

Agenda Item	6.
Report No	CCC/4/23

THE HIGHLAND COUNCIL

Committee: Climate Change Committee

Date: 16 March 2023

Report Title: Local Heat and Energy Efficiency Strategy (LHEES) update

Report By: Interim Chief Executive

1. Purpose/Executive Summary

1.1 This report provides an update on progress of the Local Heat and Energy Efficiency Strategies (LHEES) to ensure the Council meets its statutory requirement to prepare an authority wide LHEES by the end of December 2023.

2. Recommendations

2.1 Members are asked to:

- i. Note the contents of this report.

3. Implications

3.1 Resource: Climate Change Coordinator for LHEES has been employed to undertake activities and projects that contribute towards the Council's development and delivery of the Local Heat and Energy Efficiency Strategy (LHEES), to ensure we work towards the Scottish Government target to end Scotland's contribution to climate change no later than 2045.

3.2 Legal: As part of the Scottish Government's commitment to energy efficiency and carbon reduction the Local Heat and Energy Efficiency Strategies (Order) 2022 places a duty on the Highland Council, and all local authorities across Scotland, to prepare the LHEES Strategy and Delivery Plan on or before 31 December 2023, subsequently on a 5-year cycle.

3.3 Community (Equality, Poverty, Rural and Island): The Council's LHEES aim to set out the long-term plan for decarbonising heat in buildings and improving their energy efficiency across an entire local authority area with a key objective to also eliminate poor energy efficiency as a driver for fuel poverty.

LHEES represents a significant opportunity to work with local communities on net zero planning. It provides a platform for their engagement, creating opportunities for communities to help shape the net zero heat transition in their locality, as well as providing energy efficient housing for the community.

Fuel poverty is a particular issue facing householders across Highland. Scottish Government figures indicate that 33% of households in Highland are experiencing fuel poverty, compared to the national average of 24%. There is a scope to support the delivery of existing funding, for instance, the Council's Energy Efficient Scotland: Area Based Scheme (EES: ABS) while contributing towards meeting medium to long term targets and objectives set out nationally, and locally.

LHEES will evolve with the introduction of future standards and regulation, as well as new delivery and funding programmes for decarbonising heat in buildings and improving their energy efficiency across an entire local authority area.

3.4 Climate Change / Carbon Clever: The Highland Council prepares to publish a Local Heat and Energy Efficiency Strategy and Action Plan on or before 31 December 2023. LHEES will play a crucial role in achieving net zero, mitigating climate change, and protecting the environment while setting up a long-term plan for decarbonising heat in buildings and improving their energy efficiency.

3.5 Risk:

- i. Resource and Skillset – LHEES requires a range of skills and expertise to produce and understand of energy infrastructure systems, building energy patterns and building services. LHEES development is a resource-intense process, requiring significant input from the officers and services across the Highland Council including Housing, Sustainability, Planning, and Building Services. It is crucial to identify key skills required to deliver LHEES and support skills development to overcome skills challenges.
- ii. Supply chain – due to rising installation costs, lack of skills and local expertise in the installation of various energy efficiency measures and renewable energy technologies is posing a significant risk in the delivery of various services and programmes across the Highlands including LHEES.

3.6 Gaelic: There are no Gaelic implications arising from this report.

4. Background

4.1 Tackling climate change, improving the energy efficiency of Scotland's homes and businesses, reducing fuel poverty are key local and national priorities.

4.2 In March 2022, the Scottish Government published the [Heat Network Delivery Plan](#) that sets out how provisions of the [Heat Networks \(Scotland\) Act 2021](#) and wider decarbonisation policy, such as the [Heat in Buildings Strategy](#), contributing to climate change and fuel poverty targets in the development of heat networks across Scotland.

4.3 The completion of LHEES Strategy and Delivery Plan by each local authority will support the Scottish Government achieve national targets that set out in the Heat in Buildings Strategy and shape the delivery of heat decarbonisation.

4.4 The Highland Council was one of the first 32 local authorities to participate in LHEES

pilot programme¹²³ to test the LHEES concept and build knowledge to help inform future works for the development of LHEES. All the local authority officers and consultants, who participated in the pilot programme, were in favour of LHEES becoming a statutory duty.

4.5 The Local Heat and Energy Efficiency Strategies (Order) 2022 was developed in partnership with COSLA, which places a duty on all local authorities across Scotland to prepare an LHEES by December 2023, and it must be reviewed at intervals of no more than 5 years, in line with guidance provided by Scottish Ministers.

