

# District Heating Opportunities in the North of Scotland

## Post-Event Feedback Report



**Event Date:** 27 June 2016 | **Venue:** HQ Chambers, Inverness

**Host:** The Highland Council, D&I Service

**Organiser/Author:** Energy & Sustainability Team

**Supported by:** Stratego & The Heat Network Partnership



# Contents

1   Background .....	3
2   Objectives .....	4
3   Agenda .....	4
4   Attendance .....	6
Delegates.....	6
Speakers.....	6
5   Pre-Event Survey Results.....	7
6   Workshop Outputs.....	11
Workshop 1 – The Highland HERO Approach .....	11
Workshop 2 – Customer Care and Protection.....	12
Workshop 3 – Ownership and Investment Models.....	13
7   Event Feedback Forms.....	15
General comments.....	15
8   Next Steps .....	17
9   Thanks.....	17
10   Further Information .....	18

## 1 | Background

This event was organised by The Highland Council as part of developing heat and energy plans in North Scotland, with specific focus on district heating. There are specific national policies relating to the efficient provision of low carbon heat in Scotland and The Highland Council needs to consider a range of ways to provide efficient and affordable heating to its buildings, housing stock and constituents in the Highlands (there are commitments within the Corporate Plan that support the direction of planning and implementation of such schemes). District heating is one option that is to be explored and the event was held to help inform those who may be involved in the development, installation or management of future schemes.

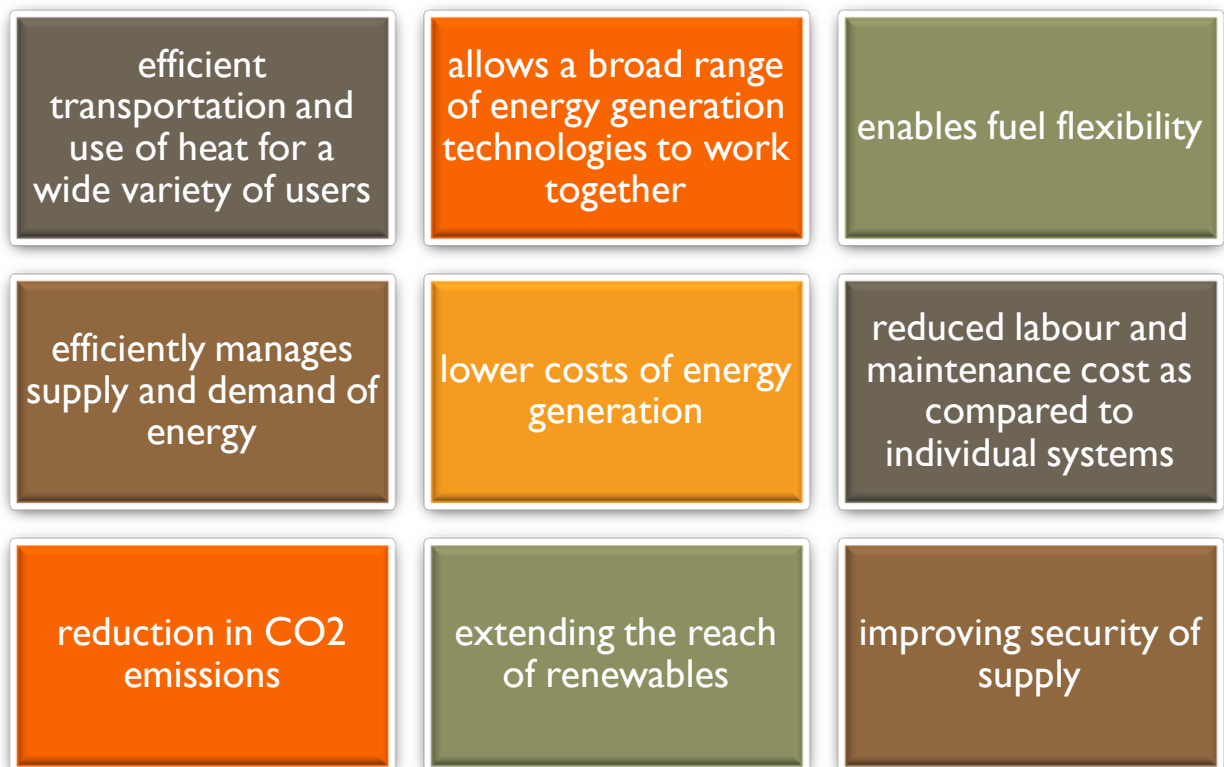


Figure 1: Example benefits of District Heating

The event was hosted by The Highland Council with support from the Stratego project <http://stratego-project.eu/> (a project funded by Intelligent Energy Europe and Scottish Government).

