

Dumfries and Galloway Local Heat and Energy Efficiency Strategy (LHEES)

Delivery Plan



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Glossary

Abbreviations

Acronym	Description
BAR	Building Assessment Report
DNO	Distribution Network Operator
EPC	Energy Performance Certificate
EST	The Energy Saving Trust
GDNO	Gas Distribution Network Operator
GIS	Geographic Information System
LDP2	Local Development Plan 2
LHEES	Local Heat & Energy Efficiency Strategy
LPG	Liquefied Petroleum Gas
PEAT	Portfolio Energy Analysis Tool
SGN	Scotland Gas Networks

Terms

Term	Description
Anchor Load	Buildings with a large, reliable and long-term demand for heat, often with a stable and constant use profile, can act as anchors for a developing district heating network. These anchor loads allow district heat networks to operate efficiently and provide the potential to extend the network to smaller existing heat users in the area. For this analysis, this has been assumed as public buildings with a heat demand of greater than 500 MWh/year.
Baselining	Baselining is the purpose of understanding at local authority or strategic level, the status of the buildings against the LHEES Considerations, Targets and Indicators.
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 level of detail 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).
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: <ul style="list-style-type: none"> • 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.

Term	Description
LHEES Guidance	The LHEES Guidance sets out the production and content requirements for a local authority to prepare a Strategy and Delivery Plan. Its purpose is to ensure that a 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	<p>There are eight 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 Report and Delivery Plan documentation. There are two LHEES reporting templates included alongside this methodology– LHEES Report 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:</p> <ol style="list-style-type: none"> 1. Policy & Strategy Review 2. Data & Tools Library 3. Strategic Zoning & Pathways 4. Generation of Initial Delivery Areas 5. Building-Level Pathway Assessment 6. Finalisation of Delivery Areas 7. LHEES Report 8. LHEES Delivery Plan
LHEES Report	<p>An LHEES Report is a long-term strategic framework for:</p> <ul style="list-style-type: none"> • The improvement of the energy efficiency of buildings in the local authority's area • The reduction of greenhouse gas emissions resulting from the heating of such buildings
Low-regrets Measures	Measures which are relatively low cost and therefore provide relatively high cost-benefits under the predicted future climate and technological scenarios.
Minimal Standard Retrofit	This description includes buildings whose fabric and build type is more commonly seen across Scotland and the UK, or buildings which need minimal retrofit to achieve a level of energy efficiency. The simplified and broad retrofit recommendations which are used by the modelling tools featuring in this LHEES analysis are therefore more applicable to buildings within this category and the modelling results are more accurate and reflective of the reality. These buildings may commonly be seen as the 'low-regrets' targets as they have a relatively low cost-benefit ratio, require less complex design or intervention methods which are likely to be the most appropriate solution regardless of future technological changes.
No-regrets Measures	Measures which may provide a benefit immediately, in the future and potentially whether or not predicted future climate and technological changes become a reality.
Older Buildings and Unconventional Construction	Buildings within this category may require a more bespoke or unique retrofitting solution to achieve higher energy efficiency or decarbonisation and are likely to have limited or no low carbon heating, according to the available data. Buildings in this category tend to have a solid wall build construction, and may include historic buildings which are listed or within conservation areas, so to preserve their historical and architectural interest they may have additional non-standard retrofit requirements.

Term	Description
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 Report 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.
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.

