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# Consultation on Heat and Energy Efficiency Strategies, and Regulation of District Heating: Analysis of Responses: November 2017



BUSINESS AND ENERGY



# Analysis of responses to the Consultation on Heat & Energy Efficiency Strategies, and Regulation of District Heating

Why Research, May 2017

## **Acknowledgments**

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# Executive Summary

## Introduction

1. The Scottish Government consultation paper on Local Heat & Energy Efficiency Strategies (LHEES) and Regulation of District Heating was a policy scoping consultation, designed to gather views to help inform further development of the proposals prior to more detailed consultations.

2. The consultation asked for views on the planning at local level of heat decarbonisation and energy efficiency programmes within Scotland's Energy Efficiency Programme (SEEP) and ran from 24 January until 18 April 2017.

## Respondent Profile

3. 87 organisations and individuals, from the following respondent sub groups, submitted a response to the consultation:

<b>Respondent Groups</b>	
	<b>Number</b>
Business & Industry	24
Network, Professional or Trade body	18
Local government	17
Third sector & Community	9
Public sector	7
Academic	4
Other	1
<b>Total organisations</b>	<b>80</b>
Individuals	7
<b>Total respondents</b>	<b>87</b>

## **Main Findings: Local Heat & Energy Efficiency Strategies to Support Delivery of Energy Efficiency and Heat Objectives of SEEP**

4. Most of those who replied agreed that local authorities should have a **duty to produce and implement a Local Heat & Energy Efficiency Strategy (LHEES)**. Key themes included that this will be vital in taking the strategy forward, or to raise the profile of heat and energy efficiency in each area.
5. The themes of reducing energy use and heat waste, promoting decarbonisation of heat, and meeting targets on climate change, fuel poverty, energy security and affordable warmth were ones that respondents from all of the different sub groups returned to in this and in subsequent sections.
6. A key concern, and again this was seen across respondent types and in response to many of the questions, was that of the availability of funding, support or other resources to enable local authorities, and others involved, to produce or implement the LHEES.
7. In relation to separate strategies for each local authority, or joint strategies across areas, respondents felt this should be dictated by local circumstances. There were also comments, including some from those involved in the district heating industry, on the need to zone based on locally-available heat sources or areas of demand, rather than strict geographical boundaries. This need to allow flexibility for local requirements and conditions was another theme that appeared at a number of different questions and from across respondent groups.

### **Scope and Content**

8. Most of the respondents who commented on the proposed scope and content for LHEES agreed with proposals; this included agreement that LHEES should set targets for energy efficiency and decarbonisation and include a costed, phased delivery programme that will meet local targets.

## **Main Findings: District Heating Regulation**

9. The main sources of data available (or that could be available) to local authorities that would be useful or key to preparing and implementing such plans beyond the Scotland Heat Map and the Energy Performance Certificate (EPC) Register, were: **Business, Energy and Industrial Strategy (BEIS) data on electricity and gas consumption; data from network operators or suppliers (perhaps making use of SMART meter data); and the Heat Map database.** There were comments on the need for more robust data in order to ensure that the Heat Map is accurate and on the need for 'real time' data.
10. The **broad principles for regulation outlined in the consultation were generally accepted** and while there were various suggestions for priority areas, a key theme again, at this and other questions in this section, was the importance of tackling fuel poverty.

11. **The main themes, from the question on key principles or approaches to inform how the regulatory approach manages risk, included fuel poverty as well as affordability.** Consumer protection was another key principle identified by respondents and this included ensuring security of supply; another recurring theme across respondent groups and at many questions.

12. For industry, reducing risk was seen as key to reducing capital and operational costs; thus reducing costs for consumers.

13. The regulation of technical standards, perhaps in a way similar to that seen for other utilities, was also a theme that featured across responses.

### **Planning, Zoning and Concessions for District Heating**

14. In relation to local authorities having the power through LHEES to zone areas for district heating, this was supported by many respondents, although fewer than half of all respondents gave a definitive answer to this question. **The main theme to emerge was that zoning areas for district heating could be aligned to local and area plans for development.** While this comment was seen in only a small number of responses at this question, it also features in responses to other questions.

15. There was little consensus as to how district heating zones should be identified, with respondents giving a variety of suggestions including, once again, the need to zone based on locally-available heat sources or areas of demand, rather than strict geographical boundaries.

16. In relation to concessions, **there was general support for establishing exclusive concessions**, with respondents, particularly local government respondents, identifying the reduction of risk to local authorities in terms of delivery and maintenance of district heating networks as an advantage of this proposal.

17. Other potential advantages mentioned by respondents were encouraging supply investment, providing certainty of supply and providing opportunities to develop networks and thus allow developers to take a long term view. The need to reduce risk for developers and to find ways to promote confidence and attract investment in district heating infrastructure were also recurring themes.

18. While many of those who addressed the question of whether local authorities should be responsible for issuing and enforcing concessions in their areas agreed, several of the small number that disagreed came from the local government group.

19. A key reason for those who did agree was the local knowledge that exists within local authorities along with the fact that they are responsible for other strategies, programmes and plans such as Local Development Plans.

20. However, as with other areas where proposals suggest responsibility should be placed with local authorities, resource implications, in terms of funds, time and expertise, were seen as a barrier.

21. **Looking at the design of concessions, concession length was a key theme.** This was also a theme that was seen at many questions with respondents commenting on the fact that concessions need to be long term to allow for the recovery of capital costs.
22. The size of the concession was also cited as an important consideration to ensure that any concession is economically attractive and financially viable to developers and investors.
23. **Location is another theme that occurred across respondent groups and at several questions; specifically that consideration needs to be given to whether an area is suitable.** Rural areas with low population densities were often cited as not suitable, but any instances where there is a great distance from anchor loads were also not seen as suitable, as were areas where there is an existing gas infrastructure and where gas might still be a cheaper alternative to district heating.
24. Also in relation to anchor loads, respondents noted the importance of ensuring concessions include key anchor users, giving examples like local authority or public sector owned buildings, large industrial centres, social housing or areas where there is already demand.
25. The question of implications of zoning and concessions for district heating networks raised more questions from respondents than it did answers and, again, there were concerns over consumer protection and the need for regulation, monitoring and review.
26. Most of those who addressed the question of whether the broad rights and responsibilities of concession holders set out in this document are appropriate felt that they are. However, respondents asked for more detail in relation to a number of points such as size, ownership, management and billing, among others.
27. **The need for consistency across Scotland and for a central body to check on concession design and progress and to provide regulation and guidance** was raised by respondents.
28. **Respondents did want to see some flexibility to allow LHEES to be responsive to changing conditions while ensuring security and stability in long term district heating development models.** For example, the LHEES will need to allow for emerging and low carbon technologies to be incorporated when they become cost effective.
29. The long term nature of LHEES was again emphasised and, in relation to long term ownership of heat network assets, post-concession, respondents wanted to see this transfer or revert to the local authority or a local authority holding company such as an energy service company (ESCo).

### **Connecting Users to District Heating Networks**

30. **Many respondents said that anchor loads would be essential in making any new district heating scheme viable, although there would be a**

**requirement for a long term commitment to using heat from the system.**

However, respondents also cited challenges in connecting anchor loads to heat networks.

31. Views were mixed on the proposed power to compel existing buildings to connect to district heating. Even among those who broadly supported the proposed power, several respondents qualified their answer and noted specific issues that would have to be considered. Some of these also felt that use of the power to compel should only be used as a last resort, with a preference for persuasion rather than compulsion; a recurring theme in this section.

32. Those supporting the proposed power felt that this would help facilitate greater uptake of district heating and create certainty for developers and investors.

33. When asked if the broad principles and criteria are appropriate, there was some support, although relatively few respondents addressed this question.

34. **There was fairly broad support for socio-economic assessment at project level to include an assessment of the impacts on consumers of the requirements to connect with the customer;** again reducing fuel poverty was seen as a priority.

35. **There was also fairly broad support for local authorities to exercise powers to compel connection of existing buildings;** respondents felt this would help to speed up growth in the district heating market. However, several cautioned that this power should be used only if economic advantage and a positive commercial basis can be proved, with no detriment to consumers.

36. Views were mixed on the question of whether mitigating risk by establishing exclusive concessions will lower financing costs and heat prices, although more agreed than disagreed. The main reason for agreement was, once again, that it removes a major risk and provides certainty to the developer; respondents felt that this should in theory lead to lower heat prices for consumers. A key concern, seen at previous questions and repeated here by respondents within the district heating development sector was that lower costs will only come about after heat revenues are de-risked to the level of current utility investors.

37. Respondents made a number of suggestions as to how regulations could best be designed. The key suggestion, albeit from a small number of respondents, was on the need for transparency of costs, which would offer protection for customers; and reductions in financing costs which could again feed through to lower heat prices.

38. In relation to the time length of concessions in order to attract investment, suggestions varied from 10 years to 50 years, although the majority noted the length of concessions needed to be at least 20 years, with some involved in district heating development suggesting 25 years but adding that any length should be appropriate to the area.

39. A majority of those, who addressed the question of whether compelling existing buildings to connect to district heating would mitigate heat demand risk, lower financing costs and help create an attractive investment proposition for district heating developers and financial institutions, agreed that it would. Some respondents added qualifications to their agreement, with suggestions again including that compulsion should be used as a last resort.

40. When asked for evidence of how much costs would be lowered or how regulations can be designed to best ensure this happens, few respondents commented; a small number said that individual areas have unique risk profiles and many variables that can impact on cost per unit of heat.

41. The main theme from responses to the question on the relationship between LHEES and local development plans, and how planning policy and development management should support the anticipated role of LHEES for new buildings, was, once again, that Local Development Plans and LHEES should be aligned.

### **Connecting Surplus Industrial Heat**

42. Respondents were asked what challenges and opportunities they saw for existing industrial plant to connect and sell waste heat to nearby district heat networks, both now and in the future. Several concerns emerged from responses and these were also given as examples of barriers to selling heat. Concerns included some of the key themes that have already been mentioned previously, particularly **reliability of supply and capital costs**, and that the risk (both legal and political) posed by this proposal could make investment less attractive. An additional concern raised here was over **the quality or nature of waste heat** and whether it could be suitable or viable for supply, as waste heat can often be at a lower temperature and may need to be boosted.

43. **The availability of data, from existing industrial plant with the potential to supply surplus heat, was seen as important**, with several respondents saying there should be a requirement to provide this data to public authorities, although others suggested a voluntary approach could be tried in the first instance. Reasons given for agreeing with a mandatory approach included the need for an accurate Heat Map.

44. More respondents agreed with an enabling approach than felt it should be a requirement, although small numbers commented. Some suggested the need for incentives such as a reduction in CO<sub>2</sub> tax, off-setting the cost of connecting or business rates reductions.

45. Respondents were fairly evenly split over whether they felt the Scottish Government, SEPA or local authorities should carry out the role of voluntary mediation; again only small numbers commented. The need for the body to have skilled people with a technical background and expertise in the field was seen as important.

46. Around half of respondents commented on compulsory mediation; most of those that did so agreed that in some circumstances (if requested) compulsory mediation is needed; some said that there may be cases where this is needed to ensure the supply.

47. Again, around half of respondents commented on whether, if compulsory mediation was not successful, a more directive approach should be used. Most of these respondents said that it should, again security of supply was a main reason, and as has also been seen at previous questions, there were comments that compulsion should be used as a last resort.

48. SEPA or the Scottish Government were the main suggestions for the body who should carry out the role of compulsory mediation or direction.

49. Most of those who addressed the question on requiring new industrial plant to be 'district heating-ready' agreed with this requirement, saying that costs will be reduced if this is incorporated at the design or early stage of development.

50. However, half of those who agreed qualified their response with many saying that that this should be a requirement only when the plant is in an area where the supply can be used.

51. **Local development plans, planning regulations and consent were seen as the most appropriate ways of ensuring that new industrial buildings connect to district heating networks.** Again, the need to ensure that decisions are appropriate for the local area and for the business were stressed.

### **Technical Standards, Consumer Protection and Licensing**

52. Almost all respondents, who provided a definitive response, agreed that, **as district heating becomes more widespread, it will need to become a licensed activity.** Once again, consumer protection and consistent standards were seen as important issues that would be protected by a licensing system. Respondents suggested the Heat Trust and Chartered Institution of Building Services Engineers (CIBSE) as measures that could be included. There was also a view, however, that adherence to strict standards might negate the need for formal licensing.

53. Although relatively few respondents commented on the issue, the view expressed by most of those that did comment was that a licensing system is the best way to confer enabling powers on operators.

54. A wide range of principles, objectives and considerations to guide the development of a Scottish district heating licence were noted in responses, each mentioned by small numbers of respondents.

55. Some respondents felt a licensing system might prove onerous, overly bureaucratic or costly and so act as a barrier to operators, particularly for public sector or small organisations that may wish to take out a licence.

56. The need to ensure access to new entrants, communities or smaller schemes was seen as important.

57. On the question of who should issue District Heating Licences and ensure that technical standards are being met, most of the small number who commented suggested a new Energy Agency; smaller numbers said the Scottish Government or SEPA.

58. While a small number of respondents felt that the benefits of the concession area would outweigh the costs of the licensing arrangements, a similar number said it was not possible to tell at this stage.

### **Enabling Activity and Additional Areas for Consideration to Support our Regulatory Approach**

59. Around half of all respondents provided views on the **best approach to ensuring that potential customers understand the differences as potential customers of a heat network**. The main themes included the need for customer engagement, consultation and education.

60. Respondents were asked for **evidence regarding analytical skills, resources and techniques that could support development of LHEES**, particularly where these are not currently used by local government. The main theme from the relatively small number that replied was that central government input will be required to create Scotland wide, standardised information, data and resources from a central body and make this available to local authorities. Several, particularly from the local government group, again highlighted a lack of either the necessary specialism and / or resources in local authorities to support development of LHEES.

61. When asked to provide any **evidence regarding the anticipated cost of preparing LHEES**, few commented and, for those that did so, the main theme was that costs are expected to be extensive.

62. Again, few commented on **evidence regarding the additional skills and resources needed to meet the requirements of the potential local authority role of district heating regulation**; respondents again mentioned a lack of many skills as well as a lack of resources in local authorities.

63. Respondents were asked what **support and resources local authorities will need to produce LHEES and implement the potential local authority role of district heating regulation**, and which organisations might be best placed to provide these. The main recurring themes focussed once again on the need for financial resource for additional in house staff and / or procurement of consultancy services. The need for technical resource and strategic guidance was also a theme again here.

64. Looking at how support could change over the different phases of development, introduction and implementation of any regulation, respondents simply expected the support required to reduce as expertise builds at a local level.

65. In respect of the wider regulation of the heat market to ensure decarbonisation, many of the comments made at this question focussed not only on decarbonisation but also the importance of heat regulation ensuring sustainability. There was reference to social, economic and environmental sustainability and comment on the importance of prioritising low carbon sources over those from fossil fuels and avoiding reliance on fossil fuels. In addition, there was comment that regulation should focus on principles around sustainability and decarbonisation linked to strategy.

66. Respondents provided a range of suggestions on when decisions should be taken on the future of the gas network with a number saying 'as soon as possible' and others giving suggestions covering the next 5 to 10 years.

# 1. Introduction

## 1.1. Background

1.1.1 The Scottish Government consultation paper on Local Heat & Energy Efficiency Strategies (LHEES) and Regulation of District Heating is one of a number of consultations on the draft Climate Change Plan, the draft Energy Strategy and related activity.

1.1.2. The consultation asked for views on the planning at local level of heat decarbonisation and energy efficiency programmes within Scotland's Energy Efficiency Programme (SEEP) and also on supporting the development of district heating in Scotland. This was a policy scoping consultation, designed to gather views to help inform further development of the proposals prior to more detailed consultations. It ran from 24 January until 18 April 2017. In addition to inviting responses to the consultation questions, two events were held in Inverness and Edinburgh at which over 130 members of the Heat Network Partnership Practitioner Group from across Scotland discussed the proposals.

## 1.2. Respondent Profile

1.2.1. There were 87 responses to the consultation: 80 from organisations and seven from individuals. Respondents were assigned to respondent groupings in order to enable analysis of any differences or commonalities across or within the various different types of organisations and individuals that responded.

1.2.2. A list of all those organisations that submitted a response to the consultation and agreed to have their name published is included in Appendix A. The following table shows the numbers of responses in each analysis group.

	Respondent Groups
	Number
Business & Industry	24
Network, Professional or Trade body	18
Local government	17
Third sector & Community	9
Public sector	7
Academic	4
Other	1
<b>Total organisations</b>	<b>80</b>
Individuals	7
<b>Total respondents</b>	<b>87</b>

1.2.3. The local government category includes local authorities, local authority officer responses and related bodies such as the Convention of Scottish Local Authorities (COSLA).

1.2.4. The organisation categories with the highest numbers of respondents were 'business & industry', 'network, professional or trade body' and 'local government'.

### **1.3. Methodology**

1.3.1. Responses to the consultation were submitted using the Scottish Government consultation platform Citizen Space or by email or hard copy.

