

Heat in Buildings Strategy: Achieving Net Zero Emissions in Scotland's Buildings.

APSE Scotland Building and Housing Seminar
17 February 2022

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- Heat in Buildings Strategy overview
- Local Heat and Energy Efficiency Strategies (LHEES)
- Low and zero emissions heating systems
 - Heat pumps
 - Heat networks
 - Hydrogen



Climate Change Emission Reduction Targets (Scotland) Act 2019

- Net zero emissions by 2045 and 75% reduction by 2030

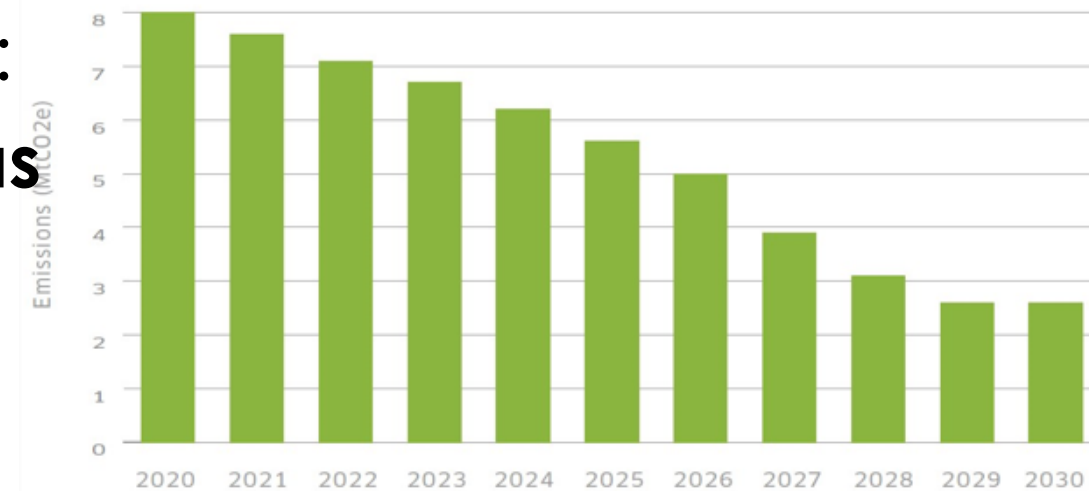
Fuel Poverty (Targets, Definitions and Strategy) (Scotland) Act 2019

- In 2040, as far as reasonably possible, no household in Scotland is in fuel poverty



The Journey to Net Zero - The Scale of the Challenge

- **2045** our homes and buildings no longer contributing to climate change, as part of the wider just transition to net zero.
- **2033** all homes equivalent EPC C
- **2030** large majority of buildings achieve a good standard of energy efficiency
- **2030** emissions from buildings **68% lower than 2020 levels**
 - Requires zero emissions heating in:
 - **The vast majority of 170,000 off-gas fossil homes**
 - **At least 1 million on-gas homes**
 - **50,000 non-domestic buildings**



The Journey to Net Zero – Strategic Technologies

We need rapid increase deployment of no and low regrets strategic technologies that are available today

Energy efficiency



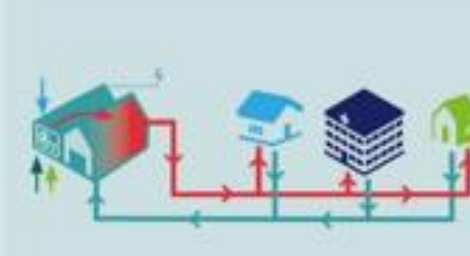
Heat pumps in off gas areas



Heat pumps in on gas areas



Low and zero emissions heat networks



People – central to the Heat Transition.

- **Key areas**

- A people-centred transition
- Consumer protection
- Continue to reduce fuel poverty



- **Key Strategy actions:**

- **Public Engagement Strategy** and action plan for heat decarbonisation
- **National Public Energy Agency** to accelerate transformational change, including informing the public and providing expert advice.
- **Guiding principles**, aligning decarbonisation and fuel poverty objectives, and underpinning our **commitment that no one is left behind** in the transition



- **Key areas**

- Local Heat & Energy Efficiency Strategies (LHEES) at the heart of a place based, locally-led and tailored approach
- The role of communities, and community 'heat' models.