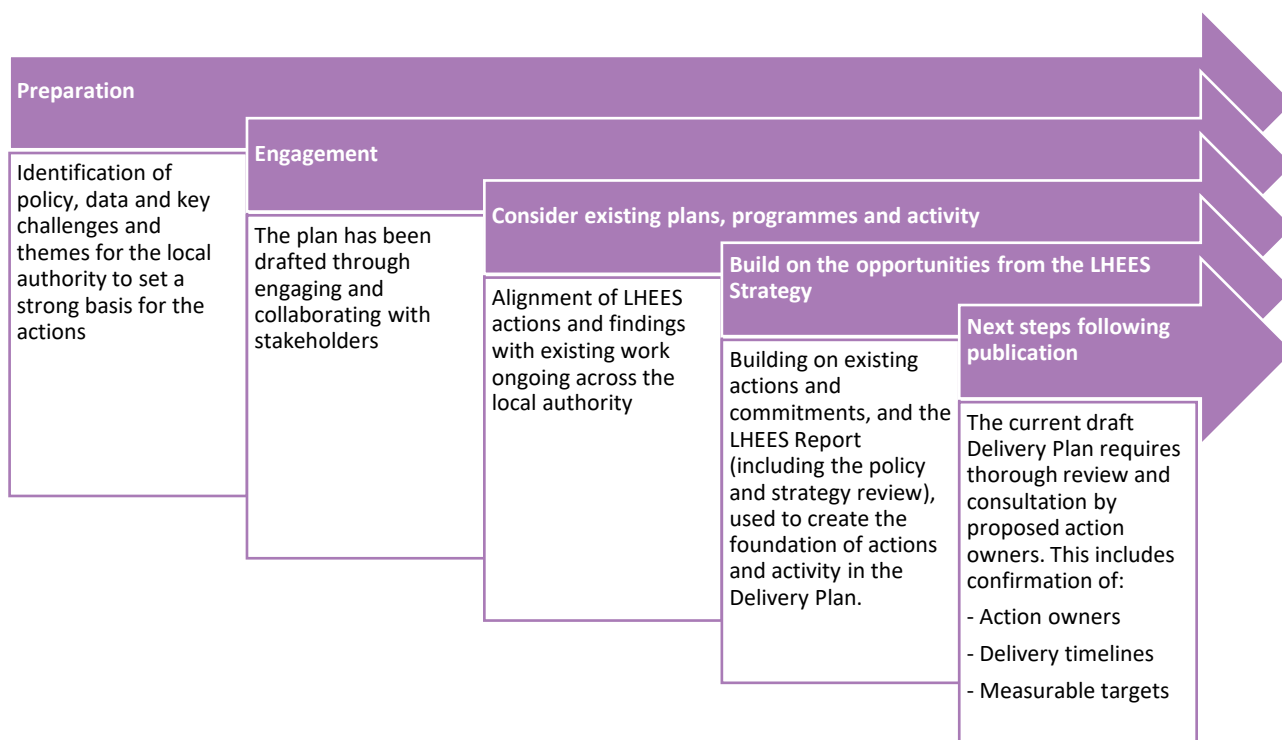
1 Introduction

1.1 Aim of this document

Accompanying a Local Heat and Energy Efficiency Strategy (LHEES) Report is an LHEES Delivery Plan. This Delivery Plan sets out how Dumfries and Galloway Council proposes to support implementation of its Local Heat and Energy Efficiency Strategy. This document is framed around what can be delivered now, given the existing policy landscape, and is likely to be updated over time as the Scottish Government introduces new standards, regulation and delivery programmes, as well as potentially updated requirements, approaches and tools associated with the LHEES process.

The actions captured in this Delivery Plan are a **draft version**, with the requirement for further stages of consultation and agreement over governance, timescales and specific details around completion. This will be carried out in the months following the LHEES publication.

The finalised Delivery Plan will then be reviewed and updated on an ongoing basis as the policy landscape changes. This first LHEES Delivery Plan incorporates actions with a near-term (5-year) focus, to put crucial steps in place to build to the longer-term goal of net zero, with clearer and more granular long-term steps set out in later LHEES iterations.



2 The Delivery Plan

Dumfries and Galloway Council is a trailblazer in acknowledging the serious urgency of action required to tackle climate change. The Council declared a climate emergency in June 2019, and developed a 12-point action plan¹ designed to accelerate activity by the Council, the wider local community, and local businesses.

Reflecting the urgency, a core element of this action plan was to make significant strides toward achieving net zero status for the region by 2025. This LHEES Delivery Plan builds on this ambition, and has been separated into key action areas based on the major stakeholders, data and findings from the Strategy. The purpose of this Delivery Plan is to provide tangible actions and direction. It streamlines the overarching need for decarbonisation into a set of key actions to be delivered over the short term. As far as possible these actions will be measurable to monitor progress.

It is recognised that actions will develop at different relative speeds and therefore the proposed delivery pathway has been separated into three timeframes. These help to paint a narrative and roadmap for Dumfries and Galloway's decarbonisation. The proposed timeframes were selected based on whether actions are likely to be completed before or after the next LHEES (in five years' time) or whether they are enabling actions and therefore should be completed as soon as possible. This version of the LHEES has also prioritised a five-year time horizon, as advised by the Scottish Government, with the knowledge that there will be an opportunity to revisit actions in the next iteration of LHEES. However, due to the high uncertainty around decarbonisation policy, funding schemes and wider work, these action timeframes are suggested at the time of writing and may be subject to change if appropriate.



During the development of the LHEES Report, several themes common to Dumfries and Galloway Council's priorities and challenges were identified. These have been used to guide the modelling and analysis completed for the strategy, and will also be a basis for the development of the actions set



Homes and buildings fit for the future in regeneration areas: Integrating retrofit and decarbonisation measures into Place Plans and Regeneration Areas. This aims to highlight the need for support and improvement of existing buildings as well as delivering efficient new builds.



Accelerating decarbonisation of buildings requiring Minimal Standard Retrofit: Targeting the domestic and non-domestic buildings which have potential for no-regrets building decarbonisation from less intrusive interventions with shorter pay back periods.

¹ Dumfries and Galloway Council, 2019. Climate Emergency Declaration. <https://www.dumgal.gov.uk/article/21773/>



Decarbonising rural and historic Dumfries and Galloway buildings: Development of a robust plan, including identification of the funding gap, to understand the best decarbonisation pathway for the domestic and non-domestic properties which are Older Buildings or Unconventional Construction.



Delivering reliable communal heating systems: Proposal of heat network zones across Dumfries and Galloway which focus on community-wide solutions and benefits. These zones present the highest opportunity for heat networks and therefore should be priority areas for analysis.



Collaborative working across local programmes, wider stakeholders and supporting a local supply chain: Integration of wider planning and programmes across Dumfries and Galloway Council with the LHEES, with a key focus on the Borderlands Energy Masterplan, to share learnings and lean on the wealth of knowledge. This includes understanding the wider need for local upskilling and retraining and targeting a local supply chain.



Increasing transparency and accessibility around the delivery pathway and funding mechanisms: Improving awareness and accessibility of funding mechanisms and increasing transparency of the delivery pathway to ensure decarbonisation is built on trusted advice and informed choices. For example, support via Trading Standards or similar.

out in this document. The themes have no particular order of priority and are all deemed to be important to Dumfries and Galloway Council. The themes are as follows:

These themes do not describe the full extent of the actions required for the local authority, but capture the current priorities based on their potential for impact in the area or alignment with existing work.