1.3.2. It should be borne in mind that the number responding at each question is not always the same as the number presented in the respondent table. This is because not all respondents addressed all questions; some commented only on those areas of relevance to their organisation, sector or field of interest. The report shows the number of respondents who replied to each question and the following table outlines the respondents that commented on each of the sections of the consultation:

A: Scope and Content of LHEES

B1: Proposed Regulatory Approach for District Heating

B2: Planning, Zoning and Concessions for District Heating

B3: Connecting Users to District Heating Networks

B4: Connecting Surplus Industrial Heat

B5: Technical Standards, Consumer Protection and Licensing

B6: Enabling Activity and Additional Areas for Consideration to Support our Regulatory Approach

**Respondents answering some or all of each section**

	<b>A</b>	<b>B1</b>	<b>B2</b>	<b>B3</b>	<b>B4</b>	<b>B5</b>	<b>B6</b>
Business & Industry (24)	21	19	19	17	16	14	18
Network, Professional or Trade body (18)	15	11	10	9	7	8	8
Local government (17)	17	14	16	15	14	17	17
Third sector & Community (9)	8	6	8	8	7	6	6
Public sector (7)	6	7	6	6	6	6	5
Academic (4)	4	4	4	4	4	4	4
Other (1)	1	1	1	1	1	1	1
Individuals (7)	7	7	7	7	7	5	6
<b>Total respondents (87)</b>	<b>79</b>	<b>69</b>	<b>71</b>	<b>67</b>	<b>62</b>	<b>61</b>	<b>65</b>

1.3.3. Some respondents (eight) did not use the consultation questionnaire and, instead, presented their views in a report or letter format. Wherever possible, researchers assigned relevant sections of these documents to the relevant questions in order that all comments on similar issues could be analysed together.

1.3.4. Some of the consultation questions contained closed, tick-boxes with options for 'Yes or No'. Where respondents did not follow the questions but mentioned within their text that they agreed or disagreed with a point, these have been included in the relevant counts. This information is presented in table format at the relevant questions (including one question where a tick box was not used but many respondents gave a definitive answer; yes or no; within their reply).

1.3.5. In a number of cases, respondents ticked yes, or made supportive comments, but went on to raise queries or concerns that, they felt, would need to be addressed before the proposal could be implemented. Where relevant, these responses have been included in a column headed 'proviso'.

1.3.6. The researchers examined all comments made by respondents at each open question and noted the range of issues mentioned in responses including reasons for opinions, specific examples or explanations, alternative suggestions or other related comments. Grouping these issues together into similar themes allowed the researchers to identify whether any particular theme was specific to any particular respondent group or groups. When looking at group differences however, it must be also borne in mind that where a specific opinion has been identified in relation to a particular group or groups, this does not indicate that other groups did not share this opinion, but rather that they simply did not comment on that particular point.

1.3.7. While the consultation gave all who wished to comment an opportunity to do so, given the self-selecting nature of this type of exercise, any figures quoted here cannot be extrapolated to a wider population out with the respondent sample.

1.3.8. A small number of verbatim comments, from those who gave permission for their responses to be made public, have been used in the report to illustrate themes or to provide extra detail for some specific points.

1.3.9 Researchers also examined the report produced on views expressed at the two consultation events and summaries of the key points raised at these events have been included beside answers to relevant questions throughout this report.

## 2. Local Heat & Energy Efficiency Strategies to Support Delivery of Energy Efficiency and Heat Objectives of SEEP

### 2.1. Duty to Produce and Implement a Local Heat and Energy Efficiency Strategy

2.1.1. Section A of the consultation document discusses placing a statutory duty upon local authorities to work with relevant stakeholders to develop Local Heat & Energy Efficiency Strategies (LHEES) and to use their powers to implement these strategies in order to support delivery of the objectives of Scotland's Energy Efficiency Programme (SEEP). The consultation sets out the proposed scope and content and explains that local authorities would be supported in developing LHEES with the provision of national guidance and data sets, such as the Scotland Heat Map.

**Section A: Q1. Do you agree that local authorities should have a duty to produce and implement a Local Heat & Energy Efficiency Strategy (LHEES) as outlined above? Please explain your view.**

2.1.2. As shown in the following table, most of those who answered this question did agree with this proposal (64). Six disagreed while five did not specify their agreement or disagreement but made other comments.

	Section A: Question 1			
	Yes	No	Other comment	No reply
Business & Industry (24)	17	1	1	5
Network, Professional or Trade body (18)	12	2	1	3
Local government (17)	13	1	3	-
Third sector & Community (9)	8	-	-	1
Public sector (7)	4	-	1	2
Academic (4)	3	1	-	-
Other organisation (1)	1	-	-	-
Individuals (7)	6	1	-	-
<b>Total (87)</b>	<b>64</b>	<b>6</b>	<b>6</b>	<b>11</b>

2.1.3. All of those who gave an answer to the tick box question provided additional comments in support of their view. These views are summarised in the following paragraphs.

### **Comments from those who agreed**

2.1.4. The 64 respondents who agreed that local authorities should have a duty to produce and implement a Local Heat & Energy Efficiency Strategy (LHEES) all provided supporting comments. Almost all of the respondents who ticked 'yes', however, qualified their support.

2.1.5. Many, from across respondent groups, commented that **such a duty is required in order to: promote decarbonisation of heating; reduce energy use or energy waste; or to meet targets relating to climate change, affordable warmth, reducing fuel poverty or energy security.**

2.1.6. A small number commented that leadership from local authorities will be vital in taking the strategy forward, or to raise the profile of heat and energy efficiency in each area. Some respondents also commented that it would not be possible to deliver such a strategy consistently across the country without such a duty. One respondent, from the business & industry group, commenting on the situation in Denmark, said that the approach should be mandatory in order to comply with EU directives on Renewable Energy and Energy Efficiency.

2.1.7. There were, however, a number of suggestions and concerns over how such a duty could be implemented:

2.1.8. The main concern, noted in 26 responses from those who agreed, as well as in a further seven responses from those who disagreed or did not specify, **was over funding, support and resources for the implementation of such a duty.** These comments were seen mainly in responses from the local government, business & industry and the network, professional or trade body groups.

2.1.9. The following, from a respondent in the business & industry group, is typical of the comments on this issue:

*"It is critical that local authorities are appropriately resourced to produce and implement a LHEES. Further consideration will therefore need to be given to the resource and support requirements that will be required and how these can be delivered".*

2.1.10. Within the comments on the need for support for local authorities were several concerns that **local authorities may not have the capacity, skills or relevant expertise needed to produce and/or implement the LHEES.** A small number commented that resources were made available when other, similar, strategies were implemented, for example the local housing strategy. Others mentioned that when Glasgow City Council developed their Energy and Carbon Masterplan they received EU funding and were supported by university and business partners.

2.1.11. There were also calls for local authorities to be allowed, or encouraged, to **share best practice, share solutions or share resources** in order to make use of economies of scale.

2.1.12. Several respondents commented that while local delivery, reflecting local conditions, will be key to successful implementation; this must be supported by a **clear national framework, guidelines and support**. There were comments that a cohesive, consistent approach was seen as necessary both to attract investment and to provide reassurance to consumers. Some also mentioned the need for oversight at a national level or queried how the duty would be enforced, including queries over penalties for non-compliance.

2.1.13. There were also comments on the need for 'joined up' thinking or strategies with suggestions that these should encompass fuel poverty, climate change, local air pollution, energy efficiency and decarbonisation, with targets set at a national level where these do not already exist.

2.1.14. Respondents included a wide range of suggestions for the type of support that would be required, in addition to financial support as mentioned above. These included:

- Access to relevant data.
- Access to expertise.
- More information or detail on producing the LHEES or on implementation.
- Standard evaluation tools.
- Guidance to ensure a LHEES is not biased towards any specific technology or fuel.

2.1.15. Several respondents also stressed the need for **flexibility in order to allow for local solutions relevant to local characteristics**, particularly in relation to: low-density or rural areas, installing district heating schemes in existing roads, the availability of suitable waste heat, existing fuel sources and customer choice. One local government respondent, for example, felt that these issues had not been considered within the consultation document which, they felt "*seeks to apply a one size fits all approach to regulation*". Other respondents mentioned the need for the LHEES to fit with local plans while also fitting with national plans, including Scottish Planning Policy and the Scottish Energy Strategy, and asked for more detail on the support that would be available to manage these alignments.

2.1.16. A small number commented on review periods. This included one, from the business & industry group, who said there needs to be a mechanism for updating the LHEES to take account of evolving renewable energy opportunities. Another, from the network, professional and trade body group, agreed with the need for the LHEES to be set for a long term period and to be updated regularly;

they suggested every five years, saying this should also include 5 year measurement milestones.

2.1.17. Other factors that respondents felt needed to be addressed included how to allow for the LHEES to fit within existing local plans and any schemes already in existence. The need to involve other public bodies, Community Planning Partnerships (CPPs), community councils, the home building industry and other stakeholders was stressed and, allied to this, were requests for advice on how best to engage or involve other relevant stakeholders such as public bodies, developers, suppliers and customers; as many of these will already be involved to some extent in the delivery of other relevant local plans while others may need to be brought on-board. A small number asked whether local authorities would be given sufficient power to require companies to provide the data required or to implement the strategy. There was also a query as to whether duties could be placed on other sectors involved in the LHEES.

2.1.18. Other queries included:

- Whether the duty would relate to producing the LHEES or to its implementation?
- Who will be responsible for enforcement and what form will this take?

2.1.19. At the two consultation events there was also broad agreement with this duty and similar comments were made, and issues raised, to those seen in the consultation responses:

- This duty would help to take the work forward.
- The duty would help to raise the profile of local heat and energy efficiency.
- The need for more information on implementation.
- Comments on the resources and support that will be needed to produce and implement the LHEES.
- The potential for regional or joint LHEES.
- Engagement with a wide range of stakeholders.
- The need for alignment with local plans and existing regulations.

### **Comments from those who disagreed**

2.1.20. Of the six who disagreed, two qualified their response; one said they would have chosen a 'yes, but' option due to resource restrictions within local authorities; this individual group respondent suggested that the duty should be placed on Community Planning Partnerships.

2.1.21. The other, from the academic group, said they did not disagree entirely but that there would need to be national co-ordination and regulation. This was

echoed by a business & industry respondent and one from the network, professional and trade group who wanted to see a single national approach or strategy in place before local authorities make decisions about their own areas.

2.1.22. The business & industry respondent was also concerned that district heating may not be the most appropriate solution for every area and also said that the impact on consumers, along with consumer preference, need to be taken into account. A local government respondent also disagreed because they did not feel that district heating will be suitable for all areas and that placing a duty would, therefore, lead to a burden on resources where little opportunity for district heating exists.

2.1.23. A network, professional and trade respondent did not agree with local authorities setting district heating zones as, they felt, this would lead to uncertainty for the property industry.

### Other comments

2.1.24. The six respondents who did not specify their agreement or otherwise all included comments similar to those seen above, mainly: concern over funding, capacity or resources.

**Section A: Q1b. What are your views on the appropriate geographical scale for the preparation of LHEES? Should each local authority produce a single strategy for its area, or would it be possible for local authorities to work together to prepare strategies jointly for a wider area?**

2.1.25. A majority of the 64 respondents who replied to this question said that **this should depend on local circumstances** (40). The following, from a local government respondent, is a typical example: *“The scale should be at least at a LA level although there may be circumstances where it is more appropriate to undertake it at a regional level or across a number of local authorities, particularly where there is opportunity for shared resources, joint procurement and collaborative working”*.

2.1.26. Around half of these respondents, from across respondent groups, wanted to see **the decision on producing a strategy based on local circumstances or needs**; several commented it should be up to each local authority to decide. A similar number, including many of the local government group, felt that **local authorities should produce their own strategy but then be allowed, or required, to work with others to produce or deliver strategies appropriate for a wider area**.

2.1.27. Both groups gave similar reasons and identified similar potential benefits and these included:

- The need to avoid any limitations caused by an artificial administrative barrier; the need to fully assess appropriate geographic scale and allow plans

to be based on local authority area, Local Development Plan area or any other relevant scale.

- Differences in size, and therefore available skills, expertise and resources, between different local authorities.
- The need for economies of scale or to avoid duplicating costs for similar work in neighbouring areas.
- That it is logical for LAs to work together to develop technological solutions relevant to their areas where appropriate.
- The need for cross boundary working where, for example, major heat loads cross LA boundaries.

2.1.28. There were also some comments on the need to allow for sub-local authority strategies, for example to ensure that the needs of urban and rural locations are considered.

2.1.29. A small number of respondents highlighted proposals in the recent planning consultation to create regional partnership working groups and suggested this could be used as a potential model for delivery of the LHEES.

2.1.30. There were also calls for a Scottish-wide strategy, guidance or template to ensure consistency and in order to avoid any 'postcode lottery' or differences across areas that might deter developers or consumers. A small number suggested that there should be a central support unit to provide support, guidance and training and to facilitate sharing or joint working.

2.1.31. A public sector respondent felt that there should be a community-led approach involving all relevant stakeholders and energy providers in each area.

2.1.32. Additional comments from those who felt that local authorities should produce their own strategy before working with others included:

- That the strategy should be at local authority level in the first instance as each local authority understands their area and its needs.
- That the strategy could be at local authority level, with an overarching strategy, rather than full LHEES, across boundaries if appropriate.
- That a funded regional body or bodies could help co-ordinate cross boundary working.
- That a duty to co-produce a strategy could lead to difficulties or conflicts or become overly complicated.

2.1.33. A third sector respondent commented that in England there is legislation that enables councils to collaborate and take collective decisions; some of these combined authorities are involved in district heating projects. In Scotland, the Tay Cities Deal was cited as an example of current, successful cross-boundary working;

another example was that of Edinburgh and Midlothian working together on a new energy from waste facility.

2.1.34. Smaller numbers, across respondent groups, supported production of a single strategy or supported a requirement for joint working.

2.1.35. Those who simply supported a single strategy felt that **local authority level was best to ensure local needs can be identified and met** without any complexity that might arise from preparing a strategy for multiple authorities across a wider area. It would also allow for more targeted, local delivery to meet the needs of smaller local areas. Many of these respondents, however, did say that local authorities should consult with their neighbours. Several of these respondents also commented that the strategy would still need to link to, or reflect, regional and national plans, with a small number of suggestions that plans could be produced at local level but delivered at a regional level.

2.1.36. Those who supported an initial requirement for joint working did so as **areas relevant to heat networks will not necessarily follow local authority boundaries**. A third sector respondent gave an example of where some parts of a housing estate had been excluded from one energy programme that covered the rest of the estate, because of their postcode. Respondents also felt that joint working would lead to more consistent, efficient and cost effective strategies. Sharing skills, expertise and resources were also key reasons for supporting joint working.

## 2.2. Scope and Content of LHEES

**Section A: Q2. Do you agree with the proposed scope and content for LHEES? In particular, do you agree LHEES should (a) set targets for energy efficiency and decarbonisation and (b) include a costed, phased delivery programme that will meet local targets? Please explain your views.**

2.2.1. Comments on this question came from 71 respondents, across respondent groups. Some answered all parts of the question separately while others gave a more general comment on the proposed scope and content.

2.2.2. The first part of the question 'Do you agree with the proposed scope and content for LHEES?' was addressed by 25 respondents, across respondent groups, and 21 of these respondents said that they do agree while three others said that further information or detail is required. The other, from the third sector, wanted to see the scope widened to include all aspects of energy use.

2.2.3 In relation to setting targets for energy efficiency and decarbonisation, most of the 59 who commented said that they agreed with the need for LHEES to set targets (47). Attendees at the consultation events said that setting targets is essential and that these targets should be accompanied by a timeline, including a review of LHEES goals.

2.2.4. Amongst those who agreed there were also comments that these **targets will need to be in line with national targets and priorities.**

2.2.5. Several local government respondents commented on the need for any targets to be achievable.

2.2.6. Other comments included the need for baselines of carbon emissions or the need for other data to support target setting.

2.2.7. Several respondents mentioned the need to **ensure targets relating to fuel poverty or socio-economic targets are also highlighted**, as well as the need for a consistent approach to socio-economic assessment; this point was also made at the consultation events.

2.2.8. There were some queries in relation to:

- Whether all buildings would be included as some may be unable to meet targets because of the building's use.
- Whether both new and old buildings would be included.
- The cost of implementation.
- That the long-term nature of such a strategy should be taken into account.

2.2.9. One local government respondent felt that targets should be set nationally rather than by local authorities. There was also a comment from a third sector respondent that local authorities do not have control over the policy levers needed to deliver targets. Two third sector respondents commented on the need for a national body to oversee targets; both for LHEES targets and overall SEEP targets.

2.2.10. In relation to the last part of the question, most of the 47 who commented did agree that LHEES **should include a costed, phased delivery programme that will meet local targets** (28). A third sector respondent said:

*"It is vitally important that a key feature of the LHEES is a costed and phased delivery programme, setting out what steps will be taken, by who and by when. This is key to ensure the strategy is turned into action".*

2.2.11. Respondents, from business and industry and the network, professional and trade groups, said each strategy would also have to include details of how each intervention would be funded.

2.2.12. One local government respondent did not agree saying: *"The annual 'bidding' process for HEEPS/ SEEPs funding makes the production of a costed, phased delivery programme extremely difficult even over a short timescale as there is no certainty of funding".*

2.2.13. 16 respondents said they were not sure. These respondents, along with the small number who gave more general comments rather than agreeing or

disagreeing, raised a number of queries. These included the availability of funding, resources, support, skills and knowledge. Issues around future industry or policy changes were raised, as was concern around engaging the wide range of stakeholders that would be involved.

2.2.14. Consultation event attendees felt a costed and phased delivery programme was essential.

**Section A: Q3. Please provide any evidence you have regarding the data available (or that could be available) to local authorities that would be useful or key to preparing and implementing such plans beyond the Scotland Heat Map and the EPC Register (including data held both within and outwith the public sector).**

2.2.15. Most of the 45 respondents who replied to this question gave their view on what data will be required rather than what is, or might be, available. Responses came from across respondent groups, although few from the 'network, professional or trade body' group commented.

