1 The decision was made to delay construction of Phase 2 in 2017 until additional finance had been secured. HNIP now provides an ideal opportunity to extend the network to unlock more of its potential and help increase financial viability.

4.4.2 The business case for the city centre extension is based upon a capital investment of £5.681m, which is required to construct the 2.5km extension into the civic quarter and to connect a number of council owned buildings to the network. The investment is based on a business model that generates revenue associated with the sale of heat to customers and includes £2.489m of HNIP grant funding. Please note, although HNIP can grant fund up to 50%, certain costs are ineligible (i.e. telecomm ducts, some works in buildings) hence our application for less than 50% of the total costs.

4.4.3 Sharing key parts of work with the LPTIP (excavations, civils, traffic management) will be a key feature in reducing costs of the project.

4.4.4 A cashflow table is provided below setting out the forecast spend for the project.

Previous Injections within thew existing programme	TOTAL £000's	TO MARCH 2019 £000's	FORECAST 2019/20 £000's	2020/21 £000's	2021/22 £000's	2022/23 £000's
DISTRICT HEATING GEN FUND	400	0	400.0	0	0	0
TOTALS	400	0	400.0	0	0	0
Injection required for this Approval	**TOTAL £000's**	**TO MARCH 2019 £000's**	**FORECAST 2019/20 £000's**	**2020/21 £000's**	**2021/22 £000's**	**2022/23 £000's**
DISTRICT HEATING GEN FUND	5,281	0.0	2,640.5	2,640.5	0	0
TOTALS	5,281	0	2,640.5	2,640.5	0	0
Authority to Spend required for this Approval	**TOTAL £000's**	**TO MARCH 2019 £000's**	**FORECAST 2019/20 £000's**	**2020/21 £000's**	**2021/22 £000's**	**2022/23 £000's**
DISTRICT HEATING GEN FUND	5,681	0.0	3,040.5	2,640.5	0	0
TOTALS	5,681	0	3,040.5	2,640.5	0	0
Total overall Funding (As per latest Capital Programme)	**TOTAL £000's**	**TO MARCH 2019 £000's**	**FORECAST 2019/20 £000's**	**2020/21 £000's**	**2021/22 £000's**	**2022/23 £000's**
GF Supported Borrowing	3,192	0.0	1,596	1,596	0	0
GF HNIP Grant	2,489	0.0	1,444.5	1,044.5	0	0
Total Funding	5,681	0	3,040.5	2,640.5	0	0
Balance / Shortfall =	**0**	**0**	**0**	**0**	**0**	**0**

4.4.5 Cost certainty is provided on the level of capital and operational costs. The Spine contract comprises a construction contract of around 18 months, followed by an operational contract of 12 years in length, followed by 2 extension periods of 5 years each. The design and build costs are based on a fixed price lump sums, subject to industry standard compensation events.

4.4.6 Variable operating costs for the phase 2 extension include the purchase of steam from the RERF and gas and electricity used in the energy centres. Fixed operating costs include proportionate level of costs associated with the operation of the energy centres, lifecycle replacements and additional Non-Domestic Rates (NDR) for the new pipework. Fixed costs also include servicing the Public Works Load Board (PWLB) debt at an interest rate of 3% over 39 years.

4.4.7 The initial customers on the phase 2 extension will be the council's own corporate buildings in and around the civic quarter, with these being the Town Hall, Civic Hall, Museum St George House and Library/Art Gallery. These council buildings will provide an initial base load of heat demand of c.4GWh, which will provide a secure revenue stream throughout the operation of the DHN. Connecting these buildings will provide long-term revenue savings and reduce capital replacement costs, saving c10% on average. This equates to over £320k of savings over the first 20 years of operation and c60% reduction in carbon emissions.

4.4.8 Additional customers have been identified within the city centre that are within viable reach of the network. Discussions with some of these potential customers have identified that there is interest in connecting to the phase 2 extension, which could result in a heat demand of 11 GWh within 5 years. These customers will generate additional revenue to support the capital cost of extending the network into the civic quarter.

4.4.9 A high level summary of the first full year's financial model is presented below. This is based upon only the council's own buildings being connected to the network.

	£
Revenue	£314k
Operational costs	(£211k)
Funding costs	(£133k)
Annual Energy Savings to the council	£15k
Surplus/(loss)	**(£16k)**

4.4.10 The table below sets out the high level summary of the financial information for year 5, where the anticipated customer heat demand is c.11GWh. This is labelled as scenario 3 within confidential appendix 1, and is based on the council's own buildings and a number of other potential customers. Over 60% of this demand is either from our own buildings or with customers that have provided a letter of support.

