ZERO WASTE SCOTLAND

Energy and Low Carbon Heat

LHEES Capacity Building Workshop 1

LHEES Stages 1, 2 and 3

Thurs 28th October 2021

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Welcome and Introduction

Aims of the LHEES capacity building workshops –

- To provide a more detailed overview of LHEES Stages 1-4, with examples from supporting templates and tools
- To provide context for how the national assessment outputs from LHEES Stages 1-4 will be generated, where these fit within the wider LHEES process and the flexibility within the Methodology for local adjustment
- To provide an opportunity for local authority Q&A / feedback on these Stages

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LHEES Capability Building Workshop 01

Thurs 28 Oct 2021 14:00-16:00

#	Item	Time (approx.)
01	Welcome and introductions	1400-1405
02	Summary of LHEES Stages	1405-1410
03	Stage 1 – Policy and strategy review	1410-1420
04	Stage 2 – Data and tools library	1420-1425
05	Q&A on Stages 1 and 2	1425-1435
06	Stage 3 – Strategic zoning and pathways	1435-1440
07	Baseline Tool – run through and overview	1440-1515
08	Break with Q&A	1515-1530
09	Visualisation of outputs – map creation	1530-1550
10	Q&A	1550-1555
11	Future workshops – summary	1555-1600

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LHEES Priority Areas

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

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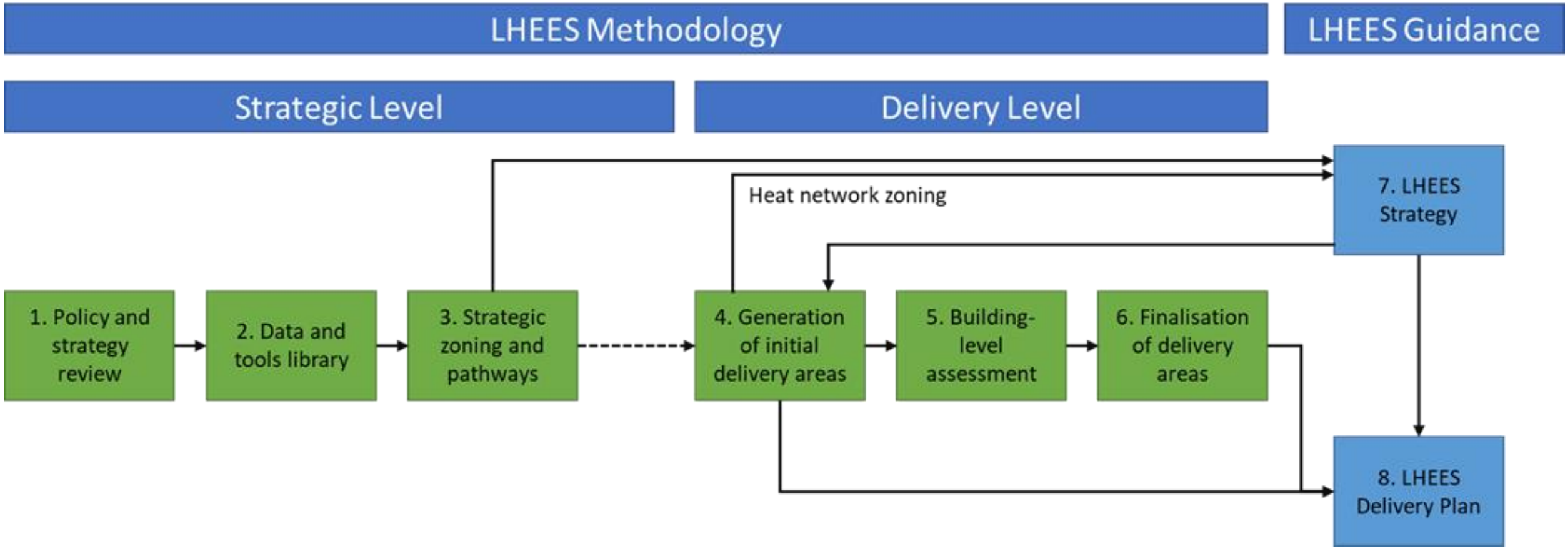
LHEES Structure and Stages



Stage 1 – Policy and Strategy Review

Purpose

Supports review of local policy in national context

Sets out Indicators, Criteria and Weightings for the LHEES Priorities

Supports capture and mapping of key internal and external stakeholders, as well as funding resources available

Approach

- Policy and Strategy Review Excel template supports completion of Stage 1
- Partially pre-populated, for local authority review, completion and expansion
- Suggestions on approach to use included within Methodology (Section 4.1.1, p.25)

Policy and Strategy Review Template – Suggested Approach (1)

- Consider roles and responsibilities in delivery of Methodology, Strategy and Delivery Plan
- Suggested starting point is internal stakeholder mapping
- Followed by engagement with colleagues to discuss LHEES process, capture local information and map external stakeholders / funding
- Drawing on the above, complete within the template –
  - Local policy tab
  - Stakeholder tab
  - Funding tab

Policy and Strategy Review Template – Suggested Approach (2)

- Re-engage internal stakeholders to discuss local priorities for LHEES
- Consider structures, forums, working groups to support completion of LHEES – reach out to external stakeholders as appropriate
- Consider requirements of local analysis under each LHEES Priority, set out revised Indicators, Criteria and Weightings to inform these
- Revisit and update the template / further documentation throughout the LHEES process

Stage 2 – Data and Tools Library

Purpose

Identifies and documents most appropriate data and information to support the LHEES analysis

Approach

- Data and Tools Library (Excel template) supports completion of Stage 2
- Library captures data requirements of LHEES collectively – data categorised based on use
  - Core data
  - Alternative data
  - Supplementary data

Stage 3 – Strategic Zoning and Pathways

Purpose

Support local authorities to understand current energy efficiency and heat decarbonisation performance of the building stock in their area

Complete analysis to enable local authorities to set out the Strategic Zones for each LHEES Priority (intermediate zone default aggregation)

Approach

- Baseline Tool (Excel) supports input, manipulation and presentation of source data
- Tool presents summary statistics for LHEES Priorities based on the Indicators from Stage 1
- Tool ranks Strategic Zones based on their performance for each LHEES Priority, providing high-level targeting
- Strategic Zones visualised using GIS
    - Identify potential pathways at a strategic level for inclusion in LHEES Strategy

Baseline Tool – Format and Limitations

Format

Context on use of Excel

More interested in outputs at the moment than format

Limitations

- Domestic focus – data from Home Analytics and OSG (mixed-use non-domestic)
- Default aggregation at Intermediate Zone
- 5 LHEES Priorities, not used for the Heat Networks Priority
- Flexibility in use constrained by Excel format and use of macros
- Buro Happold to provide overview of potential for adjustment within current format

