Leeds CITY COUNCIL

Report author: Polly Cook
Tel: 52484

Report of Director of Environment and Housing

Report to Executive Board

Date: 10th February 2016

Subject: Development of a district heating network

Capital scheme number: 32463/000/000

Are specific electoral Wards affected? If relevant, name(s) of Ward(s): Burmantofts and Richmond Hill, City and Hunslet & Gipton and Harehills	☒ 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 Recycling and Energy Recovery Facility (RERF), currently being constructed at Cross Green, is already designed to generate enough electricity to power over 22,000 homes. There is a further opportunity to harness the heat that is also produced whilst processing the waste and develop a district heating network.

2. The development of a district heating network (DHN) will provide the city with an infrastructure that will support the sustainable growth of Leeds, supporting the city's ambitions to significantly reduce carbon emissions whilst also helping those in fuel poverty.

3. The district heating network will:

- be capable of heating the equivalent of approx. 10,000 average homes;
- reduce the city's carbon emissions by circa 22,000 tons per year, this is equivalent to taking over 11,500 cars off the road;
- reduce fuel bills by up to £250 per annum per household connected, tackling fuel poverty;

- provide greater energy security for the city;

- hold the potential to be expanded to deliver low carbon heat to additional sites across the city.

4. The investment in the district heat network will be cost neutral to the Council, with the potential to provide a surplus as more heat customers are secured. The surplus will allow further investment in the network across the city, achieving greater carbon reductions as well as allowing the Council to further support residents in fuel poverty.

Recommendations

5. Executive Board is asked to:

- Approve the injection of £21 million into the Capital programme to deliver the District Heating Network programme to be funded through £14 million of borrowing that is supported by revenue income streams that are generated by the investment and £7 million grant subject to a successful bid to the LEP;

- Provide authority to procure the district heating network;

- Authorise delegated powers to the Director of Environment and Housing to vary the Residual Waste PFI contract and to enter into the necessary ancillary contractual arrangements with prospective partners/heat customers.

- Receive a further report in the Autumn when the business case has been finalised to allow Executive Board to provide authority to spend and to authorise contract award for construction and operation of the district heating network.

1 Purpose of this report

1.1 This report outlines the benefits of implementing the first phase of the district heating network, which will deliver heat from the RERF to the city centre and to council owned multi-storey blocks in the Lincoln Green, Saxton Gardens and Ebor Gardens areas of the city. A map can be found at appendix 2.

2 Background information

2.1 The primary aims of the project are:

- To reduce vulnerable residents' fuel bills by c10% to tackle fuel poverty;
- To maximise CO2 emission reduction opportunities associated with the RERF to contribute to our citywide target of 40% CO2 reductions between 2005 and 2020;
- To establish the first phase of a city-wide district heating network to stimulate additional investment in DHNs as a way to provide low carbon heat from the perimeter to the city centre.

2.2 The development of a district heating network will also:

- Act as a catalyst for regional DH, through opportunities for other partners to learn lessons from Leeds' processes, including planning, highways, procurement, marketing, operation etc.;
- Create construction, operation and maintenance jobs;
- Retain greater wealth within the local economy;
- Demonstrate the benefits of district heating with a view to persuading public and private sector partners to connect;
- Initiate a strategic network to allow us to implement policy EN4, requiring new developments to connect and providing an outlet for heat from proposed waste/energy activities in the Aire Valley;
- Allow for the removal of outdated storage heaters in council owned multi-storey flats, leading to improved comfort levels and more controllable heating;
- Further enhance the environmental performance of the RERF, and provide clear benefits of using the heat locally.

2.1 The council has been working to secure the benefits of district heating for several years and already operates small networks serving clusters of council owned multi-storey flats.

2.2 In order to be able to articulate the potential for district heating in Leeds, the council has undertaken detailed heat mapping and an energy masterplan for the city. This work identifies a realistic strategic network that could be developed over

the long-term to supply c150MW of connected load with c46MW of heat capacity from low carbon generation sources, helping the city to deliver our carbon reduction ambitions.

2.3 The council also promotes district heating to private sector developers and new networks have been approved for both housing and commercial properties recently.