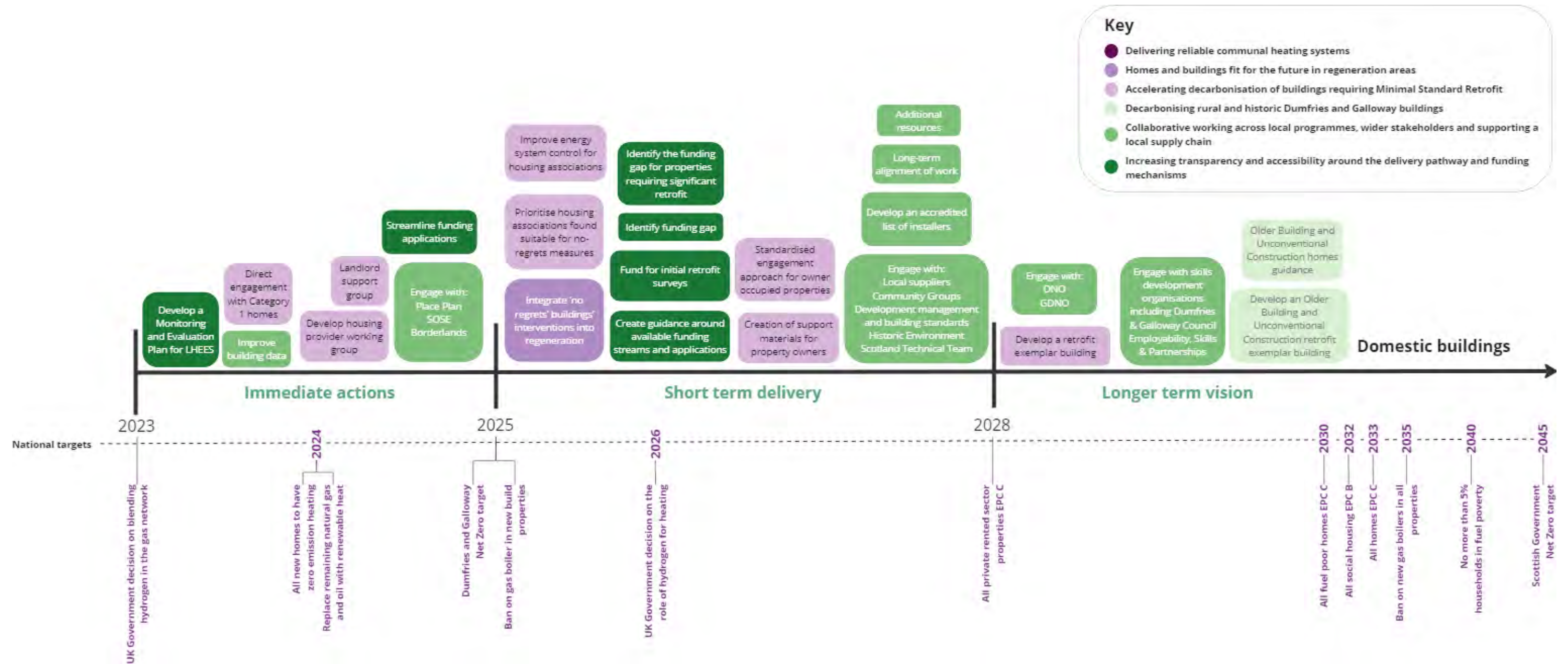
The actions have also been grouped into three key action areas based around the analysis for the strategy. The actions which are crosscutting have been listed separately.

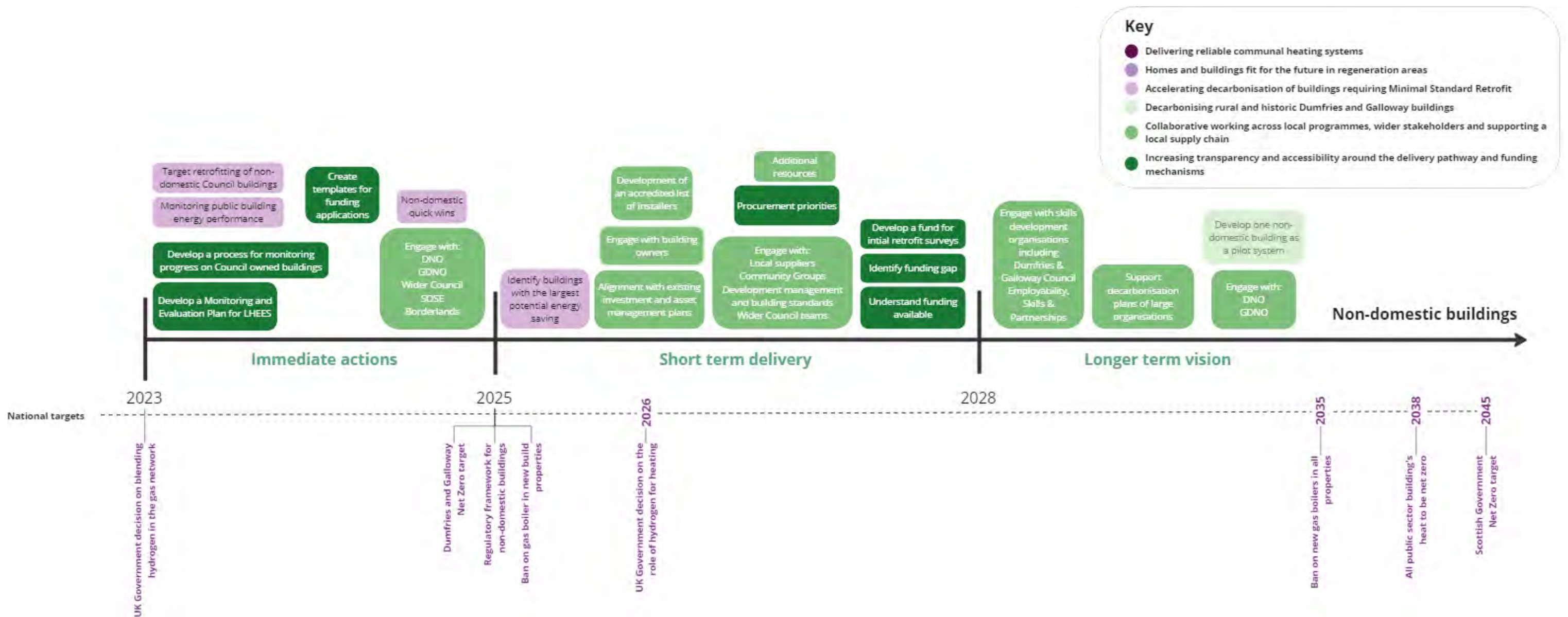
Domestic Buildings	Non-domestic Buildings	Heat Networks
Actions specific to the domestic sector which may be further split out by tenure and type.	Actions around both public and private sector non-domestic buildings.	Actions specific to the proposal and creation of heat network zones.