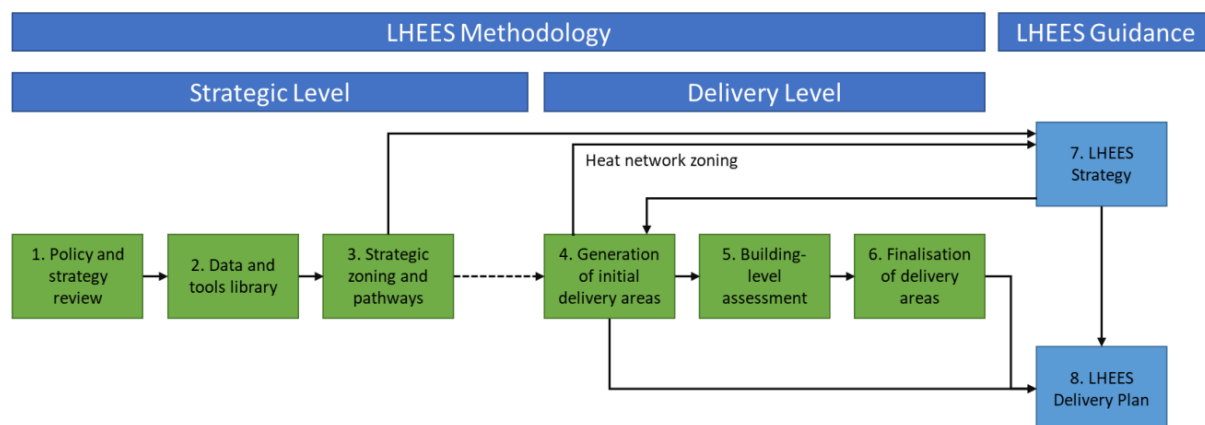
5. LHEES Structure, Stages and Priorities

5.1 LHEES is part of delivering the Heat in Buildings Strategy and will support local planning, coordination, and delivery of the heat transition in Scotland. It is structured into two parts:

- i. LHEES Strategy - is a long-term strategic framework for the improvement of the energy efficiency of buildings and the reduction of greenhouse gas emissions resulting from the heating of such buildings in the local authority's area.
- ii. LHEES Action Plan - is a document setting out how a local authority proposes to support implementation of its LHEES Strategy.

5.2 There are 8 LHEES Stages and these are outlined in Figure 1. The completion of stages 1 to 6 provides the local authority with the data analysis and evidence base to enable them to complete their LHEES Strategy (Stage 7) and Delivery Plan documentation (Stage 8).

Figure 1.



5.3 The LHEES priorities are a list of technologies, buildings typologies and policy priorities and these are outlined below:

- i. Heat networks
- ii. Off-gas grid buildings
- iii. On-gas grid buildings
- iv. Poor building energy efficiency
- v. Poor building energy efficiency as a driver for fuel poverty
- vi. Mixed-tenure, mixed-use and historic buildings

¹ [Local Heat and Energy Efficiency Strategies \(LHEES\): phase 1 pilots - social evaluation](#)

² [Local Heat and Energy Efficiency Strategies \(LHEES\): phase 1 pilots - technical evaluation](#)

³ [LHEES Phase 2 Pilots: Evaluation Report](#)

The LHEES Priorities are summarised in more detail in Table 1 below.

Table 1.

	No.	LHEES Priorities	Description
Low regrets heat decarbonisation	1	Heat networks	Decarbonisation with heat networks
	2	Off-gas grid buildings	Transitioning mainly from heating oil and LPG in off-gas areas
Secondary outcomes	3	Poor building energy efficiency	Poor building energy efficiency
	4	Poor building energy efficiency as a driver for fuel poverty	Poor building energy efficiency as a driver for fuel poverty
	5	Mixed-tenure, mixed-use and historic buildings	Covering mixed-tenure and mixed-use buildings (5.1), listed buildings (5.2) and buildings in conservation areas (5.3)
Heat decarbonisation	6	On-gas grid buildings	On-gas grid heat decarbonisation

6. Progress to date

The Highland Council appointed Changeworks as a consultant to undertake a four stage LHEES progress, following methodology set out by the Government. The first four states are listed below:

- i. Stage 1 – Policy and strategy review
- ii. Stage 2 – Data and tools library
- iii. Stage 3 – Strategic zoning and pathways
- iv. Stage 4 – Generation of initial delivery areas

6.1 Stage 1

The purpose of Stage 1 is to support local authorities to set out the national and local policies that are linked to impact or could be impacted by LHEES.