2.4 The council has included a specific district heating enabling policy (EN4) within the Core Strategy, which has now been adopted following planning inspector's approval.

2.5 The council is currently developing a Local Development Order which would remove the requirement for planning permission for district heating pipework in a large part of the district.

3 Main issues

3.1 The RERF is due to be fully operational in 2016 and will generate enough electricity to power over 22,000 homes. When the RERF was procured, it was required to be district heating enabled in order to maximise the future environmental benefits of the plant.

3.2 At September 2014's Executive Board, the Director of Environment and Housing was authorised to approve the installation of initial infrastructure at the RERF necessary to the delivery of a district heating scheme. As a result of this the plant is now enabled with a grid valve, which means that the implementation of a district heating scheme will have minimal disruption to the operation of the RERF.

3.3 The first phase of the long term strategic plan for district heating is therefore to develop a spine network that utilises the heat from the RERF. The RERF is able to provide c22MW of heat. This could provide the peak heat demand of c6,000 flats. However, supplying a mix of houses and non-domestic sites creates a better 'heat demand profile' throughout the day and over the entire year, allowing the RERF to supply a far greater amount of energy.

3.4 It is intended to procure a contractor that will design, build and operate the district heating network on the Council's behalf. This procurement process is due to start in early 2016. This investment will form a key step in providing 21st century strategic integrated infrastructure. In detail, the project will:

3.4.1 Construct an underground spine DHN to take heat from the Aire Valley to the city centre and surrounding areas. This will comprise c6.4km of well-insulated steel pipes with an expected life of over 40 years;

3.4.2 Install empty service ducts alongside the full 6.4km of the DHN. This will be available for broadband and telecommunication companies to hire to facilitate the spread of superfast broadband around the city;

3.4.3 Construct a new energy centre on council owned land in Cross Green. This will convert steam from the RERF currently in the commissioning stage in Cross Green to hot water to feed into the spine DHN. It will also contain peaking/back

up boilers, pumps, control gear and accumulators to allow the network to be managed;

3.4.4 Connect the network to key clients (known as 'anchor loads') such as the council owned multi-storey flats (subject to ESIF funding), public buildings and development sites;

3.4.5 Provide spurs and connections to allow the network to be expanded. This will include connecting known future heat sources and heat loads, such as waste industrial heat, new thermal power plants and key development sites.

3.5 It is estimated that more than 2,000 flats in parts of the city where fuel poverty is most prevalent could have their heat supplied by this during the first phase of the scheme. This initiative will replace outdated electric heating systems which offer poor levels of comfort and value for money and replant existing district heating schemes. This first phase would build the foundations for a wider district heating network that can be developed in the future and also create confidence in the principle of heat networks and possible further schemes.

3.6 A separate bid to ESIF (European grant funding) has been submitted to convert 22 multi-storey blocks from electric heating to district heating and to connect to the spine DHN. This has been accepted at outline business case stage, with a requirement to submit a refined full business case by February 25th. This £5.7m bid, combined with existing HRA budgets of c£10m, would allow the council to deliver an innovative lower temperature district heating system to around 1,400 flats.

4 Corporate Considerations

4.1 Consultation and Engagement

4.1.6 As part of the development of the local development order for district heating, statutory consultation has taken place, including placing notices on lamp posts along the route and holding two ward member consultation events.

4.1.7 The Executive Member for Regeneration, Transport and Planning and the Lead member for the Cutting Carbon and Improving Air Quality breakthrough project have also been consulted.

4.1.8 Local businesses with a large enough heat requirement will be invited to take part and receive heat from the district heating.

4.1.9 Prior to starting any district heating work in our blocks we will use the statutory leaseholder process as well as engaging LCC tenants in a similar way to that used successfully on the Clydes local district heating project.

4.2 Equality and Diversity / Cohesion and Integration

4.2.1 An equality impact assessment has been completed and is 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, improves mental health and wellbeing and reduces health inequalities.

4.3 Council policies and Best Council Plan

4.3.1 This scheme supports the aspirations set out in the Best Council Plan 2015-20; in particular, the first two objectives of the council's overall list of 6, which were declared for 2015/16:

- Supporting communities and tackling poverty.
- Promoting sustainable and inclusive economic growth.