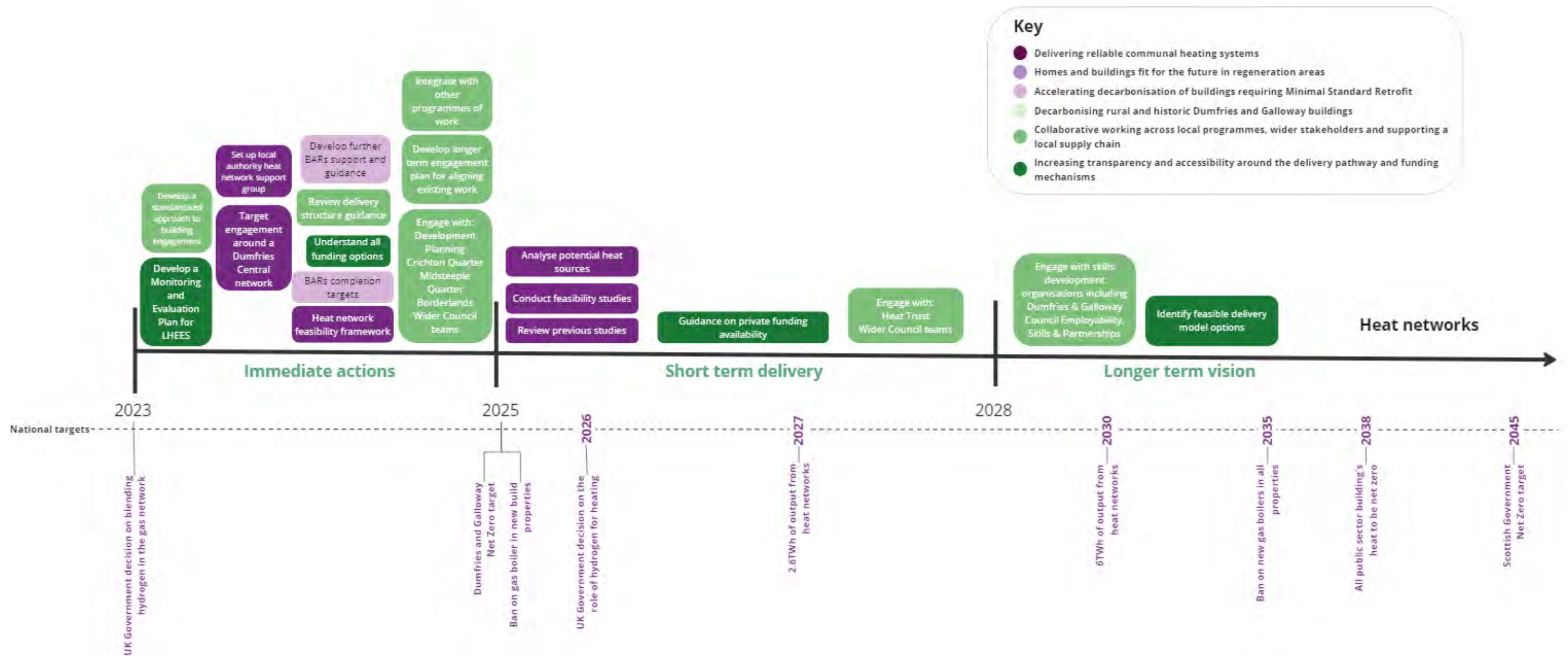
Each action has been assigned a potential action owner and other relevant stakeholders. Due to challenges around the timeframe of the LHEES, proposed action owners have not yet been fully consulted on these actions and therefore still require agreement for the LHEES process. Therefore it should be emphasised that the action owners listed below are suggested, not confirmed, and are subject to change. The immediate next step is to arrange wider engagement with stakeholders to discuss and agree an official action owner, action timeframes and measurable targets.

The following section presents the proposed actions as a roadmap across the key action areas.

2.1 Delivery Action Roadmap







2.2 Priority Action List

Priority actions were identified through engagement with the Dumfries and Galloway Council and key stakeholders. These actions have been developed below (in no particular order) in slightly more detail. The full list of actions is provided in Appendix 4.

Long-term Alignment of Work



Develop an ongoing engagement plan, across the next five years, to align any relevant existing programmes of work across Dumfries and Galloway with the LHEES Delivery Plan. This engagement plan will then be revisited and revised during the next LHEES iteration at the end of the five years.