## 2 | Objectives

<b>EDUCATE</b>	on District Heating support, experiences and best practice
<b>INFORM</b>	on The Highland Council heat and energy strategy development
<b>STIMULATE</b>	stakeholder engagement and gather views

## 3 | Agenda

PROGRAMME	SPEAKER
1 Introduction	<b>Eddie Boyd</b> Highland Council
2 Scottish Context and Drivers	<b>Ruth Bush</b> Stratego (Scottish Government)
3 Highland HERO Approach	<b>Jackie Sayer</b> Highland Council
4 Highland Council Planning Context	<b>David Cowie</b> Highland Council
Q&A	

<b>5</b>	Dronninglund Community DH network	<b>David Goldie &amp; Finlay MacDonald</b> Highland Council
<b>6</b>	Danish Experience	<b>Morten Jordt Duedahl</b> Danish Board of District Heating
<b>7</b>	Customer Experience	<b>Tessa Clarke</b> Changeworks
	Q&A	
	LUNCH @ 12:30	
<b>8</b>	The Highland Council – Local Energy Solutions	<b>Dr Stuart Black</b> The Highland Council
<b>9</b>	HERO Energy Strategy Approach	<b>Eddie Boyd</b> The Highland Council
<b>10</b>	Danish Expert Support	<b>Morten Jordt Duedahl</b> Danish Board of District Heating
<b>11</b>	Technological Solutions	<b>Dave Pearson</b> Star Refrigeration
	Q&A	
	Discussion Session 1	
	Break @ 15:00	
	Discussion Session 2	
	Close @ 16:30	

## 4 | Attendance

### Delegates

Invitations were extended to a wide range of interested parties and stakeholders resulting in a fair attendance rate.

Invited	Registered	Attended	Turnout (from registered)
133	61	40	59%

There was representation from

- The Highland Council (staff and members)
- Scottish Government and their agencies
- Heat Network Partnership
- Energy Organisations
- Other Scottish Local Authorities
- Highland based Housing Associations
- International experts (Danish Board of District Heating)
- Industry experts

