Planning Committee

10.00am, Wednesday, 14 March 2018

Supplementary Guidance: Heat Opportunities Mapping

Item number	6.1
Report number	
Executive/routine	Executive
Wards	All
Council Commitments	18

Executive Summary

The Edinburgh Local Development Plan was adopted in November 2016. The Local Development Plan requires statutory Supplementary Guidance to be prepared regarding heat mapping and district heating opportunities. The Supplementary Guidance sets out an approach to identifying heat mapping and opportunities in line with the Local Development Plan.

The purpose of this report is to seek the Committee's agreement of draft Supplementary Guidance on Heat Opportunities Mapping for consultation purposes.

Report

Supplementary Guidance: Heat Opportunities Mapping

1.   Recommendations

1.1   It is recommended that Committee:

1.1.1   agrees appendix 1 as draft Supplementary Guidance on Heat Opportunities Mapping for consultation purposes; and

1.1.2   refers appendix 1 to the Housing and Economy Committee for approval prior to consultation.

2.   Background

2.1   Statutory Supplementary Guidance (SG) is prepared under Section 22 of the Planning etc. (Scotland) Act 2006 and aims to deliver the policies and principles as set out in the Local Development Plan (LDP)

2.2   Policy RS 1 Sustainable Energy of the adopted LDP (2016), within its supporting text, requires that statutory SG is prepared regarding heat mapping and district heating opportunities. This guidance will support the implementation of the supporting text to Policy RS 1 Sustainable Energy and Policy Des 6 Sustainable Buildings (part a) along with the overarching aims of the LDP.

2.3   The SG, once adopted, will form part of the statutory development plan alongside the strategic and LDPs and other SG and will be used as a material consideration in the determination of planning applications.

3.   Main report

3.1   The SG sets out potential opportunities for establishing district heat networks within the context of the LDP. It is to be used in the assessment of the most suitable low carbon energy and heat solutions for new developments.

3.2   Heat networks, including district heat networks, refer to a means of supplying heat in the form of heating and/or hot water to more than one building or residence from a locally generated source. It is considered a highly efficient way of providing heat to residential and commercial properties. Heat mapping is used to show sources and uses of heat energy in order to determine where new heat networks could be created.

3.3   The formation of heat networks is considered a key means of achieving the Scottish Government's targets for reducing energy consumption. This is reflected in Scottish Planning Policy which requires plans to support the development of heat networks and to use heat mapping. Through the examination of the LDP a commitment to produce SG on heat mapping was established as reflected in the supporting text to LDP Policy RS 1 Sustainable Energy.

3.4   The SG consists of two key elements. This includes setting context for heat networks including other Council plans and strategies and establishing a policy and accompanying map which seeks to deliver heat networks, where these are feasible, in line with the LDP's site allocations and potential sources of heat supply.

3.5   The SG places the emphasis on planning applicants for major sites to demonstrate how they have considered whether a heat network is feasible and, where appropriate, demonstrate how this will be implemented.

3.6   The scope of the SG mapping is limited to the LDP allocations and its policy is in accordance with what can be directly influenced by planning. Sites which are at an advanced stage of delivery will be beyond the scope of the SG. The approach reflects the Scottish Government's expectations for heat mapping which is to use it to identify the potential for co-locating developments with a high heat demand with sources of heat supply and to support the development of heat networks in as many locations as possible.

3.7   The draft SG will be subject to a period of consultation as outlined in section 9. Consultation responses will then be considered and a finalised form of the SG will be prepared for approval prior to submission to Scottish Ministers and adoption.

3.8   On publication of the consultation draft, planning applications subject to the guidance are to take account of its content in consideration of their compliance to LDP policy Des 6 (part a), though the draft guidance will have minimal weight in the determination of planning applications. As indicated in section 2, once adopted the Supplementary Guidance will form part of the statutory development plan and will become a material consideration used in the determination of planning applications.