- **Key actions**

- **LHEES to be in place by the end of 2023** for all local authority areas
- We believe LHEES should have a **statutory basis and will resource** development accordingly
- Align the **planning system with LHEES** and ensure it supports low and zero emissions heating.
- **Climate Action Towns** and **Community Climate Action Hubs**
- **Support cities** deliver a pipeline of projects



Preparing the wider energy system

• Key areas

- Electricity system impacts
- Emerging evidence around the feasibility and cost of hydrogen
- The Heat Networks (Scotland) Act

• Key actions

- Ongoing **work with industry, UK Government and Ofgem** to understand energy system issues
- Supporting **development and demonstration** projects, including on hydrogen for heat
- Business rates reliefs to **support heat networks**
- Development of **heat networks delivery plan and regulatory regime**



Kick starting investment in the transition

- **At least £1.8bn over the next five years** to kick-start market growth and support those least able to pay.
- Four strategic priorities:
 - 1. Supporting those least able to pay**
 - 2. Investing in strategic technologies in low and no regrets areas**
 - 3. Showcasing net zero leadership through early adoption**
 - 4. Investing in innovation and demonstration**
- Funding for social housing, public estate and large scale projects.
- Increased funding through existing support programmes

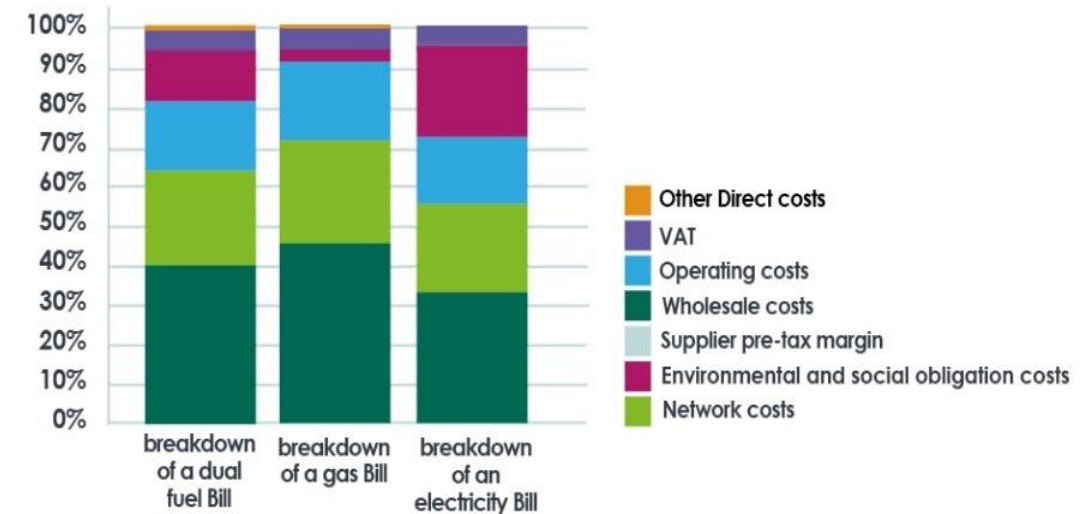


Working towards a long term market framework

- As we scale up deployment it will be important to move towards an **appropriate market framework** which:
 - helps to create demand for energy efficiency and zero emissions heating
 - help consumers overcome the upfront cost of investment
 - attract and secure other private investment and finance

• Key actions

- Establishing a Green Heat Finance Taskforce to explore new finance mechanisms
- Investigate additional options
- Address disincentives to switching



A Regulatory Framework

- Energy efficiency and zero emissions heating investments are long term decisions that require **certainty and clear end-points**.
- We will introduce new **mandatory legal standards** for zero emissions heating and energy efficiency, where it is within our legal competence, during this term of Parliament.
 - Minimum standards and timing across new buildings, social housing, private housing and non-domestic buildings
 - Mixed-use and multi-tenure buildings
 - Potential **trigger points**
 - Building-level events (change of tenancy, sale, refurbishment, etc.)
 - Area-based triggers (e.g. where there are shared or common issues)
- Regulations subject to detailed consultation





- **The opportunity**

- **16,400 additional jobs** across the economy in 2030 as a result of investment in the deployment of zero emissions heat.
- We are committed to building **local supply chains, maximising local job creation** and ensuring a **just transition**.