4.3.2 The council has made public commitments to address fuel poverty concerns. As part of the city's Affordable Warmth Partnership, there is a stated aim to improve the health and wellbeing of vulnerable people through action on increasing affordable warmth and this project supports that aspiration.

4.3.3 In addition, the council is committed to reducing citywide carbon emissions by 40% between 2005 and 2020 and has already made significant progress towards this target. Indeed, the council considers CO2 emissions to be a crucial challenge facing the city and this has culminated in the creation of a 'breakthrough project' – under the Best Council Plan 2015-20 – titled 'Cutting carbon and Improving air quality in Leeds', 1 of 8 priority council projects.

4.3.4 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 An application for £7 million of funding has been made to the regional growth fund to support the development of the district heating network. The outline business case was reviewed on 20th January and has been asked to submit a full business case on 9th March 2016 for consideration.

4.4.2 A technical advisor has been employed to provide due diligence on the costs included within the business case and suitable contingencies have been allowed for both professional fees and capital costs.

4.4.3 The revenues to offset the costs of the project will be provided by the heat sales to Council tenants as well as other anchor tenants and subsidies such as Renewables Obligation Certificates (ROCs) that are available to support renewable energy projects in the UK.

4.4.4 The detailed financial analysis for the project is contained within the exempt appendix 1.

4.4.5 Council tenants that are newly connected to district heating will benefit from a reduction in their fuel bills of at least 10%.

4.5 Legal Implications, Access to Information and Call In

4.5.1 The information contained within appendix 1 is commercially sensitive, relating to financial and business affairs currently being contemplated by the Council. Disclosure at this stage will impact on the Council's ability to negotiate the best commercial deal and achieve best value. Consequently, the public interest in maintaining the exemption currently outweighs the public interest in disclosing the information. This exemption relates to the Access to Information Procedure Rule 10.4 (3).

4.5.2 Although the baseline position under the PFI Contract is that the RERF will (at the commencement of operations) generate electricity only for sale into the grid, Veolia are required to deliver a facility that is 'enabled' for CHP. This means that the plant has been specified and designed to allow the incorporation of the necessary additional on-site CHP infrastructure should a viable heating scheme come forward, and the Contract envisage the development of such a scheme by the Council and Veolia.

4.5.3 The construction and operation of the DHN will be procured in accordance with procurement law and other relevant obligations (including state aid and competition law, and the Council's best value duty).

4.5.4 Any heat sale or purchase, or other ancillary partnering arrangements, will be undertaken in accordance with the Council's duties.

4.6 Risk Management

4.6.1 The development of the district heating scheme does have two major risks but the risks can be managed to bring them down to a more acceptable level. For example, the business case relies on subsidies and in order to secure the key subsidy (ROCs), the RERF operator must deliver a paper pulp plant before March 2017. However, the target is to deliver the pulp plant by Autumn 2016 and the Council will not award a contract to construct the DHN until the key subsidy income has been secured.

4.6.2 Securing contracts with the anchor loads (including council flats, which are subject to a separate funding bid) are key to the successful development of the district heating network. Again a contract to design, build and operate will not be awarded until these contracts have been signed and the anchor loads secured.

4.6.3 The intention is to return to Executive Board to request authority to spend and authority to award a contract in the autumn and by this stage the two key risks outlined above will have been mitigated.

5 Conclusions

5.1 The development of a district heating network into the city centre is an exciting opportunity as it not only provides Leeds with a low carbon infrastructure to support the growth of the city but it also supports some of those residents in areas where fuel poverty is most prevalent.

6 Recommendations

6.2 Executive Board is asked to:

- Approve the injection of £21 million into the Capital programme to deliver the District Heating Network programme to be funded through £14 million of borrowing that is supported by revenue income streams that are generated by the investment and £7 million grant subject to a successful bid to the LEP;
- Provide authority to procure the district heating network;
- Authorise delegated powers to the Director of Environment and Housing to vary the Residual Waste PFI contract and to enter into the necessary ancillary contractual arrangements with prospective partners/heat customers.
- Receive a further report in the Autumn when the business case has been finalised to allow Executive Board to provide authority to spend and to authorise contract award for construction and operation of the district heating network.

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.