3.9   The Council is also engaged in a number of project areas outwith the LDP relating to sustainable heat. A key area is evaluating the use of heat networks for projects at the BioQuarter, Fountainbridge and Meadowbank. In these cases, business cases and/or feasibility work has been undertaken to determine the viability of district heat networks. However, these projects are complex requiring detailed technical assessments alongside financial and delivery options. Other opportunities for heat networks are being looked at for west Edinburgh and Leith.

3.10   Development of Local Heat and Energy Efficiency Strategies (LHEES) is a further related project. The Council has been successful in securing funding for consultants to support the development of a LHEES however this work is at an early stage and is due to be completed within the next six months.

3.11   The draft SG will sit alongside these wider Council projects and requires consideration of these by planning applicants as the projects develop in the future.

It is proposed to provide Committee members with a detailed briefing on heat where more information can be provided on Council projects and initiatives.

4. Measures of success

4.1 The measure of success is that opportunities for district heat networks within new developments are considered in line with heat opportunities identified through Local Development Plan allocations and other sources.

5. Financial impact

5.1 There are no direct financial impacts arising from this report.

6. Risk, policy, compliance and governance impact

6.1 There are no perceived risks associated with this report.

7. Equalities impact

7.1 There are no equalities impacts arising from this report.

8. Sustainability impact

8.1 The proposals in this report will:

8.1.1 reduce carbon emissions because they seek to introduce district heat networks which can improve the efficiency of heat supply and reduce fuel consumption;

8.1.2 increase the city's resilience to climate change impacts through promoting opportunities for heating from decentralised sources; and

8.1.3 help achieve a sustainable Edinburgh because they will support efficient heating in new communities and impact positively on natural resources including energy and help implement wider Council strategies.

8.2 The SG has been considered through the Strategic Environmental Assessment (SEA) screening process which has determined there are no significant environmental impacts.

9. Consultation and engagement

9.1   Consultation on the draft SG will take place prior to its finalisation. The following groups and organisations will be consulted: Key Agencies, community councils and groups and relevant industry bodies.

9.2   The draft SG will be available on the Council's Consultation Hub for a specified period not less than 28 days. The opportunity to comment of the Supplementary Guidance will be open to everyone.

10. Background reading/external references

10.1   Adopted Local Development Plan, November 2016

10.2   Local Development Plan Examination Report, June 2016

10.3   Edinburgh's Sustainable Energy Action Plan, 2016

10.4   Energy for Edinburgh, September 2016

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11. Appendices

Appendix 1 – Supplementary Guidance: Heat Opportunities Mapping Consultation Draft

Supplementary Guidance:

Heat Opportunities Mapping,

March 2018

Consultation Draft

Contents

Map

1. Introduction

This Supplementary Guidance sets out potential opportunities for establishing district heat networks within the context of Edinburgh's Local Development Plan (LDP). It is to be used in the assessment of the most suitable low carbon energy and heat solutions for new developments.

This guidance supports the implementation of LDP Policy RS 1 Sustainable Energy and Policy Des 6 Sustainable Buildings (part a) along with the overarching aims of the LDP.

The Supplementary Guidance, once adopted, will form part of the statutory development plan alongside the strategic and local development plans and other Supplementary Guidance. It will be used as a material consideration in the determination of planning applications.

2. Aims

This Supplementary Guidance will, by highlighting opportunities for district heat networks in line with LDP allocations, implement LDP policy and guide Development Management decisions.

3. What are heat networks and what is heat mapping?

District heat networks ('heat networks') refer to a means of supplying heat* in the form of heating and/or hot water to more than one building or residence from a locally generated source or sources. It is considered a highly efficient way of providing heat to residential and commercial properties.

Heat networks broadly consist of underground pipework which connects individual buildings to the source. The source can take a number of forms such as a centralised efficient gas boiler, low carbon and renewable technology such as heat pumps or it can make use of waste heat captured from industrial and commercial processes such as energy from waste plants. A schematic of a heat network is shown in figure 1.