Dumfries and Galloway Council have multiple streams of work around sustainability and decarbonisation and therefore significant efficiencies can be found by streamlining them. The focus of this will be to ensure regular communication of learnings, resources, funding, challenges and data across different workstreams. Where relevant, this has also been disaggregated into specific actions.

Proposed Action Owner:

LHEES internal team / LHEES lead

Other Stakeholders to be Included:

Property Estates and Programmes,
Strategic Housing, Development
Planning

Identify Funding Gap



Engage with the Scottish Government to report the funding gap, as identified by this LHEES and further analysis, for retrofitting regional building stock (domestic and non-domestic). This will be based on the anticipated action required which is reported in this LHEES as well as taking a wider view of actions which haven't been captured in relation to buildings with unconventional construction, non-domestic support needed and cost of building renewables e.g. solar PV, battery systems. The Scottish Government and the Energy Saving Trust will also need to support the Council to account for the limitations in the estimated costs outputted by the Energy Saving Trust's modelling tool.

The funding gap for the wider network constraints will require support from network operators.

Proposed Action Owner:

LHEES internal team / LHEES lead

Other stakeholders to be included:

The Scottish Government, Ofgem,
utility network operators

Develop an Accredited List of Installers and Suppliers



Work with the Scottish Government and other key stakeholders to create a regional accreditation status for installers of retrofitting and decarbonisation measures. The standards for this status will need to be agreed by the Scottish Government but will support the trusted and high-quality installation of key decarbonisation measures. The list of accredited installers will be presented on the Dumfries and Galloway Council website with a focus on locally available suppliers.

This should include engagement with suppliers to determine which of them can provide support schemes post-installation, to troubleshoot current issues with low carbon heating, ensure efficient performance and increase trust in decarbonisation measures.

Proposed Action Owner:	LHEES internal team / LHEES lead
Other Stakeholders to be Included:	Strategic Housing, South of Scotland Enterprise (SOSE), The Scottish Government, Borderlands Energy Masterplan team, Energy Saving Trust, Trading Standards (Dumfries and Galloway Trusted Trader Scheme)
Timeframe:	Short term

Engage with Local Suppliers



Engage with local suppliers to support the increased provision of decarbonisation services. This will have a specific local focus to bring trade and economy into Dumfries and Galloway and wider areas in Scotland. Suppliers should be encouraged to include a post-installation support for heat pumps to ensure that installations are correctly operated and performing effectively. (This service can become part of the criteria for the list of accredited suppliers to encourage provision of the service).

Connect these local suppliers to buildings with existing heat pumps to offer aftercare service if this has been missing or neglected, and to offer a programme of set point and boiler set up reviews for non-domestic properties to provide basic energy efficiency improvements

Proposed Action Owner:	LHEES internal team / LHEES lead
Other Stakeholders to be Included:	SOSE, The Scottish Government, Borderlands Energy Masterplan team, Energy Saving Trust, Local suppliers
Timeframe:	Short term

Additional Resources



Provide additional resources to support the deployment, management, and progression of individual projects. This includes supporting partnerships, monitoring and the speed of delivery, adding another layer of complexity to this workstream.

The resource which will be required to support and deliver the many components and programmes required by LHEES will be extensive.

Proposed Action Owner:

Dumfries and Galloway Council

Other Stakeholders to be Included:

LHEES internal team / LHEES lead, The Scottish Government

Timeframe:

Immediate action

Standardised engagement approach for owner occupied properties



Work with existing guidance from the Scottish Government to develop a structured approach for engagement with privately owned homes around their retrofit and energy decarbonisation options. This will be essential to gaining buy-in from homeowners whilst ensuring correct information is used. This tenure type will be the most challenging to decarbonise as many do not fall under current funding criteria and therefore have the least support.

Methods could include leafletting to disseminate information on the energy and estimated bill saving potential of individual building's intervention options based on PEAT (to encourage action even when funding isn't available), as well as communicating with those which are suitable for funding. Consider the current area-based schemes as the basis to develop this.

Proposed Action Owner:

LHEES internal team / LHEES lead

Other Stakeholders to be Included:

Energy Agency, Energy Saving Trust, Strategic Housing team

Timeframe:

Short term

These priority actions represent the actions which the key stakeholders believed were some of the most integral to Dumfries and Galloway's net zero roadmap. They provide enabling actions for other key programmes of work, such as by providing key resource or funding, or solve current challenges which have been identified through this LHEES process, such as joining up the many parallel streams of work across the local authority, troubleshooting performance issues with low carbon technology or beginning to structure an approach to treat the harder to access properties with private owners.

It should be noted that the actions within the delivery plan will be updated and amended as projects are identified and feasibility studies are concluded.

The full list of actions is captured in the roadmap visualisations and paints a longer-term picture of how these different actions need to map together to progress through the themes which were identified during this LHEES. As previously mentioned, this Delivery Plan requires further development to test and consult on these actions more deeply with key stakeholders, with respect to their resource to support the delivery. It is essential that these actions are both achievable and measurable so that progress is not stalled.

Many of these actions do not have confirmed funding however it is encouraged that this is not a reason to avoid stating actions, but the lack of funding and further support needed from the Scottish Government for their delivery needs to be emphasised and raised if proving a risk to wider decarbonisation.

Furthermore, this action plan alone will not be sufficient to achieve net zero across the area. The local communities across Dumfries and Galloway will need to engage in actions, technological advances and adopt positive behavioural change. Public engagement targeting increased awareness and policy support will not only create a more informed and supportive community but also drive the necessary changes in individual and collective behaviours to achieve net zero.