Changeworks reviewed the national policies such as the Energy Efficiency Standard for Social Housing (ESSH 1 and 2), the Scottish Energy Strategy, the National Planning Framework, the Hydrogen Policy Statement, the Heat Policy Statement, the Scotland's Sustainable Housing Strategy, the Tenements (Scotland) Act 2004, the Historic Environment Policy Scotland, and the Planning (Listed Building Consent and Conservation Area Consent Procedure) (Scotland) Regulations 2015.

The Highland Council local policies such as the Caithness and Sutherland Local Development Plan, the West Highland and Islands Local Development Plan, the Inner Moray Firth Local Development Plan, the Tain Town Centre Action Plan, and the Highland Historic Environment Strategy, Coastal Development Strategy policies and their impacts on the development of LHEES were also reviewed as part of Stage 1 review.

The review of both national and local policies has provided the Highland Council with an opportunity to consider how the national landscape can be linked to the local drivers, where LHEES is concerned. In addition to this, Stage 1 sets out default Indicators, Criteria, and associated Weightings, which should underpin the analysis across the other LHEES Stages. Internal and external stakeholders that could be involved with the Highland Council's LHEES were identified. The purpose of developing a list is to allow the Council to consider potential stakeholders and build more detailed stakeholder maps for each LHEES Priority. Finally, it has helped the Council to identify funding options, such as the Warmer Homes Scotland and Energy Efficient Scotland: Area Based Scheme, to support the Delivery Plan.

6.2 Stage 2

The purpose of Stage 2 is to identify the most appropriate data and information needed to support analysis in subsequent stages of the LHEES process, based on the LHEES Priorities and the associated Indicators⁴. The data library captures data requirements for the LHEES Priorities collectively and the data is sorted according to whether it is Core, Alternative or Supplementary.⁵ Several local and national data resources and tools have been identified by Changeworks. For instance, Scotland Heat Map, Ordnance Survey (OS) product data, Home Analytics (v3.7), Council owned assets map etc. The data library is maintained and kept up to date, acting as a record of data sets used and capturing associated detail on ownership, data sharing, and key contacts within the development of Council's LHEES.

6.3 Stage 3

The purpose of Stage 3 is to support the Highland Council to understand the current energy efficiency and heat decarbonisation performance of the building stock at a local authority wide level and to develop strategic zones and pathways. This performance has been based on assessing the building stock against the associated Indicators, Criteria and Weightings considered in Stages 1 and 2.

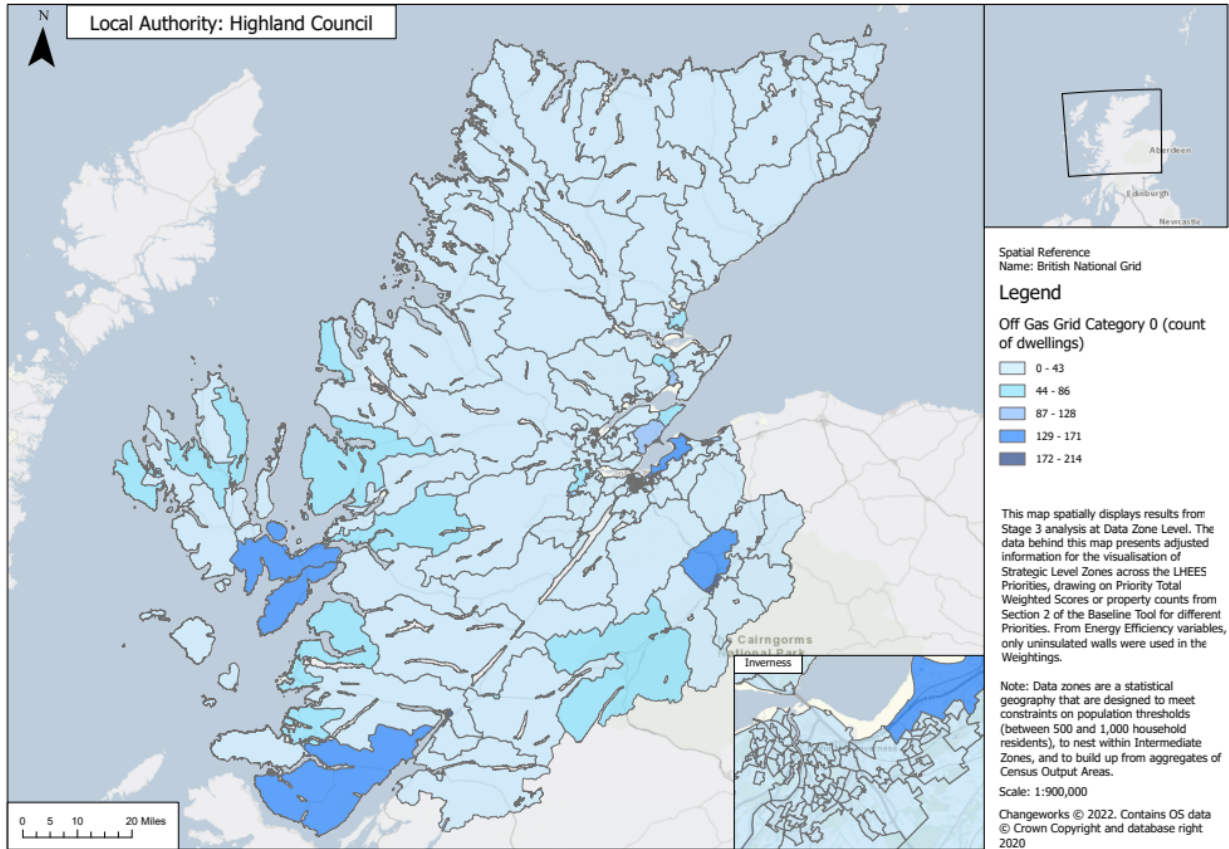
Changeworks completed the analysis to enable the Highland Council to set out Strategic Zones for each LHEES Priority, at intermediate zone level. These special zones identify potential solutions for local areas at a strategic level for inclusion in the LHEES Strategy (Stage 7) when accompanied by the outputs of the Heat Network Zoning (Stage 4). Stage 3 analysis helps the Highland Council to prioritise the delivery programmes and projects in the Delivery Plan (Stage 8). It utilises the 'Baseline Tool', which has been completed partially already and requires GIS expertise to enable the user to visualise the outputs spatially.

