ORKNEY
ISLANDS COUNCIL

Item: 7

Policy and Resources Committee: 18 February 2025.

Local Heat and Energy Efficiency Strategy.

Report by Corporate Director for Neighbourhood Services and Infrastructure.

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1. Overview

1.1. The Local Heat and Energy Efficiency Strategy (LHEES) aims to establish local authority area-wide plans and priorities for systematically improving the energy efficiency of buildings and decarbonising heat.

1.2. The scope of the LHEES includes all property in Orkney including Council buildings, schools, Housing properties, private homes, hotels and tourist accommodation, and commercial properties including offices, shops and industrial units.

1.3. Draft copies of the LHEES documents were submitted to the Scottish Government in November 2024 but subject to later approval by the Council.

1.4. The draft LHEES documents were published for consultation, the outcome of the consultation resulted in some additional actions being added to the LHEES Delivery Plan.

2. Recommendations

2.1. It is recommended that members of the Committee:

i. Adopt the Local Heat and Energy Efficiency Strategy and Delivery Plan, attached as Appendices 2 and 3 respectively to this report, in so far as they relate to the Council.

3. Background

3.1. The Scottish Government has a statutory target of Net Zero Carbon Emissions by 2045 with an interim target of 75% reduction by 2030. In addition to this, we are also aiming to eliminate Fuel Poverty in all households by 2040.

3.2. With Orkney suffering from one of the highest fuel poverty figures in the country it will be vital to develop a robust strategy and programme to address the poor energy efficiency in homes.

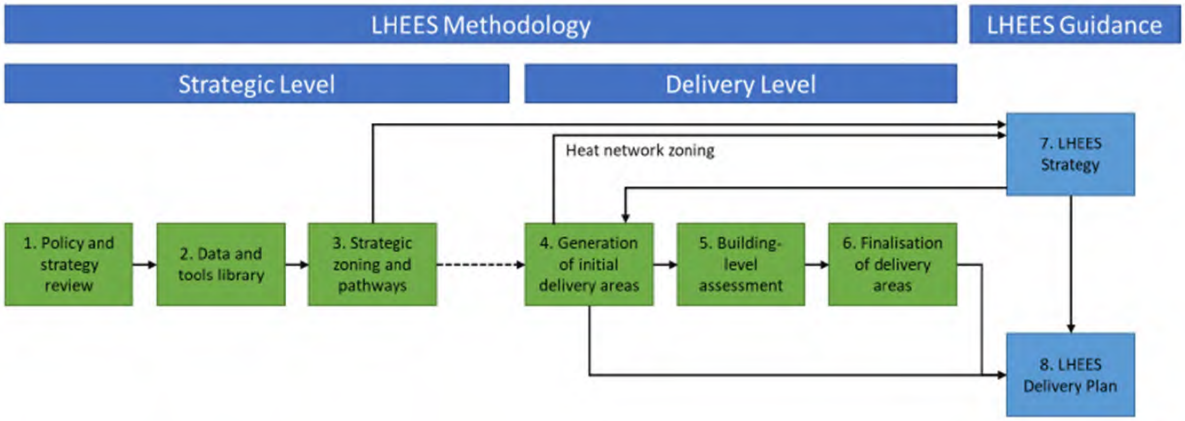
3.3. The Local Heat and Energy Efficiency Strategy (LHEES) will be based on the individual challenges and opportunities which present in Orkney and uses various local and national data sources to identify oppertunities.

3.4. The objectives of the LHEES are to:

- Set out how each sector of the building stock need to change to meet objectives.
- Identify strategic heat decarbonisation zones.
- Prioritise areas for delivery projects.

3.5. The strategy will be accompanied by a delivery plan which has been developed in partnership with our key stakeholders. The delivery plan is far reaching and includes all property in Orkney including Council buildings, schools, Housing properties, private homes, hotels and tourist accommodation, and commercial properties including offices, shops and industrial units.

3.6. The LHEES Methodology has been developed at a National level by the Scottish Government and Zero Waste Scotland and is supported by COSLA. The Methodology itself comprises two stages covering the Strategic Level and the Delivery Level as illustrated below:



3.7. The development of the strategy was supported by Changeworks through a Hub North framework contract.

4. Current Position

4.1. The completed draft documents were submitted to the Scottish Government in September 2024 on the understanding that the documents still needed to undergo the public consultation process and be considered by Council before they could be published.

4.2. The draft documents were taken to the Corporate Leadership Team (CLT) in October 2024 ahead of the consultation stage, the CLT proposed that the initial four-week consultation period should be extended to 6 weeks to allow better engagement.

4.3. The draft documents were published for consultation on 4 November 2024 which ran for 6 weeks. Over this period, 21 responses were received from members of the public and organisations. The results are contained within Appendix 1 to this report. The consultation responses resulted in a few alterations to the Delivery Plan which have been incorporated in the document attached at Appendix 3.

4.4. A public meeting was held in conjunction with Orkney Renewable Energy Forum (OREF) on 26 November 2024. The meeting was well attended with 44 participants.

4.5. Several projects identified in the LHEES are already progressing under the existing capital and maintenance works programmes. The oil fired heating system at Hope Primary School will soon be replaced with an Air Source Heat Pump (ASHP) system which will reduce carbon emission. Orkney Library and Archive will also benefit from a ASHP system to replace current oil heating. The Pickaquoy Campsite will use a small heat network to link to the sports centre heating system, minimising installation and operating cost for the building. The new Kirkwall care home will also provide a new energy efficient building heated using a zero emission heating system and replacing a poorly insulated, fossil fuel heating property.

5. Next Steps

5.1. The LHEES must be kept under review as a living document and with updates published at no more than 5-year intervals. The Scottish Government has provided funding to support the LHEES programme for the first five years, ensuring funding up to the first review.

5.2. The Delivery Plan contains many projects some of which may have short timescales, it is proposed that the Delivery Plan is reviewed annually, with a progress report to Council following the review.

5.3. The development phase of the LHEES is now complete, however we must continue to monitor the Delivery Plan on an annual basis and develop the strategy document to ensure an updated document will be published within the five-year period. The monitoring of the delivery plan will require some resource to be allocated annually, the monitoring will include working with the stakeholder group and updating datasets. The anticipated manhours are estimated to be as follows:

LHEES Project Lead		2 days
Project Officer	(3 days a week for 1 year)	20 days
Data Manager	(2 days a week for 1 year)	10 days
Heat and Energy Efficient Scotland: Area Based Scheme (HEES:ABS) and Energy Efficiency Standard for Social Housing (ESSH2) Officer	(1 days a week for 1 year)	10 days

5.4. Excluding project lead hours, 40 working days will be required, this is approximately 0.15 FTE of OIC officer time annually to maintain and report progress on the delivery plan.

5.5. In addition, the LHEES strategy will need to be revised and updated in the fifth year of the programme, the estimated workload will be:

LHEES Project Lead		10 days
Project Officer	(3 days a week for 1 year)	144 days
Data Manager	(2 days a week for 1 year)	96 days
HEES:ABS and ESSH2 Officer	(1 days a week for 1 year)	48 days

5.6. Excluding project lead hours, 288 worked days will be required, this is approximately 1.1 FTE of OIC officer time to complete the revision of the strategy.

5.7. A snapshot of the energy efficiency profile of the county based on the current data sets has been developed, with each project and new development this data set will develop and update. Similar work has been undertaken in the development

of the IslesAI by the Islands Centre for Net Zero (ICNZ) and it may be worth investigating a collaboration with ICNZ to develop data sets for future LHEES.

5.8. Many of the projects identified in the Delivery Plan rely on data sets for the private sector which are not well developed. It may be beneficial to allocate some resources to developing the data sets which would allow feasibility studies on heat networks to progress.

5.9. Similarly, the Energy Performance Certificate (EPC) data for the housing sector is not sufficient to allow detailed project planning, it may be possible to use the LHEES resource to support local stakeholders to develop survey projects to gain this vital information allowing interventions to take place.

For Further Information please contact:
Alistair Morton, Team Manager (Energy), extension 2334, Email alistair.morton@orkney.gov.uk

Implications of Report

1. Financial

The LHEES programme will deliver a Strategy and a Delivery Plan however the scheme has no direct funding associated with it. Delivery of actions will have to be met from within existing approved budgets, or from external funding sources.
The purpose of the strategy is to identify the areas of need within our Local Authority area and this will inform our existing work streams to ensure we are delivering the most cost effective interventions to meet our Net Zero aspirations.
The Scottish Government recognised the level of work involved in the development of the LHEES and allocated £75k per year from 2022/23 until 2027/28. This funding to each local authority was to help with the cost of consultant assistance and OIC staff time.
The Hub North in collaboration with Changeworks were able to provide Orkney Islands Council with an OJEU compliant framework. The cost of completing all stages was £61,124.

2. Legal – None.

3. Corporate Governance – None.

4. Human Resources – None.

5. **Equalities** – An Equality Impact Assessment has been carried out and is attached as Appendix 4 to this report.

6. Island Communities Impact –An Island Communities Impact Assessment has been carried out and is attached as Appendix 5 to this report.

7. Links to Council Plan – The proposals in this report support and contribute to improved outcomes for communities as outlined in the following Council Plan strategic priorities:

☒Growing our economy.
☒Strengthening our Communities.
☒Developing our Infrastructure.
☒Transforming our Council.

8. **Links to Local Outcomes Improvement Plan** – The proposals in this report support and contribute to improved outcomes for communities as outlined in the following Local Outcomes Improvement Plan priorities:
☒Cost of Living.
☒Sustainable Development.
☒Local Equality.

9. **Environmental and Climate Risk** – The LHEES identifies projects and strategies aimed at improving energy efficiency within Orkney's built environment. The delivery plan includes current decarbonisation projects for our current building stock and proposes future projects aimed at a transition from fossil fuel to clean electricity.

10. **Risk** – None.

11. **Procurement** – The development of the LHEES was undertaken by Changeworks who were engaged using the Hub North Framework contract.

12. **Health and Safety** – None.

13. **Property and Assets** – None.

14. **Information Technology** – None.

15. **Cost of Living** – None.

List of Background Papers

None.

Appendices

Appendix 1 – Consultation Response Report.
Appendix 2 – Local Heat and Energy Efficiency Strategy.
Appendix 3 – Local Heat and Energy Efficiency Strategy Delivery Plan.
Appendix 4 – Equality Impact Assessment.
Appendix 5 – Island Communities Impact Assessment.

Comment No	Contributor	Comment
1. Do you know of any policies or strategies which we have not identified and which may have an i		
1	ID: 256396678	No
2	ID: 256434462	In conservation areas there needs to be a marry up of energy efficiency aims and conservation building restrictions eg windows. There also needs to be a grant programme to support households in all 3 conservation areas (Kirkwall, Stromness, St Margaret's Hope) to help meet the very high costs of eg window replacement
3	ID: 256606655	No
4	ID: 257040645	No.
5	ID: 257044624	Don't think I've heard or ready any of these strategies
6	ID: 257050981	No
7	ID: 257757588	Investigate the logistics into the installation of solar panels to offset the energy consumption of the building stock that have a high energy consumption such as the Kirkwall Town Hall and St Magnus Cathedral
8	ID: 258798374	No
9	ID: 258800188	planning policies and conservation area policies make it impossible for people to make their buildings energy efficient. Refusal to allow double glazing, solar panels, some siting of air source heat pumps and also insulation within buildings.
10	ID: 258898607	In addition to the policies outlined in the Local Heat and Energy Efficiency Strategy (LHEES) documents, several other initiatives and considerations could further enhance Orkney's energy efficiency and decarbonisation efforts.
		The ReFLEX (Responsive Flexibility) Orkney project aims to integrate electricity, transport, and heat networks into a single, smart energy system. By leveraging Orkney's abundant renewable resources, this initiative seeks to create a flexible and sustainable local energy system, potentially serving as a model for other regions.
		The Energy Efficient Scotland Programme focuses on improving the energy efficiency of Scotland's buildings over the next 20 years. It includes support for homeowners, landlords, and businesses to implement energy-saving measures, aligning with Orkney's goals to reduce energy consumption and emissions.
		The Scottish Government's Local Energy Policy Statement emphasises community-led energy solutions and local energy systems. Aligning Orkney's strategies with this policy could foster community engagement and support for local energy projects.
		Orkney's unique position as a hub for marine energy research and development, through facilities like the European Marine Energy Centre (EMEC), presents opportunities to incorporate marine energy into local energy systems. Exploring synergies between marine energy projects and local energy needs could enhance sustainability.
		Given the intermittent nature of renewable energy sources, investing in energy storage technologies, such as battery systems or hydrogen production, could improve energy reliability and efficiency in Orkney. Implementing stricter building standards that exceed current regulations can ensure new constructions are highly energy-efficient, reducing future retrofit needs. Enhancing public awareness campaigns and educational programmes can encourage residents and businesses to adopt energy-efficient practices and technologies.
		By exploring these additional policies and addressing identified gaps, Orkney can further its commitment to energy efficiency and decarbonisation, contributing to Scotland's broader climate goals.
2. What other groups are working to improve energy efficiency or reducing carbon emissions for C		
1	ID: 256396678	I don't know.
2	ID: 256434462	Warm works are helping us
3	ID: 256606655	Thaw
4	ID: 257040645	Too many.
5	ID: 257044624	Hopefully Housing agencies and builders in both public and private sectors. Voluntary agencies eg THAW
6	ID: 257050981	Nobody
7	ID: 258800188	Reflex Orkney
8	ID: 258898607	In addition to the organisations mentioned in Orkney's Local Heat and Energy Efficiency Strategy (LHEES) and related documents, several other groups are actively working to enhance energy efficiency and reduce carbon emissions in Orkney's building stock.

		Community Energy Scotland (CES) is an independent Scottish charity established in 2008 that provides advice and financial support for renewable energy projects developed by community groups across Scotland, including Orkney. Their aim is to build confidence, resilience, and wealth at the community level through sustainable energy development.
		The European Marine Energy Centre (EMEC), based in Orkney, is a leading facility for testing and developing marine renewable energy technologies. While primarily focused on marine energy, EMEC's initiatives contribute to the broader decarbonisation efforts in the region, indirectly impacting the energy efficiency of local buildings.
		The Orkney Renewable Energy Forum (OREF) is a local organisation that promotes the development and use of renewable energy in Orkney. They engage with the community, businesses, and policymakers to advocate for sustainable energy solutions, including improvements in building energy efficiency.
		ReFLEX Orkney, the Responsive Flexibility project, aims to integrate electricity, transport, and heat networks in Orkney to create a smart, flexible, and decarbonised energy system. By optimising energy use and storage, ReFLEX contributes to reducing carbon emissions associated with buildings.
		These organisations, through various initiatives and collaborations, play a significant role in advancing energy efficiency and reducing carbon emissions in Orkney's building stock.
9	OREF	It is not clear which groups are already identified. In addition the public sector support processes of individual action remain woefully inadequate to mobilise

3. Who may be able to contribute to the data used to generate the LHEES assessments and who co

	OREF	The is a very wide question. In short; whomever has useful data and this needs to be actively sought, collated and considered. OREF would be willing to contribute, and members could be commissioned to provide input when required.

4. Do you have any examples of projects relating to domestic properties which could contribute to

1	ID: 256396678	I don't know.
2	ID: 256434462	Don't know
3	ID: 256606655	no clue
4	ID: 257040645	Who knows.
5	ID: 257044624	All in two above
6	ID: 257050981	Nobody
7	ID: 258800188	don't know
8	ID: 258898607	In addition to the stakeholders identified in Orkney's Local Heat and Energy Efficiency Strategy (LHEES) documents, several other entities could contribute valuable data for LHEES assessments and benefit from access to this dataset.
	ID: 258898607	The National Records of Scotland (NRS) provides comprehensive demographic and housing data that can inform energy efficiency planning. The Information Services Division (ISD) Scotland, as part of NHS Scotland, offers health-related statistics that can help identify vulnerable populations affected by fuel poverty. The Scottish Environment Protection Agency (SEPA) provides environmental data, including climate and pollution metrics, which can aid in assessing the environmental impacts of energy strategies. Scottish Water's data on water usage and infrastructure can also provide insights into energy consumption patterns and potential efficiencies.
		Beneficiaries of access to LHEES data include academic and research institutions, which can utilise the data for studies on energy efficiency, climate change, and socio-economic impacts. Community energy groups planning renewable energy projects can leverage this data to identify opportunities and design effective interventions. Private sector companies in construction, energy services, and technology can use the information to develop energy-efficient products and services tailored to local needs. Policy makers and planners can also benefit from detailed energy data to support informed decision-making and policy development at both regional and national levels.
		Engaging these additional contributors and beneficiaries can enhance the comprehensiveness and utility of LHEES assessments, leading to more effective energy efficiency strategies in Orkney.

	OREF	There are many in Scandinavia, but many require the adoption of higher building densities. At present it is unclear that the Local Plan process will permit or encourage this due to the opacity of the processes and inadequate public engagement.

5. The private rental sector is a major part of the Orkney housing mix, what support or services wo

1	ID: 256396678	That's down to the landlord.
2	ID: 256493494	Get rid of the ludicrous conservation area and allow private landlords to install proper windows and doors in properties.
3	ID: 256606655	No idea
4	ID: 257040645	Financial incentives.
5	ID: 257044624	Money.
6	ID: 257050981	None
7	ID: 257757588	The services of an energy efficiency adviser dedicated to the private sector
8	ID: 258800188	I suggest low interest loans to landlords
9	ID: 258898607	Improving energy efficiency in Orkney's private rental sector is essential for reducing emissions and enhancing tenant comfort. Several support mechanisms and services are available to assist landlords and tenants in this endeavour.
	ID: 258898607	Home Energy Scotland (HES) provides free and impartial advice to landlords and tenants on energy efficiency improvements. They offer guidance on installing energy-saving measures and information about available financial support. Landlords can benefit from tailored advice to enhance the energy performance of their properties.
		The Warmer Homes Scotland Scheme offers funding for energy efficiency measures such as insulation and heating system upgrades. While primarily aimed at homeowners, eligible private tenants can also access support through their landlords. Landlords are encouraged to collaborate with tenants to apply for these improvements.
		The Energy Company Obligation (ECO) scheme requires energy suppliers to fund energy efficiency improvements in homes, particularly benefiting vulnerable and low-income households. Landlords can access funding for measures such as insulation and heating upgrades, reducing the cost burden of property enhancements.
		Some local authorities offer Landlord Loan Schemes to private landlords for energy efficiency improvements. These loans often come with favourable terms to encourage property upgrades. Landlords should consult with Orkney Islands Council to explore available financial assistance.
		Landlords are required to provide an Energy Performance Certificate (EPC) when renting out properties. Understanding EPC ratings and implementing recommended improvements can enhance the energy efficiency of properties, making them more attractive to tenants and potentially commanding higher rents.
		The UK government offers tax incentives for landlords undertaking energy efficiency improvements. Expenses incurred for certain energy-saving measures can be deducted from rental income, reducing taxable profits. Landlords are advised to seek financial guidance to maximise these benefits.
		Educating tenants about energy-saving practices can also lead to more efficient energy use. Providing information on the proper use of heating systems and encouraging energy-conscious behaviours can complement physical property improvements.
		By utilising these resources, landlords in Orkney's private rental sector can significantly improve the energy efficiency of their properties, benefiting both the environment and their tenants.
10	OREF	Money, a sympathetic and mobilising planning regime and a focus by Building Control on effectively driving decarbonisation.

6. Owner Occupiers form over half of the domestic properties in Orkney, what measures and supp zero.

1	ID: 256396678	Why are you pushing people into poverty over this made up agenda? There is absolutely no need for net zero, it's another tax.
2	ID: 256434462	Grant assistance in all 3 conservation zones so that energy improvements can be made and still meet conservation restrictions. Also alternatives for conservation zone houses who cannot use wind or solar due to restrictions. This support needs to include very high cost of replacing windows with energy efficient conservation approved wooden ones!
3	ID: 256493494	Get rid of the ludicrous conservation area and allow owner occupiers to install proper windows and doors in properties.

4	ID: 256606655	No idea
5	ID: 257040645	You can't force people. Their house, their choice. Even the use of enforced planning permission is wrong. You can only educate.
6	ID: 257044624	See 4.
		Utilities need to be both more affordable and reliable. Giving up non electric based heating systems requires a 100% reliable network. Currently power cuts are frequent and even for scheduled maintenance areas can be without electricity for 9 hour periods.
7	ID: 257050981	None
8	ID: 257757588	Advice and financial support into the installation and wind power for owner occupiers
9	ID: 258800188	Grants and low interest loans. Good information about what measures would help. Previously when I have had people from gov schemes relating to insulation they have often known less than I do about the building and how to improve it. You need knowledgeable tradespeople to assess buildings and give reliable information
10	ID: 258898607	To upgrade owner-occupied homes in Orkney to meet energy efficiency and net-zero targets, a comprehensive approach is essential. While retrofit measures and heat pump installations are central, additional initiatives could significantly enhance these efforts, particularly through the opportunities provided by the forthcoming Heat Networks (Scotland) Act 2021. This legislation enables Orkney Islands Council (OIC) to operate as a utility provider, unlocking significant benefits for all the islands.
		A pivotal aspect of the legislation is the inclusion of Shared Ground Loops as part of heat networks. For Orkney, shared ground loops offer a highly practical and cost-effective solution. Unlike traditional district heating systems, shared ground loops eliminate heat losses in distribution as they do not involve the transfer of heat through pipe networks. Instead, they provide a network of ground source connections, allowing individual heat pumps to extract energy efficiently. This system is particularly suitable for Orkney's dispersed housing and rural communities, where traditional district heating systems may not be viable due to high costs and logistical challenges.
		Shared ground loops are also significantly cheaper to install compared to conventional district heating systems, making them an attractive option for communities looking to decarbonise heating without prohibitive upfront investment. Their modular nature allows them to be installed incrementally, expanding as funding and demand grow. By leveraging Orkney's abundant renewable energy resources, such as wind and marine energy, to power the heat pumps, shared ground loops can offer residents a low-carbon and reliable heating solution tailored to the region's unique needs.
		Through the heat network legislation, OIC can take advantage of its role as a utility provider to drive the adoption of shared ground loops. This would provide greater local control over energy solutions, enabling the Council to design systems that align with local priorities and reduce costs for residents. By reinvesting revenue from these heat networks, OIC could further stimulate local economic growth and job creation, supporting contractors and suppliers involved in installation and maintenance.
		To maximise the benefits of shared ground loops, OIC could implement public awareness campaigns to educate residents about their advantages, including reduced energy costs, lower carbon emissions, and improved energy efficiency. Training and accreditation programmes for local contractors would ensure a skilled workforce capable of delivering high-quality installations. Partnering with suppliers to achieve bulk purchasing of materials could reduce costs further, making these systems even more accessible.
		Streamlining the planning process for retrofitting projects and providing clear guidance on compliance with building standards would help facilitate the widespread adoption of shared ground loops. Collaboration with local businesses, housing associations, and community groups could ensure the successful implementation of these networks, fostering community engagement and buy-in.
		By embracing shared ground loops as part of the heat network strategy, Orkney can lead the way in deploying innovative, low-cost, and highly efficient heating solutions. This approach would not only contribute to meeting net-zero targets but also enhance community resilience, reduce energy bills, and support sustainable development across the region.
11	OREF	Money, a sympathetic and mobilising planning regime and a focus by Building Control on effectively driving decarbonisation.
7. Energy Performance Certificates (EPC) for properties provide good information on a properties e number of EPC available for Orkney properties?		
1	ID: 256396678	EPCs are only needed if someone is selling their house or they want to do some home improvements. A piece of paper does nothing. I have read a few and most say; you can save £10 a year if you change lightbulbs. A waste of ink. Try bringing energy costs down, seeing as Orkney produces more than it uses.

2	ID: 256606655	Make it part of the landlords responsibility to provide it and keep it updated
3	ID: 257040645	Not necessary. It's only a piece of paper and not worth anything.
4	ID: 257044624	Offer them free of charge or as a requirement for grants.
5	ID: 257050981	Don't bother
6	ID: 257757588	Through the extended services of an energy efficiency adviser
7	ID: 258800188	I am not convinced about the data that they give . A lot of tick boxes carried out by people without a great depth of knowledge
8	ID: 258898607	To enhance the availability of Energy Performance Certificates (EPCs) for properties in Orkney, a multifaceted approach can be implemented, focusing on collaboration, financial support, and public engagement to drive awareness and uptake.
		Orkney Islands Council, as a key stakeholder in the region's energy transition, is well-placed to lead public awareness campaigns. Workshops and informational materials could be distributed to educate homeowners on the benefits of obtaining an EPC, including potential energy savings and increased property value. Local media outlets can also be engaged to highlight success stories of homeowners who have undertaken energy efficiency improvements identified through EPC assessments. Such initiatives would help to normalise the process and increase demand for EPCs within the community.
		Financial incentives are another effective means of increasing the number of EPCs. Subsidised assessments could be introduced to reduce or eliminate the cost of obtaining an EPC, particularly for low-income households. This would remove financial barriers and encourage greater participation. Similarly, offering tax benefits for homeowners who undertake energy efficiency improvements based on EPC recommendations could provide further motivation for action.
		Collaboration with local organisations and the community will be essential. Partnerships with energy groups and local contractors can help promote EPC assessments and provide the necessary resources for homeowners to engage with the process. Developing community-led initiatives, such as neighbourhood-level campaigns, could encourage groups of homeowners to pursue EPC assessments collectively, reducing costs and fostering a shared sense of progress towards energy efficiency.
		Streamlining the process of obtaining EPCs is also critical. By simplifying procedures and providing clear guidelines, the council can ensure the process is accessible and user-friendly. The development of digital platforms, where homeowners can schedule assessments, access results, and receive tailored recommendations, would further enhance the efficiency and appeal of obtaining an EPC.
		As Orkney Islands Council works towards its energy efficiency and net-zero goals, implementing these strategies could significantly increase the number of properties with EPCs. This would not only provide valuable data for ongoing energy planning but also support broader efforts to improve building performance and reduce carbon emissions across the region. By taking the lead, the Council has the opportunity to demonstrate its commitment to sustainable development and drive meaningful progress in achieving its environmental objectives.
9	OREF	OREF would challenge that they provide 'good information'. It is sketchy and believed to be inaccurate in some cases. Subsidise the process by which EPC are undertaken and outline the means by which the EPC register is kept up to date. If progress can be shown then this will help motivate.

8. Is there an alternative to the EPC as a method of gathering energy efficiency data for both domes

1	ID: 256396678	It's up to the individual. There is no need for anyone else to know what happens in someone else's house.
2	ID: 256606655	No idea
3	ID: 257040645	No.
4	ID: 257044624	No. Any system relied upon needs to be meet a set standard of measurements.
5	ID: 257050981	Who cares
6	ID: 258898607	Yes, there are alternatives to Energy Performance Certificates (EPCs) for gathering energy efficiency data for both domestic and non-domestic properties. While EPCs provide a standardised method of assessing a property's energy efficiency, other methods and proposals aim to offer more detailed, accurate, and actionable insights.

		The Energy Systems Catapult has recommended a comprehensive reform of the current EPC system to better align with net-zero objectives. Their proposal suggests replacing the single EPC rating with three equally significant metrics: an Energy Use Metric, which provides a clear indication of the predicted total energy use of the building's fixed services (heating, cooling, lighting, etc.), encouraging improvements to both the building's fabric efficiency and its heating systems; a Climate Impact Metric, which offers information on the emissions attributable to the property's energy use, enabling homeowners and policymakers to target decarbonisation efforts more effectively; and an Energy Cost Metric, which gives a clear indication of how the property's energy costs compare to others, crucial for addressing fuel poverty and energy affordability issues.
		Additionally, the Energy Systems Catapult advocates for the incorporation of real data, moving beyond theoretical models to include actual energy consumption data in assessments, leading to more accurate and relevant evaluations. They also emphasise focusing on building performance, showing how a building operates in reality rather than just its potential performance under standard conditions.
		Other alternative methods to gather energy efficiency data include building energy modelling and simulation. Programmes like SAP (Standard Assessment Procedure) for domestic buildings and SBEM (Simplified Building Energy Model) for non-domestic buildings offer dynamic modelling of energy use and carbon emissions. Advanced tools such as IES VE or Energy Plus provide detailed simulations of a building's energy performance under various conditions.
		Thermal imaging surveys, using infrared thermography, can identify areas of heat loss through the building envelope, such as poor insulation or air leaks, providing actionable insights for improvements. Smart meter and Internet of Things (IoT) data analysis, tracking real-time energy consumption patterns, and utility bill analysis, reviewing historical energy consumption data, can also be valuable in establishing baselines and identifying inefficiencies.
		Whole-building retrofit assessments, such as those conducted under the PAS 2035 Framework, involve detailed evaluations by qualified Retrofit Coordinators, focusing on all aspects of a building's performance before implementing energy efficiency measures. Home Analytics and GIS mapping, including Home Analytics Scotland, can combine property types, construction details, and energy usage data to assess energy efficiency on a larger scale, while GIS systems can analyse clusters of properties to aid in planning area-based interventions.
		Carbon assessment tools, such as Lifecycle Analysis (LCA), assess both operational and embodied carbon footprints over a building's lifecycle. Building condition and energy audits, involving comprehensive manual inspections, and certifications such as BREEAM and LEED provide frameworks for assessing energy and environmental performance, particularly for non-domestic properties.
		The benefits of these alternative methods include enhanced accuracy, incorporating real-world data and advanced modelling for more precise assessments; tailored recommendations that allow for customised energy efficiency solutions specific to each property; and alignment with net-zero goals, as metrics focusing on actual energy use and emissions support more effective strategies for decarbonisation.
		By combining these alternative methods, especially the Energy Systems Catapult's proposed metrics, stakeholders can gain a deeper understanding of energy efficiency in both domestic and non-domestic properties. This holistic approach provides actionable insights that go beyond the traditional EPC, supporting more effective interventions to improve energy efficiency and move towards net-zero emissions across Orkney's building stock.

9. Do you know of any project addressing the energy efficiency of Non Domestic building in Orkne

1	ID: 256396678	No.
2	ID: 256606655	No
3	ID: 257040645	No.
4	ID: 257044624	No
5	ID: 257050981	No
6	ID: 257757588	No
7	ID: 258898607	No

10. What additional measures and support will be needed to ensure non domestic properties are u

1	ID: 256396678	Energy efficiency is one thing and can save the individual money but net zero is a tax and totally irrelevant and unnecessary. It's a way of raising money and reducing people to poverty.
2	ID: 256606655	No idea
3	ID: 257040645	That's up to them. You can't force them to do anything if they don't want to.

4	ID: 257044624	Money
5	ID: 257050981	None
6	ID: 258800188	Again assistance to business owners to improve their buildings. Would it be allowable against tax ?
7	ID: 258898607	To ensure non-domestic properties in Orkney are upgraded to meet energy efficiency and net-zero targets, a comprehensive strategy is required that incorporates funding mechanisms, technical expertise, and stakeholder collaboration. Financial support, green finance initiatives, and investments aligned with sustainability goals will be key drivers for this transformation.
		Access to adequate funding is a fundamental enabler for energy efficiency upgrades. Engaging with green finance companies, such as the Green Finance Institute, can provide access to tailored financial products designed to support decarbonisation projects. These organisations specialise in creating financial solutions to accelerate the transition to a net-zero economy, making them valuable partners for Orkney's initiatives.
		Business Energy Scotland offers free, impartial advice and support to businesses seeking to reduce energy costs and carbon emissions. They provide guidance on funding opportunities, including loans and grants, that can be utilised for energy-saving measures in non-domestic properties. Leveraging their expertise can assist businesses in identifying and applying for financial assistance.
		The increasing interest of investors seeking alternatives to oil and gas provides a promising funding avenue. Many are now prioritising renewable energy and energy efficiency projects. By presenting well-structured project proposals that outline potential financial returns alongside environmental and social benefits, Orkney can attract significant investment. This approach aligns with the global shift towards sustainable investments.
		Technical guidance is essential for property owners and managers to implement effective energy efficiency measures. Partnering with organisations such as Business Energy Scotland can provide tailored energy audits and detailed recommendations for non-domestic properties. These services ensure that property owners adopt the most suitable and cost-effective energy-saving technologies.
		Orkney Islands Council could further enhance support by establishing a dedicated advisory service to provide bespoke energy management advice. Such a service could include energy audits, advice on retrofitting options, and recommendations for integrating renewable technologies such as solar panels, shared ground loops, and wind energy systems.
		The Heat Networks (Scotland) Act 2021 presents an opportunity to deploy shared ground loop systems as a cost-effective and efficient heating solution for non-domestic properties. Shared ground loops are particularly well-suited to Orkney due to their lower installation costs compared to traditional district heating systems and the absence of heat losses during distribution. These systems, powered by renewable energy, can be integrated into existing building stock, reducing carbon emissions and providing long-term energy savings.
		Community and business engagement is vital to foster widespread support and collaboration. Orkney Islands Council can host workshops and forums to educate non-domestic property owners about the benefits of energy efficiency upgrades, available funding, and technical solutions. Encouraging partnerships between local businesses, organisations, and investors will ensure shared resources and coordinated efforts.
		Developing local expertise is critical to implement energy efficiency measures effectively. Training programmes for contractors and engineers should focus on retrofitting techniques, renewable energy integration, and heat network installation. Building a skilled local workforce not only supports project delivery but also drives economic growth within the region.
		Collaborations with suppliers to enable bulk purchasing of materials can reduce costs for businesses and property owners, making energy efficiency upgrades more accessible. A streamlined procurement process will also enhance project efficiency and affordability.
		Establishing a robust framework for monitoring the energy performance of non-domestic properties will help track progress towards net-zero goals. Regular benchmarking can enable property owners to measure their performance against industry standards and adopt best practices.
		By integrating these measures, Orkney can create a supportive environment for upgrading non-domestic properties, leveraging financial resources, technical expertise, and community engagement to achieve its energy efficiency and net-zero objectives. This approach will not only reduce emissions but also strengthen Orkney's position as a leader in sustainable energy solutions.

11. Heat networks have offered opportunities for renewable heating in town and cities around the c
the property, many Orkney properties are electrically heated, how could this problem be overcome

1	ID: 256396678	Are you suggesting that you force people to change their heating systems?
2	ID: 256606655	No idea
3	ID: 257040645	People can't afford to change systems so you can't force them. You can only point them in the direction you want them to go when they do decide to change.
4	ID: 257044624	Disconnect Orkney from the National Grid and set up a local network.
5	ID: 257050981	Who cares
6	ID: 258974426	Wet-based overlay systems provide an efficient and effective solution for transitioning properties with electric heating to renewable heat networks. Among the leading systems is the Wunda Rapid Response® overlay system, which stands out for its innovative design and exceptional performance.
		The Wunda Rapid Response system utilises low-profile overfloor boards with pre-routed channels for warm water pipes, allowing for rapid heat transfer. These boards are bonded with aluminium to maximise heat conduction, enabling the system to operate at low feed temperatures of less than 30°C. This characteristic is particularly advantageous when paired with heat pumps, as it allows the heating system to achieve maximum efficiency, reducing operational costs and carbon emissions.
		One of the key benefits of the Rapid Response system is its ability to function like a conventional boiler-fed space heating system, offering the flexibility to be switched on and off as needed. This makes it an excellent choice for households facing potential fuel poverty, as it provides the option to heat a space from cold in as little as 15 minutes. Such rapid responsiveness supports strategies like night setback, where temperatures are reduced overnight, or frost protection settings when a property is unoccupied. These features enable users to control heating costs while maintaining comfort and safety.
		The system is particularly beneficial in retrofit situations where properties have suspended floors. During retrofitting, underfloor insulation can be added without any concern for routing water heating pipes under the floorboards, as these are integrated within the overlay system itself. This minimises disruption and simplifies the installation process. The system's boards can be laid directly over existing flooring, requiring a process as straightforward as installing laminate flooring. This ease of installation, combined with its compatibility with various floor finishes, makes it an attractive choice for both renovations and new installations.
		In addition to Wunda's offering, other overlay systems, such as Nu-Heat's LoPro®10 and LoPro®Max, REHAU's underfloor solutions, Polypipe's Overlay® system, CosyFloor's overlay boards, and The Underfloor Heating Company's multi-room kits, provide alternatives that cater to various project requirements. These systems generally feature low-profile designs, fast response times, and compatibility with renewable heat sources, ensuring they are suitable for a wide range of applications.
		Overlay underfloor heating systems, such as Wunda Rapid Response, provide an efficient, user-friendly, and sustainable heating solution that supports the transition to renewable energy, especially when combined with technologies like heat pumps. Their rapid heat-up times, operational flexibility, and ease of installation make them ideal for properties transitioning from electric heating, ensuring comfort and cost control for residents
7	OREF	The statement 'Many Orkney Properties' is questioned and should be justified. It is important to better understand which properties have heat pumps which themselves could be converted to receive district heat. In addition the provision of heat to electrically heated buildings will be popular if the heat is cheaper than the alternative.

12. What barriers or concerns exist that would stop businesses and householders signing up to a

1	ID: 256396678	Money!
2	ID: 256434462	Conservation restrictions and lack of grants
3	ID: 256493494	Cost, Stupid 'conservation area' policy.
4	ID: 256559708	Expensive and pointless. A bit like communist Poland etc - no wonder the greenists like the idea

5	ID: 256606655	Lack of information?
6	ID: 257040645	Cost, cost, cost.
7	ID: 257044624	Lack of control. Many network systems appear experimental and expensive.
8	ID: 257050981	None
9	ID: 257757588	Financial constraints with the rising costs in all sectors of our communities
10	ID: 258800188	Reliable information about the running costs which are often higher than is initially indicated and people /businesses have no comeback once it is installed
11	ID: 258974426	N/A
12	OREF	Ignorance and lack of familiarity. The complete absence of any attempt to educate will not change this!

13. Are there any project opportunities you feel could be investigated that would help Orkney on th

1	ID: 256396678	Net zero isn't necessarily. Energy efficiency is fine so long as there are no extra cost to the homeowner.
2	ID: 256493494	Net Zero is a farce. Total pipe dream.
3	ID: 256559708	scrap the communist/greenist ideals of ""Net Zero"" etc and Orkney will be a far better place for everyone
4	ID: 256606655	No idea
5	ID: 257040645	It's up to the individual.
6	ID: 257044624	No
7	ID: 257050981	No
8	ID: 258800188	Higher insulation and building standards for new builds especially
9	ID: 258974426	Not known
10	OREF	As detailed above. The old Balfour site and Area around Jewson's Yard both need development briefs to be drawn up that include district heating. In addition the operation of the Balfour's plant should be checked and plans drawn up to make that a central heat supply source.

14. What services would you like to see developed that would help tenants, homeowners and busi

1	ID: 256396678	Let them make their own minds up, then give them the money to do it if it means that to you. This can not come out of their pockets.
2	ID: 256434462	Grants for improvements including replacement of windows & doors in conservation zones, alternative systems and or grants for sustainable energy for heating in conservation zones
3	ID: 256493494	None. Its a busted flush.
4	ID: 256559708	scrap the communist/greenist ideals of ""Net Zero"" etc and Orkney will be a far better place for everyone
5	ID: 256606655	Make social housing suppliers look at what can be done, there are lots of social housing especially built in the last 15 years which are severely sub standard in their insulation and heating systems
6	ID: 257040645	Leave it alone. It's not necessary.
7	ID: 257044624	Systems need to be cheaper to purchase, have at least 20 year life expectancy and cheaper maintenance costs.
		Unit energy costs must also be more realistic.
8	ID: 257050981	No
9	ID: 257757588	A dedicated energy advice centres prominently situated in our two main towns
10	ID: 258800188	Better information and surveys being carried out by people whose input can be trusted to improve the situation. I have had walls insulated internally (for external walls). This has made a great difference to heat retention but is expensive and disruptive so not sure suitable for all
11	ID: 258974426	A transformative service that could support tenants, homeowners, and businesses in the transition to Net Zero is for Orkney Islands Council (OIC) to operate as a utility, providing efficient shared ground loop systems (SGLs) for heating and charging a fixed monthly standing charge for connection. This approach has the potential to revolutionise access to sustainable heating, ensuring affordability, reliability, and equity while maximising efficiency.

		Shared ground loops involve a network of ground source heat pumps (GSHPs) connected to a communal system of underground pipes that extract heat from the ground. These systems are highly efficient, operating at low temperatures to deliver heating and cooling. By leveraging this technology, OIC could provide a utility-style service, where residents and businesses pay a predictable monthly fee for connection rather than incurring the high upfront costs traditionally associated with GSHP installation.
		A fixed monthly standing charge—potentially around £30 per month—would make energy costs predictable for households and businesses. This would eliminate the financial burden of fluctuating fuel prices and high energy bills, which is particularly important for those at risk of fuel poverty. Users would pay only for their connection to the shared loop, ensuring equitable access to a renewable heating solution without the need to manage or maintain complex equipment.
		Shared ground loops operate at low feed temperatures, typically below 30°C, which is ideal for technologies like underfloor heating or low-temperature radiators. These efficient systems reduce energy consumption and operational costs, particularly when paired with modern emitter systems such as Wunda Rapid Response. This system can be operated flexibly, allowing heating to be turned on and off as required, with spaces able to heat from cold in just 15 minutes. This rapid response enables energy-saving practices such as night setback and frost protection, empowering users to minimise energy use without compromising on comfort.
		The utility model is well-suited to retrofitting existing properties and integrating into new developments. For tenants and homeowners in properties with electric heating or outdated systems, OIC could support retrofits with low-disruption solutions like wet-based overlay systems. These systems, such as Wunda's Rapid Response, can be installed over existing floors with minimal impact, providing high-efficiency heating without the need for extensive property modifications. For properties with suspended floors, retrofitting could also involve adding underfloor insulation alongside the installation of overlay systems, ensuring that traditionally hard-to-heat properties benefit from the efficiencies of shared ground loops.
		A significant advantage of GSHPs over air source heat pumps (ASHPs) in Orkney's marine environment is that GSHPs are typically installed indoors. This protects the heat pump unit from exposure to harsh weather conditions, salt spray, and corrosive marine air, which can reduce the lifespan and efficiency of outdoor equipment like ASHPs. By housing the heat pump indoors, GSHP systems ensure long-term reliability and performance, which is particularly important in areas such as Orkney where the weather can be challenging. This also avoids the potential for noise pollution associated with ASHPs, further enhancing the suitability of GSHPs for local properties. Additionally, many traditional historic buildings would not be spoiled by the addition of an unsightly external box, preserving their aesthetic and architectural integrity, which is often a priority in conservation areas.
		By operating as a utility, OIC would ensure that everyone, regardless of income or property type, has access to modern, efficient heating. This approach would also support local Net Zero goals by prioritising sustainability and carbon reduction. Shared ground loops could be powered by Orkney's abundant renewable energy resources, such as wind, solar, and tidal, further decarbonising the heating supply and supporting local energy generation projects. This would align with broader national Net Zero targets and position Orkney as a leader in sustainable energy innovation.
		The simplicity of the system would also be a key benefit for users. The ground loop infrastructure and central heat pumps would be maintained by the utility, reducing the burden on individual households and businesses. This reliability would ensure consistent service, with users only needing to focus on their in-home emitters, such as underfloor heating or low-temperature radiators.
		Beyond environmental benefits, this model could create jobs and stimulate the local economy. Skilled roles would be needed for the installation, operation, and maintenance of the shared ground loops, providing opportunities for local businesses and residents. Predictable and affordable heating costs would also enhance the quality of life for tenants and homeowners, while making Orkney more attractive to businesses and new residents.
		By implementing shared ground loops under a utility model, OIC could lead the way in developing sustainable heating infrastructure that supports the transition to Net Zero. This innovative approach would ensure renewable heating is accessible, efficient, and affordable, providing tangible benefits for tenants, homeowners, and businesses alike. It would also demonstrate how local councils can play a central role in decarbonising communities, offering a replicable model for other regions striving to meet their Net Zero ambitions.
12	OREF	Impartial information provided in easy to find and digest form along with practical hand holding... what we used to have in the Energy Advice Centre.
15. Please add any comments on the proposed LHEES strategy that would not be covered by the p		
1	ID: 256396678	Stop with all this net zero nonsense, folk are fed up of hearing about it and will be furious when they hear it's going to cost them. Quit whilst you're slightly ahead.

2	ID: 257040645	You have asked all the wrong questions. I've not had heating in my house for 5 years because I can't afford it. So, my house is cold, damp, mouldy. My carpet is too damp to vacuum, so I have to brush it. Our clothes end up smelly and my daughter's health is suffering. I live in a council house and if I say anything, I'm told to turn the heating up. All you are bothered about is net zero and want to spend all that money on something that is irrelevant and made up, it's just an extra tax, and I can't afford to look after my family even though I work full time. It's a disgrace. Your survey disgusts me and the fact you are pushing this agenda makes me feel ashamed. You want to look after your own people instead of pushing this unwanted and unnecessary cr*p.
3	ID: 257044624	Net Zero is laudable but trying to force uptake will fail, systems need to be attractive, affordable and beneficial then people will sign up willingly.
4	ID: 257050981	It's all rubbish
5	ID: 257755260	Why do we want to be net zero?
		Surely the priority is to identify poorly insulated and heated houses so they are warm affordable and not damp.
		The OIC would do well to consider installing wood burning stoves and oil central heating in some of there older housing stock where insulation levels are difficult to improve dramatically. Cladding buildings with insulation I personally think will lead to problems in future with dampness. Net zero in Orkney can only be achieved if OIC build more wind power and have some scheme where Orkney residents benefit from this for electric heating other wise it will be unaffordable
6	ID: 258800188	Good luck
7	ID: 258898607	Please ensure shared ground loops and networked heat pumps are central to the LHEES Strategy and Plan. Support and details available from the Ground Source Heat Pump Association (GSHPA): ken.gordon@gshpa.org.uk
8	ID: 258974426	Please ensure shared ground loops and networked heat pumps are central to the LHEES Strategy and Plan. Support and further details available from ken.gordon@gshpa.org.uk
9	OREF	See covering letter. Whilst good work has been done, OREF is concerned at some of conclusions reached and does not believe the document is ready for adoption.
		The scale of the data capture and presentation in the document is recognised and the general intent strongly supported. However it is not clear if all this information needs to be in the Strategy of Plan themselves. The documents presently sit at about 80 pages each and seem very long on facts, but short on specific means by which the problems identified are to be tackled. OREF therefore wonders if the documents should be sieved apart, and the corroborative information moved to appendices or annexes. This may then help the Strategy and Plan to more clearly focus on the activities to be undertaken.
		it is not clear what the data on pages 26 to 36 are actually telling the reader in the Plan. There are no actions on these pages.
		the tables forming the 'Actions' are poorly laid out and hard to read and could be compacted significantly if presented in landscape with abbreviations for the participants.
		The lack of colours in the 'status' column is peculiar and it is not clear how this will be used and why it is not fully completed.
		District Heating Several members have commented upon the concentration in the document on the district heating proposals being confined to council property. This does not seem to fit with the ethos of the guidance document which states: 1.11. LHEES should: • Be evidence based; • Cover the full building stock within the local authority, including the domestic and non-domestic sectors, so far as reasonably possible;… In your presentation you highlighted the paucity of information on EPC for all the non-domestic buildings (Building Performance Assessment Studies) and it appears that the approach outlined in the Strategy of seeking to build something around OIC buildings is as a result of this lack of wider data. OREF would therefore caution against the district heating proposals as presented since they are driven by an incomplete picture based on this incomplete data. Proposing schemes with only part of the data cannot be a good fit with the first bullet point in the guidance 1.11.

