



EAST AYRSHIRE COUNCIL

# **Local Development Plan 2**

## Local Heat and Energy Efficiency Strategy

Supplementary Guidance

2025



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## REVISION HISTORY

Version	Date	Changes
1.1	10/02/2025	First issue – based on version 1.1 of the main LHEES Stage 7 document

# 1 INTRODUCTION

Under the terms of the Local Heat and Energy Efficiency Strategies (Scotland) Order 2022<sup>1</sup>, East Ayrshire Council has prepared an LHEES, covering the period 2024-2028. The LHEES in its entirety can be viewed [here](#)<sup>2</sup>.

Policy PROP6 of the East Ayrshire Local Development Plan 2 states the Council's commitment to take forward relevant parts of the published LHEES into Supplementary Guidance, to support its implementation. Therefore, this guidance has been published in fulfilment of this commitment.

**PLEASE NOTE: The information in this Guidance should always be viewed in the broader context of the full LHEES.** As established by the 2022 Order and accompanying guidance published by Scottish Government, the LHEES will be a 'living document': it will be regularly reviewed, and updated in line with any related changes to national or local policy. Because of this, it is possible that the information contained in this document will fall out of step with the priorities of the wider LHEES. In the event that any discrepancies are apparent, or further clarification is required on this matter, please contact:

[localdevelopmentplans@east-ayrshire.gov.uk](mailto:localdevelopmentplans@east-ayrshire.gov.uk)

'East Ayrshire' refers to all properties, private and public. Where only Council buildings are concerned, this will be explicit in the relevant text.

Costs, figures and estimates are correct at the time of publication but are liable to change over time. Any costs presented in the document are based on broad estimates included for illustration only and should not be used for any planning purposes.

Similarly, the zones and areas presented in this document are indicative only and are the result of the first iteration of the East Ayrshire Council LHEES.

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<sup>1</sup> <https://www.legislation.gov.uk/sdsi/2022/9780111053935>

<sup>2</sup> <https://engagementtea.east-ayrshire.gov.uk/eac-lhees>

## 2 STRATEGY CONTEXT & TARGETS

The LHEES is driven by phased national targets for matters concerning heat and energy efficiency up to 2045. Highlight targets and their current dates are summarised below. For more detailed, up-to-date information on the Policy and Strategy Context, please refer to Chapter 3 of the LHEES.

Private rented homes - equivalent to EPC C, where technically feasible and cost-effective.	2025
2.6 TWh of thermal energy to be supplied by heat networks	2027
Private rented homes to be energy performance certificate (EPC) band C	2028
2 GW of community owned energy	2030
Emissions from buildings to be 68% lower than 2020 levels	2030
1M homes and 50,000 non-domestic buildings convert to zero or low carbon heating systems	2030
No more than 15% households in Scotland in fuel poverty and 5% extreme fuel poverty.	2030
Equivalent of 50% of the energy for Scotland's heat, transport, and electricity consumption is to be supplied by renewable sources.	2030
6 TWh of thermal energy to be supplied by heat networks	2030
Vast majority of the 170,000 off-gas homes that currently use high emissions oil, LPG and solid fuels must convert to zero emissions heating.	2030
Maximise the number of homes in the social rented sector achieving EPC B by 2032 (subject to EESSH2)	2032
66% reduction in emissions	2032
15% heat demand reduction in domestic properties	2032
20% heat demand reduction in non-domestic buildings	2032
35% heat from low carbon sources in domestic properties by 2032.	2032
70% heat from low carbon sources in non-domestic buildings by 2032.	2032
All homes to be energy performance certificate (EPC) band C where technically and financially feasible	2033
No more than 10% households in Scotland in fuel poverty and 3% extreme fuel poverty.	2035
No more than 5% of households in Scotland are in fuel poverty and no more than 1% of households in extreme fuel poverty.	2040
All homes in fuel poverty to be EPC band B	2040
<b>Net Zero</b>	2045
25 GW of hydrogen production capacity	2045

Figure 1 - Summary of Policy Targets



### 3 GENERATION OF STRATEGIC ZONES AND PATHWAYS

#### 3.1 Defining Strategic Zones and Delivery Areas

Strategic Zones present a visualisation of the potential pathways to decarbonise the heating stock at a local authority level. 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.

Due to the rural nature of East Ayrshire as a whole (62% of domestic addresses are small towns or rural) and the relatively small size of settlements outside Kilmarnock, it was determined that Strategic Zones would be most applicable at a settlement level, with the exception of the rural area which will be considered a Strategic Zone in itself at this stage.

As such, and owing to the granularity of the data outputs available, settlements were analysed at a datazone level and then amalgamated. The idea of this summary analysis is to give a broad overview of both the suitability of the settlement for allocation as a Strategic Zone, and the immediate need for such an allocation. However, in the long term, all of East Ayrshire's settlements and buildings will need to be decarbonised in order to meet Scottish Government aims and targets.

Strategic Zones and Delivery Areas will be used to guide the design of policy levers, such as advice, funding and regulation, which will give further direction and clarity to delivery routes and timescales. Both Strategic Zones and Delivery Areas are indicative and are likely to be updated through the lifetime of the LHEES.

#### 3.2 Application in East Ayrshire

East Ayrshire spans 1,262 km<sup>2</sup> (487 sq miles), and includes a large rural area. Around 40% of East Ayrshire's ca. 122,000 population live within and surrounding Kilmarnock, the largest town in the local authority area. Mid-2020 estimates for East Ayrshire's largest settlements are shown below:

Settlement	Population (mid-2020 est.)
<b>Kilmarnock</b>	46,970
<b>Cumnock</b>	8,700
<b>Stewarton</b>	7,770
<b>Galston</b>	4,710
<b>Hurlford</b>	4,400
<b>Darvel</b>	3,900
<b>Mauchline</b>	3,900
<b>Auchinleck</b>	3,630
<b>Drongan</b>	3,060
<b>Kilmaurs</b>	2,790

Figure 2 - Settlement size by population

### 3.3 Summary analysis of East Ayrshire's settlements

In order to develop Strategic Zones for East Ayrshire, summary analysis was undertaken for each settlement within the council area (Table 3). For the settlement of Kilmarnock, due its size in comparison to other settlements, analysis was undertaken at an intermediate datazone level (see Table 5).

For each settlement, and using the data outputs available, the following indicators were used to give an overview of the scale of energy efficiency improvements required:

Indicator (Energy Efficiency)	Description
<b>Fuel poverty (min and max across datazones)</b>	<p>This indicator is included in analysis as a high percentage of households in fuel poverty can be (but is not always) a sign that intervention is necessary to improve energy efficiency.</p> <p>As data outputs were available at a datazone level rather than a settlement level, the minimum and maximum fuel poverty statistics across the datazones included in the settlement are included in the analysis in order to give a more accurate picture of the settlement as a whole.</p> <p>For this indicator, a high percentage would indicate a likely need for intervention.</p>
<b>Extreme Fuel Poverty (min and max) across datazones</b>	<p>This indicator is included in analysis as a high percentage of households in fuel poverty can be (but is not always) a sign that intervention is necessary to improve energy efficiency.</p> <p>As data outputs were available at a datazone level rather than a settlement level, the minimum and maximum fuel poverty statistics across the datazones included in the settlement are included in the analysis in order to give a more accurate picture of the settlement as a whole.</p> <p>For this indicator, a high percentage would indicate a likely need for intervention.</p>
<b>No. of properties with single glazing</b>	<p>Properties with single glazing are likely to be less energy efficient than properties with double or triple glazing. High numbers of single glazed properties in a single area may suggest an opportunity to improve energy efficiency and consequently reduce both carbon emissions and energy bills.</p> <p>For this indicator, a high figure would indicate a likely need for intervention.</p>
<b>No. of properties with loft insulation 0-99mm</b>	<p>Properties with very low loft insulation (0-99mm) are likely to be less energy efficient than properties with better loft insulation. High numbers of properties with low loft insulation in a single area may suggest an opportunity to improve energy efficiency and consequently reduce both carbon emissions and energy bills.</p> <p>For this indicator, a high figure would indicate a likely need for intervention.</p>
<b>Total no. of properties with uninsulated walls</b>	<p>Properties with uninsulated walls are likely to be less energy efficient than properties with better loft insulation. High numbers of properties with uninsulated walls in a single area may suggest an opportunity to improve energy efficiency and consequently reduce both carbon emissions and energy bills.</p> <p>For this indicator, a high figure would indicate a likely need for intervention.</p>
<b>No. of uninsulated properties: no. cavity construction or system built</b>	<p>The data outputs for the LHEES break down uninsulated walls into four categories: Solid brick/stone; timber frame; cavity construction and system built. Properties constructed using solid brick/stone or timber frames are much more difficult to retrofit with wall insulation. As such, the number of properties which are cavity construction or system built are shown in this table as these properties present the most realistic opportunity for retrofitting.</p> <p>For this indicator, a high figure would indicate a realistic possibility for intervention to improve wall insulation, whilst a low figure would suggest that it will be more challenging to make improvements.</p>

Indicator (Energy Efficiency)	Description
<b>No. of properties with uninsulated walls in Council or Housing Association Ownership</b>	<p>Of those properties that have uninsulated walls, it is much more likely that interventions can be achieved by the Council for properties in Council ownership or in the ownership of other partners like Housing Associations.</p> <p>For this indicator, a high figure would indicate a realistic possibility for intervention to improve wall insulation, whilst a low figure would suggest that it will be more challenging to make improvements.</p>
<b>Assessment for intervention</b>	Based on the data for all of the above indicators, an overall assessment is provided on the priority for intervening in each area.

Table 1 - Energy efficiency indicators used in settlement analysis

For each settlement, and using the data outputs available, the following indicators were used to form a conclusion on the heat decarbonisation technologies that would be most suitable for installation:

Indicator (Heat Decarbonisation)	Description
<b>Overall Solar Suitability</b>	<p>Although domestic renewables are not part of the LHEES Methodology, the potential for suitability has been included in support of decarbonisation of heat and a potential fuel poverty intervention. There is at least some potential for solar thermal and solar PV installations in East Ayrshire.</p> <p>An overall conclusion on the solar suitability for each settlement is given, based on the percentage suitability of solar PV of each datazone within that settlement.</p>
<b>No. of properties listed or in a conservation area</b>	<p>Historic buildings often present a greater challenge for heat decarbonisation as they are more difficult to retrofit with e.g. insulation and there also may be more procedural barriers to installing new technologies, owing to the need to balance this with the sensitive protection of the historic environment (however, permitted development rights for renewable energy technologies continue to be expanded in Scotland).</p> <p>For this indicator, a high figure would suggest that it may be more challenging to make improvements or install new technologies.</p>
<b>% of all properties that are Category 1 (on gas grid)</b>	<p>One option for heat decarbonisation is heat pump deployment. Category 1 properties are deemed to be 'heat-pump ready': according to LHEES Methodology, these properties are well insulated and have a wet heating system, which means they would be well suited to the installation of a heat pump. However, this 'readiness' does not take account of electricity network impacts, or the costs of any network upgrades.</p> <p>For this indicator, a high figure would suggest that there is good potential to use heat pumps as an option for decarbonisation in this area.</p>
<b>Heat Network Opportunity</b>	Heat networks are of strategic importance when it comes to decarbonising heat, and for LHEES, heat network zones need to be determined. Based on the analysis of local heat demand (discussed in full in section 4, some of East Ayrshire's larger settlements may be suitable for the deployment of a heat network in order to achieve heat decarbonisation.

Table 2 - Heat decarbonisation indicators used in settlement analysis

### 3.3.1 Notes on Strategic Zoning

**Note 1:** The datazones used for the analysis of each settlement do not match up completely with the settlement boundaries defined in the Council's Local Development Plan 2 (LDP2).

**Note 2:** A limitation of the data is that it provides information on where uninsulated properties are built using cavity construction, and where uninsulated properties are in public ownership – however it cannot be discerned where these categories overlap, e.g. where uninsulated



properties built using cavity construction are also in public ownership. However, where numbers of both are high, an assumption is made that there will be at least some overlap, though how much exactly cannot be determined.

**Note 3:** The number of off-gas grid properties per settlement was not included as an indicator in this analysis as the vast majority of East Ayrshire's urban properties (at least 90% in all urban areas) are on the gas grid and use mains gas as their main source of fuel for heating. For the very small amount of properties where this is not the case, the most common alternative is electricity – therefore this is not an immediate concern with regard to reducing carbon emissions.

### 3.4 Strategic Zoning Tables

The results of strategic zoning are presented in Table 3 - Table 6. **Where settlements are listed as low intervention opportunities it does not mean that effort will not be directed towards advancing projects in these areas;** the low/medium/high categorization supports an evidence based approach to the LHEES.

Settlement	Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation between 0-99mm	Total no. of properties with uninsulated walls	No. of uninsulated properties: cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership	Intervention Opportunity
Auchinleck	26%	37%	5%	17%	41	164	595	340	129	Medium
Bellsbank	54%	57%	31%	35%	21	5	320	316	281	High
Catrine	26%	35%	10%	20%	44	97	482	260	187	Medium
Crookedholm & Hurlford	19%	34%	1%	14%	196	138	655	444	57	Medium
Crosshouse	18%	21%	0%	9%	89	78	536	213	35	Low
Cumnock & Craigens	22%	45%	10%	32%	154	317	1583	1189	289	High
Dalmellington	40%	42%	31%	48%	30	53	346	166	52	High
Dalrymple	22%	23%	6%	7%	31	41	156	97	7	Low
Darvel	19%	27%	1%	9%	191	241	815	251	46	Medium
Drongan	24%	33%	8%	17%	31	76	303	246	96	Medium
Dunlop		20%		6%	35	91	184	50	8	Low
Fenwick & Laigh Fenwick		22%		4%	41	72	219	91	4	Low
Galston	18%	36%	1%	17%	195	214	1067	605	94	Medium
Kilmaurs	20%	25%	2%	8%	99	166	373	226	18	Low
Knockentiber		21%		6%	5	23	29	19	1	Low
Logan	41%	50%	33%	38%	29	36	149	91	26	Medium
Mauchline	17%	35%	1%	8%	69	143	756	406	38	Medium
Muirkirk	34%	47%	20%	46%	28	54	196	98	14	Medium
New Cumnock	30%	52%	20%	38%	51	133	528	378	169	High
Newmilns	21%	32%	2%	17%	139	257	968	406	142	Medium
Ochiltree		19%		2%	29	61	220	70	4	Low
Patna	23%	29%	5%	16%	32	36	272	155	54	Medium
Stewarton	16%	33%	1%	19%	96	259	1029	544	52	Medium

Table 3 - Analysis of fuel poverty and energy efficiency for EAC settlements (excl. Kilmarnock)

Settlement	Overall Solar Suitability	No. of properties listed or in a conservation area	% of all properties that are Category 1 (on gas grid)	Heat Network Opportunity
Auchinleck	Good	0	66	
Bellsbank	Poor	1	48	
Catrine	Moderate	424	42	
Crookedholm & Hurlford	Moderate	2	70	
Crosshouse	Good	1	50	
Cumnock	Good	87	60	Proposed
Dalmellington	Poor	175	52	
Dalrymple	Excellent	81	75	
Darvel	Poor	161	54	
Drongan	Excellent	0	75	Proposed
Dunlop	Moderate	14	57	
Fenwick & Laigh Fenwick	Moderate	178	35	
Galston	Moderate	197	52	
Kilmaurs	Good	138	65	
Knockentiber	Good	0	88	
Logan	Good	122	66	
Mauchline	Excellent	182	55	
Muirkirk	Good	0	70	
New Cumnock	Good	0	58	Proposed
Newmilns	Poor	493	30	
Ochiltree	Moderate	27	49	
Patna	Good	4	58	
Stewarton	Excellent	111	63	

Table 4 - Analysis of heat decarbonisation options for EAC settlements (excl. Kilmarnock)



Intermediate Zone in Kilmarnock	Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation 0-99mm	Total no. of properties with uninsulated walls	No. of uninsulated properties: cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership	Intervention opportunity
Altonhill North and Onthank	19%	41%	2%	23%	365	60	195	182	36	Medium
Altonhill South, Longpark and Hillhead	20%	40%	7%	14%	278	126	433	246	92	High
Bellfield and Kirkstyle	20%	29%	5%	10%	291	113	451	415	81	Medium
Bonnyton and Town Centre	20%	30%	1%	11%	306	225	1212	385	93	Medium
Dean and New Farm Loch North	19%	30%	0%	12%	72	50	679	634	78	Medium
Grange, Howard and Gargieston	13%	22%	0%	1%	117	271	1171	558	14	Medium
Kilmarnock South Central and Caprington	13%	31%	4%	12%	99	123	709	456	118	Medium
New Farm Loch South	12%	24%	0%	7%	64	127	422	314	67	Medium
Piersland	25%	27%	0%	6%	123	236	912	352	37	Medium
Shortlees	29%	37%	8%	22%	127	98	887	871	813	High
Southcraig and Beansburn	13%	18%	0%	1%	52	172	521	401	3	Low

Table 5 - Analysis of fuel poverty and energy efficiency for Kilmarnock's intermediate zones

Intermediate Zone	Overall Solar Suitability	No. of properties listed or in a conservation area	% of all properties category 1 (on gas grid)	Heat Network Opportunity
Altonhill North & Onthank	Good	0	88	
Altonhill South, Longpark & Hillhead	Moderate	27	81	Existing
Bellfield & Kirkstyle	Good	0	77	
Bonnyton & Town Centre	Poor	262	46	Proposed
Dean and New Farm Loch North	Excellent	0	56	Proposed
Grange, Howard & Gargieston	Good	590	52	
Kilmarnock South Central & Caprington	Moderate	20	55	Existing & Proposed
New Farm Loch South	Moderate	45	68	Proposed
Piersland	Moderate	642	30	Existing & Proposed
Shortlees	Moderate	0	56	
Southcraig & Beansburn	Excellent	3	76	

Table 6 - Analysis of heat decarbonisation options for Kilmarnock

### 3.5 Strategic Zones and Delivery Areas by Geography

#### 3.5.1 Bellsbank

Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation 0-99mm	Total no. of properties with uninsulated walls	Of uninsulated walls: no. cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership
54%	57%	31%	35%	21	5	320	316	281

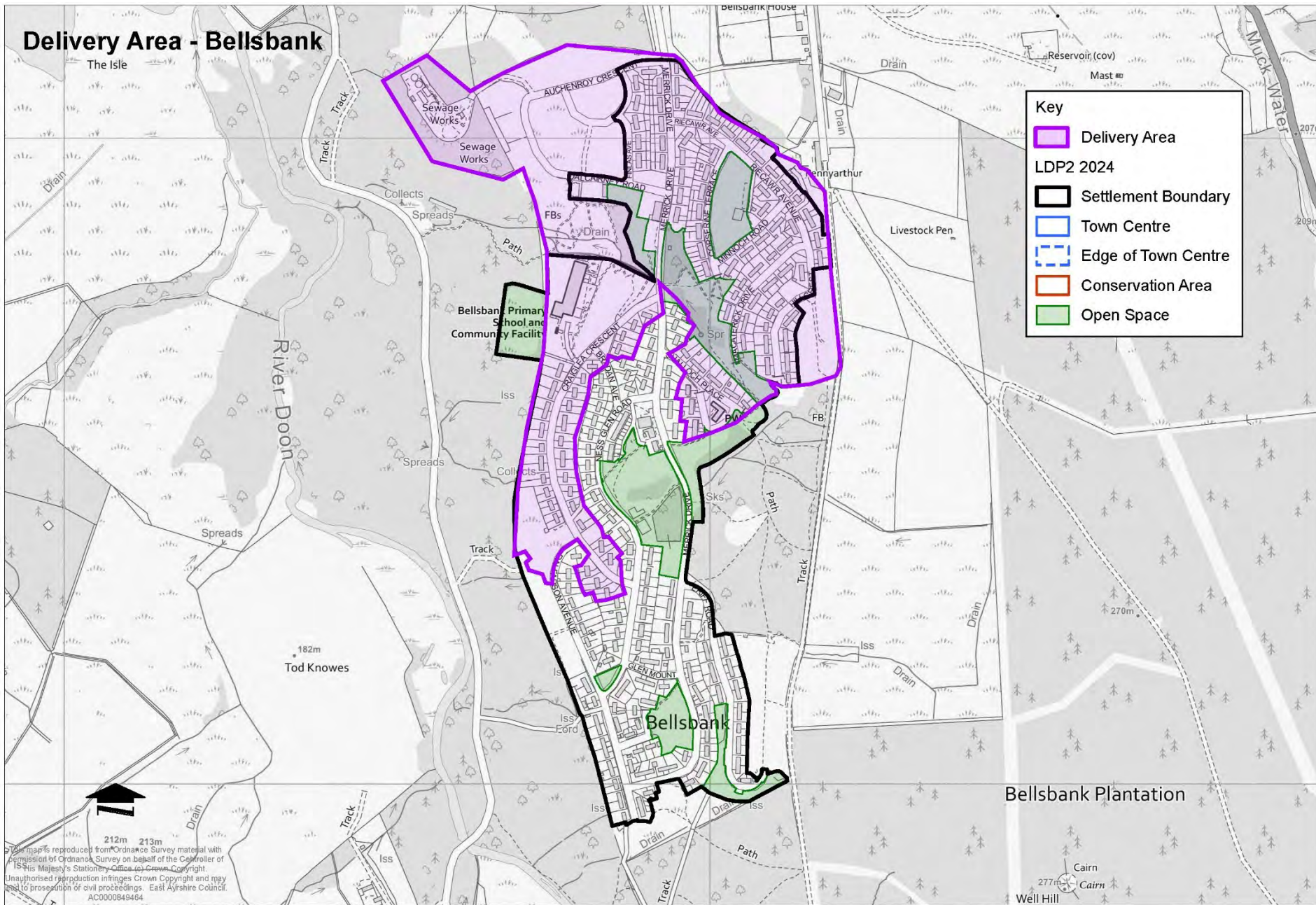
Overall Solar Suitability	No. of properties listed or in a conservation area	% of properties that are Cat 1 (on gas grid)	Heat Network Opportunity
Poor	1	48	No

1	Tackling the Climate Crisis
2	Decarbonising Heat Sources & Transitioning the Energy System
3	Improving Energy Efficiency in Buildings
4	Tackling Fuel Poverty

Bellsbank has very high levels of fuel poverty, however energy efficiency ratings and insulation measures are good overall – as such, interventions would be needed beyond the scope of the LHEES in order to address the other root causes of fuel poverty in Bellsbank.