### Speakers

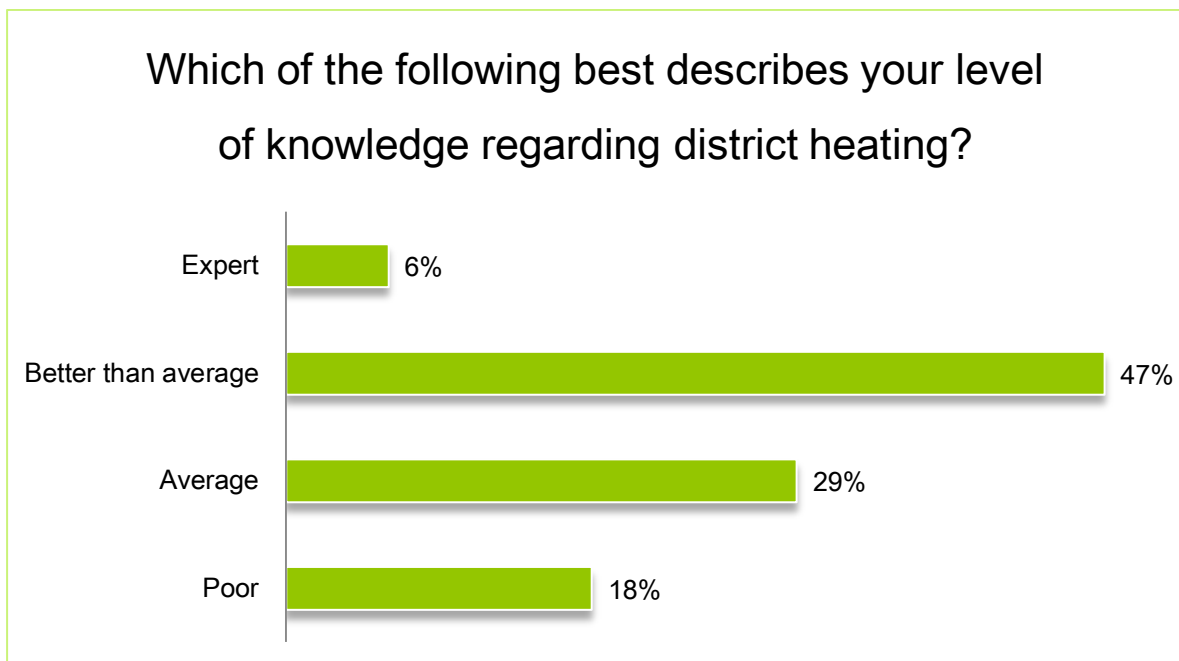
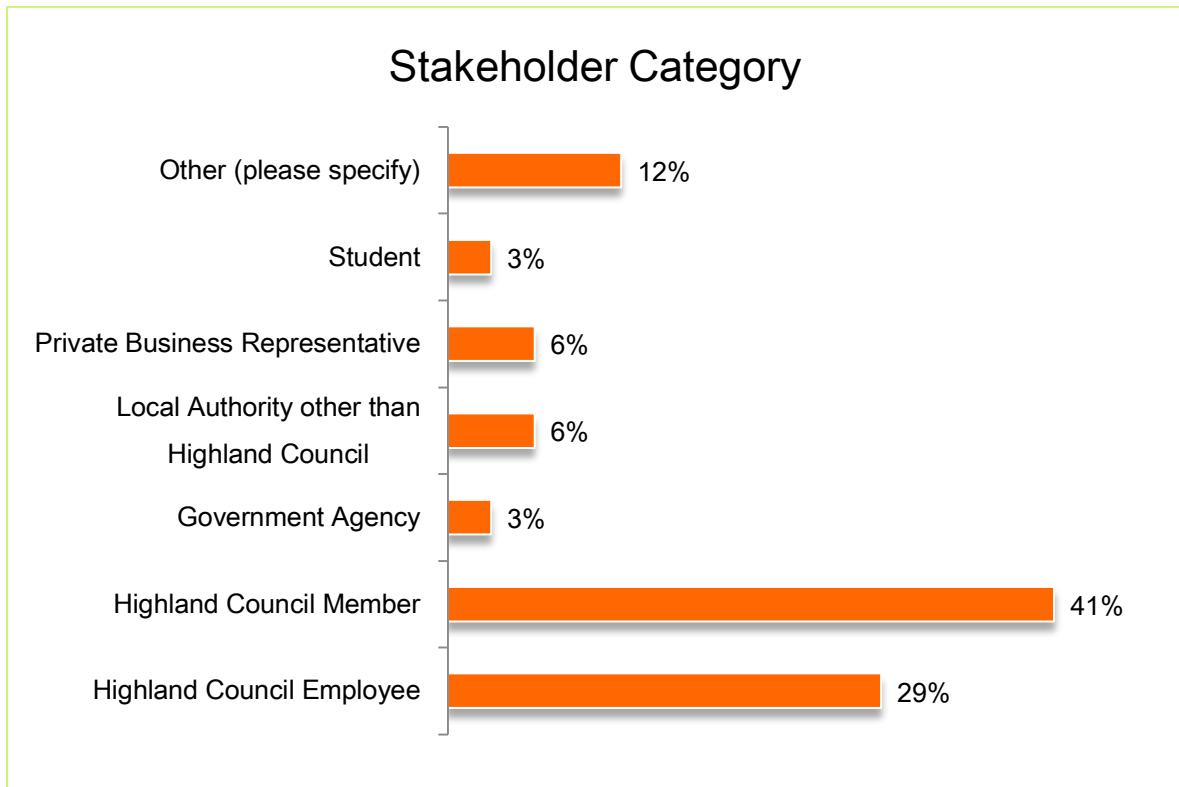
The presenters were carefully selected to provide interesting, diverse and informative sessions and ensuring best value for the audience. Topics covered included:

- The Highland Council corporate direction for heat and energy planning
- Planning context
- Energy, engineering and sustainability context
- Scottish Government drivers and policies
- Available funding streams and support networks
- International solutions
- District Heating case studies
- Customer experience
- District Heating sustainable technology options

## 5 | Pre-Event Survey Results

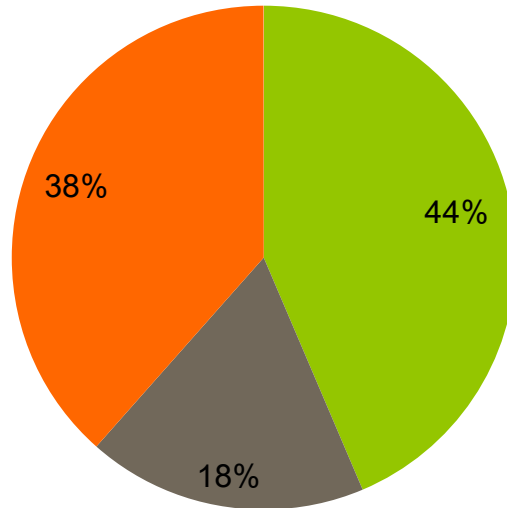
An online survey was issued to invitees prior to the event to gauge general opinions on various aspects of district heating.

Here is an overview of the results:



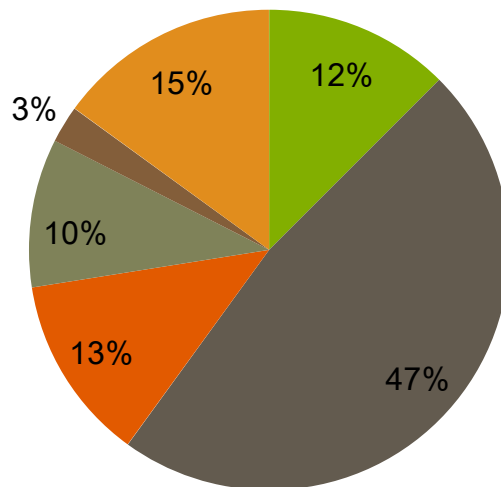
If a district heating connection was offered to your own home, would you be most likely to...

Join - 44%   Refuse - 18%   Don't know - 38%



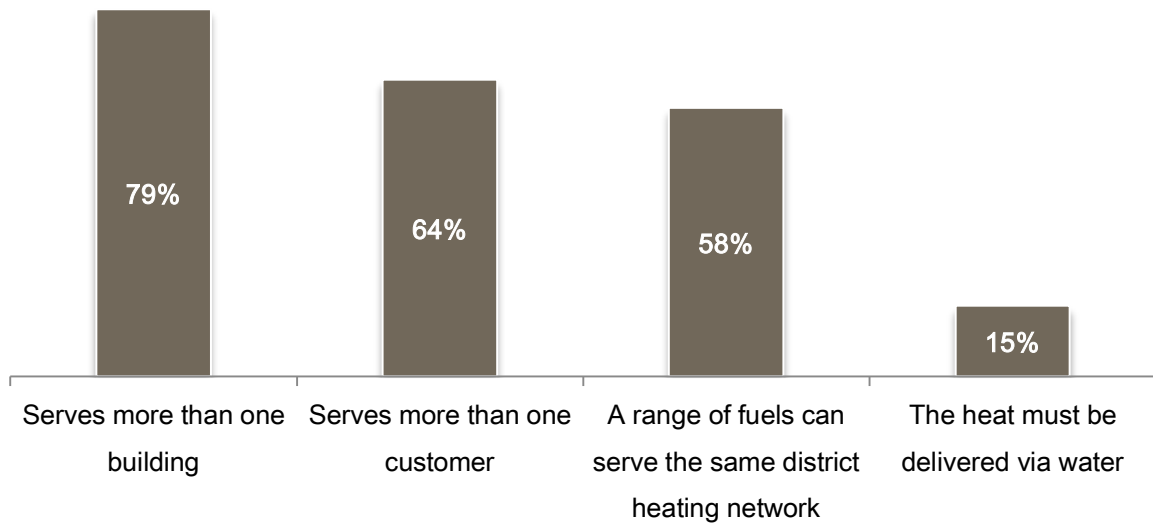
### Opinions towards DH in the Highlands