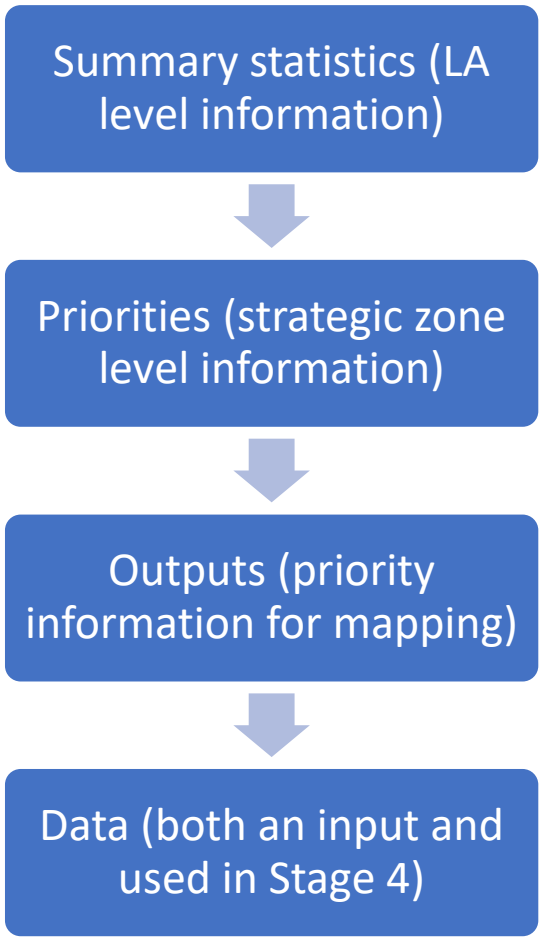
Baseline tool walkthrough

- Should all receive a baseline tool with the predefined LHEES settings.
- Run through the baseline tool for each LHEES priority:
  - 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
- Much of this information can be found in Section 4.3.1 of the LHEES Methodology document.

After this run through of the tool…

- You should have understanding of what level of information is provided and potential uses.
- Where to find information.
- Using the tool to identify high priority strategic areas.
- Familiarity

Baseline tool structure



- Baseline tool has four key elements:
  - Summary statistics – provides a baselining overview of the LHEES priorities, using the LHEES indicators in Stage 1, for the whole LA. These can also be examined for one strategic zone of interest.
  - Priorities – these examine heat decarbonisation pathways at a strategic zone. This includes the option to adjust weightings on some priorities.
  - Outputs – this packages the priority information for use in the creation of maps.
  - Data – this includes the input data used in the tool and some files used later in LHEES Stage 4.
- A more detailed summary of these is provided in the 'Overview' tab of the Baseline tool and pages 29-30 of the Local Heat and Energy Efficiency Strategies: LHEES Methodology.

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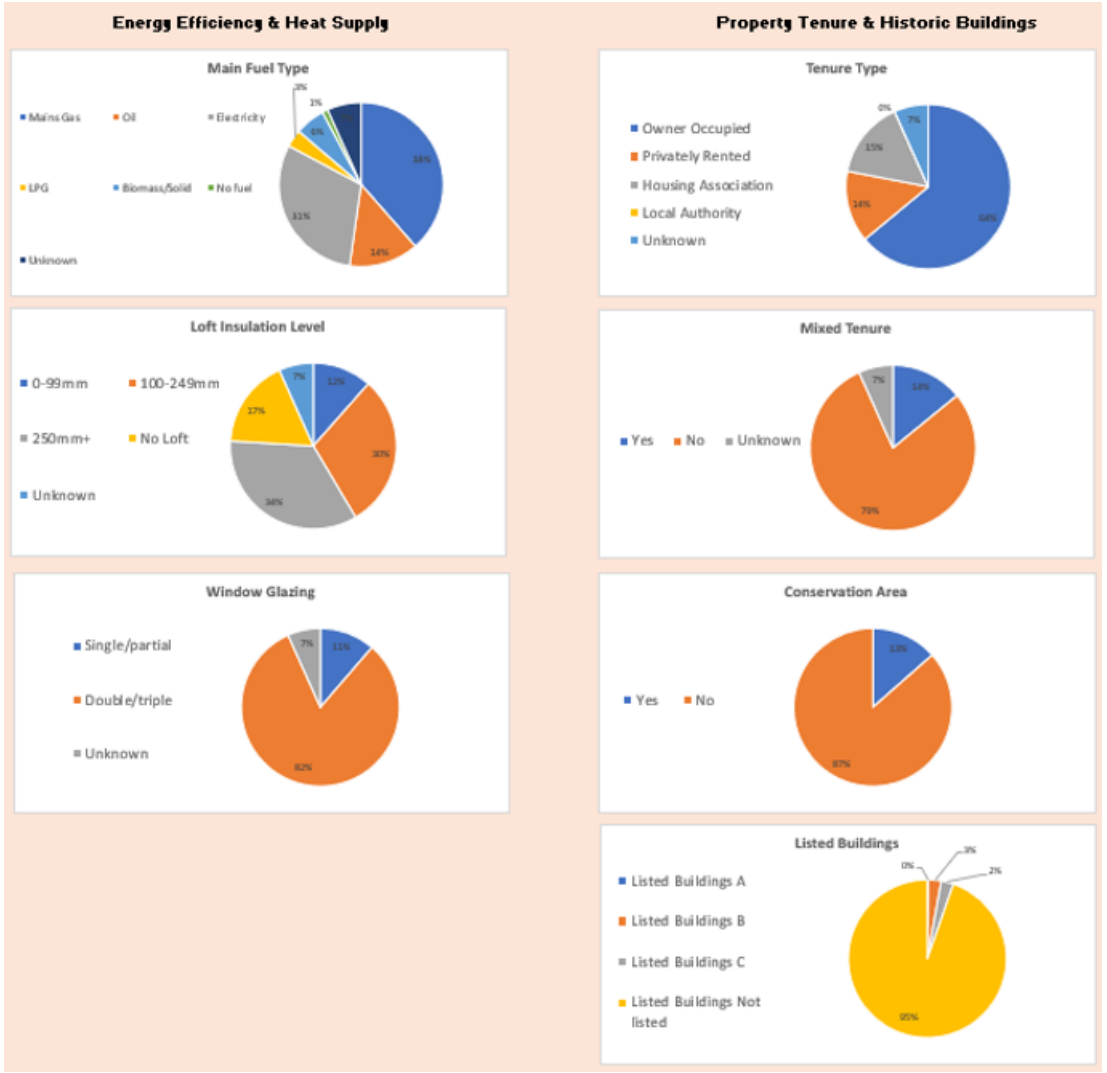
Key Indicators

Local authority summary dashboard

Key Indicators summary

- This is found at the top of the ‘LA dashboard’ tab with a breakdown to strategic zone level in the ‘Summary Outcome Domestic’ tab.
- It provides tabulated information as well as graphs summarising key indicators and characteristics.
- It aims to provide an overview of the factors which will impact the different LHEES Priorities.
- Much of the information may already be familiar but centralising it in this way makes it useful for direct use in reporting and determining priorities.