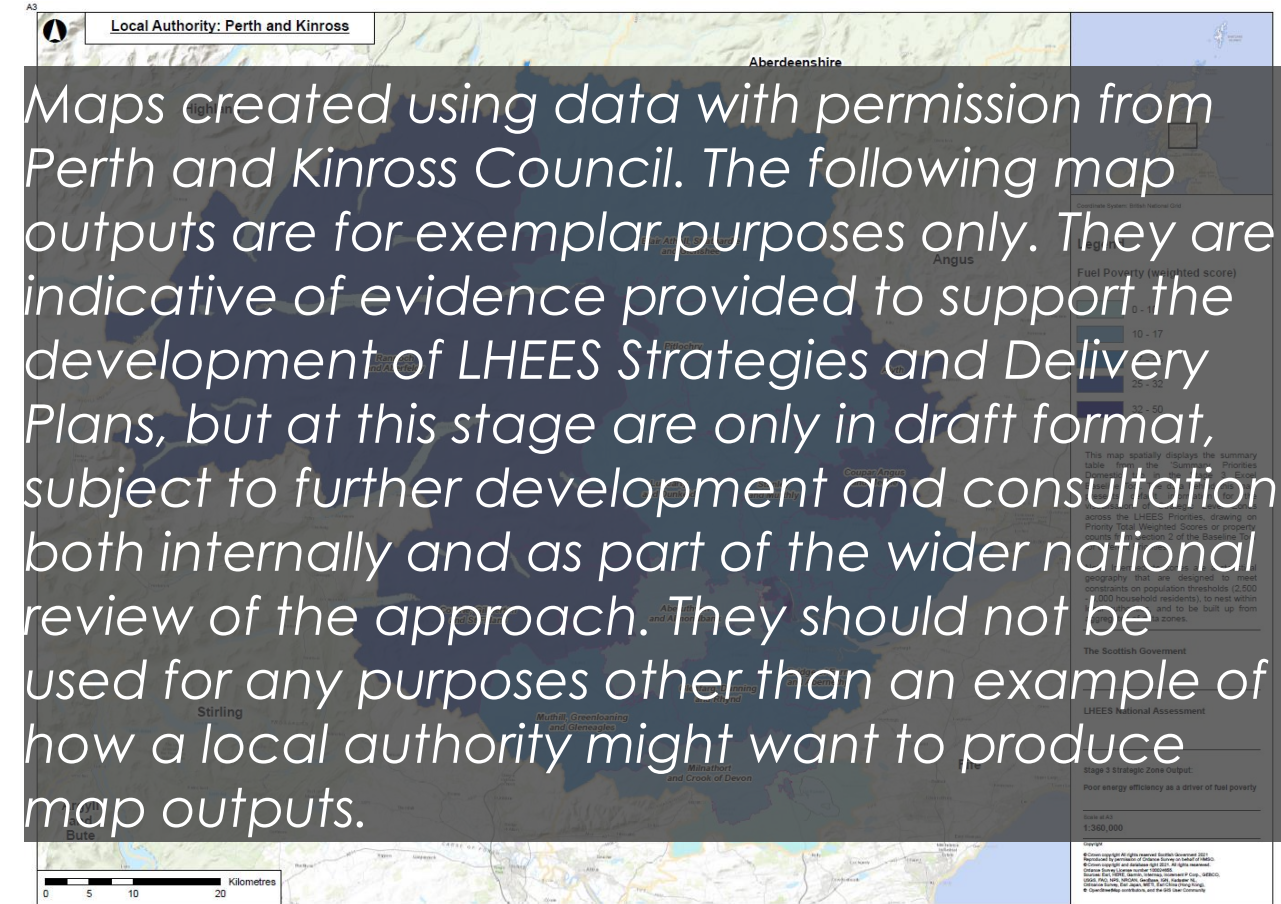
- **Key actions**

- We will work with industry to co-produce a new Heat in Buildings **Supply Chain Delivery Plan** by Summer 2022
- We will **publish a policy statement in late 2021**: proposals for quality assurance including quality marks and consumer protection.