This has identified 311 data zones within the Highlands. These zones include Badenoch and Strathspey, Thurso, Dingwall, Forth William, Invergordon, Alness, Tain, and others whilst taking the LHEES Priorities into consideration. For example, the first map (Map 1), displays results from Stage 3 analysis at Data Zone Level for off-gas grid buildings transitioning mainly from heating oil and LPG in off-gas areas. This allows the Highland Council to identify low off-gas heat decarbonisation pathways and opportunities at a strategic and delivery level.

Map 1.

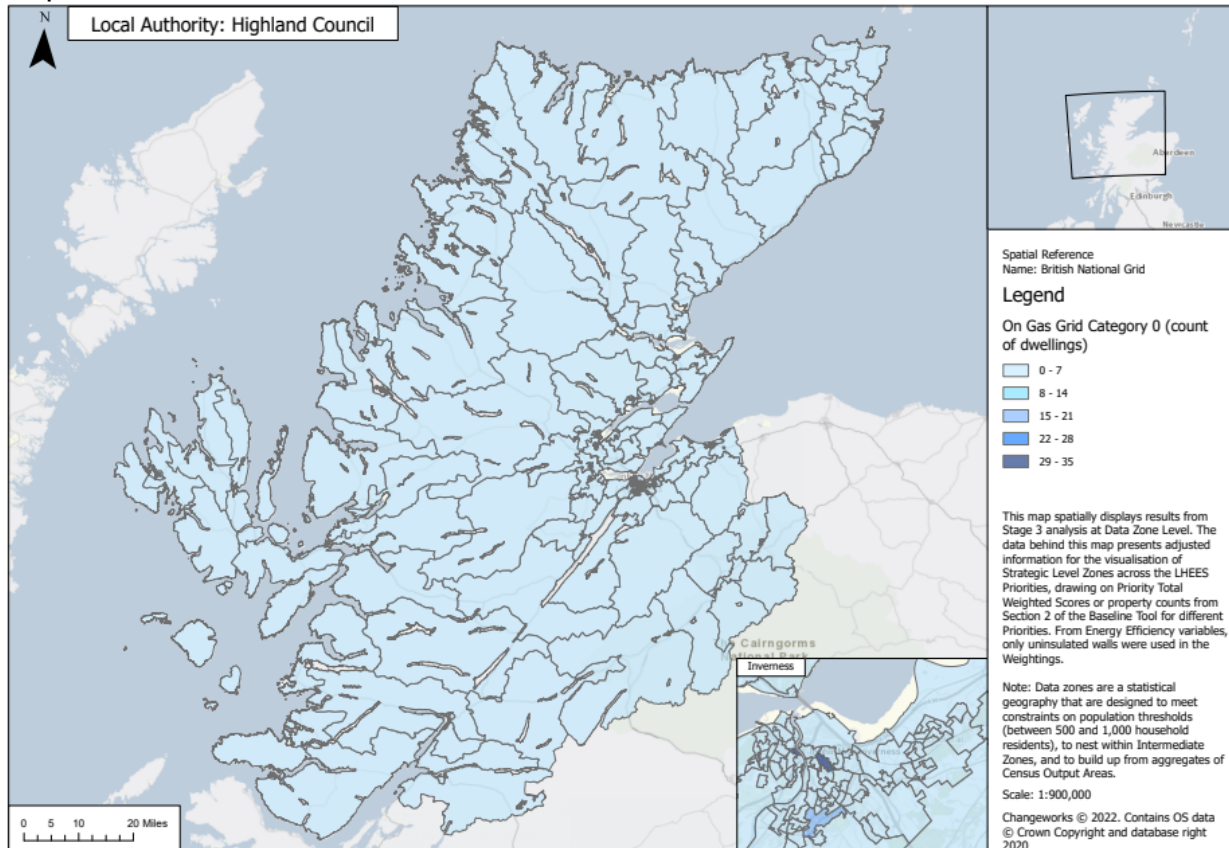
⁴ [LHEES Methodology - Indicator \(page 5\)](#)