The scale of heat networks can vary from a small network supplying a group of homes or flats to larger schemes stretching over several kilometres and covering a range of mixed uses. To maintain efficiency and reliability more than one source can be connected within a heat network and thermal storage can also be utilised to capture any unused heat.

Heat mapping is used to show sources and users of heat energy in order to show where heat networks could be created.

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* Where heat is referenced this can also imply a multifunctional network supplying both heating and cooling.
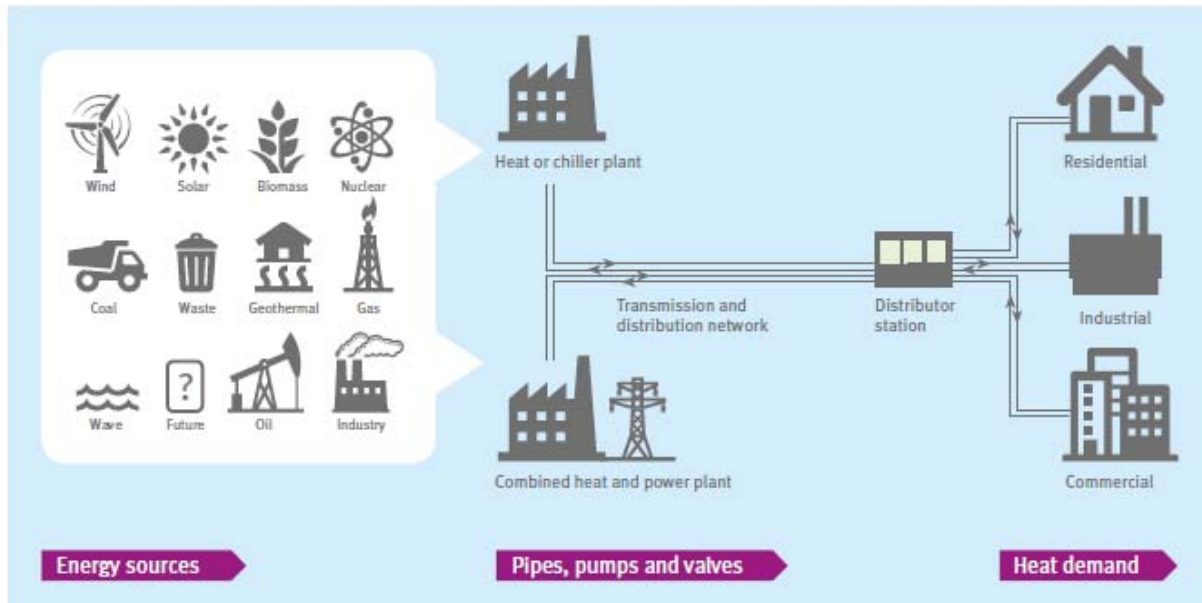
Figure 1: Schematic of a District Heating Network (reproduced from Edinburgh's SEAP)

4. National context

The Scottish Government's policies and guidance on heat networks are still under development in some areas. Currently Scotland's Energy Efficiency Programme is in the process of being implemented. This programme looks at improvements to the energy efficiency of homes and buildings and supports the decarbonisation of heat supplies. Regulation of district heating is also being explored.

Scotland's Energy Efficiency Programme[1] acknowledges that reducing energy demand is one of the most significant contributors to reducing greenhouse gas emissions, meeting national energy targets and addressing fuel poverty. In Scotland's Heat Policy Statement heat is shown to be Scotland's biggest energy use and biggest source of emissions. Appropriately sited low carbon district heat networks are considered to become a significant contributor in addressing the Scottish Government's energy and climate ambitions.

