# Planning Background Paper

# Heat Networks and District Heating

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| SCOTTISH ENVIRONMENT PROTECTION AGENCY | Identifier: | LUPS-BP-GU2c (ii) Heat Networks and District Heating |
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| Background Paper on<br>Heat Networks and District Heating<br>Development Plan and Development Management | | |

**Update Summary**

| *Version* | *Description* |
|---|---|
| Version 1 | First issue |
| Version 2 | Update to requi rements 1 -3 and supporting text. |
| Version 3 | Update to incorporate d evelopment Management requirements and recommendations |
| Version 4 | Update policy context and amend Development Management requirements to recommendations |

**Notes**

This document outlines SEPA's position on land use planning and Heat Network and District Heating . It is based on SEPA's interpretation of national planning policy and duties and requirements under relevant legislation.

This document is uncontrolled if printed . Always refer to the online document for accurate and up-to-date information.

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## Why we comment on this topic

DI.1 SEPA's statutory purpose under the Regulatory Reform (Scotland) Act 2014 is "to protect and improve the environment, including managing natural resources in a sustainable way and that we must also contribute to improving the he alth and wellbeing of the people of Scotland and to the achievement of sustainable economic growth"

DI.2 We have duties under the Public Bodies Climate Change (Scotland) Act 2009, with the Public Bodies Climate Change Act Guidance 2011 setting out how we are to comply with these duties.

DI.3 District heating and heat networks are becoming increasingly important topic area. This is particularly pertinent given the role that Heat Networks and district heating systems can contribute towards the attainment of Scottish Government's targets including :

- a reduction in carbon and greenhouse gas emissions using low -carbon heat sources ;
- the provision of alternative technologies to reuse excess (waste) heat ; and
- opportunities to decreas e our reliance on carbon -based energy .

DI.4 It is essential that heat networks and district heating opportunities are fully explored and delivered through the planning system if these targets are to be met . New developments have a role to play in not only establishing and creating these networks, but also in connecting to networks to make use of heat that is being captured . Planning authorities should consider the potential links between heat producers and heat users when all ocating sites for development .

DI.5 We assist the delivery of the Scottish Government 's national and planning outcomes by providing environmental advice in relation to development plans and proposals across Scotland on Heat Networks and District Heating . As s et out in the table, the advice we provide also directly contributes to achieving two of our corporate outcomes.

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<tr><th colspan="6">Scottish Government National Outcomes</th></tr>
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<tr><td rowspan="2">SEPA</td><td>Purpose</td><td colspan="4">Protecting and improving the environment (including managing resources in a sustainable way). As long as it is not inconsistent with the above we will also contributes to (a) improving the health and well being of people in Scotland, and (b) achieving sustainable economic growth.</td></tr>
<tr><td>Corporate Outcomes<br><br>(relevan t to Heat Networks and District</td><td colspan="2">Scotland is developing in a way which is environmentally sustainable, taking advantage of the economic benefits presented by a move to a low carbon economy and greater use of renewable energy sources - resources are managed and</td><td colspan="2">Champion sustainable resource use and management of all resources and explain the environmental, social and economic benefits - We will work with Government and other partners to develop the necessary policies, regulatory framework, incentives and clear</td></tr>
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|---|---|---|---|---|
| | Heating ) | used more sustainably and waste is managed as a resource. More materials are recycled and landfilling has been virtually eliminated. | information to encourage citizens, public authorities and businesses to choose the most sustainable and resource -efficient products and services. | |
| | Planning Objectives | To ensure that development plans make an effective contribution to national targets relating to heat. | To encourage use of heat maps to maximise opportunities for the use of waste heat in new develop ment. | |
| | Supporting Objectives | 'Headline ambition' to have **heat from renewable sources rrecognised as the first choice option** for new developments in areas of the gas grid and maximising opportunities for retrofitting. | **Actively engaging in the preparation of development plans to help identify favourable locations for thermal treatment of waste infrastructure** in relation to potential end users and the need to **achieve high energy efficiencies through heat recovery** from energy from waste infrastructure . | **Protecting the environment and human health from the effects of waste** management and disposal and applying the principles that underpin the waste hierarchy . |
| | Planning Guidance | Development Plan Guidance | Development Management Guidance | Background Paper | Standing Advice |

DI.6 Four Strategic outcomes for SEPA identified in our Annual Operating Plan are;

(i) **Scotland is thriving in a low carbon world**:

- the Scottish economy is becoming increasingly resource efficient and there is a general acceptance of the need to live within the planet's regenerative capacity. The economy is becoming increasingly resilient to the threat of scarce raw materials.
- Scotland is developing innovative approaches to carbon and resource efficiency and is sharing and exporting its technologies and e xpertise.

(ii) **Scottish businesses are prospering from better environmental performance**:

- Scottish businesses recognise the benefits to them of good environmental performance and take full advantage of them.
- SEPA regulated businesses secure and maintain full compliance with environmental rules and regulations. Non -compliance is not tolerated.

(iii) **The impact of flooding is reducing**:

- the likelihood and potential impact of flooding across Scotland is understood and strategies are developed to tackle greatest risks.
- Flood warnings are provided and businesses, communities and individuals understand the steps they can take to protect themselves from the impact of flooding.
- Robust advice is given to ensure planning decisions are well informed and new developments ar e not located in high risk areas.

(iv) **People benefit from Scotland's improving environment**:

- the quality of the air, water and land in Scotland is improving, providing benefits to health and local amenities and better resources for local businesses.
- The impa ct of pollution and environmental crime is reducing.

- People understand the benefits a healthy environment provides for their quality of life and take full advantage of them.
- People have the information they need, when they need it, to help them make go od decisions that improve the environment, society and the economy.

DI.7 Delivery of our first outcome, Scotland is thriving in a low carbon world, is key to our involvement in district heating and heat networks.

**Statutory Context**

DI.8 We have a duty under the Town and Country Planning (Scotland) Act 1997 and Planning etc (Scotland) Act 2006 to provide comments to Local Planning Authorities consultations on proposed Strategic and Local Development Plans and planning applications for major waste and energy related proposals.

DI.9 The provision and promotion of Zero Waste advice through our Planning Service accords with the following statutory requirements within the table below.

| Statute | Relevant Sections | Our Advice |
|---|---|---|
| Town and Country Planning (Scotland) Act 1997 and Planning etc (Scotland) Bill 2006 | Section 4 and 15 - Town and Country Planning (Scotland) Act 1997<br>Section 2 and 18 – Planning etc (Scotland) Act 2006 | Requirements to prepare Strategic and Local Development Plans under the aforementioned legislation ens ures that SEPA are routinely consulted on Strategic and Local Development Plans to assess the acceptability of Heat Networks and District Heating Zero policies and/or Heat related strategic policy frameworks. |
| Development Management Procedure (Scotland) Regulations 2013 | Schedule 5 – Consultation by the Planning Authority.<br>The planning authority must consult with SEPA before determining an application for planning permission for the use of land for the deposit of any kind of refuse or waste, including slur ry or sludge. | Local Planning Authorities have a statutory duty to consult SEPA as a statutory consultee for various waste -related development proposals to ensure adequate consideration of any potential environmental impacts. |
| The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 | Part 4 (Sections 14, 15, 19) - Preparation of Environmental Statements<br>Part 5 (Section 19) Publicity & Procedures on Submission of Environmental Statements | Local Planning Authorities have a st atutory duty to consult SEPA as a consultation body for various development proposals requiring consideration under EIA Screening / Scoping or where proposals are supported by an Environmental Statement. |
| Climate Change (Scotland) Act 2009 | Part 4 - Public Body Duties | To ensure that we exercise our planning advisory role in the way best calculated to contribute the delivery of national greenhouse gas emission reduction targets. |

**Policy Context**

DI.10 The Committee on Climate Change outlined the challenges to meet ing the targets in the Climate Change Act and to maintain the UK contribution to international action under the Paris Agreement in their report "Next steps for UK heat policy" 2016 . A key message (page 17) from Chapter 1: The challenge to reduce emissions from heating UK buildings, is that:

- "heating and hot water for buildings make up 40% of energy use and 20% of greenhouse gas emissions in the UK.
- These emissions need to be reduced by over 20% by 2030, with a near complete decarbonisation by 2050, as a contribution to the legally -binding targets set by Parliament in the Climate Change Act. "

DI.11 The Scottish Governme nt's Energy Efficiency Action Plan for Scotland (2010) identified a role for SEPA in district heating through Action 6.2 which states that the Scottish Government "Will proactively deve lop district heating as a discrete policy area within energy efficiency, including by…(v) SEPA's advice to planning authorities re: water, heat and power."

DI.12 The Scottish Government has an ambition for a largely decarbonised heat sector by 2050 (2020 Routemap for Renewable Energy in Scotland, Scottish Government 2011), with significant progress by 2030. On 5 October 2011 the then Energy Minister, Fergus Ewing, announced publication of an independent study into the recovery of heat from power generation in Scotland. The study examines the technical and financial prospects for recovery of heat from four sites used for large scale fossil fuel power generation in Scotland and then explores policies that could help make the recovery of heat a more practical option. Promoting recovery of heat from large scale power stations through building on the results of this study is highlighted as a key action in the 2020 Routemap for Renewable Energy in Scotland

DI.13 The Expert Commission on District Heating recommendations to the Scotti sh Government (November 2012) sets out the benefits that district heating can have on a number of policy areas, including heat poverty, and reducing emissions – a key figure stated is that there are potential reductions in carbon emissions averaging 30 -40% as a result of substituting district heating for other forms of heating. The Expert Commission set out a number of recommendations for future areas of work which are intended to support the delivery of low -carbon renewable heat. One area of recommendatio n was the delivery of a national heat map. The Scottish Government published a national heat map in April 2014 which identifies existing sites of h eat demand as well as sources of heat supply, both primary and potential secondary/surplus heat supply. There is great potential for use of the national heat map, which is explored below.

