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| <b>Item No.</b><br>13.             | <b>Classification:</b><br>Open | <b>Date:</b><br>14 September 2021                          | <b>Meeting Name:</b><br>Cabinet |
| <b>Report title:</b>               |                                | Heat Networks Strategy                                     |                                 |
| <b>Ward(s) or groups affected:</b> |                                | All  |                                 |
| <b>Lead Officer:</b>               |                                | Strategic Director Housing & Modernisation                 |                                 |
| <b>Cabinet Member:</b>             |                                | Councillor Stephanie Cryan, Council Homes and Homelessness |                                 |

## **FOREWORD – COUNCILLOR STEPHANIE CRYAN, CABINET MEMBER FOR COUNCIL HOMES AND HOMELESSNESS.**

Having access to reliable heating and hot water is a basic human right and one that the council strives to achieve across all of our council homes. We have 17,000 homes that receive heating and hot water from a District Heating system with the aim of providing affordable and reliable heating and hot water. Many of our District Heating Systems are now over 40 years old and require significant financial investment to maintain. We also need to ensure that we keep heating costs as low as possible and have a duty of care towards preventing fuel poverty for some of our more vulnerable residents. We also need to ensure that as part of the Council's commitment to tackle the climate emergency and become net carbon neutral by 2030 that we start to decarbonise our District Heating Networks and look at low carbon options, we have already made some progress with this through connecting some of our systems in the North East of the borough to SELCHP and the grants we have received to install heat pumps on the Consort, Newington and Wyndham estates.

All of these priorities need to be balanced and the emerging Heat Networks Strategy outlines the journey we need to take to meet these objectives. When looking at the investment needed across the District Heating Networks we also need to be mindful of other works relating to building and fire safety and this strategy will interlink with the Asset Management Refresh which will be presented to cabinet in 2022.

The strategy has been designed with input from our residents and I want thank all of those who took part in the working group and completed the online survey.

Our biggest challenge will be the significant financial investment needed to upgrade, maintain and decarbonise our District Heating Systems. This will have to be balanced with other calls on the Housing Revenue Account such as our new council homes building commitment, major works and repairs and the day to day management of our homes. We are committed to exploring and applying for all available grant funding both now and in the future and will continue to lobby Central Government to adequately fund councils to carry out the vital works needed to help make Heat Networks greener, low cost and reliable.

## **RECOMMENDATIONS**

That the Cabinet

1. Notes the work done in preparing a strategy for decarbonising the council's heat networks, but that challenges remain both in terms of residual carbon and financial impact (paragraphs 73-82).
2. Agrees to use appropriate opportunities to lobby government to bring forward grants for low carbon heating that will help to overcome the challenges described the Climate Change Implications section.
3. Agrees the principles and activities laid out within the Strategic Direction, Service Improvement and Investment Plan sections (paragraphs 17-38 and Appendix 3).
4. Agrees to adopt the 'District Heating Disconnection Policy for leaseholders and freeholders' included in Appendix 1 and summarised in paragraphs 43-54.
5. Notes the update provided relating to the heat metering regulations and the Council's related legal obligations and requests an update within 12 months on progress in delivery against its heat metering obligations and on any changes to the status of the upcoming heat networks market regulation.

## **BACKGROUND INFORMATION**

6. A heat network is a series of insulated pipes, normally buried underground, used to carry heat from one place to another, usually via the medium of hot water or steam. Heat networks are useful because connected properties need not have their own boiler or other heating system. This has advantages in terms of installation cost, air quality, fuel price and ease of maintenance. The Council has over 100 heat networks on our housing estates serving 17,000 properties. Much of the infrastructure is in need of investment.
7. In July 2019, the then Cabinet Member for Housing Management and Modernisation presented a paper to Cabinet that included a number of recommendations including the development of a Heat Networks Strategy and Investment Plan, the establishment of a Heat Networks Governance Board, the establishment of a Residents Working Group, the further exploration of expanding the SELCHP heat network, the further exploration of some water source heat pumps projects and an update on the status of heat metering and heat network regulations. This paper provides an update on progress against those recommendations and forms the basis of the Heat Networks Strategy for the borough.
8. Heat Network Governance Board: As per the recommendation in July 2019, a Governance Board was set up and has met every six weeks since August 2019. Meetings have been chaired by the Cabinet Member with responsibility for housing or in their absence the Strategic Director for Housing and Modernisation, with updates and reports brought by various parties representing both the strategic and operational sides of the Council's housing heat networks. The

intention is that this group continues.

9. Heat Networks Residents Working Group: As per the recommendation in July 2019, a Residents Working Group was established with representatives from Tenants Council, Home Owners Council, Tenant Management Organisations and the Southwark Group of Tenants Organisations, as well as council officers. The group met three times between October 2019 and February 2020 and discussed a range of topics and experiences. The key discussion outputs from this group is provided in Appendix 2.
10. Full updates on the SELCHP expansion, the water source heat pumps projects, and the items on heat market and heat meter regulation are given within Appendix 5.
11. Investment in the Council's heat networks is only one part of the work covered by the Asset Management Strategy, which is currently being refreshed. It is clear that the Building Safety and Fire Safety Bills that are being presented to Parliament will place significantly greater responsibilities on local authorities to meet new fire safety and building safety standards, and these are likely to lead to significant work streams. It is vital that works across different priority areas are coordinated as much as possible in order to reduce delivery costs and disruption to residents.