		With so many OREF members in Stromness having to endure the fossil fuelled heating in the ORIC owned buildings it is of particular surprise that the opportunities for a district heating scheme based on those existing buildings does not feature in the draft Strategy of on Page 20 of the Action Plan. In the discussions I was not left with the impression that there had been significant engagement with ORIC management. OREF members can sympathise with this lack of engagement, however the omission of such a significant opportunity in the middle of Orkney's 2nd largest town seems to be a serious omission from the Strategy and OREF would urge that this is addressed. Overall OREF seriously questions the conclusions reached in terms of heat networks in the Strategy and urges that more work is done in a more inclusive manner before the document is finalised.
		New sites It is also surprise that the Strategy does not mention the approach that the county should take towards new sites. Locations such as Jewson's old yard and the old Balfour Hospital site need to be considered in the context of an overall Net Zero target. It is not clear where such information will sit if it does not feature in LHEES. The 5 year refresh in the Strategy could see the sites sold and fully developed without even appearing in a strategy. This cannot be right.
		Faulty EPC It has been reported to OREF that a contractor that precedes Warm works is alleged to have falsely submitted EPC assessments. By inspection I am aware of properties incorrectly assessed and therefore would strongly suggest that any certificates provided by this earlier contractor are scrutinised and audited. Unless accurately known it will be wasteful to target resources on properties that have false EPCs.
		Voids OREF strongly supports the approach being taken by OIC in tackling inadequate housing during turn over periods. OREF did not see any reference in the documents as to the time the retrofit measures actually take and so would urge that this is measured and reported. The loss of rental should be a cost that is captured in the analysis of the scheme.
		Progress reporting The improvement in property condition should be measured and reported monthly in order to set a degree of pace and not annually as detailed on Page 50 of the Plan. If left to annual reporting there is a risk of the reason for delays becoming 'lost in the mists of time'. In effect the progress being made should be reported in almost real time in order to create and maintain interest. The Appendix seems to comprise the bones of a reporting tool, but there is no mention of frequency or the means by which progress will be publicly tracked. In addition the colour code seems incorrect in that red denotes not yet started and amber in progress. A more logical code would be 'no colour' for not yet due, grey for in progress, amber for slightly behind and red for significantly behind. Green for complete is OK, however OREF would also suggest the inclusion of a letter code such as I for in progress, L for late, X for attention needed. The use of letter in the tracking spreadsheet will allow rapid sorting and easier reporting.
		Table 2: • Cat 2: "There must be no risk of the property having a narrow uninsulated cavity" (added emphasis). Many owners will not know whether their property has such a cavity. Requiring no risk (rather than a low risk) would possibly require every otherwise-eligible property to have a destructive/invasive inspection. • Cat 3… is simply unclear and confused. It seems to be a list of types of heating rather than a description of indicators that a house is in this category, as per cats 0-2. It seems to say that if the property is currently heated by oil then it should get a heat pump, but if it currently has storage heaters then it is most suitable for storage heaters…?
		Timetable: It was unfortunate that the public meeting to discuss the document was only 10 days before the end of the consultation period. Whilst OREF welcomes the opportunity to comment, it is unfortunate that more time was not made available.
		Questions Posed: The questions in the online consultation tool were largely impossible to answer in detail and generally focussed on details rather than whether the document was travelling in the right direction. In addition the questions were not visible until attempting to fill out the online form as they did not appear in the consultation document. Once the document is more focussed it may be possible to address the points raised in more detail.

		In conclusion: OREF welcomes the work done on these consultation draft documents, but would urge that they are tightened up by the removal of a lot of the factual into a supporting appendix. More active reporting of progress is needed that outlined in the drafts. The omission of potential sites needs to be corrected and integrated with the Local Plan if this document is to be useful. The absence of data from non OIC building fundamentally undermines the work done on district heating and OREF believes this work needs to be re-executed and cannot support the documents as presented. Despite the criticism of the document the underlying work done is commended and OREF would urge that more attention is paid to making it a more progress focussed document.

OIC Response	Action / Update required
mpact on the Energy Efficiency of the building stock in Orkney?	
Investigate requirements for window replacement in conservation zones, can energy Efficient window units be used? Is there any grant funding available for support of energy efficient improvement?	
Solar PV and Solar Thermal panels are considered for new build and refurbishments of OIC properties, however it may not always be desirable to install systems on historic properties.	
Investigate requirements for energy efficiency fabric improvements in conservation areas.	work with Planning to address energy efficient refurbishment for properties in conservation areas
The ReFLEX project as described has now been wound up, however there are elements of the project which will continue to address energy efficiency of domestic and non domestic buildings, this project has been identified within the strategy document.	
	investigate The Energy Efficient Scotland Programme and include reference within strategy document. Identify any opportunities for project funding.
LHEES is aimed at addressing energy efficiency in the built environment the broader energy system aspirations of Orkney are addressed by the Orkney Energy Strategy	
Stricter local requirements for energy efficiency of new build properties. Would indeed help reduce carbon emissions. A voluntary code could be developed and local builders encouraged to pick this up. OIC currently aim to exceed the minimum fabric u Values in all new build projects.	Develop an Energy Efficiency code of practice document for Orkney, this could be done in collaboration with Shetland and CNS Develop a formal policy for the energy efficiency standards for all new build and refurbishment projects.
)rkneys building stock?	
Warm works have been identified in the strategy document	
Thaw have been identified in the strategy document	
OHAL and Thaw have been identified in the strategy document	
ReFlex Orkney have been identified in the strategy document	

	Request update from CES regarding projects in and around Orkney and the other island groups.
EMEC works primarily in the energy supply and distribution sector and does not address building energy efficiency directly	
OREF have taken part in the consultation process and there comments are addressed below	
The ReFLEX project as described has now been wound up, however there are elements of the project which will continue to address energy efficiency of domestic and non domestic buildings, this project has been identified within the strategy document.	
Further clarification required on this comment	Contact NC for clarification

uld benefit for access to this data set?

minimising emissions? Could any of these projects be replicated?

It is worth looking at alternative data sets for future iterations of the LHEES, the current version uses the data sets identified in the SG methodology documentation, but alternative national or local data sets may add to the overall accuracy of the assessments	Add an action into the delivery plan to investigate the use of additional data sets to help identify vulnerable populations
Data sets, where not covered by data sharing agreements will be made available, We already have an action in the delivery plan to work with ICNZ to make sure data id available.	

low energy density has been identified as an issue with regards to heat networks, building form may also contribute to energy efficiency in high density housing.	Add an action into the delivery plan to investigate planning policy with regards to density
uld help improve the energy efficiency of this sector?	
Investigate requirements for energy efficiency fabric improvements in conservation areas.	See action 1/9 above
Some funding opportunities exist to help with the Private Rented Sector	Add an action into the delivery plan to investigate the opportunity to contact private rented landlords / tenants to inform them of funding opportunities.
See item 5/4 Above	
Energy Efficiency advisors are available through the ReFlex project and also Thaw and Home Energy Scotland	Add an action into the delivery plan to investigate options for publicising the availability of energy advice for private sector tenants and owner occupiers.
See item 5/4 Above - Funding Opportunities	
See item 5/7 Above - Energy Advisors	
See item 5/7 Above - Energy Advisors	
ECO funding has been addressed in the delivery plan as part of the OIC/OHAL housing improvement works	
look into what schemes are available in other LA areas	Add an action to investigate possibility of Local Authority funding for private sector landlords looking to improve Energy efficiency of properties
currently an EPC must be provided but there is no minimum requirement, could a local minimum standard for energy efficiency be considered	Add an action to investigate possibility of Local Authority setting a minimum EPC rating for private rented properties
	Add and action to promote tax opportunities available to private landlords
See item 5/7 Above - Energy Advisors	
See item 5/4 Above - Funding opportunities See item 1/10 above - Local Energy Standards	
ort will be needed to ensure dwellings are upgraded to be energy efficient and net	
OIC is committed to reducing our Carbon emissions in line with Scottish and UK government targets	
OIC recognise that the cost of energy efficiency improvement in conservation areas is high.	Add and action to investigate opportunities for funding to help address the high cost of conservation windows / doors.
OIC recognise that energy efficiency of properties is important , but the preservation of character of out conservation areas is also necessary. The two are not necessarily in conflict and solutions will be possible	See action 1/9 above

Electricity outages will always occur due to faults or weather conditions, but frequency and duration are reducing as improvements are made to the distribution network.	Investigate outages frequency and duration over years.
See item 5/7 Above	
See item 5/7 Above	
Heat networks have been investigated as part of the LHEES assessment, several actions exist within the delivery plan relating to heat networks	
Shared ground loops offer an opportunity to reduce the costs associated with ground source heat pump systems. There are many possible opportunities to use such systems within Orkney	Add and action to investigate opportunities for shared ground loop systems within Orkney
	Add and action to investigate opportunities for wind turbine integration with GSHP systems.
See item 6/10b above	
	contact respondent to identify current issues with planning on retrofit projects
See item 5/4 Above - Funding opportunities See item 1/10 above - Local Energy Standards	

energy efficiency, but not all properties have an EPC, how can we increase the

Registered private landlords are required to provide an EPC for the rental property, however currently there is no minimum rating to be achieved.	
	investigate opportunity to use local energy efficiency assessors to provide no/low cost EPC service to assist in development of Energy Efficiency improvement projects
See item 5/7 Above - Low / No cost EPC's	
All energy assessors are trained and audited to ensure consistent quality for the assessments.	
See item 7/4 Above	
	investigate opportunity to highlight local energy efficiency projects where improvements have been made to a property. Possibly in conjunction with CINZ or ReFLEX Orkney.
See item 7/4 Above	
See item 7/4 Above	
Online application for and EPC could be offered as part of Energy Efficiency Project	investigate opportunity for Online portal to arrange EPC and understand recommendations. Possibly in conjunction with ICNZ or ReFLEX Orkney.
EPC Assessors are trained and accredited and are subject to and audit process designed to maintain quality control of the scheme. If OREF have evidence of inaccuracies in the assessment process this must be brought to the attention of the accreditation organisation. See item 5/7 Above - Low / No cost EPC's	
stic and Non-Domestic Properties?	

Use of actual billing data would give additional information, however for non domestic properties care must be taken where manufacturing processes take place which could skew building heating load.	
	Investigate the opportunity for providing building simulation modelling for major projects. OIC could take a lead on this and share results to encourage others to consider use of this.
	Investigate the opportunity of providing thermal surveys as part of an energy advice service.
this is the basis of the LHEES methodology	
OIC have used BREEAM in the assessment of the Schools Investment Project, this could be rolled out to new build projects, however issues were identified in the assessment process where applied to very rural settings, making it very hard to score well.	Investigate the opportunity of providing BREEAM / LEED surveys as part of an energy advice service.

y not listed in the Strategy?	

pgraded to be energy efficient and net zero?	
OIC is committed to reducing our Carbon emissions in line with Scottish and UK government targets	

Grant and loan funding is available from many sources, sharing information on the sources of grants and loans may be beneficial	
Some Tax benefits may be available, advice on this would be useful to businesses	Investigate possibility of providing Tax advice on energy efficiency measures for businesses, this could possibly be done by Business Gateway
	Investigate possibility of providing grant and loan advice on energy efficiency measures for businesses, this could possibly be done by Business Gateway
Do we have a Business Energy Scotland contact for Orkney? https://businessenergyscotland.org/	
	Investigate possibility of developing an investors database for energy efficiency and small scale renewable projects. This could possibly be done by ICNZ or Business Gateway
See 10/7 above	
See 5/7 above - Energy Advice Service	add an action to investigate the opportunity to provide an energy advice service within Orkney open to both domestic and commercial clients and able to provide technical support
See 6/10 above - Shared Ground Loop Systems	
See 5/7 above - Energy Advice Service	
Developing local skill sets has been identified as vital in the delivery plan, retraining of oil industry employees is also considered.	
	investigate the option of providing a carbon monitoring service for non domestic properties, companies could sign up and provide billing data to receive an annual CO2 report

country, systems usually rely on the pre-existence of a wet central heating system in ?

No, question was looking for ways to install heating systems compatible with renewable sources	
Local private wire networks have been considered in the past, but should we look at Orkney as an opportunity for the local community to own the distribution network?	
OIC will investigate this for use within refurbishment projects	
Table 9 of the strategy document show 56% of domestic properties in Orkney have electricity as the primary heating fuel compared to a Scottish average of 11% Additional work will be required to identify existing heat pump users that could be converted to Heat Network use, however this is currently a small number compared to the number of Storage Heating properties.	add and action to investigate existing heat pump properties where conversion to heat network is a possibility.

heat network if one was available in your area?

We could assume that if a heat network was installed within the conservation zone then planning would be on board with this. Grant funding for connections would generally be required to help stimulate the market.	
See 12/2 above	

Need to develop an information portal to inform public of benefits and risks associated with district heating systems	add and action to develop public engagement process where a heat network is considered for an area.
Details of existing systems where they have operated for many years with high customer satisfaction	
Government legislation around the operation of heat networks will impose constraints on how much operators can charge and provide protection for the network customers.	
See item 12/5 above - Heat Network Awareness Raising	
e road to Net Zero in our building stock?	
See 6/1 above - OIC Commitment to NZ	
See 6/1 above - OIC Commitment to NZ	
See 6/1 above - OIC Commitment to NZ	
See 1/10 above - Local EE Standards	
Old Balfour Hospital site utilises oil fired steam heating plant which may not be suitable for repurposing as a heat network energy centre, however the site should be considered as a ideal location for a new build heat network site if the area was redeveloped as housing, The Jewson's yard area is within the area covered by a proposed town centre heat network details in the strategy document	.
nesses with the move to Net Zero?	
Grants will be identified where available	
this is not true, all OIC and OHAL properties constricted in the past 15 years meet standards which are better than building standards minimum levels.	
Grants will be identified where available	
Energy costs are a major issue with respect to fuel poverty. Minimising fuel spend is a driver for energy efficiency.	
See 5/7 above - Energy Advice Service	
See 5/7 above - Energy Advice Service	
the use of heat networks as a means of reducing risk of fuel poverty has been identified in the delivery plan, systems utilising common loop GSHP systems could be investigated as a specific project	Add action to investigate common loop GSHP system for existing or new build properties.

comments noted	
This would only give them access to the source of heating, the tenant would still need to pay for energy to operate there own heat pump to meet their own heating demands.	
comments noted	
comments noted	
comments noted	
comments noted	
comments noted	
comments noted	
comments noted	
See 5/7 above - Energy Advice Service	
revious questions.	
See 6/1 above - OIC Commitment to NZ	

OIC are committed to providing quality housing and strive to ensure properties meet the Energy Efficiency Standard for Social Housing (EESSH). Please contact the Housing service to discuss what can be done to minimise heating costs for your property	
comments noted	
Yes, EESSH standards address this.	
comments noted	
Thanks	
comments noted	
comments noted	
The LHEES documentation is broken into two sections currently, the Strategy document and the Delivery Plan the latter containing the activities and projects to be undertaken. We accept that there is a great deal of data in the document but we want this to be publicly available to allow external agencies to use this directly or request further information.	
the data is a summary of the current position of the tenure energy efficiency and fuel use of Orkney properties, it gives a background to the LHEES and in may cases provides a comparison with Scotland as a whole to demonstrate where Orkney is in terms of the national position.	
Additional work required to reformat summary action tables	Reformat and update appendix, actions detailed in main document but need to be expanded upon with details of partners and progress.
	Status column to be updated in appendix
The delivery plan included several actions to look at heat networks which will cover areas of or main towns and not be limited to OIC properties, part of these tasks will be the development of better data sets for the areas to allow feasibility studies to take place. The initial focus on OIC properties, as explained in the document is to identify heat network works which can be started with the existing data and resource available.	

Over the past few years the ORIC heating system has been the subject of feasibility studies to investigate the opportunities for moving away from fossil fuel. As a result a scheme utilising ASHP on each site was considered the most feasible option. Investigation of Sea Source heating and the use of a common heat network were ruled out on cost basis	Add action to investigate cost and benefit of heat network on ORIC campus, as part of a wider Stromness heat network.
The use of existing sites such as the Jewson's Yard and the old Papdale Hostel should be flagged uop in the strategy with a desire to see any development meet net zero standards, this is an onerous condition to set on a development but my be possible for OIC, it may be less easy to apply to sites not owned by OIC although the Balfour site is also owned by a public body with commitments to net zero	Add action to investigate synergies between Development Plan and LHEES with respect to development of brown field sites.
If you have evidence that an EPC is incorrect then this should be passed onto the accreditation body to investigate. Do you know how many properties this would have applied to.	
the period of time permitted to process a void is regulated and monitors by the council and reported to the SG in annual returns, Where larger works are taking place the void process can be extended, but will still be monitored so we should be able to provide an assessment of lost income	Add action to report on impact on void turnaround time
Many of the actions in the delivery plan will be delivered by parties outside of OIC, monthly data gathering would require a large admin commitment than could be delivered and we do not delve this would improve performance.	Comments on the colour coding and lettering of progress reporting is noted and will be addressed in the final draft document
These are the definitions set out by the Scottish Government to identify the heat pump readdyness of a property. Where Storage heaters are the main heating system in a property then we have to consider installing a wet heating system in addition to any fabric improvements, this will increase the cost of moving to a heat pump, from a net zero pov storage heating is also a good fit, but the fuel poverty implications need to be considered.	
The consultation was open for over six weeks, the public meeting was positioned to allow a review of the document to take place ahead of the meeting where concerns and comments could be discussed.	
Questions were meant to be open to allow discussion around the discussion points. The final section allowed for any other comments to be added.	

comments noted and addresses in specific items above	

Appendix 2

ORKNEY
ISLANDS COUNCIL

Local Heat and Energy Efficiency Strategy

August 2024

www.orkney.gov.uk

Table of contents

Executive summary

Orkney Islands Council's Local Heat and Energy Efficiency Strategy (LHEES) sets out how to tackle greenhouse gas emissions from buildings, whilst also improving residents' quality of life by minimising poor energy efficiency as a driver of fuel poverty. Orkney Islands Council, and Scotland as a whole, will be net zero by 2045. This is a challenging target and the LHEES is a key step in planning our approach to achieving this goal.

What is a Local Heat and Energy Efficiency Strategy?

The LHEES is made of two documents: the LHEES Strategy and the LHEES Delivery Plan. The LHEES Strategy is a long-term strategic framework for decarbonising heat in buildings and improving energy efficiency across Orkney. It is published alongside the LHEES Delivery Plan, which sets out how Orkney Islands Council will implement the Strategy over the next five years.

Orkney Islands Council's LHEES will support the delivery of the Council's goals of improving energy efficiency, reducing fuel poverty, and decreasing carbon emissions through zero direct emissions heating systems. The Council will use the LHEES to coordinate and focus energy efficiency and heat decarbonisation work, including heat networks, across Orkney.

The LHEES has been developed in accordance with the Scottish Government's methodology. This consists of 8 stages which bring together:

- The Council's existing goals and strategies.
- Data analysis of the building stock.
- Input from different stakeholder groups.

Overall, the content of Orkney Islands Council's LHEES has been informed primarily through a data-driven approach, using a number of datasets and proxy indicators.

Local authority's LHEES priorities

The Council has identified four priorities for the LHEES:

- Priority A: Making Orkney's homes energy efficient.
- Priority B: Removing energy efficiency as a driver of fuel poverty.
- Priority C: Improving carbon efficiency of non-domestic Council buildings.
- Priority D: Exploring heat networks for non-domestic Council buildings.

Heat and energy efficiency in Scotland

In 2018 the Intergovernmental Panel on Climate Change (IPCC) advised that in order to reach the 1.5°C target set in the Paris Climate Accord, the world needs to reach net zero carbon emissions by 2050. The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 then set an ambitious target for Scotland to reach net zero by 2045. Achieving net zero is crucial to mitigating the worst impacts of climate change and stabilising global temperatures.

The way we heat our homes, workplaces and other buildings is changing. Some improvements have been carried out to homes already under programmes such as Area Based Schemes and the Energy Company Obligation (ECO). The LHEES will support the Council and its community planning partners to scale up and align existing programmes, and to increase the scale and pace of retrofit and heat network development that is needed to meet the national target of net zero by 2045.

The Sustainable Development and Climate Change Strategy covers the actions the Council will take to tackle climate change. The Council's Corporate Plan, Connect, highlights the work required to develop local solutions to protect nature and to take action on climate change. The Local Housing Strategy outlines actions to make housing in Orkney more sustainable and improve energy efficiency, while ensuring that more of the energy used comes from low carbon and renewable sources.

Orkney housing stock

A baselining exercise has been carried out to highlight key characteristics within the housing stock across Orkney. This will facilitate benchmarking in future iterations of LHEES and enable the evaluation of progress towards targets, including the ultimate target of net zero by 2045. It also highlights some of the opportunities for how and where the Council can target interventions to achieve the greatest impact.

Domestic properties

- Domestic properties in Orkney have a wide range of construction types, with no single dominating archetype. 37% are solid brick or stone, 32% are timber frame, and 27% are cavity wall construction.
- Fuel poverty rates in Orkney are very high, at 31% according to the 2017-19 Scottish House Condition Survey, compared to the national average of 24% in the same period.
- Most homes are heated with electricity or oil.
- The Council owns only 7% of properties. To reach net zero, the Council will need to work with Orkney Housing Association Limited (OHAL), owner occupiers and private rent landlords.

Non-domestic properties

- Non-domestic properties use 25% of the energy used for heat across Orkney.
- The non-domestic properties with the highest heat demand are retail buildings, hotels, and storage and distribution buildings.
- Like domestic properties, almost all non-domestic properties are heated with either electricity or oil.
- The Council has explored several heat network options but has not yet identified any suitable opportunities. The Council is now exploring heat network options for non-domestic buildings owned by the Council.

Orkney Islands Council's heat networks

Heat networks have been identified as a low regret[1] decarbonisation option in the Scottish Government's Heat in Buildings Strategy. The Council has carried out data-driven analysis to highlight potential areas for future heat network development, including new build developments. The Council has identified four areas in which to explore potential heat networks:

- Central Kirkwall.
- West Kirkwall.
- Stromness.
- Dounby.

Beyond the page: making the LHEES Strategy a reality

This Strategy outlines a number of challenges which must be overcome in order to decarbonise buildings across Orkney. These include:

- Challenges associated with different tenure types (owner occupied, private rented, social housing, mixed tenure buildings).
- Orkney's exposed climate and geography.
- High upfront capital cost of retrofitting and the high cost of surveying.
- Orkney's unique mixture of bespoke property types.
- Issues with funding timelines and requirements.
- Skills gap and other local supply chain challenges for retrofit measures.
- Poor data on non-domestic buildings.
- Challenges for developing heat networks.

Not all of these challenges can be addressed in the first iteration of LHEES, or the first Delivery Plan. For this reason, the LHEES will be an iterative Strategy. The regulatory landscape will change quickly over the next few years in order to drive progress in building decarbonisation in Scotland[2]. The LHEES Strategy and Delivery Plan will both be reviewed annually, and if necessary revised to react to legislative and market changes and to benefit from new opportunities that arise.

[1] Low-regret decisions are actions that are cost-effective now and provide options and flexibility in the future, rather than limiting options.
[2] For example, the Scottish Government's proposed Heat in Buildings Bill and the Social Housing Net Zero Standard, or the UK Government's Review of Electricity Market Arrangements.

What is a Local Heat and Energy Efficiency Strategy?

Purpose

Scottish local authorities have a statutory duty to develop a Local Heat and Energy Efficiency Strategy (LHEES) by 31 December 2023. This duty is described in the Local Heat and Energy Efficiency Strategies (Scotland) Order 2022.[3]

LHEES is the principal mechanism for locally led heat planning across Scotland's local authorities. The strategies set out the long-term plan for decarbonising heat in buildings and improving energy efficiency across an entire local authority. The focus on locally led planning is to ensure that the decarbonisation of heat in buildings is delivered in a way that is relevant to the local context and tailored to the specific needs of communities.

The purpose of this LHEES is to present the evidence base for identifying the necessary upgrades to buildings and local infrastructure required across Orkney by 2045, to fulfil the Scottish Government's objectives and local priorities related to heat in buildings. The interventions will occur at the building level and through the use of heat networks.

Orkney Islands Council's LHEES will support the delivery of the Council's goals of improving energy efficiency, reducing fuel poverty, and decreasing carbon emissions with zero direct emissions heating systems. The Council will use the LHEES to demonstrate and coordinate the wide variety of energy efficiency and decarbonised heating projects in Orkney and provide a vision for the energy transition across the area.

Structure

LHEES has a two-part structure, consisting of a Strategy and a Delivery Plan:

- The **LHEES Strategy** is a long-term strategic framework over the next 15-20 years for decarbonising heat in buildings and improving energy efficiency across Orkney, framed around the six LHEES considerations outlined below in Table 1.
- The **LHEES Delivery Plan** sets out how the Council will implement the Strategy over the next five years. It enables the Council to work towards the delivery of the changes identified in the Strategy and clarifies the role and responsibilities of stakeholders.

This document contains Orkney Islands Council's LHEES Strategy. The accompanying Delivery Plan can be found on the Council's website. Both documents will be reviewed and updated periodically to reflect progress towards net zero, new available technologies and funding, and changing priorities in the local authority.

LHEES guidance from Scottish Government

The national LHEES guidance focuses on six considerations relating to heat decarbonisation and energy efficiency. They are used to identify and target interventions in different parts of the building stock. The six considerations are outlined in Table 1.

The considerations for heat decarbonisation are grouped around whether buildings are on- or off- the mains gas grid, and if they are in areas with the potential to develop heat networks. Considerations relating to energy efficiency and other outcomes focus on areas

[3] The Local Heat and Energy Efficiency Strategies (Scotland) Order 2022

with poor building energy efficiency, such as no or low levels of insulation, and areas where this is likely to contribute to high levels fuel poverty. This focus is to ensure that energy efficiency projects will reduce fuel poverty. Mixed-tenure, mixed-use, and historic buildings are included as separate considerations, as these are likely to require different approaches.

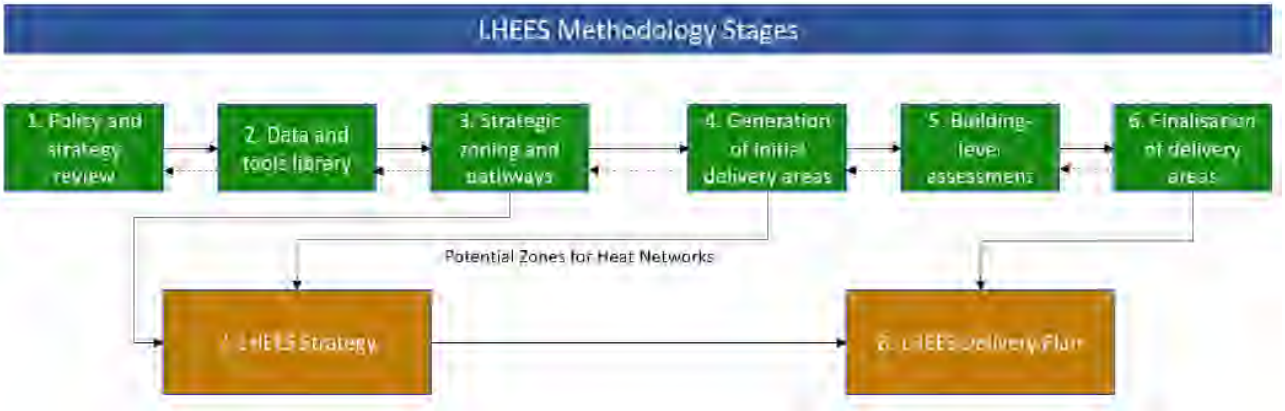
Table 1: Summary of the LHEES considerations

	No.	LHEES Considerations	Description
Heat decarbonisation	1	Off-gas grid buildings	Transitioning from heating oil and LPG in off-gas areas
	2	On-gas grid	On-gas grid heat decarbonisation (not applicable for Orkney Islands Council)
	3	Heat networks	Decarbonisation with heat networks
Energy efficiency and other outcomes	4	Poor building energy efficiency	Poor building energy efficiency
	5	Poor building energy efficiency as a driver for fuel poverty	Poor building energy efficiency as a driver for fuel poverty
	6	Mixed-tenure, mixed-use and historic buildings	Mixed-tenure and mixed-use buildings, listed buildings and buildings in conservation areas

LHEES stages

This LHEES has been developed over eight stages, as outlined in Figure 1. The completion of stages 1-6 provided the data analysis and evidence base which forms the foundation for Orkney Islands Council's LHEES Strategy (Stage 7) and Delivery Plan (Stage 8).

Figure 1: Summary of LHEES Stages



The analysis in Stage 3 separates buildings into four categories, which are primarily based on their suitability for a heat pump retrofit. The categories are defined in the Scottish Government's LHEES guidance and are based on indicators from the Home Analytics dataset. Table 2 below provides a brief description of each category and the process for categorising all domestic properties.

Table 2: Domestic building categories and category indicators

Building category	Description	Indicators
Category 0	Currently have a low or zero direct emissions heating system, or heat network connection.	• Properties with a heat pump (off-gas only) or communal heating as the main heating system
Category 1	"Heat pump ready" buildings that are well-suited to heat pump retrofit with minimal other changes.	• Cannot be a category 0 property • Not listed or in a conservation area • Properties with insulated walls and double or triple glazed windows • If the property has a loft, it must have at least 100mm of loft insulation • Properties which are likely to have a wet heating system (i.e. mains gas, LPG, Oil or Biomass/solid fuels)
Category 2	Secondary potential for heat pump retrofit. Require some fabric and/or distribution systems upgrades.	• Cannot be a category 0 or 1 property • Properties that are cavity construction (either insulated or uninsulated), or any other construction type, with insulated walls • There must be no risk of the property having a narrow uninsulated cavity • Properties can be listed or in a conservation area
Category 3	Significant upgrades required	• The subcategories below indicate the most viable decarbonisation technology. Heat pumps are the priority solution. The suitability of storage or direct

Building category	Description	Indicators
	to be heat pump ready.	electric heating, and biomass are indicated by the characteristics listed below: • Category 3 – Heat pump • If the property is currently heated via an oil or LPG system • Category 3 – Electricity (storage or direct) • Properties already using electricity as the main fuel type • Flats • Properties with double or triple glazed windows • Properties in urban areas (1, 2 or 3 in the 8-fold classification[4]) • Category 3 – Biomass • Properties already using biomass as the main fuel type • Detached and semi-detached properties • Properties of a solid brick or stone construction type

How this LHEES was developed

Orkney Islands Council's LHEES was developed in partnership with Changeworks, following the standard methodology published by Scottish Government [see Appendix D].

[4] Scottish Government Urban Rural Classification 2020

Policies and progress to net zero

Local policies and projects

Orkney Islands Council has several policies relevant to energy efficiency, decarbonising heating, and fuel poverty. The policies and relevant targets are summarised in Table 3 below:

Table 3: Summary of relevant local policies.

Name	Description
Local Housing Strategy (2024-2029, Draft)	The five-year development plan for housing across the Council. Prioritises increasing the number of homes in Orkney and providing quality, warm homes. Targets: 96% Council and 99% Orkney Housing Association (OHAL) compliance with the Social Housing Net Zero standard £4 million in HEES:ABS funding by 2026 Maximise benefits of renewable energy developments to reduce fuel costs in Orkney Lobby UK Government for lower fuel tariffs in Orkney
Council Plan (2023-2028)	The five-year plan that provides a clear direction for the Council to deliver ambitions for community and businesses. The Council aims to invest in homes and ensure social and private housing is more energy efficient. Targets: 90% of Council dwellings are energy efficiency by 2027/2028 (88% were in 2020/2021)
Local Development Plan (2017)	The vision and spatial strategy for the development of land in Orkney over the next 10-20 years. The Council supports the use of low carbon technologies to heat and power homes and intends to identify potential heat networks.
Strategic Housing Investment Plan (2021-2026)	The five-year development plan for affordable housing provision (updated yearly in line with Scottish Government guidance). Targets: To deliver 297 completed properties and further develop 38

Name	Description
Orkney Sustainable Energy Strategy (2017-2025)	The aims and actions to become a secure, sustainable, low carbon island economy. Targets: Less than 20% households in fuel poverty by 2030 and 0% by 2032 50% decarbonised energy use by 2030 300% renewably generated electricity 600 sustainable energy jobs by 2030
Orkney Hydrogen Strategy: The Hydrogen Islands (2019-2025)	Identifies how hydrogen can best be applied to energy systems in Orkney. It is part of the Orkney Sustainable Energy Strategy.
Carbon Management Programme (2016-2026)	Sets carbon targets for various sectors. The Council intends to improve energy efficiency by improving insulation and heating systems in existing buildings and develop a programme promoting energy efficiency among staff in Council buildings. Targets: Total CO2 emissions in financial year 2025-2026 should be 42% of baseline year 2004-2005.
Indicative Regional Spatial Strategy (2021)	The strategic priorities for development planning in Orkney to 2050. Prioritises future housing that addresses fuel poverty and climate change. It also establishes an Islands Centre for Net Zero Carbon which will aim to accelerate the islands' transition to net zero carbon.
Orkney Integration Joint Board: Joint Strategic Needs Assessment (2016)	Describes partnership working between NHS Orkney and the Council for future health and wellbeing needs. Identifies fuel poverty as a significant health and wellbeing issue in Orkney.

Heat and energy efficiency projects for Council-owned properties

Carbon Management

Orkney Islands Council has committed to continually improving its CO_2 emissions to meet the 42% baseline by the 2025-2026 financial year. This will be achieved by replacing oil and other fossil fuel heating systems in existing council-owned building with electrified alternatives such as heat pumps. Another aim is to improve the energy efficiency of its existing building stock over the next 20 years by upgrading and improving the insulation and heating systems of existing buildings. This target is line with the ambitious public sector targets detailed in Scotland's Climate Change Plan and Scotland's Heat in Buildings Strategy.

Energy efficiency standards for social housing

Orkney Islands Council has made significant investments to improving the energy efficiency of its housing stock. The Council met the Scottish Housing Quality Standard (SHQS) by the deadline of April 2015 through major investment.

Due to this investment, 93.5% of Council-owned homes have an energy efficiency rating of EPC band C or above, meeting the first phase of the Energy Efficiency Standard for Social Housing (EESSH).

EESSH2 has been implemented since December 2020. It seeks to ensure social rented properties achieve the equivalent of EPC Band B or above where it is practically possible to do so. The original EESSH2 milestones of 2025 and 2032 are currently on hold while the standard is reviewed to ensure alignment with the 2045 net zero target. In accordance with the interim guidance on EESSH2[5], Orkney Islands Council will undertake an individual building assessment when a property becomes void and take a fabric first approach (focussing on the building fabric before upgrading the heating system). Mechanical Ventilation with Heat Recovery (MVHR) systems will also be installed. These systems provide ventilation while recovering and reusing the heat in the air leaving the property. MVHR systems help maintain healthy air quality while saving energy on heating.

Currently, just under 20% of the Council's housing stock reaches the energy efficiency rating of band B required for EESSH2 compliance. This is higher than the national level of 7%. Analysis undertaken by the Council in 2022 showed that adopting a fabric first approach and installing MVHR systems in the remaining properties not currently meeting the Social Housing Net Zero Standard, would cost £25.2 million.

However, an independent review of the Housing Revenue Account suggests that it will cost even more to update the housing stock to meet the proposed energy efficiency standard (SHNZS). The Council will commission a comprehensive survey to establish up-to-date costs to meet these standards.

Carbon Trust

The Carbon Trust set out a range of projects aiming to reduce carbon emissions across all 32 local authorities[6]. Orkney Islands Council is now in its second 10-year programme, which is due to end in April 2026.

The current programme saw a total of 12 retrofits (including several schools, a community centre and a care home) which included a variety of measures such as:

- External wall insulation.
- Ground source heat pump.
- Loft insulation.
- Re-roofing.
- LED lighting replacement

[5] Energy Efficiency Standard for Social Housing post 2020 (EESSH2) review: interim guidance for social landlords
[6] Why Scotland's public sector needs to rise to the carbon challenge | The Carbon Trust

These retrofits were a success and contributed to an annual carbon saving of 486 tonnes, all at less than £450 per tonne of carbon saved over the lifetime of the measures. Four larger projects (St Andrews Primary School; Kirkwall Care Home; St Margaret's Hope Primary School; and Kirkwall Nursery) have since been added to the project list with the expectation of an additional 144 tonnes per annum saved.

Heat and energy efficiency projects across the area

Heat and Energy Efficient Scotland: Area Based Schemes (HEES: ABS)

HEES: ABS provides funding for privately owned homes across Scotland, administered by each council. In Orkney, funding increased through HEES: ABS from £785,102 in 2015 to over £1.7 million claimed in 2022/23. In 2023/24, funding totalled £1.86 million to install energy efficiency improvements in private sector housing.

In 2022/23:[7]

- The Council funded 239 energy improvements completed across 176 households.
- The Council offered grants of between £10,500 to £16,100 to households.
- EPC ratings for each household improved by an average of 11.7 points.
- On average, individual households saved £728 per year as a result of the energy improvements.
- 22% of homes referred to HEES: ABS were previously in the worst EPC Bands F or G.
- Energy improvements installed under the scheme have helped to save more than 108 tonnes of CO2.

Since 2015, a total of 1,521 energy improvements have been completed across 1,184 households.

Orkney Housing Association Ltd maintenance programme

Orkney Housing Association Ltd (OHAL) received grant funding from the Scottish Government Social Housing Net Zero Fund to add an additional 49 properties into the 2023/2024 planned maintenance programme. Energy efficiency works will include:

- High efficiency, triple glazed windows.
- Replacement high insulation doors.
- Loft insulation top ups.
- Hot water cylinder jackets.

It is anticipated that all properties which receive retrofit works will move to EPC band B or C. OHAL plans to bid for additional funding from the Social Housing Net Zero Fund to enhance the 2024/2025 maintenance programme. Future projects include more fabric improvements and zero direct emissions heating systems such as high retention storage heaters for OHAL properties.

[7] Warmworks (2023) Energy Efficient Scotland: Area-Based Scheme (Orkney) Annual Report 2022/23

OHAL were unsuccessful in their February 2023 bid to improve 130 properties spread across their housing stock. As such, they are moving ahead with a reduced programme that affects 29 properties, with works including:

- High retention storage heaters.
- High efficiency, triple glazed windows.
- Replacement high insulation doors.
- Loft insulation top ups.

Fuel poverty advice and assistance for OHAL tenants

Over the course of the last three years, OHAL has successfully bid for a total of £325,000 from various Scottish Government funding schemes. This has allowed OHAL to provide direct financial support to tenants for their energy costs. For example, in the financial year 2022/23, every OHAL tenant was able to access a £150 grant to assist with fuel costs. In addition to this, OHAL has a dedicated Energy Advice Officer who provides bespoke support to tenants experiencing fuel poverty and/or in need of support or advice.

The Orkney Partnership

The Orkney Partnership is made up of the Council and four partner agencies (NHS Orkney, Police Scotland, Highlands & Islands Enterprise, Scotland Fire and Rescue Service), collaborating with the community to accomplish its key priorities. One of the key priorities is sustainable development for the region, specifically tackling fuel poverty, transitioning to a greener economy, and meeting net zero by 2030.

These ambitions are set out and explained in The Orkney Community Plan 2023-2030. The partnership aims to increase the number of homes with sustainable and affordable forms of heating in the region. The target is to increase the number of homes built per annum with sustainable heating and improved insulation from 92 to125 by 2030. This development will be undertaken through collaboration with the Council, housing associations, and private developers.

Energy Company Obligation (ECO)

The Energy Company Obligation (ECO) was first introduced in 2013 and places legal obligations on energy suppliers to deliver energy efficiency measures to domestic premises. The scheme is a UK Government energy efficiency scheme that supports private tenure households on low incomes and vulnerable households. The aims of the scheme are to improve the least energy efficient homes and help to meet the UK Government’s fuel poverty and net zero commitments. Local authorities are invited to participate in these schemes.

Previously in Orkney, ECO funding was included in Area Based Schemes’ projects. However, the recent iteration of the scheme (ECO4) does not permit blended funding. The Council is considering a separate project to make use of the funds.

Regional projects

Islands Centre for Net Zero (ICNZ)

The ICNZ is a ten-year UK and Scottish Government funded project supporting Orkney, Shetland and the Outer Hebrides in reducing their greenhouse gas emissions. The project has £16.5 million to provide:

- Research and demonstration funding and resource.
- Direct community resources so that communities can develop their own localised decarbonisation projects.
- Capital funding directly for projects that can actively decarbonise the islands.
- Resources to identify further funding opportunities.

The project is currently in its second funding year and has established a secure Data Exchange on UrbanTide's uSmart platform, and data governance protocols. Early conversations have been held between ICNZ and the three local authorities to explore how the ICNZ Data Exchange can support LHEES and the councils' Delivery Plans.

The project team are also developing demonstrations, including a domestic decarbonisation project in the Outer Hebrides, which is expected to have replicability for Orkney properties.

Scottish Government Policy

The following section discusses the most relevant policies from Scottish Government. For a full list of policies, see Appendix A.

In 2018, the Intergovernmental Panel on Climate Change (IPCC) advised that to reach the 1.5°C target set in the Paris Climate Accord, the world needs to reach net zero carbon emissions by 2050.

Achieving net zero is crucial to mitigating the impacts of climate change and worsening the consequences of climate change. With the way we heat our homes, workplaces and other buildings making up the third-largest cause of carbon emissions in Scotland, it is vital the nation decarbonises its buildings. This is done through implementing measures to improve the energy efficiency of domestic and non-domestic buildings, as well as transitioning to zero direct emissions heating systems.

Several national policies are relevant to driving LHEES, particularly the Heat in Buildings Strategy, the Heat Network Act, and the Fuel Poverty Act. These policies are described below, followed by a table with all relevant national policies.

Heat in Buildings Strategy

The Heat in Buildings Strategy, published in 2021, sets out a vision that by 2045 Scotland's homes and buildings will be cleaner and easier to heat and no longer contribute to climate change. The Strategy prioritises improvements to the fabric of buildings to reduce energy demand, alongside a focus on zero emissions heating systems, such as heat pumps and heat networks. This LHEES will contribute to the targets set out in the Heat in Buildings Strategy by identifying measures for reducing building emissions and potential heat network zones.

In the Heat in Buildings Strategy, the Scottish Government committed to the development of a Heat in Buildings Bill to provide the regulatory framework for zero emissions heating and energy efficiency.

In November 2023, the Scottish Government launched a consultation on the Heat in Buildings Bill, which proposes a minimum energy efficiency standard for private landlords by the end of 2028, and for owner-occupiers by 2033. It also proposes a ban on polluting heating systems in all buildings by 2045.

Social Housing Net Zero Standard

The Scottish Government has established targets to improve the energy efficiency of social housing. Previously, these targets have been set through the Energy Efficiency Standard for Social Housing (EESSH). EESSH2 guidance required all social housing to meet an energy efficiency rating of EPC band B by 2032. EESSH2 has been under review to realign the standard with net zero targets and the 2032 milestone has been put on hold.

In November 2023, the Scottish Government launched a consultation on a new Social Housing Net Zero Standard which will replace EESSH2. The proposed new standard includes setting a minimum fabric efficiency rating (different to current EPC ratings) and introducing a requirement to replace polluting heating systems with clean alternatives by a backstop date of 2045, with possible interim targets before then.

Heat Networks (Scotland) Act 2021

Heat networks supply multiple buildings with heat or cooling from a central source or sources. This avoids the need for individual boilers or electric heaters in every building.

The Act defines a heat network to mean either a district heat network or a communal heating system. It provides the legislative framework to both set up and regulate heat networks. The act requires local authorities to review areas that are potentially suitable for heat networks within their constituency. This LHEES will function as the main vehicle by which Orkney Islands Council will carry out this review.

Fuel Poverty (Scotland) Act 2019

The Fuel Poverty (Scotland) Act 2019 was passed by the Scottish Parliament in 2019. According to this Act, a fuel poor household spends at least 10% of their net income to pay for reasonable fuel needs after housing costs have been deducted. A household is extremely fuel poor if fuel costs are 20% or higher.

The first set of targets laid out in this legislation are that by 2030 no more than 15% of households in Scotland are in fuel poverty and no more than 5% are in extreme fuel poverty. Homes with a lower energy efficiency were identified as one of the key drivers of fuel poverty and the LHEES looks to address this pressing issue. By improving the energy efficiency of homes, a reduction in fuel costs can be expected. LHEES can therefore provide support to reducing fuel poverty by mitigating energy efficiency as a driver.

Energy Performance Certificate reform

To date, Scotland’s energy efficiency targets have been articulated through Energy Performance Certificate (EPC) ratings. Recently, limitations of this approach have been

highlighted.[8] One limitation is that the EPC rating is a cost efficiency rating, where the cost of using the heating system is a factor in the rating. This makes the rating less useful for setting targets for the energy demand of buildings.

The Scottish Government has launched a consultation on EPC reform.[9] It proposes to introduce a range of new metrics, including a fabric rating, which will specifically focus on the fabric performance in terms of heat loss. Recent consultations on minimum energy efficiency standards for buildings indicate that this rating may be used.

[8] Climate Change Committee - Reform of domestic EPC rating metrics to support Net Zero
[9] Scottish Government - Energy Performance Certificate (EPC) reform: consultation

Stakeholder engagement

In developing the LHEES, the Council has engaged with a variety of stakeholders on several topics related to the Strategy. The following subsections outline the levels of current and future engagement with various internal and external stakeholders; their interest in the development of the LHEES; their level of engagement; and the potential challenges that could be faced.

Interest and influence mapping

An Influence/Interest Matrix has been used to map key LHEES stakeholders across Orkney. This gives a clear picture of the level of engagement required for each stakeholder and quickly highlights who the high-priority stakeholders are.

The following engagement level is a recommended starting point for each tier, based on LHEES guidance from Zero Waste Scotland and Arup:

Tier 1: Part of project steering group. Ongoing engagement throughout the project at defined workshops e.g. identifying priorities and for delivery. Specific engagement plans developed as required. Includes:

- Tackling Household Affordable Warmth (THAW) Orkney.
- Orkney Housing Association Limited (OHAL).
- Warmworks – managing agent of HEES:ABS and national operator of the Warmer Homes Scotland Scheme.