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Energy and Low Carbon Heat

Off-gas grid buildings

To help quantify and identify areas to focus on for heating system switching – primarily to heat pumps.

Off-gas grid buildings: approach

Groups of buildings into **3 principal Categories** for heat decarbonisation:

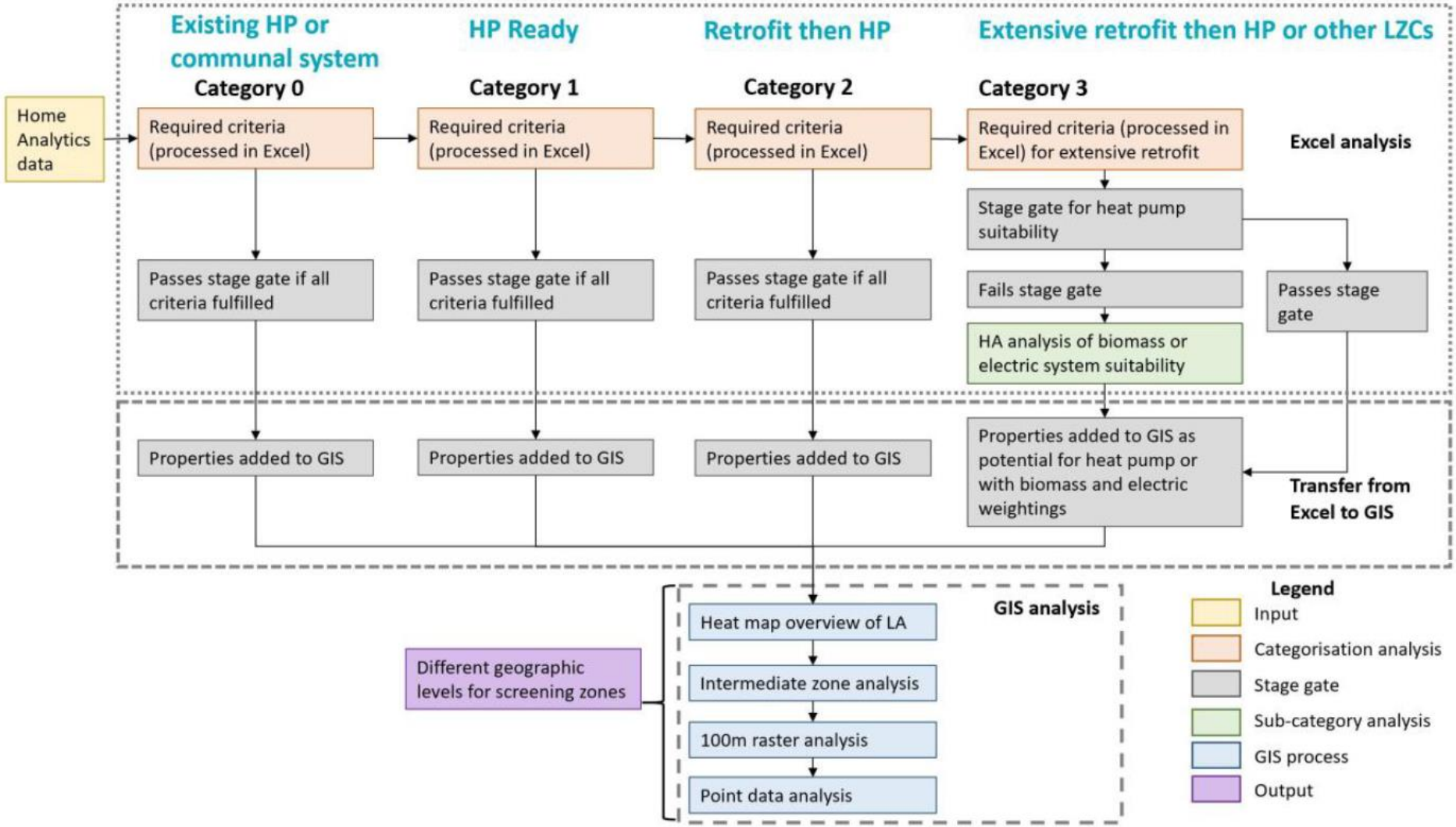
1. Those with immediate potential for heat pump retrofit,
2. Those with secondary potential for heat pump retrofit (i.e. some fabric / heat distribution system upgrade),
3. Those with tertiary potential for heat pump retrofit (e.g. costly fabric retrofit), and not suited to heat pump technology with electric storage, direct electric or biomass likely to be the most viable decarb technology.

An additional **Category 0** is used to identify properties that already have a low or zero emissions heating system and those that are connected to a heat network.

For details of the precise requirements for each category see pages 12-17 of the LHEES Stage 4 ‘Off-gas grid: Detailed Practitioner Guidance’

Off-gas grid buildings: method summary

- Key factors considered are:
- Listed building/ conservation area
- Wet system required for category 1
- Insulation (wall, loft and window)
- Ease of adding insulation (wall focus)



Off-gas grid buildings: LA Dashboard tab

- Within the LA Dashboard the information relating to off-gas grid buildings appears in a similar table to that on the right.
- For all categories the property count for different tenures is provided at a local authority wide basis.
- For Category 0 and 3 the details of the different zero carbon technologies are included.
- For Category 1 and 2 all buildings are assumed to adopt heat pumps, so the technology breakdown is not included.

Summary for domestic properties in whole Local Authority, off-gas grid

This section shows summary statistics for the off-gas grid Priority in terms of the categorisation of properties based on their suitability for heat pump retrofit
The data presented in this section has been filtered for properties which are off-gas grid, based on the Home Analytics data

Run Analysis

Total number of domestic properties in LA	51,837
Total number of domestic properties in LA which are off-gas grid	27,979

		Tenure types				Category 0 breakdown	
Category 0	Count in Category	Housing Association	Local Authority	Owner Occupied	Privately Rented	Heat Pump	Communal
Number of domestic properties	2,015	825		1,014	176	1,694	321

		Tenure types			
Category 1	Count in Category	Housing Association	Local Authority	Owner Occupied	Privately Rented
Number of domestic properties	3,462	437		2,640	385
Percentage of Local Authority domestic properties	7%	1%	0%	5%	1%

		Tenure types			
Category 2	Count in Category	Housing Association	Local Authority	Owner Occupied	Privately Rented
Number of domestic properties	10,679	2,778		6,446	1,455
Percentage of Local Authority domestic properties	21%	5%	0%	12%	3%

		Tenure types				Category 3 breakdown		
Category 3	Count in Category	Housing Association	Local Authority	Owner Occupied	Privately Rented	Heat pump	Biomass	Electrification
Number of domestic properties	12,234	485		9,185	2,564	4,734	1,267	6,232
Percentage of Local Authority domestic properties	24%	1%	0%	18%	5%	9%	2%	12%

Off-gas grid buildings: priorities tab (OffGasGrid)

- Provides a count of properties within each off-gas category per strategic zone (IZ).
- To aid with interpreting the data a rank (by total property count) is also provided for the strategic level zone. A summary of the 12 zones with the highest counts is provided for a preselected category.