DI.14 Following the findings of the Expert Commission on District Heating in 2014, the Scottish Government set up a Special Working Group that was tasked to research and report on regulation to the Expert Commission on district heating. The Report of the Special W orking Group on Regulation For the Scottish Government and the Expert Commission on District Heating was published in 2016 on the opportunities that could be utilised to support and stimulate the district heating market in Scotland. Additionally, the rep ort outlined the potential wider benefits that could be achieved from district heating:

> (Page 1) District heating is an important means of both reducing carbon emissions and helping meet fuel poverty targets and can also make a significant contribution t o the development of a low -carbon economy and to local economic regeneration. Reductions in carbon emissions as a result of substituting district heating for other forms of heating are estimated at 30 -40% and fuel bill reductions can be of the same order. District heating also has significant benefits for both the national and local economies, including creation of jobs in the construction and operation of district heating systems and the retention of wealth in the local economy as a result of fuel bill sav ings.

DI.15 To summarise, benefits that have been identified include economic benefits and the opportunity to utilise district heating as an energy store which could help to balance the supply and demand of energy in Scotland. With regards to the source of heat , the report acknowledges that that networks can use heat from a variety of sources and (page 1) "can be repowered as lower carbon heat sources become available".

DI.16 The role of Local Authorities is also explored in some detail, with the recommendation from t he Special Working Group that Local Authorities are tasked with the responsibility to prepare (page 5) "strategic plans for developing district heating in their area and exercise their planning powers to implement these plans." The potential role for planning and these strategic plans (which have been realised by the Scottish Government as LHEES discussed in paragraph DI. 21) is suggested that it can identify and promote large -scale users of heat from district heating systems, and Local Authorities could uti lise the strategic plan for district heating to require buildings with significant heat loads to connect to district heating networks where the network can offer heating at a competitive cost. There is also the recommendation that the strategic plans can be used to future -proof district heating schemes to allow for the ability to expand in line with the overall strategic plan for district heating.

Energy in Scotland 2014 and Scottish Energy Strategy 2017

DI.17 Energy in Scotland 2014 (Scottish Government) and the Scottish Energy Strategy (2017) estimates that heat accounts for ove r half of all the energy we use for our homes, offices, hospitals, businesses, schools, other buildings and industries. There are clear links between district heating and climate change – Scotland's long term climate change targets will require the near c omplete decarbonisation of our energy system by 2050. Switching from fossil fuel to renewable sources of heat has the potential to reduce greenhouse gas emissions, support delivery of climate change targets and make a significant contribution to Scotland's overall renewable energy target.

DI.18 The Scottish Energy Strategy is mindful that any approach towards decarbonising heat depends on the decisions the UK Government will make on the future of the gas network, however it also identifies a role for low carbon and renewable heat in the prioritisation of decarbonisation of Scotland's heat supply as an integral part of SEEP, including(pages 50/51)

- "a priority to reduce heat demand as set out in the heat hierarchy of the heat Policy Statement; and
- Promoting low c arbon heat via low regrets options as set out by the Committee on Climate Change, such as:
  - District heating projects where appropriate, delivering affordable, low carbon heat efficiently; and
  - Renewable heat technologies to individual properties, particular ly in areas off the gas network.

DI.19 The document goes on to outline (page 51) the support that the Scottish Government will continue to extend towards investment and consumer protection, financial support that will continue through the District Heating Loan Fund, Low Carbon Infrastructure Transition Programmes and others that may be developed under SEEP (Scotland's Energy Efficiency Programme).

DI.20 The Scottish Government's support for low-carbon and renewable sourced heat is outlined in the Scottish Government's Heat Policy Statement: Towards Decarbonising Heat (June 2015). This sets an ambition of 40,000 homes to benefit from affordable low carbon heat from district heating, part of an overall ambi tion of 1.5TWh of heat to be delivered by district heating by 2020 to both domestic and non -domestic properties. This approach is sought to ensure that renewable heat makes a significant contribution to meeting Scotland's climate change targets and support the delivery of our renewable heat target.

DI.21 The Heat Policy Statement sets out the Scottish Government's future policy direction for addressing the Heat including: how heat is used (i.e. heat demand and its reduction); how heat is distributed and stored (i .e. heat networks and heat storage) and where our heat comes from (i.e. heat generation). Initiatives provided by the Policy Statement have now been established. Each of the initiatives address objectives set out in the Government's Heat

Hierarchy – reducing the need for heat; supplying heat efficiently and at least cost to consumers; and using renewable and low carbon heat. A number of projects were identified to deliver the priorities in the Heat Policy Statement:

- The Scottish Government designated energy efficiency as a National Infrastructure Priority, the cornerstone of which is Scotland's Energy Efficiency Programme (SEEP). This is a 15 to 20 year programme that has been set up to support to all buildings in Scotland – domestic and non-domestic – to improve their energy efficiency rating and decarbonise heat over the long term.

  SEEP phase 1 is formed by "Pathfinder" pilot projects that will help the development of SEEP, contribute to the design of future programmes aimed at tackling fuel poverty and reducing greenhouse gas emissions and inform how future SEEP funding is best deployed to achieve Ministerial objectives. SEEP Phase 2 is a second round of invitations for pilot projects to further help the development of SEEP.

- The Low Carbon Infrastructure Transition Programme (LCITP) was launched by the Scottish Government, and supported by European Regional Development Funding (ERDF), in March 2015 with £76 million available for the first 3 years, and a further £60 million allocated from 2018-2020, to provide tailored project development support for established and start-up infrastructure projects, including heat, across the private, public and community sectors. The projects that have gained funding through the LCITP programme include schemes to develop heat networks from low carbon heat sources.
- The Scottish Government has consulted twice on Local Heat and Energy Efficiency Strategies (LHEES) as part of the Heat and Energy Efficiency Strategies and district Heating Regulation consultations. These were identified by the Expert Commission's Special Working Group as an opportunity for Local Authorities to plan how energy efficiency measures and local heat issues could be addressed in the most appropriate way for their area. The LHEES would be prepared by local authorities, setting out a framework and delivery programme for how the local authority would reduce energy demand and decarbonise the heat supply of existing and proposed buildings in its area, to ensure progress against the national objectives of SEEP.

  A number of local authorities in Scotland are currently piloting, through SEEP Phase 2, the development of Local Heat and Energy Efficiency Strategies. The lessons learnt from this pilot will support other local authorities in how to develop, and the methods that can be used to develop, an LHEES. To date, an LHEES pilots evaluation interim report is available.

DI.22 The Scottish Government's Energy Strategy was published in 2017 and outlines the vision for energy in Scotland in 2050. The Energy Strategy sets two new targets for the Scottish energy system by 2030: the equivalent of 50% of the energy for Scotland's heat, transport and electricity consumption to be supplied from renewable sources; an increase by 30% in the productivity of energy use across the Scottish economy. Priorities have been set in the Strategy to deliver the 2050 vision; for heating this includes the priority for "A smarter local energy model" and "Renewable and low carbon solutions" where the government proposes a smarter, more coordinated approach to planning and meeting distinct local energy needs, including heat, and "will continue to champion and explore the potential of Scotland's huge renewable energy resource, and its ability to meet our local and national heat, transport and electricity needs – helping to achieve our ambitious emissions reduction targets." The Energy Strategy identifies the existing role the planning system has in supporting the development of the energy system, and in setting positive policies for heat network installations and other renewable generation technologies.

DI.23 The Energy Strategy (Diagram 6) identifies that in 2016 an estimated 4.8% to 5% of total Scottish heat demand was met from renewable sources. Visions for the future include (page 35) the growth of renewable heat to around 20% of non-electrical heat demand, and that renewable heat is also likely to increase due to growth in district heating (if powered by renewable fuels).Specific priorities are set for different sectors in Scotland, with the industrial sector playing a role in the decarbonisation of energy, increasingly investing in more energy-efficient equipment or reusing waste heat (page 39).

DI.24 Renewable and low carbon energy is identified in the Energy Strategy (page 41) as the foundation of future energy systems in Scotland and a Strategic Priority. A strategy for low carbon and renewable heat is expected to be developed in the early/mid 2020s, but until this happens the Scottish Government will continue to prioritise the decarbonisation of Scotland's heat supply. This includes, as a priority, utilising SEEP to reduce heat demand in line with the heat hierarchy and promoting low carbon heat via "low regrets" options as identified by the Committee on climate Change which includes district heating projects where appropriate, to deliver affordable, low carbon heat efficiently, and renewable heat technologies to individual properties, particularly in areas off the gas network. Support will continue to be provided through existing funding programmes such as the District Heating Loan Fund and LCITP and new funding opportunities developed under SEEP.

Climate Change Plan Third Report on Proposals and Policies 2018

DI.25 The Climate Change Plan Third Report on Proposals and Policies 2018 (CCP RPP 3) provides the most recent annual update on proposals and policies set out by the Scottish Government to meet its climate change targets. The vision for Scotland (page 22) is that by 2032, Scotland will have reduced emissions by 66% (relative to the baseline), while growing the economy, increasing the wellbeing of the people of Scotland and protecting and enhancing our natural environment. The CCP RPP3 ambitions include the delivery, by 2032 of

- 35% of heat for domestic properties will be supplied using low carbon technologies, where technically feasible, and all buildings (residential and non-domestic) will be insulated to the maximum appropriate level
- 70% of heat and cooling for non-domestic buildings will be supplied using low carbon heat technologies
- Improvements to the building fabric of Scotland's buildings will result in a 15% reduction in residential and 20% in non-residential heat demand.