## KEY ISSUES FOR CONSIDERATION

### Why heat networks?

12. There are a number of significant benefits to heat networks which is why local, regional and national policies all support maintaining existing heat networks and building new heat networks (see the July 2019 cabinet paper referenced in Background Documents). Such policies expound the reasons for increasing use of heat networks but briefly, these benefits include:
  - **Bulk purchase discount** on fuel used means that running costs can be lower
  - **Shared operation and maintenance** again leading to lower running costs
  - **Limited requirement to enter properties** (e.g. to undertake gas checks) because the majority of heating infrastructure and plant is in communal areas
  - **Quicker and easier to decarbonise** than individual heating, due to the ability to apply low carbon technologies at scale (such as the SELCHP and water source heat pump projects referenced in later sections)
  - **Lower air quality impact** compared to individual gas boilers due to advanced low NOx burner technology, higher flues leading to better dispersion and an increasing move away from fossil fuel
  - **Condensation and mould** - compared to individually heated properties, those connected to heat networks suffer from far lower instances of condensation and mould<sup>1</sup>. Heat losses from distribution pipes should be minimised through efficient insulation and control, but this background heat does keep the fabric of the building warm with associated building and health benefits.

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<sup>1</sup> Analysis undertaken by the council showed that reported instances of mould requiring repair were almost half as frequent proportionally in communally heated homes compared to individually heated homes.

## **Objectives**

13. The Council wants all of its heat networks to be effective, reliable, affordable and low carbon. Some of the challenges of meeting these objectives are outlined in the Heat Networks Strategy Development paper (Appendix 5).
14. **Reliable:** A heating system is something that we all take for granted until it goes wrong. Not being able to heat your home or bathe your children is a major inconvenience if it carries on for any length of time. It impacts on people being able to get to work on time, or get children to school and it can impact people's physical and mental health.
15. **Affordable:** There are two primary causes of fuel poverty – higher costs of energy, and low household income. Some people are in fuel poverty, not because their heating costs are unreasonably high but because their income levels are too low. As a heat supplier we must ensure that we maintain affordability so that we are not part of the problem, but part of the solution. In practice, this means not making investment decisions that leave residents paying unreasonably high heating charges.
16. **Low carbon:** Decarbonising new and existing heat networks is an important strand of achieving the Council's overall objective of being net zero carbon by 2030. The majority of carbon emissions from the Council's existing heat networks come from the combustion of natural gas, and to a much lesser extent the use of electricity for pumping. The major challenge for our heat networks in terms of achieving our climate objectives is, therefore, to switch away from gas boilers to low or zero carbon heating technology.

## **Service improvement**

17. **Operation and maintenance** - A number of measures have been and are being taken to improve service resilience:
  - Upgrades to some networks that have been most prone to air locks, isolating individual blocks to protect them from air locks when maintenance or leaks happen in other parts of the network
  - Upgrades to controls on many networks so they will send automatic alarms to the maintenance contractors so they can attend as soon as problems occur
  - The council's repairs service, SBS, is now using freezing techniques that substantially reduce the amount of heating and hot water shutdowns needed for their plumbing works
  - The Council's main heating repairs and maintenance contractors (OCO and Smith & Byford) have taken on extra staff so they can respond faster when there is a high demand
  - A third maintenance contractor has been appointed to provide extra capacity during the busiest periods
  - Increased stock of parts ready and waiting should they be needed
  - A new supplier of temporary boilers has been set up so these can be provided on site quickly should they ever be needed

18. **Communication during outages** – There are a number of ways that residents can report outages including via the call centre, via email or via their MySouthwark account. And there are three ways in which residents can keep up to date with outages affecting their estate – text messages, the communal repairs webpage (updated every two hours) and the recorded message played when phoning the call centre (also updated every two hours). In addition to this, letters are normally sent when outages become prolonged, and we aim to make outbound calls to all vulnerable residents affected.
- At present residents can only sign up for the text message service by phoning the call centre. The Council will look at ways that residents could sign up online to save time.
  - Following this, and in alignment with the HSC recommendation, we intend to carry out a dedicated campaign to increase the uptake of the text message service.
  - Development of online / social media communication tools – some sources have suggested this as a means of communicating heating updates to residents. This needs further consideration before moving forward as there is a risk of enhancing the digital divide.
19. **Analysing and reporting outages with greater granularity** – The Council's maintenance contractors provide monthly outage reports. These record all communal outages affecting whole blocks and are currently analysed to calculate the availability levels achieved across the borough and what levels of compensation might be due to residents. At present availability statistics are calculated on the basis of all outages but propose the following be added:
- The proportion of outages that were unplanned only. Not only are these more disruptive to residents, but they also more accurately reflect unknown problems within systems. Planned outages are unfortunately necessary to carry out maintenance or capital replacements and these activities should actually improve system performance. Increasing investment could, in the short term at least, lead to worsening availability statistics under the current reporting model, which would not be a fair reflection of performance.
  - The proportion of outages that go on for more than 24 hours. These are also most disruptive to residents so it would be helpful to disaggregate these. 24 hours is the reference point for compensation and, with the advent of a heat market framework, it is possible that reporting in this way may become mandatory.
  - Site by site availability statistics are helpful for highlighting where significant problems have occurred and where planned investment needs to be targeted.
20. At present, providing this additional granularity in reporting is manual and time-consuming and we are looking at what steps would be necessary to make the process more automated.
21. **Options appraisal process** – As described in paragraph 29, where significant investment is required, a detailed options appraisal should be carried out to look at a range of investment options from a capital, operational and lifecycle cost, as well as from a carbon perspective. The options appraisal process is designed to

ensure a full range of impacts are considered including capital costs, operational costs, resident bills, carbon emissions and maintenance complexity. Capturing residents' site-specific experiences and views will form part of the options appraisal process.

22. **Filing and enforcing warranties** – One of the messages that emerged from the recent Home Owner Improvement work stream was that the Council could do more to tie down and enforce warranties on its investment projects. This is often harder than it seems at first sight. For example a boiler or heat exchanger warranty may become void if good water quality is not maintained within the system. This in turn requires good technical record keeping, which as noted in paragraph 26 will be facilitated in some cases by completing the roll-out of BMS systems and connecting water quality logs to these wherever possible.