Tier 2: Participate in workshops and engage with the project at key milestones (if required). Potentially one-to-one contact during data collection stage and one-to-one interviews to be held with these stakeholders to gain further insight and understanding of priorities and delivery contributions. Includes:

- Home Energy Scotland (HES).
- Aquatera.
- Island Centre for Net Zero.

Tier 3 and 4: Potentially participate in workshops and engage with the project at key milestones (ad hoc basis e.g. delivery planning). Receive a direct invite to public consultation. Includes:

- SSE.
- Orkney Care and Repair.
- Orkney Community Planning Partnership.
- Orkney Renewable Energy Forum (OREF).
- Community Energy Scotland (CES).
- ReFlex Orkney.
- Aspire Orkney.
- Community Councils.

- Development Trusts.
- Orkney Builders Ltd.
- R Clouston.
- Kirkwall Business Improvement District (BID).

Engagement plans

Drafting the LHEES Strategy

Participation and consultation with stakeholders are essential to the development of the LHEES. The following outlines the initial stakeholder engagement work undertaken to date with Tier 1 stakeholders.

Warmworks

Since 2020, Warmworks has been the managing agent for Orkney Islands Council's HEES:ABS projects and work to deliver energy efficiency measures for private tenure housing. Warmworks provided detailed data on the number of measures and households it has worked with during this time, as well as laid out the challenges faced. The main priorities are improving energy efficiency in homes and removing energy efficiency as a driver of fuel poverty.

THAW Orkney

THAW is a third sector organisation with the aim to reduce levels of fuel poverty and achieve affordable warmth in Orkney. It has provided information on the type of energy efficiency saving advice given to householders, as well as the funds available to help make homes retrofit ready. THAW's main priorities are improving energy efficiency in homes and removing energy efficiency as a driver of fuel poverty.

OHAL

OHAL functions as the only housing association in Orkney and currently manages 7% of housing in the region. Focusing on implementing tenant support, as well as by adopting a fabric first approach to retrofit, OHAL prioritises improving energy efficiency in homes and removing energy efficiency as a driver of fuel poverty.

Approval and public consultation process

After the draft of the Strategy was finalised, it went through the same consultation process as all Council policies:

- Approval from senior management.
- Public consultation.

Further stakeholder engagement plans

The Council is already conducting stakeholder engagement as part of the recently passed Local Housing Strategy. The Council anticipates that there will be workshops and working groups around energy efficiency, fuel poverty, and other topics later in 2024. The Council staff responsible for LHEES will be part of these engagement activities. Feedback from

these sessions will be included in the ongoing development of the LHEES Strategy and Delivery Plans.

LHEES governance

The delivery plant will be updated on an annual basis, the following steps will be included:

- Assessment of current funding opportunities will be undertaken.
- Stakeholder group will be approached to update current progress and new opportunities, a short workshop may be used or a round of telephone calls / Team meetings.
- Stakeholder group will be revied to update list and level of involvement.
- Current projects will be evaluated in terms of progress, impact, and cost.
- New projects developed over the year will be evaluated.
- New data available will be used to update LHEES datasets. Where new data insights are available, these will be included in reporting and project development.
- Annual LHEES update report will be produced.

The completed report will be taken to the Corporate Leadership Team. A briefing note will then be prepared and issued to the Councillors.

The LHEES Strategy will be reviewed every five years and the process will include the following steps:

- Update strategy review, what new legislation, national and local strategies will impact the LHEES.
- Delivery Plan will be reviewed as annual programme above and the highlights will be discussed in the strategy document.
- Revised strategy will undergo a public consultation.

The completed strategy will be taken to the Corporate Leadership Team. A report will then be prepared for the Policy and Resources Committee, with final approval by the full Councill. The updated Strategy and Action Plan will then be published.

Baselining: Heat and energy efficiency in the Council

This section provides an overview of the building stock in Orkney Islands Council at the time of writing. This baseline allows the Council to create an effective strategy and to measure progress towards targets and the ultimate target of net zero by 2045.

Age, dwelling type, wall construction, tenure, and heating fuel are key factors that impact energy performance, operational costs, and living conditions in buildings. Home Analytics data for Orkney Islands Council has been used to benchmark key property statistics against overall national statistics found in the 2021 Scottish House Condition Survey.[10]

Domestic buildings

Property age and construction type for domestic buildings

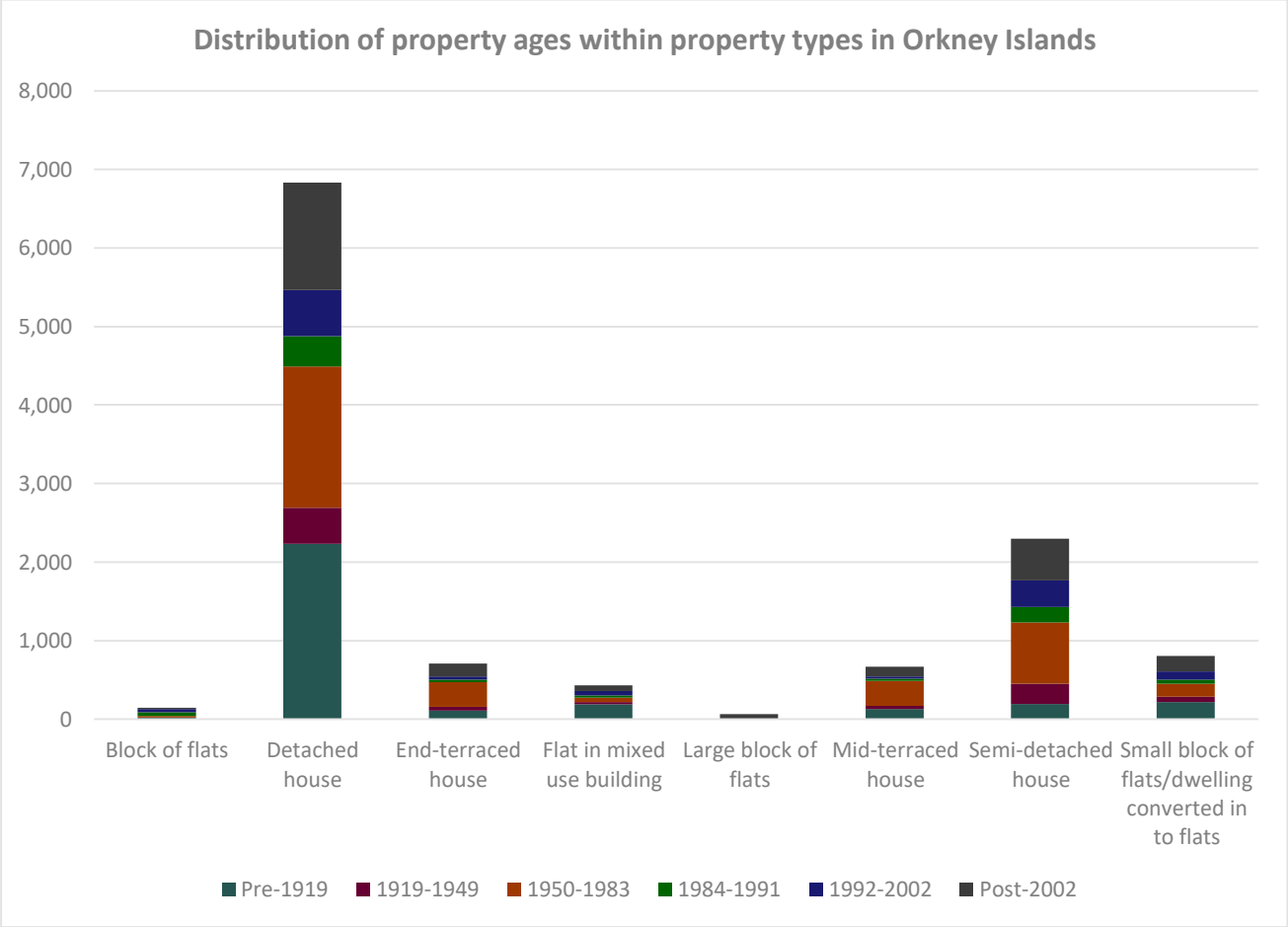
The majority of properties in Orkney Islands Council were built before 1950 and between 1984-1991. These properties are likely to require fabric measures to improve the level of insulation, due to the insulation standards in place at the time of their construction.

Table 4: Property ages per property type within Orkney Islands

Property Type	1919-1949	1950-1983	1984-1991	1992-2002	Post-2002	Pre-1919	Total
Detached house	2,232	460	1,800	387	586	1365	6,830
Semi-detached house	196	257	778	198	337	531	2,297
Mid-terraced house	131	41	317	27	27	126	669
Small block of flats/dwelling converted in to flats	219	69	165	53	102	200	808
Block of flats	23	0	21	45	40	17	146
End-terraced house	109	51	311	35	40	165	711
Large block of flats	0	0	0	1	0	65	66
Flat in mixed use building	191	27	58	26	59	71	432
Total	3,101	905	3,450	772	1,191	2,540	11,959

[10] Introduction - Scottish House Condition Survey: 2021 Key Findings - gov.scot (www.gov.scot)

Figure 2: Property types by age of building in Orkney Islands



Property age can be used to predict construction type, which is useful when planning appropriate retrofit interventions across a large number of buildings.

The majority of properties in Orkney fall within two categories of construction: solid brick or stone (37% of total housing stock) and timber frame (32% of total housing stock) (Table 5). Additionally, 27% of total housing stock are of cavity construction, and 4% are system built. Within the total housing stock, 25% of properties are solid brick or stone and are uninsulated. Properties of the same construction category provide an efficient opportunity for retrofit, as fabric measures can be standardised and installed at a larger scale. However, as discussed below, there will be a range of different thermal performances within each archetype.

Properties built before 1919 are likely to be of a **solid wall construction**, from brick or stone, with timber floor and roof construction. Stone buildings are likely to have a high conservation value, and might be within conservations areas or listed. Retaining the facing stone in such buildings is often essential to the character of the area, however, it also presents unique retrofit challenges and is expensive. In Orkney, 25% of all domestic properties have uninsulated solid walls (see *Table 5*).

Cavity wall construction became more commonplace from the 1920s onwards and is still built today. Like traditional construction, cavity wall construction commonly uses timber for

floors and roofs. Walls are constructed in two layers, rather than a single leaf. In comparison to solid wall construction, unfilled cavity walls are almost twice as thermally efficient. Additionally, cavity wall constructed properties are much more likely to incorporate damp proof courses (DPCs) and Portland cement than traditionally constructed properties. More recent cavity wall constructed properties (post-1980) are likely to have partially filled cavities. In Orkney, 8% of domestic properties have uninsulated cavity walls (see *Table 5*).

In Scotland, **timber frame construction** superseded cavity wall construction as the primary method of housebuilding in the early 1980s. The proliferation of timber frame construction in Scotland has coincided with the incremental increase of insulation standards. Older properties may have minimal mineral wool insulation between timber studs whereas newer properties may have up to 140mm of phenolic foam or air tightness barriers. Increasing insulation standards have been the main driver in the increase in depth of the timber structure, with older properties having around 75mm timber studs in comparison to 140mm in modern buildings. In Orkney, 9% of domestic properties have uninsulated walls with a timber frame construction (see *Table 5*).

System-built usually refers to post-war, non-traditional construction housing that is not cavity wall constructed. It is generally found in mass social house building programmes of the period. Such housing is normally utilitarian in design with low conservation value. This is advantageous for potential external wall insulation interventions; however, these properties have a range of unique designs making standardised retrofit plans challenging. A very small percentage of domestic properties in Orkney are system-built (4%). Half of these have uninsulated walls (2% of all domestic properties) (see *Table 5*).

Table 5: Wall insulation by construction types of properties within Orkney Islands

Construction type	Number of properties		Number of properties with insulated walls		Number of properties with uninsulated walls	
	Count	*% of total domestic properties*	*Count*	*% of total domestic properties*	*Count*	*% of total domestic properties*
Cavity	3,279	27%	2,279	19%	1,000	8%
Solid brick or stone	4,441	37%	1,438	12%	3,003	25%
System built	414	4%	278	2%	136	2%
Timber frame	3,825	32%	2,800	23%	1,025	9%
Total	**11,959**	**100%**	**6,795**	**56%**	**5,164**	**44%**

Tenure of domestic buildings

Property tenure will have a direct impact on the pace and extent of retrofit installations across Orkney. Specific tenure-targeted policies such as EESSH2 for social housing have been proven to accelerate change. Conversely, the private sector has seen slower

progress due to property owners not seeing a strong return on capital investment without government stimulation.

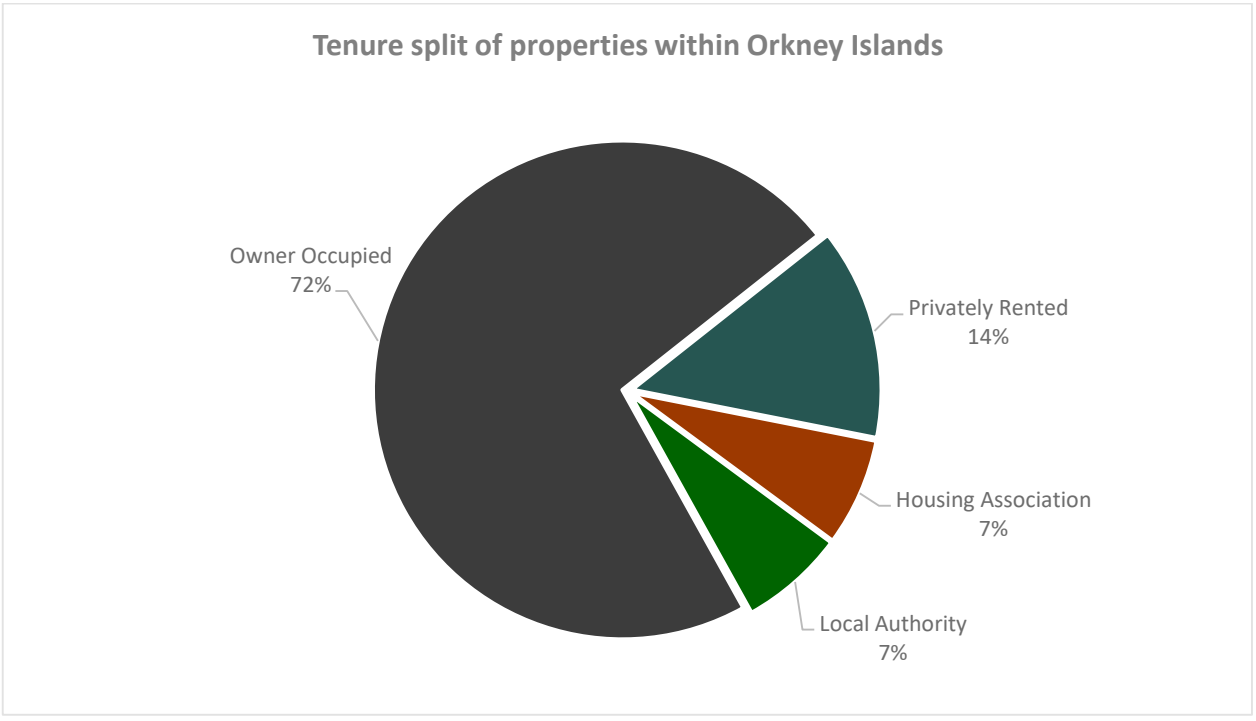
Approximately 14% of homes in Orkney are social housing (7% Council-owned and 7% housing association-owned). While these properties are eligible for various government funding streams for retrofit, the existing funding is not often sufficient to meet the energy efficiency requirements while keeping rent affordable. This is a challenge for the social housing sector.

Most properties in Orkney are owner occupied (72%) and a smaller proportion are private rented (14%). Private tenure properties will require a different approach to retrofit and heating upgrades than the social housing sector.

Table 6: Tenure split of properties within Orkney Islands

Owner Occupied	Local Authority	Privately Rented	Housing Association
8,660 (72%)	817 (7%)	1,644 (14%)	838 (7%)

Figure 3: Pie chart of property tenure split within Orkney Islands

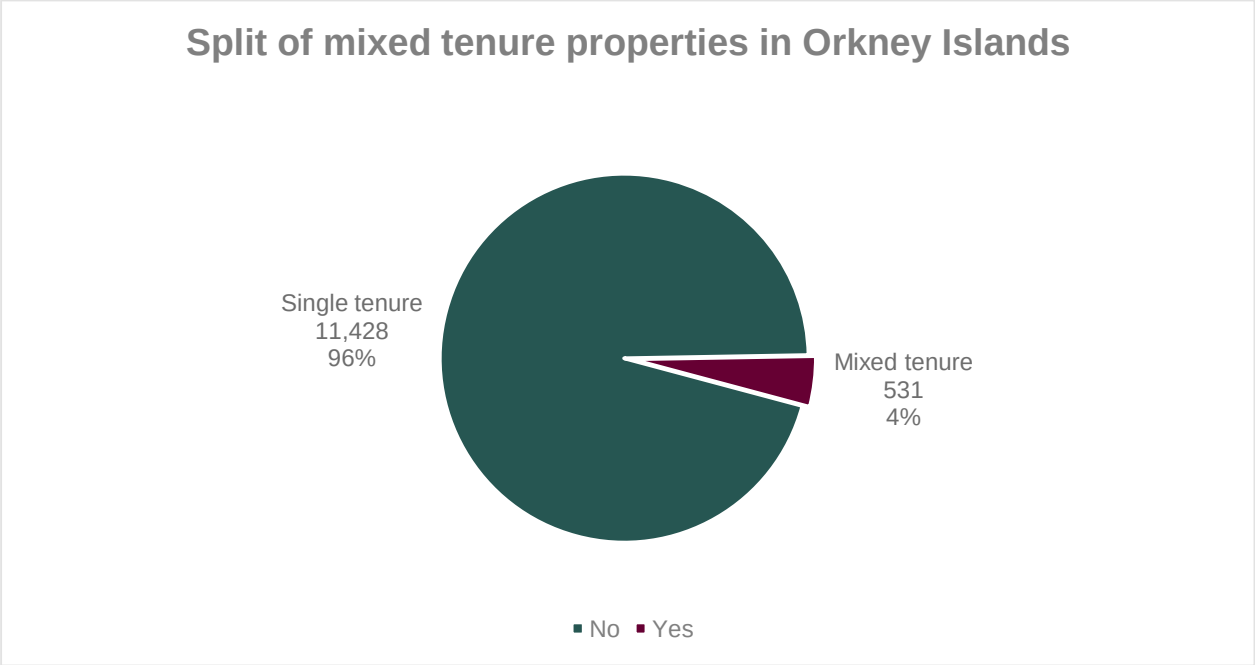


There are a small number of mixed tenure properties in Orkney (see Table 7). Mixed tenure provides an additional retrofit challenge due to multiple owners within the same property. In these buildings, there is a risk that retrofit plans are delayed or the extent of retrofit is reduced due to different priorities or capital investment plans for the property owners. Council-owned properties in mixed tenure buildings could be targeted first to develop a retrofit plan addressing challenges and opportunities.

Table 7: Mixed tenure properties in Orkney Islands

Single tenure	Mixed tenure
11,428 (96%)	531 (4%)

Figure 4: Pie chart of mixed tenure split within properties in Orkney Islands



Fuel poverty

The Scottish House Condition Survey (SHCS) provides data on fuel poverty in Scotland. This data has been used to assess the fuel poverty of Orkney Islands. Scotland-wide data is published annually, with the latest data being from 2022. No data was published in 2020 and 2021 due to the COVID-19 pandemic. Local authority figures for fuel poverty are based on three years' worth of SHCS data in order to achieve sufficient sample sizes. The latest data is from 2017-19. This is no longer accurate but may provide an estimate of how Orkney compares to the Scottish average.

The Scottish Index of Multiple Deprivation (SIMD) is a tool for identifying areas with relatively high levels of deprivation. It is a relative measure of deprivation across small areas (data zones) in Scotland. 'Deprived' does not necessarily mean 'poor' or 'low income'. It can also mean people have fewer resources and opportunities, for example in health and education. SIMD data is split into ten deciles covering the whole population, where one is most deprived and ten is least on the scale. The latest data was published in 2020.

Based on 2017-19 data from the Scottish House Condition Survey (SHCS) (see Box 1), Orkney's fuel poverty rate[11] was 31%. This is above the Scottish average[12] in the same period, which was 24%. These statistics are the most up to date data on fuel poverty available at the local authority level.

Although there is no SHCS data available, it is likely that fuel poverty rates in Orkney now are far higher than 31%, as a result of the cost-of-living crisis and the sharp rise in energy costs. In 2022, the SHCS estimated that the national rate of fuel poverty had increased to 31% (Table 8).

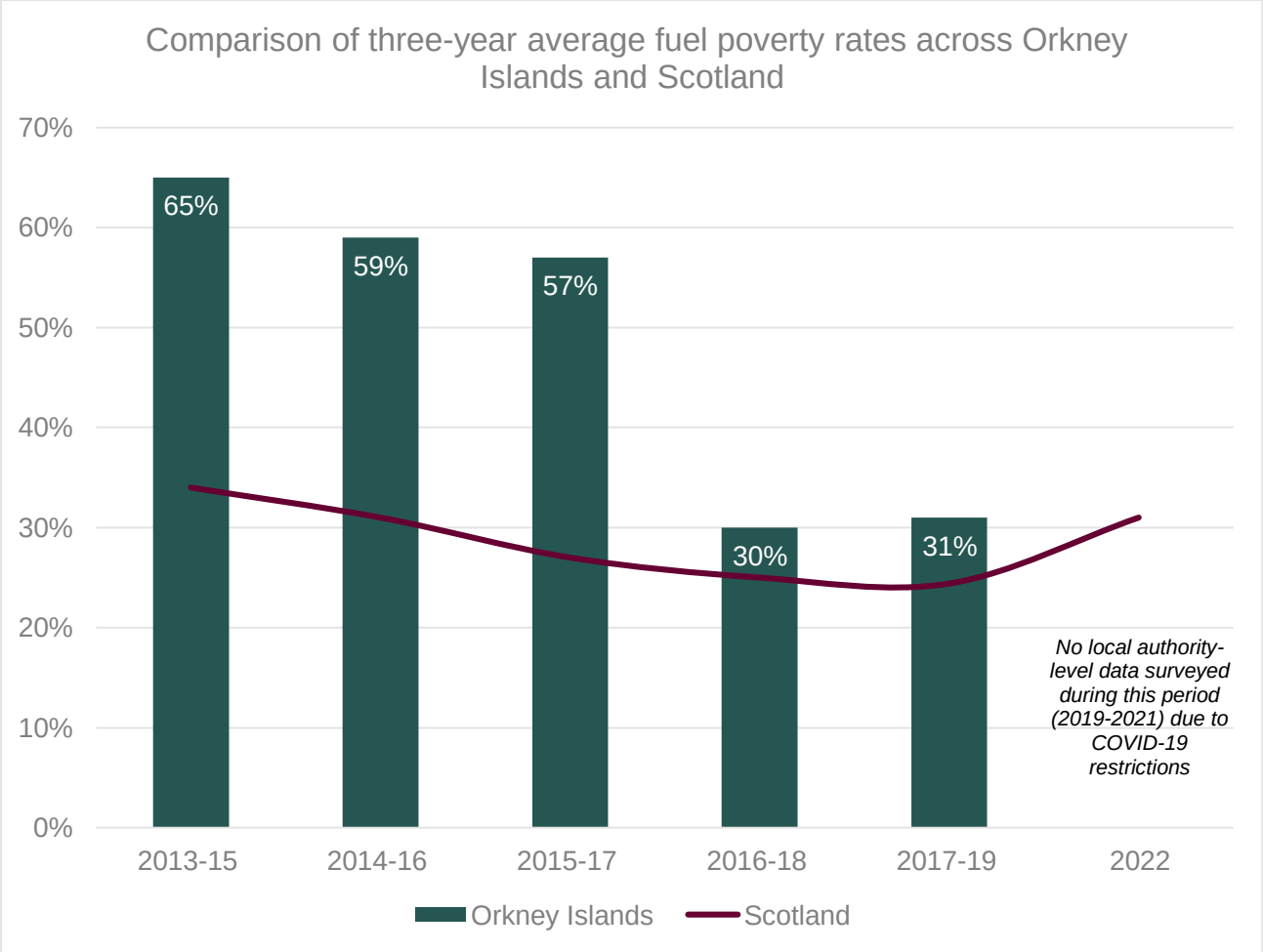
Table 8 shows how Orkney Island's fuel poverty rates have changed in the past decade. Across these years, average fuel poverty in Orkney Islands has been above the Scottish national level. However, due to a change in fuel poverty definition, this is likely to have been the cause for the significant differences observed between 2015-17 and 2016-18. Therefore, direct comparisons cannot be drawn with the statistics published prior to and after 2016-2018.

Table 8: Scottish House Condition Survey figures showing the three-year average fuel poverty rates across Orkney Islands and Scotland

Households	*Old fuel poverty definition*			*New fuel poverty definition*		
	2013-15	2014-16	2015-17	2016-18	2017-19	2019-22
Orkney Islands Council	65%	59%	57%	30%	31%	-
	7,000	6,000	6,000	-	-	-
Scotland	34%	31%	27%	25%	24%	31%

[11] Scottish Government (2022) Scottish House Condition Survey: Local Authority Analysis 2017-2019. Available at: https://www.gov.scot/publications/scottish-house-condition-survey-local-authority-analysis-2017-2019/pages/6/ (Accessed: 15 July 2024).
[12] Ibid.

Figure 5: Three-year average fuel poverty rate across Orkney Islands Council relative to the Scottish national. Note that from the years 2016-18 onwards, the definition of fuel poverty differed to the previous years.



According to the Scottish index of Multiple Deprivation (see Box 1), no properties in Orkney Islands fall within SIMD deciles one and two (most deprived). However, this does not mean that deprivation does not exist. SIMD demonstrates that Orkney's ferry-linked isles experience higher ongoing levels of deprivation with these areas found to be in the bottom 28% across Orkney's 29 datazones.[13]

With a priority of alleviating fuel poverty, Orkney Islands Council has used the LHEES process to investigate areas where fuel poverty has contributed to poor energy efficiency, particularly in social housing and the private rented sectors. This is detailed in the Delivery Plan.

Primary fuel type for domestic buildings

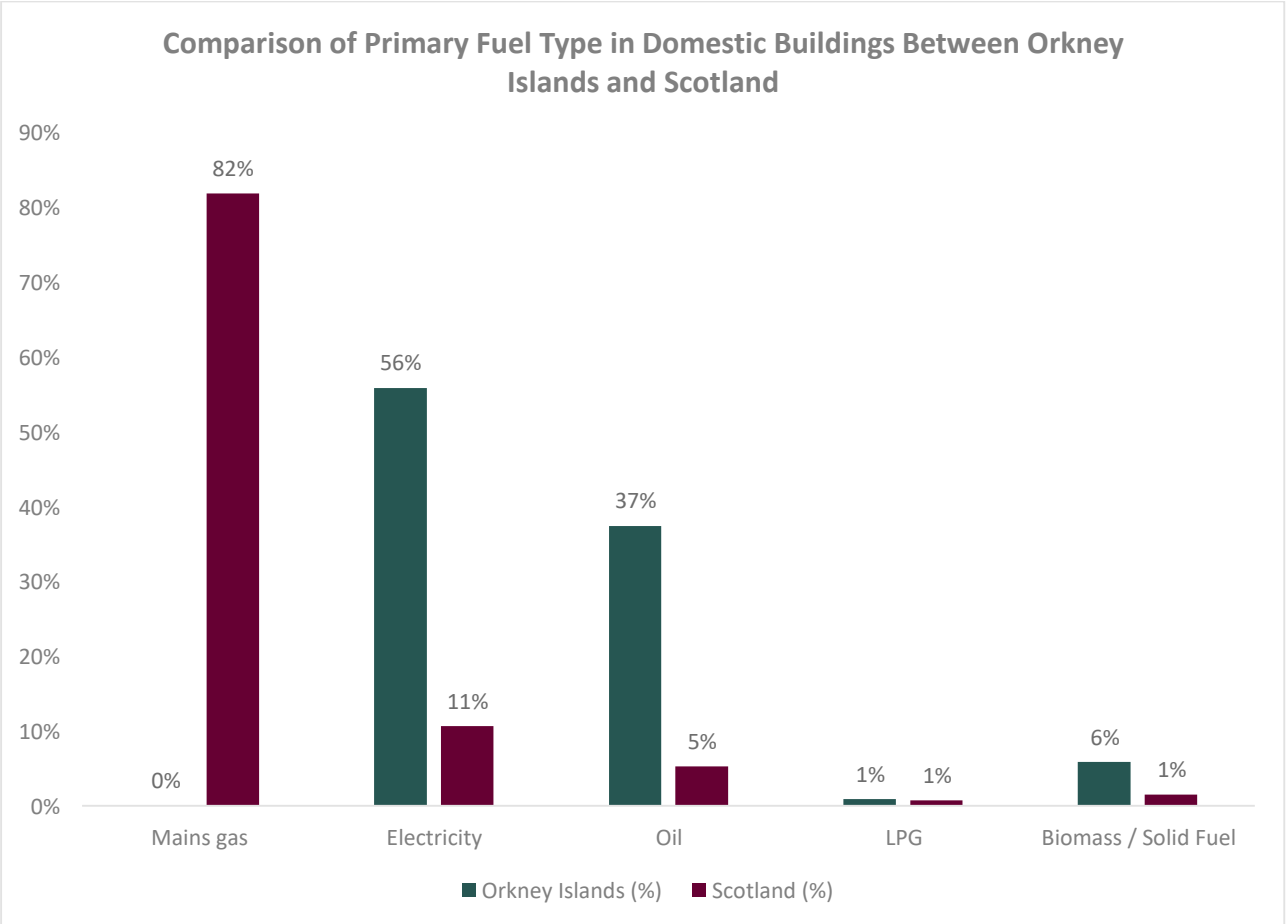
The primary fuel type for domestic buildings in Orkney is very different from the Scottish national average because the Orkney Islands have no mains gas network. The majority of properties use electricity as the primary fuel type which is approximately five times higher than the national average (Table 9). There are also a high number of domestic properties using heating oil (37%), approximately seven times the national average.

[13] Orkney Child Poverty Strategy 2022-2026

Table 9: Primary fuel type statistics for domestic properties in Orkney Islands

Primary Fuel Type	Orkney Islands Council	Scotland
Mains gas	0 (0%)	2,016,000 (82%)
Electricity	6,646 (56%)	262,000 (11%)
Oil	4,453 (37%)	129,000 (5%)
LPG	103 (1%)	18,000 (1%)
Biomass / Solid Fuel	697 (6%)	36,000 (1%)

Figure 6: Primary fuel types across properties in Orkney Islands relative to the Scottish national average.



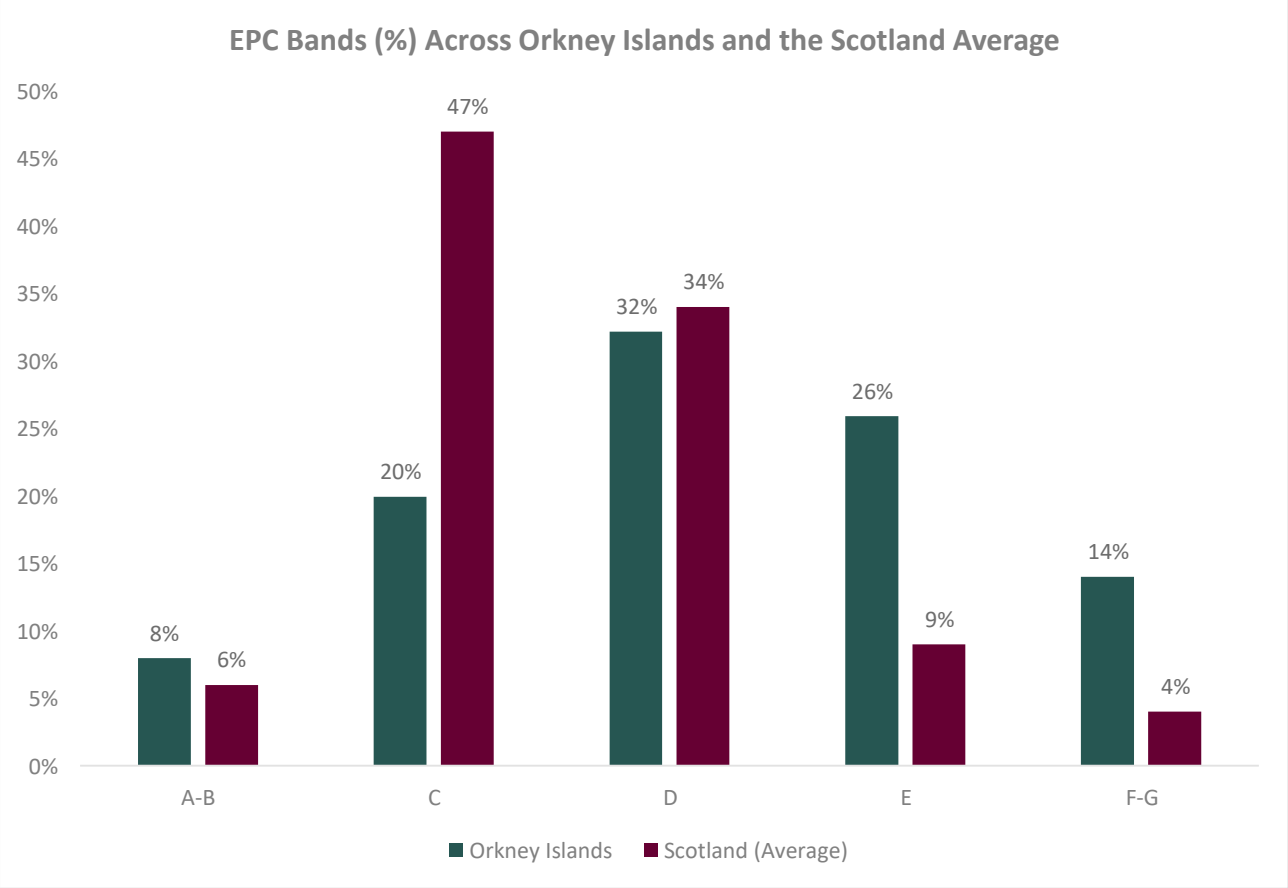
Energy Performance Certificate data for domestic buildings

Orkney has more properties across all tenures that are within EPC bands A-B (most energy efficient) compared to the Scottish national average (Table 10). Most properties within the local authority are within EPC band D. Orkney also has a far higher percentage of properties in bands E-G (least energy efficient), compared to the national average.

Table 10: EPC data for domestic properties in Orkney Islands and national averages[14]

	A-B (81-100)	C (69-80)	D (55-68)	E (39-54)	F-G (1-38)
Orkney Islands	8%	20%	32%	26%	14%
Scotland (Average)	6%	47%	34%	9%	4%

Figure 7: Distribution of EPC Bands across Orkney Islands compared to the Scottish national average



[14] 3 Energy Efficiency - Scottish house condition survey: 2019 key findings - gov.scot (www.gov.scot)

The social housing sector in particular has high levels of energy efficiency, with only 10% of properties in band E or F (Table 11). It is also the tenure type with the largest share of properties in bands A-B. This indicates that policy drivers for the sector have been successful at driving energy efficiency improvements.

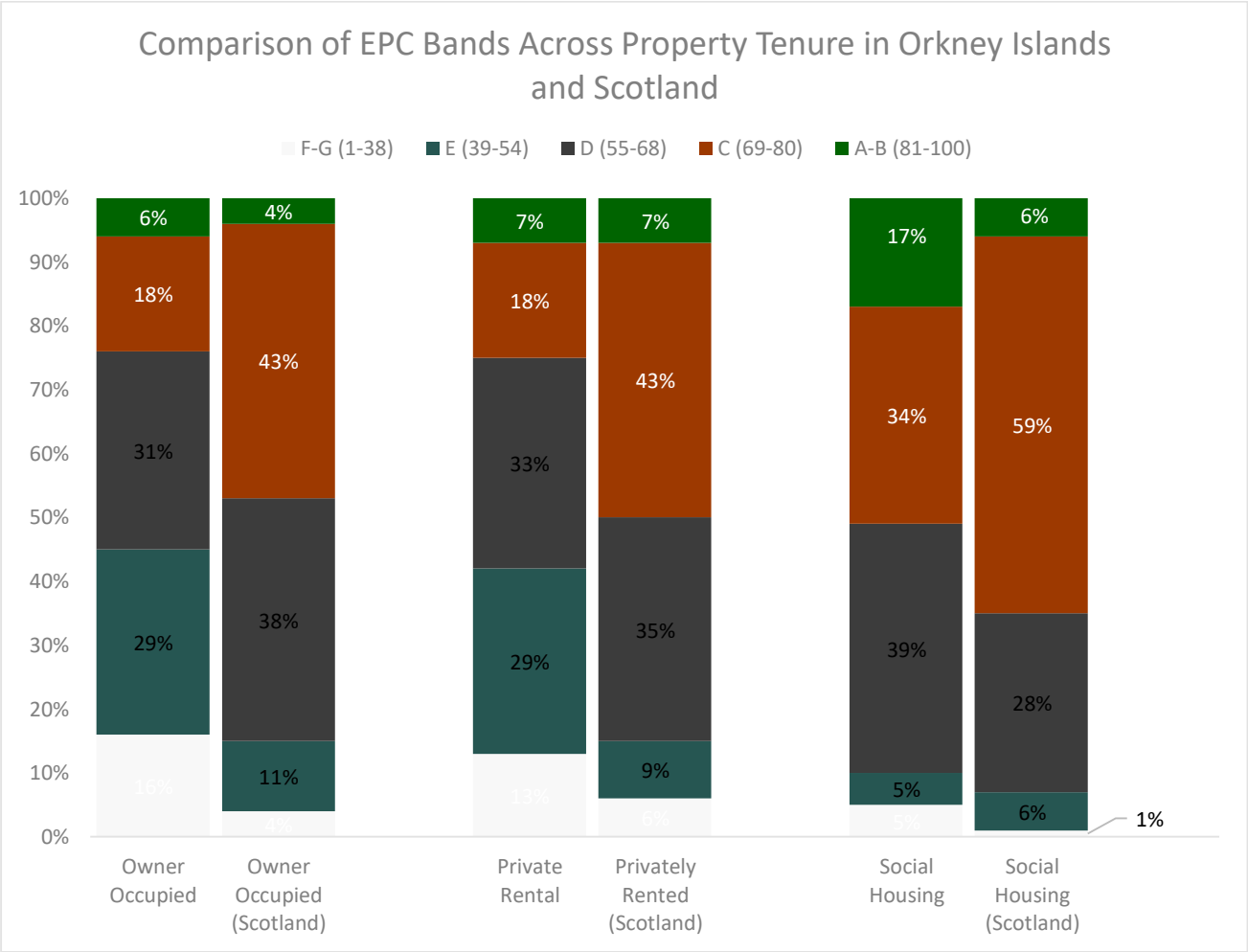
Owner-occupied properties have a wider distribution across EPC bands compared to the national average. This sector has fewer properties in band C compared to Scotland overall, but in turn more properties in both bands A-B (more energy efficient) and bands E (less energy efficient) (Table 11). Overall, most of the owner-occupied properties in Orkney (76%) are band D or below.

The private rented sector is similar to the owner-occupied sector. Most properties (75%) in this sector are in band D or below.

Table 11: EPC data for domestic properties in Orkney Islands

EPC Band	Owner Occupied		Private Rental		Social Housing	
	Orkney Islands Council	Scotland	Orkney Islands Council	Scotland	Orkney Islands Council	Scotland
A-B (81-100)	6%	4%	7%	7%	17%	6%
C (69-80)	18%	43%	18%	43%	34%	59%
D (55-68)	31%	38%	33%	35%	39%	28%
E (39-54)	29%	11%	29%	9%	5%	6%
F (1-38)	16%	4%	13%	6%	5%	1%

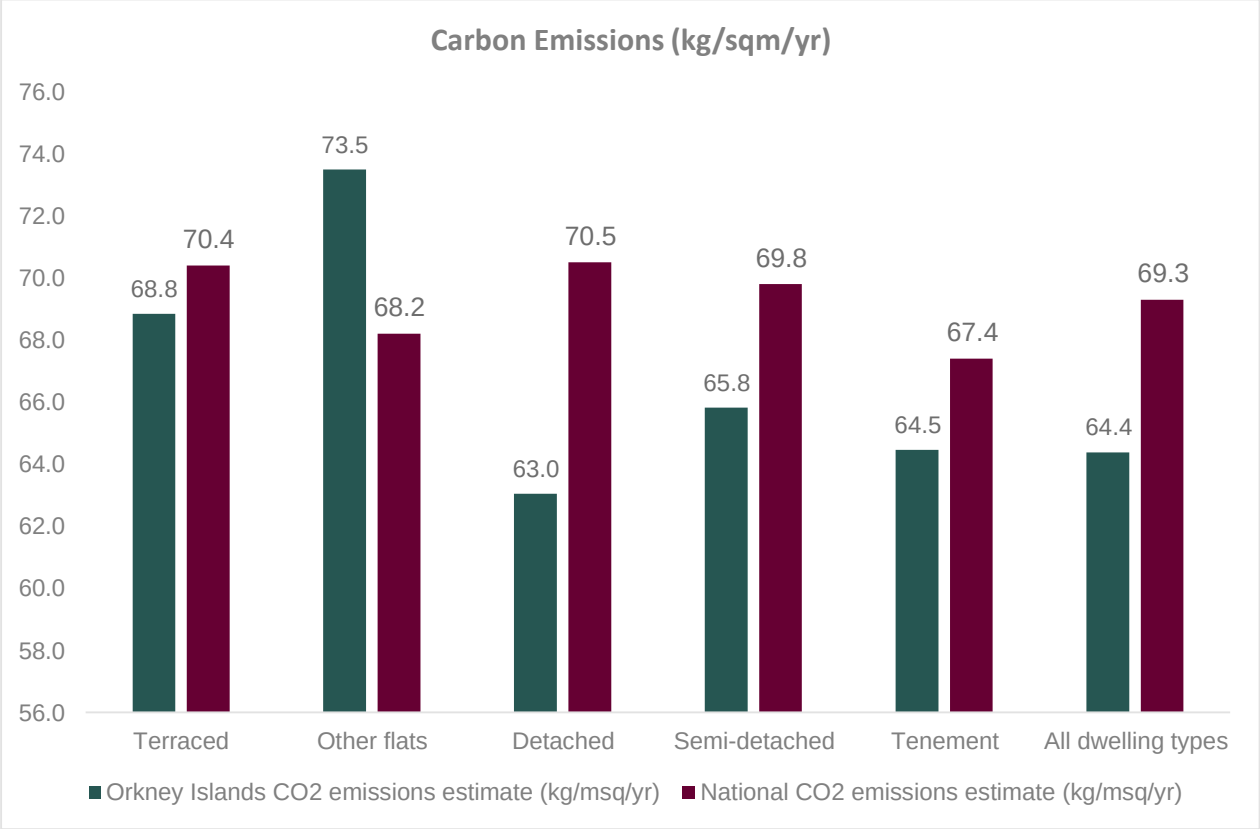
Figure 8: Split of EPC bands across all property tenures Orkney Islands relative to the Scottish national average



Carbon emissions from domestic buildings

Carbon emissions from buildings are often measured by kilogrammes of carbon emitted per square metre in the property. Carbon emissions across the Scottish national housing stock are relatively consistent between 67.4 kg/m² and 70.5kg/m² for all types of dwellings (Figure 9). In Orkney Islands, the estimated amount of carbon emitted per m² across all property types except 'other flats' is significantly lower than the national average (Figure 9). This is mainly because the majority of properties rely on electricity for heating, compared to the rest of Scotland where most homes rely on mains gas. Terraced housing and other flats have much higher emissions compared to detached, semi-detached and tenements in Orkney Islands.

Figure 9: Carbon emissions (kg/m²) for each dwelling type in Orkney Islands



Non-domestic buildings

Figure 10 provides a breakdown of the number of domestic and non-domestic buildings in Orkney Islands Council. There are 11,578 domestic buildings in Orkney Islands, amounting to 85% of the total building stock in Orkney. By comparison, non-domestic buildings make up only 15% of the total building stock, of which 12% are publicly owned. Non-domestic buildings include short term residential accommodation, offices, retail, hotels, industry, education and leisure facilities.

Heat demand

Despite making up only 15% of buildings, non-domestic buildings account for 25% of total heat demand across Orkney Islands (Table 12 and Table 13). This demonstrates that average heat demand is higher in non-domestic buildings than domestic. Due to their higher relative heat demand, non-domestic buildings have the potential to be used as anchor loads to improve the feasibility of heat networks by providing guaranteed demand.

Table 12: Total property count for domestic and non-domestic buildings in Orkney Islands

Non-domestic property count	Domestic property count	Total property count
2,098 (15%)	11,578 (85%)	13,676

Table 13: Total heat demand for domestic and non-domestic buildings in Orkney Islands

Non-domestic total heat demand (MWh/yr)	Domestic total heat demand (MWh/yr)	Total heat demand (MWh/yr)
67,575 (25%)	207,324 (75%)	274,899

Figure 10: Breakdown of domestic and non-domestic building counts and respective heat demands in Orkney Islands

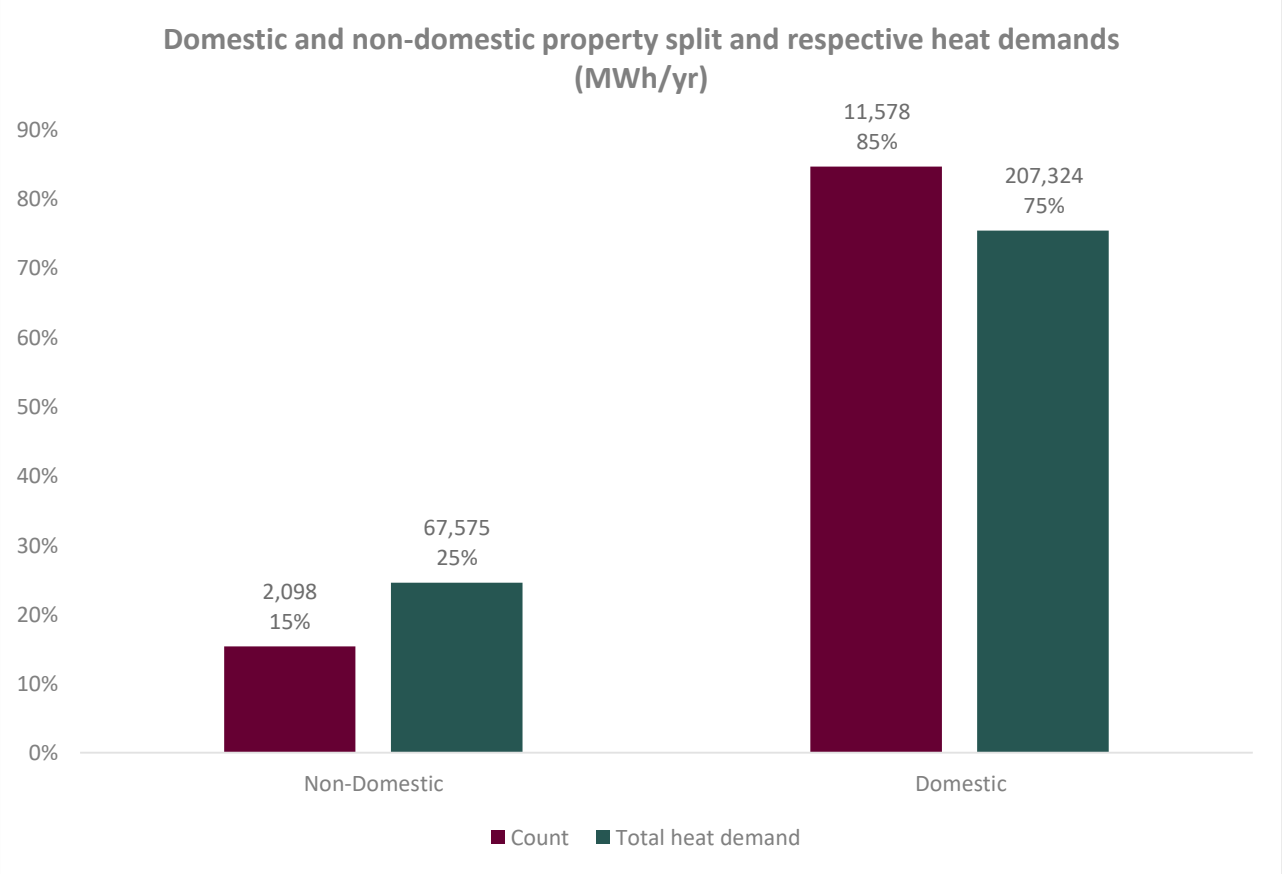


Figure 11 demonstrates that the relationship between number of properties and heat demand is not always directly proportional and is dependent on property end use. Non-domestic typologies such as hotels, residential uses[15] and retail properties have higher average heating demands per property when compared to offices, education and industry.