Limited potential   Good potential  
Good benefits which outweigh obstacles   Good benefits but too many obstacles  
Not worth the effort   Other

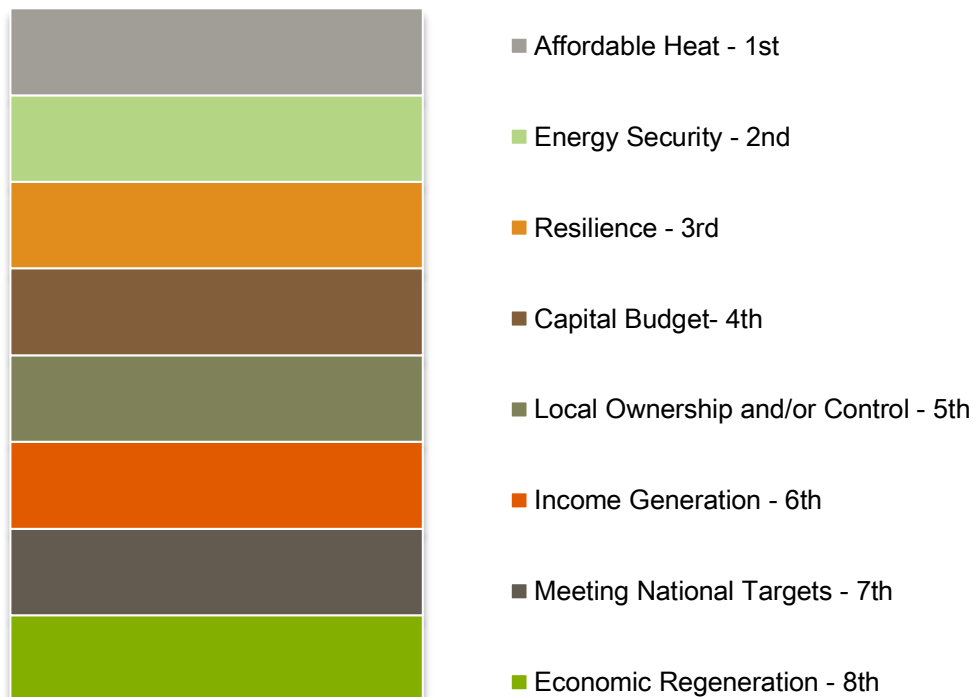




## Which characteristics would you say best describes district heating?



## Rate these DH Factors in Priority Order



## Additional comments/factors for consideration

1. Delivery agent needed to act as link /operator between waste heat sources and potential customers.
2. Investment in DH is not worth the problems in the long term.
3. District Heating must include
  - Dependable sources of fuel
  - Robust design and operation
  - Design and management expertise
4. Taking advantage of the best local solution for the demand. i.e. a mix of technologies
5. Carbon footprint is an important consideration.
6. Link to waste disposal as in continental Europe and in line with long standing Council policy. Projects must be managed competently in line with lessons learned.
7. Lack of accurate information leads to risk of public resistance
8. Safety assessment of fuels to be incorporated into decision making process.
9. There will be aspects of adaptability by using district heating, a range of marginal energy options can be combined to make systems collectively better.
10. Making the most of the natural environment can provide in a less intrusive way than traditional renewable technologies (e.g. wind), and thinking outside the box – e.g. heat recovery from sewage works etc., not just generation of 'new' heat.
11. Carbon reduction and 'local' employment regeneration (retaining wealth within localised communities). Also health benefits of district heating for householders should be explained.
12. The most important factor must be affordable heating - locally generated is very desirable - as is generating income!
13. A number of district heating schemes have been tried and failed miserably. Providing a reliable, affordable source of heating is paramount.