- Despite this, there is opportunity to make energy efficiency improvements in Bellsbank: of the 320 properties with uninsulated walls, 316 can be retrofitted and 281 are in Council or Housing Association ownership. This means that there could be intervention by the Council and other partners to make improvements and potentially reduce energy bills by increasing efficiency.
- In Bellsbank, there are 123 properties (19%) recorded as containing more than one individual dwelling. Additionally, only 26 properties (11%) are mixed-tenure. These numbers are relatively low, but do mean that for these properties there may be some additional challenges to achieving heat decarbonisation, as there will be multiple stakeholders within each property.
- Bellsbank has low levels of overall solar suitability, and is not presently assessed to be suitable for a heat network; however, 48% of properties are assessed as being category 1 (heat-pump ready). The latter is therefore a likely technology intervention for decarbonisation of heating of domestic properties in Bellsbank.
- Only 1 property in Bellsbank is listed or in a conservation area – this means that there are unlikely to be additional procedural challenges to the installation of renewable energy technologies.
- Owing to its relatively small size and the very high levels of fuel poverty throughout, all of Bellsbank would be considered a suitable delivery area – however datazone **Doon Valley South – 03** is the location of the majority of the settlement's properties with uninsulated walls (221 properties). Therefore this datazone would be of slightly higher priority for intervention.





## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone: Doon Valley South - 03

Key

Relative performance of DZ for each characteristic compared to LA average

- Value in top quartile; very poorly performing
- Value in 3rd quartile; quite poorly performing
- Value in 2nd quartile; fairly good performance
- Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	12,242
Energy demand per property	19,103

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill > 10% of income)	56.8%	192.42
Estimate of households in extreme fuel poverty (fuel bill > 20% of income)	31.8%	107.87
Council Tax Band A-C	99.4%	337.00

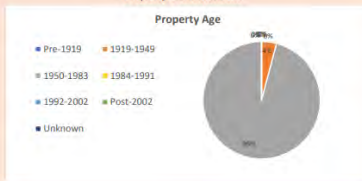
### EPC Rating

	Percentage	Number of properties
EPC F-G	0.0%	0.00
EPC D-G	36.3%	122.99

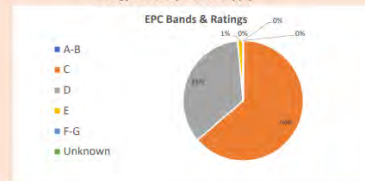
### Insulation

	Percentage	Number of properties
Uninsulated walls	65.2%	220.99
Loft insulation <100mm	2.7%	8.98
Single glazed windows	0.3%	0.98

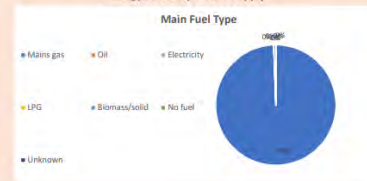
### Property Characteristics



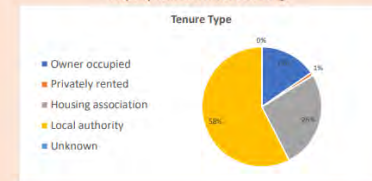
### Energy Efficiency & Heat Supply



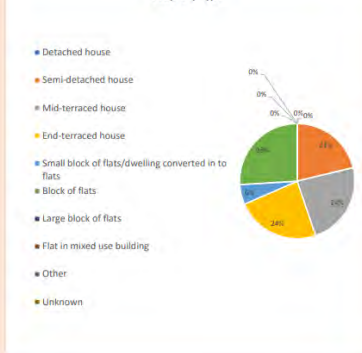
### Energy Efficiency & Heat Supply



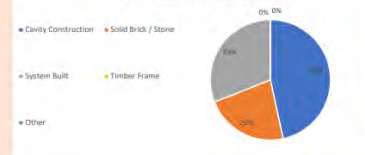
### Property Tenure & Historic Buildings



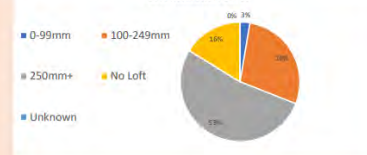
### Property Type



### Wall Construction & Insulation



### Loft Insulation Level



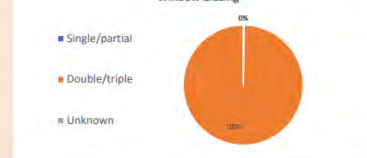
### Mixed Tenure



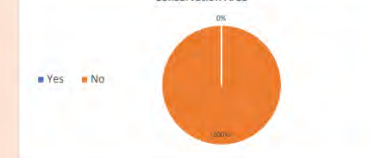
### Off gas grid



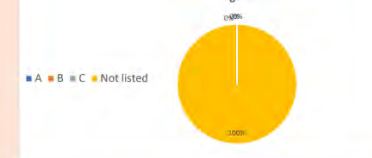
### Window Glazing



### Conservation Area



### Listed Buildings



## 3.5.2 Cumnock and Craighens

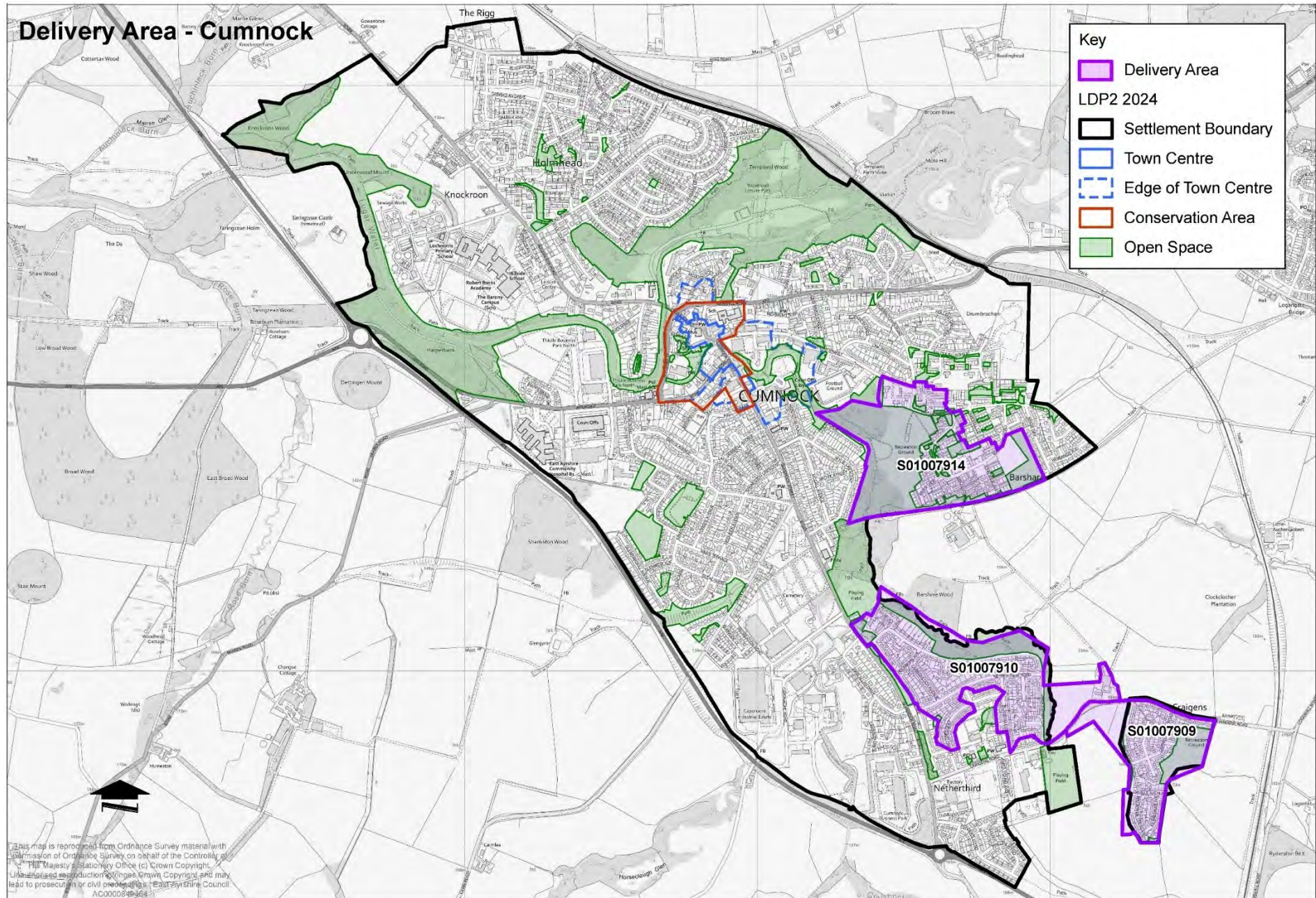
Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation 0-99mm	Total no. of properties with uninsulated walls	Of uninsulated walls: no. cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership
22%	45%	10%	32%	154	317	1583	1189	289

Overall Solar Suitability	No. of properties listed or in a conservation area	% of properties that are Cat 1 (on gas grid)	Heat Network Opportunity
Good	87	60	Yes

1	Tackling the Climate Crisis
2	Decarbonising Heat Sources & Transitioning the Energy System
3	Improving Energy Efficiency in Buildings
4	Tackling Fuel Poverty
7	Maximising Knowledge and Awareness

- Cumnock has varying levels of fuel poverty across the settlement, however there are a number of datazones where fuel poverty is above average, and the maximum figures shown in the table above are a cause for concern.
- Domestic properties in Cumnock have relatively poor insulation, as the table above shows – in particular, it is estimated that of 4258 total properties, there are over 1500 properties with uninsulated walls (35%). There is therefore a real need to improve insulation in Cumnock. Of the properties with uninsulated walls, 1189 can be retrofitted but only 289 are in Council or Housing Association ownership. This means that there could be intervention by the Council and other public sector partners to make improvements and potentially reduce energy bills by increasing efficiency – however, there will also need to be private sector interventions in order to really tackle this problem.
- In Cumnock there are 1051 properties (25%) listed as containing more than one individual dwelling. Additionally, 470 properties (11%) are mixed-tenure. This means that for these properties, there may be additional challenges to achieving heat decarbonisation, as there will be multiple stakeholders within each property.
- Cumnock has a number of potential options for achieving heat decarbonisation: it has good levels of overall solar suitability; high numbers of category 1 properties (heat-pump ready), and is also assessed to be suitable for a heat network. This means that either solar or heat pumps could be used as the energy source for a heat network in the future.
- 87 properties in Cumnock are listed or in a conservation area, so overall there is likely to be very minimal additional procedural challenges to installing renewable technologies.







## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone: Cummock South and Craighers - 01

Key: Relative performance of DZ for each characteristic compared to LA average  
 Value in top quartile; very poorly performing  
 Value in 3rd quartile; quite poorly performing  
 Value in 2nd quartile; fairly good performance  
 Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	13,240
Energy demand per property	22,496

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill > 10% of income)	40.0%	13.64
Estimate of households in extreme fuel poverty (fuel bill > 20% of income)	18.1%	41.49
Council Tax Band A-C	76.0%	173.99

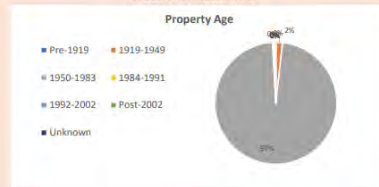
### EPC Rating

	Percentage	Number of properties
EPC F-G	1.3%	3.00
EPC D-G	74.7%	170.99

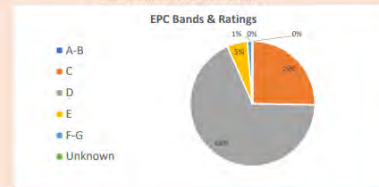
### Insulation

	Percentage	Number of properties
Uninsulated walls	56.0%	133.02
Loft insulation < 100mm	6.1%	13.99
Single glazed windows	3.9%	9.00

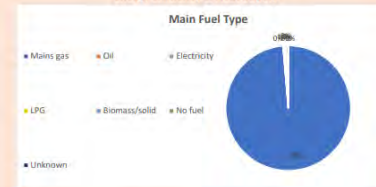
### Property Characteristics



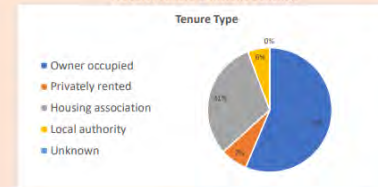
### Energy Efficiency & Heat Supply



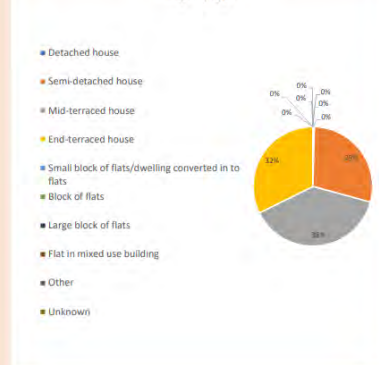
### Energy Efficiency & Heat Supply



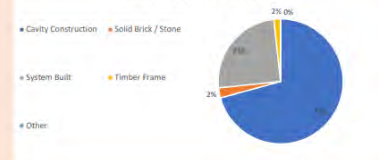
### Property Tenure & Historic Buildings



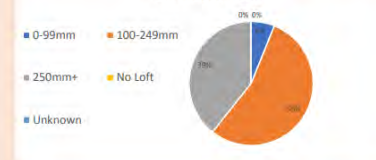
### Property Type



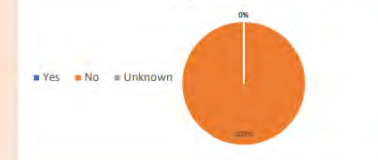
### Wall Construction & Insulation



### Loft Insulation Level



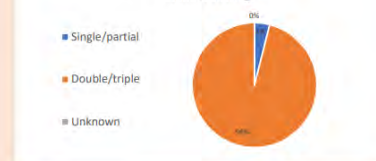
### Mixed Tenure



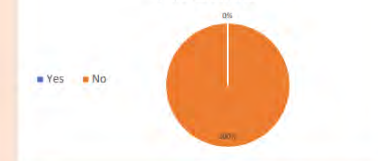
### Off gas grid



### Window Glazing



### Conservation Area



### Listed Buildings



## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone Cumnock South and Craigs - 02

Key

Relative performance of OZ for each characteristic compared to LA average  
 Value in top quartile; very poorly performing  
 Value in 3rd quartile; quite poorly performing  
 Value in 2nd quartile; fairly good performance  
 Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	14,871
Energy demand per property	24,405

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill>10% of income)	46.3%	151.01
Estimate of households in extreme fuel poverty (fuel bill>20% of income)	19.1%	71.63
Council Tax Band A-C	93.9%	352.01

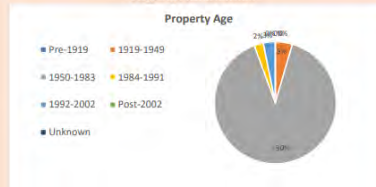
### EPC Rating

	Percentage	Number of properties
EPC F-G	1.3%	4.99
EPC D-G	53.3%	199.99

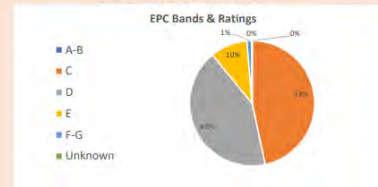
### Insulation

	Percentage	Number of properties
Uninsulated walls	47.7%	178.95
Loft insulation <100mm	3.5%	13.01
Single glazed windows	7.7%	28.99

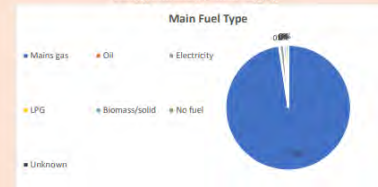
### Property Characteristics



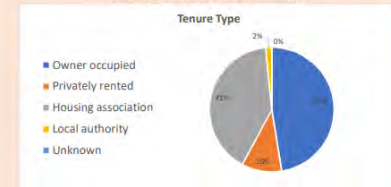
### Energy Efficiency & Heat Supply



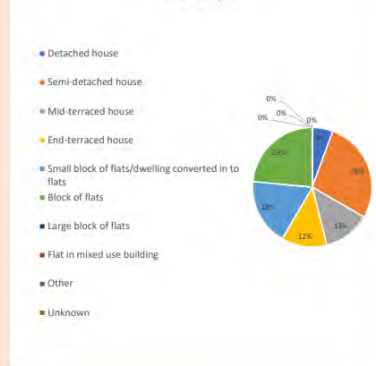
### Energy Efficiency & Heat Supply



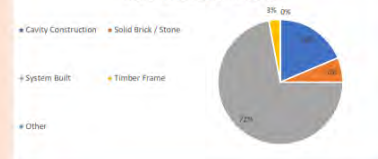
### Property Tenure & Historic Buildings



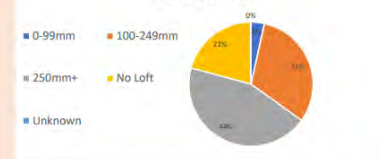
### Property Type



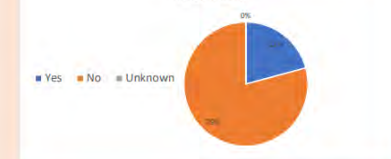
### Wall Construction & Insulation



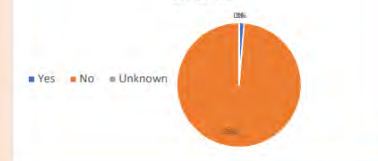
### Loft Insulation Level



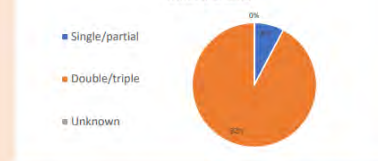
### Mixed Tenure



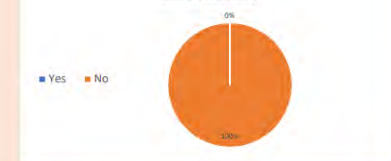
### Off gas grid



### Window Glazing



### Conservation Area



### Listed Buildings



## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone: Cummock South and Craighers - 06

Key

Relative performance of DZ for each characteristic compared to LA average

- Value in top quartile; very poorly performing
- Value in 3rd quartile; quite poorly performing
- Value in 2nd quartile; fairly good performance
- Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	13,671
Energy demand per property	21,610

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill > 10% of income)	41.1%	117.15
Estimate of households in extreme fuel poverty (fuel bill > 20% of income)	31.8%	89.11
Council Tax Band A-C	100.0%	272.00

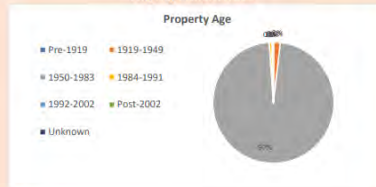
### EPC Rating

	Percentage	Number of properties
EPC F-G	1.5%	4.00
EPC D-G	49.3%	133.99

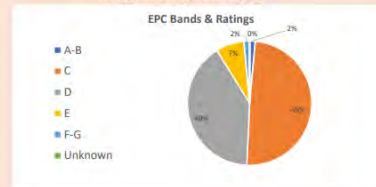
### Insulation

	Percentage	Number of properties
Uninsulated walls	44.8%	124.89
Loft insulation < 100mm	5.2%	14.01
Single glazed windows	0.4%	1.01

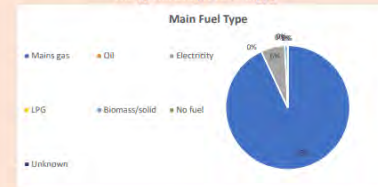
### Property Characteristics



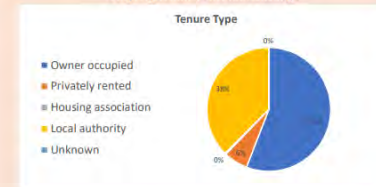
### Energy Efficiency & Heat Supply



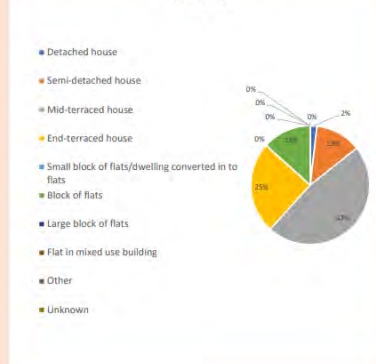
### Energy Efficiency & Heat Supply



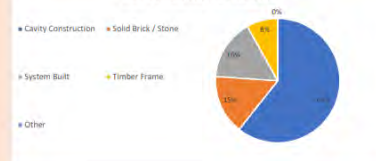
### Property Tenure & Historic Buildings



