

## **CABINET**

**5 APRIL 2022**

### **LOW CARBON HEAT NETWORK – DETAILED PROJECT DEVELOPMENT PHASE PROPOSAL**

Portfolio Holders: Councillor Adrian Gulvin, Portfolio Holder for Resources  
Councillor Howard Doe, Deputy Leader and Portfolio Holder for Housing and Community services

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#### **Summary**

The report seeks to facilitate a discussion on the Low Carbon Chatham Heat Network. This is a significant, four-year project and aims to achieve an expected reduction of 7,600 tonnes of carbon per year. This will help Medway achieve its commitment to being Net Carbon Zero by 2050. The information in this report is based on documents from a consulting company and these documents are in the appendices at the end of this report.

The project has completed the Techno-Economic Feasibility study and requires up to £60k of council funding to complete the Detailed Project Development phase. That phase will incorporate an outline business case which will address key risks, conduct soft market testing, and develop the delivery and commercial strategy. It is anticipated that the future Heat Network delivery phases (commercialisation and delivery) will be extensively financed by private investment and government funding.

#### **1. Budget and policy framework**

1.1. This is within the council's policy and budget framework regarding commitment to Net Carbon Zero.

1.2. This is an urgent requirement due to the challenging targets and pressing timescales of the climate emergency.

## 2. Background

- 2.1. The Refit Project is an approved Procurement, which was the original £12M phased retrofit works for our Council Buildings.
- 2.2. That contract also allowed for Heat Networks to be explored. Special Projects are allowed under the Refit Contract, and we have been working for a year on the River Source Heat Network feasibility study, of which the Techno Economic Feasibility (TEF) with Greenfield consultants and Local Government Partnership is the first part.
- 2.3. The next stage in the Heat Network is the Detailed Project Development (DPD) phase. The resulting works following the TEF and DPD is estimated as £46M build out across Chatham.
- 2.4. However, this paper is just for the DPD stage (total £180k), and Medway will only pay up to £60k for this. Any further costs to the Council will be ascertained in this phase and brought back to Members for a decision as necessary.
- 2.5. This document is provided as a “heads-up” in advance of a discussion at a future cabinet meeting.
- 2.6. Medway, as a town, is at a key juncture with regards to its heating decarbonisation strategy. To achieve UK decarbonisation targets all domestic and commercial heating needs to transition away from fossil fuels by 2050. The recent Net Zero Strategy: Build Back Greener and the Heat and Buildings Strategy<sup>1</sup> confirmed the Government’s ambition to start phasing out gas boilers for existing buildings from 2035. For new build properties, this is expected to take place by 2025 as part of the Government’s Future Homes Standard<sup>2</sup>. Consequently, the two main options available to decarbonise heat are either an individual heat pump or a connection to a low /zero carbon heat network.
- 2.7. A Low Carbon Heat Network in Chatham has the potential to save 7,600 tonnes of carbon dioxide per year (over an estimated 40-year average lifetime). This will contribute significantly towards Medway’s commitment to be Net Carbon Zero by 2050. Additionally, it can provide an internal rate of return of between 5% and 10% for a period of excess of 25 years without the need of any Capital Expenditure investment. Finally, it would provide social value such as local jobs and significant inward investment.
- 2.8. Greenfield, a consultancy company with expertise in energy and sustainable projects and businesses, was contracted to produce a feasibility study for a Low Carbon Heat Network in Chatham. This study was partially funded by the

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<sup>1</sup> Net Zero Strategy: Build Back Greener (<https://www.gov.uk/government/publications/net-zero-strategy>) and the Heat and Buildings Strategy (<https://www.gov.uk/government/publications/heat-and-buildings-strategy>)

<sup>2</sup> <https://www.gov.uk/government/consultations/the-future-homes-standard-changes-to-part-l-and-part-f-of-the-building-regulations-for-new-dwellings>

Department of Business, Energy and Industrial Strategy (BEIS) via their Heat Networks Delivery Unit (HNDU).

2.9. A heat network is a distributed system of pipes that take heat from a central source and delivers it to multiple consumers, rather than each site having their own heating system. Greenfield’s preferred solution uses the River Medway, which provides good access to a significant renewable heat source using Water Source Heat Pumps. These use ‘ambient’ heat from a water body and upgrading it to useable temperatures (for individual buildings or heat networks). Due to the significant amount of work required (energy centre(s), heat network pipework and property connections), it is expected that it would take four years to complete most of the work.

2.10. Currently the project has completed the Techno-Economic Feasibility (TEF) phase. The following diagram illustrates the typical heat network development project lifecycle.

