AGENDA ITEM No:

City of Westminster

Climate Action, Housing and Regeneration Policy and Scrutiny Committee

Date:	27th March 2023
Classification:	General Release
Title:	PDHU Decarbonisation and Renewal – Strategic Outline Case
Report of:	Debbie Jackson
Cabinet Member Portfolio	Cllr Matt Noble, Cllr Liza Begum, Cllr David Boothroyd
Wards Involved:	Pimlico North, Pimlico South
Policy Context:	Fairer Housing/ Fairer Environment
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1. Executive Summary

This briefing note provides a summary of the Strategic Outline Case (SOC) as presented to Capital Review Group on 17th January 2023. The SOC sets out the rationale for significant investment in Pimlico District Heat Undertaking (PDHU).

2. Key Matters for the Committee's Consideration

- Does the committee agree with the rationale for significant investment in PDHU?
- Does the committee agree with the recommended strategic options identified in the SOC?
- Does the committee agree with the proposed approach to resident consultation and engagement?

3. Background

Introduction to PDHU

Pimlico District Heat Undertaking (PDHU) is a district heat network which provides heating and hot water to 3,306 residential properties and more than 50 commercial properties ranging from schools, offices, a library and shops. This is split down into 3 main areas/estates as follows:

Estates	No of Dwellings	Detail
Abbots Manor	411	
Churchill Gardens	1619	• Conservation area • Includes grade 2 listed buildings
Lillington and Longmoore	1156	• Constructed 1960 – 1970 • Conservation area • Includes grade 2 listed buildings

PDHU is supplied with heat from an Energy Centre which is located at the Pump House in Churchill Gardens Estate. The Energy Centre has 3 gas fired boilers which generates hot water, this is then pumped around approximately 5km of pipework.

PDHU is the oldest heat network in the United Kingdom, dating back to the 1950s. Its ageing distribution infrastructure is in urgent need of replacement and it is critically important that the network is renewed to maintain a secure supply to its residents.

Purpose of briefing note

The SOC sets out the rationale for significant investment in PDHU:

- **Network condition** – the existing PDHU network is over 50 years old. Due to its age, maintenance costs are increasing with £1.7m spent per annum repairing and maintaining the network. The number of leaks from the network is increasing every year, a growing problem as the pipework deteriorates. The potential for network failure will increase without investment.

- **Carbon emissions and net zero** – PDHU is currently powered by three 8MW natural gas boilers which emit 16k Tonnes of CO2 per annum, this equates to 39% of the Council's total carbon emissions in 2021/22. Investment in the network will significantly reduce emissions, a critical part of achieving the Council's net zero 2030 target.

- **Fuel costs and fuel poverty** – The recent energy price crisis has highlighted the importance of energy efficiency and energy security. Operating an efficient heat network will minimise the impact of energy price fluctuations and help to alleviate fuel poverty for vulnerable tenants

- **Improved network management** – The existing network currently has limited control, with a high level of losses due to its condition. This project will improve control through the installation of modern metering systems, resulting in users only being billed for the energy they use. Replacement of pipework will also lead to lower distribution losses, which are currently estimated at 30%.

Options Appraisal

A feasibility study has been carried out as part of the SOC, which includes a techno economic appraisal of the potential options for renewal of PDHU. A long list of options was reviewed, which was shortlisted in discussion with Cabinet Members.

A summary of the techno-economic appraisal for the shortlisted options is provided below:

Option	Estimated Capital Cost	Energy costs (40 year)	Opex/Repex cost (40 year)	2030 Carbon emission reduction (%)
Business As Usual	£133m	£140m	£95m	0%
1a – Retain PDHU and power by a river source heat pump (gas boiler back up)	£175m	£126m	£112m	74%
1b Retain PDHU and power by a river source heat pump (electric boiler back up)	£186m	£144m	£110m	76%
3a - Zone L&L and install electric boiler at Morgan House. Power PDHU by river source heat pump	£210m	£190m	£106m	68%
3b – Zone L&L and install electric boiler with heat pump using waste heat. Power PDHU by river source heat pump	£212m	£164m	£106m	72%
5 - Close down PDHU and install individual electric heating and immersion heated communal hot water	£182m	£351m	£34m	54%

The appraisal has identified that significant investment will be required to deliver the Councils strategic objectives. A heat pump led solution is currently the only option which will deliver a significant carbon reduction but this would need to be delivered alongside a widespread renewal of the existing heat distribution pipework and upgrade to the connected buildings thermal performance.

To advance the project to the next stage, a budget of £1.2m was approved by CRG to develop the Outline Business Case (OBC).

Outline Business Case

The SOC recommends that options 1A, 1B, 3A and 3B are taken forwards into the Outline Business Case (OBC). Option 5 has been discounted due to the high impact on resident energy bills and lower carbon emission reduction.

An additional option to further zone the network at Abbots Manor will be investigated – this will be an expansion of options 3A and 3B. This would effectively split the existing PDHU network into 3 separate communal heat networks.

Development of the OBC is now in progress with a focus on the following:

- Technical de-risking of the River Source Heat Pump to include engagement with Port of London and Environment Agency
- Identify and review delivery options including approach to phasing the project (i.e commence pipework upgrades as a priority)
- Procurement of professional services including commercial consultants, financial modelling and engineering
- Commencement of resident and stakeholder engagement process

The Outline Business Case (OBC) is forecast to be finalised in January 2024 at which point a decision will be required on proceeding to the Full Business Case (FBC).

South Westminster Area Network (SWAN)

The Department for Energy Security and Net Zero (DESNZ) is developing an Outline Business Case for the large heat network across South Westminster, this would potentially link PDHU with the existing heat network at Whitehall and beyond. WCC Officers have been in discussion with the DESNZ about the project and this option will be considered in the OBC.

Project funding

The total estimated capital cost for the options that the business case proposes to develop is in the range of £175-212m. It is anticipated that this capital outlay would be spread over a period of 6-8 years, depending on the final option selected, delivery approach and scope of the project.

These figures are based on high level cost estimates at this stage and will be subject to development as part of the progress towards the OBC.

Sources of funding for the project will be reviewed during the OBC. Those being considered include a mix of grant funding, borrowing and leaseholder contributions.

Resident Impact and Engagement

The project is expected to have a significant impact on residents currently connected to PDHU and engagement with residents will be vital to delivering a successful project. The level of impact will vary depending on the final design and costs of the project but it is expected to include:

- A requirement to temporarily decant properties where the renewal work does not allow the residents to stay in occupation. This may include compulsory decant to allow heat to continue to be supplied
- Interruption to heat supply during upgrade work and provision of temporary heating
- Removal of existing fittings and fixtures (e.g bathrooms) to access pipework
- Potential requirement for section 20 consultation with leaseholders depending on the agreed approach to funding the project

An initial resident engagement and communication plan has been developed and is provided in the appendices. This will be led by a full time PDHU engagement lead which is expected to be in post by June 2023.

Project Governance and Next Steps

A monthly Project Board has been set up to provide governance and decision making for the project. The main next steps for the project are:

- Finalise and implement resident engagement strategy to increase of PDHU and requirement for change
- Issue Tenders for consultancy support (technical, project management and commercial)
- Mobilise the design team and commence development of the OBC

If you have any queries about this Report or wish to inspect any of the Background Papers, please contact Chris Spicer
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APPENDICES:

A – PDHU Strategic Outline Case – Decarbonisation and Renewal
B – PDHU Comms and Engagement Plan