Local Heat and Energy Efficiency Strategies (LHEES)

- **Local Heat and Energy Efficiency Strategies (LHEES)** are area-based plans for driving the heat transition, supporting achievement of statutory emissions reduction targets.
- **Strategies** are long-term plans for decarbonising heat in buildings and improving energy efficiency across an entire local authority area. Accompanied by **Delivery Plans** that set out potential projects.
- LHEES will act as an **investment prospectus**, guiding government funding and private investment. They will support planning for the **energy networks**, as well as forming a basis for local **public engagement**.

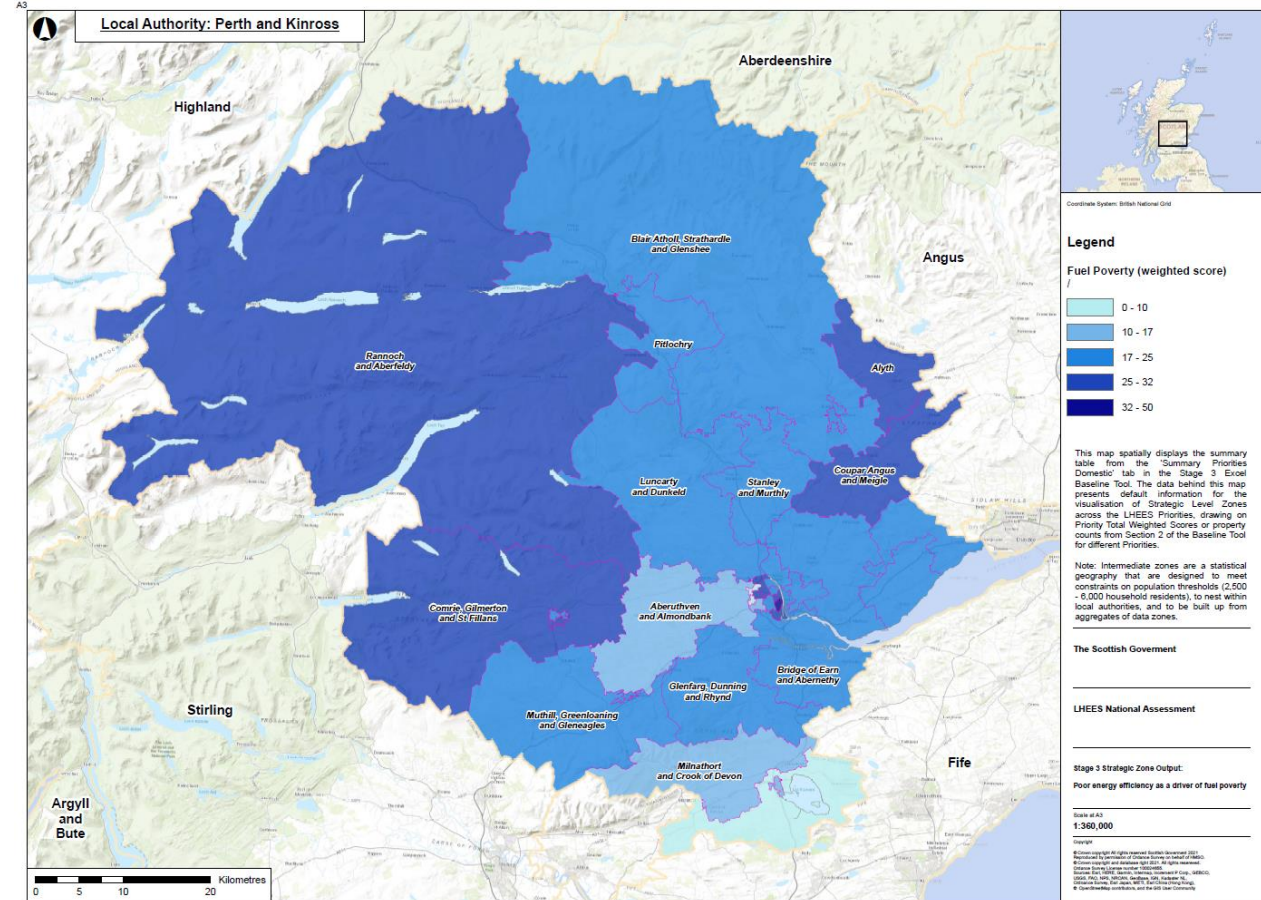


Example map highlighting areas with a high proportion of properties where poor energy efficiency is a driver of fuel poverty



Local Heat and Energy Efficiency Strategies (LHEES)

- **LHEES Strategies** – identify what needs to be done to change buildings and local infrastructure by 2045 to fulfil the Scottish Government's objectives and local priorities relating to heat and energy efficiency in buildings.
- Reflect national and local priorities, policies and wider strategies.
- 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.