## 6 | Workshop Outputs

As part of the afternoon session, delegates took part in 3 workshops to stimulate ideas and prompt discussion.

### Workshop 1 – The Highland HERO Approach

#### Participants:

Bob Grant; Graeme Hamilton; Fiona Boyd; Jackie Sayer; David Cowie; Nina Caudrey; Eddie Boyd

#### Intro:

Highland HERO is the approach that The Highland Council are taking towards heat and energy solutions in the Highlands.

**Question 1:** Based on what you've seen and heard, does the direction of the HERO strategy seem logical?

#### Response from the Group:

Unanimously YES.

**Question 2:** What do you think should be included to strengthen and/or improve it?

#### Response from the Group:

- Utility bill information - HAs are collecting billing data – potential to discuss:
  - L&S HA
  - Albyn
  - Cairn
- Utility contacts – The Highland Council GIS team (Mike Atkinson) may have useful contacts for engaging on plans.
- Outline incentives for engaging developers and private investors – e.g. heat map data sharing.
  - Without regulation/incentives – targets for DH are unlikely to be achieved.

- Potential useful learning experiences
  - Shetland NINES project
  - Glasgow HA customer billing projects (and meters)
- Community activity level would be useful to be displayed on the HERO map, could potentially engage with
  - Keep Scotland Beautiful
  - THC Ward Managers

## Workshop 2 – Customer Care and Protection

### Participants:

Helena Macleod; Tessa Clarke; Lucy Ross; Morten Jordt Duedahl

### Intro:

Although progress has been made with regards to customer care and consumer protection for district heating schemes, much is still to do and any schemes should incorporate adequate measures to satisfy confidence in this area.

**Question 1:** List the main themes on this topic that The Highland Council should consider and provide comment on them in a Highland context.

### Response from the Group:

#### 1. Heat Trust:

- Good for consumers to have more protection
- Need more information
- Dispute resolution

#### 2. Transparency:

- Price structure should be made clear
- Customer confidence will increase if approach and methodology is transparent

#### 3. Reputation:

- The Highland Council must seek to overcome any negative issues and apply lessons learned from previous projects

- LA model vs. commercial – different paybacks? (Longer for LAs)

#### 4. Benchmarks:

- How your costs compare to others will be important to gauge fairness and equality of financial aspects

#### 5. Marketing to consumer:

- Denmark utilise a very successful and personal door-to-door approach
- Segmentation – identify what appeals to different people to help with engagement

#### 6. Decentralised energy?

- This should be well communicated and people understand the concept and its benefits.

### Workshop 3 – Ownership and Investment Models

#### Participants:

Sophie Vivaudou; Beatriz Fraga de Cal; Ruth Bush; Amy Brown; Dave Pearson;

#### Intro:

Select three models then in a Highland Council context:

**Question 1:** Identify the benefits associated with each delivery model

**Question 2:** Identify the risks associated with each delivery model

**Response from the Group:**

1. Public Owned	
Benefits	Risks
<ul style="list-style-type: none"> <li>• Stronger planning policy potential</li> <li>• Lower rates of finance? (PWLB) (GIB, EIB)</li> <li>• Higher security of supply for the customer.</li> <li>• More likely to get public sector buildings to connect.</li> </ul>	<ul style="list-style-type: none"> <li>• Supply chain is never as at risk as the owner</li> <li>• Limit to borrowing – prevents other investment</li> <li>• No clear mandate for public sector to do this – lack of govt. regulation.</li> <li>• Not the in-house skills – this is new!</li> </ul>

- Lower costs to the customer (lower profit requirement)
- Meet targets on e.g. housing quality
- Income from RHI
- Develop expertise – could be sold too
- Back stop for issues of non-performance – reputational risk
- Reputation of DH (CHaP)

## 2. Mixed Ownership

### Main Benefit

- You choose the level of risk

### Main Risk

- Resolutions can become complex, timely and costly as parties are unwilling to accept blame for issues that arise.

### General comments:

Mixed ownership may be the best option lower risk but with social interests. Fuel poverty is number one priority.