⁵ [LHEES Methodology - Indicator \(page 5\)](#)



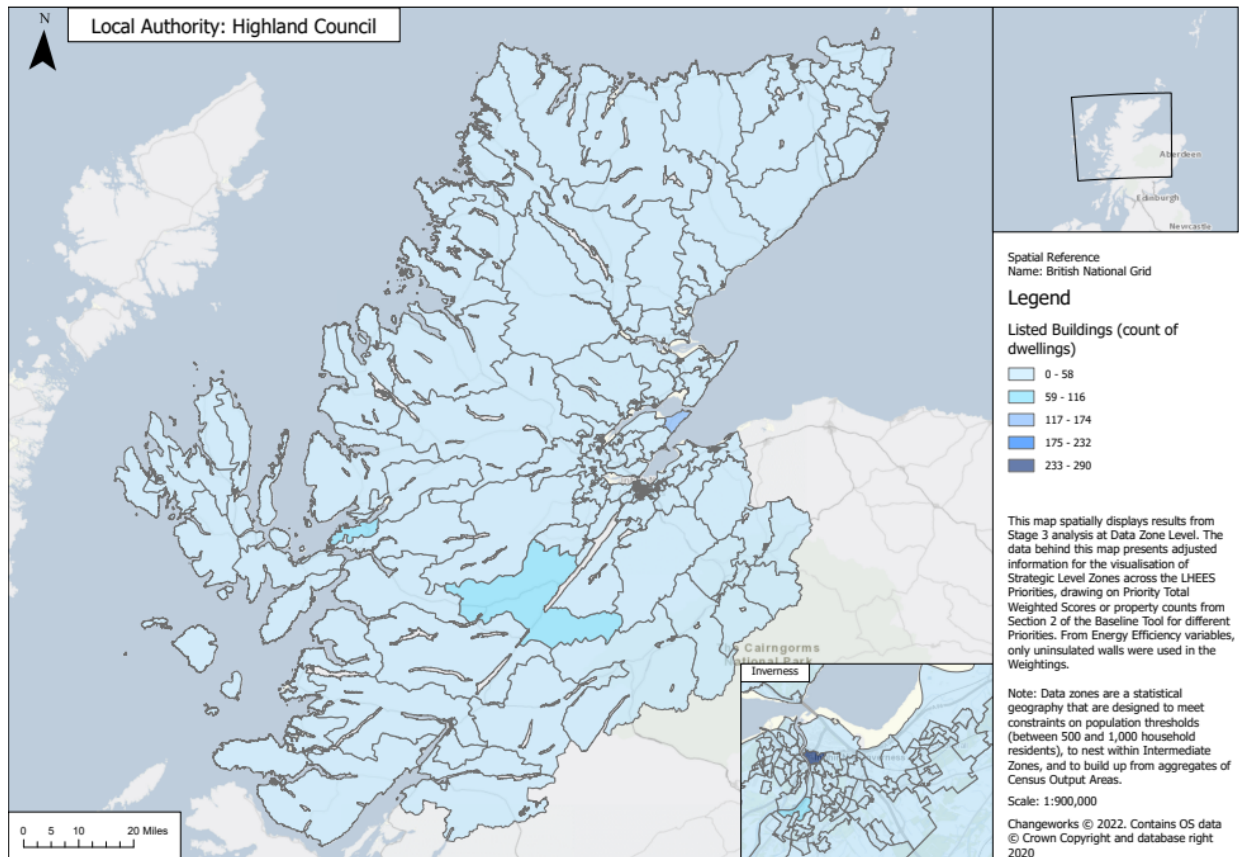
The second map (Map 2) displays results from Stage 3 analysis at Data Zone Level for on-gas grid buildings. It shows on-gas decarbonisation pathways and opportunities at a strategic and delivery level.