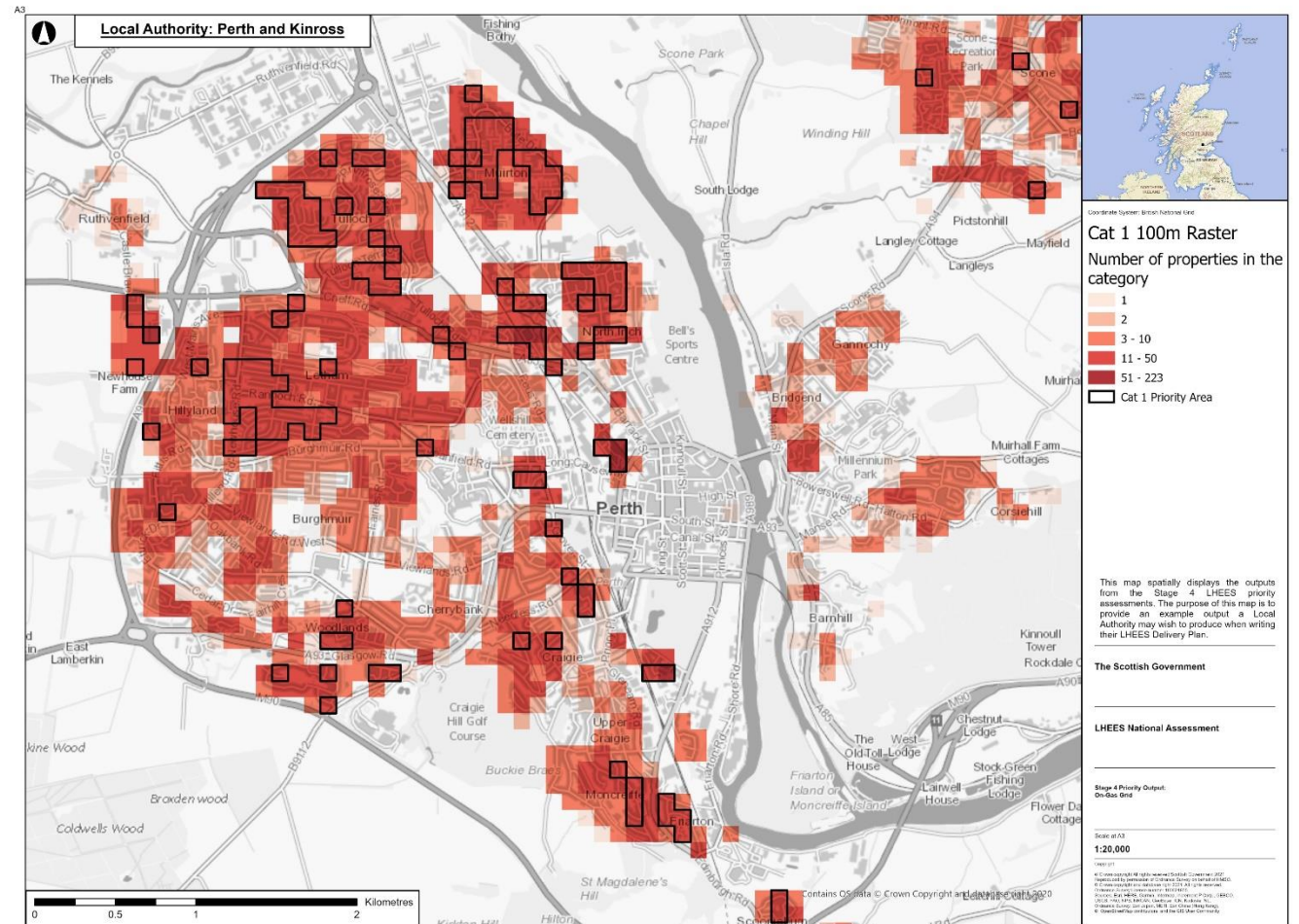


Example map highlighting areas with a high proportion of properties where poor energy efficiency is a driver of fuel poverty



Local Heat and Energy Efficiency Strategies (LHEES)

- **LHEES Delivery Plans** – action plans that will enable local authorities and their partners to work towards delivery of the changes identified in the LHEES Strategy.
- Actions contribute to achieving Scotland's statutory targets on climate change, fuel poverty and heat networks.
- Clarifies stakeholder roles and responsibilities in delivering the Strategies.
- Builds on existing plans and policies, such as HEEPS:ABS Plans.
- Coordinates across local partners, providing mechanisms to identify new delivery actions.