Description	This tab provides counts of properties in each category and sub-category, and ranks zones based on the category counts for the Off-Gas Grid Priority

Ranking	Zones with highest property counts based on Category 1	Number of properties which are Category 1
1	8	648
2	9	469
3	6	322
4	13	305
5	14	254
6	3	231
7	18	215
8	5	213
9	21	169
10	7	168
11	12	107
12	4	97

User Notes:
1. Click 'Aggregate Off-Gas Grid Data' for data to be aggregated, the results will be outputted to the 'Aggregated_Data_OGG' tab and the linked columns shown here will refresh. Note aggregation will take a few moments to complete.
2. Select from the drop-down list the Category selection which the top 12 IZ analysis will focus on.
3. The number of the selected Category properties is used to rank the zones for this given priority, shown in the summary table in the top left. The results of all Category property counts are pulled through to the 'Summary Proirities Domestic' tab.

Aggregate Off-Gas Grid Data

Aggregation Level:	Intermediate Zone
Category Selection:	Category 1

		Categories for Off-Gas Grid													
		Category 0 Properties				Category 1		Category 2		Category 3 Properties					
Intermediate Zone	Total number of properties in IZ	Total number of Cat 0 properties	Cat 0 Priority Ranking	*Number of Cat 0 properties with Heat Pumps*	*Number of Cat 0 properties using Communal Heating*	Number of Category 1 Properties	Cat 1 Priority Ranking	Number of Category 2 Properties	Cat 2 Priority Ranking	Total number of Cat 3 Properties	Cat 3 Priority Ranking	*Number of Cat 3 properties - Heat Pumps*	*Number of Cat 3 properties - Biomass*	*Number of Cat 3 properties - Electric*	Total off-gas grid property count
1	3,230	63	10	0	0	44	15	424	13	447	13	0	0	0	978
2	1,836	36	14	0	0	3	21	152	18	118	20	0	0	0	309
3	2,718	116	7	0	0	231	6	639	6	757	9	0	0	0	1743
4	2,746	8	19	0	0	97	12	603	8	308	15	0	0	0	1016

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On-gas grid buildings

To help quantify and identify areas to focus on for heating system switching – primarily to heat pumps.

On-gas grid buildings: approach

Follows the same principles and approach as off-gas grid buildings, grouping buildings into **3 principal Categories** for heat decarbonisation:

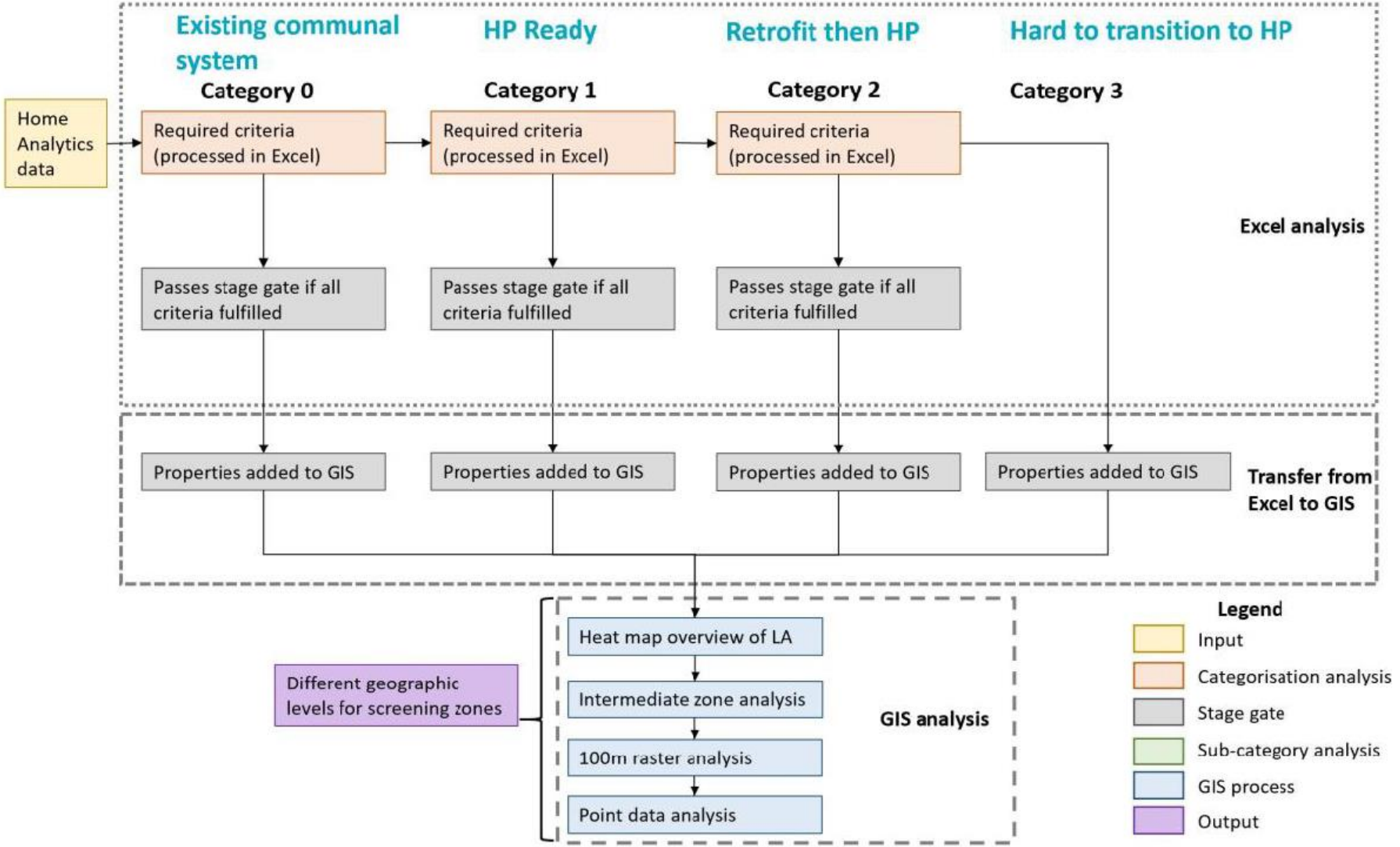
1. Those with immediate potential for heat pump retrofit,
2. Those with secondary potential for heat pump retrofit (i.e. some fabric / heat distribution system upgrade),
3. Those with tertiary potential for heat pump retrofit (e.g. costly fabric retrofit).