Map 2.

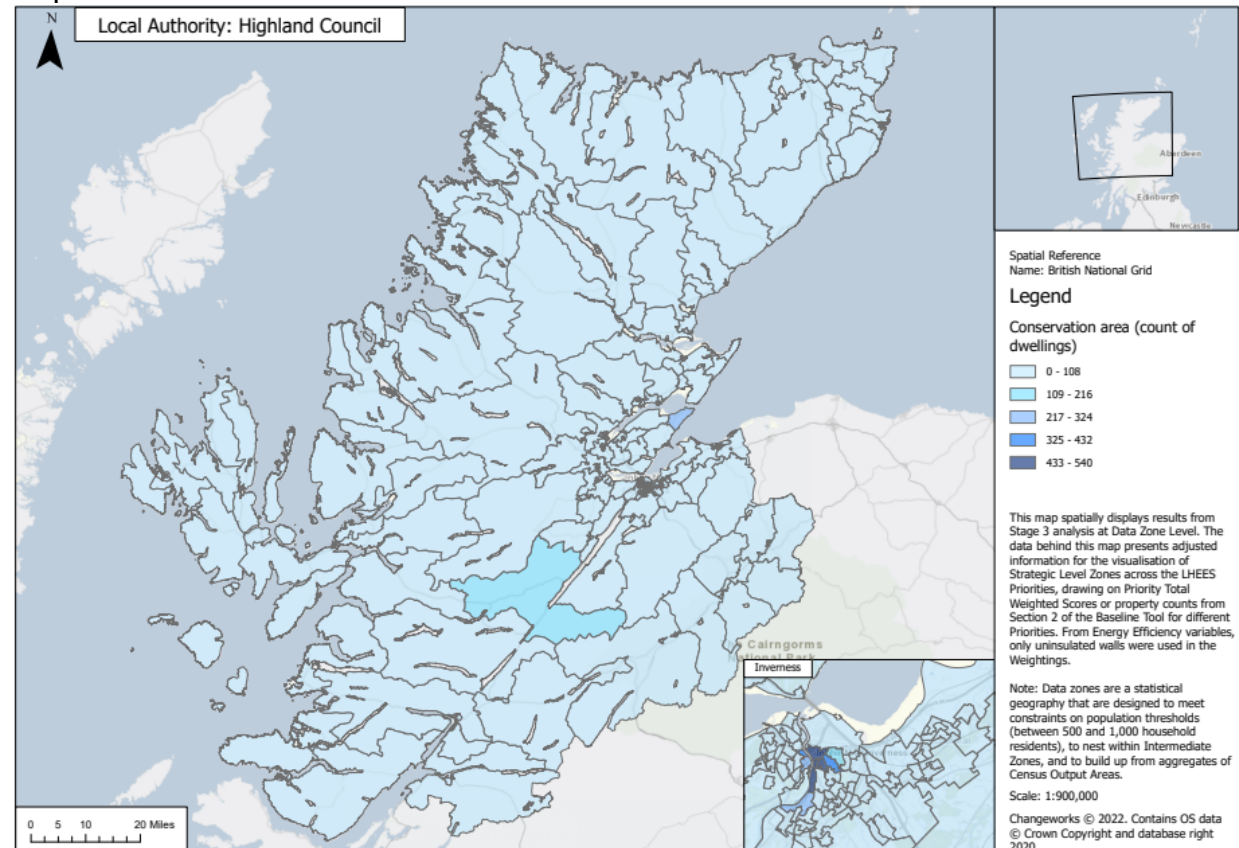


In Stage 3, we have identified a strategic and delivery level where historic buildings (covering listed buildings and conservation areas) are – see Map 3 and Map 4.

Map 3 – listed buildings.



Map 4 – conservation areas.