DI.26 One outcome identified in CCP RPP3 is that Scotland's buildings will be insulated to an appropriate level and will increasingly be heated and cooled by low carbon technologies. The progress made so far in lowering emissions to date identifies that Scotland is on track to meet our 42% emissions reduction target by 2020 (2015 emissions reduction was at 41%). Decarbonising heat is a key component of the decarbonisation of the energy system in Scotland, and the Climate Change Delivery Plan 2018 identifies (page 24) that in the residential sector, the expectation is that from 2025 there will be a greater uptake of low carbon heating sources (heat pumps and district heating) as well as energy efficiency measures. This is expected to contribute towards a reduction of 23% in residential emissions to 2032.

DI.27 The CCP RPP 3 recognises the important role of the planning system (page 33):

" Decisions we take about the places in which we live, work and play last for decades and sometimes hundreds of years. These decisions can, therefore, have an impact on people for their entire lives. The planning system must provide the framework in which decisions about "place" can support low carbon lifestyles and the transformative change needed to deliver emissions reduction targets."

And in page 34 that:

"The planning system is a means by which the missing infrastructure which would assist low carbon choices to be made, can be identified and developed in the future."

DI.28 The CCP RPP3 also identifies key approaches being undertaken by the Scottish Government (page 83), and that these include the decarbonisation of buildings through the Renewable Heat Incentive as a key approach (page 83), along with supporting the transition to lo w carbon heating through the District Heating Loan fund (page 84).

DI.29 The "Climate Change Plan – Third Report on P roposals and Polices 2018 – 2032 Summary Document " is provides a useful accessible summary of CCP RPP3. During the development of Energy Efficient Scotland, the Scottish Government will also consider what funding mechanisms are needed to support low car bon heat technologies over longer time frames (page 28). With regards to industry and the industrial sector, these have also been identified as having a role in district heating with the work being undertaken through the Manufacturing Action Plan to supp ort investment in energy efficiency and heat recovery for the industrial sector (page 34).

Energy Efficiency Directive

DI.30 In addition to heat that can be sourced from energy from waste facilities, geothermal heat and water from mines (ie where heat is a pri mary source), there is significant potential for using surplus or secondary source heat, that is heat that is currently wasted or unused which comes from industrial processes, waste water or from other industries. Maximising the use of secondary heat bring s benefits to the heat source as it can reduce emissions, but it also can reduce the need for new primary heat sources, reducing emissions and the need to source fuel for the processes which generate heat. The EU Energy Efficiency Directive updates the EU 's legal framework for energy efficiency, pursuing the target of saving 20% of the EU's primary energy consumption by 2020, and of making further energy efficiency improvements after 2020. In order to maximise the potential for district heating networks t o be established, new developments with the potential to deliver heat, including waste heat from industrial processes, should consider the potential for providing heat to areas of high heat demand.

DI.31 This "co-location" will provide a benefit for both heat user and supplier, and will enable the supplier to consider the potential for providing heat as required under the Energy Efficiency Directive Article 14. Article 14 encour ages the identification of cost effective potential for delivering energy efficiency through cogeneration (combined heat and power), efficient district heating and cooling, and recovering industrial waste heat. Under Article 14 (5) specific developments ( new installations and substantial refurbishments) may be required to assess the cost and benefit of utilising heat generated for use in cogeneration of heat and power, reusing waste heat and/or connecting the installation to a district heating and cooling network. . Article 14 of the EED is implemented, in Scotland, through The Pollution Prevention and Control (Scotland) Amendment Regulations 2014 . Scottish Government gave SEPA Directions (The Pollution Prevention and Control(Energy Efficiency Directive)(Scotland)Directions 2014) rega rding the exercise of its powers under regulation 60 of the PPC (Scotland) Regulations 2012 and the Direction outlines that the requirement for the Cost Benefit Analysis to be undertaken will be met through the PPC application process. The EED requiremen ts apply to any industrial installation or thermal electricity generation installation with a total thermal input greater than 20MW permitted after 2014 ie may include sites that have a number of small boilers, etc, that may not meet the current thresholds for PPC.

DI.32 Some types of District Heating schemes can provide an opportunity to contribute towards achieving these climate change goals related to reducing emissions and the goals to decarbonise heat in Scotland. The Scottish Government's Local Air Quality Management Policy Guidance , a document intended to help local authorities with their local air quality

management duties, outlines in section 12 the impacts of biomass combustion on air quality. Part of this section identifies the role that decentralised biomass district heating or community heating may have on air quality:

> "12.6 The individual installation tool will allow authorities to make informed judgements on the impact of biomass combustion on air quality and the potential need to specify control measures. The combined tool will help to identify high density or industrial areas where single large district or community heating schemes may be more appropriate and have less impact on air quality than numerous individual small boilers. For example, at one large proposed housing development in Edinburgh, the study shows that use of a small number of centralised biomass boilers may contribute 0.5-1.0 µg $m^{3}$ to $PM_{10}$ and $PM_{2.5}$ concentrations, compared to 2.0-5.0 µg $m^{3}$ for individual heating systems."

National Planning Framework 3 and SPP

DI.33 The ability for heat storage, heat Networks and district heating systems to facilitate the provision of efficient energy systems within Scotland has been advocated through the NPF3 and SPP. It is acknowledged that this is an emerging technology that is likely to significantly expand in the short to medium term. NPF3 National Planning Outcomes which require consideration and incorporation of this issue into Development Plans would contribute towards are:

- **a successful sustainable place** – supporting sustainable economic growth and regeneration, and the creation of well-designed sustainable places
- **a low carbon place** – helping to reduce our carbon emissions and adapt to climate change, and supporting the transition to a low carbon place

DI.34 The context supporting the attainment of a 'Low Carbon Plan' within Scotland by reducing greenhouse gas emissions is set with section 3 of NPF. In particular, NPF (paragraph 3.5) outlines the significance of heating/cooling energy demand, indicating the growing opportunity, scale and variety of heat networks and district heating systems and, subsequently, their ability in achieving Scottish Government targets for renewable heat.

DI.35 Scottish Planning Policy 2014 outlines the key Scottish Government planning policy principles relating to delivering renewable heat and electricity. A clear position is made in paragraph 153 that "Terrestrial and marine planning facilitate development of renewable energy technologies, link generation with consumers and guide new infrastructure to appropriate locations. Efficient supply of low carbon and low cost heat and generation of heat and electricity from renewable energy sources are vital to reducing greenhouse gas emissions and can create significant opportunities for communities."

DI.36 The Scottish Government advocates approaches that will 'future-proof' development to ensure that adequate provision is made to facilitate future connection to existing and proposed heat networks / district heating systems. Local Planning Authorities must be mindful to ensure that developments do not compromise future heat network connection options, particularly for large-scale ( anchor/significant heat load or demand) developments within proximity of heat producers, energy hubs or with an ability to reasonably connect to network pipelines.

DI.37 Policy Principles in paragraph 154 state that :

- The planning system should:
- Support the transformational change to a low carbon economy, consistent with national objectives and targets, including deriving:
    - 30% of overall energy demand from renewable sources by 2020;

- 11% of non-electrical heat demand from renewable sources by 2020; and
- The equivalent of 100% of electricity demand from renewable sources by 2020.

- Support the development of a diverse range of electricity generation from renewable energy technologies – including the expansion of renewable energy generation capacity – and the development of heat networks;

DI.38 The Scottish Government provides additional advice on Planning and heat online and additional support and information on district heating projects can be found from the *Heat Network Partnership*.

SEPA's Energy Framework

DI.39 We have an important role to play in helping to deliver the renewable heat aspects of the Renewables Action Plan by actively engaging in the preparation of development plans to help identify favourable locations for thermal treatment of waste infrastructure in relation to potential end users. Maximising the energy efficiency of thermal treatment facilities through heat recovery should be a key consideration in site allocation. SEPA's Energy Framework was published in November 2018 and sets out SEPA's approach to energy. We recognise that people are overusing our planet's resources and that if everyone lived as people in Scotland do, we would require the resources of three planets to sustain this. SEPPA's Energy Framework identifies (page 2) our statutory purpose as directing us to "protect and improve the environment, in ways that as far as possible create social and economic success; this provides us with the opportunity to support Scotland in

- decarbonising its energy system;
- reducing the impacts, environmental and social, that can be associated with electricity and heat generation, transmission, and use;
- creating economic opportunities for communities and industry driving innovation and investment.

DI.40 The Energy Framework clearly outlines the way forward for SEPA in terms of energy and meeting the ambitions set out in the Climate Change (Scotland) Act 2009 (page 3):

"How we use and manage our energy resources is central to our ability to live within the resources of our planet. Scotland is demonstrating strong leadership in the transition to a sustainable low carbon economy and we recognise that energy is one of the most important factors in achieving this. We also understand the complex considerations that must be taken into account when undertaking such a transition. The Climate Change (Scotland) Act 2009 requires an 80% reduction in greenhouse gases by 2050 and this is not possible without transitioning to a decarbonised energy system."

DI.41 A key means of action will be driving change in energy systems through the energy cycle – this is a means to identify ways to reduce energy use, recover excess energy, and sustainable source any further energy needs. One of the key levers (page 5) identified to do this is using our role in planning to "influence and drive energy decisions in planning policy development and implementation" and using our regulatory role to "Regulate, influence and support improved energy efficiency and low carbon heat demands."

