

ECONCOMY, REGENERATION AND HOUSING COMMITTEE

Monday, 22 January 2024

REPORT TITLE:	BIRKENHEAD HEAT NETWORK
REPORT OF:	DIRECTOR OF FINANCE

REPORT SUMMARY

This report summarises the findings of the Detailed Project Development Study and Outline Business Case for Birkenhead Heat Network.

The Committee is asked to note the progress that has been made in the development of the Birkenhead Heat Network project. The Committee is also asked to note the progress that has been made and endorse the ongoing work around the application to the Green Heat Network Fund in relation to the proposed network.

The report contributes to the recently refreshed Wirral Plan 2023-2027 in supporting the organisation in meeting Council priorities around regeneration and climate change.

This is not a Key Decision.

The appendix to this report is exempt from publication pursuant to paragraph 3 of part 1 of Schedule 12 A of the Local Government Act 1972 (Information relating to the financial or business affairs of any particular person (including the authority holding that information)). The public interest in maintaining the exemption outweighs the public interest in disclosure.

RECOMMENDATIONS

The Economy, Regeneration and Housing Committee is recommended to:

1. Note the work to date on the development of the Birkenhead Heat Network;
2. Note the grant funding received to date to support this work;
3. Endorse the application to the Green Heat Network Fund; and
4. Endorse the proposed project review around commercialisation options.

SUPPORTING INFORMATION

1.0 REASONS FOR RECOMMENDATIONS

- 1.1 The potential development of a Green Heat Network in Birkenhead will deliver against key priorities for the Council around both carbon reduction and regeneration.
- 1.2 Wirral's Cool 2 Climate Change Strategy 2019 includes an objective to generate and/or source all our local energy needs from zero carbon and renewable sources by around 2041 and commitment to progress heat networks.
- 1.3 Provision has been made within the draft Local Plan to support a heat network through making provision for an energy centre and mandating suitable buildings to connect to a heat network. Birkenhead Heat Network is listed as 1 of 8 catalyst projects in the Birkenhead Regeneration Framework.

2.0 OTHER OPTIONS CONSIDERED

- 2.1 The alternative option is to cease work on the Heat Network. This would fail to deliver against the previously agreed strategies around zero carbon and renewable energy.
- 2.2 In the absence of a heat network it is likely that new developments will need to implement air source heat pumps to respond to future building regulations. The individual deployment of air source heat pumps would place a larger strain on the electricity grid than the Heat Network.

3.0 BACKGROUND INFORMATION

- 3.1 The Chancellor's 2019 Spring Statement and Future Homes Consultation sets out the commitment that fossil fuel heating will no longer be permitted in new homes from 2025. The UK Government estimates that around 18% of UK heat will need to come from heat networks by 2050 if the UK is to meet its carbon targets cost effectively. Heat Networks supply heat from a central source to consumers via a network of underground pipes carrying hot water.
- 3.2 On 15 July 2019, Wirral Council declared an Environment and Climate Emergency at a meeting of full Council, and through this committed to action to address the ecological and climate crisis. The Environment and Climate Emergency Policy recognised the importance of:
 - achieving 'net zero' carbon emissions;
 - promoting sustainable regeneration, with a brownfield first development strategy in the Local Plan;
 - managing our use of energy, water, and resources as efficiently as possible; and
 - promoting a wider shift to non-fossil fuel clean energy sources.

- 3.3 The Department for Business Energy and Industrial Strategy's (now Department for Energy Security and Net Zero (DESNZ) Heat Network Delivery Unit (HDNU) funded the Wirral Heat Mapping and Masterplanning study (2019) and Wirral Heat Network Feasibility Study (2020). The feasibility study looked at heat pump (air, ground, water, waste-water) geo-thermal, waste heat, biomass and gas Combined Heat and Power technologies as potential options. A combination of open water from docks, tunnel water from Shore Road Pumping Station and waste water from Waste Water Treatment Works was identified as the priority option to serve planned new and existing development in Birkenhead.
- 3.4 Following this HNDU and the Liverpool City Region Combined Authority (LCRCA) awarded grant funding (£230k) for the engagement of an external Project Manager and a Detailed Project Development study (DPD) and Outline business case preparation.
- 3.5 The DPD study recommends a Heat Network in Birkenhead to utilise waste heat from the Birkenhead Wastewater Treatment Works and water source heat pumps from docks. This could potentially provide 49.6 GWh/year of heat and save 256,456 tCO₂e in its lifetime compared to the alternatives of gas fired boilers for current buildings and air source heat pumps for new builds. The Outline Business Case is attached in the confidential Appendix 1. Appendix 1 to this report is exempt from publication pursuant to paragraph 3 of part 1 of Schedule 12 A of the Local Government Act 1972 (Information relating to the financial or business affairs of any particular person (including the authority holding that information)). The public interest in maintaining the exemption outweighs the public interest in disclosure.
- 3.6 It should be noted that Peel Energy has submitted a planning application for a heat network energy centre at Vittoria Studios on Duke Street. Peel Energy was engaged during the commission to understand the future aspirations of this network. For the moment, although work and discussions are ongoing, the Peel Energy application is proposed to just serve new build residential developments proposed by Peel. Therefore the Hamilton Park Regeneration Area load (for existing buildings) has been included within the Birkenhead Heat Network assessment.
- 3.7 The current heat network does not extend across the docks to the Regeneration Areas to the north. Additional funding has been received from DESNZ and LCRCA for a Seacombe and Wallasey Heat Network Feasibility study.
- 3.8 The recommended heat network will encompass primarily planned developments in the Birkenhead area, along with some existing buildings. The Hind Street development has been identified as a significant part of the potential customer base. Since the largest proportion of planned connections to the network is higher than existing sites, it is recommended that the network operates at low temperatures, increasing efficiency and enabling the integration of low-carbon heat sources
- 3.9 Options have been considered around both utilising heat from the waste water treatment works and abstracting heat from the docks. The waste water treatment works option provides greater efficiencies owing to the higher initial heat

temperatures of the water. These options for the heat network are then considered against the alternative options the most pertinent of which in this instance would be gas fired boilers for current buildings and air source heat pumps for new builds.