2.2.16. The main sources mentioned as potentially useful were **Department of Business, Energy and Industrial Strategy (BEIS) data on electricity and gas consumption, data from network operators or suppliers (perhaps making use of SMART meter data) and the Heat Map database.**

2.2.17. Many others were mentioned by only one or two respondents and these included some general types of data as well as more specific named sources, such as:

- Land registers, urban planning maps and maps of existing network infrastructure.
- Council Tax/Business Rate data.
- Landlord Registration data.
- Home Analytics data on housing stock.
- Building data (fabric, energy rating etc).
- Emissions data.
- Weather data.
- Demographic data and demographic projection.
- Scottish Index of Multiple Deprivation and fuel poverty data.
- Scottish Household Survey data.
- Data on energy consumption in public buildings.

- Gas utility maps.
- Consumption data from smart meters.
- Health and Social Care data.
- Data held by local authorities such as heat demand, population, topography, infrastructure and building use.
- Information from public bodies, for example air quality, NHS energy use.
- Data from trade and academic sources.
- The Energy Saving Trust's Home Energy Efficiency Database (HEED): domestic energy efficiency data, and HEED+.

2.2.18. There were comments on the need for **more robust data in order to ensure that the Heat Map is accurate** and on the need for 'real time' data. The voluntary nature of data provided was seen as potentially limiting its accuracy. One respondent from business & industry asked why energy bill data is not fed into the Heat Map. Another suggested that information on fuel used for heating and hot water from EPC reports should be included.

2.2.19. Respondents also identified **gaps in data** and these included data collection from district heating schemes, although there was a caution that any requirement to provide such data should not place any unnecessary burden on local authorities or others.

2.2.20. A respondent from business & industry wanted to see *"a consistent cost database that is maintained and updated that energy planners can use"*.

2.2.21. Another, from the same group, felt that information on the amount of excess heat emitted by industrial producers would be useful.

2.2.22. A respondent from the academic group said that LHEES will provide information that can be used to *"provide much clearer understanding of the potential for different technologies according to different assumptions"*.

## **Summary: Section A**

**Most of those who replied agreed that local authorities should have a duty to produce and implement a Local Heat & Energy Efficiency Strategy (LHEES), although most had some queries, concerns or suggestions.**

**Key themes included that this will be vital in taking the strategy forward, or to raise the profile of heat and energy efficiency in each area.**

The themes of reducing energy use and heat waste, promoting decarbonisation of heat, and meeting targets on climate change, fuel poverty, energy security and affordable warmth were ones that respondents, from all of the different sub groups, returned to in this and in subsequent sections.

A key concern, and again this was seen across respondent types and in response to many of the questions, was that of the availability of funding, support or other resources to enable local authorities, and others involved, to produce or implement the LHEES.

In relation to separate strategies for each local authority, or joint strategies across areas, respondents felt this should be dictated by local circumstances. This need to allow flexibility for local requirements and conditions was another theme that appeared at a number of different questions and across respondent groups.

Many respondents who commented on the proposed scope and content for LHEES agreed that LHEES should set targets for energy efficiency and decarbonisation and include a costed, phased delivery programme that will meet local targets.

Targets were seen as essential in moving work forward and there were comments that these targets should be accompanied by a timeline, including a review of LHEES goals.

There were a variety of suggestions in relation to the data available (or that could be available) to local authorities that would be useful or key to preparing and implementing such plans, beyond the Scotland Heat Map and the EPC Register.

The main sources mentioned as potentially useful were BEIS data on electricity and gas consumption, data from network operators or suppliers (perhaps making use of SMART meter data) and the Heat Map database.

There were comments on the need for more robust data in order to ensure that the Heat Map is accurate and on the need for 'real time' data. The voluntary nature of data provided was seen as potentially limiting its accuracy.

## 3. District Heating Regulation

Section B of the consultation sets out a potential regulatory scenario aimed at helping district heating to achieve its full potential. This regulatory scenario would: establish district heating zones; create concessions and provisions for connecting users to district heating networks within these zones; look at opportunities to make use of low cost, low carbon surplus heat from industry; and set minimum technical and consumer protection standards.

### 3.1. Proposed Regulatory Approach

**Section B1: Q4. What are your views on the broad principles for regulation outlined above? What else do we need to consider? What should be prioritised in cases where principles may not always be compatible?**

3.1.1. There were 63 responses to this question, from across respondent groups.

3.1.2. The broad principles were generally accepted with over half of those who replied, from across respondent groups, stating in their comments **that they agree with, or support, the principles outlined in the consultation document.**

3.1.3. There were some suggestions for changes to the principles and these included:

3.1.4. One respondent, from the business & industry group, disagreed with the statement that *"Burden of district heating regulations are outweighed by their benefits"* while a local government respondent asked for a definition of the 'burdens' associated with district heating regulation.

3.1.5. Another business & industry respondent would like to see the principle 'wastage of surplus industrial heat is minimised' extended to all forms of waste heat.

3.1.6. A network, professional or trade group respondent felt that the principle, 'district heating networks are feasible and investible for public and private sector developers', could prove challenging as new houses are more energy efficient. In order to attract investors they felt that *"the initial focus for district heating networks should be on existing stock where heat demands are generally higher and long-term investment becomes more feasible"*.

3.1.7. A business & industry respondent felt that there should be a focus on decarbonisation rather than the principle 'overall heat demand is reduced'.

3.1.8. Another, from the network, professional or trade group, recommended changing 'overall heat demand is reduced' to *"overall energy demand is reduced"*. They also felt that the principle, 'district heating networks are developed in a way that minimises risk', is unclear and suggested instead *"district heating networks are developed in a way that minimises financial risk and reduces the cost to the*

*customer*". They also felt the principle, 'heat customers / building owners have the information that they need to make choices on their future heat supply', is unclear and suggested that there should be a principle relating to consumer protection, such as "*heat customers are protected, up to the standard currently set by the Heat Trust scheme*".

3.1.9. **Consumer protection was mentioned by several respondents as an area that should be included.** Other things respondents felt needed to be considered were:

- The need for consistent, high quality technology.
- The need to make use of new technologies to ensure efficiencies are maintained.
- How to ensure security of supply (and hence customer confidence).
- Affordability / transparent tariffs.
- The need to minimise bureaucracy.
- The need to allow for alternatives where relevant (e.g. in areas of low population).
- The need to give consideration to the decommissioning of current systems such as gas boilers in homes (and a query as to how decommissioning might affect property values).
- The business model for district heating.
- The need to take into account life-cycle infrastructure costs; the need for incentives or other support for infrastructure costs.
- Consideration of planning policy and any impact on developers.
- The need to consider industry, as providers of heat waste; industry is not mentioned in the principles.
- The need for impact assessments on applications to ensure district heating is the most effective option for decarbonisation.

3.1.10. In relation to priorities, two key, and related, points were raised by several respondents across various groups:

3.1.11. **Tackling fuel poverty** was seen as important by many; one local government respondent said they were: "*concerned about potential conflicts of interest for people in fuel poverty as district heating does not always offer the lowest cost on the market*". Conflicts, between fuel poverty and decarbonisation and between area based solutions and fuel poverty, were also raised at the consultation events.

3.1.12. **Affordability for consumers** (some also said industry) was seen as key to encouraging participation and attracting investment, as well as to tackling fuel poverty. A third sector respondent commented:

*“A priority for us is ensuring that district heating supplied is affordable to customers and building owners, and meets fuel poverty objectives. If heat is not affordable, then the objective of alleviating fuel poverty is unlikely to be achieved”.*

3.1.13. Other priorities were seen as any that will enable district heating schemes to become established.

3.1.14. There were a number of queries raised by respondents, particularly around how the balance between choice and compulsion could be struck. One local government respondent commented: *“The balance between choice and compulsion / enforcement is of concern, given the nature of energy supplier choice as exists”.*

**Section B1: Q5. What are the key principles or approaches that should inform how our regulatory approach manages risk for district heating across the whole system?**

3.1.15. Comments on key principles or approaches to risk management were noted in 56 responses.

3.1.16 Several respondents again stressed the need to **include fuel poverty and affordability as key principles**. Examples include an academic group respondent that said: *“The concept of managing fuel poverty should be a major principle of the proposals moving forward”* and a third sector respondent that commented: *“we would like to see risk being managed so that the risk of not delivering affordable warmth to consumers is minimised”.* A network respondent commented that reducing risk was seen as key to reducing capital and operational costs; this would in turn lead to reduced costs for consumers.

3.1.17. **Consumer protection** was another key principle identified by respondents and this included ensuring security of supply; some respondents suggested that identifying base or anchor loads would provide some certainty.

3.1.18. **Regulation of technical standards as well as standards for customer service** were seen as important and there was a suggestion that consumers need to be given the same rights and guarantees as currently exist for electric and gas customers.

3.1.19. As well as protection for consumers, respondents also talked about **the need to manage risks for all stakeholders** in terms of cost and sustainability given the high set-up costs and the long pay-back period involved in heat networks. In relation to businesses and developers there were suggestions that safety nets or

incentives could mitigate risk. An investment programme was suggested with one academic respondent suggesting:

*“a central energy efficiency fund dedicated to investment in localised energy provisions and services, offering low interest, long-term loans, and reducing investment risk by supporting a portfolio of projects (HNIP [Heat Networks Investment Project] in England and Wales is an exemplary indicator)”.*

3.1.20. Several respondents mentioned that as there is not a current market for energy efficiency, in terms of supply, demand or financial mechanisms, regulation is the main way in which such a market can be created.

3.1.21. However, while some wanted to see regulation obliging developers to comply, for example in relation to heat waste, other respondents commented on the need to ensure regulation does not stifle financial viability and therefore deter developers. There was also a comment that heat providers need to be shielded from liability in times when heat cannot be provided.

3.1.22. Other suggestions included identifying anchor users to help mitigate against financial risk. One local government respondent commented: *“It is recognised that if there are enough anchor users then individual private householders’ involvement can be optional”*. There were also calls for flexibility so that businesses themselves can manage risks.

3.1.23. A small number, from the local authority group, mentioned the need to address the non-domestic rates burden on the pipework operators.

3.1.24. Other suggestions included:

- The need for transparency and consistency.
- The need for information sharing.
- That systems must be assessed for viability.
- That lessons could be taken from other countries and other regulated industries or sectors.

## Summary: Section B1

The broad principles for regulation outlined in the consultation were generally accepted and while there were various suggestions for priority areas, a key theme was the importance of tackling fuel poverty.

The main themes from the question on key principles or approaches to inform how the regulatory approach manages risk included fuel poverty as well as affordability.

Consumer protection was another key principle identified by respondents and this included ensuring security of supply.

The regulation of technical standards, perhaps in a way similar to that seen for other utilities, was also seen as important

## 3.2. Planning, Zoning and Concessions for District Heating

### Section B2: Q6. What are your views on local authorities having the power through LHEES to zone areas for district heating?

3.2.1 67 respondents commented on this question; responses came from across all sub groups. 35 of these respondents mentioned in their comments that they support local authorities having the power through LHEES to zone areas for district heating, while three commented that they disagree with this. The remainder commented but not did specify their support or otherwise, although another two respondents disagreed with the policy of zoning areas for district heating connection or felt that zones were immaterial.

3.2.2. The main theme to emerge, in nine responses (many from individuals within the local government group), was that **zoning areas for district heating could be aligned to local and area plans for development** or as part of the wider ongoing planning review.

3.2.3. A number of other themes emerged, in smaller numbers of responses. These included a view, particularly from the business & industry group, that zoning would: be good for developers in that it would help to ensure developments are in the right locations; that it can provide certainty for developers and investors; that it can allow building owners in designated zones to anticipate and plan for future connections; and network developers to plan for any potential to integrate with adjacent networks.

3.2.4. Respondents from various groups commented that this is what has happened in other countries such as Denmark.

3.2.5. However, while views were generally positive, there were some qualifying comments or concerns expressed by respondents. The key concern, cited by 10 respondents across most sub groups, was that **local authorities do not have the necessary resources, skills or capacity to define and set up district heating**

**zones.** Allied to this, some respondents suggested a need for a centralised mechanism to be in place; to be responsible for dealing with appeals, co-ordination across local authorities, regulation or for providing an overview of plans and performance of LHEES.

3.2.6. There was also a view expressed of a **need for consultation with others** including tenants, residents, developers, energy service providers, home builders or other local authorities. This needed especially in the production of joint strategies or where a zone may cross a local authority boundary.

3.2.7. There were also some comments, primarily from those within the local government group, that there is a need to take an evidence-based and planned approach to infrastructure provision. This is needed to ensure that proposals meet the needs of wider social and economic benefits and contribute to other plans and investment strategies. It will also be useful for the systematic identification of zones to be promoted for district heating, or for a technical evaluation of network layouts, heat sources, current and future technology options and so on.

3.2.8 A small number of respondents commented that it might not be feasible to zone areas for district heating across all areas, with one simply referring to disparities between rural and urban areas. The other respondents commented that district heating would not be feasible for some areas, for example where there is a high degree of rurality and low density housing; or where there may be an absence of identifiable low carbon heat sources.

3.2.9 A small number of respondents within the local government group commented that there is a need to add cooling into the power because district heating and cooling will become more readily deployable as heat pump technology becomes more economic. As noted:

*“It is probable that added powers to designate district heating zones would be beneficial to a local authority. It would also be prudent to add cooling into such a power. District heating and cooling will become more readily deployable as heat pump technology continues to become more economic. The coefficient of performance (CoP) of heat pumps will, assuming the continued decarbonisation of the national electricity network, soon make heat pumps a serious contender to gas CHP, and the addition of cooling services will help attract innovation, medical, research, IT, data, etc., companies into these zones. Such investment will add baseload to a network, thus making the project more economically viable and improving the wider socioeconomic benefits.”*

3.2.10. A small number of organisations in the business & industry sector suggested that local authorities could work with organisations that have the ability to fund projects, or organisations in the private sector.

3.2.11. There were also a small number of comments on the current limitations of the Scotland Heat Map as a basis for zoning.

3.2.12. There were also a small number of requests for further information. For example, a local government organisation commented that there needs to be clarity on what is meant by 'zoned areas'. A respondent in the academic sector commented that it is not clear if LHEES will include energy efficiency measures and how they will be funded.

3.2.13. At the consultation events, respondents said that zones need to be financially viable; they also need to contribute to sustainable low carbon heat.

**Section B2: Q7. How should district heating zones be identified? For example, how should national targets, socio-economic analysis, local priorities feed into the designation of zones within the Strategy?**

3.2.14. 56 respondents commented on this question; responses came from across all sub groups.

3.2.15. Many of these respondents cited **a number of different criteria** to identify district heating zones, and these included:

- Scotland's national heat map; as this shows heat demand concentrations / heat density and demand.
- Socio-economic analysis.
- Aim to reduce fuel poverty; two respondents referenced the need to use census data and the Scottish Index of Multiple Deprivation (SIMD) to identify areas where fuel poverty can be alleviated.
- Anchor loads / areas where there is a high concentration of properties such as those owned by Registered Social Landlords (RSLs) or local authority / public sector buildings; many of these respondents were in the business & industry sector.
- Local priorities; cited primarily by respondents in the local government sector.
- National targets (cited primarily by respondents in the local government sector).
- Heat sources such as NHS hospitals, or sources of low carbon heat or waste heat.
- Heat Areas identified in the Local Development Plan (LDP) or areas where applications for major developments have been made. One respondent noted that local authorities should develop their LHEES in line with their LDP; cited mainly by respondents in business & industry. A few respondents, mostly in local government, also noted that planning information combined with Scotland's Heat Map should be used; they also referred to the combined use of Scotland's Heat Map and utility information.

- In areas where there will be a carbon reduction or where there are carbon reduction targets; cited primarily by respondents within local government.
- Future infrastructure.

3.2.16. Some respondents within the local government group also noted that district heating zones should support regeneration.

3.2.17. A number of respondents qualified their comments, with some noting **the need for any district heating zone to be financially viable**; this observation was made primarily by respondents within the business & industry sector. Another few respondents noted that existing gas networks may be a constraint to the development of district heating zones as this is a cheaper form of heating for consumers and therefore more attractive financially than district heating.

3.2.18. A few respondents also noted the need for some form of national guidance, or requested a list of criteria to be developed as a template for use in the development of district heating zones. In these instances, it was felt that the Scottish Government should have overall responsibility for development of this template as well as for review of district heating zones, to ensure consistency across Scotland. A small number of respondents (mostly in business & industry) also noted a need for more consultation with various groups of stakeholders including local authorities, key stakeholders and end users.

**Section B2: Q8. What are your views on taking district heating zones, or parts of district heating zones, and establishing an exclusive concession for either private – or public – sector heat network developers to fulfil that part of the LHEES? How will this alter the risk profile of district heating development?**

3.2.19. 54 respondents commented on this question; responses came from across all sub groups.

3.2.20. There was **general support for this proposal, with advantages including the reduction of risk to local authorities in terms of delivery and maintenance of district heating networks**, although this was mostly cited by local authorities. Also that it would encourage investment, provide certainty of supply and opportunities to develop networks and allow developers to take a long term view. A number of respondents also commented on the **benefits to developers in terms of reducing their risk and promoting confidence to invest in district heating infrastructure**. A small number of respondents also commented that this proposal would help to encourage the implementation of the proposals in LHEES.

3.2.21. That said, there was also some **qualified support with comments that there will be a need to set clear objectives for a concession**; examples of these criteria included delivering people out of fuel poverty; or comments that any criteria set need to be transparent. Allied to this, there were also some **concerns that exclusive concessions could create monopolies and impact on consumer choice**. There were some comments that risks to the consumer including lack of

choice, long term commitment or potential poor service will have to be considered. There were some suggestions of a need to ensure that there are effective procurement rules in place to outline the rights of the consumer and responsibilities of the developer. In line with this, there were some comments on the need to convince consumers of the benefits of district heating.