DI.42 In addition to this, our "Share" aim (page 7) – "communities are benefitting from investment and innovation in low carbon energy" identifies the role that we undertake in planning as means to meet success in delivering this aim:

- Provide information that empowers people to make decisions. We will use data and information to underpin policy development at national and local levels, inform regulatory interventions and report on a range o f issues including the availability and utilisation of waste heat.
- Work with planning authorities to encourage strong energy resource planning policies in all development plans and encourage new industrial facilities to be situated in the most appropriate location.

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## How we comment on this topic

DI.43 In relation to planning for Hea t Networks and District Heating systems our role is to encourage responsible authorities to explore opportunities to enable the deliv ery of low-carbon heat network opportunities within Strategic and Local Development Plans .

DI.44 Our consultation comments on Development Plans seek to ensure that future development options plan for the provision and/or subsequent connection to such networks t o help achieve, and comply with targets, to reduce carbon -based emissions within the context of Scotland's overarching planning policy framework on renewable energy .

DI.45 Our planning position, based on the documents, guidance and statements above, encourage s the use of renewable heat and district heating . We provide consultation responses on Development Plan s to this effect. We therefore recommend to planning authorities that consideration is given in Development Plans towards the implementation of heat networ ks/district heating, and require that links are made between proposals for renewable energy facilities generat ing excess (waste) heat and potential 'heat users ' nearby.

DI.46 We recommend that information is included to expect developers to take into account an d be designed to make use of the potential for district heating to use the heat identified in the heat map. (This is not limited to housing developments, as all land uses can benefit from using heat) .

DI.47 This document seeks to provide concise, consistent and robust advice to outline SEPA's position in relation to planning for the delivery of Heat Networks and District Heating opportunities within Development Plans.

SEPA's overarching objectives in providing advice to planning authorities on Heat Networks an d District Heating related matters are:

- To ensure that development plans make an effective contribution to national targets relating to heat ; and,
- To encourage use of heat maps to maximise opportunities for the use of waste heat in new development.

DI.48 Our approach to Heat Networks and District Heating is set out in the following documents. This background paper provides the context and justification for the advice contained in the guidance notes. It also explains how our requirements and recommendations can be achieved.

- SEPA Interim Position Statement on Planning, Energy and Climate Change .
- SEPA LUPS-DP-GU2c: Development P lan Guidance on Sustainable Resource Use and Energy .
- SEPA LUPS-GU6: Guidance on input to development management consultations in relatio n to Zero Waste Plan issues 2013 (and any revised versions / updated Zero Waste Development Management Guidance).
- SEPA Thermal Treatment of Waste Guidelines 2014.

## Development Plans

DP.1 The central issue we will consider when consulted on a Development Plan a nd/or the proposed development of Heat Network s and District Heating is whether the proposed Plan objectives or alternatively the proposed development will support the delivery of low-carbon energy generation objectives.

DP.2 The ability to encourage innovativ e heat networks that reduce our reliance on carbon b ased energy production and the efficient re -use of (previously discarded) waste is considered to be critical to achieve a reduction in both greenhouse gas emissions and the potential impacts associated wi th climate change.

DP.3 Initially your assessment should base consideration of this issue on:

- SEPA's Development Plan Guidance: Sustainable Resource Use and Energy (LUPS-DP-GU2-C)

DP.4 This will be backed by key policy documentation and guidance to support the assessment of such proposals including :

- National Planning Framework 3 NPF3 .
- Scottish Planning Policy (2014) – (Delivering Heat & Electricity Chapter p36 –38: para 152 – 160) .
- Zero Waste Plan Scotland (2010) – Objectives, Waste Targets and Actions 1 -22 .
- Energy in Scotland 2014
- Climate Change Delivery Plan 2009
- 2020 Routemap for Renewable Energy in Scotl and
- Expert Commission on District Heating
- National Heat Map for Scotland
- Energy Efficiency Action Plan
- Outline Heat Vision
- The Heat Policy Statement : Towards Decarbonising Heat: Maximising the Opportunities for Scotland 2015
- Energy Efficien cy Directive

SEPA:

- SEPA's Interim Position Statement on Planning, Energy and Climate Change
- SEPA's Thermal Treatment of Waste Guidelines (2014).
- SEPA's Energy Framework (2018).

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## SDP Requirement 1: Low carbon energy distribution wording

## LDP Requirement 1: Low carbon energy distribution wording

### Strategic Development Plan and Local Development Plan Requirement 1: Low carbon energy distribution wording

Include polic y wording which supports low carbon district heating networks .

**Context**

| | | | | | |
|---|---|---|---|---|---|
| National | Planning outcome(s) | A natural, resilient place | | A low carbon place | |
| | Planning principle(s) | Transformational change to a low carbon economy consistent with national objecti ves / targets. | Electricity generation from renewable energy technologies including heat networks | Guide development to appropriate locations. | Reduce emissions & energy use in new buildings & from new infrastructure. |
| SEPA | Planning objective(s) | To ensure tha t development plans make an effective contribution to national targets relating to heat. | | To encourage use of heat maps to maximise opportunities for the use of waste heat in new development. | |

**How this can be achieved**

Strategic and Local Development Plans

DP.5 Strategic and local development plans can meet this requirement by providing a positive policy framework to promote:

1. low carbon district heating networks for new development sites;
2. the co-location of new development with 'waste heat' sources through the use of national and, where available, local heat maps; and,
3. the use of other low carbon sources of renewable heat such as biomass or geothermal for new development sites.

The national heat map is available on the Scottish Government's website here: http://www.gov.scot/Topics/Business -Industry/Energy/Energy -sources/19185/Heat/HeatMap

**Justification**

DP.6 Development plans have an important role to support the develo pment of heat networks, allocating land to enable the co-location of heat supply and demand both now and for the future . Policies can also support the realisation of renewable heat capture through, where appropriate, requiring that new developments are designed to be capable of connecting to district heating networks that currently exist or are planned for the future.

DP.7 This position is supported by a policy framework underpinned by SPP (Paragraph 154 ) which indicates that the planning system should suppor t a 'transformational change' to allow for the provision of a low -carbon economy that allows for renewable energy targets to be met including:

- 30% of overall energy demand from renewable sources by 2020;
- 11% of non-electrical heat demand from renewable so urces by 2020; and

- the equivalent of 100% of electricity demand from renewable sources by 2020 .

DP.8 It also expressly supports the provision of heat networks and the growth in a diverse range of electricity generation from renewable (or low carbon) energy tech nologies. Under this policy, Development Plan are required to identify suitable locations for such developments and clarify applicable requirements / design considerations required to be assessed for the provision of such facilities. This policy then goes on to advocate any renewable energy generation facilities within new buildings and/or infrastructure that could enable the reduction of carbon emissions including energy efficiency, heat recovery, efficient energy supply/storage , electricity and heat from renewable sources. In this regard, SPP (Paragraph 156 ) also states that Strategic Development Plans support national priorities to construct and/or improve strategic energy infrastructure (generation, storage, transmission and distribution networks ) to add ress cross-boundary issues and ultimately provides a Scottish -wide approach to electricity and heat that supports a transition to a low carbon economy.

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## SDP Requirement 2: Connecting substantial / anchor developments

## LDP Requirement 2: Connecting substantial / anchor developments

### Strategic Development Plan and Local Development Plan Requirement 2: Connecting substantial / anchor developments

A requirement should be placed on all substantial developments t o ensure that their heat demand is met through a district heating network subject to a feasibility study . This should be achieved through onsite heat generation or co -location with a heat source or connection to an existing or planned district heating netw ork .

### Context

| | | | | | |
|---|---|---|---|---|---|
| National | Planning outcome(s) | A natural, resilient place | | A low carbon place | |
| | Planning principle(s) | Transformational change to a low carbon economy consistent with national objectives/targets. | Electricity generation from renewable energ y technologies including heat networks | Guide development to appropriate locations. | Reduce emissions & energy use in new buildings & from new infrastructure. |
| SEPA | Planning objective(s) | To ensure that development plans make an effective contribution to nati onal targets relating to heat. | | To encourage use of heat maps to maximise opportunities for the use of waste heat in new development. | |

### How this can be achieved

Strategic Development Plans

DP.9 Strategic development plans can meet this requirement by:

1. Ensuring t hat the heat demand of strategic development sites is met through a district heating network sourced by either onsite heat generation or through connection to existing or proposed district heating networks or other significant heat sources identified from the national, or where available, local heat map. This could be achieved through a development requirement or other clear policy commitment for delivery; and,

2. Directing LDPS to ensure that substantial* developments allocations meet their onsite heat deman d through district heating networks.

Local D evelopment Plans

DP.10 Local development plans can meet this requirement by ensuring that the heat demand of substantial* allocations is met through a district heating network sourced by either onsite heat generatio n or through connection to existing or proposed district heating networks or other significant heat sources identified from the national, or where available, local heat map. This should be achieved through a development requirement or other clear policy c ommitment for the delivery of the network.

* 'Substantial' developments may consist of new towns, urban extensions, large regeneration areas or large development sites subject to master planning. There is, however, an element of judgment that will need to be applied here and it might be that some sites offer significant potential for heat networks due their location, support from the local authority and 'buy in' from developers.

The national heat map is available on the Scottish Government's website here: http://www.gov.scot/Topics/Business - Industry/Energy/Energy - sources/19185/Heat/HeatMap

**Justification**

DP.11 In order to deliver the Scottish Government's ambitions for 1.5tw of heat demand delivered by district or communal heating and for 40,000 homes to be heated through heat networks, new developments need to be designed to incorporate district heating. Where substantial new developments are planned, the opportunity arises for providing a heat network within the site and for this to be required and designed in at the earliest stages. New developments have a role to play in not only establishing and creating these networks, but also in connecting to networks to make use of heat that is being captured.

