

Appendix A: Summary of the Outline Business Case

- I. An Outline Business Case (OBC) has been developed which considers the case for investment in a heat network in Cardiff city centre. It follows the Five Case Model in accordance with HMT's Green Book and considers the viability of investment from 5 perspectives: strategic, economic, commercial, financial and management. The sub-sections below summarise each of these cases.

The Strategic Case

- II. This focuses on the climate change, carbon reduction, energy security and economic development benefits of the scheme as outlined in the section above on objectives in developing a network.

The Economic Case

- III. Comparison of the Cardiff Heat Network against the Business as Usual (BAU) of continuing to install individual gas fired boilers in buildings demonstrated that developing the heat network offered lower lifetime heating costs. On a net present value (NPV) basis at 6% discount rate, the heat network is estimated to have costs £1m lower than BAU over the project life (assuming gas prices follow BEIS projections). This analysis is shown in detail in the OBC.
- IV. The Cardiff Heat Network option also provides CO₂ savings of 5,600 tonnes per annum (excluding the private sector loads) compared to gas boilers. If a social cost of carbon of £60/tonne of CO₂ saved is assumed in line with BEIS projections, this would result in the costs of the full network being £4.7m lower than BAU.
- V. Welsh Government has recently consulted on requiring the public sector to be carbon neutral by 2030. The scheme would make a noticeable and immediate contribution to this target for relevant Council buildings and those of the other public sector customers. Depending on the direction of the WG regulation around this issue it could also lead to potential additional cost avoidance not captured within the current figures.

Commercial – the Delivery Model

- VI. Analysis of both stakeholder and project objectives resulted in three basic delivery options for consideration, as shown in Table A below. These options were discussed with key stakeholders and within the Council both individually and at a stakeholder workshop for the project. Discussions took place in light of the project objectives and key constraints. The relative benefits and advantages of each option were considered. In particular, WG's funding interests were constrained by a requirement to ensure that the benefit of substantial public sector investment in the project was retained to support local socio-economic objectives (such as local regeneration) and ensure continued retained benefit for Cardiff. Following this process, a Public Delivery Model,

working in conjunction with Welsh Government, with the use of an Energy Services Company (ESCO) (see paragraph below) was identified as the preferred option in the commercial case of the OBC.

Table A: Shortlist of Delivery Options

Option	Description
Option 1 – Private Sector Concession Model	The Council identifies the potential heat project and procures a private sector partner to deliver the entire project: heat generation, distribution and supply to customers. The Council and other public sector bodies may participate in the project by committing their heat load to the project and facilitating agreements required by the private sector.
Option 2 – Public/Private Joint Venture Model	The Council procures a private sector partner to deliver the entire project (heat generation, distribution and supply) through a joint venture delivery vehicle in which both the Council and the private sector partner invest.
Option 3 – Public Delivery Model with Welsh Government Involvement	The Council (and any public sector partners) are responsible for delivering the entire project including heat generation, distribution and supply to customers (albeit in this case the heat generation will start with a bulk supply arrangement with the efw facility). The Council will be responsible for procuring the necessary contracts to deliver the project.

- VII. A separate delivery vehicle, in the form of a special purpose vehicle (SPV), was identified as the recommended delivery vehicle taking into account funding, project risk, management and governance considerations. Establishing an SPV will enable project benefits to be retained in the SPV to further the wider strategic objectives of making use of Cardiff's surplus heat to provide environmental and economic advantages for public sector organisations and businesses in Cardiff. The SPV will be an independent company, separate from the Council and, therefore, able to make the best decisions to meet the overall objectives of the energy business without having to manage competing Council constraints. However, the Council will be represented in the governance arrangements and step in rights would be established so that the Council or Welsh Government, as the initial owners of the company, could take over the project should that be required at any stage. The OBC commercial case sets out in detail the benefits and risks of establishing an SPV, together with advice on the process which is followed in establishing such a vehicle. The precise definition of the establishment mechanisms for the SPV, along with its constitution and governance will be the subject of a detailed piece of work in the next stages of the project development.

- VIII. Furthermore, it is proposed that the heat network will be implemented through a design, build, operate and maintain (DBOM) contract, thereby achieving a high level of risk transfer to private sector contractors. The timetable for commencing the procurement of the DBOM contractor, including shortlisting of potential contractors, is set out in Table 2 below. The rationale for this choice is explored in detail within the commercial case of the exempt OBC.