Following this initial publication of a proposed action plan, a more comprehensive and robust process needs to be carried out with each of the proposed action owners to:

- **Agree and solidify the Action Owner.** This needs to be with respect to available resource to deliver the action but importantly will need to reflect the owner's expertise or power to enable delivery.
- **Refine and add detail to the action.** The agreed Action Owner will need to add specifics to each action such as interim steps required, scope of the action and timeframes or resource needed.
- **Confirm the timeframe.** Suggested timeframes have been given in this Delivery Plan however it will be essential for the Action Owner to review this and ensure it is realistic. It may be desirable to make the timeframe more detailed than the three categories given in this LHEES Delivery Plan.
- **Ensure measurability.** All actions will need to be measurable to be integrated into the Monitoring and Evaluation Plan.

2.3 Summary and Next Steps

This Delivery Plan is designed to sit alongside the LHEES Strategy Report, which gives a more detailed view of the current performance, challenges and required actions to decarbonise Dumfries and Galloway's domestic and non-domestic building stock. The entire LHEES has been built on an evidence-based approach, with extensive stakeholder engagement. As noted in the LHEES, there are some limitations to the methodology and data included however this Strategy and Delivery Plan serves a strong baseline vision and roadmap of how to target the local authority's heat decarbonisation effectively and strategically, with a view to reduce fuel poverty. This LHEES will be repeated and updated in five years' time, with a clear report on progress since this publication.

3 Appendix: Long List of Actions

This section provides a more detailed view of the actions in the LHEES roadmap. These have been separated by the technical areas (domestic buildings, non-domestic buildings and heat networks) with an initial table covering the crosscutting actions which fall into two or all three categories.

Sections which follow are:

- 3.1 Crosscutting Actions
- 3.2 Domestic Buildings
- 3.3 Non-Domestic Buildings
- 3.4 Heat Networks

3.1 Crosscutting Actions

Action	Description	Timeframe	Homes & buildings in regeneration areas	Minimal Standard Retrofit	Decarbonising rural & historic buildings	Delivering communal heating systems	Collaborative working & a local supply chain	Transparency & access for delivery & funding
Data and zoning: Improve building data	Nominate a main contact within Dumfries and Galloway Council to engage with the Energy Saving Trust and the Scotland Heat Map teams. They will report changes to building data to align with the update of the central databases every six months.	Immediate action					✓	
Monitoring: Develop a Monitoring and Evaluation Plan for LHEES	Create a monitoring and evaluation plan (MEP) for LHEES actions and develop a role, either internal or external, to make sure this is completed and monitor progress towards the targets developed for each action. As part of this the LHEES baseline from the LHEES report should be thoroughly reviewed to ensure the baseline data is robust for target setting.	Immediate action						✓
Additional support: Additional Resources	Provide additional resources to support the deployment, management, and progression of individual projects. This includes supporting partnerships and monitoring of delivery. This resource will require funding support and could be sourced either internally or externally to the Council.	Immediate action					✓	
Additional support: Long-term alignment of work	Develop an ongoing engagement plan for the next five years to align existing programmes of work with the LHEES Delivery Plan. The focus of this will be to ensure regular communication of learnings, resources, funding challenges and data. This has also been disaggregated into specific actions.	Short term delivery					✓	
Additional support: Develop an accredited list of installers	Work with the Scottish Government and other key stakeholders to create a regional accreditation status for installers of retrofitting and decarbonisation measures. Compile a list of accredited installers which will be presented on the Dumfries and Galloway Council website with a focus on locally available suppliers. This should include engagement with suppliers to determine which of them can provide specialist skills, such as support schemes post-installation to ensure efficient performance and increase trust in decarbonisation measures.	Short term delivery					✓	
Additional support: Engage with skills development organisations	Work with the Scottish Government to engage with local education facilities to advocate creation of a working group for retrofit upskilling. This group will research the current/future skills gap, barriers, and understand additional support needed. There are recognised organisations specialising in heat pump training who can support this.	Longer term vision					✓	
Additional support: Engage with local suppliers	Engage with local suppliers to encourage provision of post-installation support for heat pumps to ensure that installations are correctly operated and performing effectively. This service can become part of the criteria for the list of accredited suppliers to encourage provision of the service. This could include reviewing buildings with existing heat pumps for an aftercare service, or creating a programme of set point and boiler set up reviews for non-domestic properties to provide basic energy efficiency improvements	Short term delivery					✓	
Funding: Identify funding gap	Engage with the Scottish Government to report the funding gap, as identified by this LHEES and further analysis, for energy efficiency measures of regional building stock (domestic and non-domestic).	Short term delivery						✓

