

## Eco Impact Checklist

**Title of report:** Further heat network expansion and utilisation of the floating harbour to provide zero carbon heat

**Report author:** Paul Barker

**Anticipated date of key decision 14/09/2021**

**Summary of proposals:** This report seeks approval to progress further heat networks that build on the delivery of heat networks either already operating or under construction:

1. Phase 1 of the Temple heat network which will supply low carbon heat to new developments being built in the Temple and St Philips areas of the city. The network will make use of the waste heat supplied from the new Temple Quarter campus cooling demands.
2. Phase 1 of the Bedminster heat network, which will initially supply low carbon heat to new developments being built in this area of the city as well as existing buildings including Bristol South Pool. An energy centre is being proposed either adjacent to or within the free space available in the Pool building that will utilise heat from the adjacent main sewer as well as potential waste heat from the former mine workings in the area.
3. Phase 1 of the Frome Gateway

<b>Will the proposal impact on...</b>	Yes/ No	+ive or -ive	If Yes...	
			<b>Briefly describe impact</b>	<b>Briefly describe Mitigation measures</b>
Emission of Climate Changing Gases?	Yes	+ive	<p>Heat networks can provide higher efficiencies and better pollution control than localised boilers. The Temple heat network will use waste heat from University campus datacentres, and a water source heat pump from the River Avon. There are also businesses in the St Philips area that produce significant waste heat (including three breweries) that may provide further opportunities for waste heat recovery.</p> <p>The Bedminster heat</p>	

			<p>network will use sewer heat recovery.</p> <p>The Frome Gateway heat network will use sewer and mine working heat recovery. There are also opportunities for recovering heat from warm air in the Frome culvert, and waste heat from a brewery.</p> <p>These heat networks will supply predominantly low carbon heat from waste heat recovery and renewable heat from other sources using heat pumps.</p>	
Bristol's resilience to the effects of climate change?	Yes	-ive	<p>Short term construction impacts, including potentially increasing traffic congestion.</p>	See mitigation in the 'consumption of non-renewable resources' section.
	+ive		<p>Diversified energy supply increases resilience. The Bristol heat network must also be able to supply low or zero carbon heat to connected buildings at a cost equivalent to or lower than mains gas which helps reduce fuel poverty in the city.</p>	Develop as diverse a portfolio of heat sources as possible, to maximise resilience.
	-ive		<p>Some parts of the Temple and Frome Gateway heat networks areas are in flood risk zones.</p>	Flood resilience will be built into the energy centres and other infrastructure.
Consumption of non-renewable resources?	Yes	+ive	<p>In the medium and long term, the Bristol</p>	

		-ive	<p>Heat network will be supplied from zero carbon heat generation sources as part of the installation of the Strategic Heat Main.</p> <p>In the short term construction will use resources.</p>	<p>Procure resources in a sustainable manner, consider re-use and recycling of construction materials, look at using local contractors and suppliers to reduce travel impacts, and link works to planned road works (where possible) to reduce the impact of trenching works.</p> <p>The positive overall effects of the heat networks when running will mitigate the impacts of the use of resources.</p>
Production, recycling or disposal of waste	Yes	-ive	<p>In the short term construction will produce waste.</p>	<p>Ensure contractors provide a waste management plan and dispose of waste according to waste legislation and the waste hierarchy. Works will be programmed to take place alongside other essential highway works so overall waste may be reduced through this.</p>
The appearance of the city?	Yes	+ive/-ive	<p>Development of several new energy centres, with some being located near rivers and parks.</p>	<p>Any new construction is likely to be subject to Bristol Planning Policy.</p>
Pollution to land, water, or air?	Yes	+ive	<p>New boiler plant may generate emissions from combustion of renewable fuels. This may be lower than standard gas</p>	<p>Any new construction is likely to be subject to Bristol Planning Policy, which will consider air quality.</p>

	-ive -ive	fired boilers, reducing overall emissions.  Construction work will have air quality impacts through contractor travel and traffic disruption.  Construction work will require dredging of contaminated material posing a risk of pollution to the watercourse and mud dock areas.	Linking works with other necessary road works will reduce construction disruption and reduce the impacts of congestion and air quality. If the contractor employs local people, travel needs may be reduced. Again, any construction will be subject to Bristol planning policy and the possible monitoring of air quality.  Bunding of mud dock area where the material will be handled will reduce the risk of contaminated run-off entering the watercourse. Treatment of the material at a specialised facility will allow it to be safely disposed of.
Wildlife and habitats?	Yes	-ive	Construction work and building energy centres may damage habitats and affect wildlife.  There is a need to comply with environmental permitting law, and any specific environmental legal and regulatory requirements concerning particular works in or near

			<p>watercourses. These will include:</p> <ol style="list-style-type: none"> <li>1. An abstraction licence will be needed if more than 20 cubic metres of water will pumped out of the Floating Harbour per day.</li> <li>2. A Flood Risk Activity permit will be needed to carry out works near the bank.</li> <li>3. A Water Discharge Activity permit will be needed if any of the abstracted water will be returned to the watercourse, regardless of whether it was used for heating or cooling.</li> </ol> <p><a href="https://www.gov.uk/guidance/open-loop-heat-pump-systems-permits-consents-and-licences#standard-rules-water-discharge-permits-for-surface-water-systems">https://www.gov.uk/guidance/open-loop-heat-pump-systems-permits-consents-and-licences#standard-rules-water-discharge-permits-for-surface-water-systems</a>.</p> <p>Maintaining navigable waters, avoiding submerged obstacles, avoiding the disturbance of any contaminated river bed, and managing silting and invasive species causing clogging of intakes may be necessary for some works with consultation from the sustainable city team to ensure measures taken are sufficient.</p>
--	--	--	--

#### Consulted with:

#### Summary of impacts and Mitigation - [to go into the main Cabinet/ Council Report](#)

The significant impacts of this proposal are:

- A reduction in greenhouse gas emissions (subject to number of connections)

- More resilience to heat supply in the city by using a diverse range of heat sources.
- Low carbon heat supply which will aid with achieving carbon neutrality
- Possible highways disruption during installation, leading to a temporary increase traffic congestion
- Waste from removal of existing plant and equipment
- Resources for the manufacture and installation of new plant and equipment.
- Works on or near water.

The proposals include the following measures to mitigate the impacts: Where possible, carry out works as part of BCC capital projects, ensure contractors are well managed and comply with relevant environmental legislation (such as waste legislation).

The net effects of the proposals are positive.

**Checklist completed by:**

Name:	Aimee Williams
Dept.:	Energy Service
Extension:	74364
Date:	13/07/2021
Verified by Environmental Performance Team	Daniel Shelton, Project Manager - Environmental Giles Liddell, Project Manager - Environmental