

**Report to: Environment Committee, 18th July 2023**

**Report of: Deputy Director – Corporate Policy and Strategy**

---

**Subject: HEAT NETWORKS DETAILED PROJECT DEVELOPMENT STUDY**

## **1. Recommendations**

**That the Committee agrees to:**

- 1.1 Accept the award of £230,000 arising from the bid to the Government's Heat Networks Delivery Unit to undertake a detailed project development study for a Worcester City Heat Network;**
- 1.2 Allocate £5,000 in match funding, from the Environmental Sustainability enabling budget; and**
- 1.3 Delegate authority to the Deputy Director, Corporate Policy and Strategy in consultation with the Chair and Vice Chair of the Committee to undertake the necessary procurement and award of contract.**

## **2. Background**

- 2.1 A heat network (also known as a district heating scheme) supplies heat in the form of hot water from a central source to a number of consumers (business or domestic). The hot water is carried via a network of underground pipes. Heat networks can be small, supplying a few buildings, or much larger, covering an entire city. (See **Appendix 1**: 'What is a Heat Network' for more information).
- 2.2 The Committee agreed on 21<sup>st</sup> July 2020 to support the submission of a grant bid and budget of up to £10k to match fund a techno-economic feasibility study for a Worcester City Heat Network. This funding was not required as the successful bid covered the costs of the study.
- 2.3 The feasibility study was led by the University of Worcester and was completed in February 2022, and demonstrated that a scheme connecting the University of Worcester campuses with a number of key buildings in the city centre was possible. This scheme centered on the use of renewable energy from the River Severn via water source heat pumps.
- 2.4 A heat network in Worcester could be a significant step forward in efforts to become a carbon neutral city. Such networks can deliver extensive carbon savings (between one and two thirds compared to individual heating systems, depending on the source of the heat). Many of the buildings likely to be part of a final scheme are publicly owned buildings; the public sector in Worcester is responsible for 8% of the city's total carbon emissions, with the commercial sector accounting for a further 7%.

2.5 There are already over 14,000 heat networks in operation across the UK, supplying heat and hot water to approximately 480,000 customers. The Committee on Climate Change estimate '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'.

2.6 Other benefits of Heat Networks include:

- Reduction in consumer energy costs.
- Operational benefits for property owners/operators, including reduced plant liability and releasing property floor space.
- Potential for further expansion and incorporation of other lower carbon technologies in future.
- Inward investment into the town, with consequent short-term employment of construction staff.
- Training and educational support opportunities for development staff and local students.
- Development of a local energy generation / supply entity which could be fully or partially publicly owned. The entity would develop and operate the heat network, employing staff, returning business rates and support new energy ventures.

### **3. Detailed Project Development Stage**

3.1 In December 2022, the Council applied to Government's Heat Networks Delivery Unit (HNDU) (part of the Department for Energy Security and Net Zero) for funding to undertake full detailed project development enabling the heat network concept to progress to the next stage.

3.2 The application was successful, and the Council has been awarded £230,000 for this work. As per the conditions of the grant, match funding has been committed from key partners - the Worcestershire Local Enterprise Partnership (£40,000); the University of Worcester (£10,000) and Worcestershire County Council (£5,000).

3.3 It is proposed that the Council contributes £5,000 to complete the match funding requirements.

3.4 As outlined in the bid, it is intended that the Worcester City heat network will take its thermal energy from the River Severn (potentially with other sources of waste heat) and will be a 'pathfinder project' from which the learning can be applied to other towns along the river. The consultant-led detailed project development stage will give the City Council, Worcester University, Heart of Worcester College, Sanctuary Housing and other key stakeholders a clear route forward to the build out of the network.

3.5 It is expected that the detailed project development work would include detailed options appraisals to be undertaken and summarised by the consultants across the following:

- technical options
- tariff structure
- commercial structure including procurement plan
- legal structure and ownership

- sources of finance

- 3.6 When built this network will serve buildings that would be difficult to decarbonise by current, low carbon, low temperature heating systems. Subject to their inclusion in a final scheme, creation of a heat network could accelerate the decarbonisation of several Council-owned buildings in the city centre – including the Guildhall, Museum and Art Gallery and the Commandery. The age and condition of these buildings makes them unsuitable for alternative renewable energy options.
- 3.7 Buildings, including the leisure centres and Crematorium, currently account for 62% of the Council's overall carbon footprint. The Guildhall and Museum and Art Gallery account for 4% and 5% respectively.
- 3.8 The Midlands Net Zero Hub has committed ongoing resources and expertise to assist the Council in the progression of this project and will serve as the primary contact for the HNDU.

#### **4. Alternative Options Considered**

- 4.1 An alternative is to delay doing this work. This would mean losing the funding which has been awarded and is required to be able to take the project to the next stage of development.
- 4.2 The 'Do Nothing' option here would mean that the detailed project development study would be unable to progress, and as an essential stage in the development of a heat network, would compromise the future of a heat network in Worcester. With no Council match or approval to receive the awarded funding from the HNDU, the opportunity to receive the Government match funding to take this concept to the next stage of development would be missed.
- 4.3 Without identification of an alternative renewable energy source, Worcester's aspiration to become carbon neutral by 2030 is much less likely to be achievable. The River Severn is currently the best identifiable source to generate clean renewable energy for Worcester's city centre.
- 4.4 Due to ongoing turbulence in the energy markets, continued reliance on fossil fuels is likely to result in higher bills than in areas which have a readily available renewable energy source.

#### **5. Implications**

##### **5.1 Financial and Budgetary Implications**

Acceptance of the Heat Networks grant is dependent on match funding contributions from partners – including £5,000 from the City Council.

This is the first request for funding from the £150,000 environmental sustainability enabling budget approved in the budget in February 2023. This budget is a one-off reserve set aside to support delivery of the Council's Environmental Sustainability Strategy. As one-off funding it can be spent in the current or future financial years. There is no further or recurring funding for this budget built into the Council's Medium Term Financial Plan.

5.2 Legal and Governance Implications

Potential governance options to operate a Heat Network for Worcester will be set out in the detailed project development study. It could be part, wholly owned or outsourced to existing partners or a third-party operator.

5.3 Risk Implications

There are no identified risks at this stage. Risks will be identified within the detailed project development work.

5.4 Corporate/Policy Implications

The Environmental Sustainability Strategy, approved by this Committee and endorsed by Council in 2020, sets out the Council's ambition for the city to become carbon neutral by 2030. Accelerating and encouraging the transition to renewable energy sources is key to achieving this.

5.5 Equality Implications

There are no identified equality implications at this stage.

5.6 Human Resources Implications

There are no human resource implications identified.

5.7 Health and Safety Implications

Health and safety implications will be set out in the detailed project development work, there are no Health & Safety implications at this stage.

5.8 Social, Environmental and Economic Implications

This project seeks to significantly reduce carbon emissions, the main contributor to climate change, from buildings in the city centre. The feasibility study calculated that over the lifetime of a scheme, approx. 40 years, emissions could be reduced by nearly 100,000tCO<sub>2</sub>e compared to the continued use of gas boilers.

**Ward(s):**

**All**

**Contact Officer:**

**Claire Neville, Tel: 01905 722363 Email:**

**[Claire.neville@worcester.gov.uk](mailto:Claire.neville@worcester.gov.uk)**

**Background Papers:**

**What is a Heat Network**