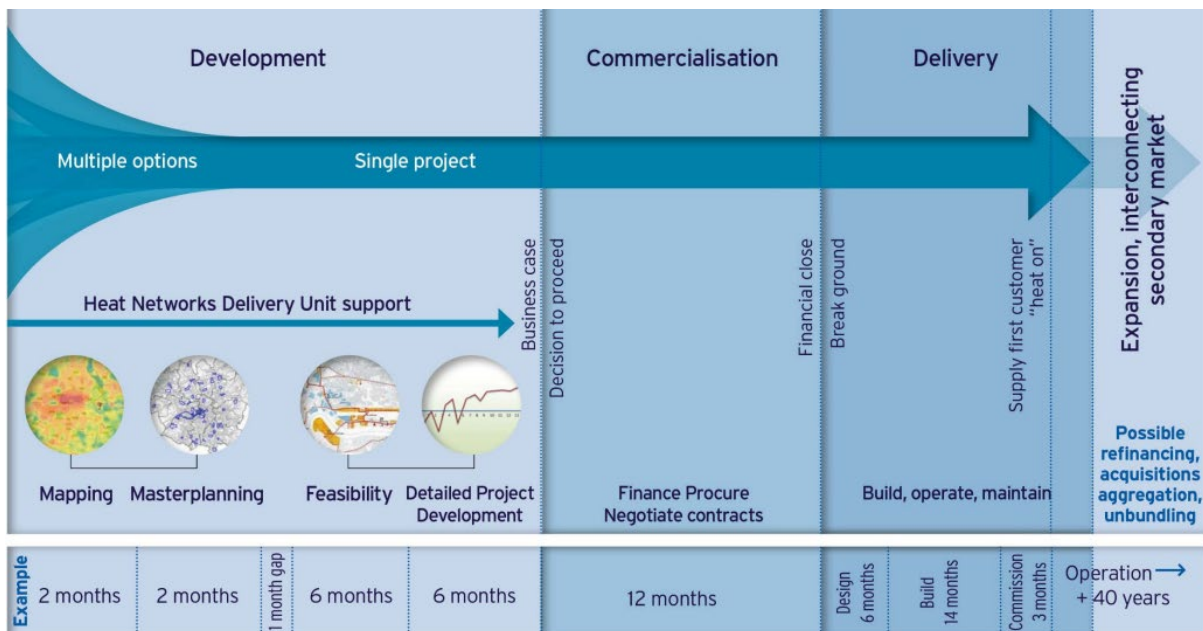


Figure 1: Project phases provided by Local Partnerships which came from BEIS.

2.11. If funding is agreed, the next phase will be the Detailed Project Development (DPD) phase. DPD supports the financial, economic, and commercial case for a heat network(s). It will support the following activities:

- Address key risks including, energy centre locations and routing, key customers
- Optimise the proposed network solution
- Provide an outline business case
- Undertake soft market testing
- Resolve the preferred delivery structure including, governance, ownership, investment, and procurement

- 2.12. The DPD phase is expected to cost approximately £180k. 67% of this would be paid by the UK Government through BEIS via the HNDU. This will support procurement of technical, legal, and commercial consultants to deliver against those activities identified above.
- 2.13. Therefore, the funding required for the Detailed Project Development phase by Medway Council will be up to £60k.
- 2.14. Additionally, 100% of the project management fees are also paid for by BEIS. It should also be noted that as well as utilisation of existing resources across council teams, Medway will require its own dedicated project management resource to manage and coordinate the programme. This will be identified as part of the DPD and included in any additional costs and asks back to Members as appropriate.
- 2.15. Production of a DPD will allow Medway to apply for capital grant funds via the Green Heat Network Fund (GHNF) to cover aspects of commercialisation and construction costs for the project, if this is required.
- 2.16. Associated documents are the “Chatham Low Carbon Heat Network Summary, Property and Capital projects, January 2022” which is based on a consultant feasibility report and presentation delivered to Councillors on 17 December 2021. Relevant documents are in the Appendices at the end of this report.

### 3. Options

- 3.1. Do nothing – if no heat network for Chatham is progressed then to help achieve the Net Carbon Zero (NCZ) targets the Council would need to utilise air sourced heat pumps provided individually in properties as a main driving factor towards NCZ (see paragraph 2.9).
- 3.2. Do something – this proposal is the alternative to ‘do nothing’ where for a nominal fee Medway can understand the full benefits and risks of a Heat Network in Chatham.
- 3.3. Await new technology development such as fusion (possibly 2030s) or hydrogen gas (still under development). There is a risk if we wait these may not become available in suitable timescales.