The Heat Policy Statement sets out a heat hierarchy (figure 2) showing the key means to address heat use and emissions. The first level of the hierarchy is to reduce heat demand and use, for example, by improving the efficiency of building fabric so less heat is lost. The second is to look at the efficiency and cost of heat supply, for example, through the use of district heat networks. The third is to look at decarbonising the heat supply, for example, through use of renewable technology. Consequently it is important to acknowledge that district heat networks are one element in a broader picture addressing heat and energy concerns. This is further evident in the Scottish Energy Strategy published in December 2017 which continues to support district heating as part of a much wider range of actions to achieve targets of reducing energy consumption by 50% and for a 30% increase in the productivity of energy use.

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[1] Scotland's Energy Efficiency Programme: Second Consultation on Local Heat & Energy Efficiency Strategies, and Regulation of District and Communal Heating, November 2017
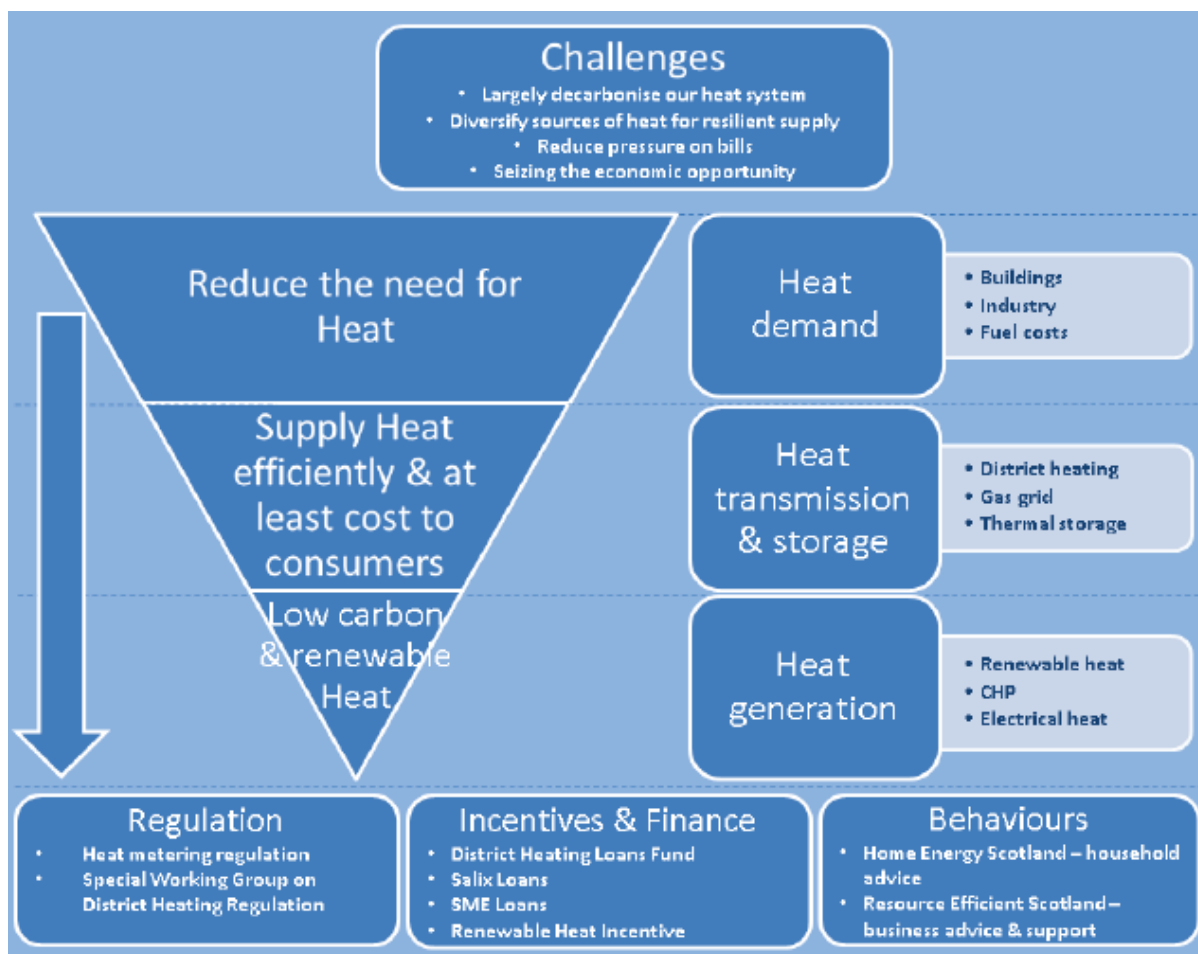
Figure 2: Heat Hierarchy (reproduced from the Heat Policy Statement)