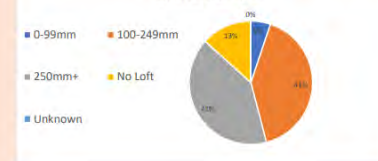
### Property Type



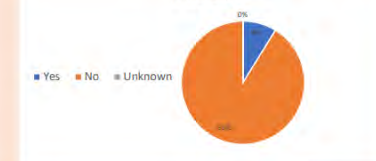
### Wall Construction & Insulation



### Loft Insulation Level



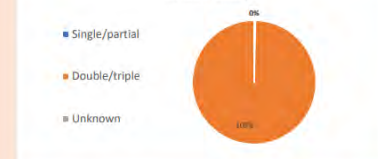
### Mixed Tenure



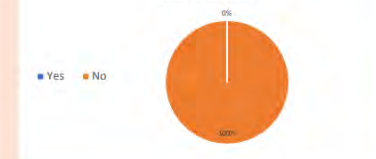
### Off gas grid



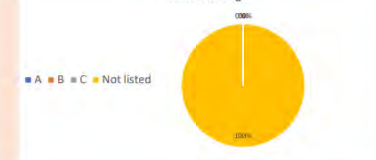
### Window Glazing



### Conservation Area



### Listed Buildings



## 3.5.3 Dalmellington

Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation 0-99mm	Total no. of properties with uninsulated walls	Of uninsulated walls: no. cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership
40%	42%	31%	48%	30	53	346	166	52

Overall Solar Suitability	No. of properties listed or in a conservation area	% of properties that are Cat 1 (on gas grid)	Heat Network Opportunity
Poor	175	52	No

1	Tackling the Climate Crisis
2	Decarbonising Heat Sources & Transitioning the Energy System
3	Improving Energy Efficiency in Buildings
4	Tackling Fuel Poverty
7	Maximising Knowledge and Awareness

- Dalmellington has some of the highest fuel poverty in East Ayrshire, thus making it a priority for intervention. Such high levels of fuel poverty are likely to have causes beyond just energy inefficiency of buildings - as such, interventions would be needed beyond the scope of the LHEES in order to address the other root causes of fuel poverty in Dalmellington.
- Despite this, there are opportunities to improve energy efficiency within Dalmellington: there are approximately 558 domestic properties in total, which overall display slightly below average levels of energy efficiency. It is estimated that there are 346 properties with uninsulated walls (62%): of these, 166 can be retrofitted but only 52 are in Council or Housing Association ownership. This means that there could only be minimal intervention by the Council and other partners to make improvements, and that there will also need to be private sector interventions in order to really tackle this problem.
- Dalmellington is characterised by flatted properties, and there are 328 properties (59%) detailed as containing more than one individual dwelling. Additionally, 151 properties (27%) are mixed-tenure. This means that for these properties, there may be additional challenges to achieving heat decarbonisation, as there will be multiple stakeholders within each property.
- At this stage, Dalmellington demonstrates suitability for a limited range of renewable heat technologies: overall, it has low levels of solar suitability and is also not suitable for a heat network. Around 50% of properties are assessed to be suitable for a heat pump, so this is likely to be one of the main technologies applied going forward. There are a small number of properties that already utilise electric heating systems, therefore this could also be an option for the future if powered by renewable energy sources.
- 175 properties in Dalmellington are listed or in a conservation area, so there will be some additional procedural challenges to installing renewable technologies.
- Owing to its relatively small size and the very high levels of fuel poverty throughout, all of Dalmellington would be considered a suitable delivery area – however, the datazone **Doon Valley South – 04** displays the highest fuel poverty (48% in extreme fuel poverty), and is ranked third in East Ayrshire in this domain. Therefore, this datazone would be of slightly higher priority for intervention.





## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone: Ossett Valley South - 04

Key: Relative performance of DZ for each characteristic compared to LA average  
 Value in top quartile; very poorly performing  
 Value in 3rd quartile; quite poorly performing  
 Value in 2nd quartile; fairly good performance  
 Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	14,559
Energy demand per property	23,859

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill>10% of income)	42.0%	154.30
Estimate of households in extreme fuel poverty (fuel bill>20% of income)	47.8%	152.81
Council Tax Band A-C	61.9%	197.98

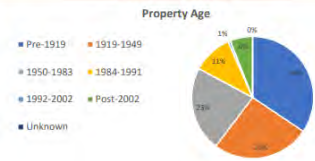
### EPC Rating

	Percentage	Number of properties
EPC F-G	3.8%	12.01
EPC D-G	63.4%	203.01

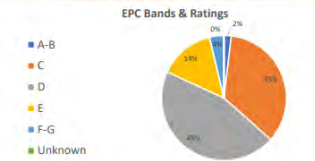
### Insulation

	Percentage	Number of properties
Uninsulated walls	64.1%	205.02
Loft insulation <100mm	7.2%	23.01
Single glazed windows	2.8%	8.99

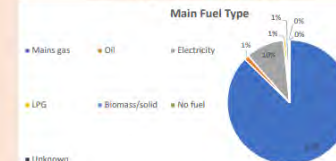
### Property Characteristics



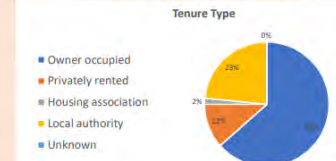
### Energy Efficiency & Heat Supply



### Energy Efficiency & Heat Supply



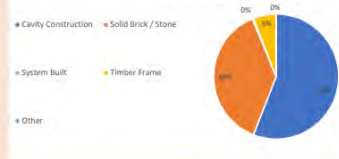
### Property Tenure & Historic Buildings



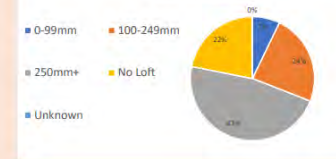
### Property Type



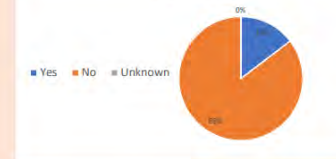
### Wall Construction & Insulation



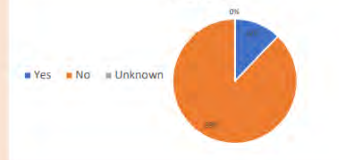
### Loft Insulation Level



### Mixed Tenure



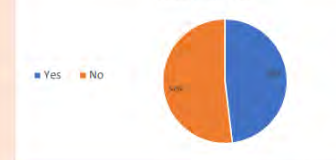
### Off gas grid



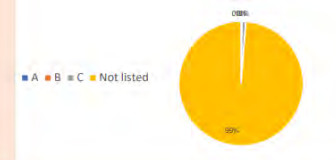
### Window Glazing



### Conservation Area



### Listed Buildings





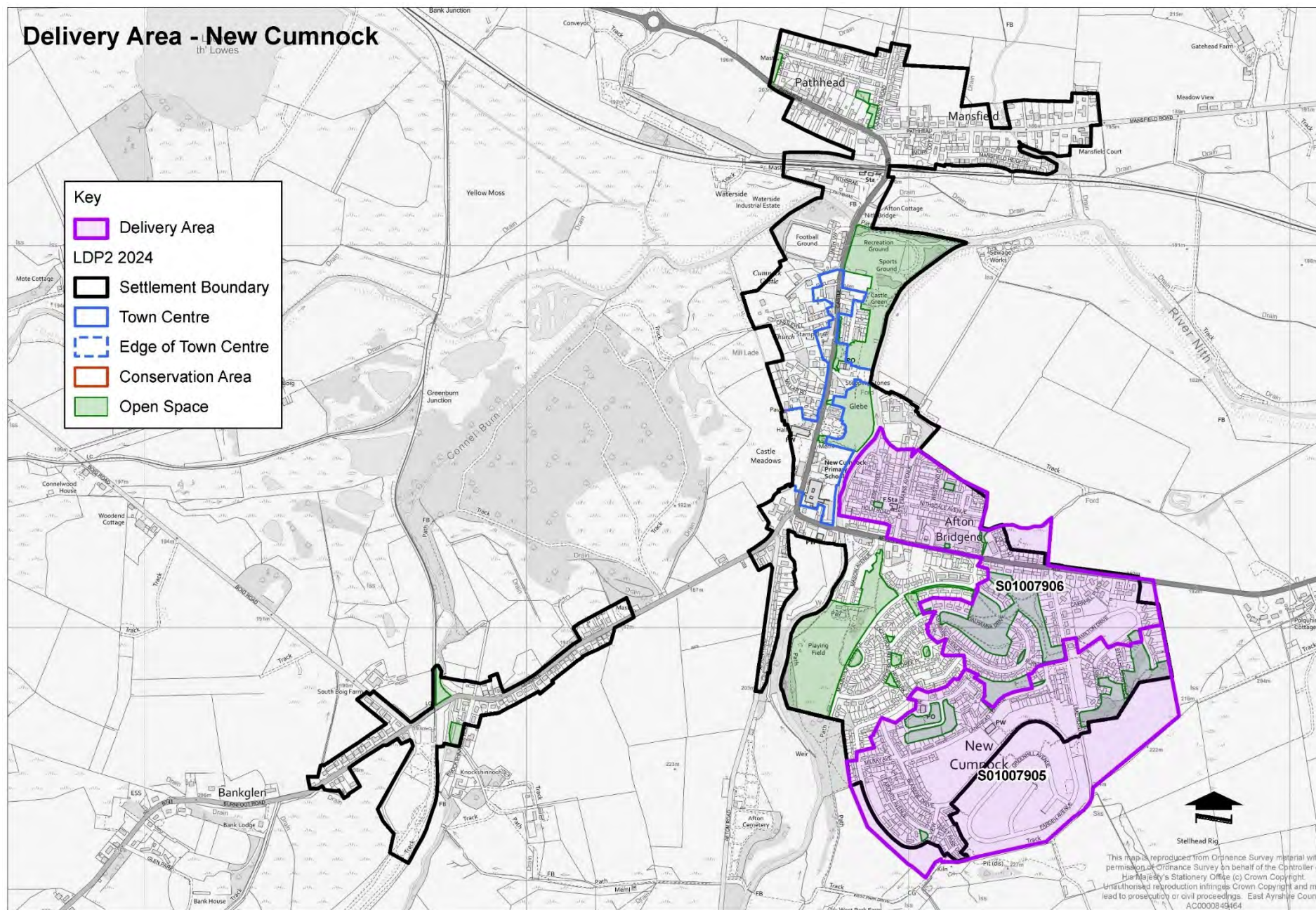
## 3.5.4 New Cumnock

Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation 0-99mm	Total no. of properties with uninsulated walls	Of uninsulated walls: no. cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership
30%	52%	20%	38%	51	133	528	378	169

Overall Solar Suitability	No. of properties listed or in a conservation area	% of properties that are Cat 1 (on gas grid)	Heat Network Opportunity
Good	0	58	No

1	Tackling the Climate Crisis
2	Decarbonising Heat Sources & Transitioning the Energy System
3	Improving Energy Efficiency in Buildings
4	Tackling Fuel Poverty
7	Maximising Knowledge and Awareness

- New Cumnock has varying levels of fuel poverty across the settlement, however there are a number of datazones where fuel poverty is above average, and the maximum figures shown in the table above are a cause for concern. The high levels of fuel poverty in some areas of New Cumnock are likely to go beyond that which is caused by energy inefficiency of buildings alone – as such interventions would be needed beyond the scope of the LHEES in order to address the other root causes of fuel poverty in New Cumnock.
- Despite this, there is at least some opportunity to make energy efficiency improvements in New Cumnock: domestic properties have relatively poor insulation, as the table above shows – in particular, of 1423 total properties, it is estimated that there are 528 properties with uninsulated walls (37%). There is therefore a real need to improve insulation in New Cumnock. Of the properties with uninsulated walls, 378 can be retrofitted but only 169 are in Council or Housing Association ownership. This means that there could be intervention by the Council and other partners to make improvements and potentially reduce energy bills by increasing efficiency – however, there will also need to be private sector interventions in order to really tackle this problem.
- In New Cumnock, there are 326 properties (23%) recorded as containing more than one individual dwelling. Additionally, 161 properties (11%) are mixed-tenure. This means that for these properties, there may be additional challenges to achieving heat decarbonisation, as there will be multiple stakeholders within each property.
- New Cumnock has a number of potential options for achieving heat decarbonisation: it has good levels of overall solar suitability; high numbers of category 1 properties (heat-pump ready), and is also assessed to be suitable for a heat network. This means that either solar or heat pumps could be used as the energy source for a heat network in the future.
- There are no properties in New Cumnock that are listed or in a conservation area, so overall this means that there will be no additional procedural challenges to installing renewable technologies.





## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone	New Cummock - 01
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Key

Relative performance of DZ for each characteristic compared to LA average

- Value in top quartile; very poorly performing
- Value in 3rd quartile; quite poorly performing
- Value in 2nd quartile; fairly good performance
- Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	12,676
Energy demand per property	19,115

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill>10% of income)	52.8%	103.02
Estimate of households in extreme fuel poverty (fuel bill>20% of income)	37.5%	114.01
Council Tax Band A-C	91.2%	278.01

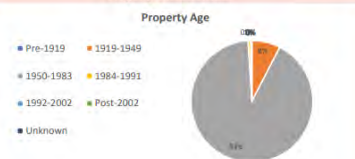
### EPC Rating

	Percentage	Number of properties
EPC F-G	0.3%	1.01
EPC D-G	40.3%	123.01

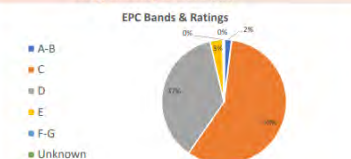
### Insulation

	Percentage	Number of properties
Uninsulated walls	31.8%	97.02
Loft insulation <100mm	3.6%	11.01
Single glazed windows	5.3%	16.01

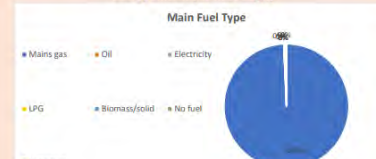
### Property Characteristics



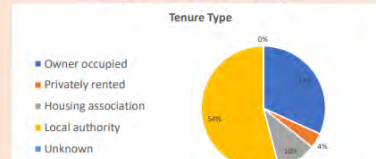
### Energy Efficiency & Heat Supply



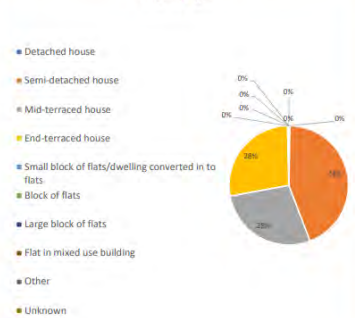
### Energy Efficiency & Heat Supply



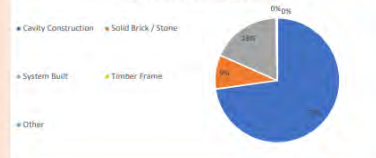
### Property Tenure & Historic Buildings



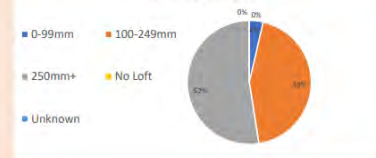
### Property Type



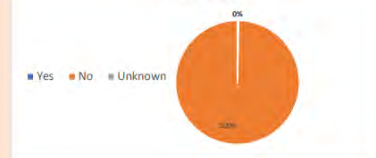
### Wall Construction & Insulation



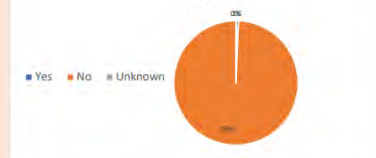
### Loft Insulation Level



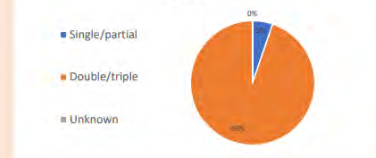
### Mixed Tenure



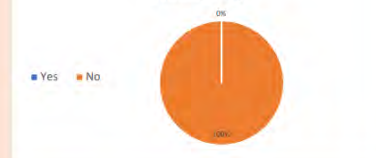
### Off gas grid



### Window Glazing



### Conservation Area



### Listed Buildings





## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone: New Cumnock - 02

Key

Relative performance of DZ for each characteristic compared to LA average

Value in top quartile; very poorly performing

Value in 3rd quartile; quite poorly performing

Value in 2nd quartile; fairly good performance

Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	11,412
Energy demand per property	18,742

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill > 10% of income)	41.0%	158.52
Estimate of households in extreme fuel poverty (fuel bill > 20% of income)	17.3%	143.79
Council Tax Band A-C	97.8%	393.00

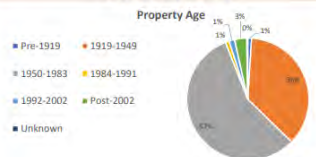
### EPC Rating

	Percentage	Number of properties
EPC F-G	0.8%	3.02
EPC D-G	38.1%	153.00

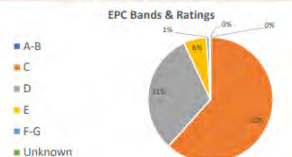
### Insulation

	Percentage	Number of properties
Uninsulated walls	31.8%	128.00
Loft insulation < 100mm	2.7%	11.01
Single glazed windows	6.5%	26.01

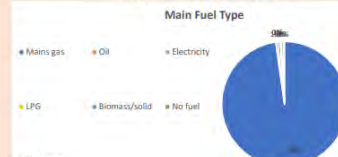
### Property Characteristics



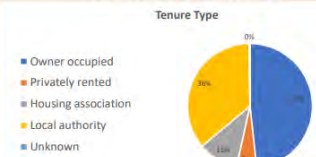
### Energy Efficiency & Heat Supply



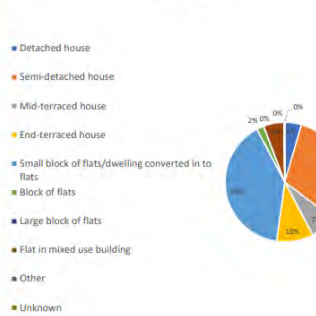
### Energy Efficiency & Heat Supply



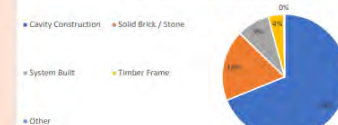
### Property Tenure & Historic Buildings



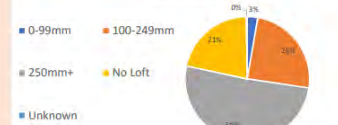
### Property Type



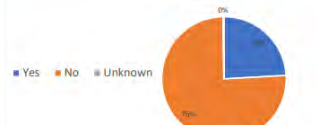
### Wall Construction & Insulation



### Loft Insulation Level



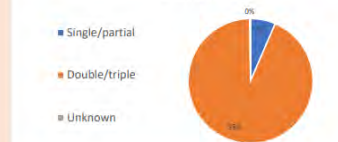
### Mixed Tenure



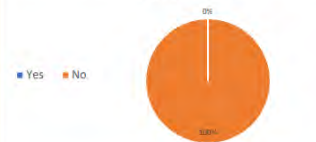
### Off gas grid



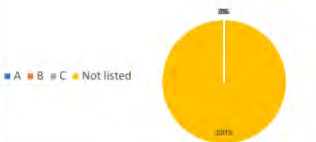
### Window Glazing



### Conservation Area



### Listed Buildings



## 3.5.5 Altonhill South, Longpark and Hillhead (Kilmarnock)

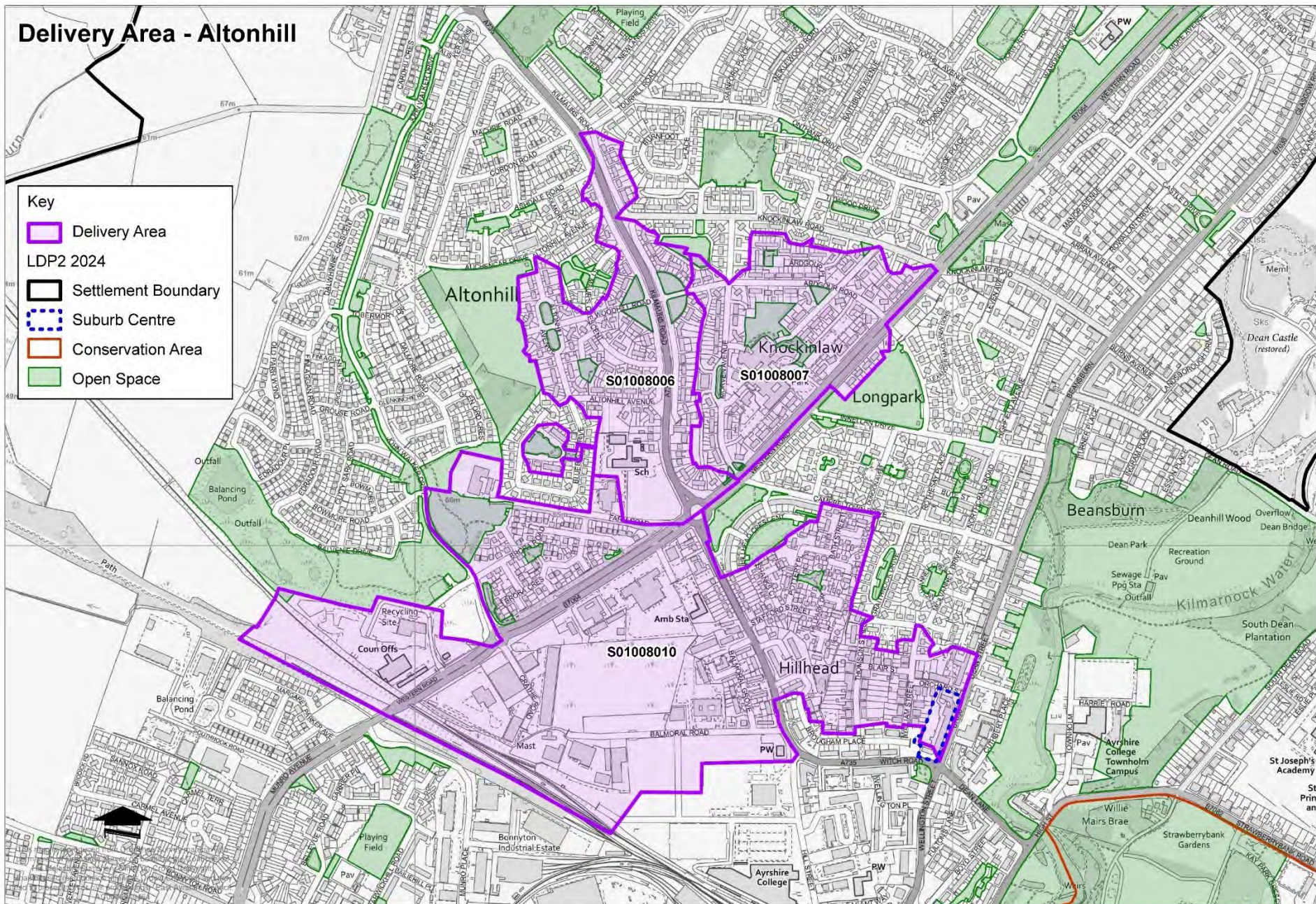
Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation 0-99mm	Total no. of properties with uninsulated walls	Of uninsulated walls: no. cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership
20%	40%	7%	14%	278	126	433	246	92