3.2.22. There were also some concerns that **exclusive concessions could lead to conflict** between the need to ensure that consumers receive good service and benefit from the introduction of district heating zones, and the need for private developers to make profits. There were also a small number of queries as to what types of organisation should be involved in development of district heating zones (private, public sector, not-for-profit), and how these zones would be managed on an ongoing basis. A small number of respondents from the local government group suggested that concessions for public sector heat networks might prove the best way to meet targets for fuel poverty or to meet socio-economic targets.

3.2.23. Bearing in mind the concerns of some respondents, it is perhaps not surprising that there were some comments on a need for a national body to provide regulatory oversight and scrutiny, with robust consumer protection in place for service provision and complaint resolution.

3.2.24. There was also concern that there could be a potential conflict for a local authority if it were the concession holder and the enforcer of the terms of the concession.

3.2.25. Concessions were also deliberated at the consultation events, with attendees discussing ways in which concessions can shape inward investment and stimulate the market.

**Section B2: Q8b. Do you agree that local authorities should be responsible for issuing and enforcing concessions in their areas? Please explain your answer**

3.2.26. As the following table shows, 53 respondents responded to this question; responses came from all sub groups. Although this was not presented as a tick box question, nevertheless, many respondents included their agreement or disagreement within their comments. Of these, more supported this proposal; 10 completely agreed with a further 28 making supportive comments but with provisos. Seven did not agree, with the greatest opposition coming from those in local government.

	Yes	Proviso	No	Other comment	No reply
Business & Industry (24)	2	8	1	2	11
Network, Professional or Trade body (18)	2	4	-	-	12
Local government (17)	3	4	4	3	3
Third sector & Community (9)	2	3	-	1	3
Public sector (7)	-	2	-	1	4
Academic (4)	-	3	1	-	-
Other organisation (1)	-	-	-	1	-
Individuals (7)	1	4	1	-	1
<b>Total (87)</b>	<b>10</b>	<b>28</b>	<b>7</b>	<b>8</b>	<b>34</b>

3.2.27. Among the respondents providing further commentary, a number of themes emerged in support of the proposal for local authorities to be responsible for issuing and enforcing concessions as one of their functions.

3.2.28. A key theme was that local **authorities have local knowledge or that they are responsible for other strategies, programmes and plans such as Local Development Plans (LDPs)**, and that this additional function would sit alongside these plans.

3.2.29. However, a number of respondents, across all sub groups qualified their support for this proposal. The key reason given was that this would need multiple expert resources across Scotland as a whole, with support from the Scottish Government (SG) to help embed the necessary skills and resources within each local authority, and to provide oversight of concessions and district heating schemes. It was felt that a national unit would also have the advantage of being able to offer economies of scale.

3.2.30. Another key theme to emerge was that **local authorities would need adequate resources** to be able to issue and enforce concessions, or that at present they do not have the necessary resources, skills and capacity.

3.2.31. Once again, there were **requests for a national unit to provide consistency across Scotland** working within nationally agreed parameters, to provide more specialist skills and to act as a regulator. Allied to this, there were some concerns that there would be a conflict if local authorities are responsible for issuing and enforcing concessions that are also managed by their own companies. There were some suggestions that if local authorities are to issue and enforce concessions, they should not also be able to hold concessions themselves.

3.2.32. While a small number of respondents felt that this proposal would sit well with local authorities as an extension of their planning role, it was suggested there would need to be an independent body such as Ofgem to design and manage an appeals process.

3.2.33. Of the small number of respondents disagreeing with this proposal, the key reasons were that local authorities do not have the necessary technical expertise or that it should be the responsibility of the SG to establish a national framework for granting concessions in order to provide consistency.

**Section B2: Q9. What considerations should inform the design of concessions (target users, envisaged network growth, concession length etc)? Please provide any evidence you have to support your views**

3.2.34. 47 respondents provided comments to this question, many of whom reiterated the considerations listed in the question.

3.2.35. A key consideration, and cited by 23 respondents across all sub groups, was that of **concession length**. Various time periods were noted by respondents from 'at least 10 years' to 30-40 years or longer.

3.2.36. Most respondents however, noted that **the concession length needs to be long term in order to allow for the recovery of high capital costs and the realisation of a return on initial investment**, to create more certainty in the market and to realise the financial and socio-economic benefits for consumers. One proviso noted by some of these respondents was that developers should not be allowed to cherry-pick specific concessions.

3.2.37. A significant number of respondents, across all sub groups, also cited **the size of the concession as being an important consideration. They saw a need for any concession to be economically attractive and financially viable to developers and investors**; and in locations where there is greatest potential to deliver benefits to the environment, the economy and society. Two examples of areas where it was felt concessions would not be appropriate were in very rural areas where there are limited potential consumers or in areas where there is an existing gas infrastructure and where gas might still be a cheaper alternative to district heating.

3.2.38. There were some suggestions, mostly from local authorities, that there should be a capped profit on heat sales. It was felt this would help to motivate a concession holder to put effort into increasing the number of connections within a concession rather than seeking only the most profitable connections. This would help to take the onus away from profit and focus more on the consumer.

3.2.39. A number of respondents referred to the need for concessions to reduce fuel poverty and lower the costs of heating so as to maximise the socio-economic benefits of any concessions. There was also reference to the need to ensure that socio-economic criteria are met.

3.2.40. Several respondents also noted **the importance of anchor loads and ensuring any concessions include key anchor users**, giving examples like local authority or public sector owned buildings, large industrial centres, social housing or areas where there is already demand. In line with this, there was some reference to the use of using heat mapping data to determine heat density and to identify potential concession opportunities.

3.2.41. A few respondents also referred to the need to ensure that any concession is in close proximity to large natural heat sources such as bodies of water. There were also requests to ensure that any heat supply would be low carbon.

3.2.42. There were some comments – largely from local government respondents – that there will be a need to target users as well as a need to consider any planned network growth so as to maximise benefits as early as possible.

3.2.43. Once again there were some **concerns related to consumer service** with suggestions for the careful management of quality assurance and governance to ensure consistency to end users (primarily local government respondents), or the introduction of performance indicators and ongoing review of concessions. There were also suggestions that there needs to be a process in place to terminate concessions that fail to deliver, with a consideration that a Scottish Government backed national energy company could take over any failing concessions.

3.2.44. Echoing a theme already noted at earlier questions, a small number of respondents (mostly in the local government group) commented that there is a link between Local Development Plans (LDPs) or local authority Corporate Asset Plans and the setting up of concessions. They said that LDPs should be used to help identify possible concession areas, taking into account other factors such as local housing strategies or planned new developments.

3.2.45. A small number of respondents noted that this needs to be consistent with the considerations set out for LHEES as they should be fulfilling LHEES ambitions, or that LHEES needs to be developed first.

3.2.46. Attendees at the consultation events discussed concessions highlighting that many models involve the local authority in a leadership role contracting out services. Concessions would have to take account of any constraints imposed by geography or infrastructure. Looking at the length of concessions, there were suggestions that concessions in mixed areas could be 10-15 years then extended if successful.

## **Section B2: Q10. What are the implications of zoning and concessions for district heating networks?**

3.2.47. 39 respondents provided comments to this question, across all sub groups.

3.2.48. A few respondents, primarily in local government, noted that this could help promote the growth of existing networks through the development of additional connections and the likelihood of further investment.

3.2.49. However, to an extent **this question raised more questions than answers**; these questions included:

- Whether an existing concession would automatically become the new concession holder or whether the new concession would be opened up to competition.
- Whether existing concession holders would be entitled to similar concessions.
- Whether an existing concession holder would have to transfer their network if they were not appointed as the new concession holder.
- How could existing heat networks be incorporated into larger systems?
- Whether integration would incorporate physical and organisational elements of the existing concession.
- Whether an existing concession holder would be compelled to sell its pipe network and infrastructure.
- A need to consider transitional arrangements.
- Ways in which existing heat networks could be incorporated into larger systems.
- Whether there would be any legal implications if zoning and concessions restricted the growth of existing networks.

3.2.50. Once again, there were a few concerns over consumer protection and the need for regulation, monitoring and review.

**Section B2: Q11. Do you think the broad rights and responsibilities of concessions holders set out in this document are appropriate? Why? Please provide any examples or evidence**

3.2.51. As can be seen in the following table, far greater numbers of respondents felt that the broad rights and responsibilities of concession holders set out in the document were appropriate, than did not. 42 agreed (including 27 who were supportive but raised some concerns or queries) while three did not.

	Yes	Proviso	No	Other comment	No reply
Business & Industry (24)	4	7	1	-	12
Network, Professional or Trade body (18)	2	3	-	-	13
Local government (17)	4	9	1	1	2
Third sector & Community (9)	1	3	-	-	5
Public sector (7)	-	1	-	-	6
Academic (4)	1	1	1	1	-
Other organisation (1)	-	-	-	-	1
Individuals (7)	3	3	-	-	1
<b>Total (87)</b>	<b>15</b>	<b>27</b>	<b>3</b>	<b>2</b>	<b>40</b>

3.2.52. A key issue for a number of respondents was **that more detail is needed across a range of issues**. These included:

- The likely size of the concession.
- Who would be the owner or operator of the heat plant?
- Would the concession holder also have the right to develop, build and operate the network for a given period?
- Would the concession extend to supply and billing?
- Whether the policy decision has been taken to commit to a private sector not-for-profit or whether SG will proactively support development for not-for-profit and state owned assets.
- Clarity on how progress will be measured and in what timescale.

3.2.53. Linked to this, there were some comments on the need for an independent organisation to issue licences and regulate the environmental impacts of the concessions, with one respondent suggesting that SEPA would be the most appropriate organisation to take on this role.

3.2.54. There were also a few suggestions that a national template is required to ensure consistency across Scotland and that there should be a central body to check on concession design and progress, to provide regulation and guidance. There were also a small number of references to the procurement process.

3.2.55. While some respondents noted the list of KPIs is sensible, there was also some concern over the need to ensure customer choice and protection, with some reference to concession holders effectively operating monopoly concessions, which could be against the interests of the end user. For example, one respondent noted the need for a concession holder to provide heat at an affordable level on a par with other heat providers; another that there is a need for procedures in place to protect the rights of consumers.

3.2.56. While there was a degree of focus on the need to protect consumers, there were also a small number of comments on the need to ensure that concessions are attractive to developers.

3.2.57. There were also some calls for more consultation with stakeholders and developers.

**Section B2: Q12. How can a balance be struck between ensuring LHEES are responsive to changing conditions while ensuring security and stability in long term district heating development models?**

3.2.58. 39 respondents commented on this question; responses came from across all sub groups. The main theme to emerge, in 15 responses (many from individuals within the local government or business & industry groups) was that **there is a need for flexibility. This is required so that, for example, the LHEES will allow for emerging and low carbon technologies to be incorporated when they become cost effective**, or to be able to change as a result of the forthcoming Climate Change Bill, changes in heat demand or to sit alongside Local Development Plans (LDPs).

3.2.59. **The long term nature of LHEES was emphasised by a number of respondents**, with some noting specific periods from a minimum of 15 years up to 50+ years.

3.2.60. That said, there were a significant number of comments on the need to have regular reviews of the LHEES document as change occurs so that adjustments could be made to contract / concession terms. Of the respondents noting the need for regular reviews, most mentioned a review period of five years, with some comments that these reviews should be aligned with the LDPs and / or Local Housing Strategies.

3.2.61. A number of respondents also noted the need **for national oversight and independent regulation**, for example, this could be along the lines of OFWAT or OFGEM so as to ensure the long term interests of consumers and network operators.

3.2.62. A small number of respondents referred to the need for carefully structured concession agreements that could be reviewed and regulated. Two organisations in the business & industry group suggested a modular approach to district heating network development to provide additional security and stability.

**Section B2: Q13. What should happen to long term ownership of heat network assets, post-concession?**

3.2.63. 43 respondents commented on this question; responses came from across all sub groups.

3.2.64. The main theme to emerge, in 14 responses and across all sub groups was that the **ownership should transfer or revert to the local authority or a**

**local authority holding company such as an energy service company (ESCo).**

A smaller number of respondents also noted that the concession should be owned by the local authority or a not-for-profit ESCo.

3.2.65. That said, there were a small number of comments that a local authority might not have the resources to take over a heat network. There were also some comments that local authorities may have to become the 'Owner of Last Resort' and that they would need to have mechanisms in place to enable this. There were some views expressed that a local authority would need to retain the limitations on profit that apply to the concession.

3.2.66. There were also some suggestions that public ownership of assets might be the way forward post-concession, with a small number of respondents specifically referring to community ownership or ownership by customers of the concession.

3.2.67. Once again, there were also some references – mostly from local government organisations – to state ownership, with the suggestion of a government-owned Energy Company, or a company with Scottish Government involvement such as Scottish Water. There were also a small number of comments that the Scottish Government may need to be the Owner of Last Resort.

3.2.68. Similar themes to those mentioned above also emerged at the consultation events.

3.2.69. Some consultation respondents noted that ownership could transfer between concession holders.

3.2.70. Rather than mentioning ownership, a few respondents noted that there need to be rules in place to govern the resale of a network and to ensure customer protection long term, with some references to the monopolistic operation of district heat networks.

3.2.71. There were also some comments, primarily from those in the business & industry group that this would be dependent on the length of the concession and the original contract, so that, for example, long term ownership should be agreed as part of the concession and this would allow the concession holder to recoup their investment. There were also references to the need for this to be flexible.

3.2.72. A number of respondents felt unable to give a definitive response to this question as they thought each should be treated on a case-by-case basis, or that it would depend on the model adopted. A small number of these respondents also suggested that there is a need to review the experience of other European countries to see what models have been adopted and how effective each has been.

## **Summary: Section B2**

**There was support for local authorities having the power through LHEES to zone areas for district heating, comments included that zoning areas for district heating could be aligned to local and area plans for development.**

**There was little consensus as to how district heating zones should be identified.**

**There was general support for establishing concessions.**

**Looking at the design of concessions, concession length was a key theme and the size of the concession was also cited as an important consideration.**

**In relation to anchor loads, respondents noted the importance of ensuring concessions include key anchor users.**

**The question of implications of zoning and concessions for district heating networks raised more questions from respondents than it did answers, with concerns over consumer protection and the need for regulation, monitoring and review.**

**Most of those who addressed the question of whether they think the broad rights and responsibilities of concessions holders set out in this document are appropriate, felt that they were.**

**Respondents did want to see some flexibility to allow LHEES to be responsive to changing conditions while ensuring security and stability in long term district heating development models.**

**The long term nature of LHEES was emphasised and, in relation to long term ownership of heat network assets, post-concession, respondents wanted to see this transfer or revert to the local authority or a local authority holding company such as an ESCo.**

### 3.3. Connecting Users to District Heating Networks

**Section B3: Q14. What are your views on the opportunities and challenges in connecting anchor loads to new heat networks? In your view, will the scenario set out address these issues and accelerate district heating development? Please explain your answer**

3.3.1. 52 respondents commented on this question; responses came from across all sub groups.

3.3.2. The main theme to emerge was **an agreement that anchor loads would be essential in making any new district heating scheme viable**, although there would be a requirement to a long term commitment to using heat from the system.

3.3.3. Respondents outlined a number of opportunities this would create, and these included that it would:

- Provide confidence in the viability of a district heating network.
- Provide stability to a heat network and make it viable for other businesses to connect.
- Reduce uncertainty and risk for developers and helps to attract investment.
- Accelerate the development of district heating and provide opportunities to progress with the decarbonisation of heat supply on a large scale and help incentivise the construction of new networks.

3.3.4. However, a number of respondents also cited **challenges in connecting anchor loads to new heat networks**. A number of respondents commented that this would be most suited to public sector buildings such as schools, hospitals, leisure centres and so on; rather than privately owned buildings. Allied to this, a small number of respondents noted that there could be challenges in encouraging existing building owners to join networks, with concerns over issues such as who would be responsible for the costs of connection or disruption to the anchor load's existing heating supply. Additionally, a small number of respondents felt that uncertainty of demand could act as a barrier to investment.

3.3.5. A number of respondents noted that there would be **a need to demonstrate affordability in comparison to existing heating options**. There was reference to the relatively low cost of mains gas and maintenance of gas boilers, with some comments that district heating networks would have to offer competitive rates that are comparable to existing heating supplies. There were also some concerns in relation to consumers, with the risk of having a single heat supplier and concerns over standards of service.

3.3.6. Given these concerns, it is not surprising that a number of respondents felt that **further detail was needed, for example, on how a local authority would compel a connection, who would be defined as a large heat user or who would be responsible for internal conversion works in compelled buildings**.

3.3.7. There were one or two suggestions of the need for data including gas consumption data at a building level or access to load data in order to help ascertain the viability of a network.

3.3.8. There were suggestions from a small number of respondents for a focus on encouraging uptake of district heating networks, in preference to compulsion and the need to create a positive profile for district heating, for example, in letting the public know that the quality of service will not suffer.

3.3.9. There were also some suggestions for incentives for developers, from a small number in the local government, third sector and business and industry groups, for example to help with the construction of new networks or to keep schemes running efficiently or to help with capital investment.

3.3.10. There were a small number of suggestions for a tiered approach to the development of district heating networks, with large heat users connecting initially, which would then encourage others.

3.3.11. Some respondents referred to district heating networks in other locations and the need for Scotland to take these approaches into consideration. These included France where tax incentives are offered, Denmark and the Royal Free Hospital in London.

**Section B3: Q15. What are your views on the proposed power to compel existing buildings to connect to district heating?**

3.3.12. 58 respondents commented on this question; responses came from across all sub groups. Views were mixed on the proposed power to compel existing buildings to connect to district heating. Of those providing a response, 20 supported the proposed power while 30 raised concerns or queries. Even among those who said they supported the proposed power, some qualified their response and noted specific issues that would have to be considered. **Some of these also felt that use of the power to compel should only be used as a last resort, with a preference for persuasion rather than compulsion.**

3.3.13. Of those supporting the proposed power, there was a perception **that this would help facilitate greater uptake of district heating and create demand certainty for developers and investors**, or that it would help meet climate change targets and optimise the planning and design of heat networks. There were a few comments that this has worked well in Norway and Denmark. Consultation event attendees also mentioned the situation in Denmark, saying that this had been successful because the alternative to district heating is much more expensive.