An additional **Category 0** is used to identify properties that already have a low or zero emissions heating system and those that are connected to a heat network.

For details of the precise requirements for each category see pages 12-17 of the LHEES Stage 4 ‘On-gas grid: Detailed Practitioner Guidance’

On-gas grid buildings: method summary

- Very similar process to off-gas
- Main difference is no technology defined for category 3
- Does not examine hydrogen



On-gas grid buildings: LA Dashboard tab

- The LA dashboard is similar to off-gas, splitting counts for categories by tenure as well as providing a total property count.
- No technology information is provided, to be in Category 0 communal heating is the only technology and no split given for Category 3.

Summary for domestic properties in whole Local Authority, on-gas grid

This section shows summary statistics for the on-gas grid Priority in terms of the categorisation of properties based on their suitability for heat pump retrofit

Total number of domestic properties in LA	51,837
Total number of domestic properties in LA which are on-gas grid	19,987

Run Analysis

Category 0	Count in category	Tenure types: Housing Association	Local Authority	Owner Occupied	Privately Rented
Number of domestic properties	175	78	0	48	49

Category 1	Count in category	Tenure types: Housing Association	Local Authority	Owner Occupied	Privately Rented
Number of domestic properties	6,050	1,743	0	3,676	631
Percentage of Local Authority domestic properties	12%	3%	0%	7%	1%

Category 2	Count in category	Tenure types: Housing Association	Local Authority	Owner Occupied	Privately Rented
Number of domestic properties	4,234	725	0	3,044	465
Percentage of Local Authority domestic properties	8%	1%	0%	6%	1%

Category 3	Count in category	Tenure types: Housing Association	Local Authority	Owner Occupied	Privately Rented
Number of domestic properties	9,528	844	0	7,115	1,569
Percentage of Local Authority domestic properties	18%	2%	0%	14%	3%

On-gas grid buildings: priorities tab (OnGasGrid)

- Provides a count of properties within each off-gas category per strategic level zone (IZ) and ranks by total count in the same manner as off-gas.

Description	This tab provides counts of properties in each catogory and ranks zones based on the categorg counts for the On-Gas Grid Priority.

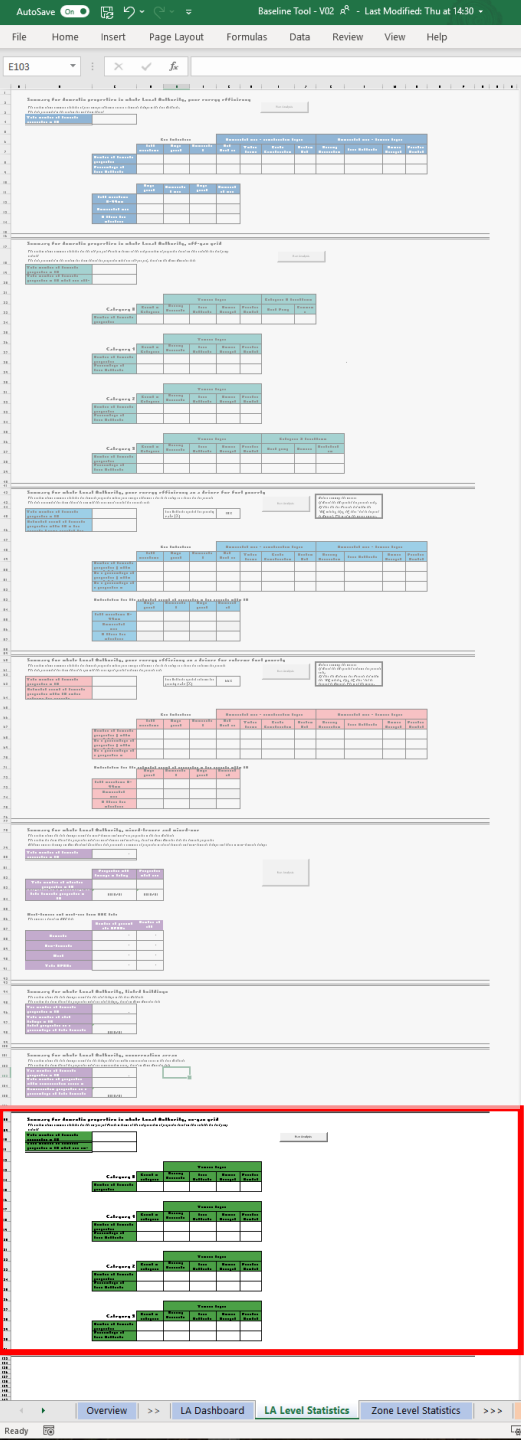
Ranking	Zones with highest property counts based on Category 1 selection	Number of properties which are Category 1
1	10	961
2	20	765
3	16	753
4	1	649
5	17	541
6	15	513
7	2	412
8	19	404
9	18	263
10	12	253
11	22	228
12	23	137

User notes:
1. Click 'Aggregate On-Gas Grid Data' for data to be aggregated, the results will be outputted to the 'Aggregated_Data_OnGG' tab and the linked columns shown here will refresh. Note aggregation will take a few moments to complete.
3. Select from the drop-down list the Category selection which the top 12 IZ analysis will focus on.
4. The number of the selected Category properties is used to rank the zones for this given priority, shown in the summary table in the top left. The results of all Category counts are pulled through to the 'Summary Priorities Domestic' tab.

Aggregate On-Gas Grid Data

Aggregation Level:	Intermediate Zone
Category Selection:	Category 1

		Categories for On-Gas Grid								
Intermediate Zone	Total number of properties in IZ	Number of Category 0 Properties	Category 0 Ranking	Number of Category 1 Properties	Category 1 Ranking	Number of Category 2 Properties	Category 2 Ranking	Number of Category 3 Properties	Category 3 Ranking	Total on-gas grid property count
1	2,718	0	6	649	4	374	5	708	6	1731
2	2,575	67	1	412	7	495	3	1189	2	2163
3	1,841	0	6	0	16	0	18	0	18	0
4	1,438	0	6	61	14	69	12	259	12	389



File: **Baseline Tool** Tab: **LA Level Statistics** Focus: **On-Gas Grid**

Summary for domestic properties in whole Local Authority, on-gas grid

This section shows summary statistics for the on-gas grid Priority in terms of the categorisation of properties based on their suitability for heat pump retrofit

The data presented in this section has been filtered for properties which are on-gas grid, based on the Home

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Percentage of Local Authority domestic properties	8%	1%	0%	6%	1%

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Percentage of Local Authority domestic properties	18%	2%	0%	14%	3%

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Energy and Low Carbon Heat

Poor building energy efficiency

To help quantify an area's energy efficiency and the measures which could be taken to improve these.