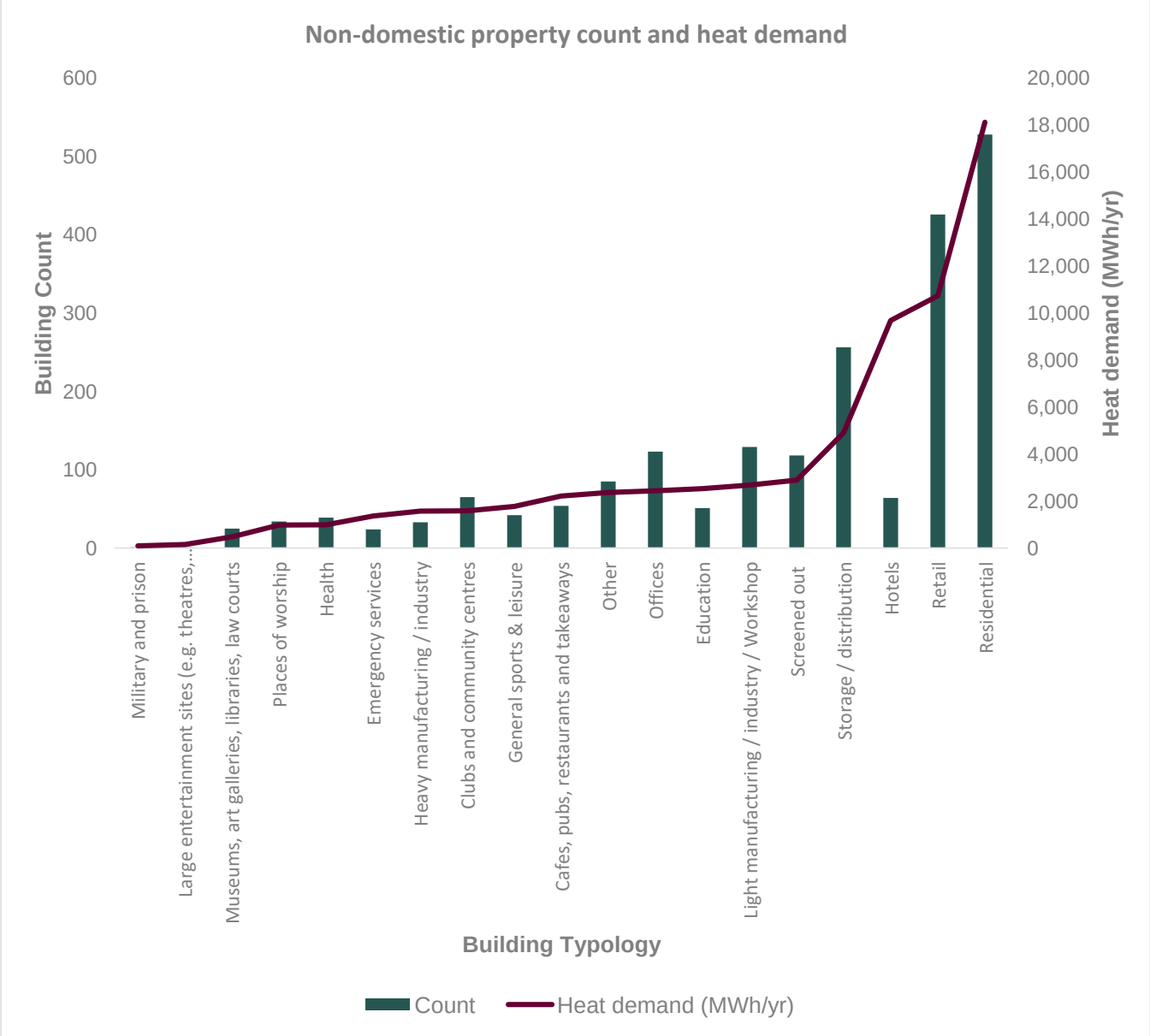
Comparatively across all property typologies, hotels have the highest heat demand of all non-domestic building typologies, accounting for 14% of non-domestic heat demand despite making up only 3% of non-domestic buildings. The category of hotels includes care homes, traditional hotels, hostels, guest houses and/or bed and breakfasts, which have very high heat demands.

Whilst offices make up 6% of total non-domestic buildings, they only contribute just under 4% of non-domestic heating demand. Similarly, although sports and leisure facilities

[15] In the context of non-domestic buildings, residential use refers to short-term accommodation such as holiday lets.

generally have very high heating demands, there are only 42 buildings of this typology, contributing 2% of total non-domestic heating demand in Orkney Islands.

Figure 11: Non-domestic property count and heat demand by building typology



Primary fuel type in non-domestic buildings

Nearly 80% of non-domestic properties across Orkney Islands use electricity as their main fuel source, a total of 1,664 properties (Table 14).

Table 14: Non-domestic property count by main fuel type

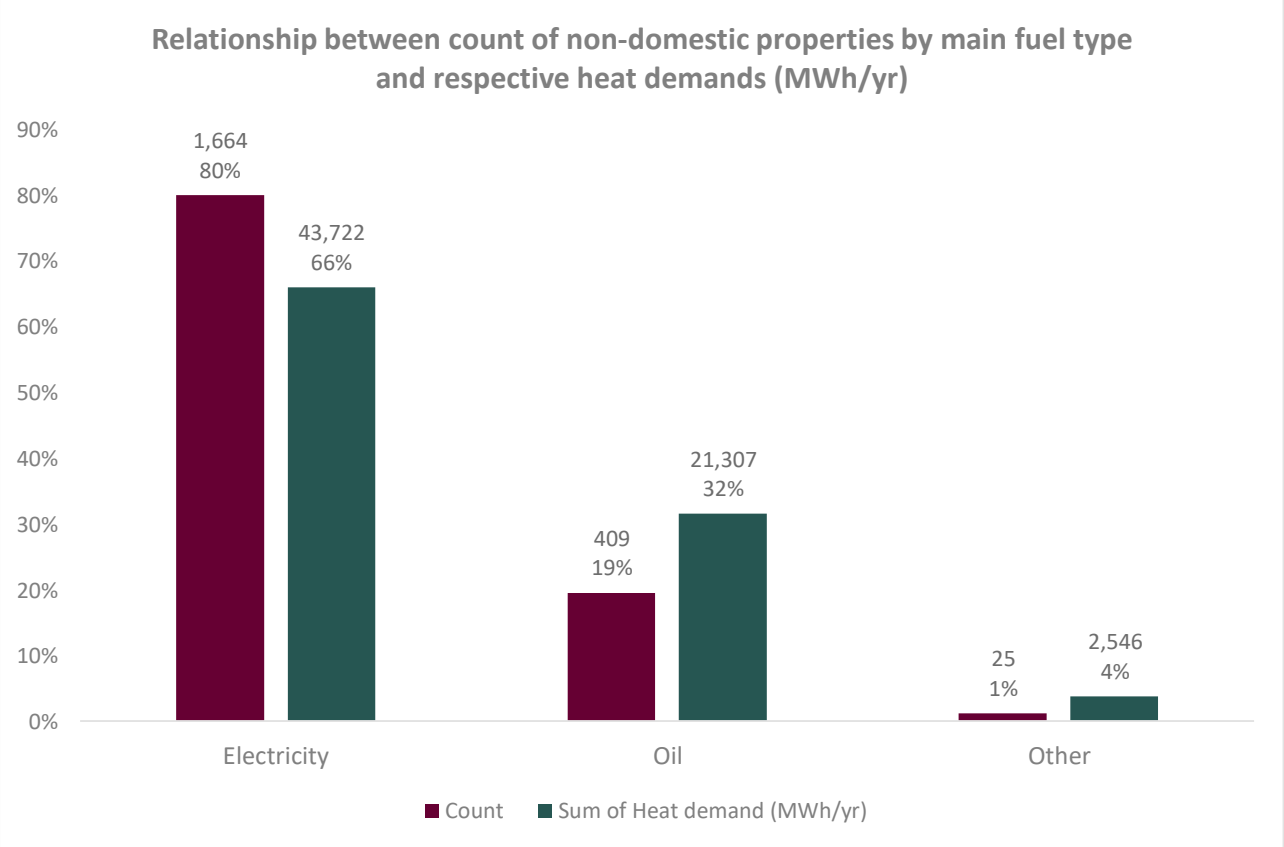
Electricity	Oil	Other
1,664 (80%)	409 (19%)	25 (1%)

While only 19% of non-domestic buildings use oil as the primary fuel type, oil is used to meet 32% of total heat demand, providing 21,307 MWh/yr of heat (Table 15). This means that properties which use oil as a main fuel type have a higher average demand than those that use electricity.

Table 15: Heat demand by main fuel type (MWh/yr)

Electricity	Oil	Other
43,722 (66%)	21,307 (32%)	2,546 (4%)

Figure 12: Count of non-domestic properties by main fuel type and respective heat demands within Orkney Islands



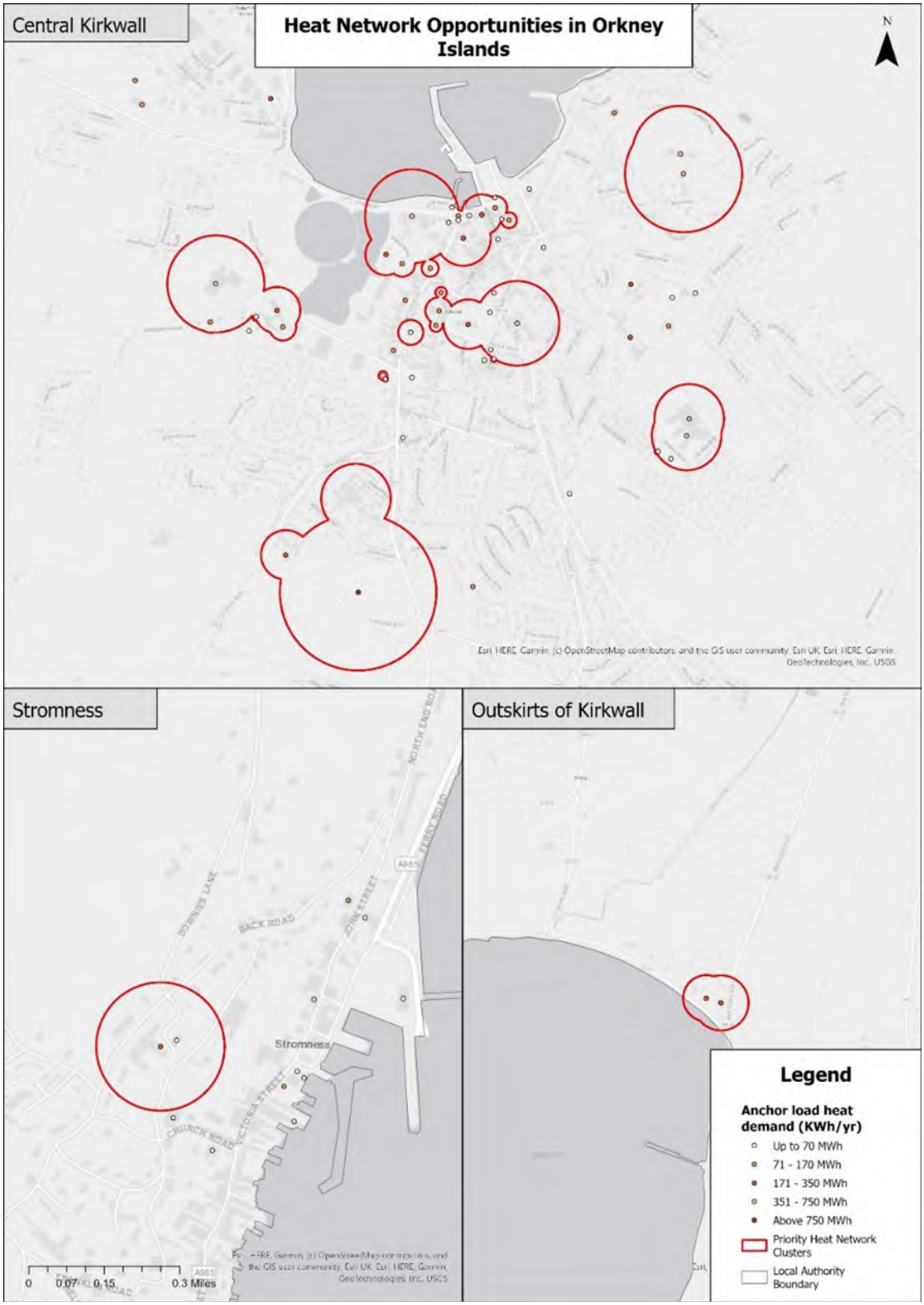
Heat networks

Heat networks are a key part of the transition to net zero in Scotland.

Previously, Orkney Islands Council explored initial feasibility of heat networks in the centre and outskirts of Kirkwall. The assessments conducted by an external consultant highlighted three potential network routes based on areas of high heat demand. One route explored the possibility of a heat network connecting the main Council buildings in Kirkwall; the second following the first route and extending to public buildings identified by the Council; and the third following the first route and extending out through Hatston Industrial Estate to the proposed Energy Centre to the west of the Industrial Estate. For all three routes, the return on investment was very low.

Based on LHEES analysis, there are 15 potential heat networks clusters of varying area size and heat demands located in Kirkwall and one in Stromness (Figure 13). These are detailed in the Delivery Plan. Orkney Islands Council is seeking to explore the viability of connection opportunities between outputs from LHEES, prior and current assessments.

Figure 13: Heat network opportunities as derived from LHEES analysis



Priority A: Making Orkney's homes energy efficient

Summary of Priority A: Making Orkney's homes energy efficient

- The Council is focussed on improving energy efficiency for all tenures of homes.
- The Council has a **'fabric first'** approach meaning that improvements to the building's walls, roof, floors, doors, and windows should be considered before installing new heating systems.
- Warmworks delivers Area Based Scheme funding, on behalf of the Council, to improve energy efficiency for **owner occupied and private rented homes.**
- In accordance with Scottish Government legislation, **almost all social housing** run by the Council and OHAL **is EPC band C and above.**
- There is **upcoming legislation** that **will increase the energy efficiency standards for social housing**. Once this is announced, the Council and OHAL will move forward with developing specific plans to further improve energy efficiency.
- **Relevant policies:** Local Housing Strategy (2024-2029, Draft), Council Plan (2023-2028), Strategic Housing Investment Plan (2021-2026), Carbon Management Programme (2016-2026), Energy Efficiency Standard for Social Housing, upcoming Scottish Government Heat in Buildings Bill and Social Housing Net Zero Standard

Overview

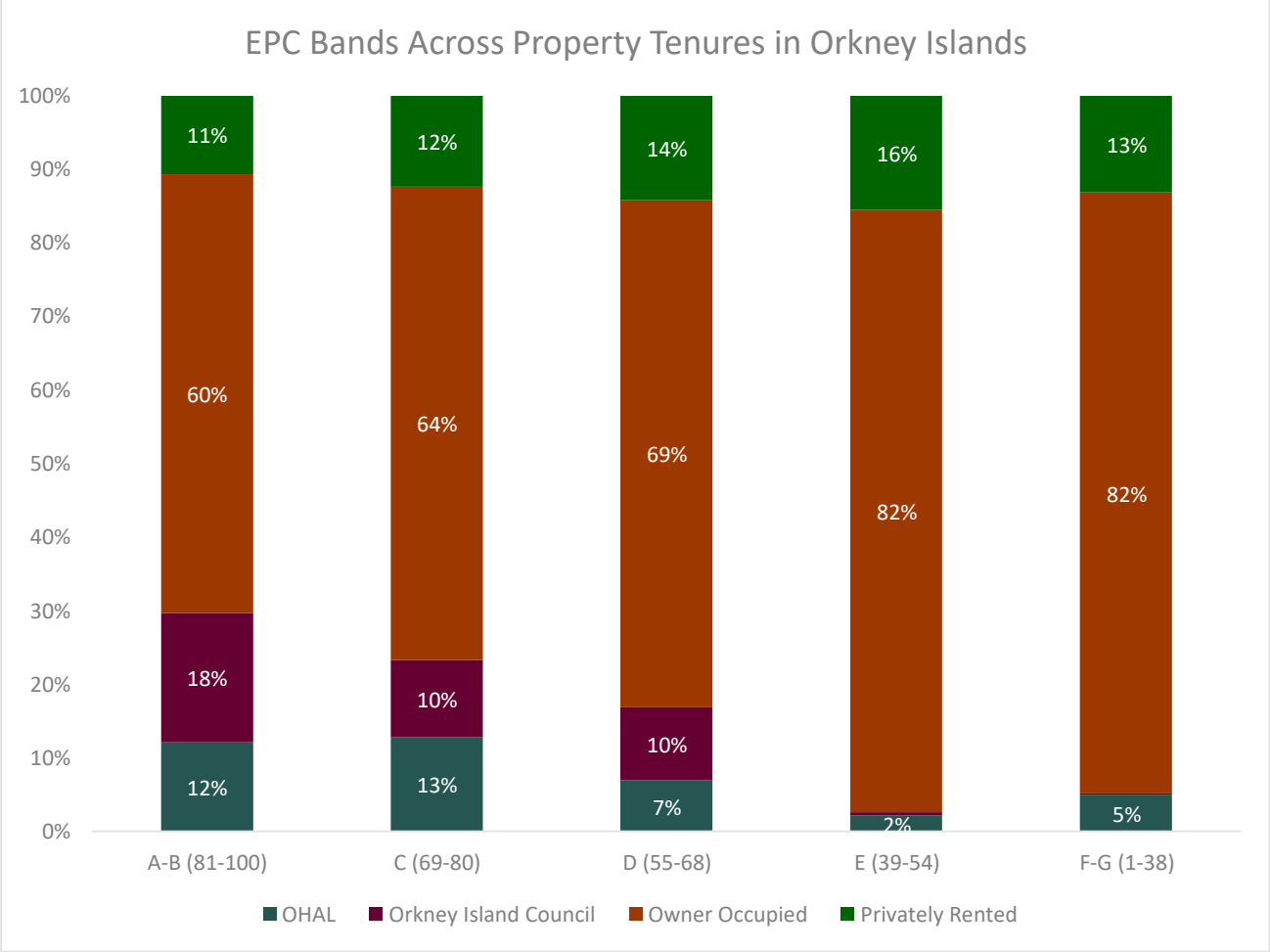
Making Orkney's homes energy efficient is a key priority for Orkney Islands Council. The approach the Council takes to improve energy efficiency depends on the tenure of the building.

The majority of homes (72%) in Orkney are owner occupied. A further 14% are privately rented. The Scottish Government's upcoming Heat in Buildings Standard is likely to include a minimum energy efficiency standard for owner occupied and privately rented homes.

Owner occupiers and private landlords can access funding through the Heat and Energy Efficient Scotland: Area Based Scheme, delivered by Warmworks. Social housing properties are owned and managed by either the Council or Orkney Housing Association Limited (OHAL). These properties are required to meet different standards and are eligible for different types of funding from Scottish Government to improve energy efficiency. There are also certain energy efficiency requirements for new social housing properties being built by the Council and OHAL.

The majority of homes with poor energy efficiency (EPC band D and below) are owner occupied and privately rented (see Figure 14).

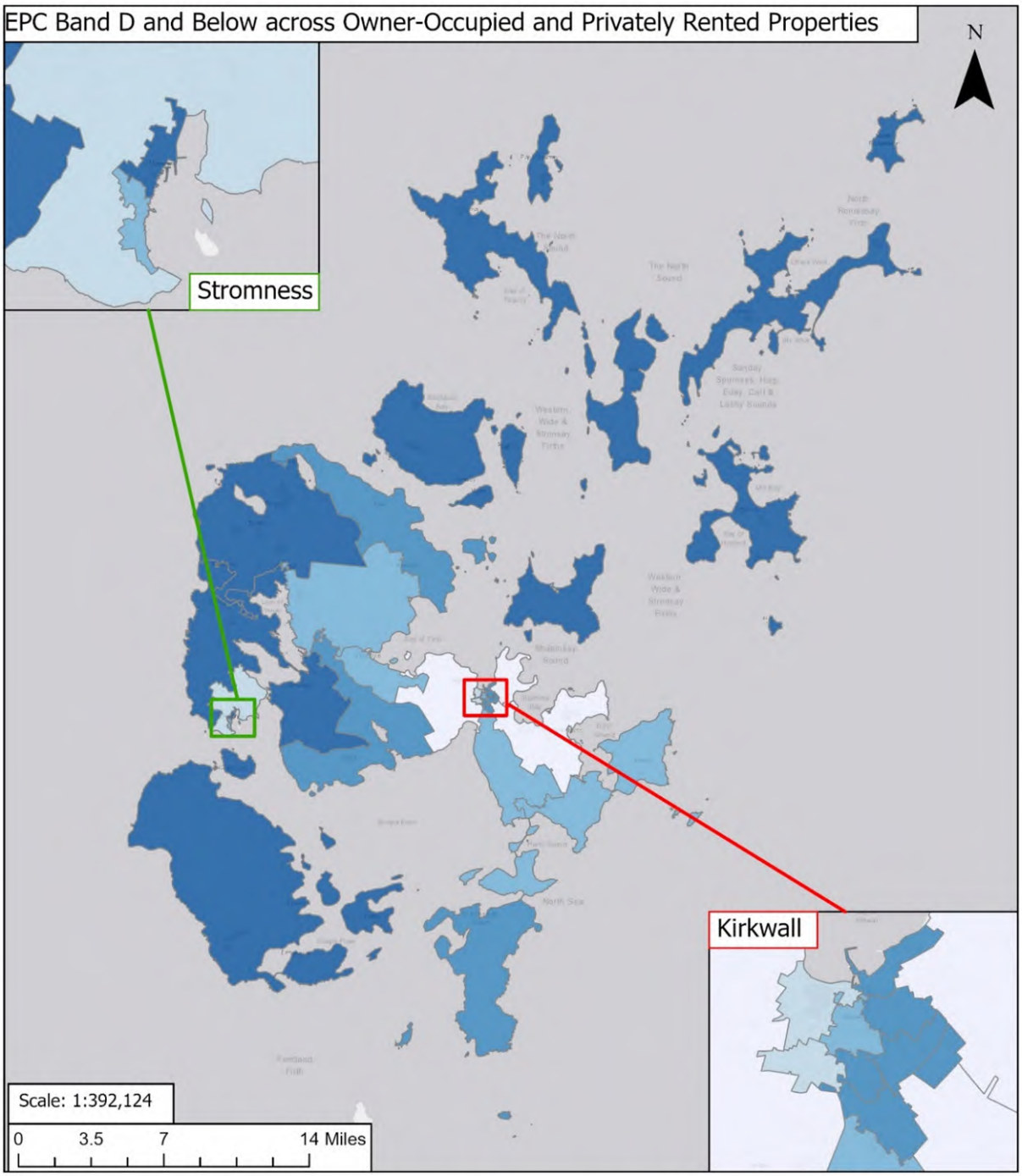
Figure 14: EPC Bands across all property tenures in Orkney Islands



Owner occupied and privately rented homes

As outlined in Section 4.1, there is a lot of work to be done to make owner occupied and privately rented homes more energy efficient in Orkney. Figure 15 shows the distribution of owner-occupied and privately rented homes that are EPC band D and below across Orkney.

Figure 15. Strategic zoning of Owner-occupied and Privately Rented properties of EPC Band D and below



Heat and Energy Efficient Scotland: Area Based Scheme

The Scottish Government provides funding to every local authority to improve energy efficiency in owner occupied and privately rented homes in areas with high levels of fuel poverty. This funding is called **Heat and Energy Efficient Scotland: Area Based Schemes** (HEES:ABS). A grant of up to £10,500 – £16,100 was made available per customer in 2022/23, with a higher grant award available in certain circumstances.[16] The main aim of HEES:ABS is to upgrade homes to at least EPC band C.

Local authorities determine how the scheme is delivered, informed by requirements from Scottish Government. In Orkney, the scheme is run by a managing agent called Warmworks. Warmworks oversee delivery of the funding from start to finish, to install measures such as insulation and new, efficient storage heating. In many local authorities, the scheme is targeted at specific geographic areas with higher rates of fuel poverty. However, in Orkney the scheme is open to people living everywhere who meet the criteria. Most homes in Orkney qualify for HEES:ABS, meaning they will some level of funding and Warmworks will manage the retrofit work.

Most funding goes to owner occupiers. A very small percentage of HEES:ABS funding goes towards private rented homes because upgrades to heating systems are now required to be funded by landlords under minimum housing standards.

In 2024/25, the following measures will be offered by Warmworks:

- High heat retention storage heaters.
- Interlinked fire alarms (first time offered).
- Internal and External wall insulation.
- Loft top-up insulation.
- Underfloor insulation.
- Virgin loft insulation.

HEES:ABS funding has increased a lot in the last ten years. In 2015/16, Orkney Islands Council received nearly £800,000 in HEES:ABS funding. In 2024/25, the Council will deliver £1.2 million worth of energy efficiency projects. The Council intend to lobby for additional funding, as the original bid was for £2.25 million.

The HEES:ABS scheme has made a significant impact on the energy efficiency of owner occupied and privately rented homes in Orkney. In 2023/24, the HEES:ABS scheme has funded 229 energy efficiency improvements in 172 households in Orkney. At the time of writing, the full annual report for 2023/24 is not available. However, in 2022/23 the scheme had the following additional impacts:

- Increased the energy efficiency of homes, the average SAP score (score on an EPC report) increase by 11.7 points
- Helped some of the least energy efficient homes in Orkney, as **22%** of homes referred to HEES:ABS **were in EPC bands F and G** (the worst ratings for energy efficiency)

[16] Warmworks (2023) *Energy Efficient Scotland: Area-Based Scheme (Orkney) Annual Report 2022/23*, Available at: https://www.warmworks.co.uk/wp-content/uploads/2023/10/Final-web-ready-version.pdf

- **Saved 108 tonnes of CO2** by improving energy efficiency and reducing emissions

THAW Flex Fund

THAW, Orkney's fuel poverty charity, also provides funding for owner occupied and private rented homes to make energy efficiency upgrades. Households must be in extreme fuel poverty (spending a minimum of 20% of their income on energy bills) to be eligible. See 6.2 for more information.

Council-owned social housing

The Council owns 7% of the total housing in Orkney. Improving the energy efficiency of the Council's housing is a key priority and allows the Council to lead by example in delivering retrofit.

Retrofitting existing homes to improve energy efficiency

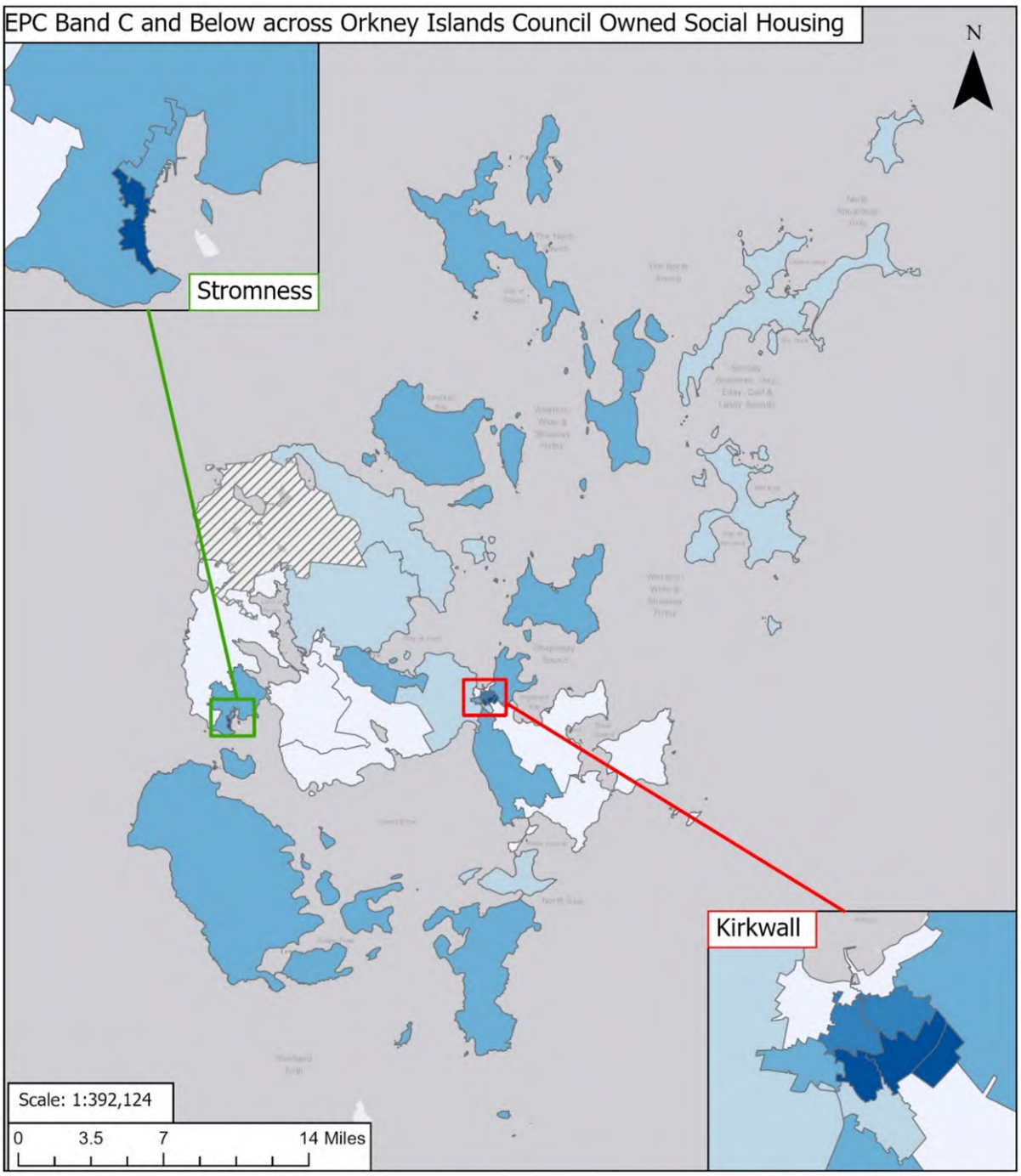
The Energy Efficiency Standard for Social Housing (EESSH) was introduced by the Scottish Government to improve the energy efficiency of social housing in Scotland. The EESSH standard requires social housing properties to be EPC band C or D at a minimum. A stricter standard called EESSH2 was brought in more recently for all properties to be EPC band B (or as close as possible). EESSH2 is currently on pause as it is undergoing review. The Scottish Government intends to replace EESSH2 soon with a new standard called the Social Housing Net Zero Standard (SHNZS). Due to uncertainties around current and future regulations, Orkney Islands Council is focussing all energy efficiency work to meet the EESSH standard until a new standard is published.

96% of Orkney Islands Council housing stock meets the current EESSH standard. Only 20 properties did not meet the standard due to various reasons described in the Local Housing Strategy.

The new standards are expected to be much more difficult to achieve. To prepare, the Council has been trialling approaches when properties become empty. For more information on these projects, see the Delivery Plan.

Figure 16 shows the areas where retrofit programmes for council-owned social housing will need to take place.

Figure 16. Strategic zoning of Orkney Islands Council owned social housing properties of EPC Band C and below



This map spatially displays the percentage of local-authority owned domestic properties of EPC Band C and below across each datazone. The EPC percentage is represented as a propoprtion of the total dwelling count for each datazone.

Note: Data zones are a statistical geography that are designed to meet constraints on population thresholds (between 500 and 1,000 household residents), to nest within Intermediate Zones, and to build up from aggregates of Census Output Areas.

Legend

EPC Band C and Below - Council-owned social housing buildings

- Below 1%
- 2% - 3%
- 4% - 6%
- 7% - 11%
- Over 11%
- No council-owned buildings

Spatial Reference
Name: British National Grid

Energy efficiency standards for new homes

Based on an analysis of new social rented housing needs and the Council's Housing Revenue Account, **the Council has a target to build 14-15 new social rented homes every year** for the next ten years (140-150 by 2034). These homes need to meet a certain energy efficiency standard.

Orkney Housing Association Limited (OHAL)-owned social housing

OHAL is the only housing association operating in Orkney. OHAL owns 7% of the housing in Orkney (half of the social housing)

Energy efficiency standards for new homes

OHAL's Business Plan sets a target for 20 new homes to be built every year. These homes will be built to the Scottish Government energy efficiency standard required for social housing.

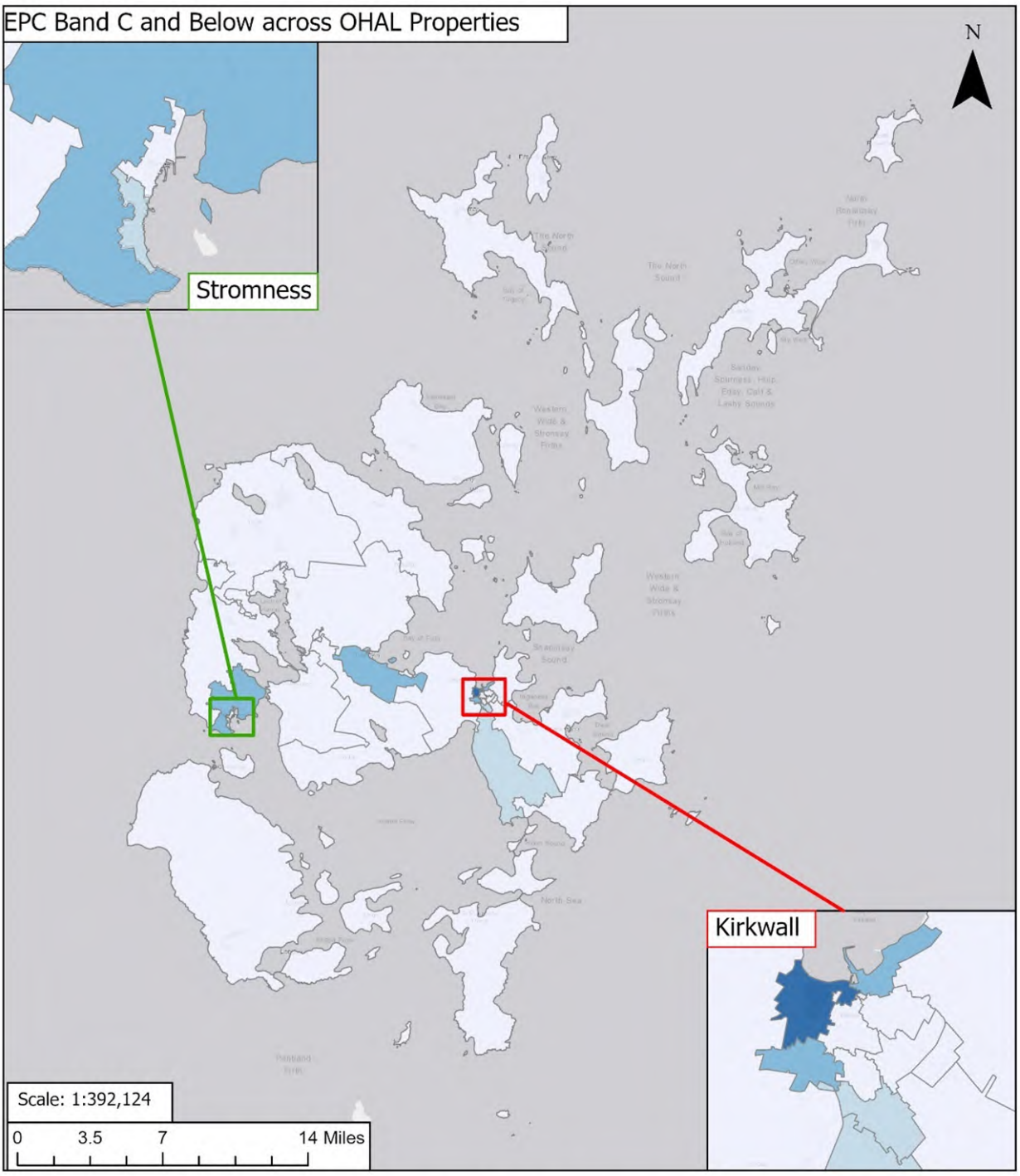
Retrofitting existing homes to improve energy efficiency

OHAL's approach to improving the energy efficiency of its housing stock involves tenant support and a fabric first approach—making the building itself more efficient so less energy is needed to heat a home.

97% of properties run by OHAL meet current EESSH standard. Only 13 properties fail these standards due to various reasons described in the Local Housing Strategy.

Figure 17 shows the areas where OHAL will need to target retrofit programmes for its properties.

Figure 17: Strategic zoning of housing association (OHAL) properties of EPC Band C and below



This map spatially displays the percentage of housing association (OHAL) owned properties of EPC Band C and below across each datazone. The EPC percentage is represented as a propoprtion of the total dwelling count for each datazone.

Note: Data zones are a statistical geography that are designed to meet constraints on population thresholds (between 500 and 1,000 household residents), to nest within Intermediate Zones, and to build up from aggregates of Census Output Areas.

Legend

EPC Band C and Below (%) (OHAL)

- Below 6%
- 6% - 13%
- 14% - 19%
- 20% - 25%
- Over 25%

Spatial Reference
Name: British National Grid

Priority B: Alleviating fuel poverty

Summary of Priority B: Alleviating fuel poverty

- **Nearly every home in Orkney is at risk of fuel poverty**, if not already experiencing it.
- A large number of homes in Orkney are experiencing **extreme fuel poverty** and **fuel poverty rates are worse in more remote areas**, such as the Outer Isles.
- There are many causes of fuel poverty. **Energy efficiency** is one of the most straightforward ways that the Council and partners **can alleviate extreme fuel poverty** in Orkney.
- **Warmworks, THAW and OHAL all provide support for households in extreme fuel poverty** to improve energy efficiency.
- **Relevant policies:** Local Housing Strategy (2024-2029, Draft), Orkney Sustainable Energy Strategy (2017-2025), Regional Spatial Strategy (2011), Orkney Integration Joint Board: Joint Strategic Needs Assessment (2016), Fuel Poverty (Scotland) Act 2019

Fuel poverty in Orkney

A household is in fuel poverty if they cannot afford to heat their home to a reasonable and healthy temperature. There are many causes of fuel poverty. Across all of Scotland, the four main causes are:

- High fuel costs.
- Poor energy efficiency in homes.
- Low household income.
- How energy is used in the home.

In Orkney, these factors are made more extreme and there are additional causes that make fuel poverty more extreme than other parts of Scotland. Some of these additional causes are:

- Cold, wet and windy climate.
- Higher fuel costs than other parts of Scotland (reliant on electricity, heating oil, or LPG).
- High cost of housing.
- High cost of living.
- High rates of underemployment (not having enough or consistent paid work) and unemployment.
- Ageing demographics, as people in older age groups require a higher temperature at home to stay healthy and warm.
- Limited access to support services because funding is limited, or support is dispersed across rural and remote areas.

Nearly every household in Orkney is at risk of fuel poverty. According to the Scottish Government definition, a fuel poor household spends at least 10% of their net income to pay for reasonable fuel needs after housing costs have been deducted. A household is extremely fuel poor if fuel costs are 20% or higher. The Scottish Housing Condition Survey reports that 31% of households in Orkney are in fuel poverty. However, this was from 2017-2019 before the energy crisis and does not include a number of important factors that have since impacted levels of fuel poverty.

The Scottish Housing Condition Survey is the only existing data that estimates fuel poverty rates for all of Orkney. However, local fuel poverty organisations and schemes can help to provide a fuller and more accurate picture.

The Area Based Scheme, run by Warmworks, provides grants to people in fuel poverty. Households are eligible if they quality for the Warmer Homes Scotland scheme or if they are considered fuel poor after Warmworks conducts a fuel poverty assessment.[17] According to Warmworks, nearly every household in Orkney would be considered fuel poor if they were assessed. This means nearly every household is likely to be eligible for HEES:ABS grant funding.

Extreme fuel poverty

In addition to high rates of fuel poverty overall, **Orkney has a high number of households who are experiencing extreme fuel poverty** (spending a fifth or more of their income on fuel, after housing costs).

80% of households who THAW supports are in extreme fuel poverty. **1 in 6 THAW clients would need to spend nearly all of their income to keep warm at home.** As a result of the high costs, 60% of THAW clients are not heating their home to a healthy or warm level.[18]

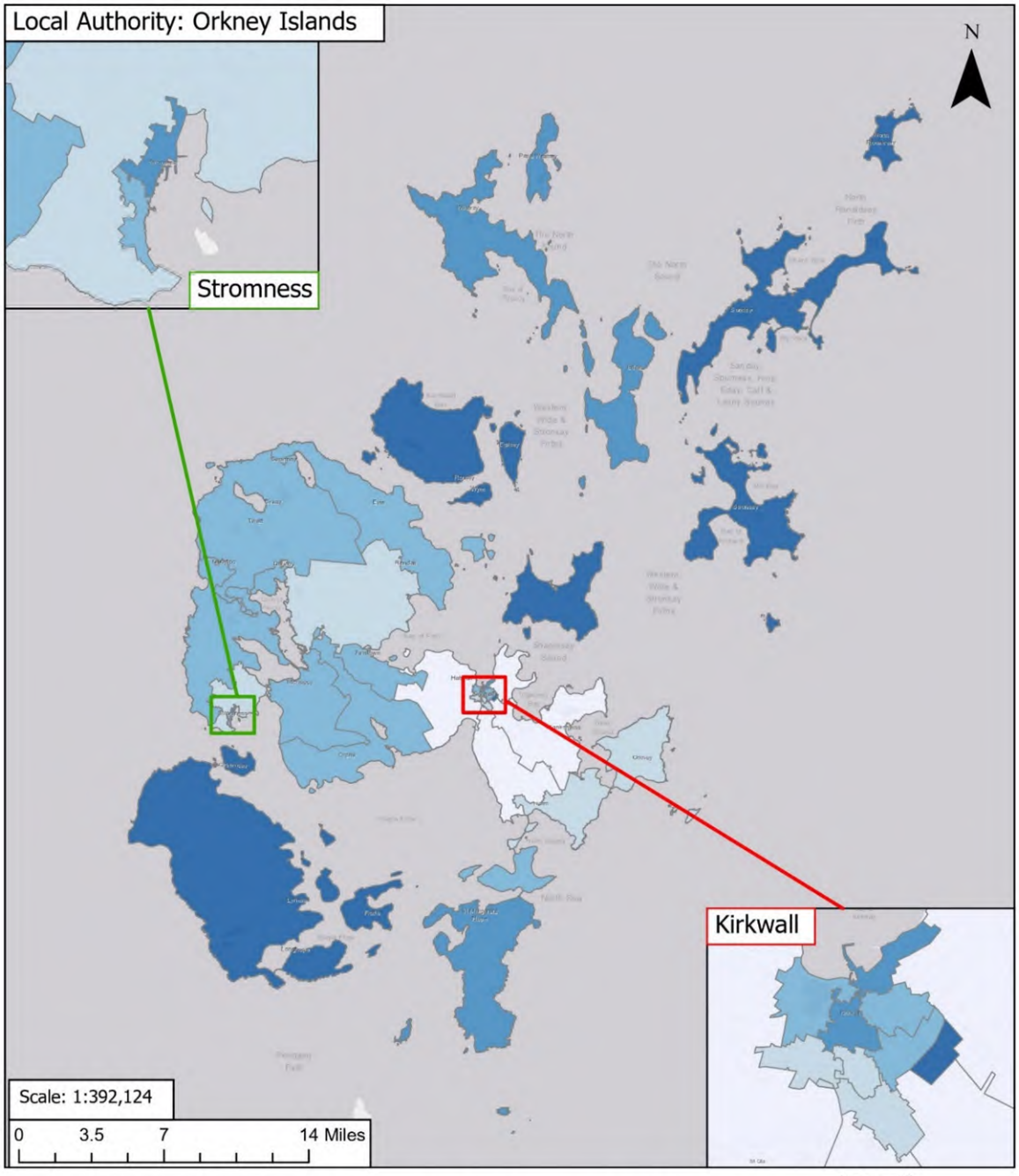
Fuel poverty on the Outer Isles

Fuel poverty is not evenly distributed in Orkney. Organisations like Warmworks and THAW that provide support across Orkney, report that **fuel poverty is more extreme on the Outer Isles** than it is on the Mainland. This is because the cost of living is higher, the climate is more exposed, and buildings are less energy efficient.

Changeworks analysed how likely it was that households are in fuel poverty due to inefficient housing across Orkney. This map indicates that energy inefficient housing plays a larger role in fuel poverty in the Outer Isles than the Mainland.

[17] The Warmworks fuel poverty assessment looks at factors like amount spent on energy bills, income, Council Tax band, the building fabric of the home, and more.
[18] THAW (2023) *Annual Review 2023.*

Figure 18: Strategic zoning map showing energy efficiency as a driver of fuel poverty in Orkney Islands.