	£
Revenue	£790k
Operational costs	(£489k)
Funding costs	(£168k)
Annual Energy Savings to the council	£15k
Surplus/(loss)	**£116k**

4.4.11 A breakdown of the summary information is provided within confidential appendix 1. The tables above demonstrate that the phase 2 extension should be able to cover its costs based on a relatively moderate increase in the level of customer demand.

4.4.12 The construction of phase 2 enables the further expansion of the network through additional future phases (phase 3), which would see the DHN pipework extend to the Whitehall Road/Globe Road area of the city. Additional capital investment would be required to further expand the DHN, however initial discussions with customers in this area of the city have demonstrated there is interest from potential customers who could require an additional c.10GWh of heat from the network.

4.4.13 It is anticipated that some new phase 1 and phase 2 connections will require additional capital finance, which will be repaid over c20 years via the customers' standing charge.

4.4.14 The HNIP grant is subject to State Aid considerations and the Council has sought external legal advice to ensure that we comply. This is detailed in section 4.5 below.

Establishment of a Special Purpose Vehicle (SPV)

4.4.15 A key parameter of the HNIP investment mandate is that any local authority-controlled project with a capex greater than £2.4m must be off the National Accounts, such as through the use of a special purpose vehicle (SPV). The council has been working closely with the LCR Energy Accelerator to consider the most suitable structure. The focus has been on creating a structure that is HNIP compliant, complementary to the existing Phase 1 structure and importantly allows flexibility to restructure Phase 1 in future should the council wish, to as well as considering the tax and state aid implications of each scenario. The recommended structure is a company limited by shares, wholly owned by Leeds City Council, in the form of a PipeCo. A PipeCo simply owns and operates the underground pipes and makes a use of system charge for transporting heat. This approach works well in many deregulated utilities and it would be relatively simple to transfer pipes from Phase 1 and future Phases to this structure.

4.4.16 Should HNIP be successful, the SPV will be set up on terms that are approved by the Director of Resources and Housing in line with statutory requirements and in consultation with the Leader, the Executive Member for Resources and Sustainability and the section 151 officer.

4.5 **Legal Implications, Access to Information and Call In**

4.5.1 The information contained within confidential Appendix 1 to this report is designated as exempt from publication in accordance with paragraph 10.4(3) of the Access to Information Rules and Schedule 12A(3) of the Local Government Act 1972 on the grounds that it contains information relating to the financial or business affairs of any particular person (including the authority holding that information). The appendix contains detailed pricing information underpinning the Council's heat sales business case which if disclosed could damage the commercial interests of the Council. Disclosure of this information would seriously harm the Council's negotiating position when discussing heat sales with potential customers. Therefore it is considered that the public interest in maintaining the content of confidential Appendix 1 as exempt outweighs the public interest in disclosing the information.

4.5.2 The Phase 2 extension will be delivered by Vital Energi under the existing OJEU compliant Spine D&B and O&M contracts, described in the July 2017 Executive Board report. Construction of Phase 2 was varied out of the contract when Phase 1 commenced in order to reduce risks and improve affordability. However, it was always intended to undertake this work in future so we now intend to exercise this option by varying the contract to bring this work back in. No new procurement or authority is required.

4.5.3 In any project involving the expenditure of public monies and parties acting in part for a commercial purpose there is the possibility of state aid arising. External legal advice regarding state aid has been received. This indicates that the Phase 2 extension can rely on the block exemption under Article 46 of the General Block Exemption Regulations (GBER), which applies to the capital cost of the pipes for the district heating network. Other state aid risks that have been considered (including possible aid to businesses that purchase heat) cannot be ruled out but should not arise.

4.5.4 Article 46(6) of GBER requires that the total amount of aid for the distribution networks must not exceed the difference between the eligible costs (i.e. the investment costs) and any operating profit which is generated. The Council must calculate the operating profit on the basis of discounted revenues and operating costs over the life of the asset. If an operating profit is made the Council must then repay an equivalent amount of the grant it received to the grant provider.

4.5.5 The decisions within this report are Key Decisions and are therefore subject to call in.

4.6 **Risk Management**

4.6.1 Cost certainty relating to the construction of the DHN is provided through the completed procurement, which ties down the majority of the construction and operational costs. The signed deed of variation to the residual waste PFI contract provides a secure price for the purchase of steam from the RERF. Heat sales agreements with customers are index linked relevant energy indices to ensure back to back risk cover.