Example map targeting properties with immediate technical potential for heat pump retrofit



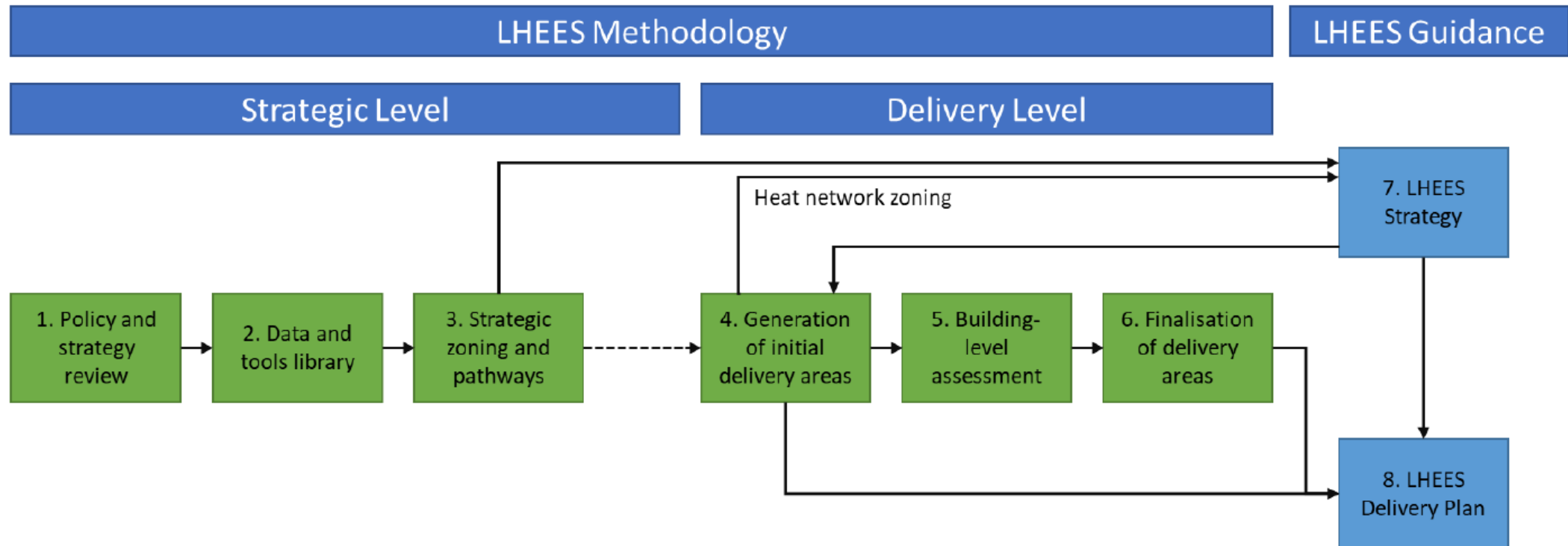
Local Heat and Energy Efficiency Strategies (LHEES)