### **Strategic direction**

23. In order to achieve the Council's stated aims, the areas of required change and investment are as follows.
24. **Direct public control:** We do not currently believe that developing long-term partnerships with the private sector in order to upscale investment and transfer risk away from the Council is the right way to go. Instead we will continue to deliver mainly Council led heat networks in order to keep maximum control, but will continue to utilise private sector expertise where this is most beneficial. Other contracting models could still be considered by exception and SELCHP would be one notable exception, though even here the Council retains direct responsibility for heat into residents' properties.
25. **Improving resident communications:** Keeping residents informed when there is an outage, finding convenient ways for residents to communicate with us, and taking a more collaborative approach to heating investment decisions needs to be at the heart of how the Council operates.
26. **Raising technical standards:** The decision to continue with an internal delivery model does not mean no change. Current contracts can be made to deliver increasing service standards, though increased spend is going to be necessary to achieve this. Two areas of particular focus are the installation of the remaining BMS control systems to provide maximum real-time remotely accessible data to the Council and its contractors, and the improvement of water quality and water quality monitoring. We will start to connect continuous water quality monitoring wherever it is possible to do so and log water consumption and quality readings into the BMS systems.
27. **Targeted investment:** Using a combination of site specific outage statistics, efficiency metrics and consultation responses, it is possible to prioritise those networks in most need of investment.
28. **Holistic investment:** Many of the Council's investments in recent years have focussed on individual elements of the networks, for example the boilers or the underground mains. In lots of cases this has undoubtedly been the right

approach, given both budget constraints and the need to ensure we are getting maximum life out of our assets. Partial renewal, however, can result in problems moving from one part of a system to another and sub-optimal design solutions been implemented. Given the age and condition of many of our assets, the Council may need to undertake more whole system renewals. Holistic projects obviously come with a higher initial price tag, but can result in better outcomes, fewer disruptive interventions and lower running costs.

29. **Options appraisals:** Where significant investment is required, a detailed options appraisal will be carried out to compare partial vs whole system investment, and to look at a range of different options from a capital, operational and lifecycle cost, as well as from a carbon perspective. Options appraisal reports will be shared with residents whenever possible and their input obtained, though it is important to remember that the Council often has to make difficult decisions that will not please everyone. The holistic investment and options appraisal principles will also ensure that wider asset investment needs such as building safety, fire safety and energy efficiency improvements are identified and work plans developed accordingly.
30. **SELCHP expansion:** Energy from Waste was identified in the Technology Appraisal within Appendix 5 as a key heating technology, and a project update is provided. Veolia has applied for a government grant to expand the SELCHP network in Southwark and is waiting to hear if a grant will be awarded. Next steps:
  - If successful, it is anticipated that commercialisation activities will progress through to March 2022 when the capital grant would need to be drawn down to commence construction. If not successful, further grant applications are likely to be made, particularly in consideration of the upcoming Green Heat Network Fund.
  - Homeowner consultation is ongoing. Due to the nature of the contract, it will not be possible to follow the standard Section 20 consultation process and so the Council intends to apply for First Tier Tribunal dispensation from needing to follow the standard process. This is the process followed by the Council when it set up the initial Heat Supply Agreement with Veolia.
  - In terms of approval of the contract variation this would be dealt with through a Gateway 3 report. Section 6.6.3 of the Contract Standing Orders says “if the value of the proposed Variation is a Strategic Procurement, the decision must be taken by the cabinet or cabinet committee, after consideration by the CCRB of the report”. Strategic Procurement includes non-works contracts with values of £4 million or more. It is therefore the intention to bring a Gateway 3 paper to cabinet for the approval of a variation to the SELCHP Heat Supply Agreement with Veolia.
31. **Heat pumps:** Heat pumps were identified in the Technology Appraisal within Appendix 5 as a key heating technology, and a project update for the Consort, Newington and Wyndham water source heat pump installation is provided. Post installation the Council must monitor this project carefully to ensure all possible lessons are learnt and we are in as strong a position as possible to roll-out further heat pump projects. Specialist maintenance contracts will be required initially, but the Council will also start to require more low carbon expertise from its

primary maintenance contractors. Heat pumps are likely to be a significant way in which the new homes being built by Southwark are heated, and the Council needs to be able to monitor and maintain these systems effectively. In terms of wider roll-out of heat pumps into existing heat networks beyond the three sites named above, without the RHI such projects, while saving carbon, could increase residents' heating bills. We will continue to monitor government grants and make use of these as much as possible.

32. **Heat meters:** For reasons of compliance, resident control and energy efficiency, dwelling level heat meters will need to be installed, though the extent of this programme is not yet defined. However, in accordance with feedback from the Residents Working Group, the wider resident community, and recent experience from our newly built homes, the intention should be to deliver as simple a billing system as possible. This should be along the lines of encouraging energy efficient behaviour while also protecting vulnerable residents from the risk of fuel poverty. The next step is to complete all Cost Effectiveness Tests, required by heat metering legislation, by November 2021 as described in Appendix 6.
33. **Compensation:** Views from the Residents Working Group were that the issuing of compensation has been too ad hoc and difficult to obtain, but on the other hand the group wanted to avoid the development of a compensation culture which left the Council over-stretched on claims and unable to invest in actually improving the problematic systems. The Housing Scrutiny Commission report on district heating recommended that the compensation policy review be completed promptly and "that any new policy should simplify the compensation payment process, and remove the need for detailed and onerous record keeping by residents."
34. As reported to cabinet in January 2021 in response to the HSC recommendations, there is now a new compensation policy in place. The main elements of the new compensation process is to make it as direct, automated and live as is possible, including a flat rate payment of £3 for every whole day that the outage goes on for.
35. **Disconnection applications:** The Council does not support individual properties (either tenants or leaseholders) disconnecting from its district and communal heating systems for reasons of efficiency, system imbalance, decarbonisation and the increased burden of cost upon remaining connected properties. The Council cannot prevent freehold properties from disconnecting, however, if the owners bear all costs of disconnection. This position has been laid out on the Council's website for many years but not formally adopted as policy. Leaseholders and freeholders often request permission to disconnect and it is recommended that the Council adopts the District Heating Disconnection Policy for Freeholders and Leaseholder located in Appendix 1 to further clarify its position.
36. **Consultancy support:** The Council relies heavily upon being able to access good quality Mechanical and Electrical (M&E) advice quickly when it is needed. This may be on either planned major works projects or in reactive situations. The current consultants framework has certain commissioning value and duration