Scotland's Heat Map is an online tool produced by the Scottish Government which shows heat demand across the country along with locations where energy is directly supplied from low carbon or renewable sources. It also includes locations of existing heat networks. This map should be used in combination with the Heat Opportunities Map which forms part of this Supplementary Guidance.

A heat network may comprise of a range of components some of which may constitute development under current national planning legislation, such as an energy centre, and some which would not be considered a development, such as underground pipe runs. Elements of heat networks which do not constitute development cannot be controlled by Development Management and enforcement. This also includes the type of energy supply to private properties as this is not regulated through the planning system.

5. Local context

As part of Scotland's Energy Efficiency Programme Local Heat and Energy Efficiency Strategies are intended to allow Local Authorities to coordinate local delivery programmes and are focused on energy efficiency and appropriately sited low carbon district heating. Edinburgh is part of a pilot to develop a Local Heat and Energy Efficiency Strategy along with a number of key energy projects. At the time of

preparing this Supplementary Guidance the content of Edinburgh's Local Heat and Energy Efficiency Strategy is still being considered. However, it will determine zones which set out energy efficiency and heat decarbonisation options which may include areas for heat networks. In the future it is expected there may be alignment between Local Heat and Energy Efficiency Strategies and subsequent LDPs.

In 2015 the Council approved Edinburgh's [Sustainable Energy Action Plan](). This document sets out the Council's plans to reduce carbon emission, reduce energy demand and encourage local energy generation. The Plan looks at increasing the use of district heating systems including expanding existing schemes as well as looking at opportunities to create new heat networks. As part of this plan a vision for a city wide heat network is included. This looks at a citywide network which connects twelve existing, under-construction and proposed developments. The twelve elements of the proposed network are shown on the Heat Opportunities Map.

6. How this guidance fits

This Supplementary Guidance is intended to complement existing strategies and should be considered when developing local strategies where a planning context is required. The Supplementary Guidance mapping is limited to sites already identified through the LDP along with acknowledging schemes from the Sustainable Energy Action Plan and sources identified through Scotland's National Heat Map. It has been prepared without prejudice to any future work which may be carried out such as under the Local Energy and Efficiency Strategy.

This guidance is intended to address the second level within the Scottish Government's heat hierarchy by forming a starting point for the consideration of where district heat networks could be introduced in new developments. The guidance specifically looks at areas where significant new development is proposed through the LDP in the form of housing, mixed-use and commercial developments as these present the greatest possibility for the introduction of infrastructure to be accommodated during construction. This may include pipe runs, energy centres and heat storage facilities noting what is within the scope of Development Management determination as set out in section 4.

7.   Heat Opportunities Policy Guidance

To support the development of heat networks in new development a Heat Opportunities Map (see Map 1) has been produced as part of the Supplementary Guidance. This shows where new development and associated new heat demand is likely to occur in line with the sites allocated for development through the LDP.

Policy Des 6 (part a) of the LDP states that planning permission for new developments will only be granted where it has been demonstrated that current carbon dioxide emissions reduction target has been met, with at least half of this target met through the use of low or zero carbon generating technologies.

In addressing the requirements of Policy Des 6 (part a) applicants for major developments within the identified opportunity areas (map 1) must demonstrate the approach taken to identify whether a heat network is viable. Applicants are required to:

  i.   identify the existing and under development district heat networks which the proposed development could connect to;
  ii.   consider the proposed developments proximity to existing areas of high heat demand and existing buildings or facilities with high heat demand which could form part of a new network;
  iii. identify the heat sources the development could connect to including the potential for onsite generation and to sources identified through mapping; and
  iv.   determine if a heat network should be delivered for the development.