Energy efficiency: approach

Guidance to enable a local authority to identify possible locations at a strategic and delivery level where poor building energy efficiency exists across the local authority.

Examines three primary indicators to identify areas with low energy efficiency:

1. Low/no loft insulation
2. Single glazed windows
3. Uninsulated walls

At the local authority level, the tool provides a count for each indicator but at the strategic zone level the tool provides the flexibility to focus on different aspects, through weighting different indicators.

Energy Efficiency: LA Dashboard tab

- Examines the counts and percentage of properties with each of the three indicators.
- Also provides useful information on how to target energy efficiency improvements.
- Focuses on wall type – which requires the most varied approach for different construction types and was found to be the most frequently occurring indicator.

Summary for domestic properties in whole Local Authority, poor energy efficiency

This section shows summary statistics of poor energy efficiency across all domestic buildings in the Local Authority.
The data presented in this section has not been filtered

Run Analysis

Total number of domestic properties in LA	51,837

	Key Indicators			Uninsulated walls - construction types				Uninsulated walls - tenure types			
	Loft insulation: 0-99mm	Single glazed windows	Uninsulated walls	Solid Brick or Stone	Timber Frame	Cavity Construction	System Built	Housing Association	Local Authority	Owner Occupied	Privately Rented
Number of domestic properties	5,175	5,869	27,381	16,157	3,823	6,541	860	2,016		20,448	4,917
Percentage of Local Authority	10%	11%	53%	31%	7%	13%	2%	4%	0%	39%	9%

	Single glazed windows	Uninsulated walls	Single glazed windows	Uninsulated walls
Loft insulation: 0-99mm	930	4,012	2%	8%
Uninsulated walls	4,516		9%	
All three key indicators		817		2%

Energy Efficiency: priorities tab (EnergyEfficiency)

- Examines all indicators together, giving a total count for potential energy efficiency interventions for every strategic zone.
- Zones are given a rank based on a weighted score of interventions identified.
- This is set up for interventions to be equally weighted for contributions to this rank, this can be changed through use of the weightings.

Description s tab provides a Total Weighted Score and zone ranking for the poor energy efficiency Priority, alongside information on potential energy efficiency interventions by zo

Ranking	Zones with highest Total Weigthted Score	Number of interventions identified
1	2	2,343
2	9	2,158
3	6	2,398
4	5	1,901
5	16	1,320
6	18	1,561
7	17	1,187
8	22	2,114
9	23	1,731
10	15	1,402
11	3	2,096
12	12	1,678

Weighting	
0-99mm	34
Single glazed	33
Uninsulated (all construction types)	33
Total	100

User Notes:
1. Change the Weighting for each Indicator if required in the 'Weighting' table, the total Weighting must equal 100.
2. The Total Weighted Score is used to rank the zones, shown in the summary table in the top left. These results are then pulled thorugh to the 'Summary tab'.
Please note that the number of interventions does not alw ays correspond to a priority ranking, as the Weighting utilises percentages associated with the Indicators.

		Poor energy efficiency Indicators								
		Loft Type & Insulation	Glazing	Wall Insulation	Number of properties					
Intermediate geography zone	Total number of properties in IZ	0-99mm	Single glazed windows	Uninsulated (all construction types)	0-99mm	Single glazed windows	Uninsulated (all construction types)	Number of potential interventions identified	Total Weighted Score	Ranking
1	3230	10%	9.1%	42.7%	337	295	1378	2010	21	19
2	1836	18%	28.1%	81.3%	336	515	1492	2343	42	1
3	2718	9%	15.4%	52.7%	247	418	1431	2096	26	11
4	2746	11%	9.8%	47.2%	299	270	1297	1866	23	17
5	2069	11%	16.5%	64.6%	222	342	1337	1901	30	4
6	2567	12%	11.2%	69.7%	320	288	1790	2398	31	3
7	2769	11%	10.4%	48.0%	311	287	1330	1928	23	16
8	2050	7%	6.8%	40.9%	150	140	838	1128	18	21
9	2030	14%	11.2%	80.9%	288	227	1643	2158	35	2
10	2001	10%	6.1%	44.5%	205	121	891	1217	20	20
11	1915	10%	10.9%	46.6%	183	208	892	1283	22	18
12	2196	8%	11.4%	57.0%	176	250	1252	1678	25	12
13	3345	6%	5.6%	42.3%	209	186	1415	1810	18	23
14	1855	16%	10.7%	48.1%	299	199	893	1391	25	13
15	1816	10%	15.0%	52.6%	175	272	955	1402	26	10
16	1485	20%	11.5%	57.0%	303	171	846	1320	30	5
17	1447	15%	11.1%	56.4%	211	160	816	1187	27	7

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Energy and Low Carbon Heat

Poor building energy efficiency as a driver for fuel poverty

Examines energy efficiency indicators in the context of fuel poverty.

Poor building energy efficiency as a driver for fuel poverty: approach

- Fuel poverty % likelihood indicators are used, and a Weighting is applied between these and the poor energy efficiency indicators.
- The fuel poverty levels are specified for each local authority area, to categorise buildings as being in fuel poverty or not based on the Home Analytics data.
- There is flexibility for a user to adjust the balance between Weightings for probability of fuel poverty and of extreme fuel poverty, to investigate one Indicator or the other, or a blend of both.
- The combined Weighting for Indicators of fuel poverty to sums to 50%, and the combined default Weighting for the poor energy efficiency Indicators sums to 50%.

Fuel poverty: LA Dashboard tab

- Provides a count of properties within fuel poverty that have each of the poor energy efficiency indicators.
- These are examined in the context of percentage of properties in fuel poverty that have one of these indicators and what percentage of properties within a local authority this equates to.

Summary for whole Local Authority, poor energy efficiency as a driver for fuel poverty

This section shows summary statistics for domestic properties where poor energy efficiency is likely to be acting as a driver for fuel poverty
The data presented has been filtered to align with the user input specified fuel poverty rate

Total number of domestic properties in LA	51,837
Estimated count of domestic properties within LA in fuel poverty (using specified fuel poverty likelihood rate %)	5,184

Local Authority specified fuel poverty rate (%)	32%

Run Analysis

Before running the macro:
1) Select the LA specified fuel poverty rate,
2) Filter the Fuel Poverty field within the "HA_individual_bldgs_FP_filter" tab by Largest to Smallest. This will aid in the marco analysis.

