

Civic Centre District Energy Capital Investment

Briefing Paper



This briefing paper relates to the expansion of low carbon heat network infrastructure to support the City's commitment to carbon reduction but also the regeneration of Civic Centre. It seeks approval to deliver a district energy scheme that will support the redevelopment of the Civic Centre by Urban Splash and the decarbonisation of the Theatre Royal and Plymouth Combined Courts. The preferred scheme involves the expansion of an existing heat network serving the Council House and Guildhall. It will also serve as enabling infrastructure for other nearby developments in the City Centre and Millbay.

The paper seeks approval to utilise CIL grant and service borrowing towards the preferred scheme alongside connection charges and an application for a BEIS Green Heat Network Fund (GHNF) grant. Should the GHNF application be unsuccessful, a fall-back scheme would involve connecting (initially) the Civic Centre and the Combined Courts, with an option to expand the network to the Theatre Royal at a later date.

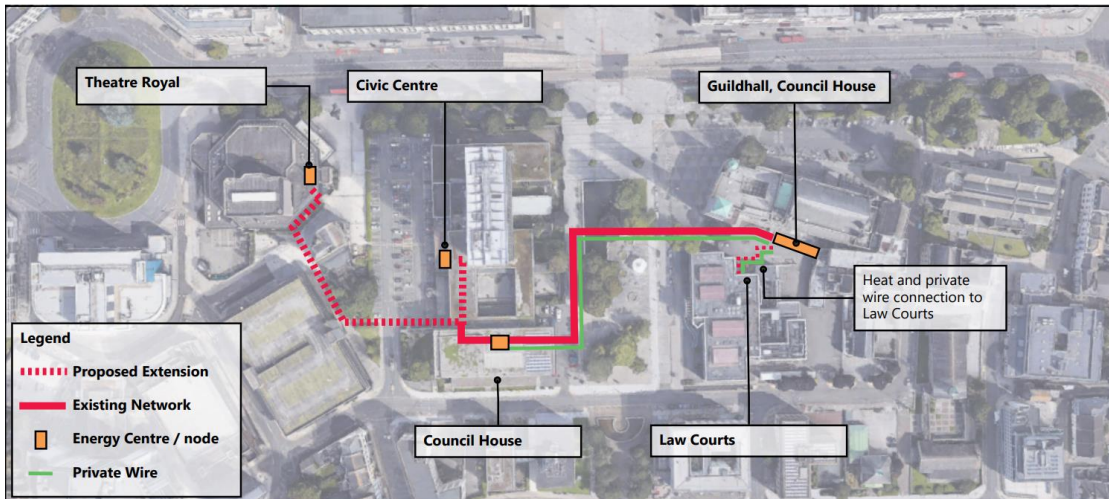
Plymouth has an existing heat network connecting the Council House and Guildhall. Until recently, the network was served exclusively by a number of gas boilers sited at the Guildhall. Work is currently advanced on site to decarbonise this heat network by constructing a new energy centre served by an air source heat pump sited adjacent to the Guildhall. Construction work is due to be completed in November 2022. The energy centre is designed to accommodate an expansion of the heat network to supply decarbonised heat to the Plymouth Combined Courts, Civic Centre and Theatre Royal (along with other new low carbon heat generation equipment).

Some of these buildings are challenging to decarbonise individually, as they have insufficient space to install an air source heat pump. Sharing low carbon heat pumps across buildings (in combination with solar PV) supports decarbonisation by delivering low carbon heat in the most efficient and cost-effective manner.

Extensive engagement has taken place with Urban Splash to explore the benefits of a heat network solution for the Civic Centre in parallel with developing their plans for the building. Its redevelopment is due to commence soon, firstly with a strip out works contract, followed by the main contract for delivery of the mixed used scheme. This heat network investment proposal directly supports these redevelopment works through the provision of decarbonised heat. It also supports the wider development of a City Centre heat network by providing an additional energy centre.

There is a specific requirement for a heat network connection with space allocated for an energy centre at the Civic Centre, secured through the existing planning consent. Timescales for the implementation of the redevelopment plans and the heat network are also well aligned.

The scheme comprises the extension of an existing heat network connecting additional properties, as well as the installation of a (400kW) air source heat pump at a new energy centre within the Civic Centre. It will provide low carbon heat to the extension connections thereby contributing to the further decarbonisation of the existing network. The BEIS application for technology funding is not to address any pre-existing performance issues.



The project has been through the various stages of technical development and design and a RIBA 3 design pack has been prepared. A full capital costing exercise has also been carried out by an external cost consultant. The capital costs allow for a commercialization phase to enable terms to be agreed with the building owners and to support the scheme's procurement and delivery.

Detailed project development work has been completed comprising an energy centre, located in the basement of the Civic Centre. This uses renewable energy in the form of an air source heat pump (ASHP), and associated equipment, in addition to its connection to the existing low carbon equipment at the Guildhall. Together, they will deliver a low carbon heat solution for the network of connected buildings.

Techno economic modelling of the project has identified the funding gap in order to achieve Plymouth performance requirements. The results show that, with a grant contribution towards the capital costs, the scheme is viable, operationally profitable and sustainable in the long term. The financial model explores the cashflow and revenue implications over the term of the investment (20 years). It shows that with the funding mix for either the preferred or fall-back scheme there should be no additional revenue pressures. The results show that the projected sales of heat have the potential to generate an operating surplus and a reduction in carbon emissions for the Civic Centre, Theatre Royal and Plymouth Combined Courts of at least 161t/ annum against a gas counterfactual.

The scheme has an IRR which is below what would usually be acknowledged as a commercial return. However, PCC consider this lower return to be acceptable on account of the project's relatively low risk and that it will enable further City-wide decarbonisation through the expansion of the network. Connection and commercial agreements have been prepared and shared with the three building owners. The arrangement involves a bulk heat supply through a separate (retail) heat provider supplying to the domestic customers. This will ensure that PCC is billing only commercial heat customers which will minimise its on-going costs and administrative responsibilities.

The financial modelling demonstrates that there should not be revenue pressures for either the preferred or fall-back schemes. Whilst there are a number of key risks including occupancy levels, timing and energy market volatility, these risks will be covered in the Commercial Agreements. Supply chain volatility could also impact the overall capital costs, although the costs are based on recent scheme costs and include some contingency.

The preferred scheme that would serve the Civic Centre, Theatre Royal and the Combined Court has a capital requirement of £2.973m. Other than the CIL Funding of £350k secured, together with

service borrowing and a Revenue Contribution, with contributions from land owners in discussion, there is the opportunity to secure the remaining funding requirement of £1.2m from the Green Heat Network Fund (GHNF). This is a BEIS supported programme of grant investment which was opened to applications in 2022, to support this type of low carbon heat network project. Should the GHNF application be unsuccessful, PCC could proceed with a fall-back scheme serving the Civic Centre and the Combined Court only. This has a lower capital requirement of £1.1m.

Project delivery would involve preparing a design & build contract based on a performance specification, with an extended commissioning, monitoring and defects period, to allow for operational optimisation.