3.3.14. Regardless of whether respondents were pro or anti the proposed power, there were suggestions for a market based comparison to demonstrate the validity of the business case to potential commercial users, for the technical and financial benefits to be highlighted or simply for the need to present a positive business case. There were also comments on the need to ensure consumers will continue to

get a good level and quality of service which is affordable, and some concerns that district heating will limit consumer choice.

3.3.15. There were some suggestions for a staged approach to this power, with an expectation on public sector buildings, developers of major heat sources or new public buildings to use district heating networks in the first instance, with some suggestions that this should sit alongside the Local Development Plan. It was felt that this would help create a more positive image for district heating and help persuade others to connect. There were also suggestions, primarily from those in the business & industry sector, that this proposed power would not be advantageous for existing buildings and that retrofitting could cost more than new build.

3.3.16. Some respondents suggested incentives should be provided, in preference to using compulsion. These included financial support to help upgrade heating in existing buildings or connection subsidies for anchor loads.

3.3.17. Those who did not support this proposal felt that **compulsion may serve to deter new schemes starting up or that this does not sit well with the concept of a wider competitive energy market**. There was a preference to work with developers and building owners, emphasising the benefits, and being involved in discussions from an early stage, so that it could be demonstrated that connection is in the socio-economic interest of a building owner.

3.3.18. There were some concerns about affordability, primarily from respondents in the local government or business & industry sub groups, and the need to demonstrate through a socio-economic assessment that there would be no long term detriment to building owners or consumers. The role of promoting district heating to developers and potential customers was seen to sit with the Scottish Government, local authorities and other key stakeholders.

3.3.19. There were also some comments that where there are existing gas networks, district heating would be more expensive; also that while heat dense areas would be more economically appealing for district heating, these are also where there are most likely to be existing gas networks.

3.3.20. There were some concerns expressed by a small number of respondents within the local government group, that there could be legal challenges to local authorities.

3.3.21. Consultation event attendees wanted to see clarification of the term 'large heat users'.

**Section B3: Q15b. Are the broad principles and criteria appropriate? Should other principles or criteria also apply? In particular, what approach should be taken to socio-economic assessment at the project level, prior to a compulsion to connect?**

3.3.22. There was support for these broad principles and criteria from 17 respondents, including those representing district heating developers, with several respondents reiterating points raised in response to the previous question.

3.3.23. In relation to the socio-economic assessment, there were a number of approaches suggested by respondents; these included:

- A standardised approach and methodology for socio-economic assessment so that all outcomes would be compatible across Scotland.
- The proposed 'no detriment' test should safeguard the interests of building owners.
- This assessment should be based on the heat tariff that is cost effective for the consumer; also safeguarding the economic interests of building owners.
- This assessment needs to consider the complete existing cost of heat to a property, and whether a property is suitable for connection.
- It is important that social benefits are considered, and not just financial benefits.
- This should include distributional benefits.
- The socio-economic assessment should have to look at all potential benefits including the financial benefits from a reduction in carbon emissions, improved health benefits, improved air quality, reduction in fuel poverty and so on.
- This would need to take place on a project-by-project basis.

3.3.24. There were also a small number of comments, primarily from respondents in the business & industry group, that the technical feasibility of heat networks needs to be considered as connection might not always be feasible; or that it might be more expensive for users even if it is needed for the viability of the network.

3.3.25. Alongside this, some respondents noted the need for national standards that would be administered and implemented by a central body, in partnership with local authorities.

3.3.26. There were a small number of comments on the need to market the benefits and cost savings associated with connecting to heat networks relative to other options to help bring about more positive perceptions of district heating in general.

3.3.27. Some respondents felt that further details were needed and raised issues such as what would happen in the event of a change of owner of a building or a change of use or closure of a building, or what would happen to the heat load if the anchor load building were vacated.

3.3.28. Some respondents, across most sub groups, reiterated their antipathy to compulsion, with comments that compulsion should only be a last resort and that voluntary connection is preferred. This included representatives from district heating, including one who said:

*“The aim of allowing a network to legally compel a user to connect to it should be that the offer is sufficiently positive that the legal obligation is never or rarely required to be used.”*

**Section B3: Q15c. Do you agree that this socio-economic assessment at project level should include an assessment of the impacts on consumers of requirements to connect?**

3.3.29. As the table below demonstrates, there was a very high level of support for socio-economic assessment at project level to include an assessment of the impacts on consumer of the requirements to connect, with 51 agreeing and only one disagreeing. In addition, the consultation events also saw broad agreement amongst attendees.

Section B: Question 15c			
	Yes	No	No reply
Business & Industry (24)	12	1	11
Network, Professional or Trade body (18)	6	-	12
Local government (17)	14	-	3
Third sector & Community (9)	5	-	4
Public sector (7)	3	-	4
Academic (4)	3	-	1
Other organisation (1)	1	-	-
Individuals (7)	7	-	-
<b>Total (87)</b>	<b>51</b>	<b>1</b>	<b>35</b>

3.3.30. General views across all sub groups were that **the customer should be the priority, that the customer needs to understand and agree with the impact on the services they receive**, or that this is needed to achieve ambitions in relation to reducing fuel poverty. There were a small number of comments in relation to the need to consider the impact of a failure to supply heat, and two respondents in the network, professional or trade body group commented that this could potentially lead to consumer detriment by reducing choice.

3.3.31. As seen at previous questions, a few respondents reiterated their opposition to compulsion and noted it should be the end users’ choice as to

whether they take up this form of energy. Indeed, the one respondent disagreeing with this proposal reiterated their lack of support for compulsion.

3.3.32. There were also a few comments on the need to market district heating networks to potential customers, as attitudes towards collective heating and collective decision making are not in the psyche of Scottish people; with two organisations in the network, professional or trade body group commenting that financial viability will be key to establishing a willingness to connect.

3.3.33. A small number of respondents in the local government group queried how 'no detriment' data would be gathered and assessed.

**Section B3: Q15d. Do you agree that local authorities should exercise powers to compel connection of existing buildings (for example when requested by relevant concession holders)? Please explain your answers**

3.3.34. As the following table demonstrates, there was a high level of support for local authorities to exercise powers to compel connection of existing buildings, with 20 agreeing, 24 giving a supportive but qualified response, and seven opposed.

Section B: Question 15d					
	Yes	Proviso	No	Other comment	No reply
Business & Industry (24)	5	7	3	-	9
Network, Professional or Trade body (18)	1	3	2	-	12
Local government (17)	4	6	1	2	4
Third sector & Community (9)	1	4	-	-	4
Public sector (7)	1	1	1	-	4
Academic (4)	2	1	-	-	1
Other organisation (1)	1	-	-	-	-
Individuals (7)	5	2	-	-	-
<b>Total (87)</b>	<b>20</b>	<b>24</b>	<b>7</b>	<b>2</b>	<b>34</b>

3.3.35. 49 respondents, across all sub groups, chose to provide further commentary. Reasons given for support of this included that it would help to speed up growth in the district heating market or that this is a prerequisite for attaining high densities.

3.3.36. That said, the key theme to emerge at this question – and cited by 20 respondents across all sub groups – was that **this power should be used only if economic advantage and a positive commercial basis can be proved, with no detriment to consumers.**

3.3.37. There were some suggestions that public sector organisations should lead the way in adopting district heating systems.

3.3.38. Some respondents suggested there needs to be support, guidance and encouragement or the offering of incentives for the adoption of district heating, rather than compulsion. Allied to this, there were some calls for compulsion to be used as a last resort, with suggestions for a defined period of time and technical support for owners before compulsion should be used; this came primarily from those in the business & industry group.

3.3.39. There were a few concerns raised, each by small numbers of respondents. These included:

- Concerns over the issues of penalties and sanctions for enforcement and the legal and political risk that could sit alongside the power to compel. This was raised by respondents within the business & industry or network, professional or trade groups; two of which were involved in the development of district heating.
- Concerns over a lack of resources and skills within local authorities to enable them to enact this power.
- Concerns over a potential conflict of interest if a local authority is both a concession holder and enforcer of the power.
- A need for a well-defined appeals procedure.

3.3.40. Those in disagreement with the proposed power commented primarily that district heating is not viable for all businesses or consumers, or that compulsion overrides the right of consumer choice and / or potentially creates economic disadvantage.

3.3.41. There were a small number of suggestions that the Scottish Government should adopt this role, rather than local authorities.

3.3.42. Attendees at the consultation events had a mixed view, with support for compulsion in the public sector, but that this should be used as a last resort in the private sector and third sector.

**Section B3: Q16. Do you agree that mitigating risk by establishing exclusive concessions will lower financing costs and heat prices?**

3.3.43. As shown in the following table, views were mixed on agreement that mitigating risk by establishing exclusive concessions would lower financing costs and heat prices, with 14 agreeing, 16 giving a more qualified positive response and 14 disagreeing. The business & industry sub group showed greatest levels of agreement.

	Yes	Proviso	No	Other comment	No reply
Business & Industry (24)	5	8	2	-	9
Network, Professional or Trade body (18)	1	-	2	-	15
Local government (17)	-	4	5	6	2
Third sector & Community (9)	1	2	1	1	4
Public sector (7)	1	1	1	1	3
Academic (4)	3	-	1	-	-
Other organisation (1)	-	-	-	-	1
Individuals (7)	3	1	2	-	1
<b>Total (87)</b>	<b>14</b>	<b>16</b>	<b>14</b>	<b>8</b>	<b>35</b>

3.3.44. 45 respondents also provided further commentary. The key theme for agreement with this, from 16 respondents, was that **it removes a major risk and provides certainty to the developer, which in theory should also mean that there should be lower heat prices for consumers.** One individual suggested that only public sector or community bodies should be able to hold exclusive concessions.

3.3.45. However, there were some comments that there is no guarantee of lower heat prices, with some comments that exclusive concessions might remove the funding gap rather than reduce heat prices or that heat tariffs in less dense areas could still be relatively high.

3.3.46. A respondent from the network, professional and trade group did not support mitigating risk by establishing exclusive concessions will lower financing costs and heat prices. They commented that they:

*“do not agree that establishing exclusive concessions, as designed in the consultation document, will provide positive steps forward and reflect a strategically important step, but are unlikely to significantly lower financing costs and heat prices until further action is taken to further de-risk heat revenues to the level faced by gas, water and electricity network investors”.*

3.3.47. There were a small number of requests for effective and fair regulation; or for performance criteria to be set and monitored throughout the concession period.

3.3.48. There were a small number of concerns that district heating operators would still wish to maximise profits at the expense of the customer. Furthermore, some respondents noted there is no evidence to back up any claim that lower heat

prices would result from exclusive concessions. Additionally, exclusive concessions remove competition and possibly innovation within the market.

**Section B3: Q16b. How can these regulations be designed to best ensure this happens?**

3.3.49. 33 respondents commented at this question; responses came from across all sub groups. Respondents made a number of suggestions as to how regulations could best be designed.

3.3.50. The key suggestion, from nine respondents, **was on the need for transparency of costs, which would offer protection for customers; and reductions in financing costs which could feed through to lower heat prices.** One organisation suggested a cap on profits.

3.3.51. There were also calls for **robust stakeholder engagement**, both to help develop the regulations, and to help raise awareness and thereby create demand for district heating. Incentives were also suggested by some respondents so as to encourage take up by customers or to help grow networks. These incentives included tax breaks or the creation of a district heating Renewable Heat Incentive (RHI) scheme.

3.3.52. Smaller numbers of respondents suggested:

- Concession holders should be limited to not-for-profit organisations, with some further comment that this has worked well in Denmark.
- A central unit within Scottish Government or a Working Group of experts to devise regulations, or a body within each local authority to manage and oversee the process and establish zonal boundaries.
- Long term funded networks that are government or local authority owned, or for build programme risks to be the responsibility of local authorities (business & industry).
- National benchmarking of heat supply pricing compared to alternative supply options; or conducting annual tariff reviews (local government).
- Effective planning at LHEES stage, and guidance and support to local authorities to help them in the development and delivery of LHEES.
- Creation of procurement frameworks for this sector.
- Consistency in government policy, particularly given the long term nature of district heating concessions.
- Ensure that concession holders meet standards for design, build and operation; with suggestions that there should be adherence to the CIBSE Code of Practice or the ADE Heat Networks Code of Compliance for the UK.
- Reduce the risk profile for district heating operators, so that they are comparable with existing gas, electricity and water networks.

**Section B3: Q16c. What are your views on the time length of concessions in order to attract investment?**

3.3.53. 37 respondents commented at this question; responses came from across all sub groups. Most respondents specified time periods, although a few simply referred to **the need for long term concessions in order to attract investment**.

3.3.54. Specific suggestions for the length of time of concessions varied from 10 years to 50 years, although **the majority noted the length of concessions needed to be at least 20 years**. Some noted that the time period needs to be lengthy in order to attract investment, provide greater certainty for developers and obtain a return on their initial investment. There were a small number of comments that the length of the concessions should match the duration of the RHI support mechanism.

3.3.55. There were a few respondents who noted that the timeframe needs to be considered on a case-by-case basis because it will depend on the financial model used or that it should depend on cost benefit analysis and linked to the requirements of the development to obtain a reasonable return.

3.3.56. There were also a small number of suggestions to set review periods of 5-10 years where performance criteria can be checked.

**Section B3: Q17. Do you agree that compelling existing buildings to connect to district heating would mitigate heat demand risk, lower financing costs and help create an attractive investment proposition for district heating developers and financial institutions?**

3.3.57. As shown in the table below, a majority of those providing a yes / no response supported the view that agreeing to compel existing buildings to connect to district heating would mitigate heat demand risk, lower financing costs and help create an attractive investment proposition for district heating developers and financial institutions. 45 agreed (26 gave a positive response while a further 19 agreed but with concerns or queries) and five disagreed.

## Section B: Question 17

	Yes	Proviso	No	Other comment	No reply
Business & Industry (24)	5	8	2	1	8
Network, Professional or Trade body (18)	2	2	1	-	13
Local government (17)	5	5	-	4	3
Third sector & Community (9)	4	2	-	-	3
Public sector (7)	1	1	-	-	5
Academic (4)	2	1	1	-	-
Other organisation (1)	1	-	-	-	-
Individuals (7)	6	-	1	-	-
<b>Total (87)</b>	<b>26</b>	<b>19</b>	<b>5</b>	<b>5</b>	<b>32</b>

3.3.58. 44 respondents opted to comment further at this question; responses came from across all sub groups.

3.3.59. Some of those agreeing qualified their commentary, with **suggestions that compulsion should be used as a last resort or noting that compulsion should not apply to the private sector.**

3.3.60. In terms of compulsion for developers, there were a small number of comments that there would need to be a clearly defined timeline.

There were also a small number of concerns that;

- The legal and political risk of compulsion could be detrimental to the aim of creating an attractive investment proposition.
- This would not necessarily lead to lower financing costs.

3.3.61. Those respondents who disagreed with this proposal commented that it is better to offer incentives and present a positive business case rather than compel.

**Section B3: Q17b. Could you provide evidence of how much they [financing costs] would be lowered?**

3.3.62. Only 13 respondents provided any commentary at this question.

3.3.63. The key theme – mentioned by four respondents – was that individual areas have unique risk profiles and many variables that can impact on cost per unit of heat.

3.3.64. Only a small number of respondents provided evidence, which included reference to:

- Leith district heating feasibility study.
- Commercial developers look for a hurdle rate of 15%.
- Ofgem work on evaluating business plans of companies owning regulated assets such as gas networks shows they allow for 3% return on capital.
- Private sector investors look for a 12-15% return on investment which might not be sustainable for district heating projects.
- For long term investment over 30-40 years a return on capital of around 3% could be the norm.

**Section B3: Q17c. How can these regulations be designed to best ensure this happens?**

3.3.65. Only 26 respondents opted to answer this question; comments came from across all sub groups and some of these reiterated points raised in earlier questions.

3.3.66. A small number of points were made about the design of the regulations, mostly by a single respondent, and these included:

- The regulations need to be clear and simple, and designed in a transparent and participative way.
- The regulations should link to energy efficiency measures, service delivery and local objectives, taking into account viability of district heating and decarbonisation targets.
- The regulations need to define a clear process for engaging anchor loads.
- The regulations should only enforce connection if it is in the interest of the building it is intended to connect.
- The regulations need to place an emphasis on feasibility, ensuring that heat supplied is not more expensive than what would be paid using an alternative energy source.
- The regulations need to be linked to climate change objectives.

3.3.67. A small number of comments referred in some way to the planning process and the need for this to be taken into account. These comments included:

- The regulations should address any potential gap between existing planning guidance or obligations and any new regulatory framework.
- A need to make new build and refurbished buildings low carbon mandatory and district heating ready.
- All new buildings should be on Scotland's Heat Map.
- Local Development Plans should include details of district heating system (DHS) locations and access points for add-ins; furthermore, where the LDP states that there should be a DHS or combined heat and power (CHP), no exemption should be permitted.
- There should be a change to the current National Building Standards to require an exemption allowance where any new build development is seeking approval without connection to a DHS / CHP.

3.3.68. There were also a small number of comments of the need to do hypothesis testing / evidence collecting before implementation of any regulations.

**Section B3: Q18. What are your views on the relationship between LHEES and local development plans and how planning policy and development management should support the anticipated role of LHEES for new buildings? Please explain your answer**

3.3.69. 46 respondents commented at this question; responses came from across all sub groups.