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



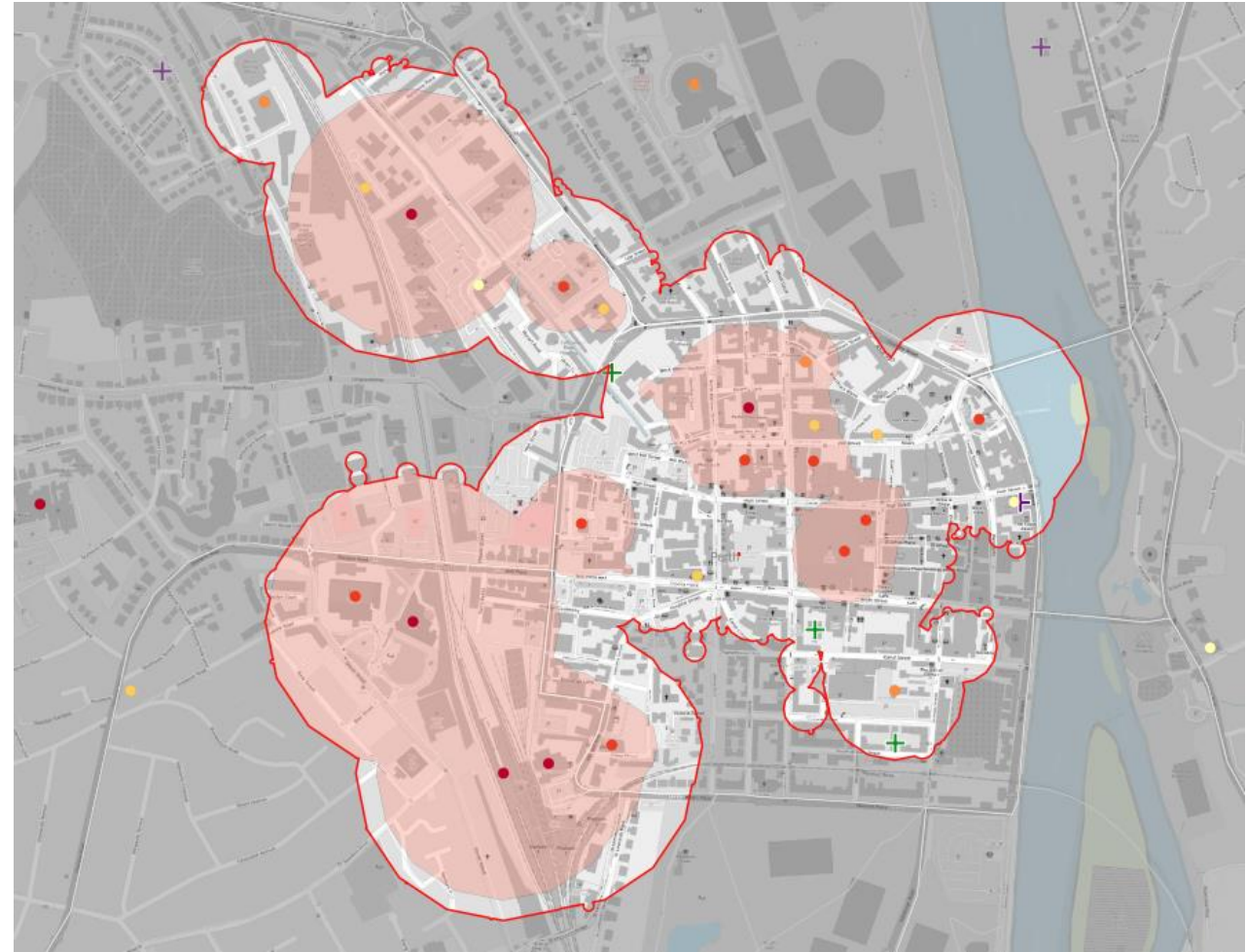
Local Heat and Energy Efficiency Strategies (LHEES)

- **LHEES** first introduced in 2017, piloted by all 32 Scottish local authorities 2017-2021, synthesis evaluation of pilot programme published: <https://www.gov.scot/publications/synthesis-evaluation-local-heat-energy-efficiency-strategy-lhees-pilot-programme/>
- **LHEES methodology** developed from pilots by Zero Waste Scotland, peer reviewed and issued to local authorities in October 2021.



Local Heat and Energy Efficiency Strategies (LHEES)

- **Statutory framework** for LHEES under development with COSLA to place a duty on local authorities to develop Local Heat and Energy Efficiency Strategies and Delivery Plans. Consultation on draft Order held in January 2022.
- Scottish Government committed to providing appropriate **resource** to ensure LHEES in place across all local authority areas by the end of 2023.
- LHEES will support local authorities to discharge their duties under the Heat Networks (Scotland) Act with regards **heat network zoning**.