3.2 Domestic buildings

Action	Description	Timeframe	Homes & buildings in regeneration areas	Minimal Standard Retrofit	Decarbonising rural & historic buildings	Delivering communal heating systems	Collaborative working & a local supply chain	Transparency & access for delivery & funding
Data and Zoning: Integrate ‘no regrets’ buildings’ interventions into regeneration	Use the Home Analytics data and PEAT outcomes to identify the Category 1 and 2 buildings ² which fall within existing identified areas such as Regeneration Areas and Place Plans. Integrate the energy efficiency improvement strategies into the wider programme of work where possible.	Short term delivery	✓					
Housing associations: Improve energy system control	Work with housing providers to identify the feasibility for the implementation of building monitoring systems and smart home energy systems to monitor energy use and improve building performance in Housing Association buildings.	Short term delivery		✓				
Housing associations: Develop housing provider working group	Work with SOSE to further develop a working group for housing providers to share learnings around improving energy efficiency of their building stock and decarbonising their energy use. This can base itself on current work progressing via SOSE and could be extended to outside of Dumfries and Galloway local authority.	Immediate action		✓				
Housing associations: Prioritise buildings found suitable for low-regrets measures	Use LHEES data on Category 1 and 2 Housing Association buildings, which are considered as low- or no- regrets, to identify any which don’t currently fall under existing areas of priority or planned work. These should be targeted. ³ This could be tied into the work currently underway with SOSE and housing providers.	Short term delivery		✓				
Housing associations: Identify the funding gap for properties requiring significant retrofit	Consolidate data on Category 3 Housing Association buildings and the required efforts to decarbonise these including anticipated costs and the gap in available funding. This will start the basis to develop a specific action plan to target these buildings. ²	Short term delivery						✓
Owner Occupied: Standardised engagement approach for owner occupied properties	Work with existing guidance from the Scottish Government to develop a structured approach for engagement with privately owned homes around their energy efficiency and decarbonisation options.	Short term delivery		✓				
Owner Occupied: Direct engagement with Category 1 homes	Directly engage with households which are Category 1 to inform them on their options around heat pump financing and the potential benefits for the user.	Immediate action		✓				
Owner Occupied: Creation of support materials	Creation of guidance on the Dumfries and Galloway Council website around support networks, suppliers and funding options for building decarbonisation. This information page would include general information on energy efficiency measures and decarbonisation options, benefits and simple instructions on how to get started. This would link to the list of accredited installers.	Short term delivery		✓				

² Category 0: Buildings with low carbon heating systems; Category 1: Buildings suitable for heat pumps; Category 2: Buildings which require a moderate amount of retrofit to be suitable for heat pumps; Category 3: Buildings which require substantial retrofit to be suitable for heat pumps and therefore alternative low carbon heating may be more suitable.

³ Local Heat and Energy Efficiency Strategy, Dumfries and Galloway

Action	Description	Timeframe	Homes & buildings in regeneration areas	Minimal Standard Retrofit	Decarbonising rural & historic buildings	Delivering communal heating systems	Collaborative working & a local supply chain	Transparency & access for delivery & funding
Owner Occupied: Develop a retrofit exemplar building	Develop a retrofit exemplar building to demonstrate the potential for average homes to undergo fabric retrofit, install batteries, solar PV and heat pump to work effectively. This could be tied into proposed plans for a zero carbon town.	Longer term vision		✓				
Owner Occupied: Identify an Older Buildings and Unconventional Construction retrofit exemplar building	Identify a Category 3 property of any tenure, to pilot fabric retrofit, heat pumps with option to also include solar PV and batteries. This could serve as an exemplar of what is possible and improve engagement in retrofitting. This could be tied into proposed plans for a zero carbon town.	Longer term vision			✓			
Owner Occupied: Older Buildings and Unconventional Construction homes guidance	Engage with other local authorities and the Scottish Government to review and further develop existing guidance around Older Buildings and Unconventional Construction which is harmonious with the building fabric and character. This will review current limitations on potential intervention measures and remove restrictions where possible.	Longer term vision			✓			
Funding: Streamline funding applications	Work with the Scottish Government to review funding applications and streamline where possible to reduce barriers to apply. This could be in the form of a standardised template which is more compatible with the required data. These could be available via the local authority website.	Immediate action						✓
Funding: Develop a fund for initial retrofit surveys	Lobby the Scottish Government to develop a fund for initial retrofit surveys which is accessible to all homeowners to remove this initial barrier to action.	Short term delivery						✓
Stakeholder Engagement: Engage with DNO and GDNO plans	Engage with SP Energy Networks and SGN to determine current plans around grid reinforcement and gas network repurposing. Agree joint plan for future engagement to align roll out of heat pumps and grid capacity	Longer term vision					✓	
Stakeholder Engagement: Engage with Community Groups	Engage with community groups to demonstrate the potential and the benefit of energy efficiency improvements and decarbonisation, access funding for community project, and identify pathways to support increased uptake in the community.	Short term delivery					✓	
Stakeholder Engagement: Engage with SOSE	Engage with SOSE to understand options for further support around the LHEES actions	Immediate action					✓	
Stakeholder Engagement: Engage with Borderlands	Engage with Borderlands Energy Masterplan team to embed the LHEES plan and align project areas	Immediate action					✓	

3.3 Non-Domestic Buildings

Action	Description	Timeframe	Homes & buildings in regeneration areas	Minimal Standard Retrofit	Decarbonising rural & historic buildings	Delivering communal heating systems	Collaborative working & a local supply chain	Transparency & access for delivery & funding
Data and Zoning: Identify non-domestic buildings with largest potential energy saving	Analyse building data to identify those with the largest heat demands, engage with the buildings owner and propose/support a high-level energy efficiency analysis. These buildings may offer the largest impact from energy efficiency improvements.	Immediate action		✓				
Data and Zoning: Alignment with existing investment and asset management plans	Review existing investment and asset management plans to target energy efficiency improvements of buildings within the Council's portfolio	Short term delivery					✓	
Energy Efficiency: Council owned buildings	Target energy efficiency improvement of all Council owned buildings by 2025.	Immediate action		✓				
Energy Efficiency: Engage with building owners	Conduct early engagement with building owners to improve understanding of the purpose of energy efficiency improvements and decarbonisation of the energy system	Short term delivery					✓	
Decarbonise energy system: Procurement priorities	Review internal Council procurement procedures (in line with the Scottish Government procurement rules) to prioritise based on energy efficiency and carbon emissions and encourage the supply chain to do the same	Short term delivery						✓
Decarbonise energy system: Monitoring public building performance	Accelerate ongoing works to improve building management systems in all public buildings where appropriate, to more accurately monitor and improve building performance	Immediate action		✓				
Monitoring progress: Develop a process for monitoring progress on Council owned buildings	Instate a process to monitor progress of improving energy efficiency and decarbonising Council owned buildings. Include creation of a specific road map to net zero and key, realistic and achievable target dates for reporting progress. As per Capital Programme Procedures	Immediate action						✓
Wider stakeholder engagement: DNOs and GDNs	Include engagement with SP Energy Networks and SGN in Council planning to ensure a continuous communication channel	Immediate action					✓	
Wider stakeholder engagement: Council engagement	Engage with wider teams such as transport or education to streamline approach to delivery of LHEES information and energy reduction strategies	Short term delivery					✓	
Wider stakeholder engagement: Support decarbonisation plans of large organisations	Identify and engage with large organisations who are known to have a large number of properties or a large amount of energy demand through their properties to determine their decarbonisation plan and support they may require.	Longer term vision					✓	