Overall Solar Suitability	No. of properties listed or in a conservation area	% of properties that are Cat 1 (on gas grid)	Heat Network Opportunity
Moderate	27	81	Existing

1	Tackling the Climate Crisis
2	Decarbonising Heat Sources & Transitioning the Energy System
3	Improving Energy Efficiency in Buildings
4	Tackling Fuel Poverty
7	Maximising Knowledge and Awareness

- Altonhill South, Longpark and Hillhead has moderate-high levels of fuel poverty across the intermediate zone. The fuel poverty in Altonhill South, Longpark and Hillhead is likely to go beyond that which is caused by energy inefficiency of buildings alone – as such, interventions would be needed beyond the scope of the LHEES in order to address the other root causes of fuel poverty in this area.
- Despite this, there is at least some opportunity to make energy efficiency improvements in Altonhill South, Longpark and Hillhead: there is a mixed picture within the intermediate zone, as there are some new-build developments (post-2002) with good levels of insulation and above-average energy efficiency. However, as the table above shows, it is estimated that there are 278 properties in this area with single glazing and 433 (17%) with uninsulated walls. Of the latter, it is estimated that 246 can be retrofitted but only 92 are in Council or Housing Association ownership. This means that there could be some minimal intervention by the Council and other partners to make improvements – however, there will also need to be private sector interventions in order to really tackle this problem.
- There are a number of flatted developments in Altonhill South, Longpark and Hillhead: there are 1132 properties (45%) recorded as containing more than one individual dwelling. Additionally, 596 properties (24%) are mixed-tenure. This means that for these properties, there may be additional challenges to achieving heat decarbonisation, as there will be multiple stakeholders within each property.
- Altonhill South, Longpark and Hillhead has a number of potential options for achieving heat decarbonisation: it has moderate levels of overall solar suitability, and 80% of properties are assessed to be category 1 properties (heat-pump ready). There is also an existing heat network in the area.
- There are only 27 properties in Altonhill South, Longpark and Hillhead that are listed or in a conservation area, so overall this means that there will be minimal additional procedural challenges to installing renewable technologies.







## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone Altonhill South, Longpark and Hillhead - 02

Key  
Relative performance of DZ for each characteristic compared to LA average  
Value in top quartile; very poorly performing  
Value in 3rd quartile; quite poorly performing  
Value in 2nd quartile; fairly good performance  
Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	12,193
Energy demand per property	18,843

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill > 10% of income)	39.6%	100.58
Estimate of households in extreme fuel poverty (fuel bill > 20% of income)	20.7%	52.55
Council Tax Band A-C	98.0%	248.97

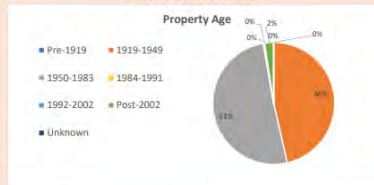
### EPC Rating

	Percentage	Number of properties
EPC F-G	0.4%	0.99
EPC D-G	29.9%	76.00

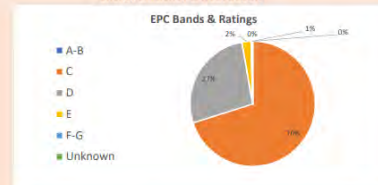
### Insulation

	Percentage	Number of properties
Uninsulated walls	11.8%	30.00
Loft insulation <100mm	3.9%	10.01
Single glazed windows	21.3%	54.00

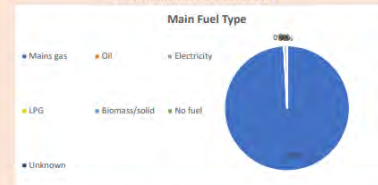
### Property Characteristics



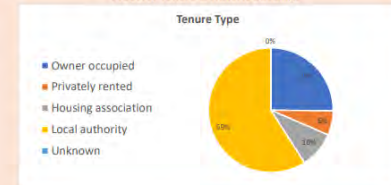
### Energy Efficiency & Heat Supply



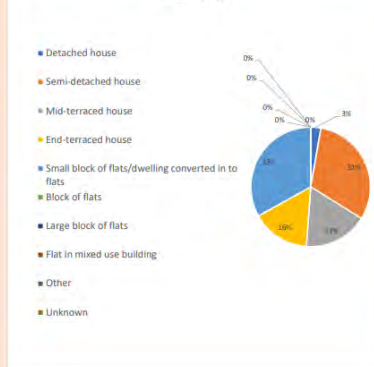
### Energy Efficiency & Heat Supply



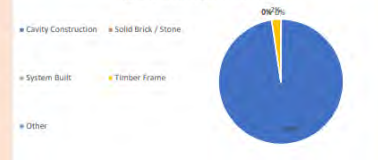
### Property Tenure & Historic Buildings



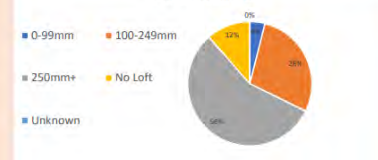
### Property Type



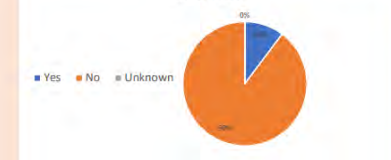
### Wall Construction & Insulation



### Loft Insulation Level



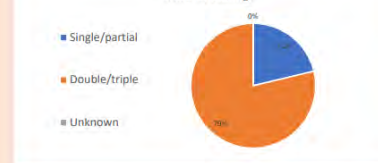
### Mixed Tenure



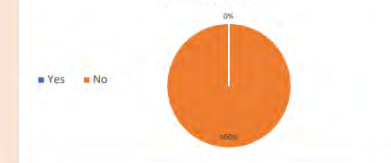
### Off gas grid



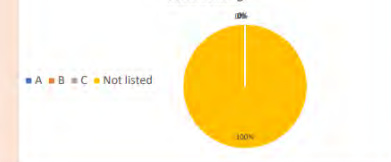
### Window Glazing



### Conservation Area



### Listed Buildings



## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone	Altonhill South, Longpark and Hillhead - 03
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Key

Relative performance of D2 for each characteristic compared to LA average

- Value in top quartile; very poorly performing
- Value in 3rd quartile; quite poorly performing
- Value in 2nd quartile; fairly good performance
- Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	11,537
Energy demand per property	19,838

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill>10% of income)	29.5%	77.75
Estimate of households in extreme fuel poverty (fuel bill>20% of income)	12.2%	32.10
Council Tax Band A-C	100.0%	264.00

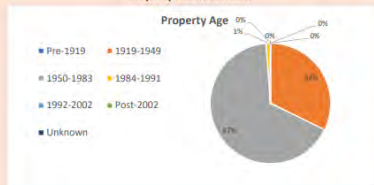
### EPC Rating

	Percentage	Number of properties
EPC F-G	1.9%	4.99
EPC D-G	53.0%	139.97

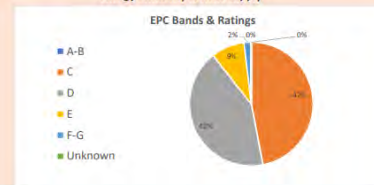
### Insulation

	Percentage	Number of properties
Uninsulated walls	40.2%	106.02
Loft insulation <100mm	6.1%	16.00
Single glazed windows	32.6%	86.01

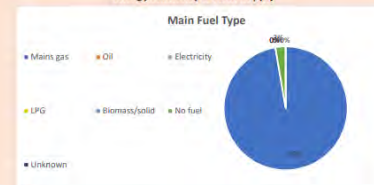
### Property Characteristics



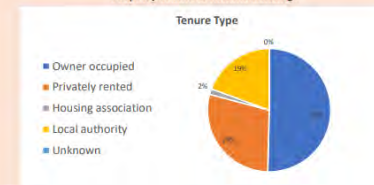
### Energy Efficiency & Heat Supply



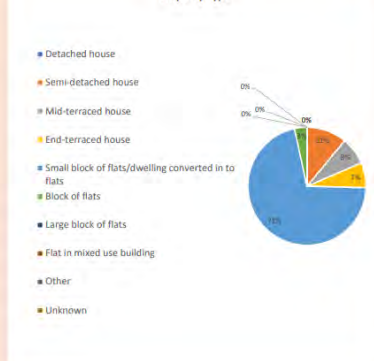
### Energy Efficiency & Heat Supply



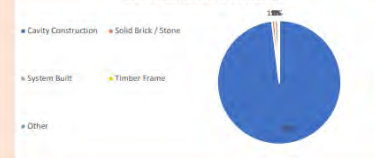
### Property Tenure & Historic Buildings



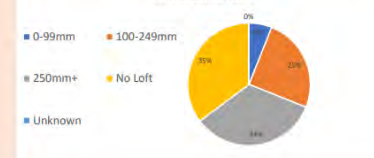
### Property Type



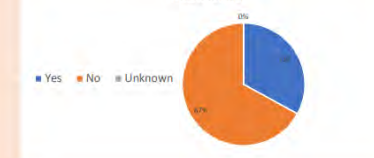
### Wall Construction & Insulation



### Loft Insulation Level



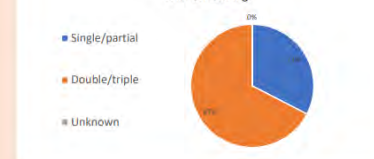
### Mixed Tenure



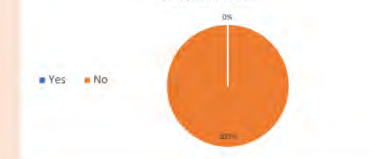
### Off gas grid



### Window Glazing



### Conservation Area



### Listed Buildings





## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone Altonhill South, Longpark and Hillhead - 06

Key  
Relative performance of DZ for each characteristic compared to LA average  
Value in top quartile; very poorly performing  
Value in 3rd quartile; quite poorly performing  
Value in 2nd quartile; fairly good performance  
Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	10,172
Energy demand per property	16,272

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill>10% of income)	21.7%	120.97
Estimate of households in extreme fuel poverty (fuel bill>20% of income)	3.1%	17.13
Council Tax Band A-C	61.8%	345.01

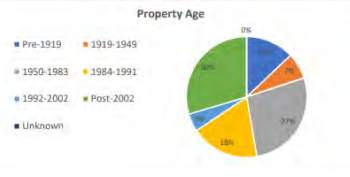
### EPC Rating

	Percentage	Number of properties
EPC F-G	3.1%	17.02
EPC D-G	30.8%	172.03

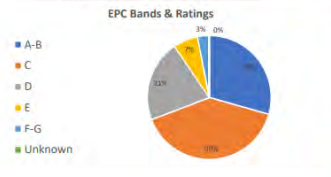
### Insulation

	Percentage	Number of properties
Uninsulated walls	21.9%	122.03
Loft insulation <100mm	9.3%	52.01
Single glazed windows	4.8%	27.01

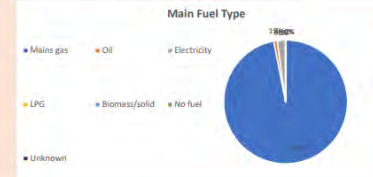
### Property Characteristics



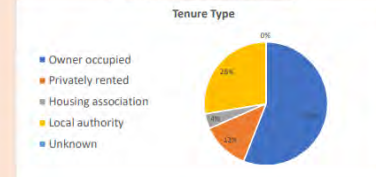
### Energy Efficiency & Heat Supply



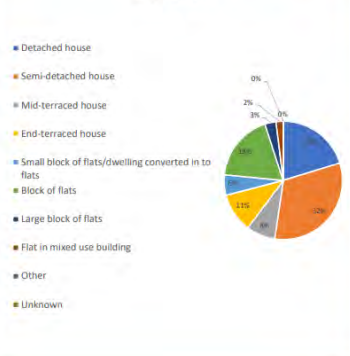
### Energy Efficiency & Heat Supply



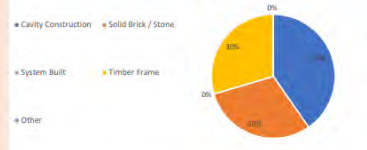
### Property Tenure & Historic Buildings



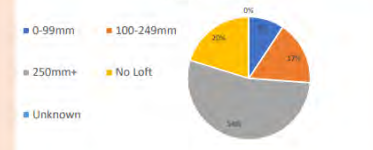
### Property Type



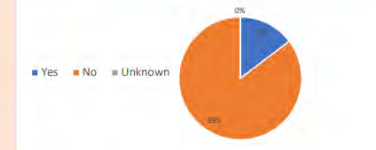
### Wall Construction & Insulation



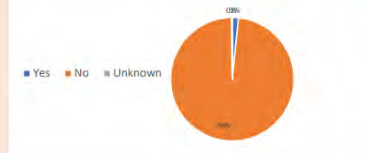
### Loft Insulation Level



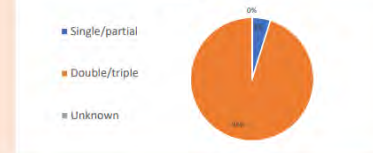
### Mixed Tenure



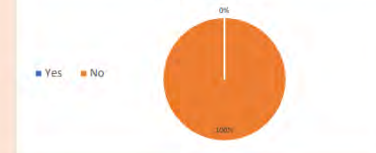
### Off gas grid



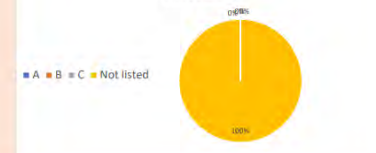
### Window Glazing



### Conservation Area



### Listed Buildings



## 3.5.6 Shortlees (Kilmarnock)

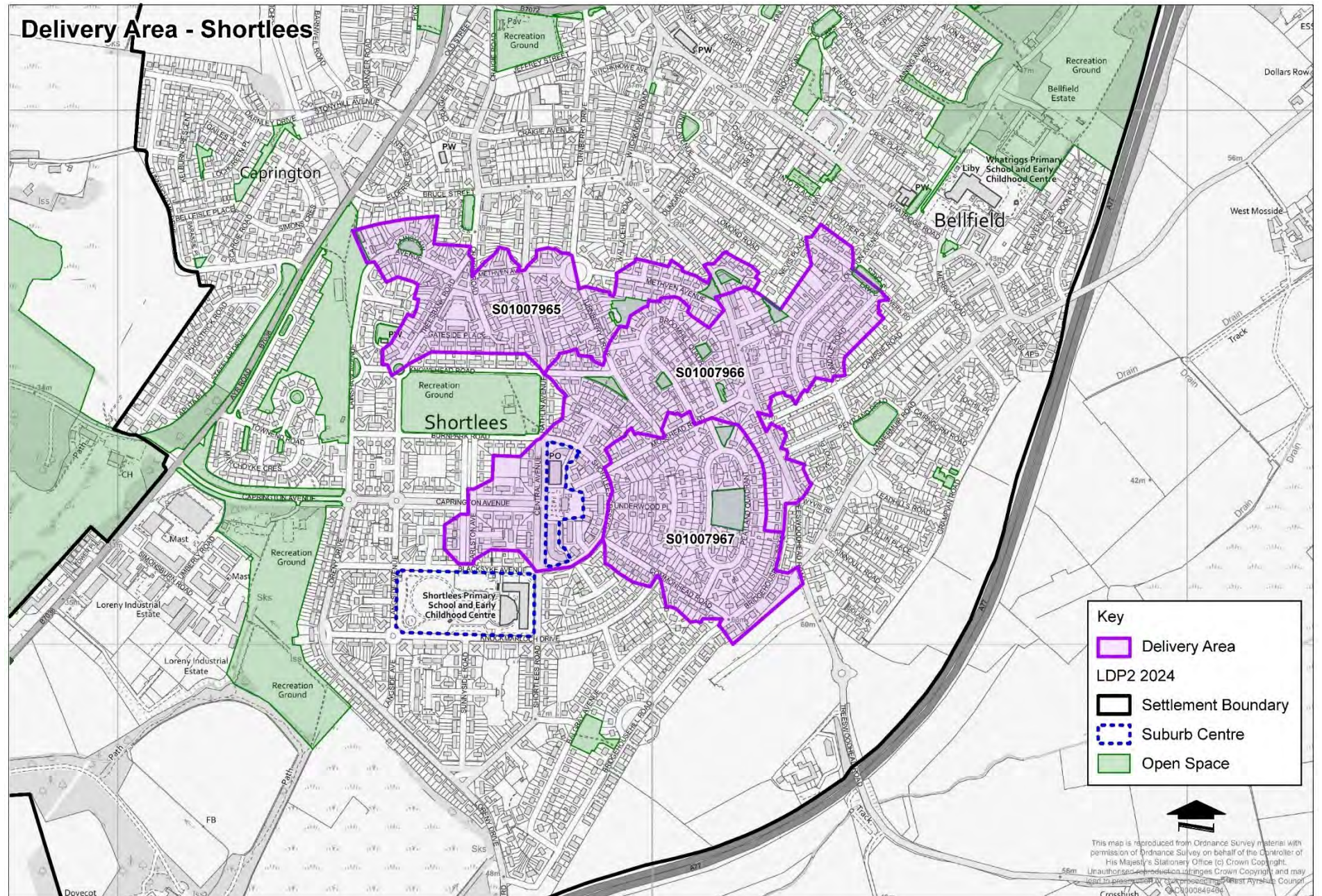
Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation 0-99mm	Total no. of properties with uninsulated walls	Of uninsulated walls: no. cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership
29%	37%	8%	22%	127	98	887	871	813

Overall Solar Suitability	No. of properties listed or in a conservation area	% of properties that are Cat 1 (on gas grid)	Heat Network Opportunity
Moderate	0	56	No

1	Tackling the Climate Crisis
2	Decarbonising Heat Sources & Transitioning the Energy System
3	Improving Energy Efficiency in Buildings
4	Tackling Fuel Poverty

- Shortlees has high levels of fuel poverty across the intermediate zone. The fuel poverty in Shortlees is likely to go beyond that which is caused by energy inefficiency of buildings alone – as such, interventions would be needed beyond the scope of the LHEES in order to address the other root causes of fuel poverty in New Cumnock.
- Despite this, there is some good opportunity to make energy efficiency improvements in Shortlees: there are approximately 2062 domestic properties in total, which overall display below average energy efficiency. As the table above shows, it is estimated that there are 887 properties in this area (43%) with uninsulated walls. Of these it is estimated that 871 can be retrofitted and 813 are in Council or Housing Association ownership. This means that there is an excellent opportunity for intervention by the Council and other partners to make improvements in Shortlees, and very minimal private sector intervention would be needed.
- There are some flatted developments in Shortlees: there are 566 properties (28%) recorded as containing more than one individual dwelling. Additionally, 201 properties (10%) are mixed-tenure. This means that for these properties, there may be additional challenges to achieving heat decarbonisation, as there will be multiple stakeholders within each property.
- Shortlees currently demonstrates some suitability for the installation of renewable heat technologies, but the best options will need to be investigated further: the area has moderate levels of overall solar suitability, and just over half of properties are assessed to be category 1 properties (heat-pump ready). There is no current heat network or proposed heat network in the area.
- There are no properties in Shortlees that are listed or in a conservation area, so there will be no additional procedural challenges to installing renewable technologies.







## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone	Shortlees - G4
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Key

Relative performance of DZ for each characteristic compared to LA average

Value in top quartile; very poorly performing

Value in 3rd quartile; quite poorly performing

Value in 2nd quartile; fairly good performance

Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	12,162
Energy demand per property	19,915

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill > 10% of income)	33.3%	88.96
Estimate of households in extreme fuel poverty (fuel bill > 20% of income)	18.9%	45.20
Council Tax Band A-C	92.5%	247.00

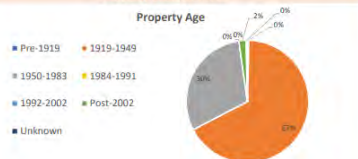
### EPC Rating

	Percentage	Number of properties
EPC F-G	0.4%	0.99
EPC D-G	62.6%	167.01

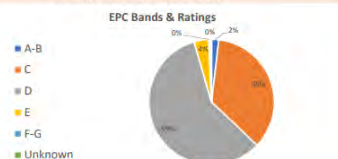
### Insulation

	Percentage	Number of properties
Uninsulated walls	57.7%	153.88
Loft insulation < 100mm	4.5%	11.99
Single glazed windows	6.0%	15.99

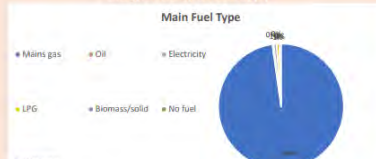
### Property Characteristics



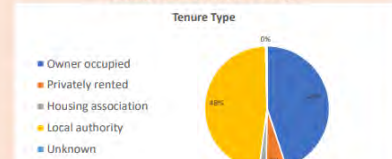
### Energy Efficiency & Heat Supply



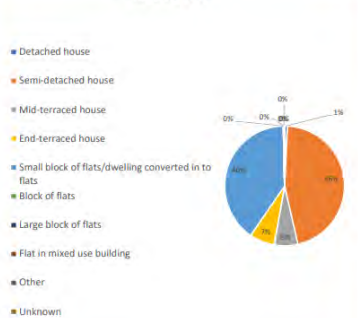
### Energy Efficiency & Heat Supply



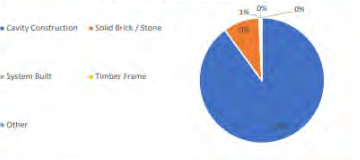
### Property Tenure & Historic Buildings



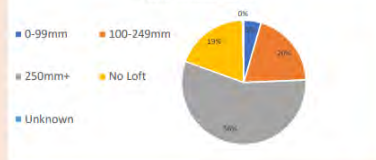
### Property Type



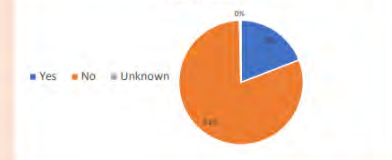
### Wall Construction & Insulation



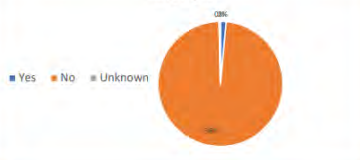
### Loft Insulation Level



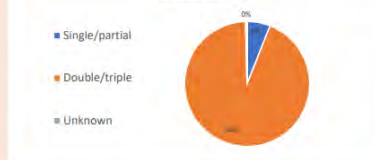
### Mixed Tenure



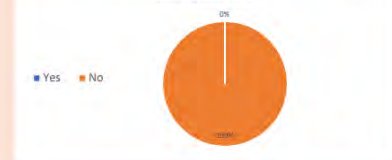
### Off gas grid



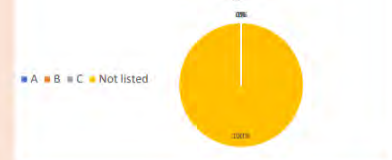
### Window Glazing



### Conservation Area



### Listed Buildings





## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone	Shortlees - GS
------	----------------

Key

Relative performance of DZ for each characteristic compared to LA average

- Value in top quartile; very poorly performing
- Value in 3rd quartile; quite poorly performing
- Value in 2nd quartile; fairly good performance
- Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	12,840
Energy demand per property	19,046

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill > 10% of income)	33.0%	117.18
Estimate of households in extreme fuel poverty (fuel bill > 20% of income)	17.5%	78.62
Council Tax Band A-C	91.1%	408.99

### EPC Rating

	Percentage	Number of properties
EPC F-G	0.2%	0.99
EPC D-G	58.4%	261.99

### Insulation

	Percentage	Number of properties
Uninsulated walls	42.8%	191.99
Loft insulation < 100mm	4.0%	18.00
Single glazed windows	4.5%	19.98



## Local Heat and Energy Efficiency Strategy – LDP2 SG Summary

Zone	Shortlees - 06
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Key

Relative performance of DZ for each characteristic compared to LA average

Value in top quartile; very poorly performing

Value in 3rd quartile; quite poorly performing

Value in 2nd quartile; fairly good performance

Value in bottom quartile; good performance

### Energy and heat demand

Heat demand per property (kWh/property/year)	13,777
Energy demand per property	22,427

### Income

	Percentage	Number of properties
Estimate of households in fuel poverty (fuel bill > 10% of income)	36.7%	91.89
Estimate of households in extreme fuel poverty (fuel bill > 20% of income)	22.3%	55.93
Council Tax Band A-C	95.6%	240.01

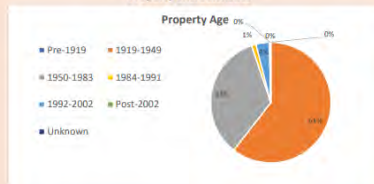
### EPC Rating

	Percentage	Number of properties
EPC F-G	0.4%	1.00
EPC D-G	72.5%	182.00

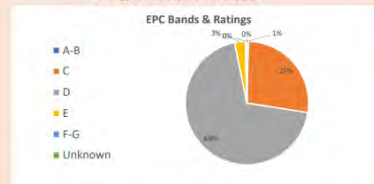
### Insulation

	Percentage	Number of properties
Uninsulated walls	53.8%	133.02
Loft insulation < 100mm	6.4%	15.99
Single glazed windows	12.0%	29.99

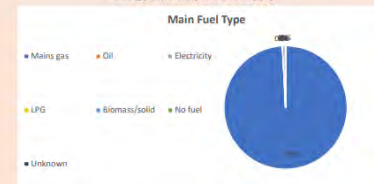
### Property Characteristics



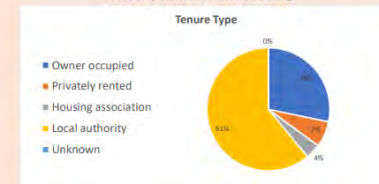
### Energy Efficiency & Heat Supply



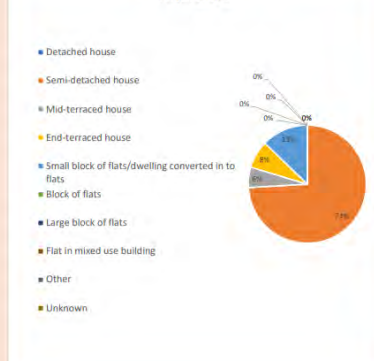
### Energy Efficiency & Heat Supply



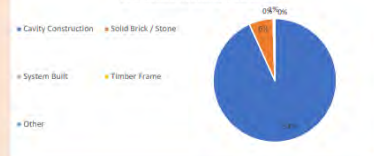
### Property Tenure & Historic Buildings



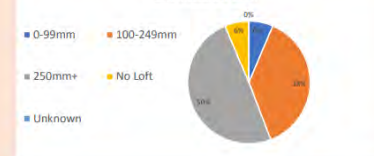
### Property Type



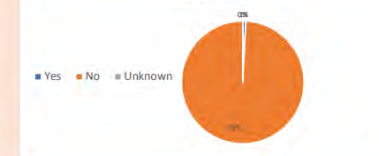
### Wall Construction & Insulation



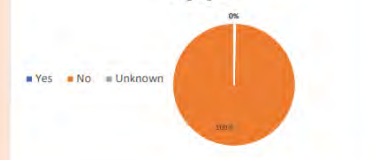
### Loft Insulation Level



### Mixed Tenure



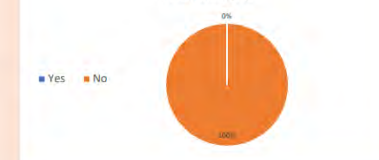
### Off gas grid



### Window Glazing



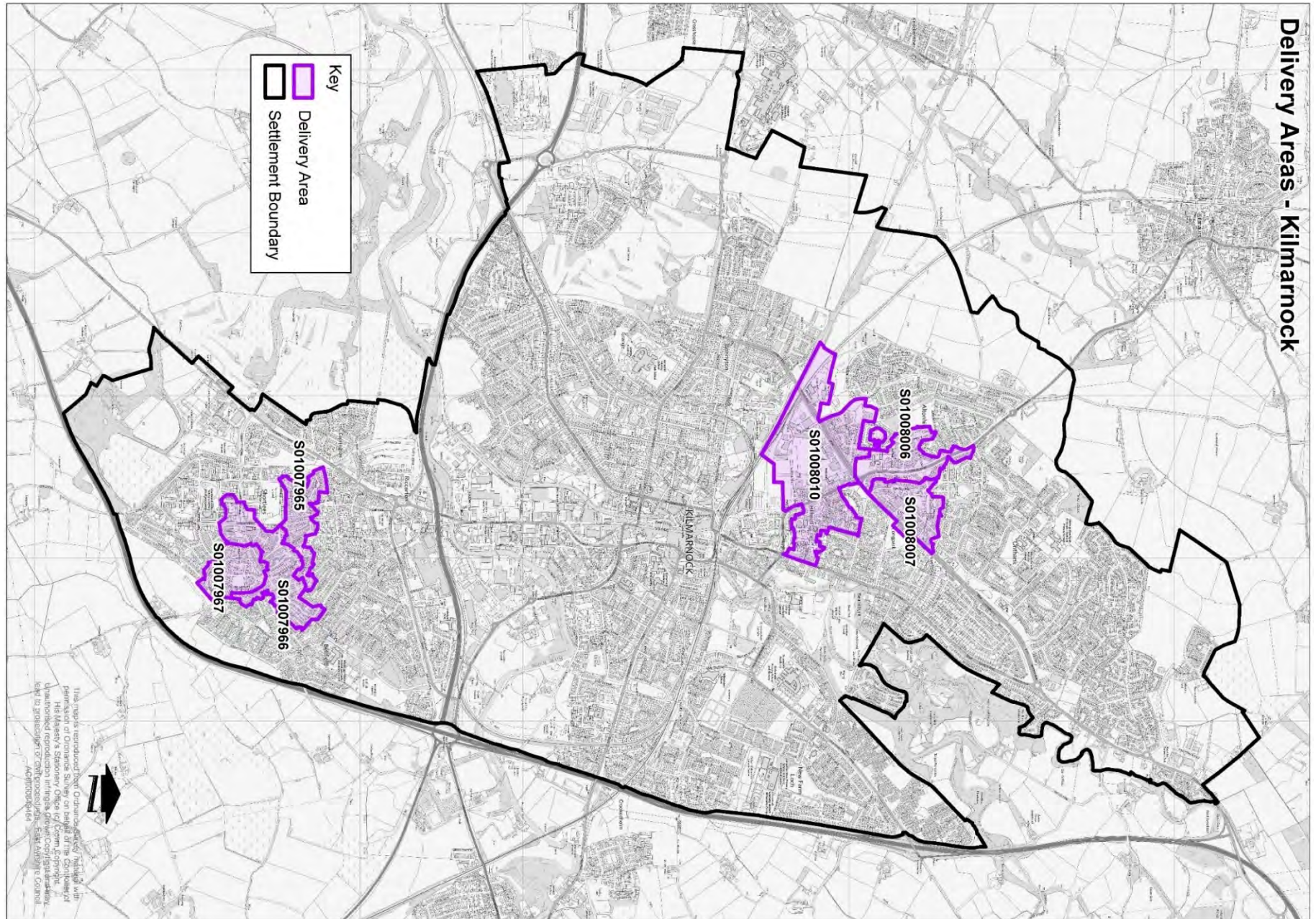
### Conservation Area



### Listed Buildings









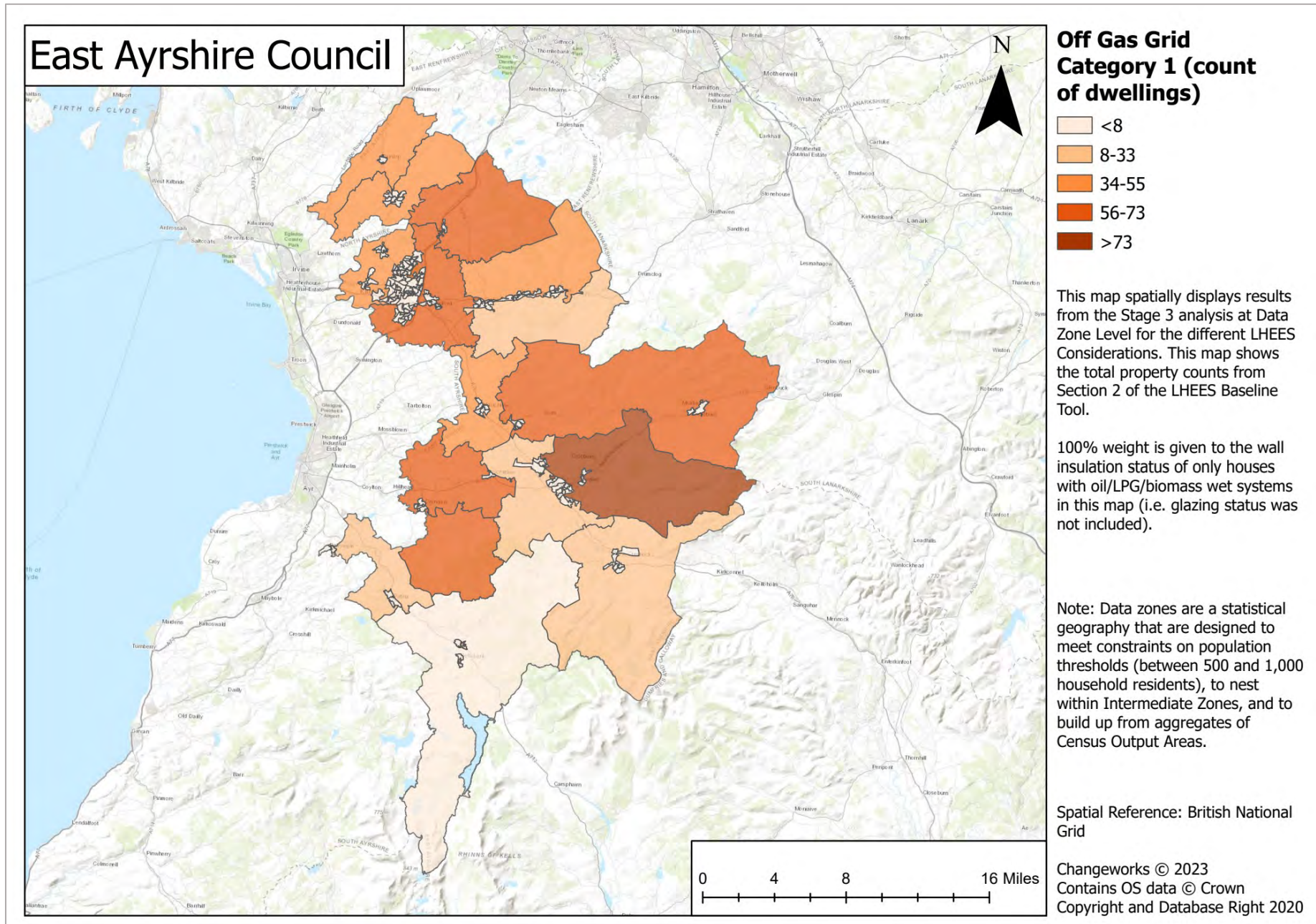
### 3.6 Strategic Zones and Technology-Based Interventions

#### 3.6.1 Rural Area

Datazone	Total no. of properties in datazone	% of properties off-gas grid	% Cat 1 properties (off-gas grid)	main fuel sources for heating (off-gas)	% of properties with EPC rating D-G	% of properties with EPC rating F-G	% Estimate of households in extreme fuel poverty (fuel bill > 20% of income)
Crosshouse, Gatehead & Kilmaurs Rural - 05	979	32	4	Electricity (17%); Oil 10%	24	8	5
Cumnock Rural - 01	181	81	10	Oil (50%); LPG (17%)	70	29	23
Cumnock Rural - 02	166	45	15	Oil (25%); Electricity (10%); Biomass (8%)	64	20	21
Cumnock Rural - 03	246	65	49	LPG (41%); Oil (20%)	31	5	51
Cumnock Rural - 08	351	83	17	Oil (52%); Biomass (15%)	77	19	18
Doon Valley North - 06	234	41	14	Oil (30%); LPG (7%)	58	16	5
Doon Valley South - 01	201	34	8	Oil (12%); Electricity (9%)	75	13	36
Earlston and Hurlford Rural - 07	337	69	22	Oil (44%); LPG (9%); Electricity (9%)	69	27	1
Mauchline Rural - 01	265	100	24	Electricity (39%); Oil (29%); LPG (19%); Biomass (13%)	62	23	25
Mauchline Rural - 02	256	96	27	Oil (58%); LPG (16%); Electricity (13%); Biomass (9%)	84	22	2
Mauchline Rural - 07	275	59	19	Oil (46%)	54	20	6
Northern and Irvine Valley Rural - 01	183	77	17	Oil (46%)	87	12	1
Northern and Irvine Valley Rural - 02	156	90	26	Oil (46%); LPG (20%); Electricity (13%)	81	27	3
Northern and Irvine Valley Rural - 03	307	81	20	Oil (39%); LPG (24%); Electricity (15%)	71	34	4
Northern and Irvine Valley Rural - 05	728	31	7	Oil (22%)	28	10	1
Northern and Irvine Valley Rural - 06	227	89	24	Oil (47%); LPG (20%); Electricity (10%)	77	35	2

1	Tackling the Climate Crisis	6	Making Best Use of East Ayrshire's Assets
2	Decarbonising Heat Sources & Transitioning the Energy System	7	Maximising Knowledge and Awareness
3	Improving Energy Efficiency in Buildings		
4	Tackling Fuel Poverty		

- The Rural Area is grouped into one Strategic Zone as similar challenges and opportunities with regards to energy efficiency and heat decarbonisation are displayed across East Ayrshire's rural area, regardless of geographical location.
- The rural area is characterised by three shared themes:
  1. A high percentage of properties are off-gas grid
  2. The domestic building stock has poor insulation and low overall energy efficiency
  3. There is very low public sector ownership of domestic properties
- Fuel poverty however varies within the rural area – the Doon Valley and Cumnock rural areas in the south of East Ayrshire display higher levels of fuel poverty than the Irvine Valley and the northern areas.
- Although there are a high percentage of properties in the rural area that are off the gas grid, the most common fuel sources for these properties are not 'clean' fuels: the majority of homes use oil or LPG, with a smaller proportion using biomass. Therefore, a likely strategic intervention for the rural area will be to consider how these properties that are already off-gas could transition to low carbon fuel sources.
  - Some properties are assessed as being 'Category 1' or suitable for a heat pump installation at present – as shown above, the percentage of these properties varies between areas but does not exceed 50% in any area.
  - Around 10% of all properties in the rural area are currently using electricity as the main fuel source, so green electricity may prove to be the most viable alternative in future, particularly considering the proximity of some rural communities and dwellings to East Ayrshire's abundant wind farms.
- Alongside changes to heat sources, it is likely that energy efficiency improvements will be needed to rural properties in order to reduce waste heat emissions and, in some places, associated fuel poverty. All of the datazones in the rural area are in the top quartile of East Ayrshire's datazones for properties with EPC ratings in the F-G range.
- The rural area in general appears to have lower levels of solar suitability, though it may be the case that the lower numbers of domestic properties in these areas compared to in urban settlements does not fully reflect the solar suitability of e.g. individual buildings. This could therefore need to be explored on a dwelling-by-dwelling basis.
- In the rural area, almost all of the interventions will need to be made by private property owners, therefore the main role for the Council is likely to be in raising awareness amongst property owners of the most suitable renewable heat technologies for their properties, and any support available for such installations (financial or otherwise).





## 3.6.2 Medium Priority Group 1: remaining areas with Council or Housing Association ownership

Intermediate Zone	Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation 0-99mm	Total no. of properties with uninsulated walls	Of uninsulated walls: no. cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership
Auchinleck	26%	37%	5%	17%	41	164	595	340	129
Catrine	26%	35%	10%	20%	44	97	482	260	187
Newmilns	21%	32%	2%	17%	139	257	968	406	142

Intermediate Zone	Overall Solar Suitability	No. of properties listed or in a conservation area	% of all properties that are Cat 1 (on gas grid)	Heat Network Opportunity
Auchinleck	Good	0	66	No
Catrine	Moderate	424	42	No
Newmilns	Poor	493	30	No

1	Tackling the Climate Crisis
2	Decarbonising Heat Sources & Transitioning the Energy System
3	Improving Energy Efficiency in Buildings
4	Tackling Fuel Poverty
5	Protecting and Future-Proofing the Historic Environment
7	Maximising Knowledge and Awareness

- The intermediate zones in this section are grouped together as they are the remaining areas in which the Council or Housing Associations own a large enough number of uninsulated properties for intervention of this kind to be an appropriate aim for the Council in order to overall improve the energy efficiency of domestic properties in East Ayrshire.
- All of the areas have moderate fuel poverty – therefore, whilst fuel poverty is not a priority concern in these areas, energy efficiency improvements are likely to result in at least some reduction in fuel poverty.
- All of the areas do however have slightly different profiles in terms of the likely renewable heat technologies that would be implemented, as shown in the tables above.