Addressing fuel poverty by improving energy efficiency

The previous section provides an overview of the many causes of fuel poverty in Orkney. Some causes, such as climate and cost of fuel, are out of the control of the Council. However, some are within the responsibility of the Council. **Improving energy efficiency is one of the most straightforward ways to reduce extreme fuel poverty in Orkney.** This section outlines the various schemes and organisations addressing fuel poverty by making peoples' homes more energy efficient.

THAW Orkney

THAW Orkney is a fuel poverty charity in Orkney. It addresses fuel poverty through energy efficiency in two ways: energy efficiency advice and funding retrofit projects.

THAW energy advisors provide bespoke advice to householders about energy efficiency. This advice can help people use heating systems more efficiently, identify small draughtproofing projects to do at home, and more.

THAW have introduced a new type of grant called the Flex Fund. The Flex Fund provides between £250 to £2,000 to households in extreme fuel poverty. The funding can go towards repairing heating or hot water systems or providing additional funding alongside other schemes such as HEES:ABS. Projects are assessed on a case-by-case basis, but all projects support energy efficiency for households in extreme fuel poverty and provide funding in cases where national schemes such as HEES:ABS or Home Energy Scotland grants or loans may not.

HEES:ABS Extreme Fuel Poverty uplift

The Heat and Energy Efficient Scotland: Area Based Scheme, delivered by Warmworks, provides additional grant funding to households who are in extreme fuel poverty, which is assessed on a case-by-case basis by the Warmworks team. This is in addition to the extra HEES:ABS funding provided in Orkney as a rural remote/island area.

In 2022/23, households who received HEES:ABS funding saved an average of £728 on their energy bills annually because of the energy improvements installed.

Warmworks also has a Local Engagement Manager who works with other organisations to increase the number of households outside of the Mainland applying for funding. This is important because areas outside the Mainland, especially the Outer Isles, have higher levels of fuel poverty.

OHAL Energy Advisor

OHAL has a dedicated Energy Advice Officer who provides advice to tenants experiencing fuel poverty and/or need support or advice around their energy. The Energy Advice Officer can offer information specific to the tenant's situation to help them use energy more efficiently.

Priority C: Improving carbon efficiency in council buildings

Summary of Priority C: Improving carbon efficiency in council buildings

The Council has a responsibility to improve the energy efficiency of its operational and leased buildings. However, there is limited data on these buildings. 17% of the Council's operational buildings and 29% of the Council's leased buildings have EPCs. The Council will increase the carbon efficiency of these buildings, which means improving energy efficiency and changing heating systems away from fossil fuels, like oil or LPG.

- **Operational buildings:** There are a number of projects underway to improve the energy efficiency and replace heating systems in operational buildings.
- **Leased buildings:** The Council will collect more data on these buildings and explore ways to help tenants improve energy efficiency and upgrade heating systems.
- **Relevant policies:** Carbon Management Programme (2016-2026), Orkney Sustainable Energy Strategy (2017-2025)

Overview

The Council has a responsibility to improve the carbon efficiency of the buildings that it operates and leases. Measures to improve carbon efficiency include energy efficiency measures and decarbonising heating systems. A number of Council operated and leased buildings will need to replace their fossil fuel-based heating systems to meet the 2045 net zero target. There are also a number of energy efficiency measures that would improve these buildings.

The Council is already working on several projects to improve the carbon efficiency of their operational buildings. The biggest barrier to taking further action in this area is energy and building data. In order to understand and plan carbon efficiency projects, the Council must know more information about the buildings it owns and operates. The Council is interested in developing a tool to track EPC information live.

Operational buildings

The Council owns and operates 271 non-domestic operational sites across Orkney. Operational buildings include schools, council offices, sports centres and more. Only 17% of the Council's operational buildings currently have valid EPCs. The Council is legally bound to do EPCs for the remaining 83% of operational buildings without EPCs.

The 2016-2026 Carbon Management Programme identifies a list of projects on Council-owned operational buildings to improve carbon efficiency. These projects are:

- Hamnavoe house – replacement of existing care home with high efficiency building using zero direct emission Ground Source Heat Pump.
- Stromness Swimming Pool, Thermal Upgrade and Heat Pump replacement of Boiler Plant.

- Stronsay Junior High School, Thermal Upgrade and Heating Systems Upgrade.
- Shapinsay Primary School, Thermal Upgrade and Heating System Upgrade.
- Hatston Pier and Ferry Terminal, LED Lighting Upgrade.
- South Pier, Stromness LED Lighting Upgrade.
- Kirkwall Pier, Marina Breakwater LED Lighting Upgrade.
- Papdale Primary School, Thermal Upgrade.
- Pickaquoy Centre, LED Lighting.
- Stromness Academy, Thermal Upgrade.
- Hope Primary School, ASHP replacement of oil boiler plant.
- Smiddybrae Care Home – GSHP replacement of oil boiler plant.
- St Andrews Primary School – GSHP replacement of oil boiler plant.

Further details on the progress of each project can be found in the LHEES Delivery Plan.

For the past 10-15 years all major new build project in the county have employed renewable heating systems, with Ground, Air and Sea source heat pumps all being used to make best use of the renewable resources available.

Building fabric is of primary concern when addressing energy efficiency, high levels of insulation are specified for all building elements in our new build programme and where possible u-values will exceeds current building standards requirements. With the maritime climate of Orkney, building are frequently exposed to windy conditions, the Air Tightness of buildings is therefore very important. All new build properties are now tested to ensure air infiltration is low, the use of warm roofs has been adopted in new build projects to ensure continuous insulated envelope both at hand over and in later operational use.

Existing operational buildings have also benefited from building fabric upgrades including external and internal wall insulation, Triple glazing, Underfloor insulation and Air tightness Improvements.

Leased buildings

In addition to operational buildings, the Council also owns and leases 89 buildings in Orkney to other stakeholders. Examples of leased buildings include offices, storage and multi-use spaces including workshop and/or storage. In multi tenanted properties, the Council pay for the utility bills initially which the tenant is then recharged for.

The majority of leased properties are let on a full repairing lease which means the Council has less control over how these buildings are operated compared to operational buildings. Tenants are normally responsible for arranging their own utility contracts. They also have less access to data on the operational performance of these properties

The Council has EPCs for 29% of leased buildings in Orkney. It is a priority for the Council to do EPCs on the remaining leased buildings without EPCs. The Council is also interested in exploring options to improve energy efficiency of leased buildings.

Priority D: Exploring heat networks for Council buildings

Summary of Priority D: Exploring heat networks for Council buildings

The final priority for Orkney Islands Council is exploring heat networks for non-domestic Council buildings. Heat networks can provide reliable and decarbonised heating to buildings. The Council has the opportunity to explore the implementation of these heat networks for its non-domestic buildings due to them possessing large, reliable and long-term demands for heat.

- **Areas of interest:** Central Kirkwall, West Kirkwall, Stromness, and Dounby.
- As buildings in Orkney are not very densely built, **it will be difficult to make a heat network cost effective**. Further analysis is needed to see if any of the potential heat networks will be feasible.
- Each of the potential heat networks has been chosen because there is **at least one building owned by the Council that requires a replacement heating system** of either a heat network, heat pumps, or other electric heating system. A heat network may provide a cost-effective opportunity when comparing with other options.
- There is some **funding available** for heat networks, including the Central Energy Efficiency Fund and the Scottish Public Sector Energy Efficiency Loan Scheme.
- **Relevant policies:** Local Development Plan (2017), Heat Networks (Scotland) Act, upcoming Heat in Buildings Bill

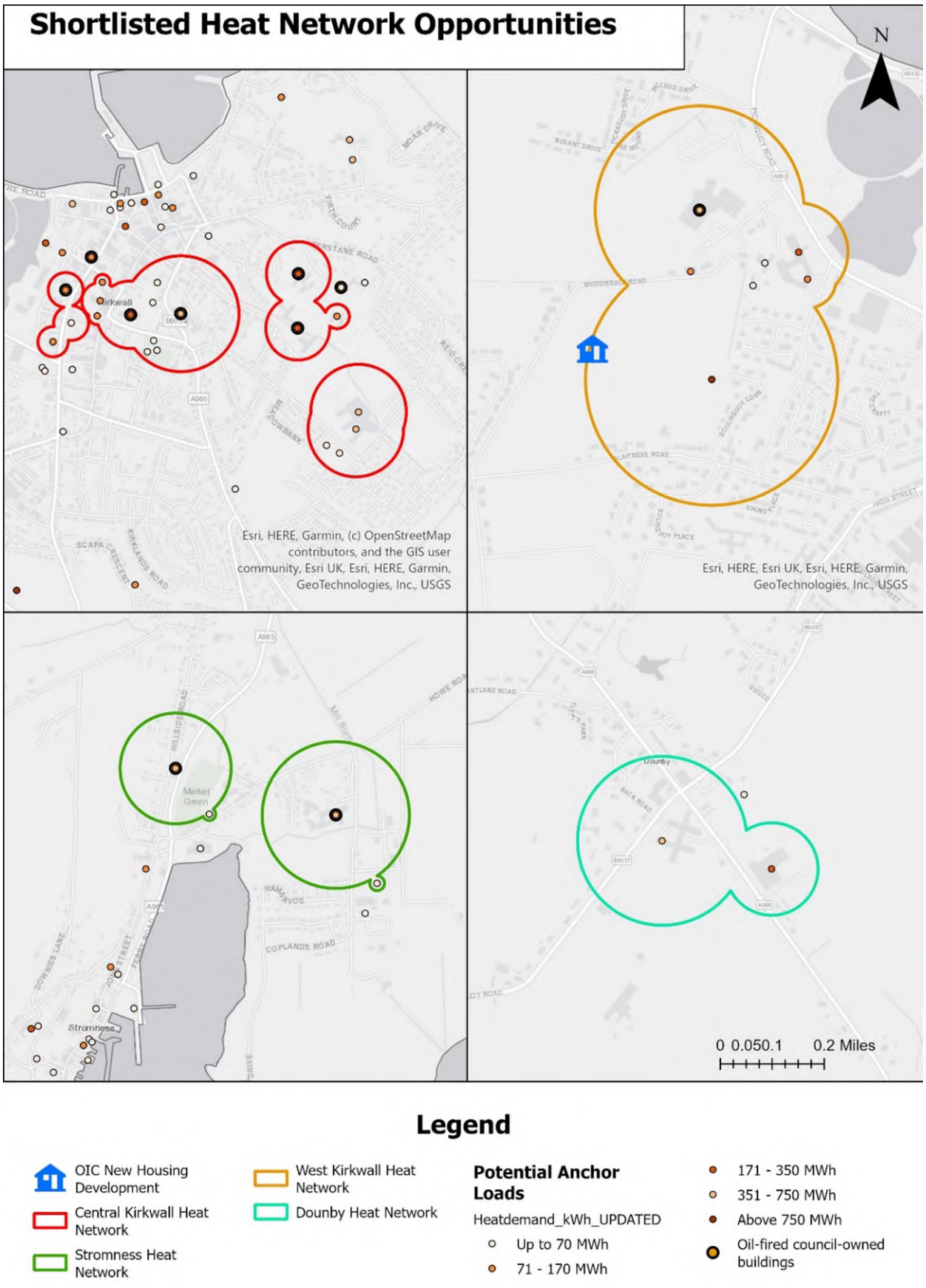
The Council has commissioned feasibility studies for several potential heat networks across Orkney. However, to date none have been identified as feasible or cost effective. This is due to a variety of reasons. The main reason is that heat networks need a large and consistent demand for heating to be feasible, which is difficult to provide from a dispersed building stock. For this reason, the Council is focussing on exploring heat network options for non-domestic buildings owned by the Council.

The Heat in Buildings Bill would require a ban on polluting heating systems in all buildings by 2045. Many non-domestic council buildings would need to transition to zero direct emission heating systems. Heat networks are one kind of permitted system under the bill.

Based on an initial analysis, the Council has identified potential heat networks in central Kirkwall, west Kirkwall, Stromness, and Dounby. The analysis done as part of this Strategy is intended to identify places where further feasibility studies should be conducted.

The map below identifies the four potential heat network zones in Orkney. The Council is investigating whether the individual heat networks can be connected together in each zone. For more information on each of the potential heat networks, see the LHEES Delivery Plan.

Figure 19: Shortlisted potential heat network zones in Orkney



Challenges

Challenges for domestic buildings

Owner occupied properties

In Orkney Islands Council area, 72% of properties are owner-occupied. Of these, 24% are in EPC bands A-C, meeting the proposed 2033 requirements for energy efficiency.[19] The remaining 76% will require improvements to the buildings fabric and/or heating system within the next 10 years.[20] Given that this deadline is several years away, owner-occupiers may lack motivation to take immediate action. The LHEES is part of the Council's efforts to create clear plans for the necessary changes across the entire building stock.

Private rented sector

In Orkney Islands Council area, 14% of properties are privately rented. Almost half (49%), of these are in EPC bands D or below. Under the upcoming Heat in Buildings Bill, privately rented properties will likely be required to meet a minimum energy efficiency standard equivalent to EPC band C by 2028 (replacing the existing requirement of EPC band E by 2025). Funding exists to support landlords to improve the energy efficiency of their properties. However, there is limited funding for heating system upgrades.

There is a 'split incentive' for landlords to upgrade their properties to improve energy efficiency. This means that whilst the private landlord is responsible for paying the cost of energy efficiency upgrades, they do not gain the financial benefits from cheaper energy bills.

Social housing

In Orkney Islands Council area, 14% of properties are social housing, with half of these being owned by the Council. As outlined in previous sections, a new energy efficiency standard is being developed for social housing. This will require Orkney Islands Council's and OHAL's social housing properties to undergo significant energy efficiency improvements. Social landlords will need assurance of long-term and adequate funding to fund projects and avoid rent increases, which would worsen fuel poverty.

Mixed tenure

In Orkney Islands Council area, 4% of properties are in mixed tenure buildings. While this is a relatively small proportion, they present a challenge when it comes to retrofit and heat decarbonisation.

Mixed-tenure buildings are often slow to renovate because, for some measures such as external wall insulation, all occupants in the building must agree to the installation and pay towards funding the project. If one occupant does not have the funding available or does not agree to proceed with the project, there is a risk that the project will not go ahead.

[19] Delivering net zero for Scotland's buildings - Heat in Buildings Bill: consultation
[20] This depends on how the targets will be measured. Future measurements (as described in Scottish EPC reform consultation) may set more ambitious targets specific to the fabric efficiency.

Exposed climate

Orkney is made up entirely of islands, leaving many of the households in the region located near the coastline at risk of exposure to the extreme weather. Over time this degradation can force homes into disrepair, most notably through leaky roofs and damp walls. Disrepair makes homes hard to heat and hard to treat/retrofit, because retrofit work can only begin following these often-costly repairs. THAW highlights the deterioration of housing due to weather as being one of the biggest barriers to retrofitting in Orkney. THAW has grants to fund repair works before retrofit projects, but funding is limited.

Geography

Orkney's population is sparse as it is spread across 20 permanently inhabited islands,[21] meaning 66.5% of the population live in areas classified as remote rural.[22] This results in just 22 people per km^2, which is significantly lower than the Scottish average of 70 per km^2.[23] This low density and rural setting can result in households becoming isolated and having far higher rates of heat loss compared to those in urban environments, which benefit from the shared warmth of neighbours in terraced housing or a block of flats. This exposed climate and high level of heat loss can leave Orkney residents requiring far longer periods of heating, at a far higher price, compared to the rest of Scotland. This extended heating season caused by the weather and geography illustrates why many Orkney householders are susceptible to the rural dimensions of fuel poverty, identified by the Scottish Rural Fuel Poverty Task Force in 2016.[24]

High upfront capital costs

To reduce energy demand, many properties in Orkney require significant improvements to the building fabric to overcome the consequences of the region's geography and exposure to the climate. Additionally, a lot of homes needing similar improvements are not located near each other. The combined effect of travelling between islands and having a poor economy of scale means retrofit costs are often much higher for Orkney householders compared to the rest of Scotland. For more expensive measures, like external wall insulation, this can come with very high upfront costs and long-payback periods. This can pose a barrier for privately owned homes (owner-occupiers and private renters), if the owners do not have the funds to invest in energy efficiency improvements upfront.

Building archetypes and bespoke properties

Orkney has a high percentage of unique/custom-built building archetypes and extensions compared to other local authorities. Retrofitting custom-built properties can be challenging because each building is unique, and each home may have uncommon or varying wall and floor types.

[21] Orkney Islands – Scotland.org (Orkney Islands | Scotland.org)
[22] Scottish Government Urban Rural Classification (https://www.gov.scot/publications/scottish-government-urban-rural-classification-2020/pages/5/)
[23] Orkney Islands Key Statistics (https://www.hie.co.uk/media/6343/orkneypluskeyplusstatisticsplus2019.pdf)
[24] Delivering affordable warmth in rural Scotland: Action Plan (Delivering affordable warmth in rural Scotland: action plan - gov.scot (www.gov.scot))

Requiring an individual, bespoke solution for each home makes it challenging to hire contractors for multiple buildings at once. Any work on bespoke properties will be more expensive than large-scale retrofitting of similar homes at once.

Cost of professional surveying

Due to the diverse range of archetypes across the region, it is essential that every house in Orkney being retrofitted receives an assessment. This is so that the correct measures and retrofit design are undertaken, based on the building's data. This assessment can be costly and can be a barrier for many householders beginning their journey to improve their home's energy efficiency, especially when there is little funding available for assessments.

Councils often overcome this issue in high density, urban areas by extrapolating the data of common archetypes so a reasonably accurate picture of retrofit work needed. However, this will not be possible in Orkney because of its diverse archetypes and low-density areas. Any estimation of property data will be inaccurate, so individual assessments are necessary before starting retrofit work.

Piecemeal funding

It can be difficult for the Council, OHAL, and other stakeholders to commit to large-scale retrofit projects because of the varied archetypes in the building stock and low density of buildings. As a result, the Council must instead apply for smaller scale projects which takes their diverse building stock and geography into account. However, this piecemeal funding structure can be very challenging and time consuming. It increases the overall cost of retrofit and uses up more of the Council's own resources through repeated tendering processes.

Funding restrictions

Most of the funding for energy efficiency and heat decarbonisation work in Orkney is provided by Scottish or UK Government. Due to this, the requirements for funding are often designed for the entire country rather than tailored to the needs of Orkney specifically. Warmworks and the Council work with funders to approve exceptions for Orkney. However, there are limits.

For example, national funding schemes do not offer as many grants for air-to-air heat pumps. In most of Scotland, these types of heat pumps are not necessarily the best choice because most households are switching from a wet system/gas boiler. In Orkney, many homes could benefit from an air-to-air heat pump as they are sometimes cheaper to install. However, there is limited grant funding available for these types of heat pumps.

Grid constraints

Switching all buildings to electricity from oil and LPG will put additional pressure on the electricity grid. The grid will need to be reinforced to enable large scale heat decarbonisation. This will need to be managed through engagement with the distribution network operator to ensure that LHEES delivery will be aligned with grid investment planning.

Skills gap

Apprenticeships can be a helpful tool to train more installers and increase the size of the decarbonisation workforce. However, opportunities are few because the cost to employers is so high. This is especially the case for rural areas, such as Orkney, where upskilling opportunities are limited.

Local supply chain

There are major shortfalls facing the retrofit and decarbonisation industry in trades such as plumbers, plasterers, electricians, HVAC (Heating, Ventilation, and Air Conditioning) specialists, surveyors and Retrofit Coordinators.[25] Investment is needed to encourage existing contractors to upskill, obtain necessary accreditations and train young workers to enter the retrofit and decarbonisation workforce.

Warmworks is currently working with installers to support the delivery of HEES:ABS. For example, Warmworks supports new electrical contractors with their accreditations so the local supply chain can deliver heat pumps for HEES:ABS.

The Just Transition Commission has stated that the market will not drive the change required, and systemic change must be driven by legislation and regulation from the Scottish Government.[26] Similarly, reforming public procurement mechanisms can create demand and support growth of local workforces. The Scottish Government has committed to a £100m Green Jobs Fund between 2021 and 2026, which will be used to support the development of sustainable and low-carbon products and services.

Challenges for non-domestic buildings

Poor data accuracy

More accurate fuel poverty data and updated EPC data is essential to making correct models in LHEES. In areas where updated information is difficult to retrieve, this can prevent effective delivery. Council-owned, non-domestic operational buildings are largely up-to-date. However, there is limited data on Council-owned buildings that have been leased out externally long-term. This is because EPCs are required when new leases are signed, but the leases are over long periods so many buildings do not have recent EPCs. This limits how much the Council can plan improvements, because it does not have an accurate picture of its leased buildings.

Data for non-domestic properties not owned by the Council is difficult to obtain, the EPC register has very few entries due to the low turnover of properties. The Building Assessment Reports required to be completed as part of the heat networks assessment, may provide useful information in the absence of an EPC and efforts will be made to assist in the production of Building Assessment Reports.

[25] ClimateXChange (2022) Clean Heat and Energy Efficiency Workforce Assessment
[26] Just Transition Commission (2023) Scotland's Retrofit Workforce: A Briefing on the Built Environment and Construction

Funding avenues

Most of the funding streams available are focused on domestic rather than non-domestic properties, due to the greater impact this will have on alleviating fuel poverty and reducing carbon emissions across the region. This will make it difficult to find funding options that are focused on improving the energy efficiency of Orkney Islands Council's non-domestic buildings.

Barriers to developing heat networks

Low heat density in Orkney

Orkney has a low population density, and buildings are generally dispersed. There are a small number of non-domestic Council buildings with heat demand high enough to warrant the exploration of a heat network.

High use of Heat Pumps by commercial properties for heating, storage heating and refrigerant heat pumps systems will not be easily transitioned to heat networks.

Housing tends to be electrically heated, moving to HN would require Wet Heating System to be installed.

Anchor loads tend to be some distance from one another, again low density of buildings results in low heat density.

Major non-Council loads already on Low Carbon heating (Balfour Hospital, Highland Park Distillery).

Opportunities for Orkney Islands Council

Decarbonising heat and improving energy efficiency provide a range of economic and development opportunities for communities, the Council, businesses, charities and individuals in Orkney.

Domestic retrofit opportunities

Supply chain development

The LHEES Delivery Plan will outline the substantial pipeline of work required to achieve the net zero targets in Orkney. A clear pipeline will help to improve the local availability of 'green skills' in Orkney, by encouraging the existing labour force to invest in upskilling young talent and provide them with opportunities. Warmworks is already working with installers to train and hire more labourers and plasterers to install more external wall insulation for the Area Based Scheme.

There is a shortage of electricians in Orkney which limits the number of heat pumps that can be installed. Warmworks has already supported contractors to complete their accreditations, and is working to boost the number of electricians in the region. This will ensure that the skills and capacity are in place to add heat pumps onto the list of HEES:ABS measures available to householders.

Addressing disrepair

Identifying house disrepair is one of the main barriers to undergoing retrofit works, either because of the exposure or old archetypes. THAW has developed the Flex Fund grant which offers between £250 to £2000 for households in extreme fuel poverty. The grant can go towards small-scale repairs, such as fixing leaky roofs or replacing outdated septic tanks, as well as clearing out homes. This support helps remove barriers for householders, particularly those who are vulnerable or live alone, by ensuring necessary work can be completed. The Flex Fund is unique because it provides funding for projects required to prepare a home for retrofit. It allows households to get additional grant funding, for instance from HEES:ABS, for larger projects.

Retrofit assessment upskilling

THAW is looking to train staff in a retrofit assessment qualification to offer detailed home assessments. This will enable THAW to carry out insulation repairs in the future, as a cost-effective way for householders to improve their energy efficiency. The development of THAW's home assessments could make retrofitting more accessible and enable widespread home assessments across the region.

This increase in accurate housing data could open the possibility of moving away from this piecemeal approach and instead to grouping similar archetypes and measures together more accurately. This would be crucial to enabling a greater economy of scale and reducing the cost of implementing energy efficiency measures across Orkney.

Area Based Scheme

The Area Based Scheme has been effective at improving energy efficiency and fuel poverty rates in Orkney. The scheme has grown from providing £800,000 worth of retrofit projects in 2015/16 to £1.7 million in 2022/23. HEES:ABS is one of the key drivers of

improving energy efficiency in private tenure properties across Orkney and this is expected to grow in the coming years. The scheme is led by the Council, with Warmworks as the managing agent.

16% of owner-occupiers and 13% of private tenants currently live in homes with an EPC band F or worse, which indicates very poor energy efficiency. In order to meet the challenge, the Council aims to increase their HEES:ABS funding to £4 million by 2026, pending Scottish Government approval, as detailed in the Local Housing Strategy. Expanding this funding provides many opportunities to help tackle this large proportion of private tenure households with poor energy efficiency, particularly those in more isolated areas who have previously been unable to get retrofit work done.

The 2024/25, HEES:ABS has broadened its measures to include high heat retention storage heaters and loft top-up insulation. Cavity wall insulation being considered (not currently offered) to provide an avenue for building archetypes that are unsuitable for external wall insulation, but could still benefit from fabric efficiency measures. Adding additional funding may make it possible to add more types of energy efficiency measures in the future.

A Local Engagement Manager has recently been hired to promote the scheme to smaller island communities, which often struggle to access services due to isolation. These communities are particularly vulnerable to extreme fuel poverty because of poorer housing stock and ongoing exposure to harsh weather conditions. Further growth of HEES:ABS could see more remote communities being targeted for larger-scale retrofitting projects. Householders in these communities would almost certainly be eligible for the extreme fuel poverty uplift, which grants additional funding towards the measures.

Stakeholder collaboration

Fuel poverty stakeholder collaboration

Fuel poverty is a pervasive challenge across all of Orkney, and many organisations across the area collaborate to support householders. Examples of collaboration include the Cost of Living Task Force, the Orkney Money Matters project and the Fuel Poverty Task Force.

One outcome of collaboration is a strong referral system between fuel poverty organisations, including the Council, Warmworks, and THAW. The network enables those suffering from fuel poverty to be referred to Warmworks, to access funding for energy efficiency measures. It also directs people to THAW, which offers energy efficiency advice and access to other grants and funds. This network has proven highly effective, demonstrating the success that continued collaboration among stakeholders can achieve in addressing Orkney Islands Council’s LHEES priorities.

Next steps

Summary of context

Orkney Islands Council's LHEES sets out how to improve energy efficiency of domestic and non-domestic buildings, address fuel poverty through energy efficiency, and explore heat network options. This Strategy informs, and should be read alongside, the LHEES Delivery Plan.

The Strategy will support the Council and its community planning partners to scale-up and align existing programmes, and to increase the scale and pace of retrofit and heat network development, that is needed to meet the national target of net zero by 2045.

Overall, the content of Orkney Islands Council's LHEES has been informed primarily through a data-driven approach and by working with close partners of the Council. The Strategy outlines a number of challenges which need to be overcome in order to decarbonise Orkney Islands Council's buildings. It also highlights opportunities, including four potential heat networks.

There is a statutory duty on the Council to update the LHEES every five years. Due to the urgency of the climate emergency, and the rapidly evolving policy landscape, the Strategy and Delivery Plan will both be reviewed and updated on an annual basis, where relevant. This means they should be treated as live documents which will to respond to the introduction of new standards, regulation, and delivery programmes, to any changes in the LHEES process, and to future opportunities in Orkney.

Summary of priorities and actions

Orkney Islands Council identified the following priorities for heat and energy efficiency:

- Making Orkney's homes energy efficient.
- Alleviating fuel poverty.
- Improving carbon efficiency in Council buildings.
- Exploring heat networks for Council buildings.

LHEES Delivery Plan

The Council's LHEES Delivery Plan identifies tangible and specific actions in the next five years to achieve the four priorities set out in this Strategy. The actions are organised by tiers:

- Tier 1: actions that are immediate and/or already in progress.
- Tier 2: actions to take in the next 1-2 years.
- Tier 3: actions to take in the next 3-5 years.

This document and the Delivery Plan will be reviewed regularly.

Glossary

Defining terms

Terms	Description
Baselining	Baselining is the purpose of understanding at local authority or strategic level, the current status of the buildings against the Priorities, Targets and Indicators set out in the Baseline tool.
Building-level Pathway	As part of LHEES Stage 5, a building-level pathway is the outcome of the assessment undertaken using PEAT. It provides the likely energy efficiency retrofit technologies, as well as the low carbon heating system (where applicable) to support building level decarbonisation.
Criteria	Criteria are the settings applied to the Indicators for each Priority in order to support Baselining, Strategic Zoning and the identification of Delivery Areas. An example of Criteria is a simple “no” applied to the indicator of “wall insulation (Y/N)” to identify properties with uninsulated walls. Another example is the definition of an “anchor load” within the Heat Networks analysis, which applies a minimum threshold to the “heat demand” Indicator. The LHEES methodology provides a set of default Criteria that local authorities may wish to use, with flexibility to update and augment these to support local needs or for more focused analysis linked to specific actions and project identification within the Delivery Plan.
Data - Alternative	Alternative data can overwrite the Core data to improve accuracy (national to local level of detail, e.g. local housing data to overwrite fields in Home Analytics).
Data - Core	Core data is the data that is essential to complete the minimum requirements of the LHEES analysis. Core data will come from national datasets e.g. Home Analytics or the Scotland Heat Map.
Data - Supplementary	Supplementary data allows inclusion of additional Indicators to inform specific, local priorities & targets; also, Supplementary data can be used in GIS investigation to complement the Core analysis carried out in any assessment. An example of Supplementary data would be the inclusion of low carbon heat supply information layers within a district heating analysis.
Data Zone	Data zones are groups output areas which have populations of around 500 to 1,000 residents.
Delivery Area	Delivery Areas (sometimes referred to as Delivery Level Areas) are a term used for all LHEES Priorities with the exception of Heat Networks. These Areas will be an

Terms	Description
	important starting point for identifying a range of projects, regulation and actions that are within the competence of the Scottish Government and local authorities (projects and actions to be developed in the LHEES Delivery Plan). Delivery Areas are at a higher granularity than Strategic Zones, are generated as part of LHEES Stage 4 and are presented in the LHEES Delivery Plan. Guidance is provided for one approach to identify Delivery Areas, but there are other approaches that local authorities may wish to use. The identification of Delivery Level Areas through LHEES will be indicative only, with further investigation being required to determine the viability of progressing projects associated with the area identification activity.
Detailed practitioner guidance Steps	These Steps form part of the detailed practitioner guidance in LHEES Stage 4, Generation of Initial Areas to set out particularly suitable heat network zones and to support project identification.
Indicator	For a given Priority, the purpose of an Indicator is 1) To act as a key information field to help characterise the local authority using the Baseline tool as part of LHEES Stage 3 (authority-wide and at a strategic level); 2) To act as a key information field to support strategic zoning and generation of initial delivery areas (as part of LHEES Stage 3 and 4); 3) if suitable, to act as a key information field to measure progress against Targets over the duration of the LHEES - set out in LHEES Stage 8, LHEES Delivery Plan. For some Priorities, one Indicator may be sufficient, but for others a range may be appropriate. The LHEES methodology sets out a core set of default Indicators that local authorities may wish to use, with flexibility to update and augment these to support local needs or for more focused analysis linked to specific actions and project identification within the Delivery Plan.
Intermediate Zone	Intermediate zones are a statistical geography that are designed to meet constraints on population thresholds (2,500 - 6,000 household residents), to nest within local authorities, and to be built up from aggregates of data zones.
LHEES Delivery Plan	An LHEES Delivery Plan is an action plan that enables a local authority and its partners to work towards delivery of the changes identified in the LHEES Strategy. Actions will contribute to achieving Scotland’s statutory targets on net zero greenhouse gas emissions and fuel poverty, as well as enabling the delivery of changes to buildings and local infrastructure needed to fulfil the Scottish Government’s objectives relating to heat and energy efficiency in buildings.

Terms	Description
	The Delivery Plan will clarify stakeholder roles and responsibilities in delivering the Strategies; build on existing plans and policies, such as HEES:ABS Plans, as far as possible and; coordinate across local partners and provide a mechanism for identifying new delivery actions.
LHEES Priorities	The LHEES Priorities are a list of technologies, building typologies and policy priorities that the LHEES Methodology uses to identify and target interventions. They include: - Heat networks - Off-gas grid buildings - On-gas grid buildings Secondary outcomes include: - Poor building energy efficiency - Poor building energy efficiency as a driver for fuel poverty - Mixed-tenure, mixed-use properties and historic buildings
LHEES Stages	There are 8 LHEES Stages. The purpose of the LHEES Methodology is to enable the local authority to complete LHEES Stages 1 to 6. The completion of these Stages will provide the local authority with the data analysis and evidence base to enable them to complete their LHEES Strategy and Delivery Plan documentation. There are two LHEES guidance templates included alongside this methodology– LHEES Strategy guidance and LHEES Delivery Plan guidance. The completion of these two templates will satisfy the completion of LHEES Stages 7 and 8. The 8 LHEES Stages are: 1 - Policy and strategy review 2 - Data and tools library 3 - Strategic zoning and pathways 4 - Generation of initial delivery areas 5 - Building-level pathway assessment 6 - Finalisation of delivery areas 7 - LHEES Strategy 8 - LHEES Delivery Plan
LHEES Strategy	An LHEES Strategy identifies what needs to be done to change buildings and relevant local infrastructure by 2045 to fulfil the Scottish Government's objectives and local priorities relating to heat and energy efficiency in buildings. These interventions might occur at building level or in energy supply networks or in a combination of both. The Strategy will reflect national and local priorities, policies and wider strategies. Where feasible, it will take into account 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.

Terms	Description
Mixed-tenure, mixed-use and historic buildings	Mixed-tenure and mixed-use buildings could include a mixture of owner occupied, private rented and social housing, and also non-domestic uses, or simply multiple ownership within the same tenure. Historic buildings include the buildings that are within conservation areas or those that are listed buildings. These categories may require established alternative approaches and regulation for the installation of low carbon heat and energy efficiency solutions and where specific advice and support might be available relating to the installation of these solutions.
Potential Zones	The Heat Networks Priority follows a distinct methodology to the other LHEES Priorities – Stage 3 does not apply and the outputs from Stage 4 are of a different type, showing Potential Zones for Heat Networks as opposed to the identification of Delivery Areas (notionally using a 100m raster approach). The Heat Networks Priority analysis and activity carried out within LHEES is also anticipated to support activity related to formal zone designation as required by the Heat Networks Act. For these reasons, the analysis carried out in Stage 4 for Heat Networks is to identify Potential Zones rather than the otherwise used naming convention of Delivery Areas. The Potential Zones identified are to be included in the LHEES Strategy and could also inform actions around further investigation / progression within the LHEES Delivery Plan.
Raster	A matrix of squares, or grid, used as a method of data analysis in GIS. Each cell in the grid contains a value representing information on the cell's contents.
Strategic Level Zone	Strategic Zones (sometimes referred to as Strategic Level Zones) are a term used for all LHEES Priorities with the exception of Heat Networks. Strategic Level Zones are identified in Stage 3 and are presented in the LHEES Strategy. These zones offer a visualisation of the potential pathways to decarbonise the building stock at a local authority level, split out by intermediate zone level. They are useful to understand the baseline performance, the scale of potential and initial areas of focus. Strategic Zones could be used to inform or prioritise focus areas for the more granular identification of Delivery Level Areas. The identification of Strategic Zones through LHEES will be indicative only.
Targets	Targets are the measurable aspect of the Priority and are likely to be taken directly from national and/or local policy documentation, for example net-zero by 2045, or EPC C by 2040. Targets are likely to comprise of end-point targets and milestone targets and would sit along a timeline within (and

Terms	Description
	beyond) the LHEES. This timeline would help to prioritise the types of projects undertaken within the LHEES over its duration.
Weighting	For some Priorities, one Target and Indicator may be sufficient, but for others a range of Indicators may be appropriate to contextualise and characterise performance against a Target and/or progress towards a Priority. If multiple Indicators are used in strategic zoning or the identification of delivery areas, a Weighting can be applied based on the importance of each. The LHEES methodology sets out a core set of default Weightings for instances where multiple Indicators are suggested as a default setting. There is flexibility to update and augment these to support local needs or for more focused analysis linked to specific actions and project identification within the Delivery Plan.

Appendix

Acronyms and abbreviations

Acronym	Description
EESSH	Energy Efficiency Standard for Social Housing
EPC	Energy Performance Certificate
EST	Energy Saving Trust
GIS	Geographic Information System
HEES:ABS	Heat and Energy Efficiency Scotland: Area Based Schemes
IZ	Intermediate Zone
LA	Local Authority
LHEES	Local Heat and Energy Efficiency Strategy
LPG	Liquefied Petroleum Gas
mxd	Map Exchange Document
PEAT	Portfolio Energy Analysis Tool
SAP	Standard Assessment Procedure
ToC	Table of Contents
UPRN	Unique Property Reference Number

Appendix A: Additional national policy drivers

	Name	Description	Targets/aims
Climate Change	Climate Change (Emissions Reduction Targets) (Scotland) Act 2019	Targets to reduce Scotland's emissions of all GHGs to net-zero.	2045: Net zero GHG emissions 2020: 56%
	Update to the Climate Change Plan 2018–2032	Sets out a pathway to deliver Scotland's climate change targets, including ambitions for Scotland's buildings.	Multiple targets, including: 2030: At least 50% of building heated using zero emission systems
Housing	Heat in Buildings Strategy 2021	Sets out a pathway to reduce emissions from buildings and to remove poor energy performance as a driver for fuel poverty.	By 2030, majority of buildings should achieve EPC band C, and 1 million homes use zero emission heating
	Heat in Buildings Bill (currently at consultation stage)	Proposed new laws around minimum energy efficiency standards and prohibiting direct emissions heating systems.	Minimum energy efficiency standards to be met by: 2028 for Private landlords 2033 for owner-occupiers
	Social Housing Net Zero Standard	Proposed new energy efficiency standard that replaces EESSH2. Sets a minimum fabric efficiency rating for each home rented by social landlords. Under consultation.	2033: Fabric energy efficiency rating 2045: Clean heating in all socially rented homes
	Housing to 2040	Sets out the vision and route map for housing in Scotland to 2040.	Existing homes are adapted and retrofitted to improve their energy efficiency and decarbonise their heating
Energy	Heat Networks (Scotland) Act 2021	Requires local authorities to review whether one or more heat network in the local authority is suitable for construction.	Achieve a combined supply of thermal energy by heat networks of: 2030: 6 TWh

	Name	Description	Targets/aims
			2027: 2.6 TWh
	Heat Networks Delivery Plan	Sets out how provisions of the Heat Networks (Scotland) Act 2021 will contribute to increasing heat networks in Scotland.	The targets set out in the Heat Networks (Scotland) Act 2021.
Fuel Poverty	Fuel Poverty (Scotland) Act 2019	Defines fuel poverty and requires the creation of strategies to tackle fuel poverty.	2040: < 5% of households in fuel poverty, < 1% in extreme fuel poverty.
	National Planning Framework 4	Sets out Scotland's spatial principles, regional priorities, national developments, and national planning policy.	Multiple

Appendix B: Datasets used in the development of this LHEES

Data Resource/Tool	Description	Data Format	Weblink
Scotland Heat Map (Summer 2020)	Valuable spatial dataset with point-level heat demand data for all properties in Scotland / various other useful data fields and additional information layers. Updated approximately annually. Source data (including from public sector) requested at each update.	Spatial geodatabase	https://www.gov.scot/publications/scotland-heat-map-documents/
Home Analytics v3.7 (Feb 2021)	Database covering all domestic properties in Scotland, built using information from the domestic EPC register and other sources; statistical models are used to provide estimates giving 100% property coverage	Excel spreadsheet	https://energysavingtrust.org.uk/service/home-analytics/
Non-Domestic Analytics (version 1.1)	Database covering all non-domestic properties in Scotland, built using information from the non-domestic EPC register and various other sources, with extensive modelling to provide estimates giving 100% property coverage	Excel spreadsheet	
Portfolio Energy Analysis Tool (PEAT)[VS1]	Tool to accompany Home Analytics; can be used to investigate and cost intervention options for a portfolio of up to 500 properties; can be driven by a price cap or a target EPC score	Tool hosted online; input / output as Excel spreadsheet	https://homeanalyticspeat.est.org.uk/
One Scotland Gazetteer (OSG) - Address Gazetteer (AG)	Central database for all addresses within an authority	GIS API or csv file	
Local Development Plan sites	Information, ideally in spatial format, on development sites in the LDP and LDP2. To include detail on development type and expected build-out where available.	GIS shapefiles	
	SEPA waste heat data	Online interactive map	

Data Resource/Tool	Description	Data Format	Weblink
Waste sites capacity tool (SEPA)		viewer/ Excel spreadsheet	https://www.sepa.org.uk/data-visualisation/waste-sites-and-capacity-tool/
Green Heat in Greenspaces (GHiGs)	GHiGs investigated the suitability of many types of urban open space across Scotland for use as low carbon heat sources, heat storage sites and heat transmission corridors.	Excel spreadsheet	https://www.greenspacescotland.org.uk/introducing-ghigs#:~:text=Green%20Heat%20in%20Greenspaces%20(GHiGs)%20is%20a%20project%20within%20the,Scottish%20low%20carbon%20heat%20transition
Geographic boundary datasets	Information, ideally in spatial format, on council-owned assets.	GIS shapefiles	https://borders.ukdataservice.ac.uk/bds.html

Appendix C: Datasets and Limitations of the LHEES approach

Home Analytics

Home Analytics Scotland provides essential data on the Scottish housing stock. This data is provided down to the address level and is available to the Scottish Government and local authorities to assist them in developing, targeting and delivering policies, schemes and programmes designed to improve energy efficiency, install renewable technologies and alleviate fuel poverty. The core datasets that make up Home Analytics Scotland are:

- Energy Performance Certificate data.
- Home Energy Efficiency Database (HEED) data.
- Energy Saving Trust Home Energy Check (HEC) data.
- Ordnance Survey AddressBase, MasterMap Topography layer and StreetMap data.
- Scotland Gas Networks data.
- Scottish Census data.
- Scottish Index of Multiple Deprivation (SIMD) data.

While there is full coverage of the Council's property stock, the data is not entirely accurate given that not all properties are surveyed; where gaps exist property information will have been estimated based on neighboring characteristics using statistical modelling.

Fuel poverty figures in the dataset only act as an indication. To date, there has not been a comprehensive dataset detailing fuel poverty given the resources required to do so and the risk of identifying individuals and communities with sensitive information, such as income data. The fuel poverty data is therefore probability driven and users should not treat figures as an absolute number or percentage but rather a likelihood of fuel poverty. An instance where fuel poverty data lacks confidence and leads to a poor representation of the geographical area is in households in affluent areas who may be labelled as in fuel poverty because they live in stone buildings with poor heating capture.

Currently, fuel poverty data is calculated by the following:

- Probability of wall being uninsulated.
- Loft Insulation Prediction.
- Loft Insulation: 0-99mm.
- Loft Insulation: 100-249mm.
- Loft Insulation: >250mm.
- No loft.
- Excess Cold Category 1 Hazard.
- Probability of Fuel Poverty (Fuel Bill >10% of Income).

Non-domestic Analytics

Non-domestic Analytics is a new data set developed by Energy Saving Trust on behalf of Scottish Government, to provide more property-level details about the non-domestic building stock in Scotland. The dataset brings together property details from a variety of data sources such as the Scottish EPC Register, Ordnance Survey, Scottish Assessors and

BEIS, to establish property attributes and energy profiles for each non-domestic building. Like Home Analytics, gaps in these records are imputed using a series of statistical models. The final database is therefore a combination of known and modelled records.

There are limitations on the confidence of using Non-Domestic Analytics due to the lack of robust information from the non-domestic sector compared to the domestic sector with much of the data relying on significant modelling. Therefore, users should not take figures as an absolute number or percentage but rather an estimation. Due to the reliance on probability, analysis was limited to exploring groupings of building typologies.

The dataset relies on the use of an external categorisation of property typology (Ordnance Survey) resulting in a deviation in standard interpretation of property classes. For example, church can be classified as either a commercial or place of worship depending on its main function, while residential (non-domestic) buildings can also indicate short-term lets and sheltered accommodation.

Scotland Heat Map (2020)

Containing both domestic and non-domestic heat demand data, the Scotland Heat Map is an important resource to identify the opportunities for efficient heat supply projects and support their development. Developed with data provided by public and private sector organisations including all local authorities, it will help to identify opportunities for new and expanding heat projects including efficient supply projects, such as district heating. The dataset also contains various additional layers such as Geology and hydrogeology, waste energy supply points, and existing heat networks.

As the dataset was captured in the summer of 2020, demand data exists only as a snapshot in time. Since network viability is based around the demand of individual buildings, the difference between modelled and expected demand may affect that viability.

PEAT-OR tool

The PEAT-OR tool, developed by EST, accompanies Home Analytics. It is used to investigate cost intervention options for a portfolio of up to 500 properties. The tool has a relatively high degree of flexibility to be tailored to reveal target areas and properties by price cap or a target EPC score.

However, there are the following limitations:

- Individual measures cannot be isolated or removed; the tool will show all possible interventions. This means some impractical measures are proposed such as installing wind turbines.
- Costs and Carbon savings are calculated for all possible measures, this means it is not possible to investigate the impact of individual measures.
- Fuel cost data used within PEAT-OR was released at the start of July 2023, with fuel costs modifying frequently these costs are not totally accurate.

These limitations will affect the outputs from Stage 5, which should be understood as estimates only.

Ordnance Survey

Various mapping data, central to the development and use of Scotland's Heat Map and other GIS information sources. OS product data and licenses are required to use SHM and other OS-derived datasets. Key to GIS analysis elements of LHEES.

One Scotland Gazetteer

Central database for all addresses within an authority. Key to GIS elements of LHEES for identifying multi-tenure non-domestic properties.

Appendix D: LHEES stage descriptions

Stage 1: Policy and strategy review

A policy review was carried out to highlight national, regional and local policies that are linked to, impact, or could be impacted by LHEES. Results from this review, along with initial stakeholder mapping were logged in the policy review template for reference during subsequent stages of the LHEES.

Stage 2: Data and tools library

This stage involves identifying and maintaining a record of the data and tools used to support analysis in the subsequent stages of the LHEES process. The record captures data sources, ownership rights, requirements for the LHEES Considerations and data format.

Stage 3: Strategic zoning and pathways

The purpose of LHEES Stage 3 is to support local authorities to understand the current energy efficiency and heat decarbonisation performance of the building stock at a local authority wide level. It also supports further analysis to set out Strategic Zones and pathways for each LHEES Consideration, as far as reasonably possible, at data zone level, a commonly used standard for statistical reporting of socio-economic data.

These Strategic Zones identify potential solutions for inclusion in the LHEES Strategy (Stage 7). The analysis sets out the strategic starting point for the generation and prioritisation of Delivery Areas (Stage 4), as well as further engagement and actions for the Delivery Plan (Stage 8).