Applicants must use the Heat Opportunities Map in combination with Scotland's Heat Map[2] and other sources[3] of relevant information in their assessment.

Compliance within these requirements should be demonstrated using the Council's Sustainability Statement Form and accompanying supporting information.

Where it has been determined that a heat network should be delivered applicants should include details of the means of heat supply and mechanisms for implementing the network. Relevant infrastructure should be reflected in submitted plans including locations of energy centres and heat storage as appropriate.

In an opportunity area where establishing a district heat network is not currently considered viable now but may be in the future applicants will be encouraged to 'future proof' the development. This may include the introduction of pipe runs or space for pipe runs, space for an energy centre or source of energy supply and space for heat storage.

For a major development proposed outwith an opportunity area as indicated on the Heat Opportunities Map, in demonstrating compliance with Policy Des 6 (part a), applicants should follow the same approach as outlined above.

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[2] Scotland's Heat Map is expected to be updated over time and as such the latest online version should be used. This can be accessed at heatmap.scotland.gov.uk.
[3] This should include other Council strategies such as the Sustainable Energy Action Plan and the Local Heat and Energy Efficiency Strategy when available.

8. Sources and Environmental Impacts

Within its boundaries, the city of Edinburgh is currently limited in the number of significant existing sources of heat which could be used to fuel a district heat network. In this context, Scotland's Heat Map notes one such source at Seafield where there is potential for a water source heat pump to recover heat from the existing waste water treatment works. The LDP in Policy RS 3 and allocation EW1d also notes a potential source nearby where land at Seafield has been safeguarded for potential energy from waste and combined heat and power uses. These potential sources are noted on the Heat Opportunities Map.