- Catrine and Newmilns have high numbers of properties that are listed or in a conservation area, therefore there will be some additional procedural challenges to installing renewable technologies, as consideration will need to be given to protecting the historic environment whilst balancing the need for future renewable heat technologies. There is some correlation shown between the number of historic properties and the overall percentage of properties deemed suitable for heat pump installation (category 1 properties).
- In these areas, there will be a role for the Council and Housing Association partners in making the necessary improvements to insulation in properties within their ownership. There will also be a role in raising awareness amongst private owners of the most suitable renewable heat technologies for their properties, and any support available for such installations (financial or otherwise).

## 3.6.3 Medium Priority Group 2: Areas with poor insulation but lower fuel poverty

Intermediate Zone	Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation 0-99mm	Total no. of properties with uninsulated walls	Of uninsulated walls: no. cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership
Crookedholm and Hurlford	19%	34%	1%	14%	196	138	655	444	57
Darvel	19%	27%	1%	9%	191	241	815	251	46
Drongan	24%	33%	8%	17%	31	76	303	246	96
Galston	18%	36%	1%	17%	195	214	1067	605	94
Mauchline	17%	35%	1%	8%	69	143	756	406	38
Grange, Howard and Gargieston	13%	22%	0%	1%	117	271	1171	558	14

Intermediate Zone	Overall Solar Suitability	No. of properties listed or in a conservation area	% of all properties that are Cat 1 (on gas grid)	Heat Network Opportunity
Crookedholm and Hurlford	Moderate	2	70	No
Darvel	Poor	161	54	No
Drongan	Excellent	0	75	Yes
Galston	Moderate	197	52	No
Mauchline	Excellent	182	55	No
Grange, Howard and Gargieston	Good	590	52	No

1	Tackling the Climate Crisis
2	Decarbonising Heat Sources & Transitioning the Energy System
3	Improving Energy Efficiency in Buildings
5	Protecting and Future-Proofing the Historic Environment
7	Maximising Knowledge and Awareness

- The intermediate zones in this section are grouped together as they are all areas in which building insulation is poor overall, but where this is not necessarily associated with high fuel poverty. This includes individual settlements, and areas of Kilmarnock (the latter highlighted in grey in the tables above). As such, whilst improving insulation in these areas would still be pertinent with regard to reducing waste heat and associated carbon emissions, this is less of a priority from the perspective of reducing fuel poverty and associated health inequalities.



- Additionally, there is moderate-to-low Council or Housing Association Ownership in all of these areas; therefore, any improvements that were to made to building insulation would need to come in the majority from the private sector.
- In these areas, it will therefore be most useful to focus on the implementation of renewable heat technologies as a priority ahead of improved insulation. It is also likely that households in these areas may have a higher incidence of being able to afford the upfront costs associated with the installation of such technologies. All of the areas do however have slightly different profiles in terms of the likely renewable heat technologies that would be implemented, as shown in the tables on page 85.
- The area in Kilmarnock in particular (Grange, Howard and Gargieston) has a high number of buildings which are listed or in a conservation area, which will result in some additional procedural challenges regarding the implementation of renewable technologies, as consideration will need to be given to protecting the historic environment whilst balancing the need for future renewable heat technologies. There is some correlation shown between the number of historic properties and the overall percentage of properties deemed suitable for heat pump installation (category 1 properties).
- In these areas, there will be a role for the Council and Housing Association partners in making the necessary improvements to insulation in properties within their ownership. There will also be a role in raising awareness amongst private owners of the types of technologies for renewable heat installations and any support available for such installations (financial or otherwise).
- In these areas almost all of the interventions will need to be made by private property owners, therefore the main role for the Council is likely to be in raising awareness amongst property owners of the most suitable renewable heat technologies for their properties, and any support available for such installations (financial or otherwise).

## 3.6.4 Medium Priority Group 3: Areas with good insulation but very high fuel poverty

Intermediate Zone	Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation 0-99mm	Total no. of properties with uninsulated walls	Of uninsulated walls: no. cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership
Logan	41%	50%	33%	38%	29	36	149	91	26
Muirkirk	34%	47%	20%	46%	28	54	196	98	14
Altonhill North and Onthank	19%	41%	2%	23%	365	60	195	182	36

Intermediate Zone	Overall Solar Suitability	No. of properties listed or in a conservation area	% of all properties that are Cat 1 (on gas grid)	Heat Network Opportunity
Logan	Good	122	66	No
Muirkirk	Good	0	70	No
Altonhill North and Onthank	Good	0	88	No

1	Tackling the Climate Crisis
2	Decarbonising Heat Sources & Transitioning the Energy System
3	Improving Energy Efficiency in Buildings
4	Tackling Fuel Poverty
7	Maximising Knowledge and Awareness

- The intermediate zones in this section are grouped together as they are all areas in which fuel poverty is very high, yet building insulation is relatively good (with the notable exception of high numbers of single glazed properties in Altonhill North and Onthank). This includes individual settlements, and areas of Kilmarnock (the latter highlighted in grey in the tables below).

- In these areas, the persistently high fuel poverty indicates that interventions will be needed beyond the scope of the LHEES in order to address the root causes of this fuel poverty.
- Additionally, there is low Council or Housing Association Ownership in all of these areas; therefore, any interventions, such as those needed to e.g. install double glazing to properties in Altonhill North and Onthank, would need to come in the majority from the private sector.
- In these areas, it will therefore be most useful to focus on the implementation of renewable heat technologies as a priority ahead of improved insulation. Although there are upfront costs associated with the installation of these technologies, it is likely that these would help to reduce fuel bills over time, and thus go some way to alleviating fuel poverty.
- All three areas have relatively similar profiles in terms of the likely renewable heat technologies that would be implemented, as shown in the tables above. All areas display good suitability for both solar installations and heat pump technologies (category 1 properties). However none are deemed suitable for a heat network at present.
- For the size of the settlement, Logan has a relatively high number of buildings listed or in a conservation area, which will result in some additional procedural challenges regarding the implementation of renewable technologies, as consideration will need to be given to protecting the historic environment whilst balancing the need for future renewable heat technologies. The other areas do not have any historic designations.
- Overall, the main role for the Council in these areas will be in further investigating the root causes of persistent fuel poverty in order that residents can be signposted to any available assistance, financial or otherwise. There will also be a role for the Council in raising awareness amongst property owners, which will include private landlords, of the most suitable renewable heat technologies for their properties, and any support available for such installations (financial or otherwise).



## 3.6.5 Medium Priority Group 4 – Areas of Kilmarnock where private intervention should be encouraged

Intermediate Zone	Fuel Poverty (min and max) across datazones		Extreme Fuel Poverty (min and max) across datazones		No. of properties with single glazing	No. of properties with loft insulation 0-99mm	Total no. of properties with uninsulated walls	Of uninsulated walls: no. cavity construction or system built	No. of properties with uninsulated walls in Council or Housing Association Ownership
Bellfield and Kirkstyle	20%	29%	5%	10%	291	113	451	415	81
Bonnyton and Town Centre	20%	30%	1%	11%	306	225	1212	385	93
Dean and New Farm Loch North	19%	30%	0%	12%	72	50	679	634	78
Kilmarnock South Central and Caprington	13%	31%	4%	12%	99	123	709	456	118
New Farm Loch South	12%	24%	0%	7%	64	127	422	314	67
Piersland	25%	27%	0%	6%	123	236	912	352	37

Intermediate Zone	Overall Solar Suitability	No. of properties listed or in a conservation area	% of all properties that are Cat 1 (on gas grid)	Heat Network Opportunity
Bellfield & Kirkstyle	Good	0	77	No
Bonnyton & Town Centre	Poor	262	46	Proposed
Dean and New Farm Loch North	Excellent	0	56	Proposed
Kilmarnock South Central & Caprington	Moderate	20	55	Existing & Proposed
Piersland	Moderate	642	30	Existing & Proposed

1	Tackling the Climate Crisis
2	Decarbonising Heat Sources & Transitioning the Energy System
3	Improving Energy Efficiency in Buildings
4	Tackling Fuel Poverty
6	Making Best Use of East Ayrshire's Assets
7	Maximising Knowledge and Awareness

- The intermediate zones in this section have been grouped together as they are all areas of Kilmarnock where intervention will be needed both to improve insulation and to install renewable heat technologies, but where the Council or Housing Associations do not own a large number of properties and therefore private intervention will need to be encouraged.
- Fuel poverty in these areas is moderate, though not excessively high. It is nevertheless expected that any improvements made to insulation and energy efficiency would go some way towards alleviating fuel poverty by reducing energy bills.
- There is good opportunity to improve all types of building insulation in these areas (glazing; loft insulation and wall insulation). There is an excellent opportunity to improve wall insulation in particular, due to the prevalence of cavity construction, with the exception of Pierland, which is an area characterised by solid brick or stone buildings which are more challenging to retrofit with insulation. Any interventions regarding insulation would need to be carried out in the most part by private property owners.
- Owing to the above, the priority in these areas should be improving insulation ahead of the installation of renewable heat technologies, though the latter will nevertheless also be necessary to meet Government targets.
- All of the areas have slightly different profiles in terms of the likely renewable heat technologies that would be implemented. For example, some areas show greater suitability for solar installations than others, and the percentage of Category 1 properties (those assessed to be suitable for heat pump installation) varies between areas.
- Kilmarnock has one central conservation area designation, which overlaps the intermediate zones 'Bonnyton and Town Centre' and 'Piersland' – these areas therefore have high numbers of historic properties, as shown in the table above. This will result in some additional procedural challenges regarding the implementation of renewable technologies, as consideration will need to be given to protecting the historic environment whilst balancing the need for future renewable heat technologies. There is also some negative correlation shown between the number of historic properties and the overall percentage of properties deemed suitable for heat pump installation (category 1 properties).
- Overall the main role for the Council in these areas is likely to be in encouraging private property owners to make improvements to insulation. In order to do this, there will be a need to raise awareness amongst property owners of any support available to make such improvements, financial or otherwise. In addition, there will also be a need to raise awareness of the most suitable renewable heat technologies for their properties, and any support available for such installations, financial or otherwise.

### 3.7 Discussion of Summary Analysis

Opportunities exist across East Ayrshire, for all building archetypes and types of ownership, but the purpose of this analysis was to identify the areas where the initial interventions could have been directed to have the greatest impact in meeting the objectives of LHEES. Based on the tables shown in section 3.4, the following conclusions were made:

- Excluding Kilmarnock, there are four settlements with a **high** opportunity for intervention based on fuel poverty and energy efficiency indicators:

- 
1. Bellsbank
  2. Cumnock and Craigens
  3. Dalmellington
  4. New Cumnock
- 

- In Kilmarnock, there are two intermediate zones deemed **high** opportunity for intervention based on fuel poverty and energy efficiency indicators:

- 
1. Altonhill South, Longpark and Hillhead
  2. Shortlees
- 

- Excluding Kilmarnock, there are twelve settlements with a **medium** opportunity for intervention based on fuel poverty and energy efficiency indicators:

- 
3. Auchinleck
  4. Catrine
  5. Crookedholm & Hurlford
  6. Darvel
  7. Drongan
  8. Galston
  9. Logan
  10. Mauchline
  11. Muirkirk
  12. Newmilns
  13. Patna
  14. Stewarton
- 

- In Kilmarnock, there are a further seven intermediate zones deemed **medium** opportunity for intervention based on fuel poverty and energy efficiency indicators:

- 
1. Altonhill North and Onthank
  2. Bellfield and Kirkstyle
  3. Bonnyton and Town Centre
  4. Dean and New Farm Loch North
  5. Grange, Howard and Gargieston
  6. Kilmarnock South Central and Caprington
  7. Piersland
-



All settlements and intermediate zones not listed above are deemed to have a **low** opportunity for intervention based on data analysis, in comparison to those listed above; therefore they will not be considered further at this stage. The LHEES necessarily must prioritise strategic interventions and actions, but it is important to remember that the overall target set by the Scottish Government is to eventually decarbonise heating systems for all buildings in Scotland. This therefore means that areas listed as low priority will still ultimately require intervention.

Moreover, whilst some of these areas may be more affluent and experiencing less fuel poverty, a number of them are characterised by older properties which may also be historic assets, which presents a different challenge for intervention. Overall, then, whilst 'low' opportunity areas are assessed to be less immediately actionable than other areas, consideration will still need to be given in the future to how best to approach heat decarbonisation for the properties concerned.

All of the **high** priority areas listed above will be designated as Strategic Zones at a spatial level.

The remaining **medium** priority areas will then be grouped into technology-based Strategic Zones where they have a similar profile in terms of the likely interventions required for delivery.

Further detail is provided on each of the Strategic Zones and the likely Delivery Areas in Strategic Zones and Technology-Based Interventions. Reference is made back to the Strategic Vision and Priorities of the LHEES.

## 4 HEAT NETWORK ZONING

### 4.1 An introduction to Heat Networks

Heat Networks are strategically important for decarbonising heat at scale, and it is a requirement of the LHEES that potential future heat network zones are identified. Heat networks can be large, such as a district heating network, or small, such as a shared ground source heat pump that heats up all the properties in a block of flats.

To identify potential heat network zones, clusters of (semi-)public anchor loads with a heat demand of 500MWh/year, were created. These clusters were then buffered using a linear heat density measure which relates heat demand across distance, based on standard LHEES projects.

Priority clusters were then distinguished based on selecting intersecting buffers with anchor loads with high heat demand potential, which, after more assessment, can be designated as future heat network zones.

### 4.2 EAC Position – LDP2

Policy RE2 (Heating and Cooling) within the adopted LDP2 states “*To contribute to carbon emissions targets, the Council will support low and zero carbon approaches to heating and cooling homes and buildings*”<sup>3</sup>. Through LDP2 the Council is, in principal, supportive of proposals that take heat from alternative sources including the ground, rivers, waste and mine waters – this will be reflected in the LHEES delivery plan.

Heat networks and energy centres are encouraged in new developments at ‘major’ scale in the hierarchy of development. As the current analysis is based on existing sites it is possible that new zones will emerge in future.

### 4.3 Methodology<sup>4</sup>

The areas of greatest potential were identified using linear heat density metrics, anchor load threshold criteria and a 250m resolution raster heat density layer. Further analysis through feasibility studies will be required to understand the viability of heat network development in each identified area.

---

<sup>3</sup> <https://www.east-ayrshire.gov.uk/PlanningAndTheEnvironment/development-plans-and-policies/ldp2/policies/energy-resources-and-resilience-heating-and-cooling.aspx>

<sup>4</sup> This detail is taken from the AEM WP1 Reporting Summary, December 2023, Changeworks

To make the analysis more detailed than the standard methodology, Heat Data Point non-domestic properties were filtered to only include semi-public and public buildings. These were refined using OS AddressBase classification codes identified as semi-public or public by the Green Heat in Greenspaces project. Additionally, a sense check of building names was carried out to identify any indication of a building being Council-owned. If that was the case, they were added to the analysis. This approach was chosen so that only non-domestic buildings that the Council has full or partial control over are treated as potential anchor loads in the heat network zoning. When defining anchor loads, public and Council-owned buildings have been prioritised as the Council has greater control over the operation of these buildings.

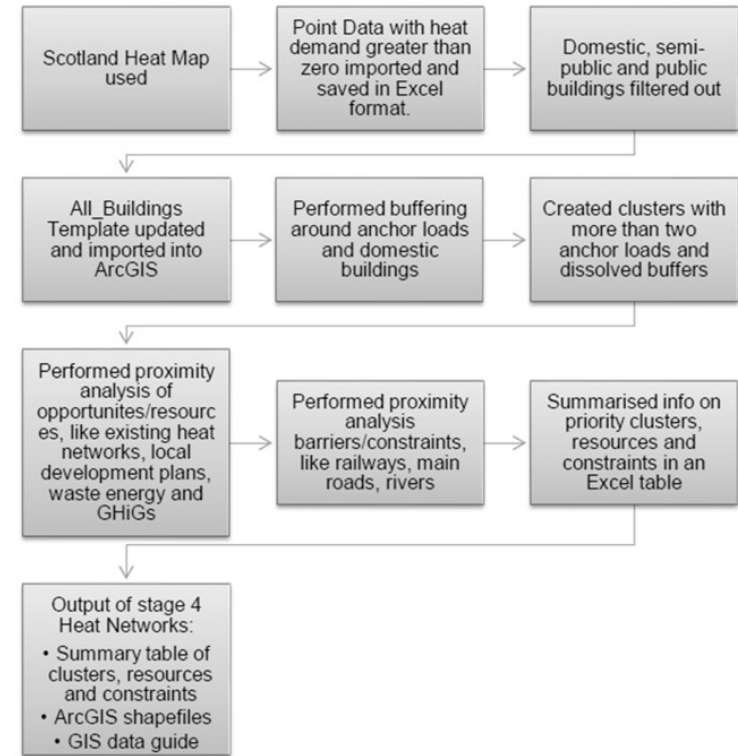


Figure 3 - Methodology for heat network zoning (Changeworks)



## 4.4 Summary of Zones

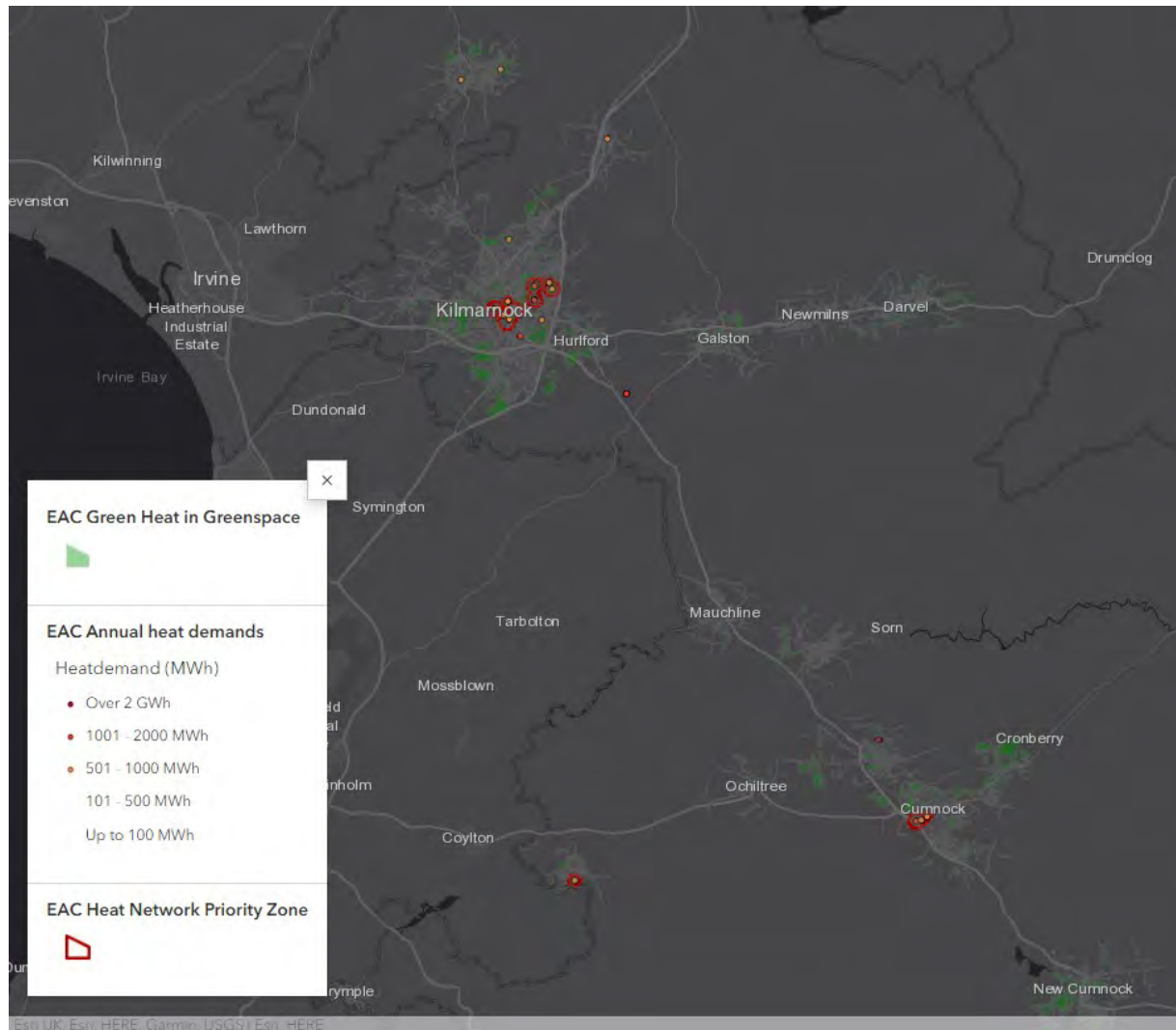


Figure 4 - Overview of East Ayrshire heat network zoning

The zoning activity serves to **identify theoretical and technical potential only** at a strategic level, prior to any site level feasibility studies that consider techno-economic appraisal and wider practical and non-technical factors. The draft LHEES methodology considers heat network potential only for 4<sup>th</sup> generation heat networks and does not include identification of communal heating opportunities<sup>5</sup>.

<sup>5</sup> LHEES Methodology, Version 4, September 2022.