LHEES Stage 3 is supported by both the ‘Domestic Baseline Tool’ and the ‘Non-domestic Baseline Tool’. The Domestic Baseline Tool was developed by Zero Waste Scotland for analysis of the domestic sector drawing on Home Analytics as the core source data to support this. The tool was used to generate a performance baseline of buildings and to set out Strategic Zones with respect to the LHEES Considerations. The ‘Non-domestic Baseline Tool’ was developed following the release of Non-Domestic Analytics, to support better understanding of the breakdown of non-domestic building typologies and by other criteria, such as age, heating system type or floor area category. Given the limitations of the non-domestic dataset, the outputs are focused on providing property count and / or total heat demand information for these groupings, rather than suggesting suitability for specific interventions.

When assessing heat decarbonisation options in the tools, heat pump installation is one of the suggestions. According to the LHEES methodology, the level of heat pump ‘readiness’ in domestic properties are sorted into four categories:

Building category	Description
Category 0	Currently have a low or zero direct emissions heating system, or heat network connection
Category 1	“Heat pump ready” buildings that are well-suited to heat retrofit with minimal other changes.

Building category	Description
Category 2	Secondary potential for heat pump retrofit. Require some fabric and/or distribution systems upgrades.
Category 3	Significant upgrades required to be heat pump ready.

In the standard Zero Waste Scotland methodology, Category 1 properties are assessed based on a range of indicators including wall insulation, glazing status, wet heating system and loft insulation prediction. For Orkney Island's LHEES, only wall insulation was accounted for in Stage 3 given that this was the most relevant factor to the local domestic property stock.

Stage 4: Generation of initial Delivery Areas

Stage 4 is informed by the LHEES Strategy and analysis from Stages 1-3. The purpose of Stage 4 is to support the Council's decision making by generating initial Delivery Areas for each of the LHEES Considerations. This Stage uses GIS to generate initial Delivery Areas at a higher granularity than LHEES Stage 3, to enable the Council to understand specific locations of potential Delivery Areas within a Strategic Zone or across the whole local authority. The level of granularity is advised at 250m^2 to reflect an appropriately sized delivery area without the risk of identifying individual properties.

This analysis is the starting point for more detailed engagement, building level assessment of interventions and cross-checking against the policy and strategy review (stage 1) to enable finalisation of the Delivery Areas (LHEES Stage 6). These Delivery Areas should then support actions in the Delivery Plan (Stage 8) that are within the competence of the Scottish Government, local authorities and wider partners.

Stage 5: Building-level pathway assessment

The purpose of LHEES Stage 5 is to support with delivery area identification of Stages 4 and 6 to establish in more detail the type of intervention(s) required to decarbonise the building from a heating and energy efficiency perspective. This stage provides an understanding of the costs and the energy and carbon savings associated with interventions.

Stage 5 enabled Orkney Island Council to select and analyse domestic buildings for assessment in the Energy Saving Trust's PEAT-OR, for the domestic sector only. PEAT-OR enables the local authority to evaluate energy efficiency and heat decarbonisation retrofit options in terms of costs and carbon emissions reduction. Results can be presented at the building level or at a zone level. The buildings to be evaluated can be selected and taken from the analysis in LHEES Stage 3 or Stage 4.

It is recognised that PEAT-OR has not been designed specifically to support LHEES. Therefore, in this LHEES, a PowerBI report has been developed to enable the Council to explore potential decarbonisation results in an interactive and customised manner to assess viability and decision making of delivery areas.

Stage 6: Finalisation of Delivery Areas

During this stage, Strategic Zones, initial Delivery Areas and any building-level assessment were considered alongside the detail included as part of the policy and strategy review and all stakeholder engagement undertaken. The outcomes from this stage are documented in the Stage 8 Delivery Plan.

Appendix E: Deviations from standard LHEES methodology

LHEES Consideration	Standard methodology	Deviation from standard LHEES method
Off-Gas Grid Buildings	Categories 0, 1, 2 and 3 properties determined according to the following factors: Unlisted property Not in a conservation area Wall insulation Double/triple glazed windows Wet system replacement (except electric and no heating/hot water systems) Loft insulation prediction (99mm +)	Only wall insulation is considered in determining Category 1 properties for all heating types (boilers, room heaters, storage heaters, no heating/hot water systems). Additionally identified solar PV suitability for category 1 properties.
On-Gas Grid Buildings	Categories 0, 1, 2 and 3 properties determined according to the following factors: Unlisted property Not in a conservation area Wall insulation Double/triple glazed windows Wet system replacement (except electric and no heating/hot water systems) Loft insulation prediction (99mm +)	Only wall insulation is considered in determining Category 1 properties for all heating types (boilers, room heaters, storage heaters, no heating/hot water systems). Additionally identified solar PV suitability for Category 1 properties.
Poor Building Energy Efficiency	Energy efficiency score is determined by wall insulation status, loft insulation status and double glazing.	As most programmes and projects are wall insulation focused, the weighted Energy Efficiency map only includes wall insulation potential, not glazing and loft.
Poor Building Energy Efficiency and Fuel Poverty	Energy efficiency and Fuel Poverty score is determined by wall insulation status, loft insulation status and double glazing and Fuel Poverty.	As most programmes and projects are wall insulation focused, the weighted Energy Efficiency and Fuel Poverty map only includes wall insulation potential, not glazing and loft.

Appendix F: Detailed methodology for the identification of potential heat network zones

Analysis was undertaken to identify the areas where heat networks present a decarbonisation pathway that could be of strategic importance for Orkney Islands Council. Heat Data Point non-domestic properties were filtered to only include semi-public and public buildings. These were refined using OS AddressBase classification codes identified as semi-public or public by the Green Heat in Greenspaces project. Additionally, a sense check of building names was carried out to identify council-owned buildings. If that was the case, the buildings were added to analysis. This approach was chosen so that only non-domestic buildings that the Council has full or partial control over are treated as potential anchor loads in the heat network zoning. When defining anchor loads, public and council-owned buildings have been prioritised as the Council has greater control over the operation of these buildings.

Heat network zones have been identified based on a 4,000 kWh/yr/m linear heat density (a means of relating annual heat demand to a distance). Areas of greatest potential for heat network development have been further identified based on a solely heat demand perspective where at least two anchor loads were required > 500MWh/yr.

Further analysis through feasibility studies and constraints analysis were required to understand the viability of heat network development in each identified area. Existing heat networks have been added to potential heat network zones to identify viability of heat network expansion. For the purpose of LHEES, a 500m radius buffer has been drawn around the existing heat network points to provide a sensible estimate of the area within which heat demand can serve.

The methodology for identification of heat networks has been summarised in the figure below. For a comprehensive methodology, please see the Heat Network Zoning methodology in the LHEES documentation.

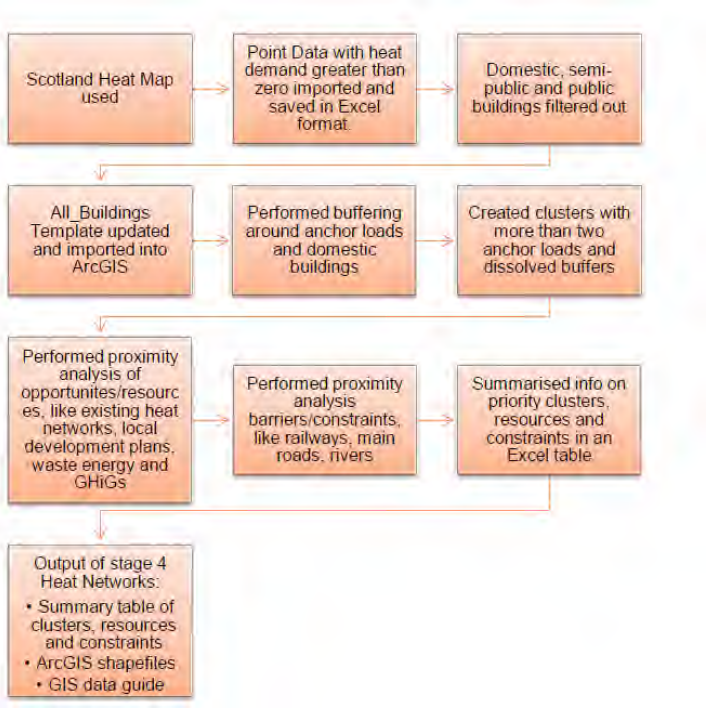


Figure 20: Summary of Scottish Government heat network methodology for LHEES

Appendix 3

ORKNEY
ISLANDS COUNCIL

Local Heat and Energy Efficiency Strategy Delivery Plan

September 2024

www.orkney.gov.uk

Table of contents

Glossary

Abbreviations

Acronym	Description
EES	Energy Efficient Scotland
EESSH	Energy Efficiency Standard for Social Housing
EPC	Energy Performance Certificate
EST	Energy Saving Trust
GIS	Geographic Information System
HEES:ABS	Heat and Energy Efficient Scotland: Area Based Schemes
IZ	Intermediate Zone
LA	Local Authority
LHEES	Local Heat and Energy Efficiency Strategy
LPG	Liquefied Petroleum Gas
mxd	Map Exchange Document
PEAT	Portfolio Energy Analysis Tool
SAP	Standard Assessment Procedure
ToC	Table of Contents
UPRN	Unique Property Reference Number

Terms

Baselining	Baselining is the purpose of understanding at local authority or strategic level, the current status of the buildings against the LHEES Considerations, Targets and Indicators.
Building-level Pathway	As part of LHEES Stage 5, a building-level pathway is the outcome of the assessment undertaken using PEAT. It provides the likely energy efficiency retrofit technologies, as well as the low carbon heating system (where applicable) to support building level decarbonisation.
Criteria	Criteria are the settings applied to the Indicators for each Consideration in order to support Baselining, Strategic Zoning and the identification of Delivery Areas. An example of Criteria is a simple “no” applied to the indicator of “wall insulation (Y/N)” to identify properties with uninsulated walls. Another example is the definition of an “anchor load” within the Heat Networks analysis, which applies a minimum threshold to the “heat demand” Indicator. The LHEES methodology provides a set of default Criteria that local authorities may wish to use, with flexibility to update and

	augment these to support local needs or for more focused analysis linked to specific actions and project identification within the Delivery Plan.
Data - Alternative	Alternative data can overwrite the core data to improve accuracy (national to local level of detail, e.g. local housing data to overwrite fields in Home Analytics).
Data - Core	Core data is the data that is essential to complete the minimum requirements of the LHEES analysis. Core data will come from national datasets e.g. Home Analytics or the Scotland Heat Map.
Data - Supplementary	Supplementary data allows inclusion of additional Indicators to inform specific, local targets; also, supplementary data can be used in GIS investigation to complement the Core analysis carried out in any assessment. An example of supplementary data would be the inclusion of a constraint's appraisal as part of a heat network analysis.
Data Zone	Data zones are groups output areas which have populations of around 500 to 1,000 residents.
Delivery Area	Delivery areas are at a higher granularity than Strategic Zones. These spatial zones should set out clusters of buildings within a Strategic Zone or across the whole local authority that identify potential solution(s) at a delivery level. They will be an important starting point for identifying a range of projects, regulation and actions that are within the competence of the Scottish Government, local authorities and wider partners (included as actions to be developed in the LHEES Delivery Plan).
Detailed Practitioner Approach	These steps form part of the detailed practitioner approach in LHEES Stage 4, Generation of Initial Areas to set out particularly suitable heat network zones and to support project identification.
Indicator	For a given Consideration, the purpose of an Indicator is: 1) to act as a key information field to help characterise and baseline the local authority. 2) to act as a key information field to support strategic zoning and generation of initial delivery areas. 3) if suitable, to act as a key information field to measure progress against Targets over the duration of the LHEES - set out in the LHEES Delivery Plan. For some Considerations, one Indicator may be sufficient, but for others a range may be appropriate.
Intermediate Zone	Intermediate zones are a statistical geography that are designed to meet constraints on population thresholds (2,500 - 6,000 household residents), to nest within local authorities, and to be built up from aggregates of data zones.
LHEES Considerations	The LHEES Considerations are a list of technologies, building typologies and policy priorities used to identify and target interventions. They include: - Heat networks

	- Off-gas grid buildings - On-gas grid buildings - Poor building energy efficiency - Poor building energy efficiency as a driver for fuel poverty - Mixed-tenure, mixed-use and historic buildings
LHEES Delivery Plan	An LHEES Delivery Plan is a document setting out how a local authority proposes to support implementation of its local heat and energy efficiency strategy.
LHEES Guidance	The LHEES Guidance sets out the production and content requirements for a local authority to prepare a Local Heat and Energy Efficiency Strategy and Delivery Plan. Its purpose is to ensure that a Local Heat and Energy Efficiency Strategy and Delivery Plan contain outcomes and actions that are backed up by robust data and analysis, supported by stakeholder engagement, and that are linked to national and local priorities, plans and targets.
LHEES Methodology	The LHEES Methodology is a more detailed, step by step approach, which includes models, tools and templates, and represents best practice in how to produce an LHEES in accordance with the requirements set out in the LHEES Order and Guidance.
LHEES Stages	There are 8 LHEES Stages proposed in this methodology. The purpose of the LHEES Methodology is to enable the local authority to complete LHEES Stages 1 to 6. The completion of these Stages will provide the local authority with the data analysis and evidence base to enable them to complete their LHEES Strategy and Delivery Plan documentation. There are two LHEES reporting templates included alongside this methodology– LHEES Strategy example template and LHEES Delivery Plan example template. The completion of these two templates will satisfy the completion of LHEES Stages 7 and 8. The 8 LHEES Stages proposed in this methodology are: 1 - Policy and strategy review 2 - Data and tools library 3 - Strategic zoning and pathways 4 - Generation of initial delivery areas 5 - Building-level pathway assessment 6 - Finalisation of delivery areas 7 - LHEES Strategy 8 - LHEES Delivery Plan
LHEES Strategy	An LHEES Strategy is a long-term strategic framework for: - the improvement of the energy efficiency of buildings in the local authority's area, and - the reduction of greenhouse gas emissions resulting from the heating of such buildings
Mixed-tenure, mixed-use and historic buildings	Mixed-tenure and mixed-use buildings could include a mixture of owner occupied, private rented and social housing, and non-domestic uses, or simply multiple ownership within the

	same tenure. Historic buildings include the buildings that are within conservation areas or those that are listed buildings. These categories may require established alternative approaches and regulation for the installation of low carbon heat and energy efficiency solutions and where specific advice and support might be available relating to the installation of these solutions.
Potential Zones	The analysis carried out for strategic zoning and pathways for the heat networks Consideration is to identify potential zones rather than the otherwise used naming convention of Delivery Areas. The potential zones identified are to be included in the LHEES Strategy and should inform actions around further investigation / progression within the LHEES Delivery Plan. The heat networks Consideration analysis and activity carried out within LHEES is also anticipated to support activity related to formal zone designation as required by the Heat Networks (Scotland) Act 2021.
Raster	A matrix of squares, or grid, used as a method of data analysis in GIS. Each cell in the grid contains a value representing information on the cell's contents.
Strategic Zone	Strategic Zones present a visualisation of the potential pathways to decarbonise the building stock at a local authority level. These could, for example, be split out by intermediate zone or data zone. They are useful to understand the baseline performance, the scale of potential and initial areas of focus, which could be used to inform Delivery Areas and follow on engagement.
Targets	Targets are the measurable aspect of the Consideration and are likely to be taken directly from national and/or local policy documentation, for example net-zero by 2045, or EPC C by 2040. Targets are likely to comprise of end-point targets and milestone targets and would sit along a timeline within (and beyond) the LHEES. This timeline would help to prioritise the types of projects undertaken within the LHEES over its duration.
Weighting	For some Considerations, one Target and Indicator may be sufficient, but for others a range of Indicators may be appropriate to contextualise and characterise performance against a Target and/or progress towards a Consideration. If multiple Indicators are used in strategic zoning or the identification of delivery areas, a Weighting can be applied based on the importance of each. The LHEES methodology sets out a core set of default Weightings for instances where multiple Indicators are suggested as a default setting. There is flexibility to update and augment these to support local needs or for more focused analysis linked to specific actions and project identification within the Delivery Plan.

Executive Summary

Purpose of the Delivery Plan

Local Heat and Energy Efficiency Strategies (LHEES) are at the heart of a place based, locally-led, and tailored approach to the energy transition. The aim of LHEES is to provide a long-term and evidence-based plan for decarbonising heat in buildings and improving their energy efficiency across an entire local authority area. LHEES are primarily driven by Scotland's statutory targets for greenhouse gas emissions reduction and fuel poverty:

- Net zero emissions by 2045 and 75% reduction by 2030
- In 2040, as far as reasonably possible, no household in Scotland is in fuel poverty

This LHEES Delivery Plan should be considered in conjunction with Orkney Islands Council's LHEES Strategy. The Delivery Plan explains how the Council will support implementation of the LHEES. It identifies areas for targeted intervention through early, low-regrets measures to improve energy efficiency and decarbonise heat in buildings. This is the first LHEES Delivery Plan, and it focuses initially on immediate and medium term (5-year) actions. The Council has identified four main priorities for the LHEES, which have been further developed in Sections 5-8:

- **Priority A**: Making Orkney's homes energy efficient
- **Priority B:** Alleviating fuel poverty
- **Priority C**: Improving carbon efficiency in non-domestic Council buildings
- **Priority D:** Exploring heat networks for Council buildings

This Delivery Plan sets out the Council's approach to delivering the LHEES over the next five years. The Council's approach is to primarily prioritise heat network development to achieve building level decarbonisation across the county. Furthermore, the Delivery Plan examines levels of energy efficiency across all property tenures in Orkney. At this early stage in the LHEES process, many of the actions detailed in this plan are developmental or reflect projects and initiatives which are already underway. The analysis undertaken to date as part of the LHEES process will be further expanded to develop a more detailed and strategic delivery framework. This will form the basis of the next iteration of the LHEES, which will be reviewed at least annually.

Delivery Plan layout

The actions and delivery areas in this Delivery Plan are split into the following sections:

- Heat networks
- Energy efficiency in homes

- Non-domestic Council buildings
- Electrification of heat in homes

For each chapter, the actions are summarised in a table format shown below. Actions have been prioritised as one of:

- **Immediate:** actions already in progress
- **Short-term:** to be implemented in the next two years.
- **Medium-term:** to be implemented in the next three to five years.

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
Action required to implement the LHEES	Immediate / Medium-term / Long-term	Additional detail of how the Council and its partners will achieve this.	Lead responsible for delivery	Key stakeholders to engage on specific action	How LA will know goal of action is achieved

Delivery Plan scope and limitations

The LHEES is being developed in the context of changing national policies, targets and funding. Multiple relevant national policies and their specific targets are under review, such as the Heat in Buildings Bill and the Net Zero Standard for Social Housing (SHNZS). Equally, established targets have been pulled, such as the Scottish Government's interim target to reduce greenhouse gas emissions by 75% by 2030. Many actions described in the Delivery Plan are subject to Scottish Government funding for local authorities, such as Home Energy Efficiency Programmes for Scotland: Area Based Schemes.

LHEES is also a new type of policy for local authorities. Many of the actions set out in this document pull together existing actions from other policies. Others focus on laying the groundwork for collaboration between Council teams and other organisations to achieve the goals set out in LHEES. As the Strategy and Delivery Plan are reviewed in future years and as work progresses, the Council intends to use LHEES to develop new heating and energy efficiency projects.

Orkney Islands Council’s LHEES

LHEES Priorities

Orkney Islands Council’s key priorities for this LHEES have been informed by the six LHEES considerations (detailed in the LHEES Strategy), the local policy context, stakeholder engagement, and analysis of the building stock in Orkney Islands Council. The Council has identified four priorities for the first LHEES.

Summary of Priority A: Making Orkney’s homes energy efficient

Improving the energy efficiency of homes decreases the demand for energy, reduces fuel poverty, and addresses climate change. Orkney Islands Council has made significant improvements to the energy efficiency of domestic properties. However, a significant number of privately rented and owner-occupied properties require improved insulation.

Summary of Priority B: Alleviating fuel poverty

The LHEES presents an opportunity to address the high levels of fuel poverty within Orkney. The Council has worked through a range of programmes to target support to fuel poor households. The Council has made the removal of energy efficiency as a driver of fuel poverty a priority within the LHEES strategy.

Summary of Priority C: Improving carbon efficiency in non-domestic Council buildings

The Council operates and leases a number of non-domestic buildings across Orkney. As the owner of these buildings, it is the Council’s responsibility to ensure these buildings become net zero by 2045. Replacing heating systems with zero direct emissions heating will be essential to this. Improving the energy efficiency of these buildings will help reduce the cost of running them.

Overview of Priority D: Exploring heat networks for Council buildings

Heat networks can provide reliable and decarbonised heating to Council buildings. Developing heat networks in Orkney is a challenge because buildings are not densely located and there are issues with the geology of the area. However, there are some Council buildings that will need to replace their heating systems to a decarbonised heating source. Heat networks may provide a viable option for these buildings to meet Scottish Government decarbonised heating requirements.

Implementation and governance

The implementation of the LHEES will be driven by Orkney Islands Council. The LHEES requires a collaborative cross-sectoral approach, engaging with partners and stakeholders to achieving the goals set out.

The LHEES will be integrated into existing steering groups and governance structure for sustainable development and climate change this will ensure the strategy can develop as priorities develop and legislative requirements dictate.

Action	Priority	Description	Responsibility	Key stakeholders	Measures of success
Identify leads and champions for the actions arising from the Delivery Plan	Immediate	These will be appointed at Corporate Director or Head of Service level.	OIC	Corporate Directors and Heads of Service	Each action in delivery plan has confirmed champion. Meetings scheduled to support champions to deliver actions.
LHEES governance arrangements put in place	Immediate	LHEES to be integrated into existing Steering Group and governance structure for Sustainable Development and Climate Change (SDCC)	OIC	Steering Groups	Orkney Islands Council to meet with all steering groups to ensure integration of LHEES plans
Develop a monitoring and evaluation framework for the LHEES delivery actions	Immediate	For delivery actions, identify the owner and the indicators to be measured.	OIC	OIC	Orkney Islands Council review framework and create system to ensure it is reviewed on ongoing basis.

Action	Priority	Description	Responsibility	Key stakeholders	Measures of success
Annual review of Delivery Plan and review of the Strategy every five years	Immediate	Update and amend both documents in light of regulatory changes. Identify local targets.	OIC	OIC and partner organisations	Orkney Islands Council to set up system to prepare and deliver workshop with key stakeholders to review LHEES plans on an annual basis

Engagement Approach

The LHEES Strategy and Delivery Plan have been developed in consultation with stakeholders across Orkney, and through the public engagement strategy. Implementation will also be a collaborative effort.

A key priority for the delivery of the LHEES is for the Council to develop an engagement strategy. This will draw on the stakeholder identification and mapping work which took place as part of the LHEES development. Key stakeholder groups that the Council will work with include:

- Local community groups
- Public sector partners
- Housing providers
- Delivery partners
- Electricity network operators
- Local businesses
- Advice organisations

Priority stakeholders	Specific outcomes of engagement	Stakeholder priorities	Existing methods of engagement	Action
OHAL	Develop closer working between OIC and OHAL on Energy Efficiency programmes	Improve energy efficiency of social housing stock	*Scheduled regular meeting*	*OIC to initiate*
Warmworks Managing Agent	Delivery of HEES:ABS Programme	Improve energy efficiency of private housing stock	*Progress meetings*	*Underway*
ICNZ	Work with ICNZ on the sharing of data and development of data processing opportunities	Progress towards Net Zero targets	*Scheduled regular meeting*	*OIC to initiate*
THAW	Develop existing referral system	Alleviation of Fuel Poverty	*Scheduled regular meeting*	*OIC to initiate*
SSEN	Development of LENZA scenarios for future energy	Delivery of electrical network to meet Net Zero targets	*Upload anticipated future loads*	*OIC Action*

Heat network delivery areas

Section 47 of the Heat Networks (Scotland) Act[1] states that each local authority is required to carry out a review to consider whether one or more regions in its area are likely to be particularly suitable for the construction and operation of a heat network. This should be done within the Local Heat and Energy Efficiency Strategy. Following this review, the Act requires that a decision is made (by the local authority or Scottish Ministers) to consider designation of areas as Heat Network Zones. The local authority must publish a statement in relation to each area considered which provides a rationale for decisions made.

[1] Heat Networks (Scotland) Act 2021, Scottish Government.

Approach to selecting heat network delivery areas

As part of the LHEES process, Changeworks conducted GIS analysis using Scotland Heat Map data to create initial heat network delivery areas. The analysis used heat load data from non-domestic public and semi-public buildings.

The Council and Changeworks delivered a workshop to share the findings with key stakeholders in LHEES Stage 6. This included Orkney Housing Association Limited (OHAL), Warmworks, Aquatera, and members of relevant local authority departments. This allowed a collaborative sense checking process to take place and allowed us to see if the outputs reflected the local knowledge and knowledge of those involved. Changeworks highlighted the limitations of non-domestic datasets, and the need for data to be collected in potential areas through a process such as Building Assessment Reports (BARs), to assess the suitability of a non-domestic property for connecting to a heat network. The primary use of BARs information is to inform decisions on the suitability of areas for the construction and operation of a heat network, and subsequently to inform designation decisions should these areas be progressed for consideration for designation. Following further communication with the council, Changeworks updated several anchor load data addressing any heat load inaccuracies and missing anchor loads.

The outputs of the LHEES data analysis are provided in Section 5.1. Following a review of the outputs, the Council have identified the key heat networks they are interested in exploring further which is discussed in Section 5.2.

Heat network analysis based on LHEES methodology

Limitations

The LHEES methodology for heat network analysis identifies potential high heat load areas suitable for heat network development for the Council to explore. These only account for non-domestic semi-public or public buildings where heat supply is not needed 24 hours a day. Any commercial, privately owned buildings that often come with large heat demands are not accounted for in this analysis. Buildings like this may be suitable for heat network developments.

Additionally, the Scotland Heat Map data that is used as the basis of this analysis may not capture the most up-to-date heat demands of buildings.

Lastly, the recommended practice for zoning heat networks is to apply a linear heat density of 4,000 kWh/yr/m for more rural local authority areas. However, when applied to Orkney, the outputs indicates that there are likely to be no heat network opportunities suitable for economic development. The linear heat density was therefore reduced to 3,000 kWh/yr/m to explore more potential heat network opportunities.

Because of these limitations, the Council has made the decision to not designate heat network zones at this time but have narrowed down specific areas in which potential heat networks may be a solution to meet net zero ambitions, based on knowledge of the area and data outputs. These are explored in the next section.

Priority heat networks

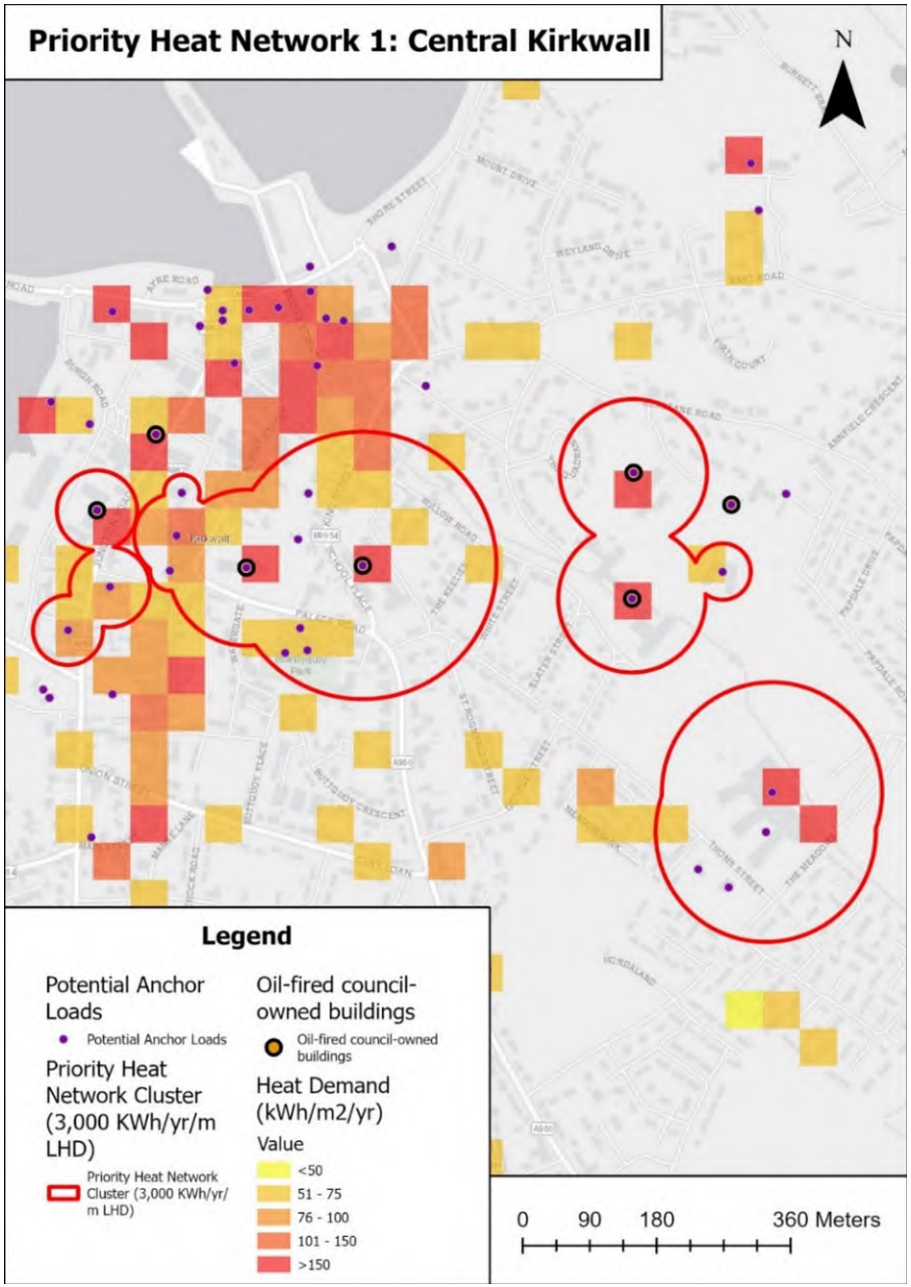
The LHEES analysis has identified two indicative heat network zones in Orkney that are the priority for further investigation and development. Despite inherent challenges in the shortlisting process due to sparse heating demand, priority heat networks were identified based on the possibility of replacing oil fired Council buildings with heat networks. The proximity of non-domestic public buildings such as leisure centres and schools also contribute to efforts in making the networks as efficient as possible, while offering potential connection to upcoming new housing developments.

For a detailed insight into the methodology for heat network identification, refer to the Appendices of the Strategy Document.

Heat Network Zone 1: Central Kirkwall

The Central Kirkwall indicative heat network zone is represented at four separate heat networks, with a total combined area of 24 hectares, however the Council are exploring these in tandem as one larger heat network. Within the outlined zone there are 21 non-domestic public buildings registering a total estimated annual heat demand of 5,911 MWh/yr. The cluster is marked by a few pockets of very high heat demand (above 150 kWh/m²/yr) while moderate heat demand (51-75 kWh/m²/yr) underpins the majority of the zone. The two key anchor loads underpinning this area are the Council Offices (1,206 MWh/yr) and the Papdale Primary School (981 MWh/yr). The Council Offices and Papdale Primary School are currently heated using heating oil. The Council will need to change this heating system in coming years to meet net zero targets. The Council will also explore opportunities to connect the Kirkwall Grammar School (heated with LPG), special needs new build near Papdale Primary School, and Papdale Halls (heated with LPG).

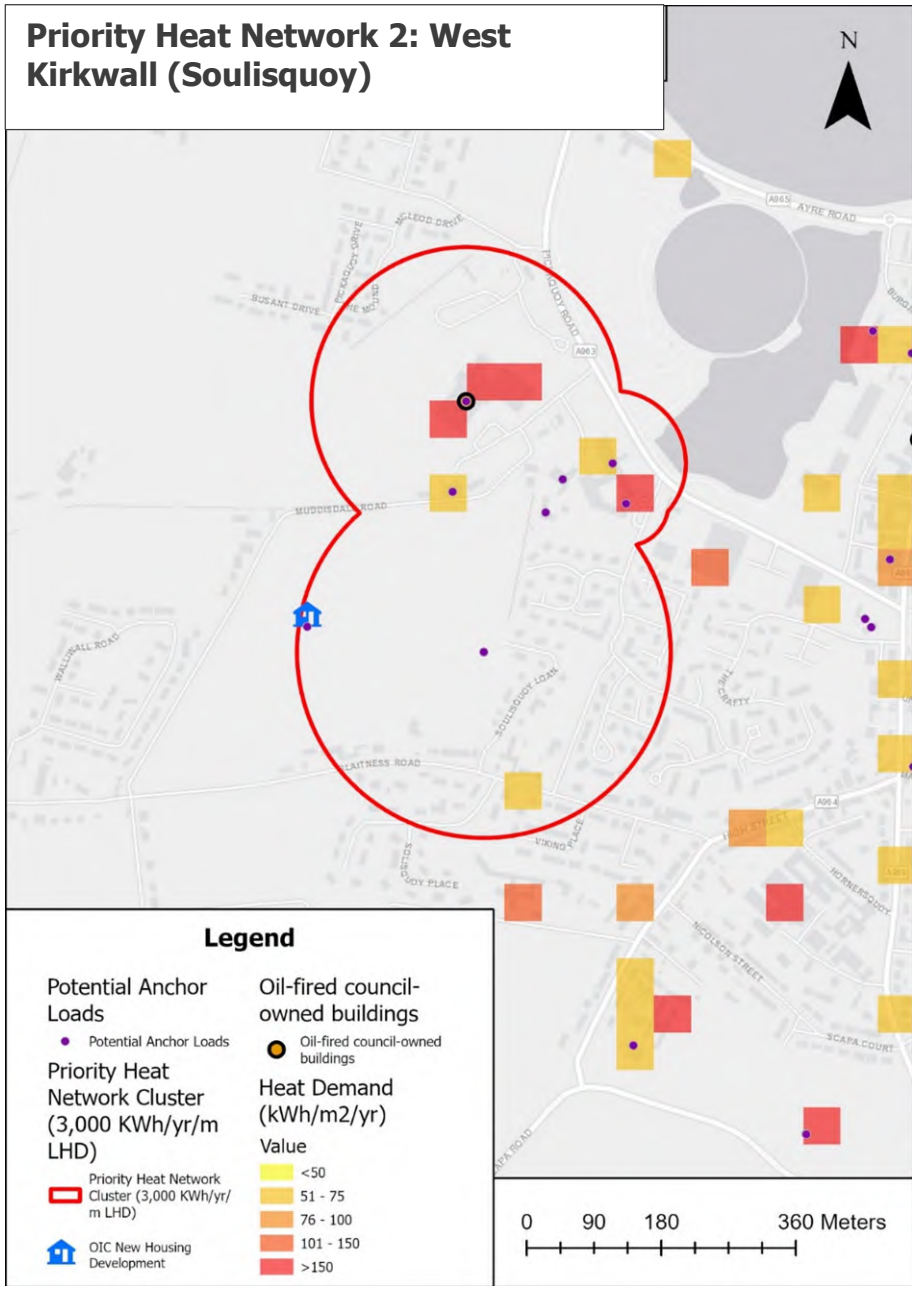
Zone Name	Central Kirkwall
Zone Area (ha)	23.8
Count of Anchor Loads	21
Estimated Zone Heat Demand (MWh/yr)	5,911



Heat Network Zone 2: West Kirkwall

The West Kirkwall (Soulisquoy) indicative heat network zone has an area of 32.2 hectares. Within the outlined zone there are 7 non-domestic public buildings registering a total estimated annual heat demand of 4,809 MWh/yr. The cluster is marked by a few pockets of very high heat demand (above 150 kWh/m²/yr). The two key anchor loads underpinning this area include the new care home (805 MWh/yr) and Pickaquoy Centre (2,976 MWh/yr). The Pickaquoy Centre is currently heated with heating oil, and the Council will need to change this heating system in coming years to meet net zero targets. The Council will also explore options to connect the new housing development to this potential heat network.

Zone Name	West Kirkwall
Zone Area (ha)	32.2
Count of Anchor Loads	7
Estimated Zone Heat Demand (MWh/yr)	4,809



Further heat network opportunities

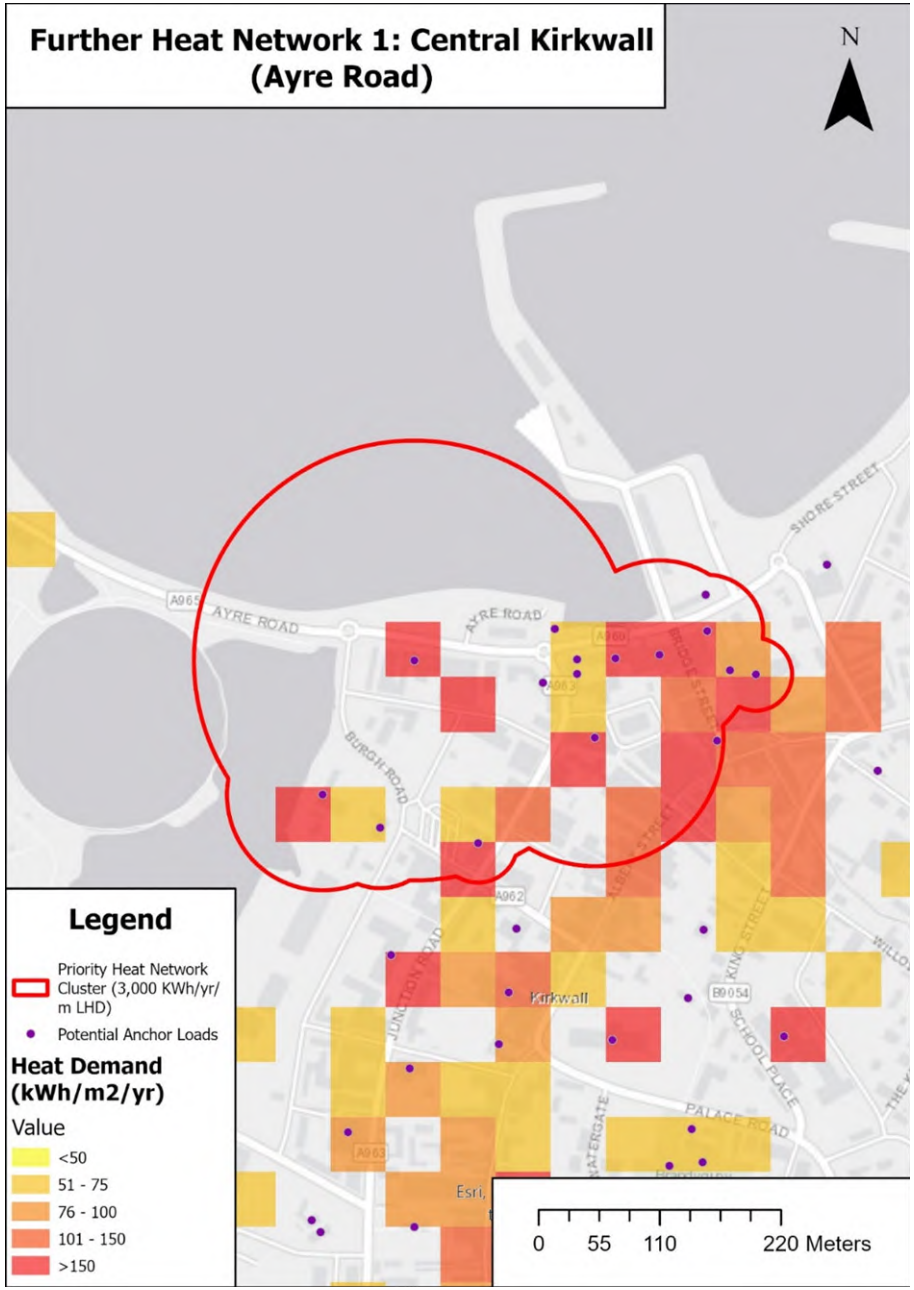
The following three indicative heat network zones have lower heat demands than the priority two clusters shown above and should be considered as additional opportunities. Further exploration will be required to assess viability of these opportunities. This is likely to include:

- Determining existing system capacity
- Site inspections
- Design considerations such as heat source appraisal (e.g. ASHP, GSHP), energy centre location and layout, grid capacity constraints, pipework distribution routes, operating temperatures, individual building upgrades required (e.g. heat interface unit installation)
- Techno-economic analysis
- Funding options and commercial delivery mechanism analysis

Further Heat Network Zone 1: Central Kirkwall (North Harbour – Ayre Road

This indicative heat network zone has a high density of heat demand as indicated by the large presence of connecting red rasters in the map below. The area is underpinned by 16 non-domestic anchor loads including the Kirkwall Police Station, Fire Station and travel centres. The next step for the Council is to explore the viability of this development in line with commercial activity in the area. The heat network also neighbours the Central Kirkwall heat network and more longer-term action could be to explore the possibility for connection between these two.

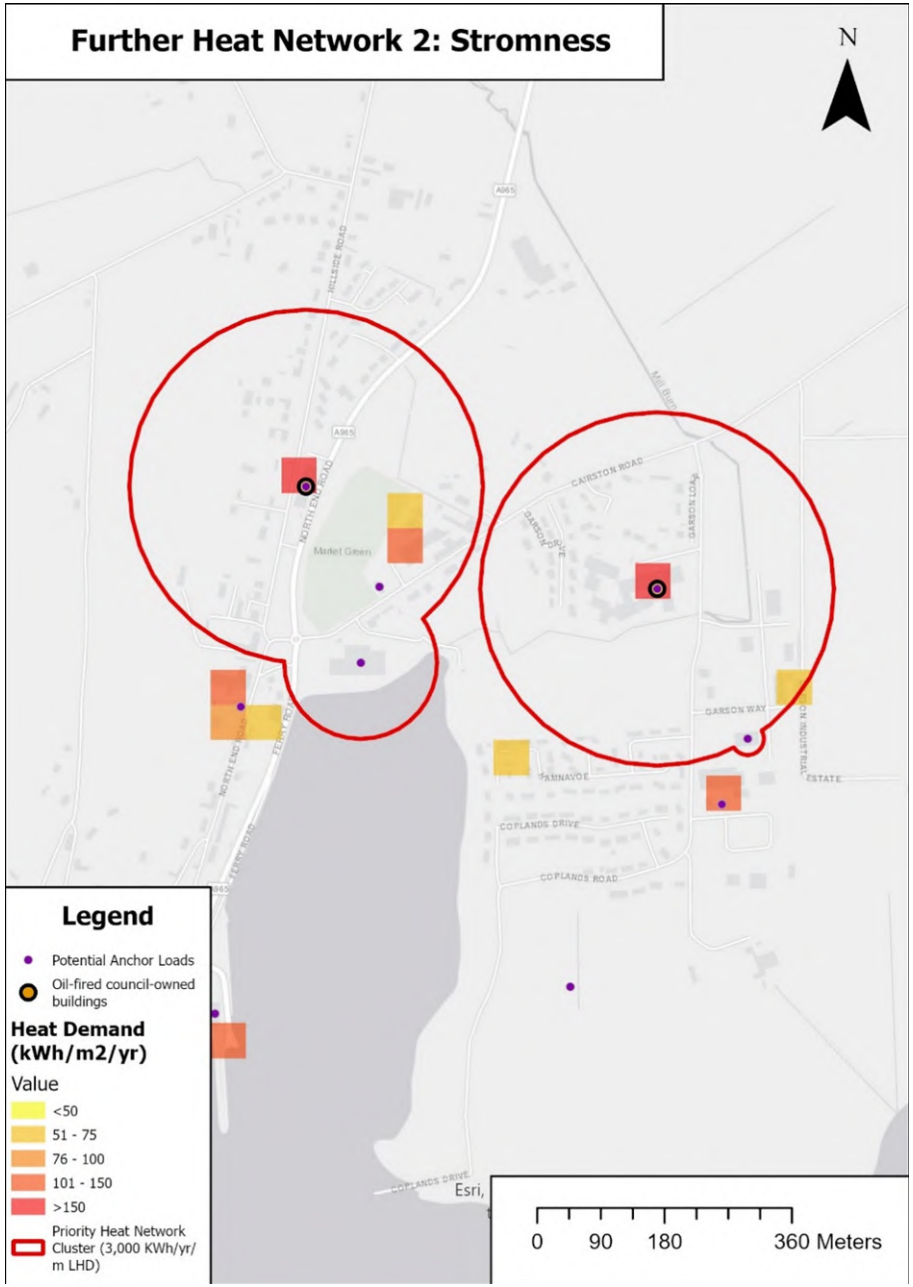
Zone Name	Central Kirkwall (Soulisquoy)
Zone Area (ha)	16.1
Count of Anchor Loads	16
Estimated Zone Heat Demand (MWh/yr)	2,277



Further Heat Network Zone 2: Stromness

The Stromness indicative heat network zone is indicated by two individual heat networks, but the Council are exploring whether these can be looked at in tandem as one bigger zone. Currently, the clusters are marked by a sparse distribution of high heat demand as indicated by individual red cells in the map below. The area is underpinned by five non-domestic anchor loads including the Stromness Primary School, Stromness Academy and Stromness Swimming Pool. The latter two buildings are currently heated with heating oil. The Council will need to change these heating systems in coming years to meet net zero targets. Stromness Primary School is also nearby, and the Council will explore options to connect this building, which is currently heated with LPG. Further exploration of the viability of development in this indicative zone is required.