Financial Case - Funding and finances

- IX. The funding and financing recommendations for the project have been reviewed in detail by the Council's Investment Review Board (IRB).
- X. The project has identified three potential funding sources that will meet the aspiration to retain as much of the benefit of the system within the local economy. These are:
- XI. grant funds available from Central Government's Heat Network Investment Programme (HNIP) (This is a £320m capital funding pot for investing in district heating networks, which are able to identify complimentary funding sources. The next bidding round is planned for the Autumn of 2018.)
- XII. an offer of direct financial investment from WG, either in the form of an Equity stake or loan on bespoke and favourable terms; and
- XIII. borrowing through invest to save or equity investment from the Council.
- XIV. In summary, the initial phase is estimated to cost £14.4m and it is proposed that this would be composed of £5.4m HNIP Grant, a £5m WG investment and £4m of Council Invest to Save Capital. The second phase to complete the network will cost an additional £16m. Soft market testing has shown a significant degree of interest from third party investors in this phase, which will have been de-risked by the grant assisted construction and establishment of the first phase. It is envisaged, therefore, that private sector loans into the established SPV/ESCO will fund this phase, though opportunities for other direct Council or WG investment will still be available if these are seen favourably at the time.
- XV. A diagram representing the envisaged funding structure for the full Cardiff Heat Network can be seen in Figure A below. The Phase 1 funding amount is shown as a total and should be referenced off the left hand axis, the full Cardiff heat network funding is shown as a percentage of the total funding and should be referenced off the right hand axis. Funding Phase 2 with private sector debt may be possible as a result of the level of public sector investment in Phase 1 and minimal counter party risk due to heat offtake being contracted on a long term basis.

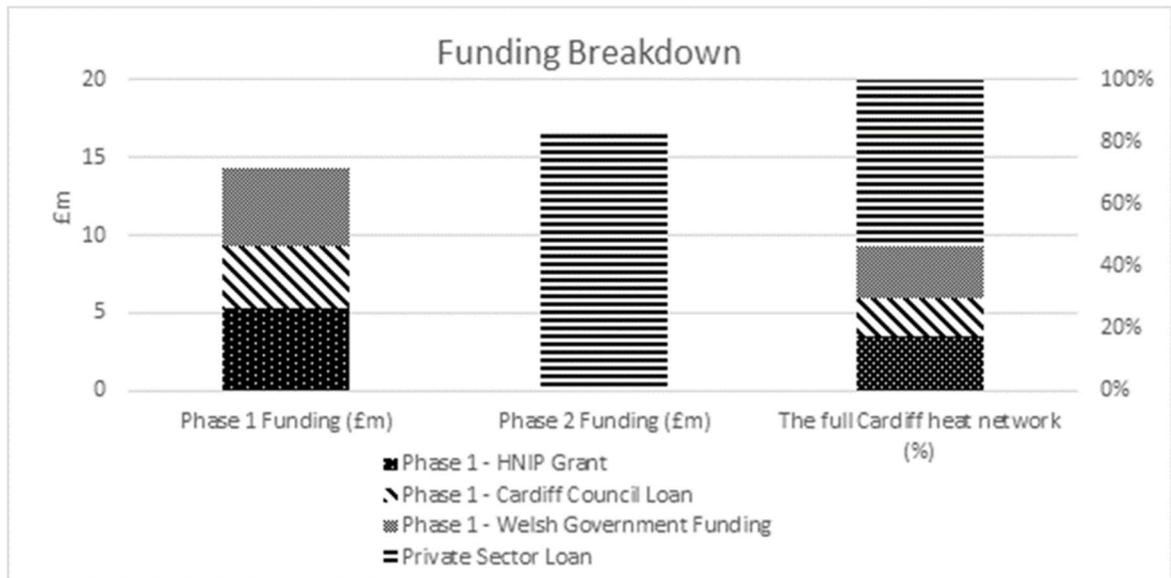


Figure A: Funding structure for Phase 1 and the full Cardiff Heat Network

- XVI. The project is dependent on the above mentioned grant and equity investment structure. It is proposed therefore that a grant application will be made to the BEIS' HNIP investment project in the autumn of 2018 for capital funding towards part of the project costs. Furthermore, detailed negotiations will be held with Welsh Government to secure their investment in the project.
- XVII. The operating margin of Phase 1 is enough to service the annual repayments of principal and interest arising from the lending into the project. However, network expansion will need to have occurred before the payment of dividends related to Welsh Government investment. The financing costs for the full network include the Council's on-lending, project finance debt to facilitate scheme expansion and dividend payments to Welsh Government as an equity investor.
- XVIII. From the Council's perspective the Cardiff Heat Network will provide two principal financial benefits:
1. The margin on the on lending to the SPV (loan repaid over 20 year period following start of operations); and
 2. A 5% reduction in the heating costs for council buildings which connect.
- XIX. Note: this lending to the SPV must be provided at a minimum lending rate as this element of the project funding is not subject to state aid exemption.

Management Case

- XX. The OBC's development, including the commissioning of all technical, financial and commercial advice, has been overseen by the Cardiff Heat Network Study Board. This was established in the spring of 2017 and has met on a monthly basis since that time. Welsh Government representatives sit on this board as key stakeholders.

- XXI. The governance structure for the commercialisation phase of the network will mirror those adopted for the development of the OBC. The implementation of the network will continue to be overseen by a Project Board led by the Director Planning, Transport and Environment. This board will provide the project with strategic leadership.

- XXII. The project team, led by a dedicated project manager, will oversee the development of the HNIP capital grant application, the documentation to allow the design, build, operation and maintenance (DBOM) contract to be procured and further legal advice on the establishment of a special purpose vehicle (SPV) to be commissioned. The project manager will also coordinate the stakeholder group to ensure key parties are kept informed of progress.