6.4 Stage 4

The purpose of this Stage is to support the Highland Council to generate initial Delivery Areas for each of the LHEES Priorities.

In Stage 4, GIS techniques were used to generate initial zones at a higher granularity than LHEES Stage 3. It also provides detailed practitioner guidance for approach to complete this zoning. The Heat Network Priority uses a linear heat density technique to generate the zones. These zones allow the Highland Council to start identifying various projects, regulation and actions that will contribute towards the development of the LHEES Delivery Plan.

In Stage 4, the Highland Council was able to identify potential zones for heat networks, for instance, using anchor loads, to identify opportunities and constraints for heat network development in the prioritised heat network opportunity area and produce summary maps for the prioritised Potential Zones.

For instance, Figure 2 displays heat demand density across the buildings in Fort William.

Figure 2.

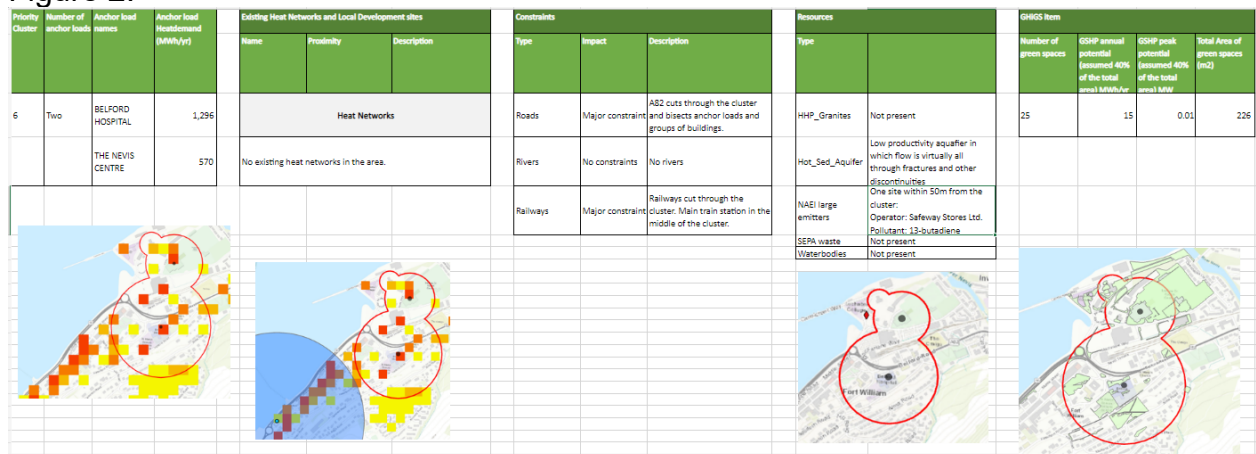
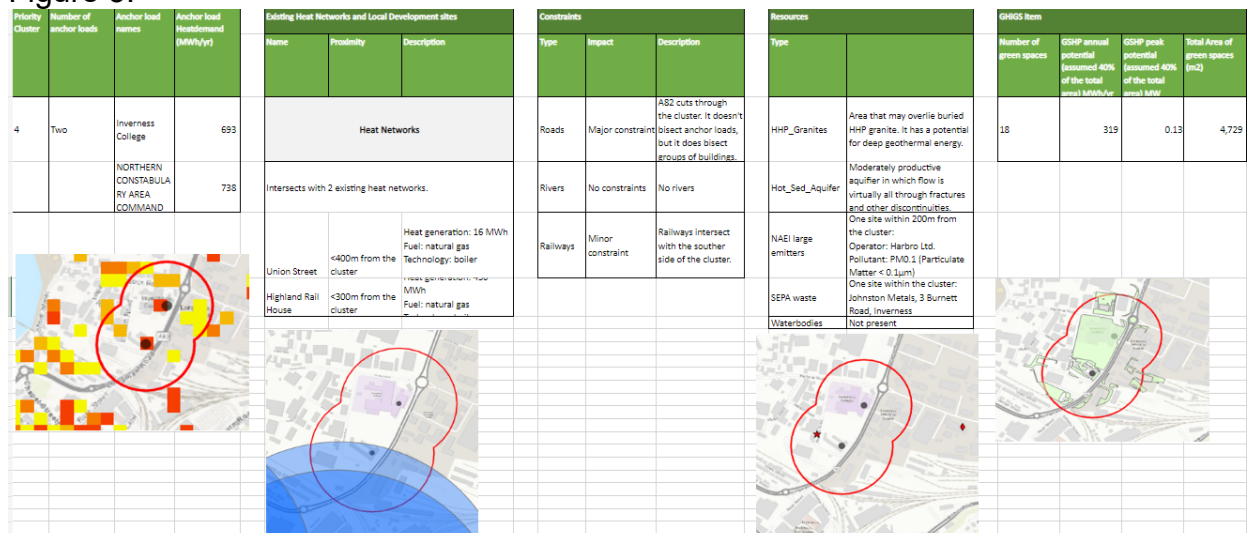


Figure 3 displays heat demand density across some of the buildings in Inverness.