DP.12 Paragraph 154 of SPP states that the planning system should support the transformational change to a low carbon economy consistent with national objectives and targets including deriving 11 % of non-electrical heat demand from renewable sources by 2020. Paragraph 159 of SPP goes on to advocate that Local Development Plans should support the development of heat networks in as many locations as possible even where these may be initially reliant on carbon-based fuels if there is potential to convert them to low carbon fuels in the future. Maximising the use of existing waste heat sources should always be explored and heat mapping used to co-locate developments with a high heat demand with sources of heat supply (paragraph 158).

DP.13 Paragraph 159 of SPP also states that LDPs should specifically identify appropriate locations for the development of heat networks/storage/energy centres and include heat policies that support the implementation of this approach.

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## LDP Requirement 3: Potential connection and safeguarding land

**Local Development Plan Requirement 3: Potential connection and safeguarding land**

New developments located adjacent to existing or proposed heat network s or significant heat sources should be designed to be capable of connecting to the heat supply . Land required for the heat network infrastructure should be protected .

### Context

| | | | | | |
|---|---|---|---|---|---|
| National | Planning outcome(s) | A natural, resilient place | | A low carbon plac e | |
| | Planning principle(s) | Transformational change to a low carbon economy consistent with national objectives/targets. | Electricity generation from renewable energy technologies including heat networks | Guide development to appropriate locations. | Reduce emis sions & energy use in new buildings & from new infrastructure. |
| SEPA | Planning objective(s) | To ensure that development plans make an effective contribution to national targets relating to heat. | | To encourage use of heat maps to maximise opportunities for the use of waste heat in new development. | |

### How this can be achieved

DP.14 The plan can achieve this in two ways:

1. Policy framework

Developments affected by this policy can be identified through reference to the national heat map and any local heat maps which wil l provide information on significant heat sources within the local plan area . Significant heat sources, alongside any proposed and existing heat networks should be identified on the LDP proposals map to assist implementation of the policy.

The policy f ramework should ensure that such new developments incorporate space to be safeguarded for future pipework/piperuns and energy centres. This space can be incorporated into grass/green corridors along footpaths or roads so that they can be more easily excava ted for installing heat network pipes without significant disturbance . The policy framework should also ensur e that t he any land required for the network is protected so that new infrastructure does not obstruct the development of the planned heat network .

2. Site allocation requirements

Any site allocations being brought forward through the development plan which are adjacent to significant heat sources or any proposed or existing heat networks should have a site requirement attached to them to ensure th at they are designed to be capable for connection to a heat network from that that source and that any land required for the heat network infrastructure is protected.

DP.15 The national heat map is available on the Scottish Government's website here: http://www.gov.scot/Topics/Business -Industry/Energy/Energy -sources/19185/Heat/HeatMap

### Justification

DP.16 In order to deliver t he Scottish Government's ambitions for 1.5tw of heat demand delivered by district or communal heating and for 40,000 homes to be heated through heat networks, new developments need to be designed to incorporate district heating. Where substantial new developments are planned, the opportunity ar ises for providing a heat network within the site

and for this to be required and designed in at the earliest stages. New developments have a role to play in not only establishing and creating these networks, but also in connecting to networks to make use of heat that is being captured.

DP.17 Paragraph 154 of SPP states that the planning system should support the transformational change to a low carbon economy consistent with national objectives and targets including deriving 11 % of non-electrical heat demand from renewable sources by 2020. Paragraph 159 of SPP goes on to advocate that Local Development Plans should support the development of heat networks in as many locations as possible even where these may be initially reliant on carbon-based fuels if there is potential to convert them to low carbon fuels in the future. Maximising the use of existing waste heat sources should always be explored and heat mapping used to co-locate developments with a high heat demand with sources of heat supply (paragraph 158).

DP.18 SPP (paragraph 159) states that LDPS should identify the location of existing/proposed/anticipated heat networks, support their development, and make provision to safeguard land for piperuns that would allow for subsequent connection to heat networks, pipelines and/or energy hubs.

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## SDP Recommendation 1: Heat mapping to identify networks

## LDP Recommendations 1-3: Using heat mapping, design capability and water environments.

**Strategic Development Plan Recommendation 1: Heat mapping to identify networks**

Heat maps are used to identify opportunities for schemes to promote heat networks, site-specific where possible. Cross boundary co-ordination is considered for development of heat networks and district heating schemes.

**Local Development Plan Recommendations 1-3: Using heat mapping, design capability and water environments.**

1. Where possible, LDPs should identify the allocated development sites that can be grouped together to improve the viability of developing a heat network.
2. Design/sustainable development policies require that new development located close to existing or proposed heat networks or sources of renewable heat should be designed to be capable of connecting to make use of district heating.
3. Any areas of search for water as a heat source should avoid sensitive and/or protected water environments.

### Context

| | | | | |
|---|---|---|---|---|
| National | Planning outcome(s) | A natural, resilient place | | A low carbon place |
| | Planning principle(s) | Transformational change to a low carbon economy consistent with national objectives/targets. | Electricity generation from renewable energy technologies including heat networks | Guide development to appropriate locations. |
| SEPA | Planning objective(s) | To ensure that development plans make an effective contribution to national targets relating to heat. | | To encourage use of heat maps to maximise opportunities for the use of waste heat in new development. |

### How this can be achieved

DP.19 The above mentioned SDP and LDP recommendations are quite detailed and therefore require little further explanation in relation to their implementation. It is recommended that these approaches are followed to help implement strategic heat network objectives.

### Justification

DP.20 We advise local authorities to make use of the National Heat Map when preparing their development plans. The Scottish Government published the national heat map in 2014 with data available to all local authorities showing heat demand and supply across the country. The heat map identifies both a range of existing potential heat generators, including all types of technology from existing energy generating power stations to potential sources of heat from wind farms, and heat demand. A full user guide can be found on the Scottish Government Heat Map webpage.

DP.21 Using heat maps can help local authorities to identify appropriate development sites for major heat providers in order to maximise the use of the heat generated, and can also be used to identify major allocations for new developments to make use of existing and proposed heat providers, for example new employment or industrial sites could be allocated adjacent to

existing landfill gas facilities. For major developments, masterplans could be required to identify space within the overall site which can be util ised by a heat provider, if one has not been identified already.

DP.22 A key issue to overcome in the development of district heating networks is the design of new developments. In order to make use of existing or planning district heating networks, new develop ment sites must be capable of connection. T his can include anything from installing pipe network at the time of construction of the development, if the district heating network is far advanced or will be built as part of the new development, or incorporati ng in the site layout green channels/grass/planting which can accommodate pipe network in future.

DP.23 Grouping together allocated sites can provide opportunit ies to make heat networks more viable, than if sites are treated individually. This can allow for e conomies of scale, for example more premises justifying larger and more efficient heat providers, or reducing initial outlay costs for infrastructure like pipework throughout all of the development sites. Midlothian Council has drafted policy which consid ers grouping sites in this manner, wording copied below in Good Practice section. The Scottish Government's consultation on the Energy Efficiency Directive Article 14 (5) -(8) provides so me guidance on feasible distances for creating district heating. It is expected that full guidance will be prepared regarding implementation of this requirement for Cost Benefit Analysis into the feasibility of creating Combined Heat and Power networks inc luding guidance on distances between heat suppliers and potential heat users.

DP.24 Consider also any potential limiting effects of major new road networks/bypass routes. These may cut off district heating networks or cause problems in the future for expansio n o f district heating networks. If the local authority is considering development of a new network or expansion of an existing network, it should also take into account where major infrastructure could affect the layout of the network. Where appropriate, new road development can require access points to be incorporated to allow for future pipe development, for example creating channels underneath the road/infrastructure to enable pipe development with minimal disruption to the infrastructure.

DP.25 Where a planning authority has already created their own Heat Map, identifying existing heat networks, this could be used to identify where new connections could be made to creat e heating for new developments. Fife Council heat map shows existing and potential heat networks; in Dunfermline the heat network has potential to extend to an anchor load (ho spital) which would open up additional district heating opportunities in residential areas between the existing network and the anchor load. Major development sites are also adjacent to the existing network, which allows the potential to provide district h eating to new development.

### Water as Heat Source

DP.26 There is an opportunity to util ise water as a source of heat. This can include using underground water (eg minewater, geothermal) as a heat source, extracting water from below ground, as well as using water f rom rivers or coastal waters.

DP.27 If a development plan has identified that river water is a potential source of heat within their area, we recommend that care is taken to avoid sensitive areas or protected water bodies. As water is extracted from the river a nd cooled down (normally by approximately 2°c), the discharge of the water into the river may have an effect on the ecological systems within or dependent on the water body. Development plans should identify if there are any protected water environments t hat should be protected from any potential impacts arising from using water as a heat source.

DP.28 The following policy framework supports the Development Plan requirement identified above:

DP.29 SPP (para graph 40 ) requires that spatial strategies within Development Plans promote a sustainable pattern of development set against principles to enhance the potential of existing resources by ensuring that appropriate infrastructure investment (including heat networks ) is paired with development growth.

DP.30 Building on this position, SPP (Paragraph 154) indicates that the planning system should support a 'transformational change' to allow for the provision of a low-carbon economy that allows for renewable energy targets to be met. These include:

- 30% of overall energy demand from renewable sources by 2020;
- 11% of non-electrical heat demand from renewable sources by 2020; and
- the equivalent of 100% of electricity demand from renewable sources by 2020.