It is expected that the sources of proposed heat networks should be from a low carbon or renewable supply. It is acknowledged however that some heat networks may run on carbon based fuels such as gas, for example through heat only boilers or combined heat and power systems. Such energy sources may be considered acceptable provided they have the potential to convert to a renewable or low carbon source in the future and that compliance with Policy Des 6 (part a) can be demonstrated. There may also be potential for sources used in combination which minimise reliance on carbon based fuels. Information on the most predominant energy sources for existing heat networks in the Edinburgh area can also be found using Scotland's Heat Map.
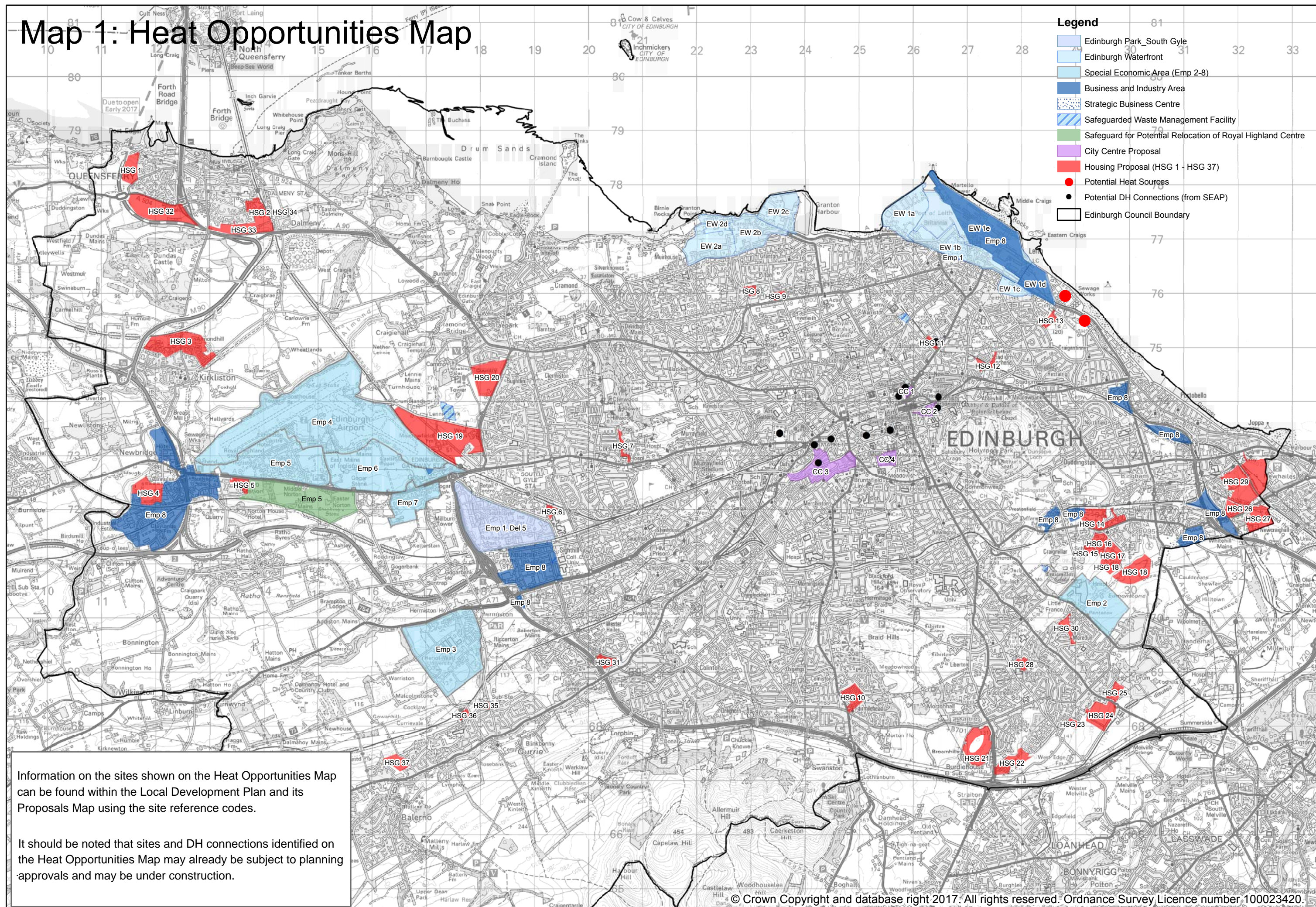
Proposals for heat networks, energy centres and heat sources will be subject to assessment under LDP Policy ENV 22. Proposals should provide an Air Quality Impact Assessment where relevant. In addition, Edinburgh has a number of Air Quality Management Areas which can be viewed on the Council's website.

9. Implementation and delivery

The implementation heat networks in new development is supported through the assessment of proposals against the policy criteria as set out in this Supplementary Guidance and through the Local Development Plan. Heat networks are also supported through a range of Council led projects and initiatives including the Sustainable Energy Action Programme and its related projects and the forthcoming Local Heat and Energy Efficiency Strategy,

This Supplementary Guidance will be monitored through the approval and implementation of planning applications for each site. This will show where developments have included heat network development.

Map 1: Heat Opportunities Map

Legend

- Edinburgh Park_South Gyle
- Edinburgh Waterfront
- Special Economic Area (Emp 2-8)
- Business and Industry Area
- Strategic Business Centre
- Safeguarded Waste Management Facility
- Safeguard for Potential Relocation of Royal Highland Centre
- City Centre Proposal
- Housing Proposal (HSG 1 - HSG 37)
- Potential Heat Sources
- Potential DH Connections (from SEAP)
- Edinburgh Council Boundary

Information on the sites shown on the Heat Opportunities Map can be found within the Local Development Plan and its Proposals Map using the site reference codes.

It should be noted that sites and DH connections identified on the Heat Opportunities Map may already be subject to planning approvals and may be under construction.