limits which have restricted the Council's ability to easily procure the necessary support. Furthermore, the capacity of the consultants has sometimes been an issue. The Council is currently working to establish a new Professional Technical Services Framework. The intention is to appoint four consultants able to provide M&E support which is double the number of companies accessible under the previous framework. This should address the capacity issue and increase the degree of specialist knowledge available.

37. **Procurement (capital works):** The Council's 'major works' framework (Lot 3 – heating) has recently expired. Mini competitions through the framework allowed the council to appoint pre-approved contractors relatively quickly and all contractors had signed up to a Schedule of Rates to keep pricing carefully controlled. Unfortunately, not all contractors on the framework had the time and resource to bid for all projects and this reduced the level of competition. The Council has investigated a number of specialist external frameworks that cover district heating works and which appear to have robust specification, increased competition and good value for money. Subject to legal review, the Council is likely to use these external frameworks for procurement of upcoming projects.

### **Investment plan**

38. The Council has carefully analysed outage records, gas consumption, complaints records, engineer feedback and resident feedback from the borough-wide consultation to develop a data-led investment plan which enables us to balance reliability, affordability and low carbon objectives across every housing heat network and target attention where it is needed most. A significant increase in expenditure will be necessary over the coming years, from around £5m p.a. in 2022/23 to £25m p.a. in 2024/25. Please refer to Appendix 3 for more detail.

### **Heat metering regulations**

39. The Heat Networks (Metering and Billing) Regulations 2014 were updated in 2015 and again in 2020. The latest version requires heat supplies (including the Council) to install heat meters in a lot more situations than previously. We are currently working through the latest requirements and will bring a separate paper to cabinet relating specifically to Heat Metering policy and practice. A fuller update is provided in Appendix 6.

### **Update on heat networks market regulation**

40. The government is proposing to implement a regulatory framework for heat networks to protect consumers, support market growth and develop low carbon networks. A consultation was run in 2020 which made clear that heat network operators (including the Council) would face a number of new requirements. Until the government provides more clarity it is not possible to ascertain the full impacts. The Council must keep fully abreast of developments to ensure that it is ready and able to comply with new regulation. Further information is provided in Appendix 6.

## **Financing heat network investments**

41. With a very significant investment need the Council has explored whether it would be beneficial to partner with private sector operators some or all of our heat networks. Various models exist and despite some advantages of these approaches, the balance of financial, operational and resident outcomes has resulted in the position that this would not be right for the Council at this time.
42. Further to outsourcing elements of ownership and operation, the Council has also begun considering the use of sinking funds to smooth homeowner payments relating to capital works. Sinking funds have previously been found to be complex to operate and to create problems for the Council and homeowners as well as solving them. A new option of ring-fencing capital works investments within a wholly-owned company is now being looked at and specialist legal advice on this is being sought. Further information on these topics is provided in Appendix 6.

## **Homeowner disconnection applications**

### **Current situation**

43. Leaseholders and freeholders often apply for permission to disconnect from a district heating system. The Council does not currently have a clear policy on who can and cannot disconnect from district heating systems. Information on our website has been historically unclear and suggests that homeowners can apply through our 'Permissions to alter' process.
44. However, there is no provision within the Council's Lease Agreements that entitles leaseholders to disconnect. All applications from leaseholders are refused at the initial request stage and they are not asked to pay a permission fee.
45. The lack of clarity raises expectations that leaseholders may be able to disconnect and if our approach is always to not allow this, we should be transparent and have a policy that explains our reasoning.
46. Transfer Agreements registered against a title allow freeholders to disconnect from a district heating system as long as they cover the costs of the disconnection. The charge to disconnect is calculated to be the amount that the council would need to invest in order to provide a return that would cover the annual cost of providing the service to the property (including any future major works costs).
47. The majority of freeholders transfer agreements have the provision which allows them to request to be disconnected from the councils heat network/district heating system as long as they pay the appropriate disconnection charges. The covenants that apply which specifically relate to the district heating system are:

'If at the date hereof the Property is attached to a district heating system supplying central heating and/or hot water to it and other properties:

- (a) Not to disconnect the Property from such system without paying to

- the Council a sum of equal to all the Council's costs and expenses of or occasioned directly or indirectly by such disconnection; and
- (b) So long as the Property remains connected to such system to contribute and pay on demand a fair and due proportion of the costs of maintaining repairing and renewing such system and of the provision of central heating and hot water thereby (and this obligation shall extend to a demand made after the Property has been disconnected but relating to costs incurred before such disconnection).
48. If the sum is not charged then the fixed costs of providing the service (boiler and pipework maintenance, repair and renewal) will increase for all other properties attached to the system. The current average disconnection fee is £39,500. The average is high due to the age of most of the systems in the borough.