DP.31 It also expressly supports the provision of heat networks and growth in a diverse range of electricity generation from renewable (or low carbon) energy technologies. Under this policy, Development Plan are required to identify suitable locations for such developments and clarify applicable requirements / design considerations required to be assessed for the provision of such facilities. This policy then goes on to advocate any renewable energy generation facilities within new buildings and/or infrastructure that could enable a reduction in carbon emissions including energy efficiency, heat recovery, efficient energy supply/storage and electricity and heat from renewable sources.

DP.32 In the same vein, SPP (Paragraph 158) specifically requires the provision of localised heat mapping to identify the potential for co-location of heat supply sources (with excess heat generation i.e. CHP, biogass, geothermal etc) and high demand energy users. Building on this, it is recommended that heat recovery is utilised to harness residual heat recovery systems from these sources and that heat storage schemes are implemented enable the re-use of excess heat within fuel-poor areas, areas 'off the gas grid' or anchor development such as large mixed use schemes, hospitals, schools and leisure centres etc.

DP.33 Critically, SEPA Thermal Treatment of Waste Guidelines is a material consideration in the determination of planning applications for thermal treatment facilities. This document provides clarity on SEPA's position to such facilities and outlines various requirements to be met within the planning application and any subsequent regulatory requirements.

DP.34 Section 2.4 (page 4) provides a strong indication of our position indicating that: "it is important for new developments to maximise the opportunities to use existing and proposed heat and energy sources. We will continue to encourage planning authorities to consider this an integral element in their assessment of land allocations for their development plans. We will expect that where heat networks and heat generators do exist that any new development proposed in the vicinity will be connected to these sources."

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## Development Management

**Development management recommendation 1: Designing new developments to enable connection to low carbon energy distribution heat networks and district heating**

**Development Management Recommendation 1:**

All significant/anchor developments or substantial developments* (allocated sites and non-allocated sites) should strongly consider the potential to meet their heat demand through district heating networks, subject to the outcomes of a feasibility statement. Where the relevant Local Development Plan has a policy position on district heating, we will object if the proposed development is inconsistent with this.

All other developments should aim to meet their heat demand through district heating networks, subject to a feasibility statement.

*'Substantial' developments may consist of new towns, urban extensions, large regeneration areas, or large development sites subject to master plannin g, or large mixed use developments. There is, however, an element of judgement that will need to be applied here and it might be that some sites offer significant potential for heat networks due to their location, support from the local authority and 'buy in' from developers. Where there is clear opportunity or context of district heating being developed adjacent to or near the proposed development, we will strongly support the assessment of district heating feasibility as part of the development.

### Context

| | | | | | |
|---|---|---|---|---|---|
| National | Planning outcome(s) | A natural, resilient place | | A low carbon place | |
| | Planning principle(s) | Transformational change to a low carbon economy consistent with national objectives/targets. | Electricity generation from renewable energy technologi es including heat networks | Guide development to appropriate locations. | Reduce emissions & energy use in new buildings & from new infrastructure. |
| SEPA | Planning objective(s) | To ensure that development plans make an effective contribution to national targets relating to heat. | | To encourage use of heat maps to maximise opportunities for the use of waste heat in new development. | |

### Information requirements

DM.1 Applications should consider how the potential for district heating within the site can be supported by an En ergy Statement or feasibility statement demonstrating how the proposal has considered district heating. The findings of the Statement should be informed by national and, where available, local heat maps, and should be reflected in a section of the Environ mental Statement and used to influence the site layout and

### How this can be achieved

DM.2 This recommendation could be achieved through :

- onsite heat generation,
- co-location with an existing or proposed heat source (including Energy from Waste facility or other facility which produces heat/power including excess or waste heat), or ;
- an existing or proposed heat network off site.

DM.3 Where the relevant Local Development Plan has a policy position on district heating, we **will object** if the proposed development is inconsistent with this. Heat and energy should be considered within a chapter of the Environmental Statement, and that an Energy Statement will be submitted (see para 4). We recommend to the Local Planning Authority that a condition be placed on applications for Planning Permission in Principle (PPP) for heat and energy to be considered within the Environmental Statement and for an Energy Statement to be submitted as part of any Application for Matters Subject to Conditions.

Energy Statements

DM.4 The development must enable connection to a heat network or heat producer, unless it can be demonstrated to the Planning Authority that this would not be feasible. An Energy Statement informed by a Feasibility Study should be provided for assessment by the planning authority demonstrating how the proposal will meet the requirements for providing district heating onsite. This should be prepared in line with the Scottish Government's online planning advice Planning and Heat and assess the technical feasibility and financial viability of heat network/district heating for this site, identifying any available existing or proposed sources of heat (within or outwith the site) and other factors such as where land will be safeguarded for future district heating infrastructure. We will not audit Energy Statements or Feasibility Studies (the responsibility for this lies with the planning authority) but expect them to be undertaken to demonstrate full consideration of how the proposed development can contribute towards Scotland's climate change targets in line with our Public Body Duties under the Climate Change (Scotland) Act 2009 to act "in the way best calculated to help deliver the emissions reduction targets and the statutory Adaptation Programme" and "in a way we consider is most sustainable."

Heat maps

DM.5 Applicants should provide evidence of how the national heat map and/or relevant local authority heat maps (where available) have been used to maximise potential connections / co-location between heat providers and high heat demand users when considering site selection for developments involving heat/power. Consideration of heat mapping should maximise opportunities for the co-location of 'high heat demand' developments with heat supply sources, like energy from waste facilities, to maximise the provision of energy efficient and low carbon heat networks and district heating installations.

DM.6 Heat Maps clearly show where there are areas of heat use and heat generation, and can therefore be used as locational criteria for new heat providers, or for new development sites which could utilise the heat being generated. Heat maps are intended for a number of uses, including in planning new developments, and identifying heat network feasibility. They also identify existing heat providers, particularly those that produce heat as "excess" or "waste" who can connect to heat networks, utilising heat that was previously "wasted".

Environmental Statements

DM.7 We consider that the provision of heat and energy for the proposed development has an environmental impact, and this should be assessed by the developer. The environm ental impacts of a heat network and district heating sho uld be fully considered including the potential options for heat sources either within or outwith the site. These should be presented in a section of the Environmental Statement dedicated to heat and energy. The Town and Country Planning (Environmental Impact Assessment)(Scotland) Regulations 2011 ("the EIA regulations") Schedule 4 sets out the information to be included in Environmental Statements. In paragraph 3 of Part 1 it outlines the aspects of the environment which might be significantly affected by proposed development, this includes **air, climate and material assets** which we consider are most relevant to, and m ost likely to be significantly affected by, distr ict heating and heat networks. The EIA Regulations outlines in paragraph 4 of Part 1 that developments are required to provide "A description of the likely significant effects of the development on the envir onment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long -term, permanent and temporary, positive and negative effects of the development..." This refers to both negative and positive likely significant eff ects, resulting from use of natural resources and emission of pollutants.

DM.8 Creating centralised heating, and potentially using low or zero carbon heat sources, will support the Scottish Government's aims to prevent and reduce significant adverse effects on the environment resulting from carbon emissions as part of the development, and also identify how the proposed development will support the Government's targets to decarbonise the heat sector in Scotland by 2030. It is therefore important that such signi ficant adverse effects are covered in a section of the supporting Environmental Statement.

Development design and layout

DM.9 A Design and Access statement which demonstrates how the findings of the Energy Statement have been incorporated into the design and l ayout of the proposed development should be provided . Where n ew developments are located adjacent to existing heat networks or district heating, the connection should be an integral part of the design to enable connection to take place at time of construct ion, unless it would not be viable or feasible to do so (the burden of proo f is placed on the developer). Ensuring users can be connected to district heating networks is an essential part of delivering the Government's targets towards renewable and low-carbon heat. There are also significant opportunities within Scotland to make use of heat that is currently waste or excess, in particular from industrial facilities.

DM.10 Where connections are intended to be made to proposed heat sources in the future , the design of new developments should incorporate space to 'safeguard' the future provision of pipework, energy hubs or other associated heat infrastructure to ensure that the subsequent connection to a proposed district heating network can be undertaken (if not alr eady proposed within the original design) without causing disturbance to buildings or infrastructure. This applies to all new significant/anchor development (i .e. developments with a significant heat load or demand). Consideration should be given to potent ial barriers or restrictions on making district heating connections, for example when planning new key infrastructure such as bypass roads which may interrupt the route of district heating pipeworks.

Other low or zero carbon technologies

DM.11 It is r ecognise d that other low or zero carbon technology is available, and may be incorporated into the design of the proposed development. Such technology can also contribute towards tackling climate change through the reduction of carbon emissions.

Scottish Pollution R elease Inventory

DM.12 SEPA is currently compiling information submitted voluntarily to Scottish Pollution Release Inventory (SPRI) by industry which will show where waste heat generat ed by industrial processes is located, and how much and what temperature this heat is. Initial information should be available from late 2016 , and this can be used to identify useable waste heat that could be utilised for district heating (subject to discu ssion and negotiation between the industrial facility and the potential heat user).

Examples of Energy Statements

DM.13 Resource Efficient Scotland have an online "first step" Renewables Calculator Tool that can be used to assess suitability of onsite electricity and heat generation which can then go on to be used as the basis of an Energy Statement that can be submitted with a planning application. The Heat Network Partnership also has a District Heating Strategy factsheet that can be used to understand how to identify opportunities for heat networks and early stages of designing for heat networks: http://www.districtheatingscotland.com/wp -content/uploads/2017/10/Module -5-Infrastructure.pdf

DM.14 Example approaches of English Local Authorities on District Heating, Feasibility Assessments and Energy Statements are provided below. Whil st these have been prepared under a different planning policy and regulatory regime they provide useful examples of the scope and purpose of such Statements and Studies.