	Key Indicators			Uninsulated walls - construction types				Uninsulated walls - tenure types			
	Loft insulation: 0-99mm	Single glazed windows	Uninsulated walls	Solid Brick or Stone	Timber Frame	Cavity Construction	System Built	Housing Association	Local Authority	Owner Occupied	Privately Rented
Number of domestic properties (within specified fuel poverty rate %)	1,260	858	3,553	2,292	341	741	179	122	-	2,959	472
As a percentage of properties (within specified fuel poverty rate %)	24%	17%	69%	44%	7%	14%	3%	2%	0%	57%	9%
As a percentage of all properties in Local Authority	2%	2%	7%	4%	1%	1%	0%	0%	0%	6%	1%

Undertaken for the estimated count of properties in fuel poverty within LA

	Single glazed windows	Uninsulated walls	Single glazed windows	Uninsulated walls
Loft insulation: 0-99mm	279	1,001	5%	19%
Uninsulated walls	713		14%	
All three key indicators		253		5%

Fuel Poverty: priorities tab

- Ranks strategic level zones in terms of occurrence of both fuel poverty and poor energy efficiency.
- Showing where both indicators are high.
- Set as default to examining fuel poverty rather than extreme fuel poverty, this can be switched.
- Energy efficiency indicators are equally weighted but one specific measure can be focused on.

Description	This tab provides a Total Weighted Score and zone ranking for the poor energy efficiency acting as a driver for fuel poverty Priority, alongside information on potential energy efficiency interventions by zone.

Ranking	Zones with highest Total Weighted Score, where poor energy efficiency is likely to be acting as a driver for fuel poverty
1	2
2	14
3	22
4	6
5	23
6	3
7	16
8	5
9	18
10	15
11	19
12	4

Weighting	
0-99mm	17
Single glazed windows	17
Uninsulated (all construction types)	16
Households in fuel poverty (fuel bill >10% of income after housing)	50
Households in extreme fuel poverty (fuel bill >20% of income after housing)	0
Total	100

User notes:
1. Change the Weighting for each Indicator if required in the 'Weighting' table, the total weighting must equal 100. Within the Weighting table, select whether fuel poverty or extreme fuel poverty should be prioritised. This is done by selecting 50 for the prioritised selection and 0 for the other. This will decide how heavily the given Indicator affects the 'Total Weighted Score' for each zone.
2. The Total Weighted Score is used to rank the zones shown in the summary table in the top left. The Total Weighted Score results are then pulled thorugh to the 'Summary Priorities Domestic' tab.

		Poor energy efficiency as a driver for fuel poverty Indicators									
		Loft Type & Insulation	Glazing	Wall Insulation	Fuel Poverty		Number of properties				
Intermediate geography zone	Total number of properties in IZ	0-99mm	Single glazed windows	Uninsulated (all construction types)	Households in fuel poverty (fuel bill >10% of income after housing)	Households in extreme fuel poverty (fuel bill >20% of income after housing)	Room in roof	Single glazed windows	Uninsulated (all construction types)	Total Weighted Score	Ranking
1	3230	10.4%	9.1%	42.7%	0.20	0.09	337	295	1378	20	18
2	1836	18.3%	28.1%	81.3%	0.39	0.29	336	515	1492	40	1
3	2718	9.1%	15.4%	52.7%	0.37	0.26	247	418	1431	31	6
4	2746	10.9%	9.8%	47.2%	0.30	0.14	299	270	1297	26	12
5	2069	10.7%	16.5%	64.6%	0.30	0.16	222	342	1337	30	8
6	2567	12.5%	11.2%	69.7%	0.35	0.22	320	288	1790	32	4
7	2769	11.2%	10.4%	48.0%	0.22	0.10	311	287	1330	23	17
8	2050	7.3%	6.8%	40.9%	0.32	0.19	150	140	838	25	14
9	2030	14.2%	11.2%	80.9%	0.17	0.10	288	227	1643	26	13
10	2001	10.2%	6.1%	44.5%	0.14	0.09	205	121	891	17	22
11	1915	9.6%	10.9%	46.6%	0.07	0.03	183	208	892	14	23
12	2196	8.0%	11.4%	57.0%	0.12	0.05	176	250	1252	19	21
13	3345	6.3%	5.6%	42.3%	0.28	0.18	209	186	1415	23	16
14	1855	16.1%	10.7%	48.1%	0.43	0.23	299	199	893	34	2
15	1816	9.6%	15.0%	52.6%	0.33	0.18	175	272	955	29	10

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Mixed tenure, mixed use and historic buildings

Mixed tenure, mixed use and historic buildings: approach

- Set of secondary indicators to consider as they can impact the delivery of other priority areas.
- The tool provides counts of instances where there are multiple properties in a building and for domestic properties when they are listed or in a conservation area.

Total number of domestic properties in LA	4,998

	Properties with dwellings in building >1	Properties which are mixed tenure
Total number of indicator properties in LA	7,293	7,301
Properties as a percentage of total domestic properties in LA	146%	146%

Mixed-tenure and mixed-use from OSG data

This danalysis is based on OSG data

	Number of parent shell UPRNs	Number of child UPRNs
Domestic	118	1,245
Non-domestic	23	67
Mixed	40	301
Total UPRNs	181	1,613

Summary for whole Local Authority, listed buildings

This section shows the total dwellings count for the listed buildings in the Local Authority
This section has been filtered for properties which are listed buildings, based on Home Analytics data

Toal number of domestic properties in LA	51,837
Total number of listed buildings in LA	2,775
Listed properties as a percentage of total domestic properties in LA	5%

Summary for whole Local Authority, conservation areas

This section shows the total dwellings count for the buildings that are within conservation areas in the Local Authority
This section has been filtered for properties which are conservation areas, based on Home Analytics data

Toal number of domestic properties in LA	51,837
Total number of properties within conservation areas in LA	6,998
Conservation properties as a percentage of total domestic properties in LA	14%

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Adding information to GIS

Summary Priorities Domestic

- The National Assessment will provide a populated equivalent of the “Summary Priorities Domestic” tab.
- This is used in the creation of maps and a map for all the information in this table will be provided to local authorities.