### Rationale for refusing disconnection requests from leaseholders

49. **Bulk discount on fuel:** The council buys its fuel in bulk, thereby achieving discounts not available on the normal domestic market. All residents attached to a district heating system benefit from the lower cost of gas used to fire the boilers. Should a communal system be decommissioned and individual boilers be installed, then both leaseholders and tenants would be responsible for paying their fuel bills directly to their domestic suppliers, and would not be eligible for the discounts received by the councils bulk purchase. In some cases this would lead to residents suffering from fuel poverty, particularly tenants who also currently benefit from the pooled nature of heating charges.
50. **Shared running costs:** Every household connected to the district heating system contributes to the running and maintenance costs. The main reason the council does not give permission to leaseholders to disconnect from the system is the running and maintenance costs are then levied across the remaining homeowners and tenants, resulting in an increased financial burden. As the landlord, Southwark must ensure there is no additional financial burden to those residents remaining on the district heating system.
51. **System imbalance:** Disconnection of an individual flat can also create an imbalance of pressure and lead to increased maintenance costs.
52. **Decarbonisation:** District heating systems are a key part of local, regional and national policy for decarbonising heat because of the relative ease of introducing renewable and low carbon technologies at scale, in a way that is not possible on an individual domestic level. It is therefore incompatible with the council's 2030 net zero carbon target to undermine the functionality of its district heating systems. Paragraphs 73 - 82 lay out a pathway to achieving carbon neutral heat networks.
53. **Air quality:** Centralised boilers also have lower NOx emissions compared to individual boilers and taller flues leading to better flue gas dispersion. This results in district and communal heating systems having less negative impacts on local air quality compared to individual gas boilers. Converting centralized boilers to

large heat pumps or other renewable sources will reduce air quality impacts even further.

### **Disconnection Policy Proposal**

54. It is recommended that the District Heating Disconnection Policy for leaseholders and freeholders contained in Appendix 1 be adopted as council policy. This includes, for the reasons outlined above, the principle of refusing requests from leaseholders to disconnect from a Council heat network / district heating system and only permitting freehold disconnection requests in line with the transfer agreements when the appropriate disconnection charge has been paid.

### **Policy framework implications**

55. Despite the Council's historic position of not allowing district heating disconnections, as noted in paragraph 43-54 and 35, this has never been formalised as policy. It is recommended that the "District Heating Disconnection Policy for leaseholders and freeholders" contained in Appendix 1 is adopted as policy.
56. The London Plan committed to meet 25% of London's energy requirements through the use of decentralised energy by 2025.
57. A manifesto pledge commits the council to becoming carbon neutral by 2050 and a motion passed by cabinet in April 2019 commits the council to achieving carbon neutrality by 2030 if possible.
58. Heat metering and billing regulations require the council to install block level heat meters, undertake cost-effectiveness calculations and install final customer heat meters wherever required.
59. Heat market regulation has been recommended to government and is likely to come into force in the coming years.
60. As noted in paragraphs 33-34 the Council is changing the way it deals with heating outage compensation. This is reflected in the updated compensation policy.
61. The heat networks strategy outlined here will assist the council in all of these policy areas.

### **Community, equalities (including socio-economic) and health impacts**

#### **Community impact statement**

62. More than 17,000 residents rely on the council's district heating systems for their everyday heating and hot water needs. This paper relates primarily to shaping future investment in these assets.
63. With regard to locations where the decision is taken to proceed with investment

in heating systems, those living in properties may experience some inconvenience and disruption in the short-term, while works are taking place but communities as a whole will benefit in the longer term.

64. In local areas, the effects will be mitigated by working closely with residents on the delivery process and using experience gained on a significant number of recent projects. Residents will continue to be at the centre of and involved in works that take place. Where financially viable other positive community impacts will also be included as part of any proposed works.
65. Investing strategically in the council's heat networks will provide a better standard of heating for residents and contribute to improved general health and well-being. Due consideration will be given to residents with specific needs both during works and after completion.

### **Equalities (including socio-economic) impact statement**

66. The Public Sector Equality Duty requires public bodies to consider all individuals when carrying out their day to day work, in shaping policy, in delivering services and in relation to their own employees. It requires public bodies to have due regard to the need to eliminate discrimination, advance equality of opportunity and foster good relations between different people when carrying out their activities.
67. As set out under the Equality Act 2010 and the Public Sector Equality Duty (PSED) an equalities impact assessment has been carried out (Appendix 4). Overall, the strategy if implemented should reduce inequality and have a positive impact on groups which are protected under the Act.
68. Major investments in the Council's heat networks, while bringing improved reliability and efficiency (which should lead to lower overall heating costs) can also cause high capital charges in the short term which would normally be passed on to homeowners.
69. It has been discussed in paragraphs 77-82 that although the wider roll-out of heat pumps is a key way of reducing carbon emissions, in some instances this could cause heating bills to rise. Affordability and low carbon are not necessarily mutually exclusive objectives, but there will sometimes be a tension here. Investment decisions should carefully weigh all factors. Maximising the use of available grants for low carbon technology and lobbying government to extend these, will help to minimise costs to the Council and residents. The options appraisal process developed also seeks to ensure that resident fuel bills are appraised before investment decisions are made.
70. The implementation of dwelling level heat metering could give rise to confusion and concern amongst some residents as it could bring about changes to the way they pay for heat and the actual costs that they face. Higher users could end up paying more, and this is more likely to effect elderly or vulnerable residents who require warmer temperatures to stay comfortable. Further consideration will be given to this in a future paper prior to implementing heat metering and billing

systems within existing properties.