3.3.70. The key theme emerging across all sub groups, from 26 respondents, was that **Local Development Plans (LDPs) and LHEES should be aligned**. A smaller number of respondents, mostly in the local government group suggested that LDPs and LHEES should be integrated and embedded.

3.3.71. A few respondents also noted that LDPs need to reference LHEES. The reasons given for this was that:

- It would help to ensure that district heating networks are created.
- It would help to create better alignment of broader decarbonisation and fuel poverty targets.
- Site allocations can inform LHEES of priority areas for district heating network development.
- New developments provide opportunities to build in low carbon heat supply, without the concerns of retrofitting in the future.

3.3.72. Some respondents noted that LHEES and LDPs need to avoid being contradictory.

3.3.73. A few respondents referred specifically to the need for LHEES to be a material consideration for planning authorities. A small number of respondents noted that it might not always be viable to include district heating in a new development and gave examples including developments where the connection cost might be prohibitive or where other low carbon technologies are cheaper to install.

3.3.74. A relatively small number of respondents noted the need for any regulation to be at a national level so that developers have a level playing field across Scotland and to prevent developments being built in an area where they will not be required to create a district heating network or connect to one. Similarly, there were a small number of comments that planning policy at both local and national levels need to be aligned.

3.3.75. A small number of respondents focused on the current Planning Review which has the potential to change Scottish Planning Policy and the National Planning Framework, and noted that LHEES needs to be considered in the context of the Review. Alongside this, there were also a few comments that there need to

be links across a range of policy areas including Local Housing Strategies, Carbon Management Plans, fuel poverty strategies and so on.

3.3.76. Once again, there were a few requests, mainly from local government, for guidance, support and resources to be provided to support local authorities.

### **Summary: Section B3**

**Many respondents said that anchor loads would be essential in making any new district heating scheme viable, although there would be a requirement for a long term commitment to using heat from the system. However, respondents also saw challenges in connecting anchor loads to heat networks.**

**Views were mixed on the proposed power to compel existing buildings to connect to district heating.**

**When asked if the broad principles and criteria are appropriate, there was some support, although relatively few respondents addressed this question.**

**There was fairly broad support for socio-economic assessment at project level to include an assessment of the impacts on consumer of the requirements to connect with the customer, again along with reducing fuel poverty, seen as priorities.**

**There was also fairly broad support for local authorities to exercise powers to compel connection of existing buildings.**

**Views were mixed on the question of whether mitigating risk by establishing exclusive concessions will lower financing costs and heat prices, although more agreed than disagreed.**

**Respondents made a number of suggestions as to how regulations could best be designed. The key suggestion, albeit from a small number of respondents, was on the need for transparency of costs.**

**In relation to the time length of concessions in order to attract investment, suggestions varied from 10 years to 50 years, although most said the length of concessions needed to be at least 20 years.**

**A majority of those who addressed the question of whether compelling existing buildings to connect to district heating would mitigate heat demand risk, lower financing costs and help create an attractive investment proposition for district heating developers and financial institutions agreed that it would.**

**When asked for evidence of how much financing costs would be lowered or how regulations can be designed to best ensure this happens, few respondents commented. A small number said that individual areas have**

unique risk profiles and many variables that can impact on cost per unit of heat.

The main theme from responses to the question on the relationship between LHEES and local development plans and how planning policy and development management should support the anticipated role of LHEES for new buildings was that Local Development Plans and LHEES should be aligned.

### 3.4. Connecting Surplus Industrial Heat

**Section B4: Q19. What challenges and opportunities do you see for existing industrial plant to connect and sell waste heat to nearby district heat networks, both now and in the future?**

3.4.1. Comments on this question were noted in 53 responses, from across respondent groups, and a number of challenges were identified.

3.4.2. One of the main concerns, raised by 20 respondents across various respondent groups was that of **reliability of supply**. An example of these comments includes the following from the network, professional or trade group:

*“For some existing industrial plant, such as power stations, a heat network operator can be assured of a long term source of waste heat, however, in many cases this level of long term stability cannot be guaranteed. Existing industrial operations may reduce output or close at any time and this may have a significant impact on the operation of the heat network”.*

3.4.3. Respondents commented that **some businesses may have varying availability of heat waste, for example depending on the season or on the demands for their product**. Respondents felt that there should be no obligation placed on businesses to provide an uninterrupted supply.

3.4.4. Other key concerns, again across various respondent groups, included the capital costs involved; one business & industry respondent identified *“the capital costs to modify their process and/or buildings to be able to take waste heat away and connect to a heating network”* while a local government respondent suggested:

*“The cost of in-building conversion to DH is identified as an issue; one solution is to require connection at the point of heating replacement. If immediate connection is required, then in-building costs would need further consideration”.*

3.4.5. Respondents were concerned that high up-front costs could act as a deterrent. There were also comments on the length of time that would be needed to recoup investment and some suggestions that incentives may be required.

- 3.4.6. There were also some concerns that the investment required to supply the heat waste may be disproportionate to the amount of heat available for use.
- 3.4.7. Several respondents, across groups, voiced **concern over the quality or nature of waste heat**, with some adding that because plants are designed to be efficient, waste heat can often be a lower temperature and may need to be boosted.
- 3.4.8. Other technical challenges identified by respondents included pipe diameter, pressure and storage.
- 3.4.9. Issues around the distance of the supply from demand were raised by several respondents as was the difficulty of matching supply with demand.
- 3.4.10. Concerns over resistance from businesses included that businesses may not want to share what may be in some cases commercially confidential data. Another potential issue was that the length of commitment will not fit with short term business planning.
- 3.4.11. Resistance to change and ownership issues, perhaps where the business owner is based overseas, were also mentioned by small numbers of respondents.
- 3.4.12. There were also comments that many businesses already use their waste heat and that an obligation could therefore be counterproductive.
- 3.4.13. Several of the points mentioned above were also raised at the consultation events.
- 3.4.14. A small number of respondents identified opportunities, either for businesses in supplying their waste heat, or in general in relation to district heating:
- For businesses, respondents saw the potential for stronger links or integration with local communities. Some said that businesses would be recognised for their contributions to climate change targets and energy efficiency and that being involved could help them meet their environmental targets. It could also provide an additional income stream or help reduce disposal costs.
  - In more general terms, the use of waste heat was seen as beneficial in helping to provide low cost social heating and low carbon heating.

**Section B4: Q19b. What barriers have industries experienced in the ability to sell their heat under current market conditions?**

- 3.4.15. 38 respondents identified barriers for industry and many of these were similar to the challenges identified at the previous question:
- That heat waste is not all suitable because of pressure, quality or temperature.

- Security and reliability of supply; in addition that users may be concerned about the security of their supply.
- Location or distance of the supply from demand.
- A lack of incentive or high set-up costs for a low return, or the time taken to recoup investment.
- Concern over any contractual requirements to provide an uninterrupted supply.

3.4.16. Other barriers identified by respondents included:

- A lack of appropriate skills or expertise.
- That there are no business models related to the use of heat waste in district heating.
- The lack of existing infrastructure in place for upgrading and transporting the heat; allied to this the need to attract commercial interest for building heat infrastructure.
- Issues around contractual arrangements; again that there should be no requirement, or penalties, on businesses that cannot guarantee the supply. In addition, a local government respondent commented: *“operators of industrial plant may be reluctant to enter into contractual agreements that could constrain their production flexibility in future or cause undue disruption to their current processes”*.
- A respondent from the business & industry group also felt that there is a lack of policy support for industrial waste heat recovery.

3.4.17. A small number mentioned that the mismatch between demand and supply could be challenging, or that until district heating networks are more established a lack of demand could pose a barrier.

**Section B4: Q20. What are your views on requiring existing industrial plant, with the potential to supply surplus heat, to make data available to public authorities? Please provide any relevant evidence.**

3.4.18. 47 respondents gave their views; 44 of these said that the availability of this data is important.

3.4.19. Many of those who replied commented said that **this should be a requirement** (26 across groups), although some suggested a voluntary approach could be tried in the first instance (six, mainly from local government). At the consultation events, attendees felt that providing data should be required.

3.4.20. Reasons given for agreeing with a mandatory approach included the need for an accurate Heat Map. Respondents said that lack of data is a barrier to

the development of heat networks. Event attendees also discussed the Heat Map and wanted to see data standardised to allow comparisons across local authority areas.

3.4.21. Some commented that, **without a requirement to provide the information, businesses may not be willing perhaps due to confidentiality**. Several of these respondents stressed the need for safeguards such as confidentiality agreements. A respondent from the academic group felt these concerns could be addressed by the data being managed centrally.

3.4.22. A few cited data protection issues with one local government respondent commenting: *“It is unclear how this data could be made available without permission from the companies given the requirements of the Data Protection Act”*.

3.4.23. A small number felt some businesses may not be able to provide the information due to a lack of expertise or resources needed to compile such data, including compliance costs; there were comments that this could involve significant time, effort or resources. Some suggested that incentives such as tax or rates relief may be required to encourage businesses to provide the data.

3.4.24. A small number of respondents commented that an obligation should only be placed on those businesses in a position to supply surplus heat or where supplying surplus heat was viable. One from the network, professional or trade body group said: *“A plant that does not meet the requirements for having ‘useful heat’ or is in an isolated location should not be required to provide data”*. One respondent from the business & industry group said that the requirement could apply a threshold of above 5MWth.

3.4.25. A small number specified that SEPA should be responsible body. One local government respondent suggested: *“There is the potential to use existing mechanisms, such as SEPA collection of environmental data to semi-automate this process. It is worth noting that SEPA already mandates industrial sites over 20MW to have a heat plan”*.

3.4.26. One network, professional or trade body respondent also commented on this requirement and suggested that this could be amended to include other, smaller industrial suppliers.

3.4.27. SEPA themselves supported the proposals but said that the current system only captures information from those with a Pollution Prevention and Control (Scotland) regulations Part A permit:

*“Current voluntary system through SPRI captures some of this information, but not all. It could be extended to capture all the useful data with changes to legislation making data submissions mandatory rather than voluntary”*.

3.4.28. A respondent from the business & industry group said that they would not support a requirement, saying: *“A more effective approach will be for the LHEES to identify potential buildings and industrial plant where waste heat may be an issue*

and to proactively engage with owners to seek data". They felt that SEPA and other public bodies should be educating and not compelling.

**Section B4: Q21. Under these proposed new arrangements, do you think that an enabling approach, perhaps using voluntary mediation, will be successful? How can we best encourage existing industrial plant to supply waste heat to a district heating network?**

3.4.29. 43 respondents commented, with **more agreeing with the enabling approach than with a requirement.**

3.4.30. 16 respondents, across sub groups, felt that the enabling approach should be tried, or tried first. For example, a network, professional or trade body respondent explained:

*"One of the key barriers to industrial waste heat connections can be the pricing of waste heat. The network operator will assume it is 'free', while the industrial user will be interested in maximising commercial value while still ensuring the price is below what the network operator is currently paying. Mediation could prove helpful in overcoming these differing commercial perspectives".*

3.4.31. Consultation event attendees also shared the view that the enabling approach should be tried first.

3.4.32. Several respondents said that being able to demonstrate the benefits (economic and environmental) would be important for engaging industry. One local government respondent suggested: *"Assistance could be offered by Resource Efficient Scotland to trial the quantification of waste heat in some key industries that are located either close to existing heat networks or areas of high heat density. Establishing real life examples of the opportunities available to industry will assist in driving demand from other sectors and industries".*

3.4.33. Nine, across most groups but none from the network, professional or trade group, felt it should be a requirement. A third sector respondent said that research by RSPB Scotland has shown that voluntary approaches are not appropriate *"where high rates of participation and compliance are required, where there is limited flexibility regarding actions and timings, or where serious social or environmental risks are involved"*. They said that, as many of these apply *"it is not possible to be confident that a voluntary mediation approach can be relied on to deliver the necessary change"*.

3.4.34. Eight, including three from the network, professional or trade group, said that incentives may or will be required, for example a reduction in CO<sub>2</sub> tax, off-setting the cost of connecting or business rate reductions.

3.4.35. A small number felt this should be dealt with on a case by case basis and this included a business & industry respondent that suggested:

*“initial contact and exchange of information a business case would have to be worked up and an open approach should be made where this is considered viable. This can only be done on a case by case basis”.*

**Section B4: Q21b. Which public authority should carry out the role of voluntary mediation?**

3.4.36. 31 respondents gave suggestions and several mentioned the need for the body to have skilled people with a technical background and expertise in the field.

3.4.37. The main bodies identified were the **Scottish Government** (seven, including several local government respondents) and **SEPA** (seven, mainly network or business respondents) and **local authorities** (seven, mainly local government and business & industry). Other suggestions included:

- Resource Efficiency Scotland.
- Heat Network Partnership.
- Scottish Enterprise / Highlands and Islands Enterprise (HIE).
- Scottish Futures Trust.
- Zero Waste Scotland.
- Ofgem.
- The Advisory, Conciliation and Arbitration Service (ACAS).
- A new independent regulator / mediator.

**Section B4: Q22. Do you agree that in some circumstances (if requested), compulsory mediation is needed?**

3.4.38. As shown in the table below, 32 out of the 46 who replied agreed that in some circumstances (if requested), compulsory mediation is needed.

	Yes	No	Other comment	No reply
Business & Industry (24)	6	2	3	13
Network, Professional or Trade body (18)	-	2	2	14
Local government (17)	10	2	1	4
Third sector & Community (9)	4	-	1	4
Public sector (7)	3	-	-	4
Academic (4)	3	-	-	1
Other organisation (1)	1	-	-	-
Individuals (7)	5	1	-	1
<b>Total (87)</b>	<b>32</b>	<b>7</b>	<b>7</b>	<b>41</b>

3.4.39. Eleven of those who agreed provided their reasons. These were mainly that **there may be cases where this is needed to ensure the supply**; some also said that this should be used as a last resort.

3.4.40. Four of those who said no commented further. One individual and a respondent from the network, professional or trade body group did not value mediation while a local government respondent felt that voluntary mediation would be more successful. A business & industry respondent did not think compulsory mediation is appropriate, adding: *“We do not see it as the role of the LAs to intervene in contractual negotiations outside of their own assets”*.

3.4.41. Most of those making other comments said that compulsion should be used as a last resort.

3.4.42. Some of the event attendees thought that mediation would be required, others suggested that mediation could be built in to engagement during the development process.

**Section B4: Q22b. Do you agree that if compulsory mediation was not successful, then a more directive approach should be used?**

3.4.43. The following table shows that a majority of the 39 who replied agreed that if compulsory mediation was not successful, then a more directive approach should be used (26).

**Section B4: Question 22b**

	Yes	No	Other comment	No reply
Business & Industry (24)	6	1	2	15
Network, Professional or Trade body (18)	-	1	3	14
Local government (17)	7	2	2	6
Third sector & Community (9)	2	-	-	7
Public sector (7)	1	-	2	4
Academic (4)	3	-	-	1
Other organisation (1)	1	-	-	-
Individuals (7)	6	-	-	1
<b>Total (87)</b>	<b>26</b>	<b>4</b>	<b>9</b>	<b>48</b>

3.4.44. Eleven of those who agreed supplied comments and, as seen in the previous question, these were mainly that there may be cases where this is needed to ensure the supply, and again some said that this should be used as a last resort.

3.4.45. The four who disagreed felt that the business should decide or that mediation may have failed because the business case had not been made; again, persuasion was seen as preferable to compulsion.

3.4.46. Those who made other comments, rather than agreeing or disagreeing, did so as they did not think compulsory mediation should be used, or that it should only be used as a last resort.

**Section B4: Q22c. Which public authority should carry out the role of compulsory mediation or direction?**

3.4.47. The main bodies identified by the 29 who replied to this question were similar to those identified in relation to voluntary mediation. The main suggestions were:

- SEPA (nine, various respondent groups).
- The Scottish Government (six, including three from local government).
- Ofgem (three, various).
- An independent regulator (three, various).

**Section B4: Q23. What are your views on requiring new industrial plant to be 'district heating-ready'?**

3.4.48. 51 respondents, across sub groups, commented on this question. 22 said that **they agree with this requirement** while a further 22 (including most of the network, professional and trade respondents that commented) **also agreed but qualified their response**.

3.4.49. Several pointed out that **costs will be reduced if this is incorporated at the design or early stage of development**. Some commented this should be a condition of planning consent or included in national Planning Policy. One local government respondent said: *"This requirement could be easily achieved through existing building regulations"*.

3.4.50. Those qualifying their response said that **this should be a requirement as long as the plant is in an area where the supply can be used**; a respondent from the network, professional or trade group said: *"If a district heating zone has been identified then any planning permission for industrial plant that falls within the zone should be subject to the plant being 'district-heating-ready'"*. Others said it should only be a requirement if it does not reduce the viability of the development or have an adverse effect on business operations. There were also concerns that such a requirement might lead to additional waste heat being produced just so that it could be sold. Some commented that this might not be suitable for all industry types.

3.4.51. A small number asked for clarification as to what is meant by 'industrial plant' and 'district heating ready'.

3.4.52. There was a query as to whether this would also be appropriate for new build residential developments and a suggestion that it should also apply to commercial buildings.

3.4.53. A very small number (four) were opposed as they felt:

- The developer should make the decision based on feasibility and cost-effectiveness (business & industry).
- New plant should be energy efficient and *"should focus on its intended commercial purpose and not be influenced by other considerations which may lead to inefficiency and unintended consequences"* (business & industry).
- That this should be measured as part of the business case but that a requirement would not be appropriate for every circumstance and area (local government).
- Some types of plant need to be based near raw materials rather than near to a heat network (network, professional or trade).