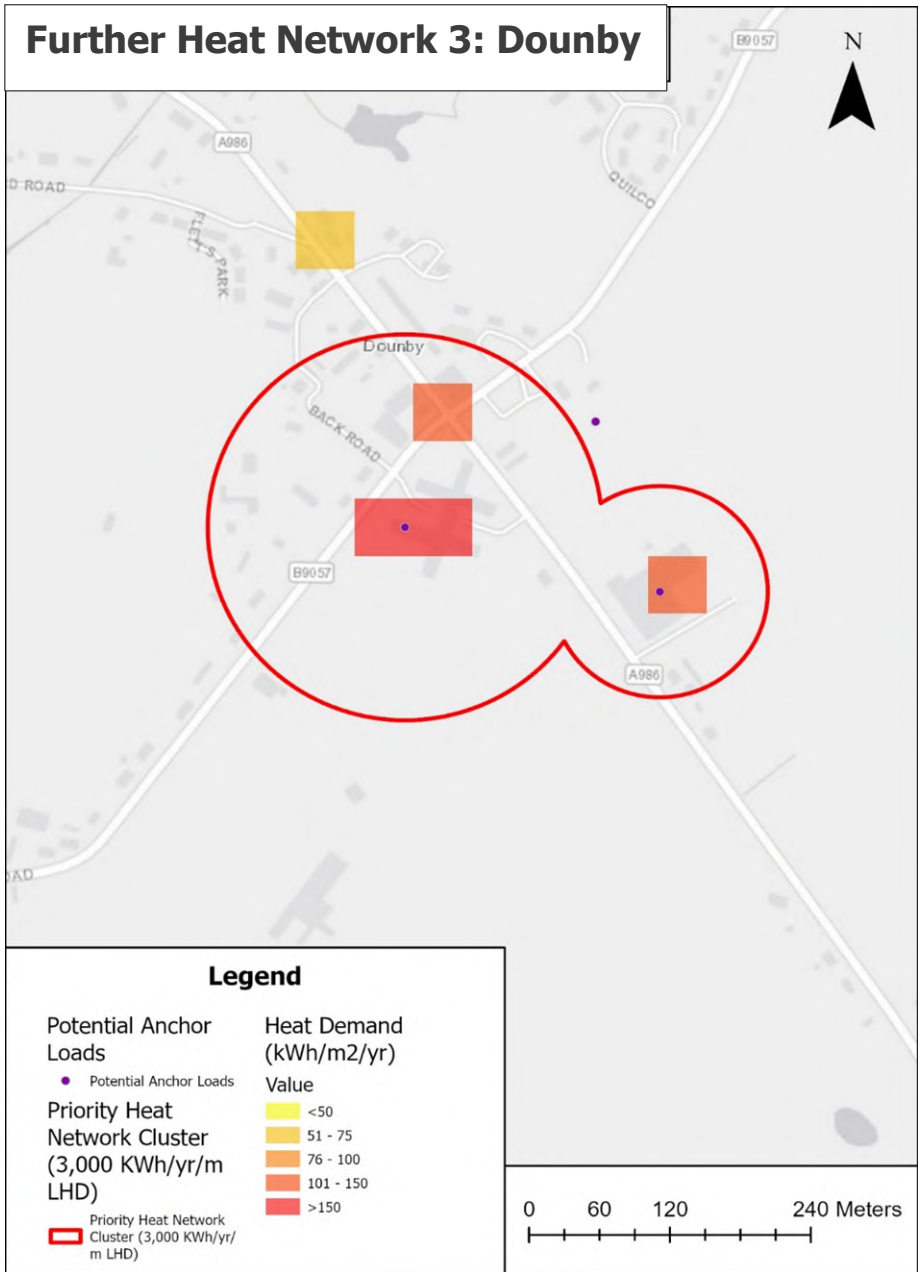
Zone Name	Stromness
Zone Area (ha)	41.4
Count of Anchor Loads	5
Estimated Zone Heat Demand (MWh/yr)	3,021



Further Heat Network Zone 3: Dounby

The Dounby indicative heat network zone is marked by a sparse distribution of high heat demand as indicated by individual red cells in the map below. The area is underpinned by two non-domestic anchor loads consisting of Dounby Surgery and Dounby Primary School. Dounby Primary School is currently heated using a boiler plant. The Council will need to change the heating system in coming years to meet net zero targets. There is also a care home in Dounby that the Council may explore connecting to. Further exploration of the viability of development in this indicative zone is required.

Zone Name	Dounby
Zone Area (ha)	11.2
Count of Anchor Loads	2
Estimated Zone Heat Demand (MWh/yr)	782



Heat networks of interest for Orkney Islands Council

Due to the limitations of the heat network data analysis, the Council has narrowed down the list of heat networks to focus on in the near term. These two heat networks of interest are in central and western Kirkwall.

Central Kirkwall

The Council is interested in exploring a heat network in Central Kirkwall similar to the one identified in the LHEES analysis. However, they have amended the list of potential anchor loads:

- Council Offices KW15 1NY
- St Magnus Cathedral KW15 1DH
- Former Papdale Halls of Residence KW15 1NA
- Papdale Primary School KW15 1PJ
- Kirkwall Grammer School KW15 1QN
- Papdale House KW15 1LJ

West Kirkwall

The Council is interested in exploring the heat network identified in the LHEES analysis. The potential anchor loads are:

- Pickaquoy Centre KW15 1LR
- St Colms Centre KW15 1RP
- Glaitness Primary KW15 1RP
- Keelylang KW15 1RP
- New Kirkwall Care Home
- Soulisquoy Housing Development

Actions for heat networks

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
Consider Central Kirkwall heat network zone	Immediate	The Council is having internal discussions about the Central Kirkwall potential heat network zone.	OIC	OIC Fire & Police Hoteliers	Commission feasibility studies
Engineering assessment	Immediate	The Council is undertaking an engineering assessment for a heat network to service OIC schools and the Council Office in Kirkwall.	OIC	OIC	Complete engineering assessment
Feasibility studies for housing developments	Medium-term	Commission a feasibility study on using ambient heat networks to supply heat pumps as an alternative to bore hole schemes.	OIC	OIC OHAL Construction Partners	Commission feasibility studies
Feasibility study in Hoy for wind to heat network	Medium-term	Carry out a feasibility study on wind to heat network scheme covering North Walls School and surrounding properties in Hoy.	OIC	OIC HWDT	Commission feasibility study
Finstown waste heat opportunity	Medium-term	Investigate Finstown Transmission sub-station as a waste heat opportunity for a heat network.	OIC	OIC SSEN	Open dialogue with SSEN
Communal heating for Council social housing clusters	Medium-term	Investigate viability of small-scale communal heating for clusters of Council social housing. For example, communal heat pump system for a small group of neighbouring Council homes.	OIC	OIC OHAL Construction Partners	Identify viable clusters for further investigation
Central Kirkwall heat network	Long-term	Development of Kirkwall Town Centre heat network, subject to positive feasibility study and business case.	OIC	OIC Heat network operator	Completion of heat network in Central Kirkwall

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
Feasibility study in Stromness	Long-term	Commission a feasibility study to explore the Stromness heat network (Further heat network 2 above.)	OIC	OIC Heat network operator	Commission a feasibility study
Feasibility study in Dounby	Long-term	Commission a feasibility study to explore the Dounby heat network (Further heat network 3 above.)	OIC	OIC Heat network operator	Commission a feasibility study
Explore heat network options for Pierowall	Long-term	Investigate a sea water source heat network at the care home and Westray Junior High School in Pierowall.	OIC	OIC Heat network operator	Commission a feasibility study
Explore heat networks for domestic properties	Long-term	Investigate heat network options that would connect to domestic properties in Orkney.	OIC	OIC Heat network operator	Identification of possible feasibility study options

Funding for heat networks

Currently there is an under-developed pipeline of heat network projects across Scotland. The Scottish Government is providing funding to stimulate and accelerate the development and growth of heat networks, as detailed below. Significant investment from the private sector and heat network developers is also required to achieve heat network deployment at the scale required to reach the national targets of 2.6 TWh of heat output by 2027 and 6 TWh of output by 2030.

Scotland's Heat Network Fund is designed to support the development and roll out of heat networks across Scotland. It is open to any organisation seeking to develop and deploy heat networks in Scotland. In total £300 million is being made available to stimulate investment and grow the low carbon heat sector. Applications can be made for enabling costs, commercialisation costs, and capital costs. The SHNF will only support projects that would not progress without capital grant funding or would not progress to the same scale. Therefore, applicants to the scheme need to clearly demonstrate the how the grant money will be used to expand the project outcomes and provide evidence the value of the grant is appropriate. Up to a maximum of 50% of the total eligible capital costs can be covered through this fund.

The Heat Network Support Unit identifies, supports, and develops heat network projects for the public sector. The support available includes expert advice and grant funding to develop projects until they have a clear financial strategy and well-defined business model. The unit is active in project identification, aggregation, and stakeholder engagement and can support with working group management, stakeholder workshops, and policy linkage and review. The Heat Network

Support Unit is no longer accepting applications for funding for the 2024-25 financial year. The unit is still accepting applications for advisory-only support and discussions on potential future applications.

Improving energy efficiency in homes

Improving the energy efficiency of buildings reduces heat demand, whilst simultaneously addressing fuel poverty and climate change. Orkney Islands Council has made significant improvements to the energy efficiency of domestic and non-domestic properties. However, a significant number of privately rented and owner-occupied properties require improved insulation.

Overall, analysis of Energy Performance Certificate (EPC) data from Home Analytics shows that energy efficiency is worse on the islands than on the mainland. This section provides energy efficiency data by island for the Council and other stakeholders to plan energy efficiency projects on a geographic basis.

How criteria were chosen

As part of standard Stage 4 LHEES methodology published by the Scottish Government, the energy efficiency delivery area outputs demonstrate and advise the Council on small-scale areas of domestic properties where energy efficiency projects could be initiated and delivered. The energy efficiency delivery areas are marked based on an equal weighted combination taking into account wall insulation, loft insulation, and window glazing statuses. The Council further opted to explore this by property tenure type: social housing, owner-occupied and privately rented sectors. The output of the modelling work did not identify any geographically specific areas but simply showed a uniform level of energy efficiency over areas, resulting in no clear project opportunities.

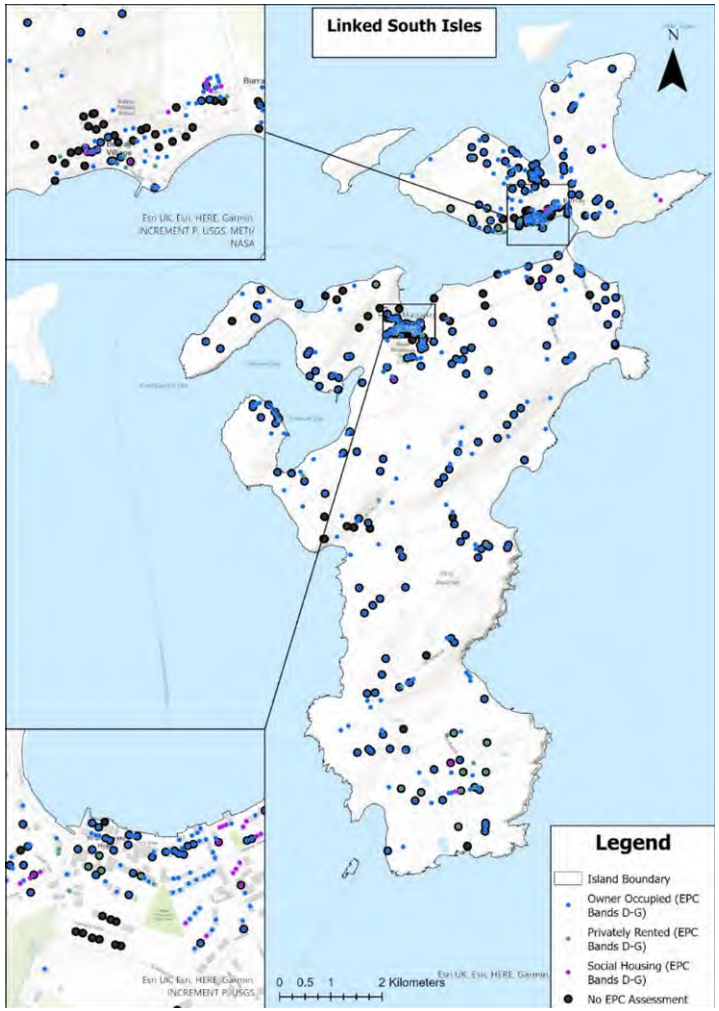
As an alternative, EPC data was used as a proxy for energy efficiency. Instead of delivery area maps, EPC maps were created. The maps display EPC bands D-G to identify the Council's poorest quality stock and are also further broken down into their respective property tenure. Another criterion included mapping domestic properties where EPC assessments had not been carried out. Both of these criteria were ultimately combined into one map output. The geographical focus for these maps remain in the 11 outer islands in Orkney as historically, domestic properties here have faced greater levels of fuel poverty. The Council hopes to utilise these maps to identify and provide comparison between the islands where opportunities for immediate EPC assessments could be carried out, and to determine who to approach for matched incentive to install heat pumps.

Energy efficiency delivery areas

Linked South Isles

The majority of the Linked South Isles is made up of owner-occupied domestic properties. Only 51% of properties have had an EPC assessment. Owner occupied EPC Band E properties comprise the greatest group that do not have EPC assessments. More work should be encouraged to increase EPC assessment uptake in this tenure.

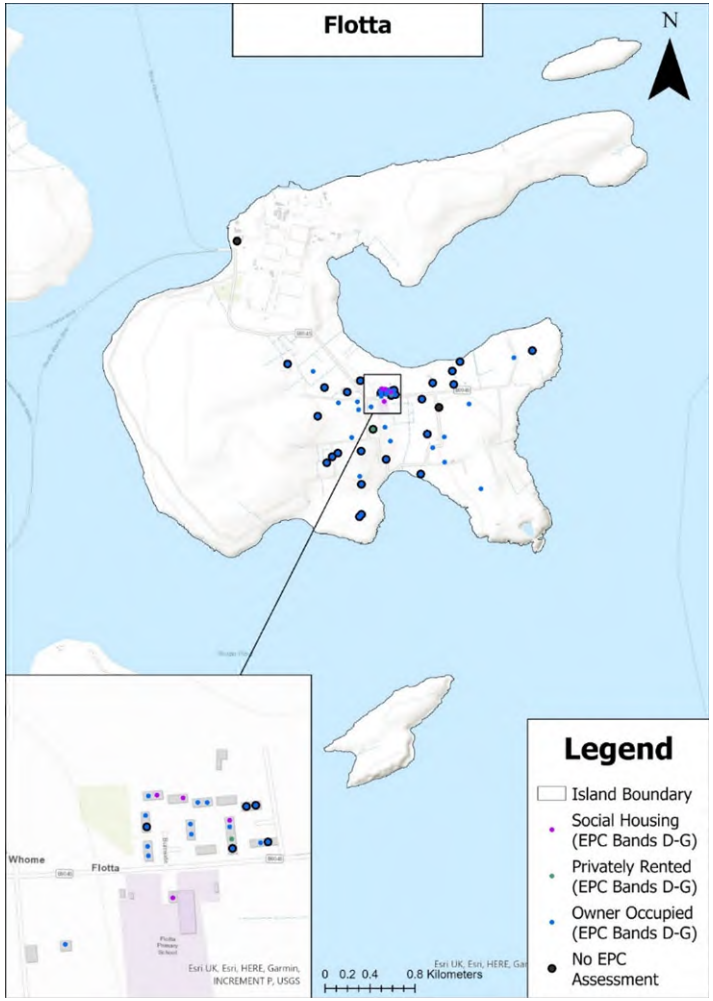
Linked South Isles				
Valid EPC	Count	EPC Band	Tenure	Count
Yes	279	D	Owner Occupied	68
			Privately Rented	7
			Social Housing	27
		E	Owner Occupied	86
			Privately Rented	9
			Social Housing	1
		F-G	Owner Occupied	69
			Privately Rented	7
			Social Housing	5
No	266	D	Owner Occupied	59
			Privately Rented	1
			Social Housing	4
		D	Owner Occupied	130
			Privately Rented	11
			Social Housing	4
		F-G	Owner Occupied	46
			Privately Rented	8
			Social Housing	3



Flotta

Owner occupied properties make up the majority of domestic properties in Flotta, followed by social housing, privately rented properties have the least presence. Only 57% of properties have had an EPC assessment. EPC Band E owner occupied housing has the greatest number of properties that do not have EPC assessments, and work could be done to ensure assessments are carried out.

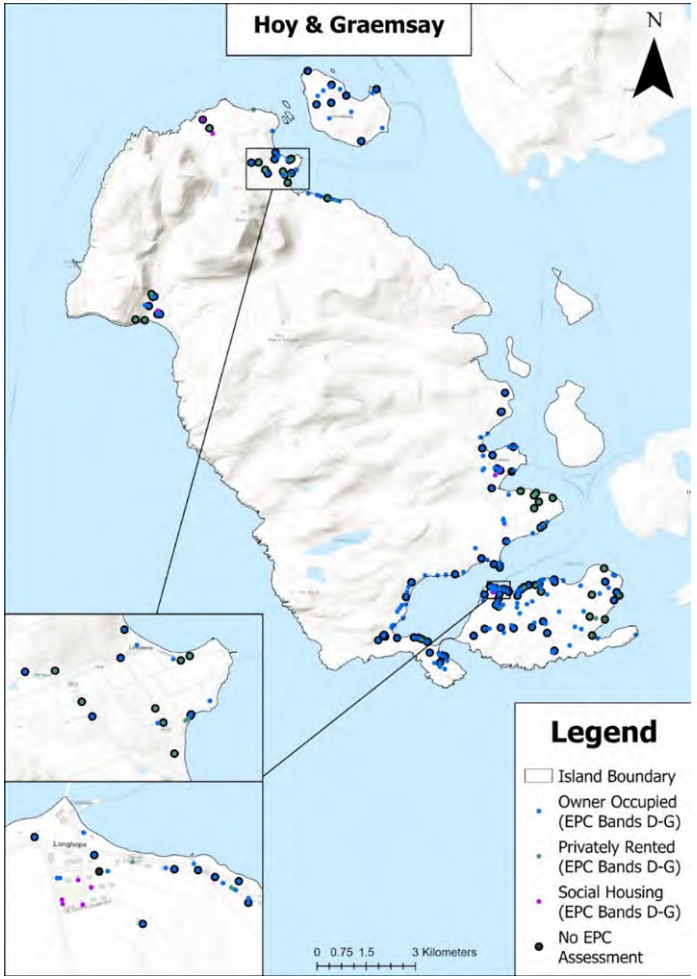
Flotta				
Valid EPC	Count	EPC Band	Tenure	Count
Yes	30	D	Owner Occupied	12
			Privately Rented	1
			Social Housing	3
		E	Owner Occupied	10
			Privately Rented	0
			Social Housing	1
		F-G	Owner Occupied	3
			Privately Rented	0
			Social Housing	0
No	27	D	Owner Occupied	2
			Privately Rented	0
			Social Housing	0
		E	Owner Occupied	24
			Privately Rented	1
			Social Housing	0
		F-G	Owner Occupied	0
			Privately Rented	0
			Social Housing	0



Hoy and Graemsay

Owner occupied properties make up the majority of domestic properties in Hoy and Graemsay. 43% of properties have not had EPC assessments due to long-term tenancies. EPC Bands E and F-G owner occupied properties make up the largest proportion of these unassessed properties.

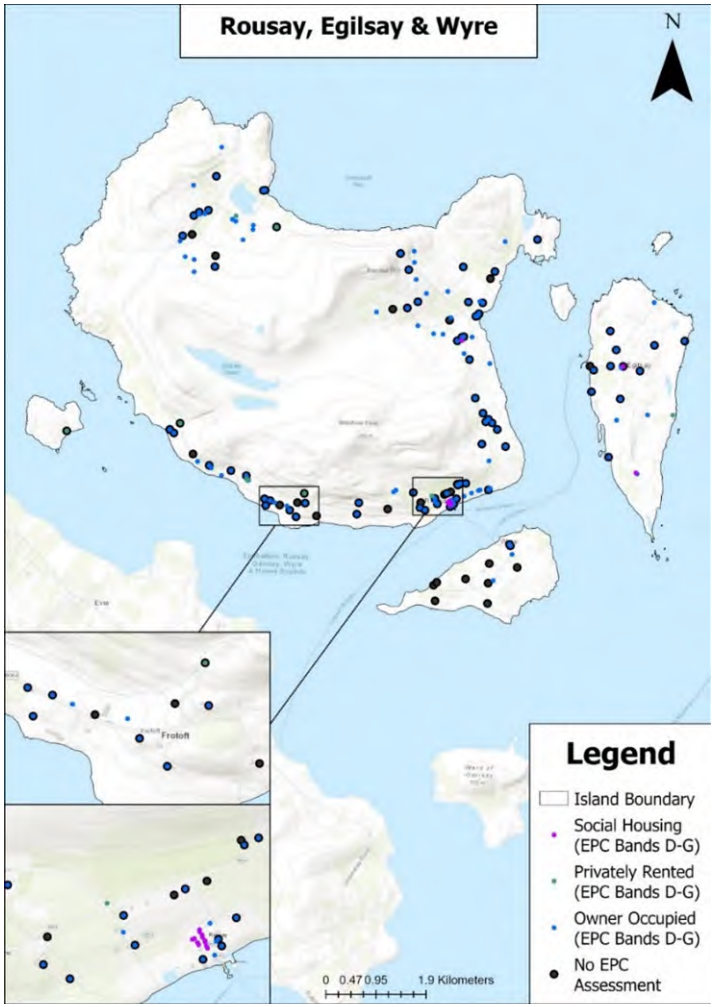
Hoy and Graemsay				
Valid EPC	Count	EPC Band	Tenure	Count
Yes	146	D	Owner Occupied	40
			Privately Rented	8
			Social Housing	7
		E	Owner Occupied	35
			Privately Rented	4
			Social Housing	7
		F-G	Owner Occupied	42
			Privately Rented	1
			Social Housing	2
No	112	D	Owner Occupied	9
			Privately Rented	2
			Social Housing	2
		E	Owner Occupied	44
			Privately Rented	13
			Social Housing	0
		F-G	Owner Occupied	22
			Privately Rented	20
			Social Housing	0



Rousay, Egilsay and Wyre

Only 33% of domestic properties in Rousay, Egilsay and Wyre do not have EPC assessments. EPC Bands E and F-G owner occupied properties make up the largest proportion of these unassessed properties.

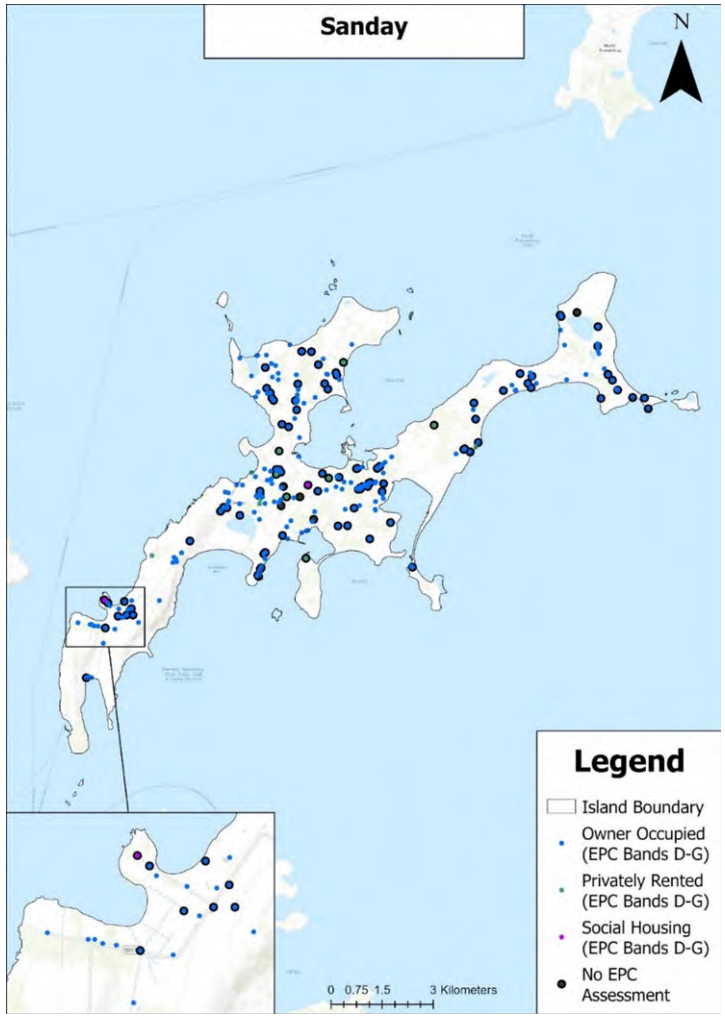
Rousay, Egilsay and Wyre				
Valid EPC	Count	EPC Band	Tenure	Count
Yes	73	D	Owner Occupied	12
			Privately Rented	1
			Social Housing	12
		E	Owner Occupied	19
			Privately Rented	1
			Social Housing	2
		F-G	Owner Occupied	23
			Privately Rented	3
			Social Housing	0
No	36	D	Owner Occupied	0
			Privately Rented	1
			Social Housing	0
		E	Owner Occupied	9
			Privately Rented	2
			Social Housing	0
		F-G	Owner Occupied	22
			Privately Rented	1
			Social Housing	1



Sanday

Domestic properties that do not have EPC assessments are in the minority (40%). EPC Band E owner occupied properties make up the largest proportion of these unassessed properties, followed by EPC Band D and F-G owner occupied properties.

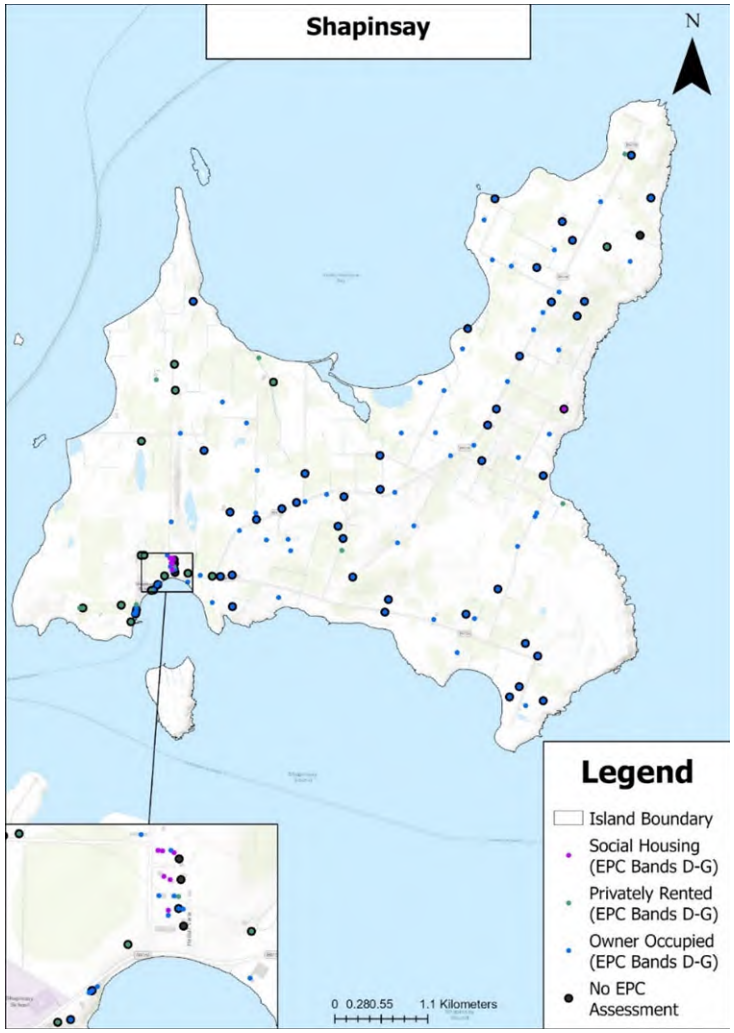
Sanday				
Valid EPC	Count	EPC Band	Tenure	Count
Yes	150	D	Owner Occupied	45
			Privately Rented	1
			Social Housing	2
		E	Owner Occupied	51
			Privately Rented	3
			Social Housing	0
		F-G	Owner Occupied	45
			Privately Rented	3
			Social Housing	0
No	98	D	Owner Occupied	16
			Privately Rented	0
			Social Housing	0
		E	Owner Occupied	63
			Privately Rented	5
			Social Housing	2
		F-G	Owner Occupied	10
			Privately Rented	2
			Social Housing	0



Shapinsay

In Shapinsay, 78% of properties are owner occupied properties and 44% have EPC assessments. Of the 44% of domestic properties without EPC assessments, 31% fall in the EPC Band E owner occupied category.

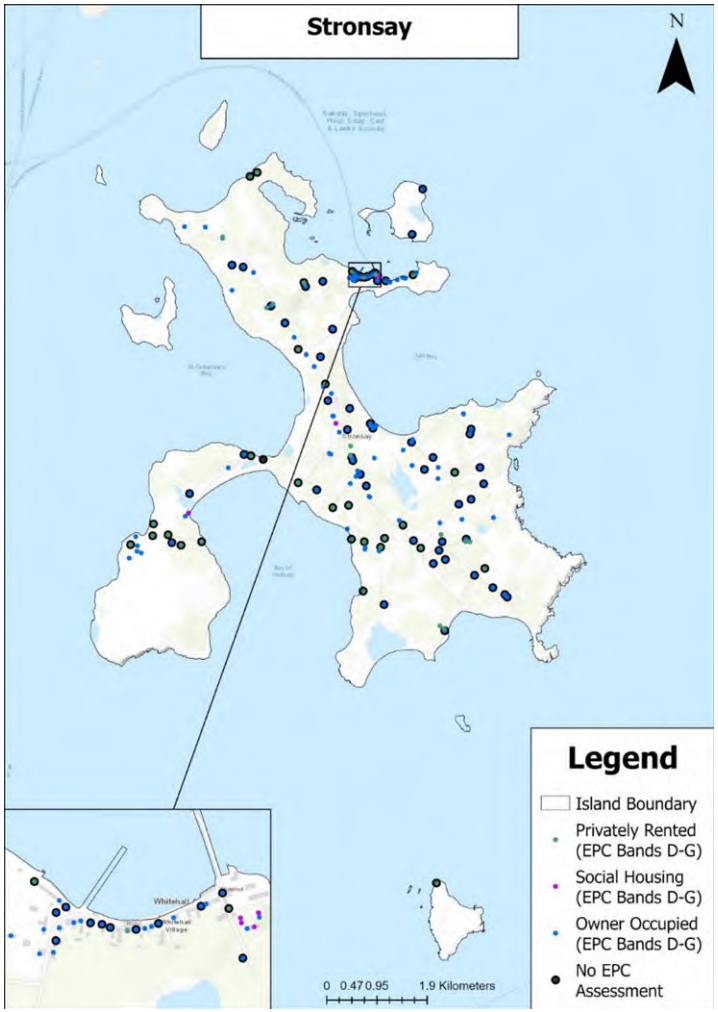
Shapinsay				
Valid EPC	Count	EPC Band	Tenure	Count
Yes	76	D	Owner Occupied	15
			Privately Rented	5
			Social Housing	4
		E	Owner Occupied	31
			Privately Rented	3
			Social Housing	3
		F-G	Owner Occupied	14
			Privately Rented	1
			Social Housing	0
No	60	D	Owner Occupied	3
			Privately Rented	1
			Social Housing	0
		E	Owner Occupied	42
			Privately Rented	12
			Social Housing	0
		F-G	Owner Occupied	1
			Privately Rented	1
			Social Housing	0



Stronsay

74% of properties are owner occupied in Stronsay, of which 41% have an EPC. Just under half of all properties in the island do not have EPC assessments. Most of these are EPC Band E and F-G owner occupied properties. There is also a relatively high count of EPC Band E privately rented properties with unconfirmed assessments.

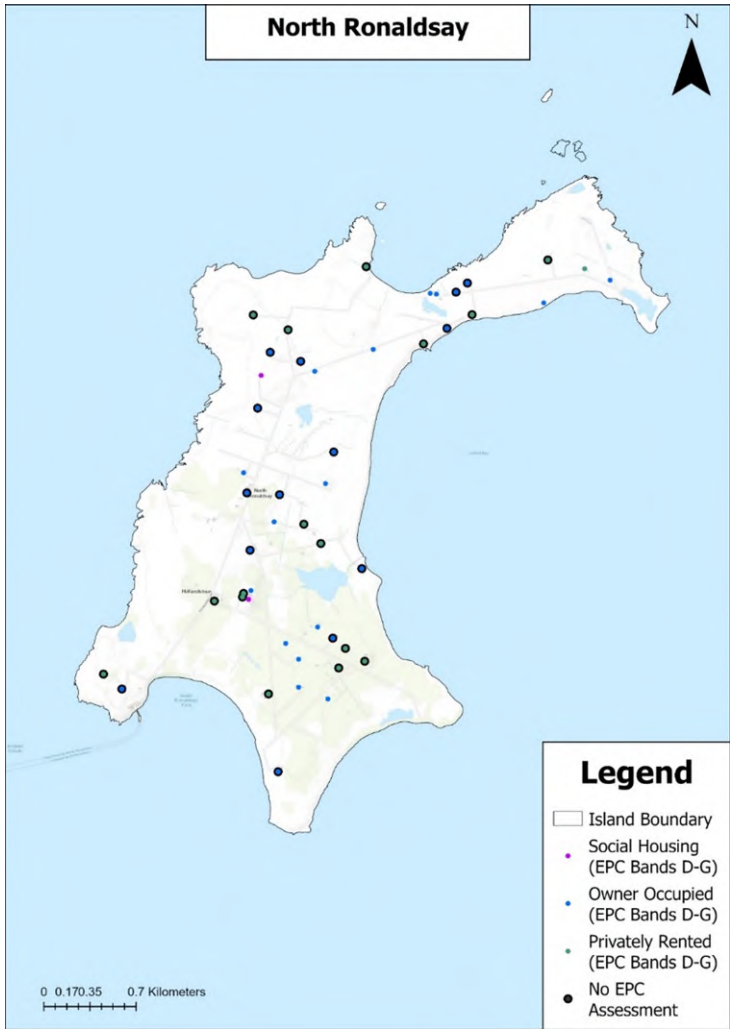
Stronsay				
Valid EPC	Count	EPC Band	Tenure	Count
Yes	90	D	Owner Occupied	9
			Privately Rented	1
			Social Housing	4
		E	Owner Occupied	33
			Privately Rented	5
			Social Housing	0
		F-G	Owner Occupied	30
			Privately Rented	6
			Social Housing	2
No	85	D	Owner Occupied	1
			Privately Rented	0
			Social Housing	0
		E	Owner Occupied	29
			Privately Rented	24
			Social Housing	0
		F-G	Owner Occupied	27
			Privately Rented	4
			Social Housing	0



North Ronaldsay

63% of domestic properties do not have EPC assessments. EPC Bands F-G owner occupied properties make up the largest proportion of these unassessed properties.

North Ronaldsay				
Valid EPC	Count	EPC Band	Tenure	Count
Yes	18	D	Owner Occupied	2
			Privately Rented	0
			Social Housing	1
		E	Owner Occupied	4
			Privately Rented	1
			Social Housing	0
		F-G	Owner Occupied	9
			Privately Rented	0
			Social Housing	1
No	30	D	Owner Occupied	2
			Privately Rented	0
			Social Housing	0
		E	Owner Occupied	2
			Privately Rented	8
			Social Housing	0
		F-G	Owner Occupied	10
			Privately Rented	8
			Social Housing	0



Papa Westray

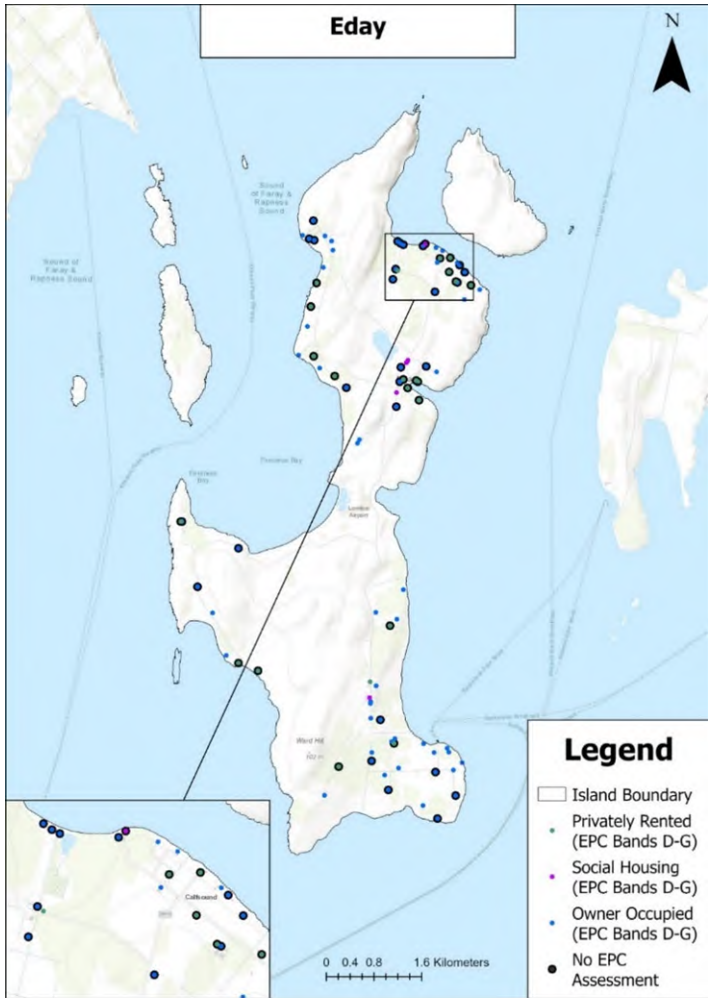
The majority of domestic properties are EPC Band E in Papa Westray. A third of properties do not have an EPC. Most of these are EPC Band E privately rented properties.

Papa Westray				
Valid EPC	Count	EPC Band	Tenure	Count
Yes	34	D	Owner Occupied	8
			Privately Rented	4
			Social Housing	0
		E	Owner Occupied	13
			Privately Rented	0
			Social Housing	0
		F-G	Owner Occupied	8
			Privately Rented	1
			Social Housing	0
No	17	D	Owner Occupied	0
			Privately Rented	0
			Social Housing	0
		E	Owner Occupied	5
			Privately Rented	12
			Social Housing	0
		F-G	Owner Occupied	0
			Privately Rented	0
			Social Housing	0

Eday

65% of domestic properties do not an EPC assessment in Eday. Over half (54%) of the properties are EPC Band F-G, with owner occupied and privately rented properties having the highest number of unassessed EPCs in this category.

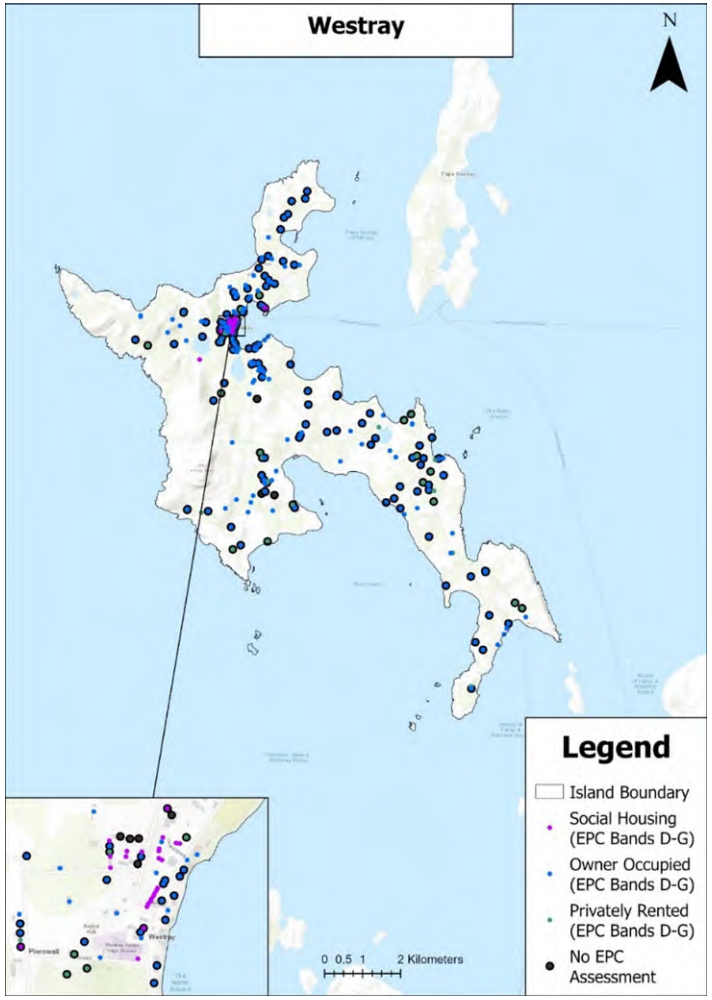
Eday				
Valid EPC	Count	EPC Band	Tenure	Count
Yes	25	D	Owner Occupied	0
			Privately Rented	1
			Social Housing	4
		E	Owner Occupied	0
			Privately Rented	1
			Social Housing	0
		F-G	Owner Occupied	18
			Privately Rented	0
			Social Housing	1
No	54	D	Owner Occupied	0
			Privately Rented	2
			Social Housing	0
		E	Owner Occupied	9
			Privately Rented	0
			Social Housing	0
		F-G	Owner Occupied	23
			Privately Rented	19
			Social Housing	1



Westray

Just over half (55%) of domestic properties do not an EPC assessment in Westray. Over a third (35%) of these properties have EPC Band E.

Westray				
Valid EPC	Count	EPC Band	Tenure	Count
Yes	127	D	Owner Occupied	31
			Privately Rented	2
			Social Housing	23
		E	Owner Occupied	35
			Privately Rented	6
			Social Housing	1
		F-G	Owner Occupied	26
			Privately Rented	3
			Social Housing	0
No	158	D	Owner Occupied	26
			Privately Rented	13
			Social Housing	3
		E	Owner Occupied	80
			Privately Rented	18
			Social Housing	1
		F-G	Owner Occupied	15
			Privately Rented	2
			Social Housing	0



Actions for energy efficiency

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
Collaboration between OHAL and OIC	Immediate	The Council/OHAL will explore ways of collaborating on energy efficiency in social housing, including combined funding applications.	OIC OHAL	OIC OHAL	Decision made on focus and frequency of meetings.
Develop data sharing agreement for energy efficiency data	Immediate	The Council will develop a data sharing agreement so the Council can share the data analysis from LHEES with relevant stakeholders.	OIC	OIC EST ICNZ	Data sharing agreement signed.
Share energy efficiency data with Warmworks	Immediate	The Council will share energy efficiency data with the managing agent to support planning for the HEES:ABS scheme.	OIC	OIC Managing agent	Data shared.
Share energy efficiency data with Islands Centre for Net Zero	Immediate	The Council will share energy efficiency data with the Islands Centre for Net Zero to support their energy data hub for Orkney, the Western Isles, and Shetland.	OIC	OIC EST ICNZ	Data shared.
Addressing fuel poverty in social housing	Immediate	Planned maintenance activities for Council properties will address energy efficiency. The Council will focus on fabric insulation, air tightness, and efficiency of heating systems until the new Social Housing Net Zero Standard is announced.	OIC	OIC OHAL Construction Partners	Improved fabric insulation, air tightness, and efficiency of heating systems.

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
Training for retrofit assessors	Immediate	THAW is training retrofit assessors to offer more services to fuel poor households. More detailed assessments for homes in fuel poverty can help homes get more funding for retrofit projects.	THAW Orkney	OIC THAW	Improved data on retrofit needs in Orkney.
Third sector retrofit projects	Immediate	THAW is starting retrofit projects for homes in fuel poverty. THAW focusses on projects that help households become eligible for other funding, such as HEES:ABS.	THAW Orkney	OIC THAW	Increase in fuel poor households eligible and ready for energy efficiency schemes.
Collaboration for fuel poverty	Immediate	A number of organisations are part of the Orkney Money Matters initiative to coordinate fuel poverty working in Orkney.	Orkney Money Matters	OIC, The Orkney Partnership, Orkney Foodbank, NHS Orkney, Social Security Scotland, OHAL, The Trussell Trust	Increase in households supported.
Walliwall housing development	Immediate	OHAL will continue working on Walliwall Stage 9 housing project.	OHAL	OHAL Construction Partners	Increase in number of energy efficient, new build homes.
Improve OHAL energy efficiency data	Immediate	OHAL to digitise data on their housing stock, like housing condition surveys. This will help OHAL understand the energy efficiency of their stock better.	OHAL	OIC OHAL	Housing condition surveys will be fully digitised.

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
		From Local Housing Strategy:			
Energy efficiency pilot projects on Council social housing	Immediate	OIC has been trialling approaches to meet the higher energy efficiency standard, undertaking an individual assessment when a property becomes void and taking a Fabric First approach, coupled with fitting mechanical heat recovery ventilation systems to help maintain air quality alongside ensuring the provision of an efficient heating system.	OIC	OIC OHAL Construction Partners	Identify viable approaches to energy efficiency retrofit in Council social housing properties.
Finalise decarbonisation of domestic Council social housing	Immediate	*From Council Delivery Plan:* The Council will finalise programme of decarbonisation for Council-owned housing stock.	OIC	OIC Construction Partners	Publish programme of decarbonisation.
Collect data on private rented sector interest in HEES:ABS	Immediate	The Council to collect data from Warmworks on number of private rented sector landlords who enquired about HEES:ABS funding but were not eligible. This could identify potential projects in the private rented sector.	OIC	OIC OHAL Managing Agent	Data obtained on private rented sector interest.
Collaboration on energy efficiency standards	Immediate	The Council to liaise with OHAL to understand similarities and differences between energy efficiency standards across Orkney's social housing.	OIC	OIC OHAL Construction Partners	Clarify differences between Council and OHAL energy efficiency standards.

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
OHAL to submit SHNZHF bids	Medium-term	OHAL will continue submitting bids to the Social Housing Net Zero Heat Fund for retrofit projects. They will focus on fabric measures, heat pumps, and high retention storage heaters.	OHAL	OIC OHAL	Funding awarded for retrofit work.
Develop plan for social housing	Medium-term	The Council and OHAL will develop delivery plans in line with new Social Housing Net Zero Standard (yet to be published by Scottish Government).	OIC OHAL	OIC OHAL	Delivery plans put in place to improve energy efficiency in social housing.
Energy efficiency data pilot project.	Medium-term	Owner occupied and private rented homes have lower levels of EPC data. The Council is interested in undertaking a surveying project on one of the Northern Isles to provide more information on how energy efficiency can be improved across an entire island.	OIC	OIC ICNZ Local Development Trusts	Funding secured for a surveying project.
Whole house energy assessments	Medium-term	Reflex Orkney will introduce whole house energy assessments that provide a recommended list of measures for each building. People can use these recommendations to take advantage of funding when it becomes available.	Reflex Orkney	ReFlex Orkney OIC ICNZ	Whole house energy assessments available for domestic and commercial properties.
Increase HEES:ABS bid values	Medium-term	OIC/Warmworks will scale-up and submit higher value bids for HEES:ABS funding in coming years to cover more properties.	OIC Managing Agent	OIC Managing Agent	HEES:ABS funding awards increase.
HEES:ABS funding for heat pumps	Medium-term	Warmworks/Managing agent will explore offering heat pumps as part of the HEES:ABS scheme. Further work is needed to determine feasibility, including finding installers.	OIC Managing Agent	OIC Managing Agent	Heat pumps added to the HEES:ABS measurement, if feasible.

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
Advanced training for retrofit assessors	Medium-term	THAW is aiming to train employees in renewables and traditional building assessments.	THAW Orkney		Renewables and traditional building assessments available.
Carbon Neutral Islands for Orkney	Medium-term	*From Council Delivery Plan:* The Council will work with the Scottish Government and other stakeholders to ensure that the benefits of the Carbon Neutral Islands project are shared across all other Orkney islands (from Council Plan Delivery Plan.)	The Council	Scottish Government	
Update Orkney Sustainable Energy Strategy		*From Council Delivery Plan:* Update Orkney Sustainable Energy Strategy in line with Scottish Government 'Energy Strategy and Just Transition Plan.'	The Council	Scottish Government	Publish updated Orkney Sustainable Energy Strategy.
Energy efficiency data project	Long-term	If the energy efficiency pilot project is successful, the Council will replicate for more islands.	The Council	Islands Centre for Net Zero, local development trusts	Surveying projects for multiple islands.
Investigate Passivhaus standard	Long-term	The Council will investigate Passivhaus standards as an option for new build and refurbishment for Council social housing.	The Council		Decision made on Passivhaus standard.
Investigate EnerPHit standard	Long-term	The Council will investigate EnerPHit standard and other similar standards for existing stock retrofit schemes.	The Council		Decision made on standard for existing stock retrofit.