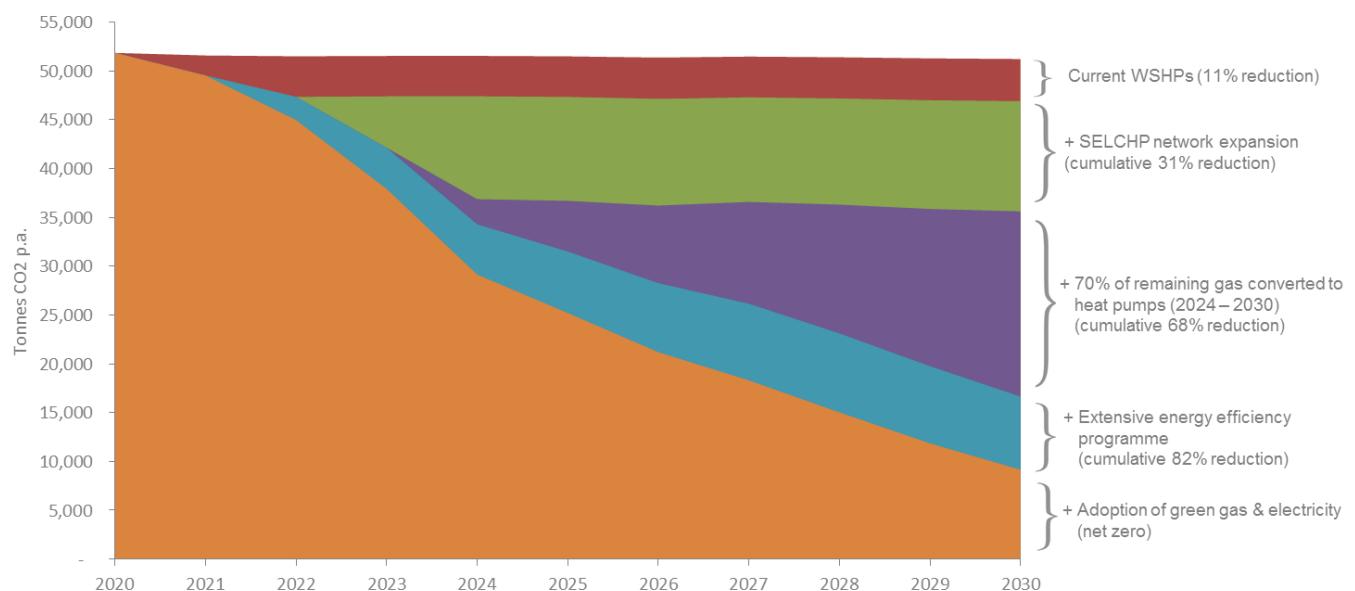
### **Health impact statement**

71. Without bringing forward the types of investment described in this document to upgrade the Council's heat networks, residents will face increasing issues with system reliability and outages. Vulnerable residents will be particularly disadvantaged by outages and ineffective heat supply. It is well known that cold indoor temperatures can lead to respiratory problems in particular as well as other illnesses. People with certain disabilities, the elderly and the very young are particularly vulnerable to such issues. And economically disadvantaged households often have less resources available to them to deal with the impacts of unreliable heating. Health issues and socio-economic issues are deeply intertwined. As indicated in paragraph 15, the issue of fuel poverty is really a combination of factors – excessive heating costs and inadequate income. Fuel poverty and resident heating costs should remain a key consideration for future investments. A modern and efficient system should decrease fuel usage, particularly when internal controls are introduced. However the cost of providing heat to residents should remain a consideration from a health perspective as well as an economic one.

### **Climate change implications**

72. Following council assembly on 14 July 2021, the council has committed to considering the climate change implications of any decisions.
73. A motion passed by cabinet in April 2019 commits the council to achieving carbon neutrality by 2030 if possible.
74. The main climate change implication of the Heat Networks strategy is a positive one – i.e. a reduction in carbon emissions through both improved efficiency and the introduction of low carbon heating technologies. The carbon emission savings of each individual project (e.g. SELCHP extension) will be assessed on a case by case basis when they are brought forward for investment. Overarching monitoring of emissions from the Council's heat networks will be addressed through utility consumption records.
75. As discussed in the Technology Review (see Appendix 5), the key heat generation technologies to feature in the Council's heat network investments in the coming years are energy from waste (SELCHP), heat pumps and gas boilers (where necessary). While the latter are not considered low carbon, their continued use could feature as a supporting technology to provide back-up heating or "peak lopping" allowing smaller and more cost-effective heat pumps to be installed.
76. Based upon the technology review conducted, a possible carbon reduction profile from the present time to 2030 has been prepared (Figure 1). This is dependent upon availability of government grants. This includes the current water source heat pumps project (11% reduction), the projected SELCHP expansion (cumulative 31% reduction), the further roll-out of heat pumps

(cumulative 68% reduction), an extensive fabric energy efficiency programme (cumulative 82% reduction), and finally the adoption of green gas and electricity to reach net zero.



**Figure 1 – Profile of potential decarbonisation of the Council heat network assets from 2020 to 2030**

- 77. The current water source heat pump project is able to deliver heat in a cost neutral way to residents, and while the SELCHP extension project is still subject to commercial negotiation, the expectation is again that cost neutrality should be achieved. Unfortunately, to implement a wider roll-out of heat pumps without the RHI grant, is likely to lead to heating costs increasing for residents.
- 78. One way of overcoming any associated heating cost increases would be to install additional thermal energy efficiency measures. This could be roof, wall or floor insulation, improved glazing or draught exclusion. Wherever air tightness is improved, ventilation requirements must also be considered to avoid poor indoor air quality. The Council has recently commissioned a specialist consultancy to carry out a detailed energy efficiency stock assessment designed to identify the best measures on a property by property basis. This is not just for the district heating stock but all Council properties. The results of this work will feed into further investment planning.
- 79. Improving the thermal efficiency of buildings served by heat pumps has a double benefit. Firstly, it reduces the space heating requirement, which translates to less electricity demand from the heat generation directly. And secondly, since there is a lower heat demand, radiator temperatures can be reduced which allows the heat pumps serving the system to work more efficiently, reducing electricity consumption and therefore communal costs, still further.
- 80. An extensive fabric energy efficiency programme would certainly help to overcome any increases in running costs from installing heat pumps, but presents a different challenge in that the capital cost of such a programme would

be significant, creating further demands on Council budgets and giving rise to additional leaseholder capital charges. These would be on top of any capital charges relating to the heat pumps themselves and any other heating works that may be required.