## 3. Private Ownership

### Benefit

- Expertise (?)
- Recognised name (?)
- LA transfers risk (in short term) – investment costs – design and technical risk – if people connect/disconnect

### Risks

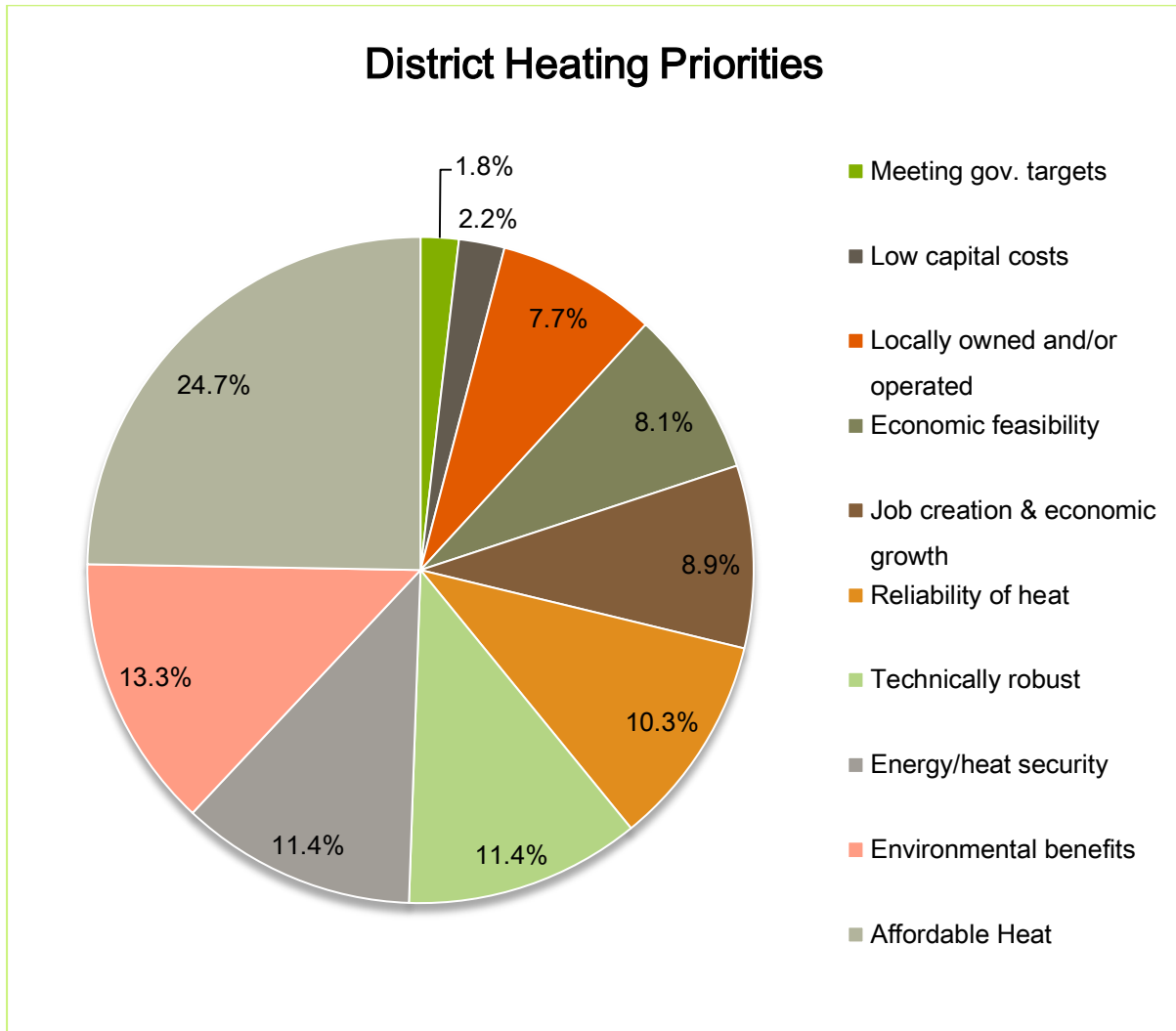
- Lack of control – e.g. protecting customers
- Conflicting objectives e.g. profit vs. fuel poverty
- Short term view – will they do the right thing in the long-term?
- Focuses on different customers – cherry picking the best sites
- Lack of transparency
- Only deliver what is specified – not necessarily what is needed - “Intelligent” client needed

### General comments:

Private owned will put in small pipes (i.e. hard to connect/expand). Public owned probably look to put in larger pipes (i.e. easy to connect/expand).