3.4 Heat networks

Action	Description	Timeframe	Homes & buildings in regeneration areas	Minimal Standard Retrofit	Decarbonising rural & historic buildings	Delivering communal heating systems	Collaborative working & a local supply chain	Transparency & access for delivery & funding
Identifying potential heat networks: Conduct feasibility studies	Conduct feasibility studies in all proposed heat network zones where these have not already been undertaken. This should include more detailed analysis on anchor loads (including engagement with building owners); potential heat sources; BARs completion; and a high-level business case.	Short term delivery				✓		
Identifying potential heat networks: Review previous studies	Conduct a review of previous heat networks studies including: <ul style="list-style-type: none"> The Cargenbridge area. This should be in light of the future demand from the development area and engagement with the NHS to review if a heat network would support their decarbonisation plans. Dumfries Town Centre to review the previous study and whether those findings could be integrated with the plans for Crichton Quarter and Midsteeples Quarter. 	Short term delivery				✓		
Identifying potential heat networks: Develop further BARs support and guidance	Develop support around Building Assessment Reports to increase completion rate, including guidance around the benefits. This could be via the local authority website to signpost to the Scottish Government website's guidance and any local support available e.g. forums	Immediate action		✓				
Delivery model: Identify feasible options	Undertake initial review of options for a delivery model for the proposed heat network zones, as required by the Heat Networks Act. Examples include an energy partnership, an internal heat network team or other feasible mechanism. Identify the benefits / risks of each delivery model type	Longer term vision						✓
Delivery model: Review delivery structure guidance	Review the guidance on the delivery structures for heat networks from the Scottish Futures Trust	Immediate action					✓	
Heat sources: Analyse potential heat sources	Review the potential heat sources for each of the potential zones including: heat capacity, availability, heat offtake readiness, stakeholder engagement complexity and longevity. Particular engagement should be undertaken with the Coal Authority to align with minewater opportunity areas and any zones they are appraising.	Short term delivery				✓		
Heat sources: Engagement with the Crichton Quarter	Continue to engage with the Crichton Quarter to understand the additional capacity available from the aquifer and based on the designed borehole. This could indicate the opportunity to extend the proposed network further into the town and connect to the potential zone in Dumfries Town Centre	Immediate action					✓	
Heat sources: Engagement with Midsteeples Quarter	Continue to engage with the Midsteeples Quarter and support the aquifer feasibility review being carried out. The outcomes of this will include the available capacity and therefore the potential to extend the current plans to incorporate more of Dumfries Town Centre	Immediate action					✓	
Funding: Understand options	Explore and understand process and criteria to engage with available funding for heat networks including the Heat Network Support Unit, Scotland's Heat Network Fund and support from external parties such as Zero Waste Scotland or	Immediate action						✓

Action	Description	Timeframe	Homes & buildings in regeneration areas	Minimal Standard Retrofit	Decarbonising rural & historic buildings	Delivering communal heating systems	Collaborative working & a local supply chain	Transparency & access for delivery & funding
	research/academic funding. This could include general funding advice on the Council's website to remove this stage for new heat network projects.							
Funding: Heat network feasibility framework	Engage with the Scottish Government to propose a heat network feasibility framework to streamline projects and ease resource for procurement	Immediate action				✓		
Funding: Private funding	Develop further understanding and guidance on how to access private funding. This includes how to reduce risk for private investors and who to engage with.	Short term delivery						✓
Stakeholder engagement: Heat Trust	Engage with the Heat Trust for advice and guidance around navigating customer issues and ensuring protection. This will be key to protecting customers from negative effects on fuel poverty from heat networks. This will need to be ongoing as heat networks develop in different areas.	Short term delivery					✓	
Stakeholder engagement: Dumfries and Galloway heat network support group	Set up a heat networks support group within Dumfries and Galloway to improve collaboration, sharing of knowledge and learnings. This will speed up processes for those involved and will also aid in identifying any funding gaps and how to address them.	Immediate action					✓	
Stakeholder engagement: Development Planning	Engage with the Development Planning team around future heat network zoning. NPF4 requires the future Local Development Plan to take LHEES into account and for the spatial strategy to take in to account areas of heat network potential and any designated heat network zones.	Immediate action					✓	
Stakeholder engagement: Standardised approach	Develop an engagement approach for anchor load stakeholders and potential building connections for a heat network	Immediate action					✓	
Additional support: Integrate with other programmes	Where possible, integrate heat network planning with other building programmes. For example, integrate BARs with retrofit programmes.	Immediate action					✓	