Funding for energy efficiency

The Council will draw on available funding from the Scottish Government and other providers to support energy efficiency upgrades of homes.

Social housing

The Social Housing Net Zero Heat Fund supports social housing landlords across Scotland to install zero direct emission heating systems. Funding for “fabric first” energy efficiency projects is also available; however, applicants are required to demonstrate a commitment to installing eligible ZDEH systems into these properties. There is currently £200 million available over five years up to 2026 and the fund supports capital costs and resource support to help build a pipeline of future projects. The fund can cover up to a maximum of 60% of total capital expenditure costs for zero direct emissions heating elements and 50% of the fabric and energy efficiency measures.

Mixed tenure

Heat and Energy Efficient Scotland: Area Based Schemes (HEES:ABS) are designed and delivered by local authorities, in combination with utility companies and local delivery partners. This funding is provided by Scottish Government. Schemes are targeted in areas in or at risk of fuel poverty and is intended for owner-occupiers and private landlords. HEES:ABS has historically focused on installing single insulation measures but is now expanding to a ‘whole house’ approach and includes other measures such as zero emissions heating systems. By working on an area-based delivery model, the programme enables mixed-tenure projects, bringing together homeowners, housing associations, and private landlords.

Owner-occupiers

The HES grant and loan is available to homeowners and offers grant funding for heat pumps of £7,500, or £9,000 to those living in rural areas. There is also £7,500 available as an optional interest free loan to further help towards the installation of a heat pump. £6,000 of interest free loan funding is available for households for solar PV panels when taken as a package of measures including a heat pump. In addition to this funding, up to 75% of the cost of energy efficiency measures can be covered by grant funding, up to a maximum of £7,500 or £9,000 in rural areas. The final 25% can be covered by an interest free loan, or paid by the customer as the loan is optional. These energy efficiency measures include but are not limited to cavity wall insulation, solid wall insulation, loft insulation, and floor insulation.

Warmer Homes Scotland (WHS) offers funding and support to households struggling to stay warm and keep on top of energy bills. This programme is available for homeowners and private sector tenants. WHS takes a ‘whole house’ approach, offering eligible households a bespoke package of measures that takes account of both the needs of the property and the needs of the household. Heating measure

installations are not available in private rented properties. This programme is most often fully grant funded, and potential improvements include wall insulation, loft insulation, draught-proofing, central heating, and renewables. Households must meet the eligibility criteria[2] and live in a property with a low efficiency rating. Interest free loans of up to £10,000 are available for homeowners or landlords who require further assistance to help pay a contribution towards the work.

The Energy Company Obligation (ECO 4) is in its fourth round as a grant/subsidy scheme which provides insulation and heating measures for low income, vulnerable owner occupiers. The measures and funding available are based on specific eligibility criteria and can include insulation, heat network connection, renewable measures, heating installation and repair. This funding is managed through Ofgem, with energy companies determining which retrofit projects they choose to fund and what level of funding they provide. It is available to households in an Affordable Warmth Group in receipt of benefits or tax credits. This fund is also available to households in properties with an EPC of D, E, F, or G.

ECO Flex is a household referral mechanism made available through the wider ECO 4 scheme. This program allows local authorities to widen the eligibility criteria to include households that would otherwise not be eligible through the ECO 4 standard criteria. Under this scheme, participating local authorities can refer owner occupied and private tenured households considered to be at risk of living in fuel poverty or on low income and vulnerable to the impacts of living in a cold home. Orkney Islands Council have previously incorporated ECO Flex funding to HEES:ABS projects. However, the funding requirements have changed, and this is no longer permitted. The Council will assess what resources are required to facilitate future ECO 4-only projects.

[2] Eligibility criteria detailed on the Home Energy Scotland website

Non-domestic Council buildings

The Council operates and leases many non-domestic buildings across Orkney. It is the Council's responsibility to do what is possible to make these buildings more energy efficient and replace their heating systems to zero direct emissions heating.

The Council will focus on improving the fabric and energy efficiency of buildings and transitioning to net zero heating systems for buildings currently using heating oil or LPG. The retrofit measures will be completed when it is most financially viable and alongside replacement of the building fabric and heating system. For example, roof insulation may be installed when the roof tiles are replaced.

Actions for non-domestic Council buildings

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
Hope Primary School retrofit	Immediate	The Council will install an air source heat pump (to replace oil heating), triple glazed windows, and improve air tightness.	OIC	OIC Construction Partners	Zero direct emissions heating installed, and energy efficiency improved.
Picky Campsite domestic hot water upgrade	Immediate	The Council will retrofit the domestic hot water system to be powered by a heat pump.	OIC	OIC Construction Partners	Zero direct emissions water heating installed.
		From Carbon Management Programme:			
Evaluate Council carbon emissions data	Immediate	The Council will start an evaluation of baseline data relating to the Council's carbon emissions in order to provide an accurate and consistent approach to the reporting and management of total corporate emissions.	OIC	OIC Aether	Baseline analysis of Council buildings complete.

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
EPC assessments for OIC operational buildings	Medium-term	The Council will conduct EPCs on the remaining properties that are required to have up to date EPCs (250m² or greater floor area & open to the public).	OIC	OIC	All required operational buildings will have up to date EPCs.
Orkney Library and Archive air source heat pump	Medium-term	The Council will replace the oil heating system with an air source heat pump at Orkney Library and Archive.	OIC	OIC Construction Partners	Zero direct emissions heating installed.
Stromness Swimming Pool air source heat pump	Medium-term	The Council will replace the oil heating system with an air source heat pump at Stromness Swimming Pool.	OIC	OIC Construction Partners	Zero direct emissions heating installed.
Oil boiler replacement schemes	Medium-term	The Council will develop schemes for remaining oil boiler replacement in the Council's buildings.	OIC	OIC Construction Partners	Zero direct emissions heating installed.
Building Energy Reports for Kirkwall properties	Medium-term	The Council will conduct Building Energy Reports for OIC buildings in central Kirkwall.	OIC	OIC	Assessment complete for all OIC owned buildings in central Kirkwall.
Building Energy Reports for all Council buildings	Medium-term	The Council will conduct Building Energy Reports for all occupied and leased non-domestic OIC buildings to improve data.	OIC	OIC	100% of Council-owned buildings have BERs.

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
Building Energy Reports for non-Council owned buildings	Medium-term	The Council will conduct Building Energy Reports for all occupied and leased non-domestic and non-Council owned buildings to improve data.	OIC	OIC	100% of *all* non-domestic buildings have BERs.
EPC assessments for all leased OIC properties	Medium-term	The Council will conduct EPC assessments for every leased property, regardless of lease renewal date.	OIC	OIC Tenants	100% of leased Council buildings have valid EPC assessments.
Action plan for leased OIC properties	Medium-term	The Council will develop an action plan to improve leased properties. The Council will prioritise zero direct emissions heating and fabric improvements based on cost benefit.	OIC	OIC Tenants	100% of leased Council buildings have NZDE Heating System.
Finalise decarbonisation programmes	Long-term	*From Council Delivery Plan:* The Council will finalise decarbonisation programmes for the school estate, infrastructure property, and ICT estate buildings.	OIC	OIC Construction Partners	Finalise decarbonisation programmes.
Carbon Neutral Islands pilot project	Long-term	*From Council Delivery Plan:* The Council will replicate Carbon Neutral Islands project on one or more islands.	OIC	CNI OIC Development Trusts	Replicate project plan developed

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
Support commercial building owners	Long-term	*From Carbon Management Programme:* The Council will develop mechanisms to support business uptake of renewable energy, smart energy and energy efficiency solutions.	OIC	OIC Reflex Orkney ICNZ	Business Support Project operational

Electrification of heat in homes

Homes across Orkney will need to move from oil heating systems to electric heating systems by 2045 at the latest. This will require collaboration between the Council and a number of stakeholders.

The Council will work with SSEN (the Distribution Network Operator for Orkney) to develop the future energy scenario for Orkney. The LENZA tool will be used to identify increases in supply required to meet the additional load associated with heat pumps replacing oil heating systems. The installation of EV charging infrastructure will also be considered together with the opportunities for on-site renewable generation, likely solar PV.

The Islands Centre for Net Zero will also be working with the wider community and business sector to identify anticipated future demands.

Actions for electrification of heat in homes

Action	Priority	Description	Responsibility	Key stakeholders	Measure of success
Collaborate with SSEN to plan for electrification of heat	Immediate	The Council will collaborate with SSEN to identify and develop a plan for improving the electricity grid to support heat pumps and other electric heating systems.	OIC SSEN	OIC SSEN	Published plan for grid upgrades.
Collaborate with the Islands Centre for Net Zero	Immediate	The Council will collaborate with the Islands Centre for Net Zero to identify future energy demands and share data on electrification of heat.	The Council, Islands Centre for Net Zero	OIC ICNZ	Data sharing initiated
Air tightness testing for void OIC properties	Immediate	The Council will begin conducting air tightness tests for Council-owned buildings when they become void.	The Council	OIC Tenants	All void buildings will have air tightness tests.
Explore options for retraining oil heating engineers for heat pumps	Medium-term	The Council and UHI to explore opportunities for retraining oil heating engineers and others to install and maintain heat pumps.	The Council & University of Highlands and Islands	OIC Construction Partners	Training programmes developed and delivered

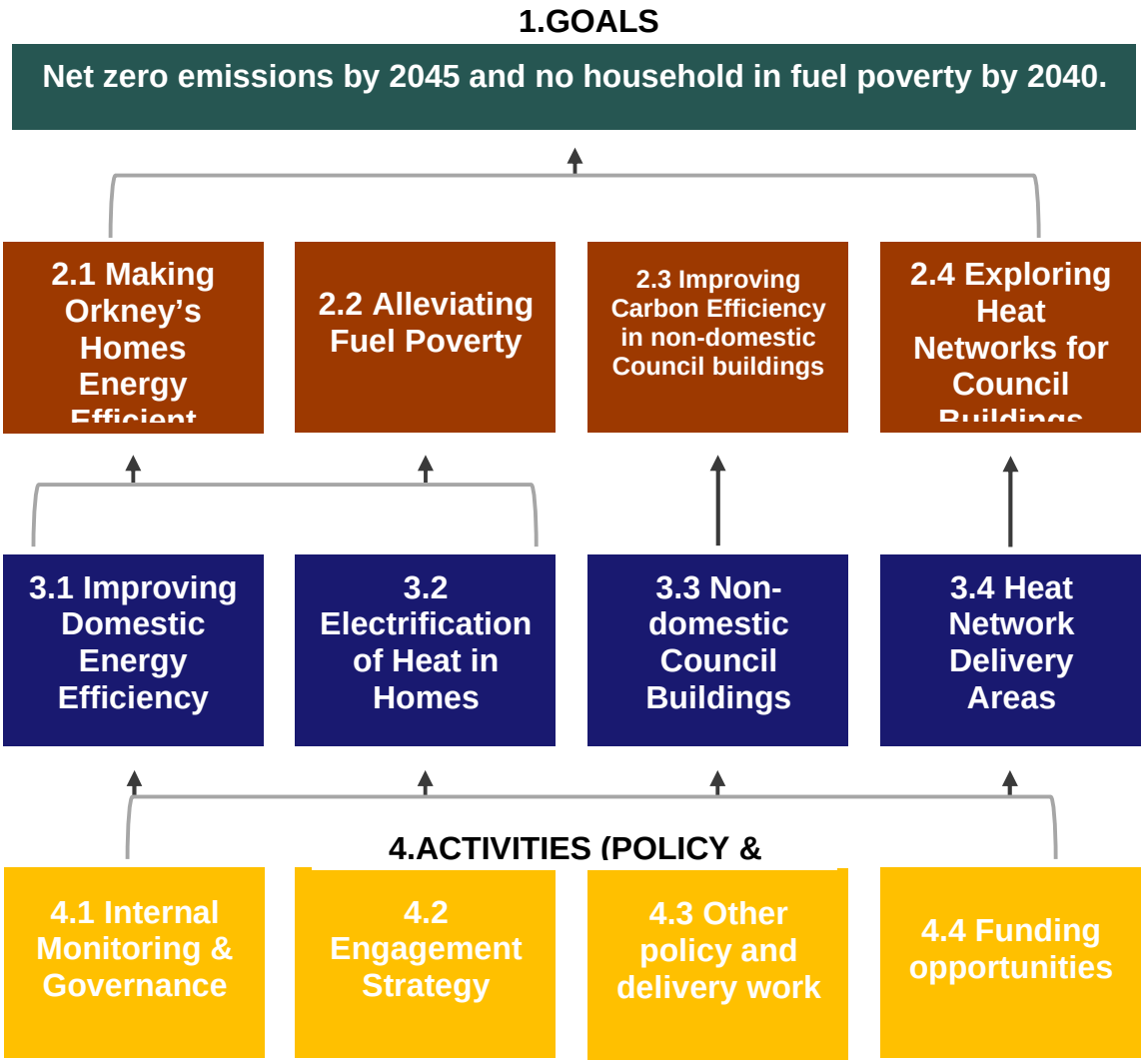
Monitoring and evaluation framework

The monitoring and evaluation frameworks should be used by the council to measure progress against LHEES considerations, local priorities and targets identified in the LHEES Stage 1 and reported against in Stage 3, and to report on the effectiveness of their LHEES delivery.

They should also set out, as far as reasonably possible, a portfolio of projects that are to be taken forward, and track progress of ongoing projects related to LHEES. The frameworks below provide a useful starting point, however, and are to be completed and updated by Orkney Islands Council as per the council's governance arrangements. The council is responsible for identifying quantifiable, time-measured targets in line with statutory requirements and local priorities. The monitoring and evaluation frameworks can be found in the Appendix of this document.

A monitoring map has been developed to show the enabling factors that will need to be in place in order to fulfil the overarching objectives of Orkney Islands Council's LHEES Strategy and Delivery Plan.

Figure 1: A Monitoring Map to show Orkney Islands Council's pathway for decarbonising heat in buildings and improving energy efficiency



Conclusion and next steps

This Delivery Plan is designed to sit alongside the LHEES Strategy. It provides a more detailed view of the actions required over the next five years to decarbonise Orkney's domestic and non-domestic building stock. This Delivery Plan details the immediate and medium-term actions that can be delivered now, given the existing policy landscape.

It is a statutory duty for the Council to update the LHEES every five years. Due to the urgency of the climate emergency, and the rapidly evolving policy landscape, the Delivery Plan will be monitored, updated and reported on annually, while the Strategy will be reviewed every five years. This means they should be treated as live documents which will respond to the introduction of new standards, regulation, and delivery programmes.

Appendix: Monitoring and Evaluation Frameworks broken down by Goals, Outcomes, Method and Activities

Key

Status	Colour
Not yet started	F
In progress	P
Slightly Delayed (<3 months)	D
Significantly Delayed (>3 months)	X
Complete	C

Table 1: Goals: an evaluation framework to monitor progress towards national decarbonisation targets.

Item	Target	Relevant indicators	Data type and source	Baseline (data)	Progress 2025-26	Timescale	Status
1.1	Net zero emissions by 2045	Greenhouse gas emissions statistics	Scottish National Net Zero Emission Figures			**2045**	**P**
1.2	75% Net zero emissions by 2030	Greenhouse gas emissions statistics	Scottish National Net Zero Emission Figures			**2030**	**P**
1.2	No household in fuel poverty by 2040	Fuel poverty statistics	Scottish National Fuel Poverty Figures			**2040**	**P**

Table 2: Outcomes: an evaluation framework to monitor progress of Orkney Islands Council's LHEES Priorities.

Priority	Target	Relevant indicators	Data type and source	Baseline (data)	Progress 2025-26	Timescale	Status
A Making Orkney's homes energy efficient	Improving energy efficiency of homes to reduce heat demand.	EPC energy efficiency rating C or above	EST Home Analytics				**P**
		EPC energy efficiency rating D or below	EST Home Analytics				**P**
B Alleviating Fuel Poverty	Improve energy efficiency of homes through fabric improvements to tackle fuel poverty.	Number of households in fuel poverty	Scottish			2040	**P**
		Average household energy cost as a percentage of income				2040	**P**

Priority	Target	Relevant indicators	Data type and source	Baseline (data)	Progress 2025-26	Timescale	Status
C Improving Carbon Efficiency in non-domestic Council buildings	Improve non domestic buildings through fabric improvements and heating system upgrades	Number of buildings with zero direct emissions heating	OIC Estates Data			2045	**P**
		% of building stock powered by renewable sources					**P**
D Exploring Heat Networks for Council Buildings	The Council is focused on exploring heat networks to connect Council buildings and heat sources.	Number of heat networks established	OIC Estates Data	0		By October 2029	**P**
		Carbon emissions from the built environment on Network	OIC Estates Data				**P**

Table 3: Method: an evaluation framework to monitor progress within Orkney Islands Council's delivery areas.

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency	Collaboration between OHAL and OIC	Explore ways of collaborating on energy efficiency in social housing, including combined funding applications.	OIC	NS&I EL&H	OHAL	By 2026	**P**
	Develop data sharing agreement for energy efficiency data	Develop a data sharing agreement so the Council can share the data analysis from LHEES with relevant stakeholders.	OIC	NS&I EL&H	ICNZ EST External Consultants	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued.	Share energy efficiency data with Warmworks	Share energy efficiency data with Warmworks to support planning for the HEES:ABS scheme.	OIC	NS&I EL&H	Warmworks	By 2026	**P**
	Share energy efficiency data with Islands Centre for Net Zero	Share energy efficiency data with the Islands Centre for Net Zero to support their energy data hub for Orkney, the Western Isles, and Shetland.	OIC	NS&I EL&H	ICNZ	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued.	Address fuel poverty in social housing through retrofit measures	Planned maintenance activities for OIC properties will address energy efficiency. They will focus on fabric insulation, air tightness, and efficiency of heating systems until the new Social Housing Net Zero Standard is announced.	OIC	NS&I EL&H	OHAL OIC Construction Partners	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued.	Training for retrofit assessors	THAW is training retrofit assessors to offer more services to fuel poor households. More detailed assessments for homes in fuel poverty can help homes get more funding for retrofit projects.	THAW	THAW Training Partners	THAW Training Partners	By 2026	**P**
	Third sector retrofit projects	THAW is starting retrofit projects for homes in fuel poverty. THAW focusses on projects that help households become eligible for other funding, such as HEES:ABS.	THAW	THAW Training Partners	THAW Training Partners	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued.	Collaboration for fuel poverty	A number of organisations are part of the Orkney Money Matters initiative to coordinate fuel poverty working in Orkney	Orkney Money Maters		OIC The Orkney Partnership, Orkney Foodbank, NHS Orkney, Social Security Scotland, OHAL, The Trussell Trust	By 2026	**P**
	Walliwall housing development	OHAL will continue working on Walliwall Stage 9 housing project	OHAL	OHAL External Consultants	OHAL Construction Partners	By 2026	**P**
	Improve OHAL energy efficiency data	OHAL to digitise data on their housing stock, housing condition surveys.	OHAL	OHAL OIC External Consultants	OHAL Construction Partners	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued.	Energy efficiency pilot projects on Council social housing	*From Local Housing Strategy:* The Council has been trialling approaches to meet the higher energy efficiency standard, undertaking an individual assessment when a property becomes void and taking a Fabric First approach, coupled with fitting mechanical heat recovery ventilation systems to help maintain air quality Identify lost rental impact of Void works	OIC	NS&I EL&H	OIC OHAL Construction Partners	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued.	Finalise decarbonisation of domestic Council social housing	*From Council Delivery Plan:* The Council will finalise programme of decarbonisation for Council-owned housing stock	OIC	NS&I EL&H	OIC OHAL Construction Partners	By 2026	P
	Collect data on private rented sector interest in HEES:ABS	The Council to collect data from Warmworks on number of private rented sector landlords who enquired about HEES:ABS funding but were not eligible. This could identify potential projects in the private rented sector.	OIC	NS&I EL&H	OIC Managing Agent	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued.	Collaboration on energy efficiency standards	The Council to liaise with OHAL to agree energy efficiency standards across Orkney's social housing	OIC	NS&I EL&H OHAL	OIC OHAL	By 2026	**P**
	OHAL to submit SHNZHF bids	OHAL will continue submitting bids to the Social Housing Net Zero Heat Fund for retrofit projects. They will focus on fabric measures, heat pumps and high retention storage heaters	OHAL	OHAL		By 2029	**F**
	Develop plan for social housing	OIC and OHAL will develop delivery plans in line with new Social Housing Net Zero Standard	OIC	NS&I EL&H OHAL	OIC OHAL	By 2029	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued.	Energy efficiency data pilot project	Owner occupied and private rented homes have lower levels of EPC data. The Council is interested in undertaking a surveying project on one of the Northern Isles to provide more information on how energy efficiency can be improved across an entire island	OIC	NS&I EL&H	OIC OHAL North Isles Development Trust	By 2029	**F**
	Increase HEES:ABS bid values	OIC will scale-up and submit higher value bids for HEES:ABS funding in coming years to cover more properties.	OIC	EL&H	OIC Managing Agent	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued	Whole house energy assessments	Reflex Orkney will introduce whole house energy assessments that provide a recommended list of measures for each building. People can use these recommendations to take advantage of funding when it becomes available	ReFlex Orkney	ReFlex Orkney ICNZ		By 2026	**P**
	HEES:ABS funding for heat pumps	Managing agent will explore offering heat pumps as part of the HEES:ABS scheme. Further work is needed to determine feasibility, including finding installers.	OIC	EL&H	OIC Managing Agent	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued	Advanced training for retrofit assessors	THAW is aiming to train employees in renewables and traditional building assessments.	THAW		THAW Training Partners	By 2029	**F**
	Carbon Neutral Islands for Orkney	*From Council Delivery Plan:* The Council will work with the Scottish Government and other stakeholders to ensure that the benefits of the Carbon Neutral Islands project are shared across all other Orkney islands (from Council Plan Delivery Plan.)	OIC	EL&H NS&I	OIC Scottish Government	By 2029	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued	Update Orkney Sustainable Energy Strategy	*From Council Delivery Plan:* Update Orkney Sustainable Energy Strategy in line with Scottish Government 'Energy Strategy and Just Transition Plan.'	OIC	NS&I	OIC Scottish Government OREF	By 2029	**F**
	Energy efficiency data project	If the energy efficiency pilot project is successful, the Council will replicate for more islands.	OIC	NS&I	OIC ICNZ Local Development Trusts	By 2029	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Improving Domestic Energy Efficiency Continued	Investigate Passivhaus standard	The Council will investigate Passivhaus standards as an option for new build and refurbishment for Council social housing.	OIC	NS&I EL&H	OIC	By 2029	**F**
	Investigate EnerPHit standard	The Council will investigate EnerPHit standard and other similar standards for existing stock retrofit schemes.	OIC	NS&I EL&H	OIC	By 2029	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
	Conservation Areas	work with OIC Planning to address energy efficient refurbishment for properties in conservation areas	OIC	NS&I EL&H	OIC	By 2026	**P**
	Energy Efficiency Standard	Develop a formal policy for the energy efficiency standards for all new build and refurbishment projects.	OIC	NS&I EL&H	OIC SIC CNS ICNZ	By 2029	**F**
	Community Projects	Request update from CES regarding projects in and around Orkney and the other island groups.	OIC	NS&I EL&H	OIC CES ICNZ	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
	Improved Data Sets	investigate the use of additional data sets to help identify vulnerable populations	OIC	NS&I EL&H	OIC CES ICNZ Scottish Government	By 2026	**P**
	New Build High Density Accommodation	investigate planning policy with regards to density	OIC	NS&I EL&H	OIC	By 2026	**P**
	Publicising Information	investigate the opportunity to contact private rented landlords / tenants to inform them of funding opportunities.	OIC	NS&I EL&H	OIC	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
	LA Funding	Investigate opportunities for Local Authority funding for private sector to improve Energy efficiency of properties promote tax opportunities available to private landlords	OIC	NS&I EL&H	OIC Business Gateway	By 2026	**P**
	Maximise EPC Data availability	investigate opportunity to use local energy efficiency assessors to provide no/low cost EPC service to assist in development of Energy Efficiency improvement projects	OIC	NS&I EL&H	OIC	By 2029	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
	Promotion of Energy Efficiency Projects	investigate opportunity to highlight local energy efficiency projects where improvements have been made to a property. Possibly in conjunction with CINZ or ReFLEX Orkney.	CES		CES ICNZ OREF	By 2026	**P**
	EPC Availability	investigate opportunity for Online portal to arrange EPC and understand recommendations. Possibly in conjunction with ICNZ or ReFLEX Orkney.	OIC	NS&I EL&H	OIC	By 2029	**F**
	Building Simulation	Investigate the opportunity for providing building simulation modelling for major projects. OIC could take a lead on this and share results to encourage others to consider use of this.	OIC	NS&I EL&H	OIC	By 2029	**F**
	Building Certification	Investigate the opportunity of providing BREEAM / LEED surveys as part of an energy advice service.	OIC	NS&I EL&H	OIC	By 2029	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
	Energy Advice Centre	investigate the opportunity to provide an energy advice service within Orkney open to both domestic and commercial clients and able to provide technical support	OIC	NS&I EL&H	OIC Business Gateway ReFlex Orkney OREF	By 2029	**F**
	Carbon Monitoring	investigate the option of providing a carbon monitoring service for non domestic properties, companies could sign up and provide billing data to receive an annual CO2 report	OIC	NS&I EL&H	OIC Business Gateway ReFlex Orkney OREF	By 2029	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Electrification of heat in homes	Collaborate with SSEN to plan for electrification o heat	Collaboration between the Council and SSEN to identify a plan for improving the electricity grid to support heat pumps and other electric heating systems.	SSEN	NS&I	OIC SSEN	By 2026	**P**
	Collaborate with the Islands Centre for Net Zero	Identify future energy demands from the commercial sector and work to develop an Orkney wide assessment of future electrical needs.	SSEN	NS&I	OIC ICNZ SSEN	By 2029	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Non-domestic Council buildings	Hope Primary School retrofit	Air source heat pump (to replace oil heating), triple glazed windows, air tightness improvements.	OIC	NS&I EL&H	OIC Construction Partners	By 2026	**P**
	Picky Campsite domestic hot water upgrade	Retrofit the domestic hot water system to be powered by a heat pump or heat network.	OIC	NS&I EL&H	OIC Construction Partners	By 2026	**P**
	Air tightness testing for void OIC properties	The Council will begin conducting air tightness tests for Council-owned buildings when they become void.	OIC	NS&I EL&H	OIC Construction Partners	By 2026	**P**
	Orkney Library and Archive air source heat pump	Replace the oil heating system with ASHP	OIC	NS&I EL&H	OIC Construction Partners	By 2026	**P**
Non-domestic Council buildings	Stromness Swimming Pool air source heat pump	Replace the oil heating system with an ASHP System.	OIC	NS&I EL&H	OIC Construction Partners	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Continued.	Oil boiler replacement schemes	Development of schemes for remaining oil boiler replacement in the Council's building portfolio	OIC	NS&I EL&H	OIC Construction Partners	By 2029	**F**
	Building Energy Reports for Kirkwall properties	Conduct Building Energy Reports for OIC buildings in central Kirkwall.	OIC	NS&I EL&H	OIC	By 2026	**P**
	Building Energy Reports for all Council buildings	Conduct Building Energy Reports for all occupied and leased non-domestic OIC buildings to improve data.	OIC	NS&I EL&H	OIC	By 2029	**F**
Non-domestic Council buildings Continued.	Evaluate Council carbon emissions data	*From Carbon Managemen Programme* Start an evaluation of baseline data relating to the Council's carbon emissions in order to provide an accurate and consistent approach to the reporting and managemen of total corporate emissions.	OIC	NS&I EL&H	OIC	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
	EPC assessments for all leased OIC properties	The Council will conduct EPC assessments for every leased property, regardless of lease renewal date.	OIC	NS&I EL&H	OIC	By 2029	**F**
	Action plan for leased OIC properties	The Council will develop an action plan to improve leased properties. The Council will prioritise zero direct emissions heating and fabric improvements based on cost benefit.	OIC	NS&I EL&H	OIC	By 2029	**F**
	Finalise decarbonisation programmes	*From Council Delivery Plan:* finalise decarbonisation programmes for the school estate, infrastructure property, and ICT estate buildings	OIC	NS&I EL&H	OIC	By 2034	**F**
	Carbon Neutral Islands pilot project	*From Council Delivery Plan:* replicate Carbon Neutral Islands project on one or more islands.	OIC	NS&I EL&H	ICNZ CNI Development Trusts	By 2029	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
	Support commercial building owners	*From Carbon Managemen Programme:* develop mechanisms to support business uptake of renewable energy, smart energy and energy efficiency solutions.	OIC	NS&I EL&H	OIC ICNZ ReFlex Orkney	By 2029	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
	Development of Brownfield Sites	investigate synergies between Development Plan and LHEES with respect to development of brown field sites	OIC	NS&	OI	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Heat Network Delivery Areas	Consider Central Kirkwall heat network zone	The Council will have internal discussions about the Central Kirkwall potential heat network zone.	OIC	NS&I External Consultants SG Heat Networks Team	OIC Fire & Police Hoteliers	By 2026	**P**
	Engineering assessment	The Council will undertake an engineering assessment for a heat network to service OIC schools and the Council Office in Kirkwall	OIC	NS&I External Consultants	OIC	By 2026	**P**
	Feasibility studies for housing developments	Commission a feasibility study on using ambient heat networks to supply heat pumps as an alternative to individual bore hole schemes.	OIC	NS&I EL&H External Consultants SG Heat Networks Team	OIC Construction Partners	By 2029	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Heat Network Delivery Areas Continued.	Feasibility study in Hoy for wind to heat network	Carry out feasibility study on wind to heat network scheme covering North Walls School and surrounding properties in Hoy	OIC	NS&I External Consultants	OIC HWDT	By 2026	**P**
	Finstown waste heat opportunity	Investigate Finstown Transmission sub-station as a waste heat opportunity for a heat network.	OIC	NS&I External Consultants SSEN	OIC SSEN	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Heat Network Delivery Areas Continued.	Communal heating for Council social housing clusters	Investigate viability of small-scale communal heating for clusters of Council social housing. For example, communal heat pump system for a small group of neighbouring Council homes.	OIC	NS&I EL&H External Consultants	OIC Construction Partners	By 2029	**F**
	Central Kirkwall heat network	Development of Kirkwall Town Centre heat network, subject to positive feasibility study and business case.	OIC	NS&I External Consultants SG Heat Networks Team	OIC Fire & Police Hoteliers	By 2034	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Heat Network Delivery Areas Continued.	Feasibility study in Stromness	Commission a feasibility study to explore the Stromness heat network (further heat network 2 above.)	OIC	NS&I EL&H External Consultants	OIC Construction Partners	By 2029	**F**
	Feasibility study Dounby	Commission a feasibility study to explore the Dounby heat network (further heat network 3 above.)	OIC	NS&I EL&H External Consultants	OIC Construction Partners	By 2034	**F**
	Explore heat network options for Pierowall	Investigate a sea water source heat network at care home and Westray Junior High School in Pierowall.	OIC	NS&I EL&H External Consultants	OIC Construction Partners	By 2034	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
Heat Network Delivery Areas Continued	Explore heat network opportunities for domestic properties	Investigate heat network options that would connect to domestic properties in Orkney.	OIC	NS&I EL&H External Consultants	OIC Construction Partners	By 2034	**F**
	Heat Pump to Heat Networks	investigate existing heat pump properties where conversion to heat network is a possibility.	OIC	NS&I	OIC Construction Partners	By 2034	**F**
	Public Engagement	develop public engagement process where a heat network is considered for an area.	OIC	NS&I	OIC	By 2034	**F**

Strategic actions	Actions	Target	Lead	Resource requirements	Partners	Timescale	Status
	ORIC Campus	investigate cost and benefit of heat network on ORIC campus, as part of a wider Stromness hea network.	OIC	NS&I	OIC External Consultants	By 2034	**F**

Table 4a: Activities: an evaluation framework to monitor progress with governance, stakeholder engagement and other policy work to support LHEES delivery.

Strategic actions	Actions	Target	Lead	Resources required	Partners	Timescale	Status
Develop clear governance framework for LHEES delivery	Identify LHEES leads and champions	Leads and champions ensure that actions identified in Delivery Plan are realised as per their timescale and measures of success.	Orkney Islands Council, Executive Director/ Head of Service Level	NS&I EL&H	OHAL ICNZ	By 2026	**P**
	Monitoring and evaluation framework review	Monitoring and evaluation framework should be updated to include specific measurable targets, clear timescales and a full portfolio o ongoing and planned projects.	Orkney Islands Council, Executive Director/ Head of Service Level	NS&I EL&H	OHAL ICNZ	By 2026	**P**

Strategic actions	Actions	Target	Lead	Resources required	Partners	Timescale	Status
Develop clear governance framework for LHEES delivery Continued.	Annual review of delivery plan	Update and amend document in light of regulatory changes. Identify local targets.	OIC Executive Director/ Head of Service Level	NS&I EL&H	OHAL ICNZ	By 2029	**P**
	Full review of LHEES Strategy and Delivery Plan	Update and amend both documents in light of regulatory changes. Identify local targets.	OIC Executive Director/ Head of Service Level	NS&I EL&H	OHAL ICNZ	By 2029	**F**

Strategic actions	Actions	Target	Lead	Resources required	Partners	Timescale	Status
Engage with relevant stakeholders to support with LHEES delivery.	Stakeholder mapping exercise	Review stakeholder mapping annually to ensure relevance and accuracy.	OIC	NS&I EL&H	OHAL, SSEN, ICNZ Scottish Government, OREF Local community groups,	By 2026	**P**
	Community consultation workshops	Undertake community consultation at major reviews to ensure policy addresses all concerns and opportunities identified by the wider community.	Orkney Islands Council	NS&I EL&H	Community Councils OHAL	By 2026	**P**

Table 4b: Activities: an evaluation framework to monitor progress with funding opportunities to support LHEES delivery.

	Funding Sources	Description	Action	Deadlines / Key Dates	Lead	Partners	Progress
4.4 Funding opportunities	Scotland's Heat Network Fund	Designed to support the development and roll out of heat networks across Scotland. It is open to any organisation seeking to develop and deploy heat networks in Scotland. In total £300 million is being made available to stimulate investment and grow the low carbon heat sector. Up to a maximum of 50% of the total eligible capital costs can be covered through this fund.	OIC to research eligibility, submit expression of interest	Application deadline ongoing. Successful projects must draw down funding in full by March 2026.	NS&I		**P**
	The Heat Network Support Unit	Unit identifies, supports, and develops heat network projects for the public sector. The support available includes expert advice and grant funding to develop projects until	The unit is still accepting applications for advisory-only support and discussions on potential future applications. OIC to research eligibility to determine if they will	No longer accepting applications for the 2024-25 financial year.	NS&I		**P**

	Funding Sources	Description	Action	Deadlines / Key Dates	Lead	Partners	Progress
		they have a clear financial strategy and well-defined business model.	apply for the 2025-26 financial year funding, or for advisory support for existing projects.				
	The Social Housing Net Zero Heat Fund	Supports social housing landlords across Scotland to install zero direct emission heating systems. Funding for “fabric first” energy efficiency projects is also available; however, applicants are required to demonstrate a commitment to installing eligible ZDEH systems into these properties.	OIC to research eligibility and apply for funding if appropriate.	Funding available until 2026.	NS&I EL&H	External Consultants	**P**
	Heat and Energy Efficient Scotland: Area Based Schemes (HEES:ABS)	This funding is provided by Scottish Government. Schemes are targeted in areas in or at risk of fuel poverty and is intended for owner-occupiers and private landlords.	OIC to continue allocating funding for HEES:ABS projects.	Ongoing	EL&H	OHAL External Consultants	**P**

	Funding Sources	Description	Action	Deadlines / Key Dates	Lead	Partners	Progress
	The HES grant and loan	Available to homeowners and offers grant funding for heat pumps of £7,500, or £9,000 to those living in rural areas. There is also £7,500 available as an optional interest free loan to further help towards the installation of a heat pump. £6,000 of interest free loan funding is available to households for solar PV panels when taken as a package of measures including a heat pump. In addition to this funding, up to 75% of the cost of energy efficiency measures can be covered by grant funding, up to a maximum of £7,500 or £9,000 in rural areas. The final 25% can be covered by an interest free loan, or paid by	OIC to research eligibility and apply for funding if appropriate.	Ongoing	NS&I EL&H	ICNZ ReFlex Orkney External Consultants Development Trusts	**P**

	Funding Sources	Description	Action	Deadlines / Key Dates	Lead	Partners	Progress
		the customer as the loan is optional.					
	Warmer Homes Scotland (WHS)	Offers funding and support to households struggling to stay warm and keep on top of energy bills. This programme is available for homeowners and private sector tenants.	OIC to research eligibility and apply for funding if appropriate.	Ongoing	EL&H	OHAL External Consultants	**P**
	The Energy Company Obligation (ECO4)	Provides insulation and heating measures for low income, vulnerable owner occupiers. It is available to households in an Affordable Warmth Group in receipt of benefits or tax credits. This fund is also available to households in properties with an EPC D, E, F, or G.	OIC to research eligibility and apply for funding if appropriate.	Ongoing	EL&H	OHAL External Consultants	**P**
	ECO Flex	Participating local authorities can refer owner occupied and private tenured	OIC to identify eligible households for funding.	Ongoing.	EL&H	OHAL External Consultants	**P**

	Funding Sources	Description	Action	Deadlines / Key Dates	Lead	Partners	Progress
		households considered to be at risk of living in fuel poverty or on low income and vulnerable to the impacts of living in a cold home.					

ORKNEY
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Equality Impact Assessment

The purpose of an Equality Impact Assessment (EqIA) is to improve the work of Orkney Islands Council by making sure it promotes equality and does not discriminate. This assessment records the likely impact of any changes to a function, policy or plan by anticipating the consequences, and making sure that any negative impacts are eliminated or minimised and positive impacts are maximised.

1. Identification of Function, Policy or Plan	
Name of function / policy / plan to be assessed.	Local Heat and Energy Efficiency Strategy
Service / service area responsible.	NS&I
Name of person carrying out the assessment and contact details.	Alistair Morton Ext 2334 Alistair.morton@orkney.gov.uk
Date of assessment.	29th Jan 2025
Is the function / policy / plan new or existing? (Please indicate also if the service is to be deleted, reduced or changed significantly).	New Strategy

2. Initial Screening	
What are the intended outcomes of the function / policy / plan?	Improvement of the energy efficiency of the built environment in Orkney, and progress the move to Net Zero Carbon emissions
Is the function / policy / plan strategically important?	Yes, major investment will be required to achieve the aims of the strategy.
State who is, or may be affected by this function / policy / plan, and how.	Homeowners, Tenants, businesses living in or operating out of properties in Orkney
How have stakeholders been involved in the development of this function / policy / plan?	We have undertake stakeholder engagement meetings as various stages of the development process, including one to one meeting with significant stakeholders.

Is there any existing data and / or research relating to equalities issues in this policy area? Please summarise. E.g. consultations, national surveys, performance data, complaints, service user feedback, academic / consultants' reports, benchmarking (see equalities resources on OIC information portal).	Work on Fuel Poverty and the impact of poor energy efficiency on this.
Is there any existing evidence relating to socio-economic disadvantage and inequalities of outcome in this policy area? Please summarise. E.g. For people living in poverty or for people of low income. See The Fairer Scotland Duty Guidance for Public Bodies for further information.	(Please complete this section for proposals relating to strategic decisions).
Could the function / policy have a differential impact on any of the following equality areas?	Strategy relates to the building fabric energy efficiency and heating systems, and any measures adopted should not be influenced by the occupant of the property or their protected characteristics. Works to buildings will have an impact on the occupant of the properties. Although the long term outcomes will be beneficial to the occupants the short term disadvantage may impact some groups more than others. each project undertaken will be assessed in terms of the impact on communities and measures to address negative outcomes will be included.
1. Race: this includes ethnic or national groups, colour and nationality.	
2. Sex: a man or a woman.	
3. Sexual Orientation: whether a person's sexual attraction is towards their own sex, the opposite sex or to both sexes.	

4. Gender Reassignment: the process of transitioning from one gender to another.	
5. Pregnancy and maternity.	
6. Age: people of different ages.	
7. Religion or beliefs or none (atheists).	
8. Caring responsibilities.	
9. Care experienced.	
10. Marriage and Civil Partnerships.	
11. Disability: people with disabilities (whether registered or not).	(Includes physical impairment, sensory impairment, cognitive impairment, mental health)
12. Socio-economic disadvantage.	

3. Impact Assessment	
Does the analysis above identify any differential impacts which need to be addressed?	No
How could you minimise or remove any potential negative impacts?	
Do you have enough information to make a judgement? If no, what information do you require?	Yes

4. Conclusions and Planned Action	
Is further work required?	No.
What action is to be taken?	Where individual projects within the strategy are developed, these may have direct impacts on equalities and at this stage an assessment will be undertaken to evaluate the risks, however at the initial strategy development stage no negative impacts are envisaged and no action is required.
Who will undertake it?	Project team for specific projects

When will it be done?	In line with the timeframe for the project
How will it be monitored? (e.g. through service plans).	Annual reporting of the LHEES will include project roundup and requirements for Equalities impact assessment will be included in the project details

Signature: [redacted] Date: 29th Jan 2025

Name: ALISTAIR MORTON (BLOCK CAPITALS).

Please sign and date this form, keep one copy and send a copy to HR and Performance. A Word version should also be emailed to HR and Performance at hrsupport@orkney.gov.uk

Island Communities Impact Assessment

Local Heat & Energy Efficiency Strategy

Preliminary Considerations	Response
Please provide a brief description or summary of the policy, strategy or service under review for the purposes of this assessment.	The Local Heat and Energy Efficiency Strategy (LHEES) aims to establish local authority area-wide plans and priorities for systematically improving the energy efficiency of buildings and decarbonising heat. The scope of the LHEES includes all property in Orkney including Council buildings, schools, Housing properties, private homes, hotels and tourist accommodation, and commercial properties including offices, shops and industrial units.
Step 1 – Develop a clear understanding of your objectives	**Response**
What are the objectives of the policy, strategy or service?	Improving the energy efficiency of buildings and decarbonising heat.
Do you need to consult?	Yes
How are islands identified for the purpose of the policy, strategy or service?	The LHEES methodology uses geographically specific data, this allows assessments to be made on a location basis.
What are the intended impacts/outcomes and how do these potentially differ in the islands?	During the evaluation process it became clear that the island communities have a higher propensity to lower energy efficiency levels based on the available data. Individual Projects will be assessed to ensure island communities benefit equally from the proposed improvement works and services.
Is the policy, strategy or service new?	Yes
Step 2 – Gather your data and identify your stakeholders	**Response**

What data is available about the current situation in the islands?	Data on EPC assessment of properties is available and is linked to the location of the property, allowing assessments based on individual islands or groups to be undertaken.
Do you need to consult?	No
How does any existing data differ between islands?	Small variation in data quality and outcomes exist but generally data sets are reasonable for all islands
Are there any existing design features or mitigations in place?	No
Step 3 – Consultation	Response
Who do you need to consult with?	Stakeholders involved in the assessment and improvement of energy efficiency in the built environment.
How will you carry out your consultation and in what timescales?	Consultation was carried out by means of an online form.
What questions will you ask when considering how to address island realities?	No island specific questions were included, however open questions exist to gather any additional comments.
What information has already been gathered through consultations and what concerns have been raised previously by island communities?	No specific issues raised
Is your consultation robust and meaningful and sufficient to comply with the Section 7 duty?	
Step 4 – Assessment	Response
Does your assessment identify any unique impacts on island communities?	No The majority of project identified in the LHEES are currently in initial stages and need to be developed to understand the impacts on the communities they will serve. it is envisaged that projects on islands will make use of any community or local resources available on the island. This may mean that other community projects will have to be organised in a slightly different way to compensate. As a result

	projects on neighbouring islands may be different, however the best practice and learning form each project will be shared between all islands in the development of future interventions.
Does your assessment identify any potential barriers or wider impacts?	No
How will you address these?	

You must now determine whether in your opinion your policy, strategy or service is likely to have an effect on an island community, which is significantly different from its effect on other communities (including other island communities).

If your answer is **No** to the above question, a full ICIA will NOT be required and **you can process to Step 6**.
If the answer is **Yes**, an ICIA must be prepared and y**ou should proceed to Step 5**.

To form your opinion, the following questions should be considered:

- Does the evidence show different circumstances or different expectations or needs, or different experiences or outcomes (such as different levels of satisfaction, or different rates of participation)?
- Are these different effects likely?
- Are these effects significantly different?
- Could the effect amount to a disadvantage for an island community compared to the Scottish mainland or between island groups?

Step 5 – Preparing your ICIA	Response
In Step 5, you should describe the likely significantly different effect of the policy, strategy or service:	
Assess the extent to which you consider that the policy, strategy or service can be developed or delivered in such a manner as to improve or mitigate, for island communities, the outcomes resulting from it.	

Consider alternative delivery mechanisms and whether further consultation is required.	
Describe how these alternative delivery mechanisms will improve or mitigate outcomes for island communities.	
Identify resources required to improve or mitigate outcomes for island communities.	
Stage 6 – Making adjustments to your work	Response
Should delivery mechanisms/mitigations vary in different communities?	No, projects will endeavour to make best use of resources by attempting to make an island by island intervention, as such each island community will be given equal opportunity
Do you need to consult with island communities in respect of mechanisms or mitigations?	Yes, for individual interventions but not for the overall strategy
Have island circumstances been factored into the evaluation process?	Yes
Have any island-specific indicators/targets been identified that require monitoring?	Island specific targets have been proposed but will require more work to implement.
How will outcomes be measured on the islands?	Targets will be identified for individual projects
How has the policy, strategy or service affected island communities?	Should prove beneficial for island communities
How will lessons learned in this ICIA inform future policy making and service delivery?	Future projects emerging from the LHEES will identify risks associated with island groups. Each project will address
Step 7 – Publishing your ICIA	Response
Have you presented your ICIA in an Easy Read format?	Full ICIA not required
Does it need to be presented in Gaelic or any other language?	No
Where will you publish your ICIA and will relevant stakeholders be able to easily access it?	Can be published along with the LHEES documentation.

Who will signoff your final ICIA and why?	

ICIA completed by:	Alistair Morton
Position:	Team Manager – Energy
Signature:	[redacted]
Date complete:	29th Jan 2025

ICIA approved by:	Kenneth C MacPherson
Position:	Head of Property, Asset Management & Facilities
Signature:	[redacted]
Date complete:	4th Feb 2025