81. Therefore, the proposed approach is not without challenges, and further detailed planning will be required. As already stated, the Council must ensure it maximises its use of government grants on the pathway to net zero carbon and uses all appropriate opportunities to lobby government to bring forward low carbon heating grants targeted to overcome these challenges.
82. The use of green gas and electricity is not just being considered as a final step towards carbon neutrality, but also as a possible short-term step. There are numerous factors affecting this decision, including the capacity of green gas production and whether it will have a net benefit or just an institutional benefit. Cost is also a factor. It has been estimated that to switch all of our heat networks onto green gas contracts would cost around £3.5m, equivalent to £200 per property.

### **Staff resource implications**

83. An appraisal will need to be conducted on the impact of the emerging strategy on various teams across the council, in particular Housing and Modernisation's 'Engineering' and 'Major Works' teams and their capacity to deliver additional installation projects, new processes, while also adjusting to new building safety and fire safety regulations. The implementation of large scale heat metering could also have significant resource implications on staff within Asset Management, Finance and Resident Services which will need to be examined as the scale of implementation becomes clear later in the year.
84. The changes in delivery laid out within this paper, do not just refer to doing more but also to doing things differently – both in terms of technologies and processes. As the Council adapts to installing, managing and maintaining different technologies and processes there will be a need to invest in training and staff development.

### **Financial Implications**

85. Several aspects of implementing this Heat Networks Strategy carry financial implications, including the following.
86. The decision not to pursue private ESCO funded investments other than by exception means that the Council will need to directly fund all of the necessary investments. This decision will mean more capital expenditure in the short to medium term rather than spreading costs out over a longer timeframe. Careful forecasting will be critical to ensure HRA budgets are not over stretched.
87. The ongoing investigation into whether the Council could ring-fence some borrowing against its capital investments in district schemes and make repayments over a period mirroring the assets' amortisation, could end up having

the opposite effect on the HRA, i.e. spreading payments out into the longer term. As the outcome of this investigation is unknown at present, this will need to be revisited.

88. In line with the Strategic Direction and Investment Plan a draft capital works budget is being prepared. Due to the increased focus on completing holistic investments preceded by options appraisals, many of the specifics are still to be confirmed, which clearly affects the actual required budget. However, draft capital budget requirements are known to fit within the currently forecast spend. Longer term budget setting has also commenced with an overall framework developed for prioritising projects and scoping each cost element.
89. Heat metering – Meeting the Council's heat metering obligations has several cost implications:
  - As noted, until the cost-effectiveness tests are complete the number of required installations is unknown and thus difficult to budget. An early prediction would be £5m spend in 2022/23.
  - Once dwelling level meters are installed, the Council must bill residents according to consumption. Multiple (and very different) approaches to this exist but all will have an operational cost. The 2020 amended regulations state, “It will be considered... economically justified... where the estimated reasonable costs... [do] not exceed £92 per final customer per calendar year”. These costs would be included in the cost of heat so are really a financial impact to residents rather than the Council directly. On average residents should pay less overall because of fuel cost reductions, but high users could pay more and this must be considered carefully as tariff structures are worked out.
  - If the Council chooses to deliver the billing service in-house rather than pay an external agent to do this on our behalf, there would be a service development cost, again depending on the model chosen. The most cost efficient solution will depend to a large degree on the number of properties receiving heat meters, and will require further consideration in due course.
  - As noted in Appendix 6 under heat metering regulations, the issue of VAT on separated heating charges is currently being investigated.
  - We believe we can manage the cost effectiveness elements of the heat metering regulations (see Appendix 6) with current staff resource but to manage the installations and specifically to handle resident communication may require additional internal capacity depending on the number of meters to be installed. This could involve recruitment part way through 2021/22.
  - The delivery of heat billing would also require additional internal staff resource if done in-house. This would involve recruitment in 2022/23.
  - Managing the partial transition to metered billing while still ring-fencing costs and incomes within the heating account will require careful planning.
90. Market regulation – as noted in paragraph 40, the current proposal for future regulation of the heat networks market, is that the regulator would charge fees to heat network operators (including the Council). It is not yet clear what level of fees would be applicable, or from when the Council would be liable to pay such fees.

91. Compensation – as noted in paragraphs 33-34, the Council has updated the way it calculates and pays compensation to residents. This will have a financial impact and this is currently being assessed.
92. Grants: As noted in paragraph 77 the current water source heat pumps project has been reliant upon a Renewable Heat Incentive (RHI) grant. The Council has supported Veolia in applying for a Heat Network Investment Project (HNIP) grant to fund the SELCHP extension. And the Council has also recently applied to the Public Sector Decarbonisation Scheme (PSDS) for assistance with capital for decarbonising non-housing assets. It is noted that there can be a capital and running cost penalty from installing heat pumps without grant support. It is further noted that we must therefore closely monitor all relevant grant streams, including the Green Heat Network Fund and the Clean Heat Grant which are expected to commence in 2022.

## **Consultation**

93. Extensive resident consultation has taken place to ensure that the Heat Networks Strategy and associated investments take account of as wide a range of views and experiences as possible. A heat networks Residents Working Group was set up and provided detailed feedback on a number of topics. Following this a borough-wide consultation exercise was run, and presentations were delivered through local housing forums, tenants council and home owners council. The presentation to the Homeowners Forum included the principles of the proposed disconnection policy as summarised in paragraphs 54 and 35. A summary of all resident consultation activities and outputs is provided in Appendix 2.