Zone ID	Zone location (text description)	Area (m <sup>2</sup> )	Potential No. anchor loads (>500MWh/yr, captured by analysis)	Annual anchor loads heat demand (MWh/yr)	Total heat demand of non- domestic properties (excluding 500MWh+ anchors)	Households in priority area	Non-domestic buildings in priority area
1	Drongan	103,879	2	1,274	1,412	125	6
2	Cumnock	283,132	3	2,614	1,723	166	50
3	Kilmarnock 1	725,693	6	9,626	17,864	1899	589
4	Kilmarnock 2	403,396	4	4,272	5,496	406	19
5	Kilmarnock 3	217,524	2	1,532	2,750	241	10

Table 7 - Heat Network zoning exercise summary<sup>6</sup><sup>6</sup> From heat networks summary "EAC\_HN\_Summary\_table\_270923"

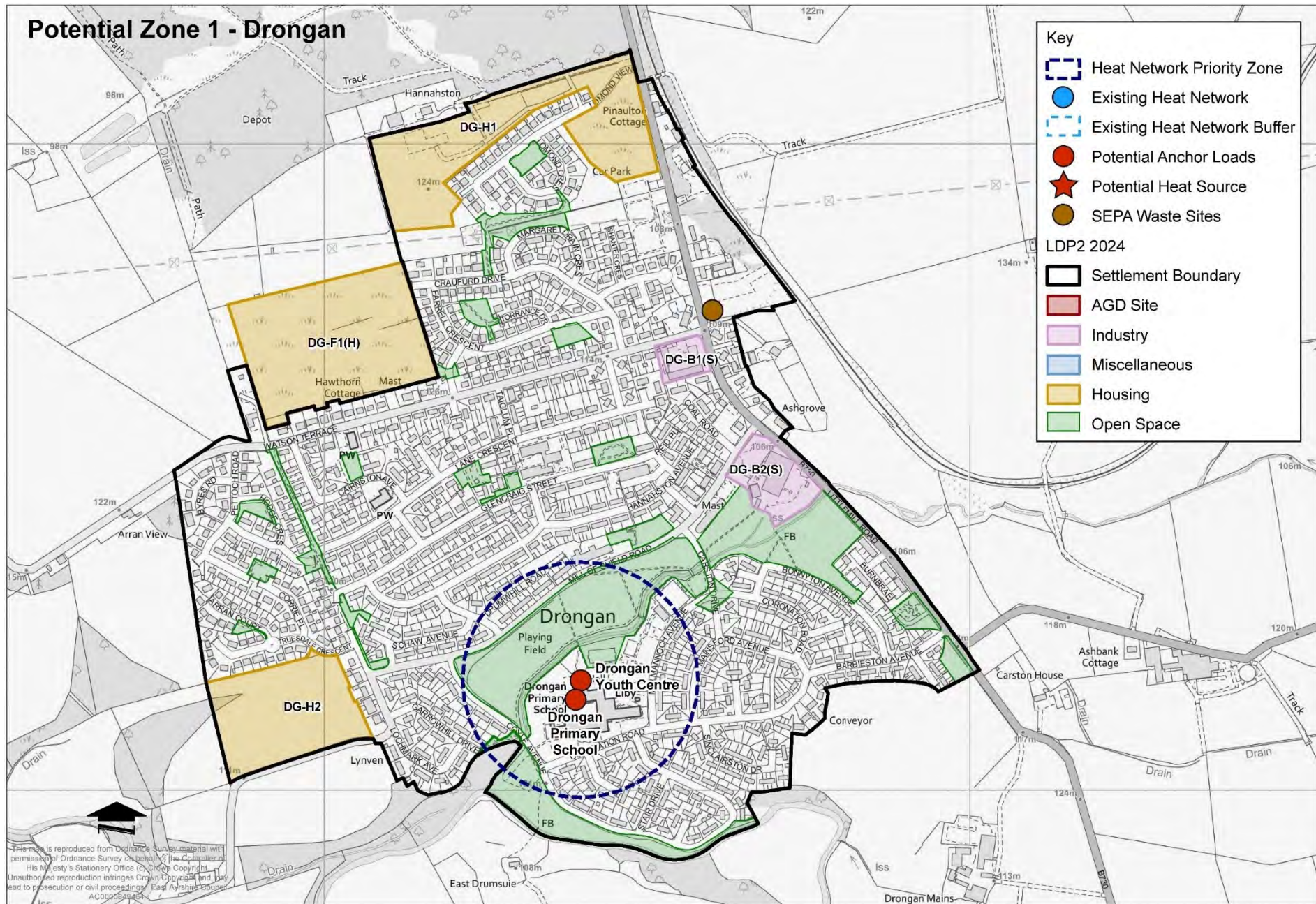
## 4.5 Potential Zone 1 – Drongan

Criteria	Detail
<b>Potential Anchor Loads captured by analysis:</b>	<ol style="list-style-type: none"> <li>1. Drongan Primary School &amp; Community Centre, Millmannoch Ave</li> <li>2. Drongan Early Childhood Centre, Millmannoch Ave</li> </ol>
<b>Other Known Potential Anchor Loads:</b>	<ol style="list-style-type: none"> <li>3. Wilsons Pet Food, Littlemill Road</li> <li>4. Taiglum Medical Practice, Mill of Shield Road</li> </ol>
<b>Nearby Heat Networks:</b>	None
<b>Waste Heat Source:</b>	Yes – according to SEPA waste heat data, there is now a disused waste heat site to the north of the potential heat network zone.
<b>Mine Water Heat Source:</b>	No
<b>Greenspace:</b>	There are 6 greenspaces intersecting the cluster which could be utilised for low carbon heat systems and distribution pipework.
<b>Comments on Feasibility:</b>	<p>Whilst this is a relatively small heat network zone, both of the potential anchor loads are council assets, therefore it is worth exploring this opportunity further.</p> <p>Drongan is a small settlement and, beyond those captured by analysis, there are few other potential anchor loads – the Taiglum Medical Centre has potential to be added into a heat network, but does not have high enough heat demand to anchor this alone.</p> <p>In terms of future development, site DG-H2 is allocated for housing in the East Ayrshire Local Development Plan 2. This is a mid-sized site at 3.2 ha with an indicative capacity of 60 units. The developer of this site would be expected to demonstrate that they have had regard for the potential connection of any new homes to a future heat network in the area.</p> <p>Site DG-B2(S) to the east of the cluster is safeguarded for business and industrial uses, and shows very high heat demand – currently there is a pet food store on the site, and it would need to be further investigated whether the heat demand shown is correct. Therefore, at present this would not be considered a potential anchor load.</p> <p>There is an identified waste heat source to the north of the cluster, however this is the site of the Old Toll Garage landfill, which is now closed and non-operational. More work would be needed to discern whether this site still has potential to release heat.</p>





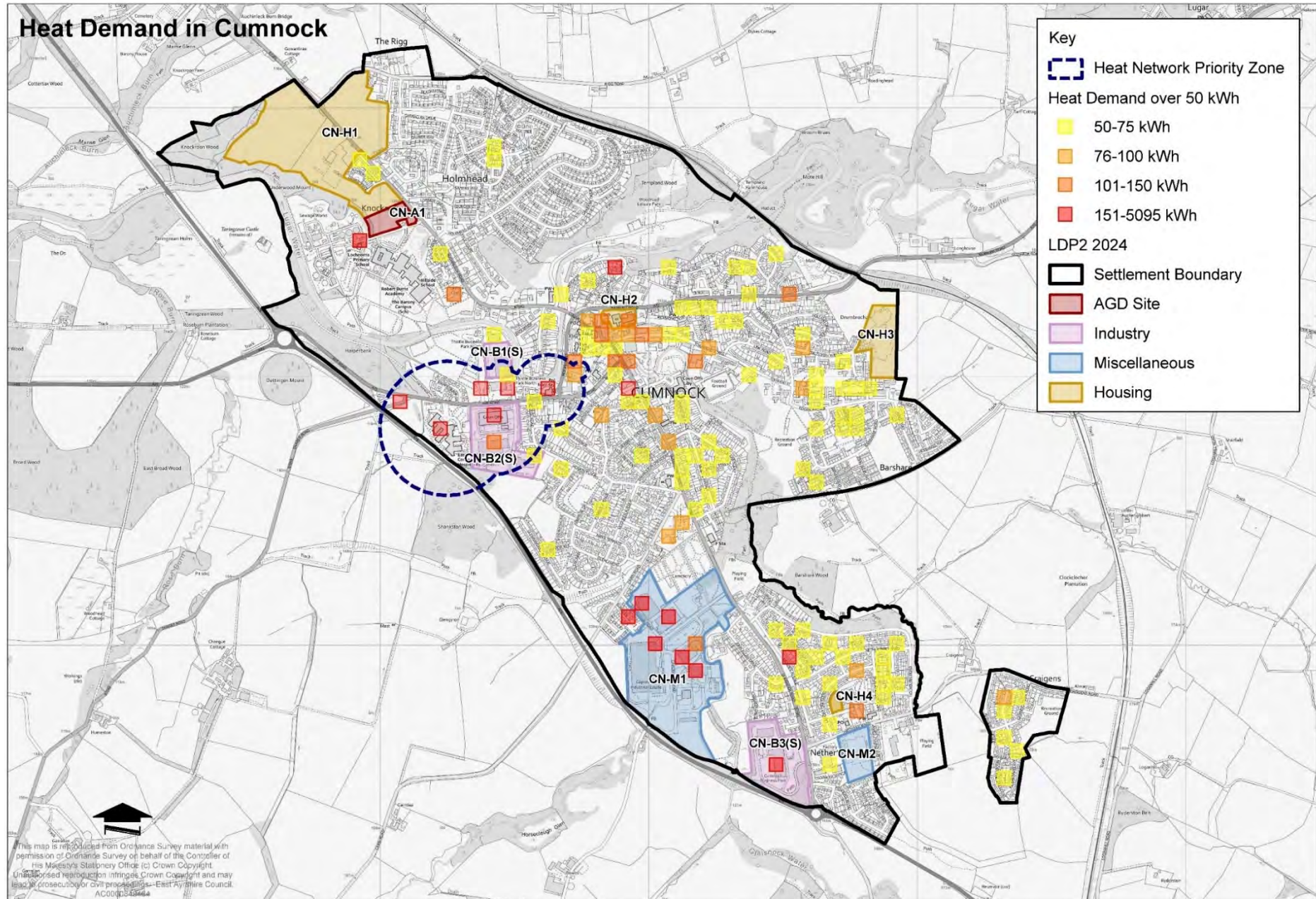




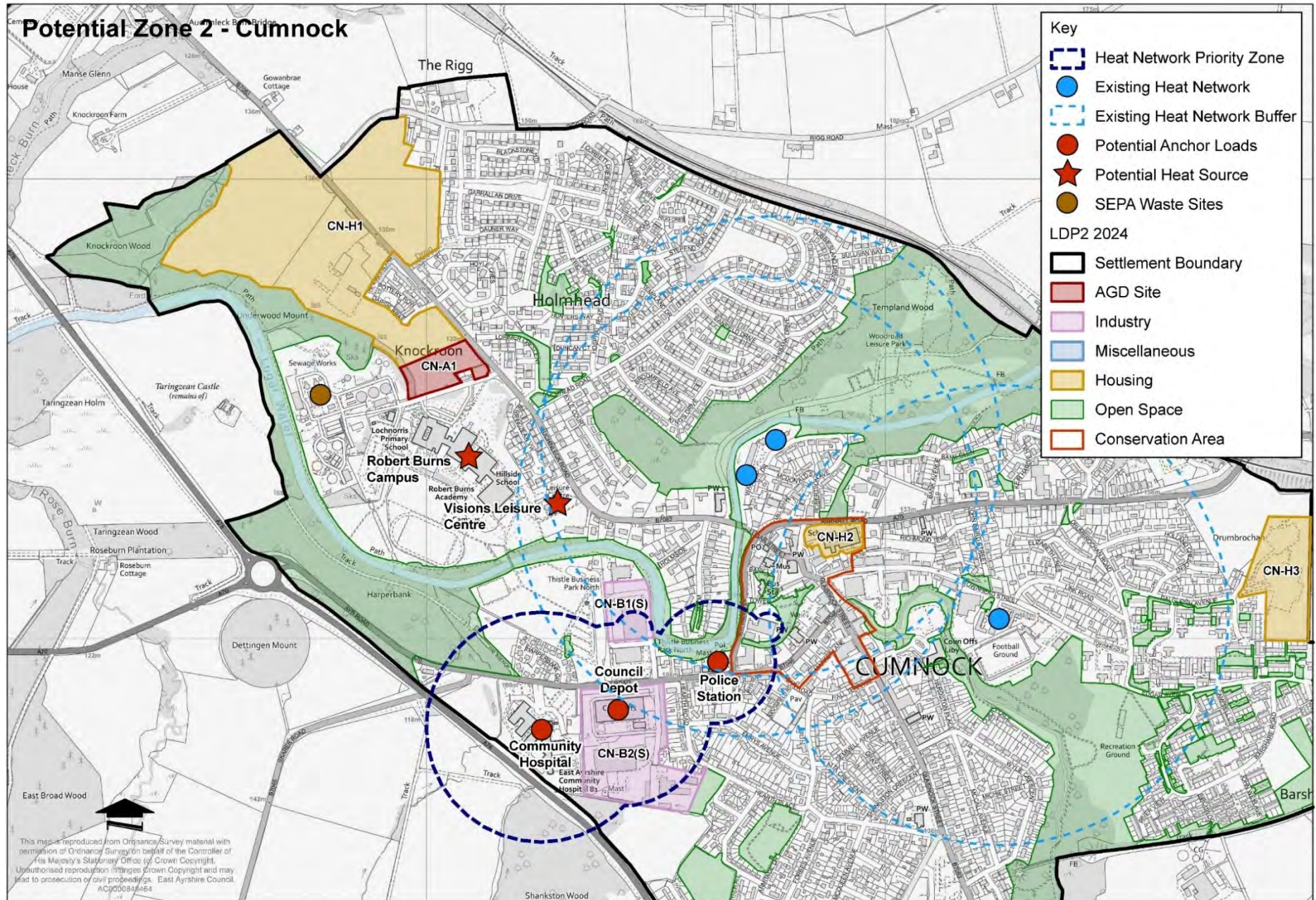
## 4.6 Potential Zone 2 – Cumnock

Criteria	Detail
<b>Potential Anchor Loads captured by analysis:</b>	<ol style="list-style-type: none"> <li>1. East Ayrshire Community Hospital, Ayr Road</li> <li>2. East Ayrshire Council Ayr Road Depot, Ayr Road</li> <li>3. Police Scotland, Ayr Road</li> </ol>
<b>Other Known Potential Anchor Loads:</b>	<ol style="list-style-type: none"> <li>4. Barony Campus Educational Development, Auchinleck Road</li> <li>5. CoRE Centre of Excellence (future development - site CN-A1)</li> <li>6. Cumnock Rugby Football Club / Visions Leisure Centre, Auchinleck Road</li> </ol>
<b>Nearby Heat Networks:</b>	Warrick Court, Glebe Court, Menzies Court. These are marked on the map with a buffer zone but are believed to be communal heating systems.
<b>Waste Heat Source:</b>	Yes – there is a sewage sludge processing system operated by Scottish Water located to the north of the potential heat network zone.
<b>Mine Water Heat Source:</b>	Yes – further investigation is needed, however data suggests there is potential to use mine water as a heat source in the Cumnock area.
<b>Greenspace:</b>	There are 2 small greenspaces intersecting the cluster which could be utilised for low carbon heat systems and distribution pipework.
<b>Comments on Feasibility:</b>	<p>There is clear potential for at least one heat network opportunity in Cumnock, particularly with the high heat demand of the Community Hospital. The other two potential anchor loads captured by analysis may need further investigation as the heat demand captured from the Ayr Road Depot in particular seems unlikely to be as high as stated. However, there are other potential anchor loads which could instead be explored, such as the Cumnock Rugby Football Club and Visions Leisure Centre development which is in close proximity.</p> <p>Moreover, the new Barony Campus educational development, which is not captured in the initial analysis of anchor loads, is situated directly to the north of the potential zone – the campus is currently heated by a <u>state-of-the-art biomass heating system</u>. However a new Centre of Excellence is planned for the site (safeguarded for this use in the East Ayrshire Local Development Plan 2 at site CN-A1), therefore there is excellent potential to explore how this new addition, and the Campus development as a whole, could contribute to, or benefit from, any heat network opportunity identified in Cumnock.</p> <p>In terms of other planned development sites, there are two sites within the potential heat network zone which are safeguarded for business and industrial development in the East Ayrshire Local Development Plan 2 (CN-B1(S) and CN-B2(S)). Any development on these sites would therefore be expected to demonstrate that consideration had been given to connecting the site to a heat network in the future.</p> <p>There are also three existing heat networks in Cumnock, which demonstrates that properties are generally suitable for this type of renewable heat installation, and also gives potential for further expansion.</p> <p>Heat demand data shows that there are a number of properties in the town centre which, although not suitable to anchor a heat network, could benefit from being linked in to a heat network should the opportunity arise. These properties include retail, hotels, bars and restaurants. Much of Cumnock's historic town centre is characterised by older stone buildings and covered by a conservation area designation – as such, some thought will need to be given as to how best to both protect and future-proof these historic assets.</p> <p>Overall Cumnock presents a good opportunity for the installation of a heat network, though further investigation is needed as to the exact location and potential anchor loads that would be incorporated.</p>