Example map of a potential heat network zone as identified using the LHEES methodology



Heat pumps

- Proven technology we can deploy at scale today
- Review of heat pump performance found no evidence to suggest that heat pumps could not operate effectively in Scotland.
- Ambition to double installations of zero emission heating systems every year for the next five years and to reach 200,000 per year towards the end of this decade.
- Expect majority of these will be individual heat pumps and connections to heat networks supplied by larger heat pumps.
- Heat Pump Sector Deal

<https://www.gov.scot/publications/heat-pump-sector-deal-expert-advisory-group/documents/>



• Heat Networks (Scotland) Act 2021

- Regulations for the supply of heat by, and the construction & operation of heat networks.
- Target of 2.6 TWh heat demand met by heat networks by 2027, 6 TWh by 2030

• Heat Networks Delivery Plan

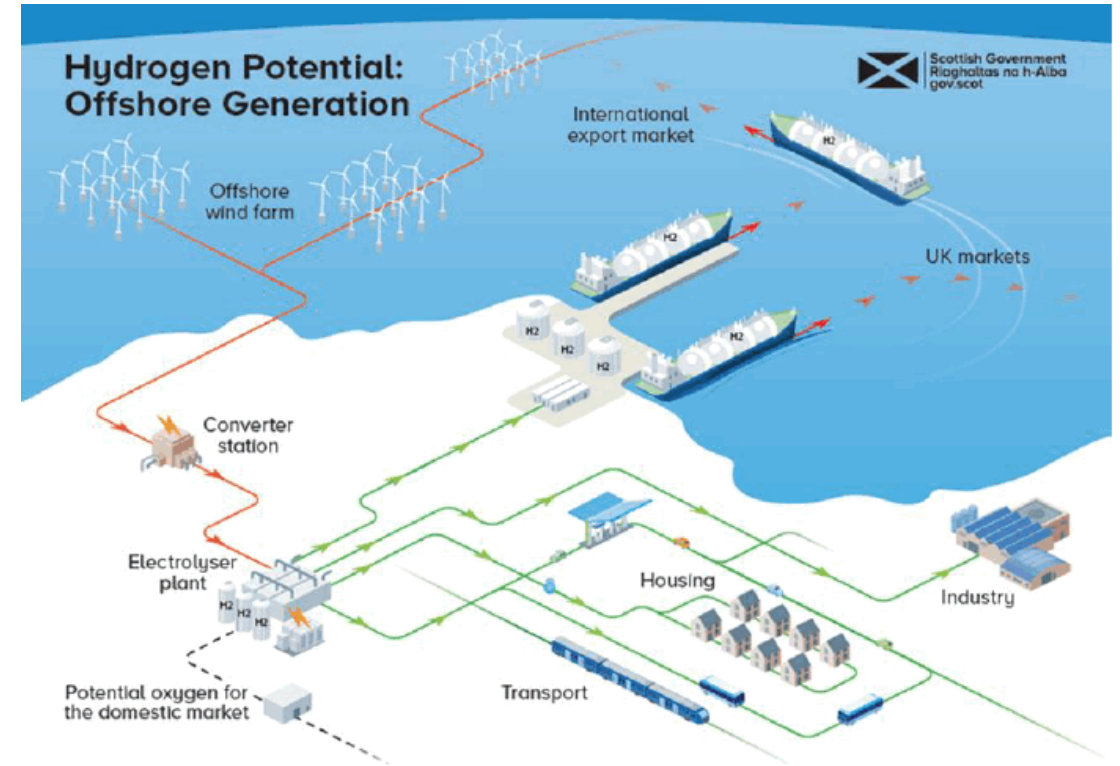
- Heat Networks Investment Prospectus
- Pre-Capital Support Unit
- £400 million to support the development of large-scale heat infrastructure
- Green Growth Accelerator programme aims to unlock £200 million of low carbon capital investment

<https://www.gov.scot/publications/draft-heat-networks-delivery-plan/>



Hydrogen

- Working with UK Government & stakeholders to support development of evidence on the potential role of hydrogen in decarbonising heat including projects such as H100 in Fife.
- Working with Gas Network Operators and UK Government to explore opportunities for increasing the blend of hydrogen in the gas network.
- Undertaking work to identify high-potential areas for the use of hydrogen for heat in Scotland.
- Ambition of 5GW of renewable and low-carbon hydrogen production by 2030 and 25GW by 2045.
- Hydrogen Policy Statement <https://www.gov.scot/publications/scottish-government-hydrogen-policy-statement/>
- Draft Hydrogen Action Plan <https://www.gov.scot/publications/draft-hydrogen-action-plan/>



Thank you

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