**Section B4: Q24. What would be the most appropriate way of ensuring that new industrial buildings connect to district heating networks? What role can zoning within LHEES play in this?**

3.4.54. There were 41 responses to this question, again from across respondent groups.

3.4.55. The main theme that emerged in responses to this question was that **local development plans, planning regulations and consent could be used to ensure connection**. Several of these responses came with similar provisos to those seen at the previous question, particularly that the decision is appropriate for the local area and for the business.

3.4.56. The following example of these comments came from a respondent in the network, professional or trade group:

*“If the LHEES has identified a particular location (zone) where district heating is the most appropriate solution then any new industrial buildings in that zone could be targeted to determine any potential anchor load or potentially any usable surplus heat. It could be a condition of obtaining planning consent for new industrial buildings to submit potential heat requirements or any usable surplus heat as part of the planning application”.*

3.4.57. Several respondents, from various groups, also mentioned the need for incentives to promote this and to ensure viability for businesses, such as loans, lower rates or other incentives.

3.4.58. One local government respondent was concerned that zoning could conflict with other development plan principles.

3.4.59. At the consultation events, respondents commented that it is already a requirement for new industrial buildings to be district heating connection-ready.

## **Summary: Section B4**

**Respondents were asked what challenges and opportunities they saw for existing industrial plant to connect and sell waste heat to nearby district heat networks, both now and in the future. Several concerns emerged from responses and these were also given as examples of barriers to selling heat. Concerns included: reliability of supply; capital costs; and the quality or nature of waste heat.**

**The availability of data from existing industrial plant, with the potential to supply surplus heat, was seen as important. Reasons given for agreeing with a mandatory approach included the need for an accurate Heat Map.**

**More respondents agreed with an enabling approach than felt it should be a requirement, although small numbers commented.**

**Respondents were fairly evenly split over whether they felt the Scottish Government, SEPA or local authorities should carry out the role of voluntary mediation; again only small numbers commented. The need for the body to have skilled people with a technical background and expertise in the field was seen as important.**

**Most of those that commented on compulsory mediation agreed that in some circumstances (if requested) compulsory mediation is needed; some said that there may be cases where this is needed to ensure the supply.**

**When asked whether, if compulsory mediation was not successful, a more directive approach should be used most of the respondents who replied said that it should.**

**SEPA or the Scottish Government were the main suggestions for the body who should carry out the role of compulsory mediation or direction.**

**Most of those who addressed the question on requiring new industrial plant to be 'district heating-ready' agreed with this requirement. However, many qualified their response saying that that this should be a requirement only when the plant is in an area where the supply can be used.**

**Local development plans, planning regulations and consent were seen as the most appropriate ways of ensuring that new industrial buildings connect to district heating networks.**

### 3.5. Technical Standards, Consumer Protection and Licensing

**Section B5: Q25. Do you agree that as district heating becomes more widespread it will need to become a licensed activity? Please explain your answer.**

3.5.1. As the table below shows, almost all respondents who provided a definitive response, agreed that as district heating becomes more widespread it will need to become a licensed activity. Event attendees also shared this view.

Section B3: Question 25

	Yes	No	Other comment	No reply
Business & Industry (24)	11	1	-	12
Network, Professional or Trade body (18)	4	1	2	11
Local government (17)	16	-	1	-
Third sector & Community (9)	5	-	1	3
Public sector (7)	2	1	2	2
Academic (4)	4	-	-	-
Other organisation (1)	-	-	-	1
Individuals (7)	5	-	-	2
<b>Total (87)</b>	<b>47</b>	<b>3</b>	<b>6</b>	<b>31</b>

3.5.2. 54 respondents also provided commentary in support of their answer; a number of key themes emerged:

- That a licensing regime will provide customer protection in terms of standards, price and security of delivery.
- That this will help to maintain and set consistent technical standards for design, construction, and operation and connectability; this perception was particularly prevalent among those in the local government group.
- That this will help to ensure customer confidence and credibility in district heating networks.
- To maintain levels of probity and governance; important because of the need to ensure close scrutiny of the potential for monopolistic abuse.
- To provide reassurances for potential customers, developers and operators.
- A need for a national framework applicable to all local authorities across Scotland, to ensure consistency in provision.

3.5.3. There were a number of comments that licensing is important because it will help to provide parity with the existing gas and electricity markets, or that this is

directly comparable to other utilities and should therefore be subjected to the appropriate regulations.

3.5.4. However, smaller numbers of respondents commented that licensing needs to be discussed with the industry so that it is not overburdened with unnecessary regulation, or that a licensing regime should not be so onerous as to prevent development or investment in the district heating sector.

3.5.5. There was also a comment that if specific standards are required (both technical and related to consumer protection) then form licensing may not be required.

3.5.6. Some respondents suggested a voluntary code of practice, with a few referring specifically to the Heat Trust or CIBSE Heat Networks Code of Practice, suggesting that the district heating sector should be compliant with either or both of these.

3.5.7. Very small numbers of respondents raised other issues and these included:

- Who will bear cost of regulation?
- Who would be responsible for issuing district heating licences?

**Section B5: Q26. What technical standards and consumer protection measures should be part of standard district heating licence conditions? How should these relate to existing schemes?**

3.5.8. 45 respondents commented at this question; responses came from across all sub groups.

3.5.9. Significant numbers of respondents referred to existing Codes of Practice, with 19 referring to **the Heat Trust** and a similar number referring to **CIBSE** (Chartered Institute of Building Services). CIBSE was also referenced at the consultation events. Smaller numbers of respondents referred to:

- ADE (Association of Decentralised Energy) Code of Practice.
- Forthcoming compliance scheme to be led on by the ADE.
- BRE – Technical Guide.
- Building Engineering Services Association (BESA) – Hiu test standard / Early Connections Guide.
- Bonfield.
- Ofgem.
- Scottish Housing Regulator.

3.5.10. Smaller numbers of respondents suggested these should be starting points for development of standard district heating licence conditions.

3.5.11. However, one issue raised by some respondents was that the **Heat Trust is only voluntary and only applied to the operator and customer; also that this does not cover pricing.**

3.5.12. There were also some comments that there is a need to look beyond voluntary measures and create mandatory measures instead.

3.5.13. At the consultation events, attendees identified retail licensing and access to an independent arbitrator as critical to consumer protection. A number of consultation respondents noted that there is need for customers to have consumer rights and protection, or to have similar levels of protection as are currently seen in the gas and electricity markets.

3.5.14. Others referred to specific key elements or protection measures that need to be incorporated in licence conditions and these included:

- Transparent costs / clear pricing / price setting criteria.
- Price caps.
- Secure supply, including high capacity flow, maximum and minimum temperatures, pressure levels.
- Process for breakdown and maintenance.
- Accurate / regular / quality billing.
- Guaranteed minimum standards of heat supply.
- Maximum repair time guarantees.
- Compensation payments.
- Dispute management / complaints handling (with one suggestion of a need for an independent organisation to manage disputes).
- Joining and leaving rights.

3.5.15. A few respondents in the business & industry and third sector & community groups made reference to the need for protection of vulnerable customers specifically.

3.5.16. One respondent from the network, professional or trade body group provided information on their customer protection scheme for the district heating sector and offered further information and engagement with the Scottish Government on this issue.

3.5.17. Other suggestions included;

- A need for annual reporting by providers of district heating systems to show they are meeting their public duties under the Climate Change Act.
- A need for a mechanism for a supplier of last resort.
- An Ombudsman service (suggested by respondents in business & industry).

3.5.18. There were a small number of suggestions that a timeframe should be put in place for existing schemes to meet technical and consumer protection measures.

There were also a small number of suggestions of the need for the Scottish Government to work with the UK Government as this is not a devolved area.

**Section B5: Q27. What are your views on using a licensing system to confer enabling powers on operators, and on what enabling powers are required?**

3.5.19. 30 respondents commented at this question; responses came from across all sub groups.

3.5.20. The view expressed by most was that **a licensing system is the best way to confer enabling powers**, with a number of these respondents suggesting this should operate in the same way as existing utility providers to as to have a 'levelling of the playing field'.

3.5.21. A small number of respondents, mostly in the local government sector, commented that concession holders should have to have a licence.

3.5.22. A few respondents outlined what they felt the enabling powers should be and these included:

- Wayleave and access rights.
- Metering.
- Installation and maintenance of a district heating system.
- Billing.
- Power to request obligatory connection.

3.5.23. A small number of respondents commented that enabling powers should not be applied to operators now but that the focus should be on implementation of technical standards and consumer protection.

**Section B5: Q28. What principles, objectives and other considerations should guide the development of a Scottish district heating licence?**

3.5.24. A wide range of principles, objectives and considerations were noted in responses, each mentioned by small numbers of respondents.

3.5.25. The following points were suggested by two or more of the 32 respondents who replied to this question:

- Fairness, transparency and sustainability.
- Fair pricing e.g.: *"it should also include unit cost / price guarantees which are indexed to incomes and inflation"* (local government).
- Security of supply.
- Consumer protection; although one respondent from the third sector commented on legislative issues saying that as consumer protection is not devolved, the SG would not be able to enact new legislation and so would

have to amend other current legislation: *“the Scottish Government can introduce a statutory licence that includes existing consumer protections in legislation”*.

- Knowledge, skills and experience (especially technical experience).
- Standards or industry-wide standards.
- Financial stability and viability.
- The need to maximise development of district heating systems.
- Environmental considerations, including energy efficiency and decarbonisation and use of low carbon sources.

**Section B5: Q29. What drawbacks or challenges might a licensing system create? How could these be minimised?**

3.5.26. 36 respondents, mainly from local government or business & industry, commented on this question.

3.5.27. Several respondents felt **a licensing system might prove onerous, overly bureaucratic or costly and so act as a barrier to operators**, particularly for public sector or small organisations that may wish to take out a licence. This view was shared by consultation event attendees.

3.5.28. There was also a concern that an overly complex or burdensome system could reduce competition and lead to a small number of operators gaining control of the market.

3.5.29. The following, from a local government respondent, is an example of these comments:

*“This must strike the right balance between rights and responsibilities; too many rights and there is a risk that the network operator becomes too powerful in its monopoly and therefore may struggle to sign up customers and keep them where there are alternative forms of heat available; too many responsibilities will result in fewer operators being willing to become suppliers and this will harm the growth of this industry”*.

3.5.30. The need to ensure access to new entrants, communities or smaller schemes was seen as important; there was a comment that a licensing system might act as a disincentive to these groups and also that it could stifle innovation.

3.5.31. In relation to minimising these drawbacks or challenges, **transparency, monitoring, and a proportionate, light-touch, well designed system were seen as key to overcoming barriers**. For example, a third sector respondent suggested: *“It should be a principle in the design of the licensing system that the burden of compliance with each clause or obligation is minimised”*.

3.5.32. Another challenge identified by respondents was the time period needed to recoup investment, with comments that long concession periods would be necessary to minimise this issue.

**Section B5: Q30. Do you have views on who should issue District Heating Licences and ensure that technical standards are being met?**

3.5.33. 38 respondents from various sub groups made suggestions; those made by two or more respondents included:

- A new SG owned Energy Agency or other national body (14 mentions).
- The Scottish Government (six).
- SEPA (four).
- Local authorities with support from SG or other national body (three).
- An independent body (three).
- Ofgem (two from network and business, although one local government respondent and attendees at the consultation events said they would prefer licensing power to remain in Scotland).

3.5.34. In addition, two respondents commented that technical standards should follow the ADE CIBSE Code of Practice.

**Section B5: Q31. Would the benefits of the concession area outweigh the costs of the licensing arrangements?**

3.5.35. 31 respondents, across respondent groups, commented.

3.5.36. Although a small number said yes (nine), more said it was not possible to say at this stage (10).

3.5.37. The remainder gave more general comments including that **the benefits of the concession area would need to outweigh the costs of the licensing arrangements** in order for the development and implementation of district heating to progress.

3.5.38. Reasons given by those who said yes included that this had already been shown to be the case in other regulated sectors or that this would be the case if compliance costs are kept in check.

3.5.39. Reasons given by those who said 'don't know' included that there is, as yet, insufficient information on which to make a determination. One network, professional or trade group respondent said it is important that:

*“any costs imposed as part of the licensing system are as cost-effective as possible, utilising existing frameworks wherever possible, to limit cost impacts on developers (as costs will make heat networks less viable as investments or will impact heat customers)”.*

### **Summary: Section B5**

**Almost all respondents who provided a definitive response agreed that, as district heating becomes more widespread, it will need to become a licensed activity. Once again, consumer protection and consistent standards were seen as important.**

**A wide range of principles, objectives and considerations to guide the development of a Scottish district heating licence were noted in responses.**

**Some respondents felt a licensing system might prove onerous, overly bureaucratic or costly and so act as a barrier to operators. The need to ensure access to new entrants, communities or smaller schemes was seen as important.**

**On the question of who should issue District Heating Licences and ensure that technical standards are being met, most of the small number who commented suggested a new Energy Agency.**

**While a small number of respondents felt that the benefits of the concession area would outweigh the costs of the licensing arrangements, a similar number said it was not possible to tell at this stage.**

### 3.6. Enabling Activity and Additional Areas for Consideration to Support our Regulatory Approach

**Section B6: Q32. What are your views on the best approach to ensuring that potential customers understand the differences as potential customers of a heat network, and who do you think is best placed to convey these messages?**

3.6.1. 45 respondents commented on this question; responses came from across all sub groups. Some responses focused on channels of communication, others on who should be responsible for communication, a small number on what the key message should be and some on combinations of these and other themes.

3.6.2. Whilst the overall pattern of comment was fragmented, a relatively common theme was to state or confirm **the need for customer engagement, consultation and education.**

3.6.3. A few respondents commented on what specifically should be included e.g. financial benefits, environmental benefits, social or societal benefits. The need for consumer protection was emphasised in a small number of comments, sometimes linked to the importance of impartial and independent advice.

3.6.4. Around one in five responses, across sub groups, referred to **a need for both national and local communication activity** to fulfil different roles, sometimes with different audiences. Linked to these differing needs, many respondents see responsibility falling to multiple parties; the Scottish Government and local authorities were relatively commonly cited. An array of different organisations were mentioned including National Oversight Body, Heat Trust, Home Energy Scotland and Heat Network Developers. The need for trusted or independent sources of information was highlighted.

3.6.5. In comments regarding channels of the communication, the importance of face-to-face contact such as public meetings was cited by a small number of respondents. Other suggested routes for engagement and communication included advocacy, websites and local press. There was recognition of a significant communication challenge and some comment on the need for plain English to be used.

**Section B6: Q33a. Please provide any evidence you have regarding analytical skills, resources and techniques that could support development of LHEES, particularly where these are not currently used by local government.**

3.6.6. Only 30 respondents commented on this question, although responses came from across sub groups. The overriding theme in responses was that **central government input will be required to create Scotland wide, standardised information, data and resources from a central body and make this available to local authorities.**

3.6.7. A few responses also suggested that a national approach would be more cost effective and ensure greater consistency.

3.6.8. Several responses, particularly but not exclusively from the local government group, highlighted a lack of either the necessary specialism and / or resources in local authorities to support development of LHEES. Some commented specifically on the need for additional staff or consultants to provide the required skill sets. A similar point was made at the consultation events.

3.6.9. There was some further comment that the purchase of external services on an individual local authority basis would not be cost effective.

3.6.10. The key skill sets identified in responses included development viability, economics, data analytics, option appraisals, whole life costings, specialist legal knowledge, GIS, environmental impact and consumer engagement.

**Section B6: Q33b. Please provide any evidence you have regarding the anticipated cost of preparing LHEES.**

3.6.11. Only 20 respondents answered this question, half were from the local government group with the rest from across the other groups.

3.6.12. The main theme in comments at this question was that **costs are expected to be extensive**, although very few respondents specified amounts. One respondent from the local government group estimated a cost of £500,000 per zone to produce a feasible action plan.

3.6.13. A couple of references were made to information from Greater London Authority, citing a cost of producing an in house basic energy master plan for an area within London as around £30,000 and for a consultant supported detailed master plan a cost of around £50,000.

3.6.14. The need for a coordinated approach across local authorities, and for pro forma and guidance from central government as well as resources, were reiterated again here.

3.6.15. At the consultation events, attendees were unsure of costs, saying that this would depend on the level of detail required and the support available.

**Section B6: Q33c. Please provide any evidence you have regarding the additional skills and resources needed to meet the requirements of the potential local authority role of district heating regulation.**

3.6.16. 25 respondents commented on this question and responses came from across sub groups. The themes were consistent with those at earlier parts of the question and reiterated **the lack of many skills as well as a lack of resources in local authorities**. Similar themes emerged at the consultation events.

3.6.17. A few respondents made suggestions for regulation to be undertaken by a third party, national body or within the Scottish Government, or for a central pool of knowledge and guidance to be made available. Once again some respondents felt this would ensure consistency and provide a cost effective solution.

**Section B6: Q34. What support and resources will local authorities need to produce LHEES and implement the potential local authority role of district heating regulation, and which organisations do you think these are best placed to provide these? Please explain your views.**

3.6.18. 38 respondents commented on this question and responses came from across sub groups. The main recurring themes focussed once again on **the need for financial resource for additional in house staff and / or procurement of consultancy services**. The need for technical resource and strategic guidance was also a theme again here.

3.6.19. Specific mentions were made, each by a small number of respondents, of the need for support in identifying zones, preparing costings, modelling, socioeconomic assessments, energy management, GIS, procurement and contract negotiations, legal, development management and housing services.

3.6.20. A wide range of organisations were cited as able to provide support and resources on specific areas, although each was mentioned specifically by very small numbers.

3.6.21. They included Heat Network Partnership, Scottish Futures Trust, Energy Saving Trust, Changeworks, Scarf, Sustainable Scotland Network, The Carbon Trust, Historic Environment Scotland and a Heat Network Delivery Unit similar to England. Comments were made regarding additional staff within local authorities, working with consultants or other third parties and also the possible benefits of shared resources.