*Stockport*

- http://www.stockport.gov.uk/2013/2994/developmentcontrol/planningpolicy/LDF/ldfcor estrategydpd (see page 50 - Development Management Policy SD -4 District Heating (Network Development Areas))
- http://www.stockport.gov.uk/2013/2994/developmentcontrol/planningpolicy/dhguidanc e (Guidance for District Heating Feasibility)

*Greater London Authority Guidance on preparing energy assessments*

- 33 page guidance setting out purpose of energy assessments, structure and content, including 4 appendices on calculating regulated $CO_2$ emissions, required approach for whole life costing, guidance on different types of renewable energy, offsettin g (https://www.london.gov.uk/file/22340/download?token=En8l3jJy )

*Islington*

- Policy DM7.3 in the local development plan (published 2013) - http://www.islington.gov.uk/publicrecords/library/Planning -and-building -control/Publi city/Public -consultation/2013 -2014/(2013 -06-21) -Development -Management -Policies -adoption -draft -(June -2013).pdf
- And Annex's 6-8 (55 -67) and section 2 (page 7 onward) of the Supplementary Planning Guidance - http://www.islington.gov.uk/publicrecords/library/Planning -and-building -control/Publicity/Public -consultation/2012 -201 3/(2012 -10-22) -Environmental -Design -SPD-FINAL.pdf

**Justification**

DM.15 Creating links between heat producers and heat users is essential to create heat networks. In order to deliver the Scottish Government's ambitions for 1.5tw of heat demand delivered by district or communal heating and for 40,000 homes to be heated through heat networks, new developments need to be designed to incorporate district heating. Where substantial new developments are planned, the opportunity arises for providing a heat network within the site and for this to be required and designed in at the earliest stages. New developments have a role to play in not only establishing and creating these networks, but also in connecting to networks to make use of heat that is being captured.

DM.16 Paragraph 154 of SPP states that the planning system should support the transformational change to a low carbon economy consistent with national objectives and targets including deriving 11 % of non-electrical heat demand from renewable sources by 2020.

DM.17 Paragraph 154 of SPP states that the planning system should support the development of heat networks. SPP (Paragraph 159) Also states that LDPs should identify existing heat networks, heat storage and energy centres exist, where they would be acceptable, and ensure that LDP energy policies support the implementation of these networks. Further support for the provision of network infrastructure is supported SPP (paragraph 159) which states that LDPs energy policies support the safeguarding land for piperuns, energy centres within developments that could allow for subsequent provision of such networks.

DM.18 Paragraph 159 of SPP recommends that LDP energy policies include a requirement for new development to include associated infrastructure for connection to ensure that opportunities to use the heat from existing and/or proposed networks is achieved. Our position in this requirement is therefore consistent with our development plan position and complies with the Scottish Government's position presented in SPP.

DM.19 Scottish Government targets within NPF3 (page 83/84) seek to ensure that:

- 11% of non-electrical heat demand will be derived from renewables by 2020; and
- significant progress to decarbonise the heat sector in Scotland by 2030.

DM.20 NPF3 (para3.17) notes the increased opportunities for the distribution of district heating systems and aims to put better practises in place that can take advantage of heat sources and unused renewable heat using, in the first instance, using the National Heat Map. In particular, opportunities to recover renewable and low cost heat energy are identified within cities with various opportunities to harness excess heat from multiple heat sources. In this regard NPF (para 3.17) recommend 'future-proofing' new development to ensure subsequent connections to existing or planned heat networks as soon as they become operational/viable.

DM.21 Additional opportunities to deliver heat networks within Scotland are identified within NPF 3 (Para 3.18) which identifies Carbon Capture Storage (CCS) as a major opportunity to enable reduction in carbon emissions associated with energy generation and their implementation should provide additional opportunities for reuse of residual and/or unused heat for nearby heat networks.

DM.22 The Scottish Government's "Public Bodies Climate Change Duties: Putting them Into Practice" refers in page 6 of four transformational outcomes that must be delivered to reduce emissions by 80% by 2050, and these include "largely decarbonised heating for buildings by 2050,

through reduced demand, energy efficiency, and renewable and low-carbon heating". SEPA's Climate Change Vision set out in "Our Climate Challenge" states on page 5 that "SEPA will do everything in its power to help Scotland address climate change to ensure Scotland's environment, economy and communities flourish."

DM.23 SEPA's position on this issue is also identified within the Thermal Treatment of Waste Guidelines 2014, section 2.4 (final paragraph) which states that it is important for new developments to maximise the opportunities to use existing and proposed heat and energy sources and that we will continue to encourage planning authorities to consider this an integral element in their assessment of land allocations for their development plans. Furthermore, it states that we would expect new development to connect to heat networks and heat generators where they are available within the vicinity of proposed development.

DM.24 SPP (para 40 bullet point 1) initially sets this agenda, seeking to optimise the use of existing resource capacities by supporting opportunities to co-locate infrastructure investment (i.e. heat networks) with compatible high-demand uses (i.e. residential and commercial).

DM.25 SPP (para 183) indicates that energy from waste facilities should enable links to potential users of renewable heat and energy, particularly proximate to areas with constant long-term heat demand.

DM.26 Additionally, SPP (para 158) requires that LDPs use heat mapping to identify the potential for co-locating developments with a high heat demand with sources of heat supply including high density proposals, communities off the gas grid, fuel poor areas and 'anchor' developments or developments with significant heat load/demand such as hospitals, schools, leisure centres and heat intensive industry.

**Sources of useful information and guidance**

- National / Local Heat Map(s)
    - To consider the appropriate distance between heat supply and heat users and to aid assessment of need/supply distances.
    - A general approach could be to use the Exemption Threshold distances set out chapter 5 of the Scottish Governments consultation on the transposition of the EU Energy Efficiency Directive Article 14, section five. These thresholds have been developed by DECC and the Scottish Government as maximum appropriate distances between heat source and heat load, minimum amount of heat that can be recovered and considered worth supplying from that installation.
- Existing heat maps are available online for:
    - Perth & Kinross Council – Heat Map
    - Fife Council – Heat Map
- Information is available for heat maps for:
    - Highland Council – Heat Mapping project
- Scotland's Heat Map and background information is available:
    - National Heat Map – information available on this page at present
    - Scotland's National Heat Map – direct link to the National Heat Map
- A UK wide map - has been prepared by the Department of Energy and Climate Change

- District Heating Scotland webpage
- Scottish Government has a planning guidance and advice relating to Renewable Energy which includes documents of use to heat networks and district heating.
- Climate Change (Scotland) Act 2009
- Scottish Government's Renewables Action Plan
- Renewable Heat Action Plan
- Energy Efficiency Action Plan
- Scottish Enterprise Energy Masterplanning guidance http://www.scottish-enterprise.com/knowledge-hub/articles/publication/guide-to-energy-masterplanning
- Heat Network Partnership which is a hub of information promoting and supporting District Heating schemes in Scotland. http://www.districtheatingscotland.com/support/ Heat Network Partnership support to Local Authorities
- Scottish Futures Trust
- http://renewables.resourceefficientscotland.com/ Resource Efficient Scotland online Renewables Calculator

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## DM Recommendation 2: Developments adjacent to heat networks or heat sources

| **Development management recommendation 2: Development Adjacent to heat networks or heat sources** |
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| All new developments, including linear infrastructure developments that are located adjacent to an existing or pr oposed heat network or heat source should be designed to enable connection to such networks our sources unless suitable justification can be provided to demonstrate that this would not be technically feasible. For sites that include district heating netwo rks as part of their infrastructure and design, the land required for heat network infrastructure within the site should be protected. |

### Context

| | | | | | |
|---|---|---|---|---|---|
| National | Planning outcome(s) | A natural, resilient place | | A low carbon place | |
| | Planning principle(s) | Transfo rmational change to a low carbon economy consistent with national objectives/targets. | Electricity generation from renewable energy technologies including heat networks | Guide development to appropriate locations. | Reduce emissions & energy use in new buildin gs & from new infrastructure. |
| SEPA | Planning objective(s) | To ensure that development plans make an effective contribution to national targets relating to heat. | | To encourage use of heat maps to maximise opportunities for the use of waste heat in new develop ment. | |

### Information requirements

Applications should consider how the potential for district heating within the site can be supported by an Energy Statement, demonstrating how the proposal has considered district heating. The findings of the Statement shou ld be informed by national and, where available, local heat maps, and should be reflected, where appropriate, in a section of the Environmental Statement and used to influence the site layout and design.

### How this can be achieved

DM.27 Proposed developments outwi th Recommendation 1 that are adjacent to proposed or existing heat networks or sources should fully explore how they can utilise the heat and ensure that they are designed to enable connection either upon completion or in the future . We will expect that th e application is supported by an Energy Statement and for developments subject to EIA Regulations w e will expect that heat and energy will be considered within a chapter of the Environmental Statement to reflect the findings of the Energy Statement (see pa ragraph 29). We require a condition to be placed on applications for Planning Permission in Principle (PPP) for heat and energy to be considered within the Environmental Statement and for an Energy Statement to be submitted as part of any Application for M atters Subject to Conditions.

DM.28 Linear infrastruct ure projects, such as new roads , bypasses an d duall ing of main roads, provide an opportunity to incorporate district heating pipework as part of the works

undertaken to create the infrastructure. This can su pport the delivery of new district heating pipework in particular where there are heat users and heat su ppliers that can be connected. It will also ensure that the linear infrastructure does not sterilise the opportunity to create district heating networks by acting as a barrier to construction of the district heating pipes. We recommend that linear infrastructure projects are considered against allocations in Local Development Plans to determine if there is opportunity to lay new heat network pipes to conn ect existing heat networks to new users, or if there is opportunity to include conduits to future - proof the opportunity for heat network connections to take place without requiring major redevelopment of the linear infrastructure.