Figure 3.



6.5 LHES Stage 5 and Stage 6 workshop

Changeworks with support from the Highland Council's LHEES officer ran a Stage 5 and Stage 6 officer workshop in January 2023. The main aims of the workshop were to:

- i. get a shared level of understanding of teams and stakeholders needed for LHEES production
- ii. get a shared level of understanding of purpose of Stage 5-6
- iii. recognition of roles each team will have in Stage 5-6
- iv. provide a worked example of Stage 6.

This workshop started with a short introduction to LHEES and then provided more detail on Stages 5 and 6. The focus was on the different approaches to Stage 6 (e.g., existing delivery schemes, funding opportunities, etc.). This was followed by a guided group discussion on what teams and roles should be involved in production of LHEES and what external stakeholders need to be considered. Attendees were asked to:

- i. identify which teams are important in LHEES production and why
- ii. actions that need to be completed to progress the LHEES
- iii. what existing or planned work should be incorporated within the LHEES In addition, time was spent on discussing LHEES relevant stakeholders, what level of interest these stakeholders have in LHEES, and their level of influence in delivering LHEES identified projects.

Various stakeholders from Planning, Housing and Building Services attended the workshop to learn more about LHEES and their contribution towards the delivery of LHEES.

LHEES Stage 7 and Stage 8 workshop

6.6

Changeworks with support from the Highland Council's LHEES officer ran a Stage 7 and Stage 8 officer workshop in February 2023. The main aims of the workshop were to:

- i. get a shared level understanding the purpose of Stage 7 and Stage 8
- ii. provide a starting point for narrative of the Strategy Document of Stage 7
- iii. provide a starting point for engagement phase of Stage 8
- iv. understand how to implement results from Stage 6 (delivery areas) in the delivery Plan (Stage 8).

The workshop started with a short introduction to LHEES and the different stages, after which Stage 7 was introduced. This exercise served as a prompt to think about different audiences for the Strategy Document, and the different narratives and key messages for those audiences. Both groups identified specific groups within given audiences, elected members, communities, DNO or contractors among the others and suggested specific key takeaway messages. The groups identified key takeaway messages about the need for upskilling the workforce (e.g., heat pump installers), how LHEES potentially could reduce fuel poverty and how it could benefit local economies.

Various stakeholders from Planning, Housing and Building Services attended the workshop to understand their contributions towards the development of the LHEES Strategy and Action Plan.

Next Steps

- 7.
- 7.1 i. The development of LHEES Strategy: A local heat and energy efficiency strategy is a long-term strategic framework to change buildings and relevant local infrastructure by 2045 to fulfil the Scottish Government's objectives and local priorities relating to:
- a. improving the energy efficiency of buildings within the local authority's jurisdiction
 - b. reducing greenhouse gas emissions from heating within the local authority's jurisdiction

The Strategy will take local and national factors such as the timing of planned infrastructure upgrades, access to resources and funding, major projects, decisions over the gas grid and community engagement into consideration.

- ii. The development of LHEES Action Plan: A local heat and energy efficiency delivery plan sets out how the local authority intends to support the implementation of its local heat and energy efficiency strategy.

Designation: Interim Chief Executive

Date: 6 March 2023

Author: Ruta Burbaite, Climate Change Coordinator (LHEES)

Background Papers:

[Heat Network Delivery Plan](#)

[Heat Networks \(Scotland\) Act 2021](#)

[Heat in Buildings Strategy](#)

[LHEES Methodology V03.pdf](#)

[Local heat and energy efficiency strategies and delivery plans: guidance - gov.scot \(www.gov.scot\)Local Heat and Energy Efficiency Strategies \(LHEES\): phase 1 pilots - social evaluation](#)

[Local Heat and Energy Efficiency Strategies \(LHEES\): phase 1 pilots - technical evaluation](#)

[LHEES Phase 2 Pilots: Evaluation Report](#)

[LHEES HC report Final.pdf](#)