## **SUPPLEMENTARY ADVICE FROM OTHER OFFICERS**

### **Director of Law and Democracy**

94. In July 2019 the cabinet approved the development of a Heat Networks Strategy and Investment Plan and a number of steps that associated with that. This report is an update on progress since that time for noting and seeks agreement to the principles and activities laid out within the Strategic Direction, Service Improvement and Investment Plan (paragraphs 17-38). The report also includes reference to a disconnection policy which the cabinet is asked to approve.
95. Pursuant to Part B of the council's constitution, the cabinet is responsible for formulating the council's overall policy objectives and priorities and to approve key strategies and this report seeks further approval of this particular policy in accordance with this.
96. In considering this report, the Cabinet should have regard to the council's obligations to carry out its duties in accordance with the principles of best value and to ensure its functions are exercised having regard to a combination of economy, efficiency and effectiveness.
97. In continuing to develop the plan, where this directly impacts upon the day to day lives of residents, the council will, where appropriate, consult relevant parties on

the various options before reaching decisions so that those responses can be conscientiously taken into account by the decision makers. The report demonstrates how this has been done since the 2019 report and the results of that consultation are included to be taken account of.

98. The cabinet must continue to take into account the public sector equality duty (PSED) general duty under the Equality Act 2010 when making decisions in relation to this strategy, and specifically to have regard to the need to (a) eliminate discrimination, harassment, victimisation or other prohibited conduct, (b) to advance equality of opportunity and (c) foster good relations between persons who share a relevant protected characteristic and those who do not share it. The relevant characteristics are age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex and sexual orientation. The PSED general duty is a continuing duty and potential equality considerations should be considered at the different stages of the programme. Cabinet is specifically referred to the community impact statement in the report and the Equality Impact Assessment that has been carried out.
99. It is noted that further decisions will need to be made via the procurement processes of the council, and officers from legal services will provide legal advice, when required, in relation to these processes. It is noted that specialist legal advice may also be provided as required.
100. The statutory duties and powers referred to in this report are noted by the Director of Law and Governance, in particular the responsibilities arising from the Networks (Metering and Billing) Regulations. It will be important for the council to continue to plan a programme which enables compliance with these regulations.

#### **Strategic Director of Finance and Governance (H&M 21/056)**

101. This report provides a comprehensive update on the council's heat network strategy for council homes. The council is one of the largest heat network providers in the UK, with over 17,000 domestic properties connected to its district heating systems, and the sheer scale of the heat network, together with its age and the council's commitment for decarbonisation means that significant investment is now needed. At this stage, the investment plan is being developed and the level of investment required is not fully known. It will, however, require borrowing in part to finance it, as will other elements of the council's Housing Investment Programme. The need to ensure that borrowing is both sustainable and affordable for the HRA will inevitably lead to re-prioritisation and re-profiling of the Housing Investment Programme to enable the council deliver on its commitments for the heat network and other programme areas.

## BACKGROUND DOCUMENTS

| Background Papers   | Web links |
|---|-----------|
| January 2017 Cabinet paper titled “Borough wide District Heating Strategy”<br><b>Link:</b><br><a href="https://moderngov.southwark.gov.uk/ieListDocuments.aspx?CId=302&amp;MId=5377&amp;Ver=4">https://moderngov.southwark.gov.uk/ieListDocuments.aspx?CId=302&amp;MId=5377&amp;Ver=4</a><br>(Item 10)  |           |
| July 2019 Cabinet paper titled “Southwark Heat Networks Strategy Update”<br><b>Link:</b><br><a href="https://moderngov.southwark.gov.uk/ieListDocuments.aspx?CId=302&amp;MId=6414&amp;Ver=4">https://moderngov.southwark.gov.uk/ieListDocuments.aspx?CId=302&amp;MId=6414&amp;Ver=4</a><br>(Item 14)  |           |
| October 2020 Housing and Community Engagement Scrutiny Commission paper titled: “District Heating and Heat Networks Final Report”<br><b>Link:</b><br><a href="https://moderngov.southwark.gov.uk/ieListDocuments.aspx?CId=302&amp;MId=6663&amp;Ver=4">https://moderngov.southwark.gov.uk/ieListDocuments.aspx?CId=302&amp;MId=6663&amp;Ver=4</a><br>(Item 24)   |           |
| January 2021 Cabinet paper titled: “Response to Housing Scrutiny Commission report into District Heating”<br><b>Link (please copy and paste into browser):</b><br><a href="https://moderngov.southwark.gov.uk/documents/s92971/Report%20Response%20to%20HSC%20Report%20on%20District%20Heating.pdf">https://moderngov.southwark.gov.uk/documents/s92971/Report%20Response%20to%20HSC%20Report%20on%20District%20Heating.pdf</a> |           |

## APPENDICES

| No.        | Title  |
|------------|--|
| Appendix 1 | Disconnection from District Heating Systems Policy |
| Appendix 2 | Outputs of Resident Consultation Activities        |
| Appendix 3 | Investment Plan and Sites of Concern               |
| Appendix 4 | Heat Network Strategy Equalities Impact Assessment |
| Appendix 5 | Heat Networks Strategy Development                 |
| Appendix 6 | Regulation and Financing                           |

## AUDIT TRAIL

| <b>Cabinet Member</b>   | Councillor Stephanie Cryan, Council Homes and Homelessness |                   |
|---|--|-------------------|
| <b>Lead Officer</b>   | Michael Scorer, Strategic Director Housing & Modernisation |                   |
| <b>Report Author</b>  | Tom Vosper, Strategic Project Manager – Heat Networks      |                   |
| <b>Version</b>  | Final  |                   |
| <b>Dated</b>  | 2 September 2021   |                   |
| <b>Key Decision?</b>  | Yes  |                   |
| <b>CONSULTATION WITH OTHER OFFICERS / DIRECTORATES / CABINET MEMBER</b> |  |                   |
| Officer Title   | Comments Sought  | Comments Included |
| Director of Law and Democracy   | Yes  | Yes               |
| Strategic Director of Finance and Governance                            | Yes  | Yes               |
| <b>Cabinet Member</b>   | No   | No                |
| <b>Date final report sent to Constitutional Team</b>                    |  | 2 September 2021  |