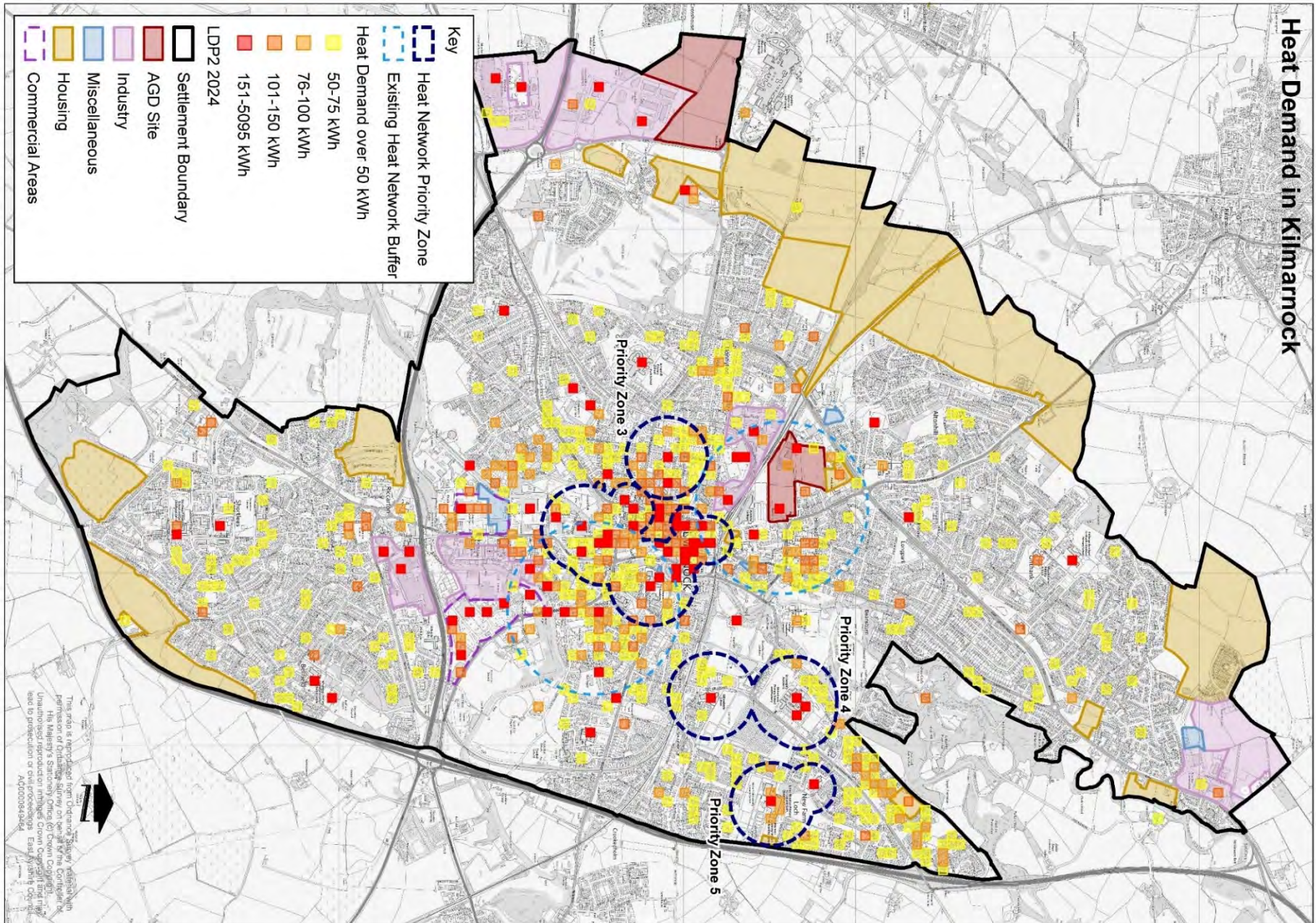




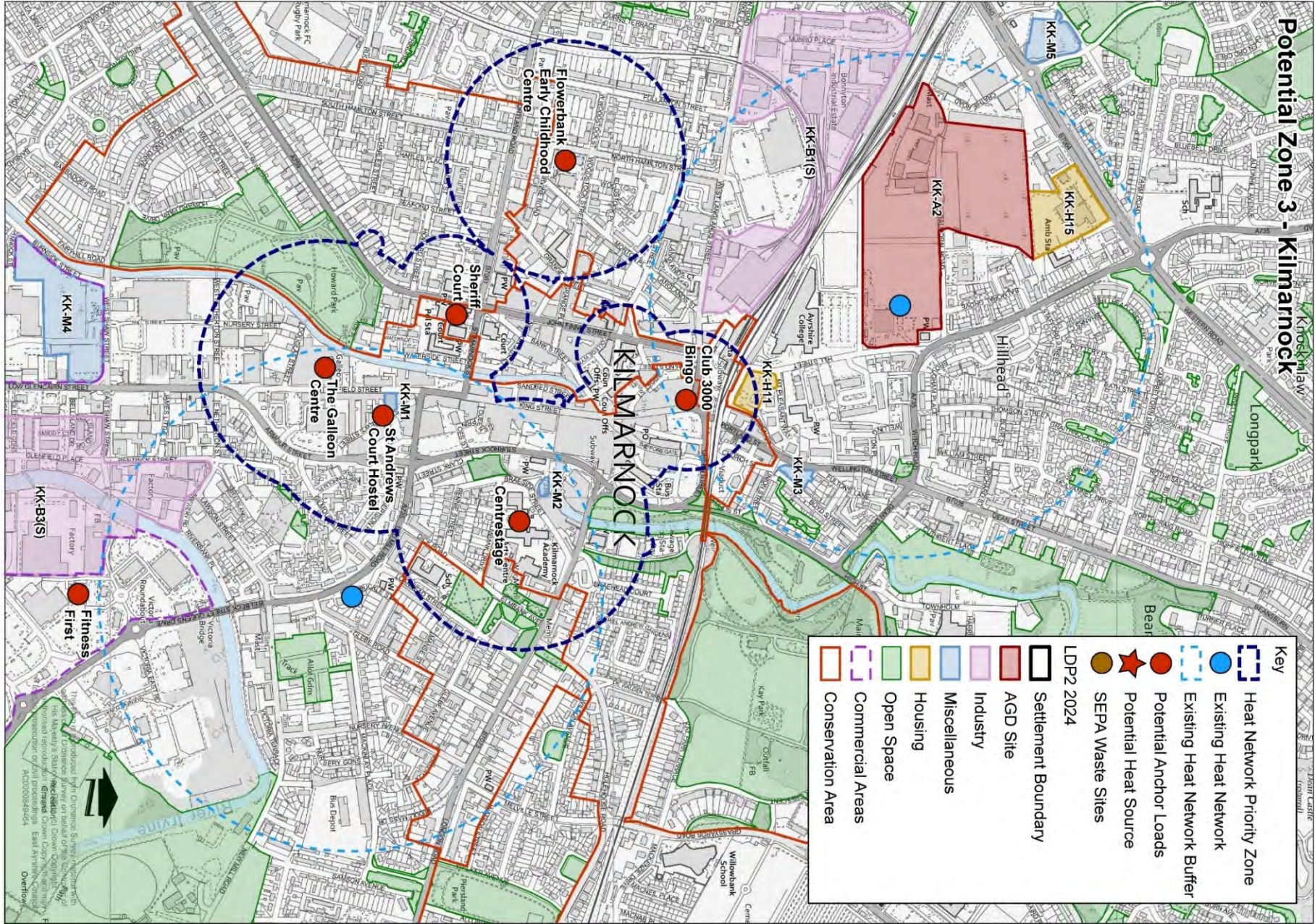
## 4.7 Potential Zone 3 – Kilmarnock

Criteria	Detail
<b>Potential Anchor Loads captured by analysis:</b>	<ol style="list-style-type: none"> <li>1. Kilmarnock Sherriff Court, St. Marnock Street</li> <li>2. St. Andrew's Court Hostel, St. Andrew's Street</li> <li>3. Portland Street, KA1 1GB</li> <li>4. Flowerbank Early Childhood Centre, North Hamilton Street</li> <li>5. Kilmarnock Academy, Elmbank Drive</li> <li>6. The Galleon Centre, Titchfield Street</li> </ol>
<b>Other Known Potential Anchor Loads:</b>	<ol style="list-style-type: none"> <li>7. Bonnyton Industrial Estate</li> <li>8. HALO Innovation Centre</li> <li>9. Grange Academy</li> </ol>
<b>Nearby Heat Networks:</b>	Hill Street, Kilmarnock Mill Court
<b>Waste Heat Source:</b>	No
<b>Mine Water Heat Source:</b>	No
<b>Greenspace:</b>	There are 66 small patches of greenspace intersecting the cluster which could be utilised for low carbon heat systems and distribution pipework.
<b>Comments on Feasibility:</b>	<p>This is a large cluster in the centre of Kilmarnock, East Ayrshire's largest settlement. The size and make-up of Kilmarnock centre, which includes a mix of residential, educational, retail and leisure facilities, makes it a good candidate for a heat network zone as there are a number of properties with large floor spaces and associated high heat demand.</p> <p>This potential zone is also within the buffer zone of two existing heat networks, therefore there is good potential to link up with these and expand them further.</p> <p>The Grange Academy High School on Beech Avenue is identified as a potential anchor load due to its high heat demand. It is deemed slightly too far removed geographically from this potential zone to be included within it – there is the possibility to explore a standalone heat network opportunity at the Grange Campus, or further investigate the feasibility of linking it up to this potential zone.</p> <p>Additionally, site KK-B1(S) is safeguarded for business and industrial use in the East Ayrshire Local Development Plan 2. This is the current Bonnyton Industrial Estate which is already the site of various businesses with large floorspace and high heat demand, such as the Morrisons Superstore.</p> <p>Across the railway line from the industrial estate is the HALO Enterprise and Innovation Centre (situated on the site allocated as KK-A2 in the LDP2). Due to the relatively recent nature of the development (completed in 2021), it is likely that its heat demand was not fully captured in the data analysis and therefore it could potentially be an asset to any proposed heat network opportunity. It already utilises a renewable heating system in the form of solar panels.</p> <p>The Kilmarnock Water runs through the centre of the town and offers a potential source of heat for water source heat pumps which could be connected into a heat network.</p> <p>This proposed heat network zone overlaps with the Kilmarnock Conservation Area – consideration will therefore need to be given to protecting the important historic assets within it whilst balancing the future need for renewable heat technologies.</p>











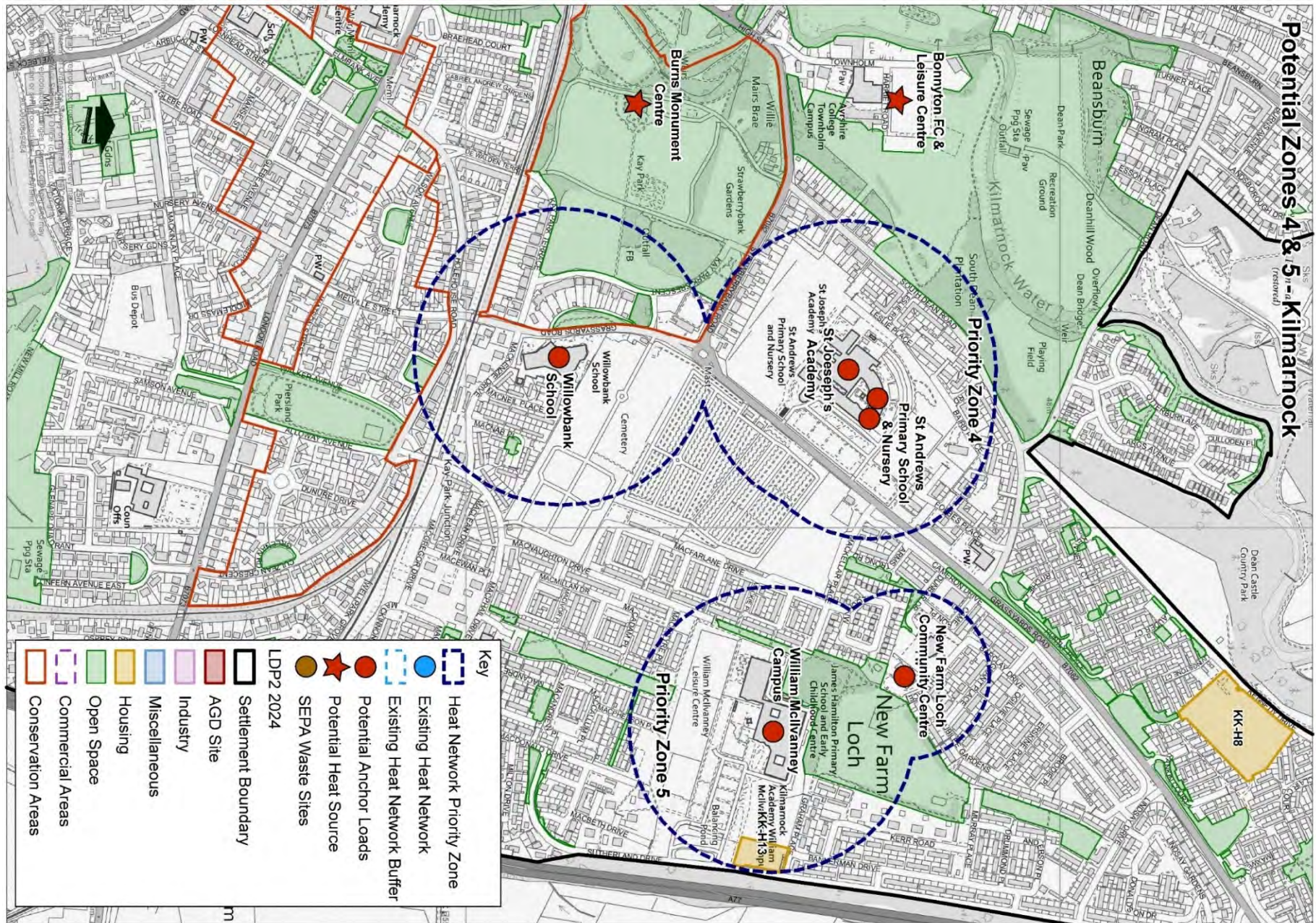
## 4.8 Potential Zone 4 – Kilmarnock

Criteria	Detail
<b>Potential Anchor Loads captured by analysis:</b>	<ol style="list-style-type: none"> <li>1. Willowbank School, Grassyards Road</li> <li>2. St. Joseph's Academy, Grassyards Road</li> <li>3. St. Andrew's Primary School and Early Childhood Centre, Grassyards Road</li> </ol>
<b>Other Known Potential Anchor Loads:</b>	<ol style="list-style-type: none"> <li>4. Bonnyton Thistle F.C. and neighbouring Leisure Centre, Townholm</li> </ol>
<b>Nearby Heat Networks:</b>	None existing – but neighbours Potential Zone 5 (see below).
<b>Waste Heat Source:</b>	No
<b>Mine Water Heat Source:</b>	Yes – further investigation is needed, however data suggests there is potential to use mine water as a heat source to the east of Kilmarnock.
<b>Greenspace:</b>	There are 29 greenspaces within the cluster which could be utilised for low carbon heat systems and distribution pipework.
<b>Comments on Feasibility:</b>	<p>This potential zone is anchored by two large educational establishments, Willowbank School and the St. Joseph's Academy Campus, which is also home to St. Andrew's Primary School and Early Childhood Centre. These two establishments are separated by Kilmarnock's largest cemetery (to the east) and Kay Park (to the west); given these constraint, thought would need to be given to whether it would be feasible to e.g. run the necessary pipework between these two sites.</p> <p>Bonnyton Thistle F.C.'s Synergy Arena is also in relatively close proximity to this potential zone, and has a neighbouring leisure centre. The heat demand captured by analysis from these facilities is not significantly high, however it would be beneficial to confirm whether this is correct as leisure facilities are often good candidates for connections to a heat network due to their floorspace and associated heat demand.</p> <p>The Burns Monument Centre within Kay Park exhibits relatively high heat demand and therefore may benefit from connection to any nearby heat network proposals – however the heat demand is not large enough for it to be suitable as an anchor load on its own.</p> <p>Housing development around both school sites would possibly be able to benefit from a heat network put in place in this area – around 50-60% of properties in this area of Kilmarnock are assessed to be Category 1 properties (suitable for heat pump installation).</p> <p>This potential zone is close to potential zone 5, which also proposes a large educational site as an anchor load at the William McIlvanney Campus – whilst the heat demand from these educational developments may be sufficient for the establishment of a heat network, some further consideration should be given to the relationship between potential zones 4 and 5 and the most efficient configuration of any potential heat network(s).</p>

## 4.9 Potential Zone 5 – Kilmarnock

Criteria	Detail
<b>Potential Anchor Loads captured by Analysis:</b>	<ol style="list-style-type: none"> <li>1. William McIlvanney Campus, Sutherland Drive</li> <li>2. Take a Bow Opportunity Centre (formerly New Farm Loch Community Centre), Fraser Walk</li> </ol>
<b>Other Known Potential Anchor Loads:</b>	None known
<b>Nearby Heat Networks:</b>	None existing – but neighbours Potential Zone 4 (see above).
<b>Waste Heat Source:</b>	No
<b>Mine Water Heat Source:</b>	Yes – further investigation is needed, however data suggests there is potential to use mine water as a heat source to the east of Kilmarnock.
<b>Greenspace:</b>	There are 18 greenspaces which intersect the cluster which could be utilised for low carbon heat systems and distribution pipework.
<b>Comments on Feasibility:</b>	<p>Unlike for other potential heat network zones identified in this chapter, there is no clear opportunity to connect potential zone 5 to other anchor facilities other than those identified above. Nevertheless, the William McIlvanney Campus is a significant facility in its own right, incorporating Kilmarnock Academy high school, New Farm Primary School, and the William McIlvanney Leisure Centre. All of these buildings have large floorspaces and high associated heat demand due to their uses.</p> <p>The Take a Bow Opportunity Centre is a much smaller facility and the heat demand shown in analysis would need to be confirmed in order to ensure that this building would be suitable as an anchor load. This is a community facility which houses an events space and associated catering facilities (café/bar).</p> <p>The two potential anchor institutions identified are separated by an area of open space which is safeguarded in the East Ayrshire Local Development Plan 2. This would need to be taken into consideration in the plans for e.g. any associated pipework – however, should the pipes run underground and the greenspace be sufficiently protected, this open area may prove to be easier to work with than e.g. a more built-up urban environment.</p> <p>The siting of this potential zone means that it is very close to the Kilmarnock settlement boundary, and there are no Future Housing Growth Sites identified in the LDP2 that would see Kilmarnock expand beyond its eastern boundary. Therefore any heat network installed in this area is likely to serve only buildings that exist within the settlement boundary, with the small exception of housing site KK-H13.</p> <p>Site KK-H13 is allocated for housing in the LDP2. This is a small site at 0.3ha with an indicative capacity of 10 units. The developer of this site would be expected to demonstrate that they have had regard for the potential connection of any new homes to a future heat network in the area.</p> <p>This potential zone is close to potential zone 4, which also proposes two educational sites as anchor loads – whilst the heat demand from these educational developments may be sufficient for the establishment of a heat network, some further consideration should be given to the relationship between potential zones 4 and 5 and the most efficient configuration of any potential heat network(s).</p>



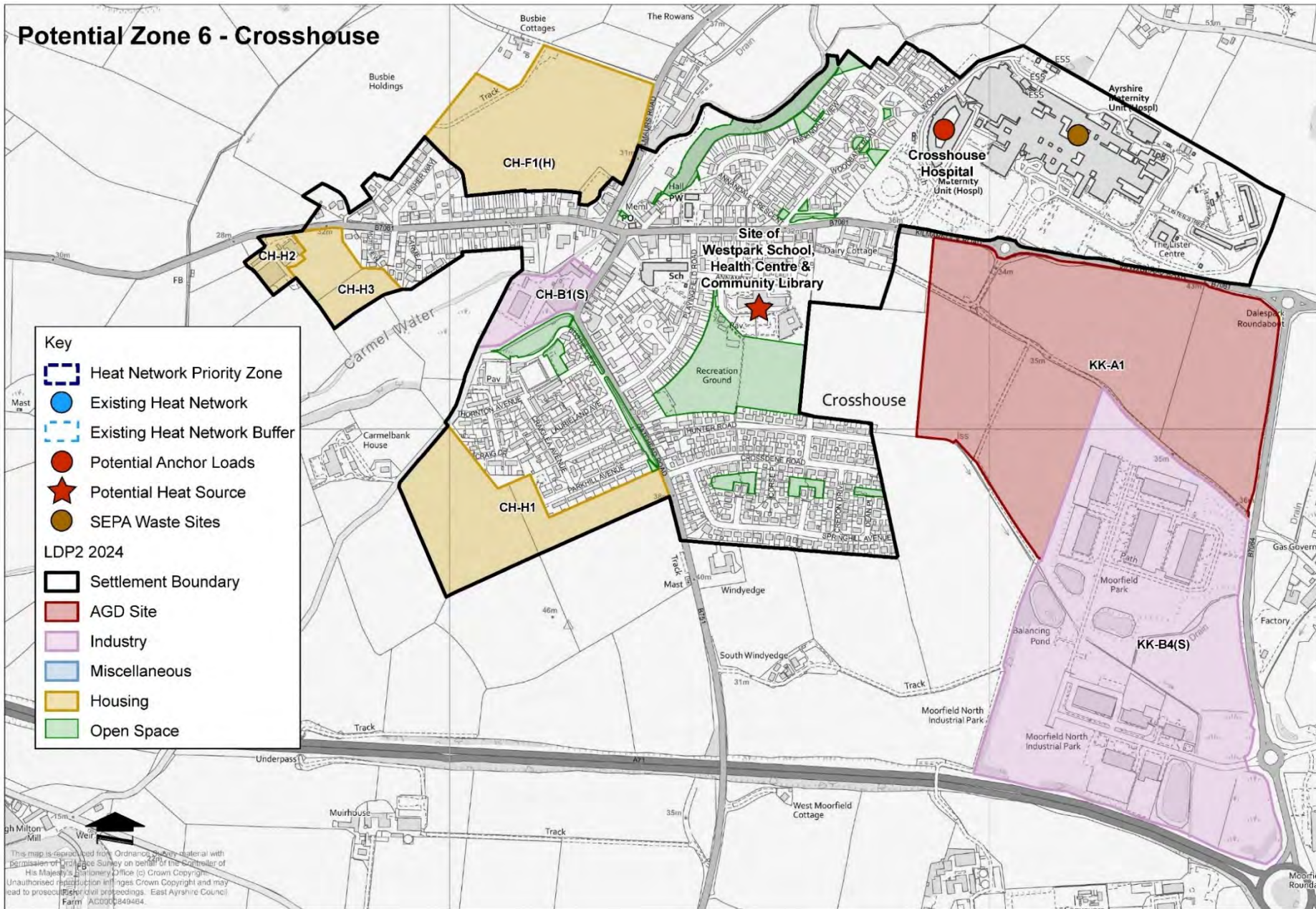




## 4.10 Potential Zone 6 – Crosshouse

This opportunity was not captured by external analysis of heat demand; however local knowledge of future development opportunities suggests that this area could have good potential as a future heat network zone.

Criteria	Detail
<b>Potential Anchor Loads captured by analysis:</b>	1. University Hospital Crosshouse, Kilmarnock Road
<b>Other Known Potential Anchor Loads:</b>	2. Crosshouse Area Health Centre and Community Library, Annandale Gardens 3. West Park School, Annandale Gardens 4. Ayrshire Engineering Park (future development – site KK-A1)
<b>Nearby Heat Networks:</b>	None
<b>Waste Heat Source:</b>	Yes – the University Hospital site includes a SEPA-licensed commercial waste facility.
<b>Mine Water Heat Source:</b>	Yes – further investigation is needed, however data suggests there is potential to use mine water as a heat source to the east of Crosshouse.
<b>Greenspace:</b>	There are approximately 35 greenspaces in and around the potential zone which could be utilised for low carbon heat systems and distribution pipework.
<b>Comments on Feasibility:</b>	<p>This opportunity was not captured by analysis of heat demand due to the standalone nature of University Hospital Crosshouse at present. However, the 23.9 ha site KK-A1, adjacent to the Hospital, is safeguarded in the LDP2 for development of the Ayrshire Engineering Park, to be delivered by the Ayrshire Growth Deal (AGD). This will therefore increase the current opportunity for the installation of a heat network in this area by locating another potential anchor load in close proximity to the hospital.</p> <p>The development of site KK-A1 would also then form a link between the Hospital and the existing business &amp; industrial facilities located on site KK-B4(S), which may then in turn have potential to join up to any heat network in the area.</p> <p>As well as this, there is some lesser potential to then link these two sites up to the existing West Park School and Crosshouse Health Centre / Community Library at Annandale Gardens.</p> <p>Installing a heat network in Crosshouse could also be of benefit to the settlement's residential properties – Crosshouse has good overall solar suitability and around 50% of properties are assessed as being Category 1 and thus suitable for heat pump installation.</p>







**East Ayrshire Council**  
Comhairle Siorrachd Àir an Ear

Development Planning and Regeneration  
Opera House, 8 John Finnie Street, Kilmarnock, KA1 1DD  
Email: [localdevelopmentplans@east-ayrshire.gov.uk](mailto:localdevelopmentplans@east-ayrshire.gov.uk)

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