### 4. Advice and analysis

- 4.1. Sustainability can be defined as avoidance of the depletion of natural resources to maintain an ecological balance.
- 4.2. This piece of work will help with sustainability aims by assessing the benefit and potential delivery of reduced separate heating systems used across high-demand energy consumers in Medway.

- 4.3. As this report is not recommending policy/service changes, a Diversity Impact Assessment is not required at this stage.
- 4.4. Based on the feasibility study conducted from Greenfield consultants (Exempt Appendix 2), it is recommended that the Council progresses this project to the Detailed Project Development phase (3.2 above) which will, within one year, give Medway Council a better understanding on whether to continue with the project into the commercialisation and construction phases and resolve the preferred delivery structure and the council's role.

## 5. Risk management

- 5.1. The risk management table has been completed based on risks associated with the Detailed Project Development phase. As part of this phase, the risks associated with the future phases will be better understood.

Risk	Description	Action to avoid or mitigate risk	Risk rating
Medway's key energy consumer, Chatham town, doesn't achieve NCZ by 2050.	Failure to develop the HNDU scheme will impact MC's ability to achieve NCZ	Take recommended action to proceed with funding for DPD (up to £60k for MC) £180k estimated total	B2 (before mitigation) D3 (after mitigation)
Internal resourcing risk	This is a specialist area (district heat networks). Requiring specialist legal, finance, contractual, technical expertise.	Ensure delivery of consultant areas is undertaken by experienced external consultants in consultation with the Medway project team.	B2 (before mitigation) D3 (after mitigation)
Financial risk	The DPD has a large external funding input (67%). There is a minimal contribution from MC (estimated maximum £60k) to move forward with the DPD stage on this circa £46m scheme.	Regular engagement with BEIS, LP and consultant throughout DPD stage.	D3 (before mitigation) E4 (at this stage)

## 6. Consultation

- 6.1. The project has involved consultation with, and input from, various parties including:
  - 6.1.1. Local Partnerships;
  - 6.1.2. UK Government Department for Business, Energy and Industrial Strategy (BEIS);
  - 6.1.3. Greenfield Nordic – consultants with expertise in energy and sustainable projects and businesses specialising in energy;
  - 6.1.4. Potential consumers of the network including universities, armed services (Royal School of Military Engineering), NHS and Chatham dockyard.
  - 6.1.5. Councillors have been kept apprised on the progress on the project such as via a presentation in December 2021.

## 7. Climate change implications

- 7.1. The Low Carbon Heat Network has the potential to make a significant impact on the Medway Council's carbon emissions. Whilst this Detailed Project Development phase will not itself help Medway Council reduce emissions. It will however help enable the decision on the Low Carbon Network to take place. If that is successful and the Low Carbon Heat Network is constructed, it would then reduce Medway Council's carbon emissions and have a positive impact on climate change.

## 8. Financial implications

- 8.1. The Detailed Project Development phase of the project will cost approximately £180k. The Heat Networks Delivery Unit (HNDU), part of the UK Government's Department for Business, Energy & Industrial Strategy (BEIS), will provide 67% of the consultant funds, and 100% of the project management cost.
- 8.2. Therefore, the Detailed Project Development phase has an associated financial cost to Medway Council of up to £60,000, and will cover addressing the key risks, conducting soft-market testing, and resolving the delivery and commercial strategy.
- 8.3. It is proposed that the Council's £60,000 contribution should be met from the Feasibility Fund in the 2021/22 budget.

## 9. Legal implications

- 9.1. This is the next stage in the project to consider whether the provision of Low Carbon Chatham Heat Network is achievable.
- 9.2. The Council has declared a climate emergency and as such is actively looking to explore options such as this which have the potential to reduce carbon emissions within the area.

9.3. As this is a continuation of an on going project and the funding is likely available from within the Council's existing resources there are no direct legal implications arising.

## 10. Recommendation

10.1. The Cabinet is asked to agree that the Low Carbon Chatham Heat Network be taken to the Detailed Project Development phase.

## 11. Suggested reasons for decision

11.1. For up to £60k of funding Medway would access £180k of work. Project Management fees are also paid for by BEIS. The DPD phase could show that the CHN would have significant benefit in terms of carbon reduction helping Medway achieve net carbon zero and socio-economic benefits, while addressing some of the current risks.

## Lead officer contact

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## Appendices

Appendix 1: Chatham Low Carbon Heat Network Summary, Property and Capital Projects

Exempt Appendix 1: Chatham Maritime Heat Network Detailed Feasibility Study Executive Summary

Exempt Appendix 2: Chatham Maritime Heat Network Detailed Feasibility Study (Final)

Exempt Appendix 3: Chatham Maritime Low Carbon Heat Network – Findings/ recommendations

## Background Papers

None.