4.6.2 An initial anchor load is provided in Phase 2 by the five council buildings to be connected, and this provides an energy demand that supports the viability of the DHN from which the network can expand. To be financially viable the network must secure sufficient heat sales and this is therefore a key risk to the project. However, planning powers (policy EN4) can be used to encourage connection to the network, which will be enforced when new developments arise and there has also been a recent national announcement that gas boilers will be banned in all new homes from 2025.

4.6.3 Interruptions in heat supply from the RERF represent a risk to the continuous supply of heat across the network. Saxton Gardens energy centre includes back-up heat generation equipment and, along with the ability to connect temporary boiler plant at locations across the network, heat supply to customers can be maintained at all times.

4.6.4 The council has sought grant only from HNIP, but it is possible that a mixture of grant and loan may be offered. Full details of the grant and loan funding agreements have yet to be released, so at this stage it is unclear what the individuals conditions will be. Therefore it is essential to maintain flexibility to review and accept the offer, with the authority for this delegated to the Director of Resources & Housing. This will be subject to due diligence in co-operation with the Section 151 officer and City Solicitor.

4.6.5 Ground conditions, access and routing risks that are associated with construction projects along highways and over third party land, have been transferred to the contractors.

4.6.6 Key Performance Indicators within the Spine D&B and O&M contracts will provide performance remedies to mitigate underperformance in key areas of the service where Vital Energi do not achieve the necessary service levels.

4.6.7 A delay in laying pipes along the Headrow may result in delays to the LPTIP contractor, increasing costs to the Council, extending the period of disruption on the Headrow and increasing the risk of failing to achieve the £174m Government LPTIP grant by the 2020/21 deadline. This risk will be mitigated by collaborating closely with LPTIP contractors, sharing sub-surface surveys and having flexibility to bring additional teams in/work extended hours should difficulties be encountered.

4.6.8 The DHN will be in use for over 40 years so during the detailed design and construction periods the council will be supported by a NEC3 Supervisor from Arup, utilising an existing contract, in order to be satisfied that the system is technically robust and well built.

5 Conclusions

5.1 The Construction of Phase 1 of the DHN is almost complete and has gone well. All pipework is in the ground, the energy centres are nearing completion, and low carbon heat will be available by May 2019. Negotiations with several large customers are ongoing and very positive with Heads of Terms due to be agreed in the near future. However, the network in its current state is not large enough to fully utilise the RERF over the long term.

5.2 An extension into the city centre will help address this excess capacity of low carbon heat by adding new customers, both council and private, and enable a further extension to the South Bank.

5.3 Connecting to council-owned buildings will be especially beneficial, as it will help realise reductions in council carbon emissions and make long term revenue and capital savings.

5.4 The LPTIP and HIF projects provide futher opportunity to share costs and ensure disruption to the city centre is kept to a minimum. However, they also present challenges as they are set to run to strict programmes, and if the opportunity to combine with them is missed it will severely delay any future network expansion. On this basis , independent of the outcome of the HNIP bid, it is proposed to commit to a limited extension which takes advantage of the planned works.

5.5 HNIP funding is a key part of Phase 2. It is a significant new source of funds to enable the council to deliver the extension, thus reducing financial risk. The association with HNIP will also raise the council’s profile as a district heating city and add to its reputation as a low carbon, sustainable city.

6 Recommendations

6.1 Executive Board are requested to note the contents of this report including its appendices, and:

6.2 Note that complementary district heating works estimated at £400k are required to be carried out alongside improvements planned through the LPTIP programme with the funding to be transferred from within the existing capital programme contingency;

6.3 Subject to HNIP funding being secured approve the additional injection of £5.281m into the Capital programme to deliver the Phase 2 DHN;

6.4 Approve authority to spend for construction of the Phase 2 DHN of £5.681m funded through £3.193m supported prudential borrowing and £2.489m of grant from the Government's Heat Network Investment Project (HNIP). As this is subject to the approval of the HNIP grant from the Department for Business, Energy and Industrial Strategy (BEIS), delegate authority to the Director of Resources and Housing to negotiate an alternative package;Delegate authority to the Director of Resources and Housing to vary the current Design & Build contract with Vital Energi to include these works;

6.5 Authority to establish a local authority company should HNIP funding be secured, on terms that are agreed by the Director of Resources and Housing and in consultation with the Leader, the Executive Member for Resources and Sustainability, City Solicitor and the section 151 officer;

6.6 Support the connection of council buildings to the district heating network, including the Town Hall, Civic Hall, Museum, St George House and Library/Art Gallery.

7 Background documents[1]

7.1 None.

[1] The background documents listed in this section are available to download from the Council's website, unless they contain confidential or exempt information. The list of background documents does not include published works.