- 3.10 The business case demonstrates that significant savings can be made from the heat network in terms of carbon savings alongside a strong financial business case. The final solution will depend on the delivery model adopted to develop the network.

4.0 FINANCIAL IMPLICATIONS

- 4.1 The grant funding received to date has been £230k. £195k has been utilised and has funded the DPD study, Outline Business Case and external project management support. The costs of the internal officer time have been absorbed by the Council.
- 4.2 The current proposal is to procure additional consultancy services, with the remaining £35k, to develop the proposal to the stage where an application can be made to the Green Heat Network Fund for Commercialisation and Construction funding.
- 4.3 The development of the project has been grant funded to date. Future financial implications will depend upon the option ultimately chosen to deliver the project and will be reported to this Committee in due course.
- 4.4 The projected capital costs of the project are in excess of £40m. A forecast financial model has been developed as part of the business case taking into account the potential customers and baseload of the network. The forecast nominal project internal rate of return for Birkenhead Heat Network has been estimated to be 13.44%.
- 4.5 This is a comparatively high level of return which is largely driven by substantial connection revenues anticipated early in the project. This is highly dependent on the project meeting the development dates associated with the proposed Hind Street development.
- 4.6 It is highly unlikely that the Council would be able to take the financial risk associated with the development of a heat network given the upfront capital costs, uncertainty over revenues and cashflow and the limited reserves that the Council currently holds. However, as the forecast financial results demonstrate a high rate of return it is very likely to be an appealing project to the private sector. A company in receipt of funding to support heat network construction has already made approaches to the Council to operate a heat network in Birkenhead for which the Council would be a customer only.
- 4.7 Four potential delivery models have been identified which would require varying degrees of investment from the Council. These include:
- 1) Council-owned Energy Service Company (ESCo) – Public Delivery Model;
 - 2) Joint Venture with third party ESCo;
 - 3) Third Party ESCo + Concession; and
 - 4) Third Party ESCo Customer only

4.9 A recommendation around the preferred option will be brought forward as the proposed work around commercialisation is completed.

5.0 LEGAL IMPLICATIONS

5.1 There are no legal implications associated with the activity and recommendations contained in this current report. However, the next stage around commercialisation will require legal input in bringing forward a future report for members consideration.

6.0 RESOURCE IMPLICATIONS: STAFFING, ICT AND ASSETS

6.1 Delivery of this project will require staff with the appropriate experience and knowledge around the subject matter to properly support the project. These may need to be externally procured due to the specialist nature of the subject matter.

7.0 RELEVANT RISKS

7.1 The governance of the project will enable the escalation and management of risks and issues. Risks and Issues will be managed using risk and issues logs and the process will be supported by the Council's Corporate Risk Management structure and Project Management Office.

8.0 ENGAGEMENT/CONSULTATION

8.1 The Carbon Trust Stakeholder Engagement Plan Tool has been used to establish an engagement strategy. A large number of potential stakeholders, should the project proceed, have been established through a stakeholder mapping exercise. United Utilities has been consulted as part of the development of this project.

9.0 EQUALITY IMPLICATIONS

9.1 Wirral Council has a legal requirement to make sure its policies, and the way it carries out its work, do not discriminate against anyone. An Equality Impact Assessment is a tool to help council services identify steps they can take to ensure equality for anyone who might be affected by a particular policy, decision or activity.

9.2 At this time, there are no equality implications identified for the proposal.

10.0 ENVIRONMENT AND CLIMATE IMPLICATIONS

10.1 The development of a low carbon heat network would support previously agreed strategies around zero carbon and renewable energy.

11.0 COMMUNITY WEALTH IMPLICATIONS

11.1 There are direct community wealth implications at this stage of the project.

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APPENDICES

Appendix 1: Birkenhead Heat Network Outline Business Case.

The Appendix 1 to this report is exempt from publication pursuant to paragraph 3 of part 1 of Schedule 12 A of the Local Government Act 1972 (Information relating to the financial or business affairs of any particular person (including the authority holding that information)). The public interest in maintaining the exemption outweighs the public interest in disclosure.

TERMS OF REFERENCE

This report is being considered by the Economy, Regeneration and Housing Committee in accordance with Section 4.2 (a & g) of its Terms of Reference: (a) formulation and delivery of the Council's strategic development objectives for planning, sustainability and transportation; and (g) overseeing the progress of major projects (including major building, infrastructure or other projects involving the erection or significant alteration of major permanent structures or landmarks) undertaken by the Council directly or as enabler, funder or joint enterprise partner, including but not limited to the Wirral Growth Company LLP;

BACKGROUND PAPERS

Wirral's Cool2 Climate Change Strategy 2019
The Chancellor's 2019 Spring Statement and Future Homes Consultation
Wirral Heat Mapping and Masterplanning study (2019)
Wirral Heat Network Feasibility Study (2020)