## 7 | Event Feedback Forms

District heating scorecards were distributed requesting delegates to list drivers in priority order.



### General comments

- Need more direction from government
- Let's set up a DH company!
- Identifying active communities - try speaking to Peter Guthrie, HIE (also Ward Managers)
- Would be useful if planning could liaise with the Energy team again, to discuss progress - and timescales/work programme moving forward - what should be the 'milestones'?

- Coming up Soon: Potential opportunity to try to push/explore district heating through preparation of Dev. Brief/Masterplan for East Inverness
- It is great to see the Council taking a strategic lead. The challenge will be implementation at scale without significant public sector investment or change in regulation.
- Well done to everyone who put in hard work, it was an interesting event.
- Fuel poverty is a big issue in the Highlands & Islands. People need low costs, reliable & efficient heating and where this can be provided through a scheme that has a social and environmental purpose, then this makes for a sustainable energy management system for communities.
- Build waste to heat plant in Aviemore to feed new hospital and future housing.
- Midmills buildings in Inverness appear to hold potential for future district heating scheme.
- Heat map - add on potential large customers; NHS, HA, swimming pools, etc. as it's easy to identify large consumers.
- Develop a map which details the biomass resource which is available in the Highlands. This can be used to ensure that there is a sufficient sustainable & low cost fuel source available into the future.
- Waste energy should play an important role.
- Great stuff! Good organisation by Fiona & Lucy.
- Great initiative. Get housebuilders/major developers on-board too to get interest & understanding - and hopefully practical support for a demonstrator project.
- GIS player suggestion: new settlements identified in WDP (?) or otherwise identified that could be encouraged/explored as potential demonstrator opportunities e.g. Tomagrain, An Camosther (sic?)
- Business model is key.
- Establish the appetite of councillors for the LA to take ownership of DH projects.



- Add to map - where biomass is and how it is currently used. Waste heat from industry. Community groups location or small scale renewable development that are community owned. Establish an area wide group for HERo see sustainable Edinburgh example.
- Could you have a joint ESCO? The other Scottish cities have indicated they want to respond as a group to the commission report.
- Social purpose is an important driver also
- Identification of low-grade waste heat sources which can be the basis of an economically feasible DH network.
- Fuel poverty the major priority
- Flexibility of fuel sources should be included as a feature for any DH network
- Business model should be developed resulting in local ownership

## 8 | Next Steps

The Highland Council will be hosting further events to increase the awareness and engagement on the future of heat and energy within the Highlands and beyond. It is expected that events will be held to cover a range of specific topics such as

- Technological solutions for fuel and systems operating in off-gas areas.

The Highland Council are in the process of drafting the HERO Strategy and are expecting a first version to be prepared later in the year.

## 9 | Thanks

Thanks to all who attended on the day and/or participated in the survey. Special thanks to the presenters and organisers who worked hard to provide a worthwhile educational event hosted in the Highlands.

## 10 | Further Information

If you have any questions or comments about the information contained within this document we encourage you to get in touch. Please contact Jackie Sayer ([energy.engineering@highland.gov.uk](mailto:energy.engineering@highland.gov.uk)) in the first instance.

Related websites:

	The Highland Council	<a href="http://www.highland.gov.uk/">www.highland.gov.uk/</a>
	The Heat Network Partnership	<a href="http://www.districtheatingscotland.com/">www.districtheatingscotland.com/</a>
	Stratego Project	<a href="http://stratego-project.eu/">stratego-project.eu/</a>
	Changeworks	<a href="http://www.changeworks.org.uk">www.changeworks.org.uk</a>
	Danish Board of District Heating	<a href="http://dbdh.dk/">dbdh.dk/</a>
	Star Renewable Energy	<a href="http://www.neatpumps.com/">www.neatpumps.com/</a>