Energy Statements

DM.29 An Ene rgy Statement informed by a Feasibility Study should be provided for assessment by the planning authority demonstrating how the proposal will meet the requirements for providing district heating onsite. This should be prepared in line with the Scottish Government's online planning advice Planning and Heat and assess the technical feasibility and financial viability of heat network/district heating for this site, identifying any available exist ing or proposed sources of heat (within or outwith the site) and other factors such as where land will be safeguarded for future district heating infrastructure. We will not audit Energy Statements or Feasibility Studies (the responsibility for this lies w ith the planning authority) but expect them to be undertaken to demonstrate full consideration of how the proposed development can contribute towards Scotland's climate change targets in line with our Public Body Duties under the Climate Change (Scotland) Act 2009.

Heat maps

DM.30 Applicants should provide evidence of how the national heat map and/or relevant local authority heat maps (where available) h ave been used to maximise potential connections / co - location between heat providers and high heat demand users when considering site selection for developments involving heat/power. Consideration of heat mapping should maximise opportunities for the co - location of 'high heat demand' developments with heat supply sources, like energy from waste facilities, to maximise the provision of energy efficient and low carbon heat networks and district heating installations.

DM.31 Heat Maps clearly show where there are ar eas of heat use and heat generation, and can therefore be used as locational criteria for new heat providers, or for new development sites which could ut ilise the heat being generated. Heat maps are intended for a number of uses, including in planning new developments, and identif ying heat network feasibility. They also identify existing heat providers, particularly those that produce heat as "excess" or "waste" who can connect to heat networks, utilising heat that was previously "wasted".

Environmental Sta tements

DM.32 The environmental impacts of a heat network and district heating should be fully considered including the potential options for heat sources either within or outwith the site. Where the proposed development is subject to EIA Regulations the potenti al impacts should be presented in a section of the Environmental Statement dedicated to heat and energy. The EIA Regulations outlines in paragraph 4 of Part 1 that developments are required to provide "A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and

long-term, permanent and temporary, positive and negative effects of the development". This refers to both negative and positive likely significant effects, resulting from use of natural resources and emission of pollutants.

DM.33 Creating centralised heating, and potentially using low or zero carbon heat sources, will support the Scottish Government's aims to prevent and reduce significant adverse effects on the environment resulting from carbon emissions as part of the development, and also identify how the proposed development will support the Government's targets to decarbonise the heat sector in Scotland by 2030. It is therefore important that such significant adverse effects are covered in a section of the supporting Environmental Statement.

Development design and layout

DM.34 A Design and Access statement which demonstrates how the findings of the Energy Statement have been incorporated into the design and layout of the proposed development should be provided. Where new developments are located adjacent to existing heat networks or district heating, the connection should be an integral part of the design to enable connection to take place at time of construction, unless it would not be viable or feasible to do so (the burden of proof is placed on the developer). Ensuring users can be connected to district heating networks is an essential part of delivering the Government's targets towards renewable and low-carbon heat. There are also significant opportunities within Scotland to make use of heat that is currently waste or excess, in particular from industrial facilities.

DM.35 Where connections are intended to be made to proposed heat sources in the future, the design of new developments should incorporate space to 'safeguard' the future provision of pipework, energy hubs or other associated heat infrastructure to ensure that the subsequent connection to a proposed district heating network can be undertaken (if not already proposed within the original design) without causing disturbance to buildings or infrastructure. This applies to all new significant/anchor development (i.e. developments with a significant heat load or demand). Consideration should be given to potential barriers or restrictions on making district heating connections, for example when planning new key infrastructure such as bypass roads which may interrupt the route of district heating pipeworks.

Other low or zero carbon technologies

DM.36 It is recognised that other low or zero carbon technology is available, and may be incorporated into the design of the proposed development. Such technology can also contribute towards tackling climate change through the reduction of carbon emissions.

Scottish Pollution Release Inventory

DM.37 SEPA is currently compiling information submitted voluntarily to Scottish Pollution Release Inventory (SPRI) by industry which will show where waste heat generated by industrial processes is located, and how much and what temperature this heat is. Initial information should be available from late 2016, and this can be used to identify useable waste heat that could be utilised for district heating (subject to discussion and negotiation between the industrial facility and the potential heat user).

Examples of Energy Statements

DM.38 Resource Efficient Scotland have an online "first step" Renewables Calculator Tool that can be used to assess suitability of onsite electricity and heat generation which can then go on to be used as the basis of an Energy Statement that can be submitted with a planning application. Example approaches of English Local Authorities on District Heating, Feasibility Assessments and Energy Statements are provided below. Whilst these have been prepared under a different planning policy and regulatory regime they provide useful examples of the scope and purpose of such Statements and Studies.

*Stockport*

- http://www.stockport.gov.uk/2013/2994/developmentcontrol/planningpolicy/LDF/ldfcorestrategydpd (see page 50 - Development Management Policy SD-4 District Heating (Network Development Areas))
- http://www.stockport.gov.uk/2013/2994/developmentcontrol/planningpolicy/dhguidance (Guidance for District Heating Feasibility)

*Greater London Authority Guidance on preparing energy assessments*

- 33 page guidance setting out purpose of energy assessments, structure and content, including 4 appendices on calculating regulated $CO_2$ emissions, required approach for whole life costing, guidance on different types of renewable energy, offsetting (https://www.london.gov.uk/file/22340/download?token=En8l3jJy)

*Islington*

- Policy DM7.3 in the local development plan (published 2013) - http://www.islington.gov.uk/publicrecords/library/Planning-and-building-control/Publicity/Public-consultation/2013-2014/(2013-06-21)-Development-Management-Policies-adoption-draft-(June-2013).pdf
- And Annex's 6-8 (55-67) and section 2 (page 7 onward) of the Supplementary Planning Guidance - http://www.islington.gov.uk/publicrecords/library/Planning-and-building-control/Publicity/Public-consultation/2012-2013/(2012-10-22)-Environmental-Design-SPD-FINAL.pdf

**Justification**

DM.39 In order to deliver the Scottish Government's ambitions for 1.5tw of heat demand delivered by district or communal heating and for 40,000 homes to be heated through heat networks, new developments need to be designed to incorporate district heating. Where substantial new developments are planned, the opportunity arises for providing a heat network within the site and for this to be required and designed in at the earliest stages. New developments have a role to play in not only establishing and creating these networks, but also in connecting to networks to make use of heat that is being captured.

DM.40 Paragraph 154 of SPP states that the planning system should support the transformational change to a low carbon economy consistent with national objectives and targets including deriving 11 % of non-electrical heat demand from renewable sources by 2020.

DM.41 SPP (para 169) introduces consideration of this issue requiring that planning applications for energy infrastructure development always take account of spatial frameworks, including heat maps and area characteristics.

DM.42 SPP (para 158) requires the provision of localised heat mapping to identify the potential for co-location of heat supply sources with excess heat generation to high density proposals, communities off the gas grid, fuel poor areas and 'anchor' developments or developments with significant heat load/demand such as hospitals, schools, leisure centres and heat intensive industry.

DM.43 The principle to encourage co-location of renewable heat sources with high demand users is expressly identified within SPP (para 183) which indicates that energy from waste facilities should allow for links to be made to potential users of renewable heat and energy, particularly where areas are close to users with constant long-term heat demand.

DM.44 SPP (para 159) requires that LDP policies consider existing/proposed district heating systems to ensure that new development proposals provide appropriate infrastructure allowing for subsequent connection to existing / proposed heat networks and utilise heat from such networks.

DM.45 SEPA's position is very strong with regards to development adjacent to existing or proposed heat sources or heat networks. This arises from our role in regulating industrial processes and permitted facilities and the requirements for heat to be captured under SEPA's Thermal Treatment of Waste guidelines ("TTWG") and the Energy Efficiency Directive Article 14 section 5-8. Section 2.4 of the TTWG clearly states our position with regard to Energy from Waste as:

"SEPA recognises that Scotland does not yet have mature or extensive heat-use networks. However, immediate opportunities do exist for contributing to the development of such a network by co-locating thermal treatment plants with existing energy and heat intensive industries, or near developments such as leisure complexes and shopping centres. Another alternative is to develop facilities in areas with the potential for the co-development of heat-using industries

Applicants should therefore consider the location of their development very carefully to maximise the opportunities for effective energy use…

SEPA considers that it is important for new developments to maximise the opportunities to use existing and proposed heat and energy sources…We will expect that where heat networks and heat generators do exist that any new development proposed in the vicinity will be connected to these sources."

DM.46 The EU Energy Efficiency Directive (EED) updates the EU's legal framework for energy efficiency, pursuing the target of saving 20% of the EU's primary energy consumption by 2020, and of making further energy efficiency improvements after 2020. In order to maximise the potential for district heating networks to be established, new developments should consider the potential for utilising heat from existing or proposed heat sources or heat networks including waste heat from industrial processes. This "co-location" will provide a benefit for both heat user and supplier, and will enable the supplier to consider the potential for providing heat as required under the Energy Efficiency Directive Article 14.

DM.47 Article 14 of this directive encourages the identification of cost effective potential for delivering energy efficiency through cogeneration (combined heat and power), efficient district heating and cooling, and recovering industrial waste heat. Under Article 14 (5) specific developments are required to assess the cost and benefit of utilising heat generated for use in cogeneration of heat and power, includes new district heating and cooling networks where there is available

waste heat, or available heat demand. The Pollution Prevention and Control (Scotland) Regulations (as amended 2014) provide clear instruction regarding when the EED energy efficiency measures apply.

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