**Section B6: Q35. What are your views on how any support should change over the different phases of development, introduction and implementation of any regulation?**

3.6.22. 30 respondents answered this question, almost half were from the local government group with the remainder from across the other groups. It was a relatively common theme that **the levels of support required are expected to reduce over time as expertise builds at a local level**. One or two respondents commented on the need for levels of support to be reviewed over time.

3.6.23. Some respondents suggested there would be greater emphasis on technical support in the early stages e.g. feasibility, heat mapping and zoning, progressing to more support with contractual issues, planning and development, and legal issues such as challenges from bidders and from building owners.

3.6.24. There was some comment that the level of support is likely to vary between local authorities and that it will be important that learnings are shared.

Several respondents reiterated again here the need for resources and expert input and this was echoed at the consultation events.

**Section B6: Q36. What are your views on the wider regulation of the heat market to ensure decarbonisation?**

3.6.25. 42 respondents commented on this question and responses came from across sub groups. A number of respondents stated their support for the Scottish Government's approach. Many comments focussed **not only on decarbonisation but also the importance of heat regulation ensuring sustainability**. There was also comment on the need to address fuel poverty as a priority.

3.6.26. A relatively common theme within the commentary at this question included **a need for controls to ensure energy for district heat systems is low or zero carbon** and that new plant can be adapted in future to operate on other fuels or technologies.

3.6.27. There were **mixed views expressed as to whether regulation relating to heat should focus on transition to a largely decarbonised energy system and not extend to regulation of other heating fuels**. One or two respondents commented on the need for balance to ensure there is fair competition and also to protect consumers. Several responses included suggestions for the use of incentives for take up of low carbon solutions, and carbon taxes or obligations for energy service providers (ESPs) to reduce CO<sub>2</sub> emissions.

3.6.28. There was some comment on the need for investment and support for green gas projects, low carbon solutions and appropriate infrastructure. There was specific comment that decarbonisation of the gas network should be encouraged through appropriate green gas projects and potentially in the longer term hydrogen. However, one respondent in the business and industry group questioned whether hydrogen or carbon capture and storage (CCS) would necessarily deliver a cheap solution to decarbonised heat. The same respondent identified the benefits of onshore wind and suggested that the availability of cheap gas is being allowed to delay investment in low carbon infrastructure.

3.6.29. A respondent in the local government group suggested that decision on the future of the gas network should only be taken when the UK Government is satisfied that there is a viable solution.

3.6.30. Another business and industry respondent suggested that policy to target off gas grid carbon emissions reductions would be welcomed, recognising LPG as a low carbon alternative and supporting the deployment of biomass and LPG heat networks.

3.6.31. The theme of appropriate incentives and encouragement recurred in several comments.

**Section B6: Q37. What are your views on when decisions should be taken on the future of the gas network?**

3.6.32. 43 respondents commented on this question and responses came from across sub groups. A number of these responses suggested that decisions should be taken **“as soon as possible” or “as a matter of urgency”**; **others referred to 2020, by 2023 (before the next gas price control review), mid 2020s or within the next five years.**

3.6.33. Comments from those who favoured early decisions included suggestions that this would assist local authorities in their planning, ensure consumers are making appropriately informed decisions regarding purchase of heating systems and give clarity to businesses who may be affected.

3.6.34. There were several comments that early decisions are required to allow all affected parties to plan accordingly; the 2032 target in the Draft Climate Change Plan is also cited as a consideration that necessitates early decisions. On the other hand, there were also comments pertaining to the need for further information, evidence and learnings from ongoing activity before significant decisions are taken.

**Section B6: Q38. Please provide any evidence you have to inform the Scottish Government in informing its thinking in this area.**

3.6.35. 16 respondents commented on this question and responses came from across respondent groups. A small number of responses include details of specific resources, occasionally in lengthy lists and others offered to share information with the Scottish Government.

3.6.36. A few offered comments detailing their views on how the cost of regulating the asset base for heat in Scotland should be socialised. One business and industry respondent commented:

*“In considering the issue of socialisation of costs in future it is important to be clear whether the aim is to spread the costs of de-carbonisation (where taxation would be a more equitable - and probably more practical - way of socialising costs across different technologies) or whether the aim is to spread risks across customers more uniformly which would still be difficult but raises fewer equity / distributional issues.”*

3.6.37. An individual respondent felt that the costs of regulating the asset base for heat in Scotland should be socialised across all of the tax payers in Scotland.

3.6.38. A local government respondent noted that it would be beneficial to investors, developers and customers for the socialisation of development and maintenance costs to be spread across the widest possible heat market.

## **Summary: Section B6**

**Around half of all respondents provided views on the best approach to ensuring that potential customers understand the differences as potential customers of a heat network. The main themes included the need for customer engagement, consultation and education.**

**Respondents were asked for evidence regarding analytical skills, resources and techniques that could support development of LHEES, particularly where these are not currently used by local government. The main theme, from the relatively small number that replied, was that central government input will be required to create Scotland wide, standardised information, data and resources from a central body and make this available to local authorities.**

**When asked to provide any evidence regarding the anticipated cost of preparing LHEES, few commented and, for those that did so, the main theme was that costs are expected to be extensive.**

**Again, few commented on evidence regarding the additional skills and resources needed to meet the requirements of the potential local authority role of district heating regulation; respondents mentioned a lack of many skills as well as a lack of resources in local authorities.**

**Respondents were asked what support and resources local authorities will need to produce LHEES and implement the potential local authority role of district heating regulation, and which organisations might be best placed to provide these. The main recurring themes focussed once again on the need for financial resource for additional in house staff and / or procurement of consultancy services. The need for technical resource and strategic guidance was also a theme here.**

**Looking at how support could change over the different phases of development, introduction and implementation of any regulation, respondents simply expected the support required to reduce as expertise builds at a local level.**

**In respect of the wider regulation of the heat market to ensure decarbonisation, many of the comments made at this question focussed not only on decarbonisation but also the importance of heat regulation ensuring sustainability.**

**Respondents provided a range of suggestions on when decisions should be taken on the future of the gas network with a number saying 'as soon as possible' and others giving suggestions covering the next 5 to 10 years.**

## 4. Other Comments

**Q39. Please set out any further views on issues covered in this consultation that you have not already expressed, providing evidence to support your views.**

4.1. 41 respondents included a response to this question; this included one network, professional or trade body respondent that did not address any of the questions but, instead, gave general comments on draft regulations and a third sector respondent that provided a number of case studies and other information.

4.2. Several respondents commented on what they saw as **omissions, or areas that need to be addressed, or where more detail is required:**

- Clearer definition of the scope and reach of LHEES.
- Clearer definition of district heating.
- Types of measure that will be within the LHEES strategies.
- Funding and financing, including Renewable Heat Initiative funding, and a need to review all existing funding elements.
- Resourcing, including skills.
- Information on ownership.
- How the LHEES falls within SEEP.
- The need for business models.
- Involving existing energy service companies.
- More robust concession models.
- The need to recognise and support other sources of decarbonising heat such as energy from waste, heat pumps and biogas plants.
- Rates relief.
- Improving the fabric of homes to reduce heat loss.
- Education for the public on district heating.
- Information on VAT.
- Whether pilot schemes could be put in place.
- Conflicts between requirements to connect and mortgage requirements.
- The need for regulations to explicitly set out which parties they apply to.

- The need to include local heat networks as well as district heating.
- That there will be areas where the NHS would be better placed to lead than local authorities.
- The need to consider integrating LHEES into Local Development Plans.
- The potential for new developments to add a clause around local or Scottish employment or content.
- The need for appropriate baseline research.

4.3. A number of respondents provided industry-specific or business-specific information in relation to proposals in the consultation. A number of respondents offered to provide further assistance, advice or asked to be involved in the next stages. A further 16 respondents provided additional information, such as background information, thanks for the opportunity to comment or a summary of the main points in their response.

## 5. Cross-cutting themes

There were a number of points that recurred across most respondent groups and at many sections of the consultation. These are summarised below:

### 5.1. Consumers

5.1.1 Themes specifically relating to consumers included the need:

- For consumer protection.
- To ensure a focus on reducing fuel poverty.
- To ensure affordable warmth.
- To ensure security of supply.
- To raise awareness and engagement.
- To ensure service standards; and
- To change cultural expectations of consumer choice and create awareness of the benefits of district heating as an energy option.

### 5.2. Environmental factors

5.2.1 Acknowledgement that the LHEES, coupled with both local authority level leadership and national, strategic direction and leadership, can be a driver for raising awareness of, as well as tackling, energy use and heat waste.

5.2.2. Environmental issues need to be prioritised in plans and proposals for LHEES and these should include:

- Decarbonisation of heat.
- Reducing energy use.
- Reducing heat waste.
- Meeting targets on climate change.
- Ensuring the quality of local air / reducing local air pollution; and
- Promoting and delivering energy efficiency.

### 5.3. Local authorities

5.3.1 The need for support for local authorities included the following:

- Financial support.
- Support to develop in-house skills or to procure consultancy services.

- Capacity building.
- Technical resources and skills.
- Support with contractual issues.
- Support with any legal challenges or other legal issues.
- Provision of, or support in collecting, information and data.
- Strategic direction.
- Consistent advice provided to all local authorities; and
- Guidance and support from the Scottish Government or another national body.

## **5.4. National oversight**

5.4.1 The suggestion that there should be some form of oversight from a national body; either a Scottish Government Department or Agency or an independent body, recurred throughout the consultation.

5.4.2. Local delivery, reflecting local conditions, was seen as key to successful implementation. However, the need for clear national guidelines and support providing a cohesive, consistent approach will be necessary both to attract investment and to provide reassurance to consumers.

5.4.3. In addition, national input could reduce the resource implications for local authorities.

5.4.4. Suggestions for a national agency or other form of national oversight were noted in relation to the following areas:

- Provision of guidance, advice or templates.
- Setting and implementing national standards. Working in partnership with local authorities to ensure local targets are in line with national targets and priorities or to oversee targets; both for LHEES and overall SEEP targets.
- Provision of regulatory oversight and scrutiny to ensure the long term interests of both consumers and network operators.
- Overseeing consumer protection, including service provision and complaint resolution.
- Raising awareness among consumers; trusted or independent sources of information will be required.
- Issuing and enforcing concessions; as this needs multiple expert resources across Scotland, a national unit could provide specialist skills and would offer

economies of scale. A national framework for issuing concessions would provide consistency.

- Checking for consistency of concession design.
- A Scottish Government backed national energy company could take over failing concessions or post-concession.
- Collecting and providing data or providing support to collect data.
- National benchmarking of heat supply pricing compared to alternative supply options; or conducting annual tariff reviews.
- Issuing licences, again to ensure consistency and also that technical standards are met.
- Provision of analytical skills, resources and techniques; this will be cost effective and ensure consistency.

## **5.5. Developers and Investors**

5.5.1. Risk reduction is a key factor that will promote confidence and attract investment in district heating infrastructure. Heat revenues being de-risked to the level of current utilities should lead to lower costs.

5.5.2. Financial viability will need to be demonstrated and there are a number of factors that could impact on this, including:

- Ensuring regulation does not stifle financial viability.
- Providing certainty in relation to anchor loads.
- The design of concessions, including size and concession length; and
- The use of zoning based on heat sources or areas of demand to ensure developments are in the right locations.

## **5.6. Business and Industry**

5.6.1. Early engagement and discussion with existing industries should include promotion of the benefits of district heating schemes to the community and environment. It should also demonstrate the value of their own involvement such as increasing their environmental credentials, helping them to meet targets, or providing an additional income stream.

5.6.2. It should be recognised that not all businesses will be able to provide an uninterrupted supply of heat waste, or heat waste of a suitable quality.

5.6.3. Along with encouragement, appropriate incentives could be offered. For example: a reduction in CO<sub>2</sub> tax; off-setting the cost of connecting; or business rate reductions.

5.6.4. Powers to compel industry should be used as a last resort. At all of the questions where some form of requirement or compulsion was proposed there was a preference for persuasion.

## **5.7. Other issues**

5.7.1. Some suggestions that district heating networks should be owned and operated by a not-for-profit organisation, rather than private businesses who may prioritise profit over other considerations.

5.7.2. A need for the Scottish Government to learn lessons from elsewhere in the UK or other countries such as Denmark, where district heating has been introduced.

## 6. Consultation Feedback

6.1. At the end of the questions, respondents were asked if they would like to provide feedback in order to help improve future consultations and this section outlines the findings from these responses.

### How satisfied were you with this consultation?

6.2. As the table below demonstrates, of those providing an answer, more respondents (28) were satisfied with the consultation than were dissatisfied (eight).

#### Section Evaluation: Question 1

	Very Satisfied	Slightly Satisfied	Neither Satisfied nor dissatisfied	Slightly Dissatisfied	Very dissatisfied	No reply
Business & Industry (24)	5	7	3	-	1	8
Network, Professional or Trade body (18)	-	3	1	1	-	13
Local government (17)	2	4	3	1	-	7
Third sector & Community (9)	1	-	1	1	-	6
Public sector (7)	-	-	2	1	-	4
Academic (4)	1	1	-	-	1	1
Other organisation (1)	--	-	1	-	-	-
Individuals (7)	1	3	1	2	-	-
<b>Total (87)</b>	<b>10</b>	<b>18</b>	<b>12</b>	<b>6</b>	<b>2</b>	<b>39</b>

6.3. Only 19 respondents, across all sub groups, provided any additional commentary. The key comment, from four respondents was that the consultation paper was too long, with another two respondents commenting that the questions were too repetitive. Other comments about the questions, each made by a single respondent were that the questions:

- Were too verbose.
- Not well worded.
- Too detailed for a high level consultation.
- Too ambiguous.
- Not all relevant to the respondent or their sector.
- Were worded from the perspective of established schemes with little regard to the low penetration of district heating systems nationally.

6.4. One respondent suggested that a separate list of questions be made available for people to review prior to responding to a consultation; another requested a simpler version for members of the general public; another disliked the 'agree / disagree' style of question.

6.5. Other comments in relation to the consultation included:

- Scottish Government do not realise the implications of expecting organisations and individuals to respond to consultations as they take up a great deal of time and resources, particularly given the high number of consultations put out every year.
- The timeframe for responding was too short.
- There needs to be much more background work done on district heating.
- The workshop session was informative and useful.
- This consultation should be done in connection with SEEP and the Climate Change plan, not in isolation.

**How would you rate your satisfaction with using this platform (Citizen Space) to respond to this consultation?**

6.6. As the table below demonstrates, of those providing an answer, more respondents (41) were satisfied with using Citizen Space than were dissatisfied (three).

**Section Evaluation: Question 2**

	<b>Very Satisfied</b>	<b>Slightly Satisfied</b>	<b>Neither Satisfied nor dissatisfied</b>	<b>Slightly Dissatisfied</b>	<b>Very dissatisfied</b>	<b>No reply</b>
Business & Industry (24)	11	-	3	1	1	8
Network, Professional or Trade body (18)	3	1	-	1	-	13
Local government (17)	6	4	-	-	-	7
Third sector & Community (9)	2	1	-	-	-	6
Public sector (7)	1	2	-	-	-	4
Academic (4)	2	1	-	-	-	1
Other organisation (1)	-	1	-	-	-	-
Individuals (7)	6	-	1	-	-	-
<b>Total (87)</b>	<b>31</b>	<b>10</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>39</b>

6.7. Only eight respondents provided any additional commentary. These comments were:

- Citizen Space is an excellent tool that is easy to use.
- Some of the questions needed additional options for 'unsure' or 'other'.
- Would like to be able to provide short contextual comments in the questionnaire format – would like this above the question and answer section.
- Can be slow to work through the consultation questions.
- Not all questions were relevant.
- Would be useful to be told at the start of the consultation paper that a pdf copy of responses would be provided.
- Dislike of the presentation of the consultation paper.
- Difficult to find the actual consultation document.
- A request to advertise the consultation better.

# Appendix A: Respondent organisations

Respondent organisations
Aberdeen City Council
Aberdeen Heat & Power Co. Ltd
Aberdeenshire Council Officer response
ADE - The Association for Decentralised Energy
Aqualor Energi
Built Environment Asset Management (BEAM) Centre, School of Engineering and the Built Environment, Glasgow Caledonian University
Castle European Limited
Centre for Energy Policy, University of Strathclyde
Changeworks
Competition and Markets Authority
Consumer Futures Unit, Citizens Advice Scotland
COSLA, Convention of Scottish Local Authorities
Council of Mortgage Lenders (CML)
EDF Energy
Energy Saving Trust
Energy Systems Catapult
Energy UK
ENGIE UK
Existing Homes Alliance Scotland
Friends of the Earth Scotland
Glasgow City Council
Grid Edge Policy Ltd

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Heat and the City Research Team, University of Edinburgh

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Heat Trust

---

Historic Environment Scotland

---

Homes for Scotland

---

Metropolitan Infrastructure Ltd

---

MIMA

---

NHS National Services Scotland

---

NORDIC ENTERPRISE TRUST

---

OFGEM- Office of Gas and Electricity Markets

---

Perth & Kinross Council

---

Pinnacle Power

---

Ramboll Energy

---

RTPI Scotland

---

Scottish Environment Protection Agency (SEPA)

---

Scottish Federation of Housing Associations

---

Scottish Futures Trust

---

Scottish Land & Estates

---

Scottish Property Federation

---

Scottish Renewables

---

ScottishPower

---

SGN

---

star renewable energy

---

Stop Climate Chaos Scotland

---

Sunamp Ltd

---

Sustainable Energy Association

---

---

The Building Engineering Services Association

---

The Law Society of Scotland

---

Town Rock Energy Ltd

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University of Strathclyde

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West Dunbartonshire Council

---

WWF Scotland

---

27 organisations - name withheld

---

7 individuals

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