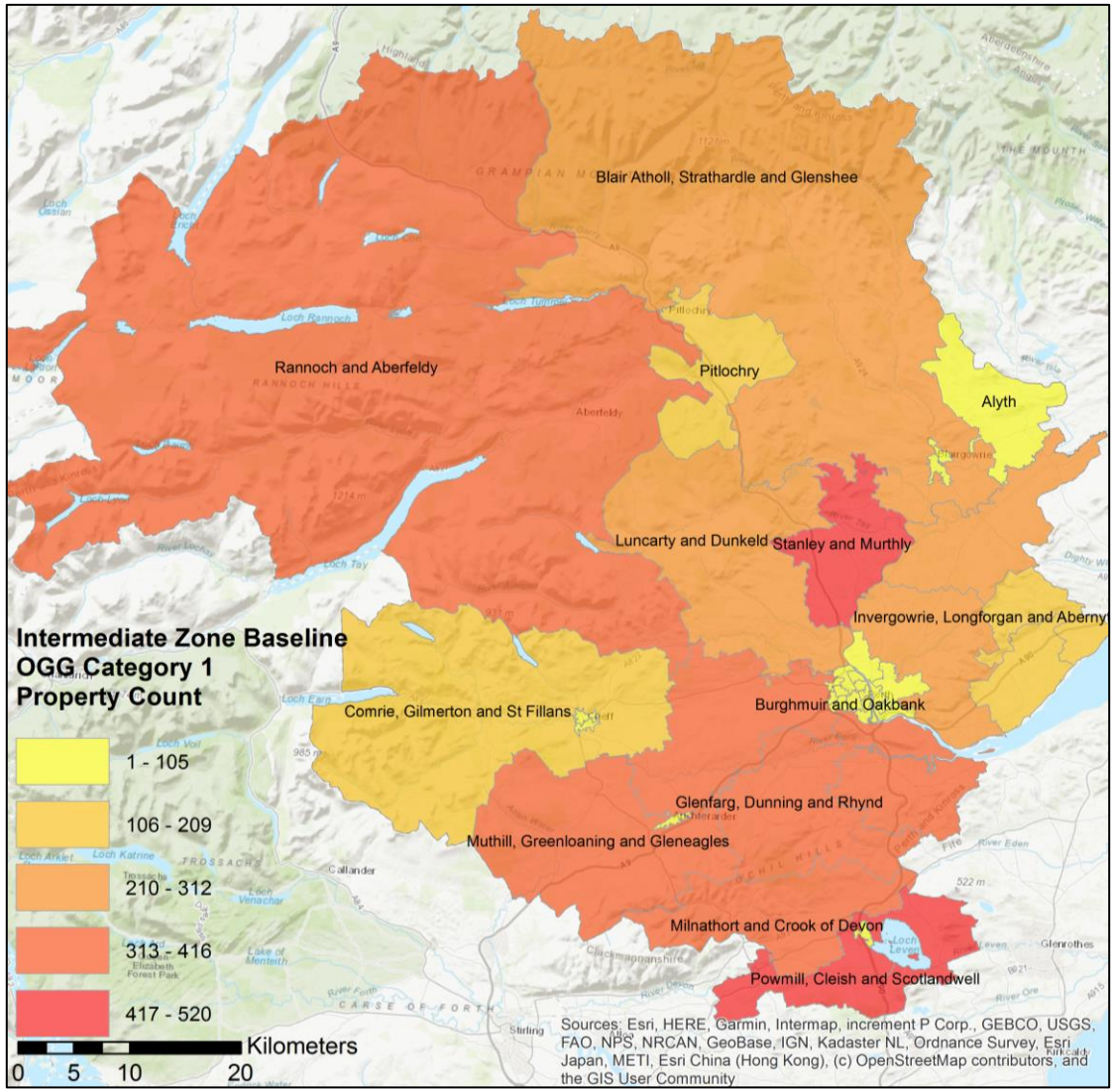
User notes:
This summary table presents default information for the visualisation of Strategic Level Zones across the LHEES Priorities, drawing on Priority Total Weighted Scores or property counts from Section 2 of the Tool for different Priorities. You can utilise the filter function on each column to filter by highest count or Total Weighted Score.

	Off-Gas Grid				Energy Efficiency	Fuel Poverty
Intermediate Zone	Off-Gas Grid Cat 0 property count	Off-Gas Grid Cat 1 property count	Off-Gas Grid Cat 2 property count	Off-Gas Grid Cat 3 property count	Energy Efficiency Total Weighted Score	Fuel Poverty Total Weighted Score
1	63	44	424	447	21	20
2	36	3	152	118	42	40
3	116	231	639	757	26	31
4	8	97	603	308	23	26
5	76	213	434	678	30	30
6	232	322	813	805	31	32
7	54	168	616	774	23	23
8	456	648	797	1123	18	25
9	179	469	778	1105	35	26
10	0	5	95	14	20	17
11	13	13	82	405	22	14
12	201	107	1418	727	25	19
13	53	305	551	763	18	23
14	123	254	460	1137	25	34
15	15	6	93	245	26	29
16	1	0	46	15	30	31
17	14	15	221	24	27	19
18	54	215	487	858	28	29

... ire, mixed-use | Listed Buildings | Conservation Areas | OnGasGrid | >>>> | Summary Priorities Domestic | Summary Outcome Domestic | >>>>> | HA_individual_bldgs_no_filter | HA_LA_Aggregate_Level_Dat

Visualising data in GIS

- Shows how to take information from the baseline tool and make it into a map. As detailed in Section 4.3.10 of the LHEES methodology document.
- Requires “Summary Priorities Domestic” tab and Intermediate Zone boundary layer within the Scotland Heat Map.
- Some of these maps will be generated and passed over alongside a populated baseline tool.
- This provides the flexibility to create other non-standard maps which may be of interest.
- The example we will work through will be for off-gas grid category 1 buildings.



Overview of Ongoing Support

- Regular forum for local authorities and their contractors to share knowledge and experience relating to LHEES. Email LHEES@gov.scot.
  - Wed 3rd Nov 3-4:30 pm
  - Wed 1st Dec 3-4:30 pm
  - Thurs 13th Jan 2:30-4 pm
  - Thurs 10th Feb 2:30-4 pm
  - Wed 9th Mar 2:30-4 pm

- **Testing and Feedback template** shared, to collate ongoing feedback using a standard approach

- Zero Waste Scotland to provide semi-structured **Feedback Workshops** in Feb/Mar 2022 to collate feedback and experiences of using the LHEES Methodology

Overview of Ongoing Support

- Upcoming Capacity Building workshops from Zero Waste Scotland and Buro Happold
  - Workshop 1 – Thurs 28th October (14:00 to 16:00) – Stages 1, 2 and 3
  - Workshop 2 – Wed 10th November (14:00 to 16:00) – Stage 4, non-Heat Networks Priorities
  - Workshop 3 – Wed 24th November (14:00 to 16:00) – Stage 4, Heat Networks

- Follow-up separately with request for input / discussion on where additional capacity building support for LHEES would be of benefit

ZERO WASTE SCOTLAND

Energy and Low Carbon Heat

LHEES Capacity Building Workshop 1

LHEES Stages 1, 2 and 3

Thurs 28th October 2021

Calum Robertson – Zero Waste Scotland

Chris Morrison – Zero Waste Scotland

Andrew Commin – Buro Happold

Scottish Government
Riaghaltas na h-Alba
gov.scot