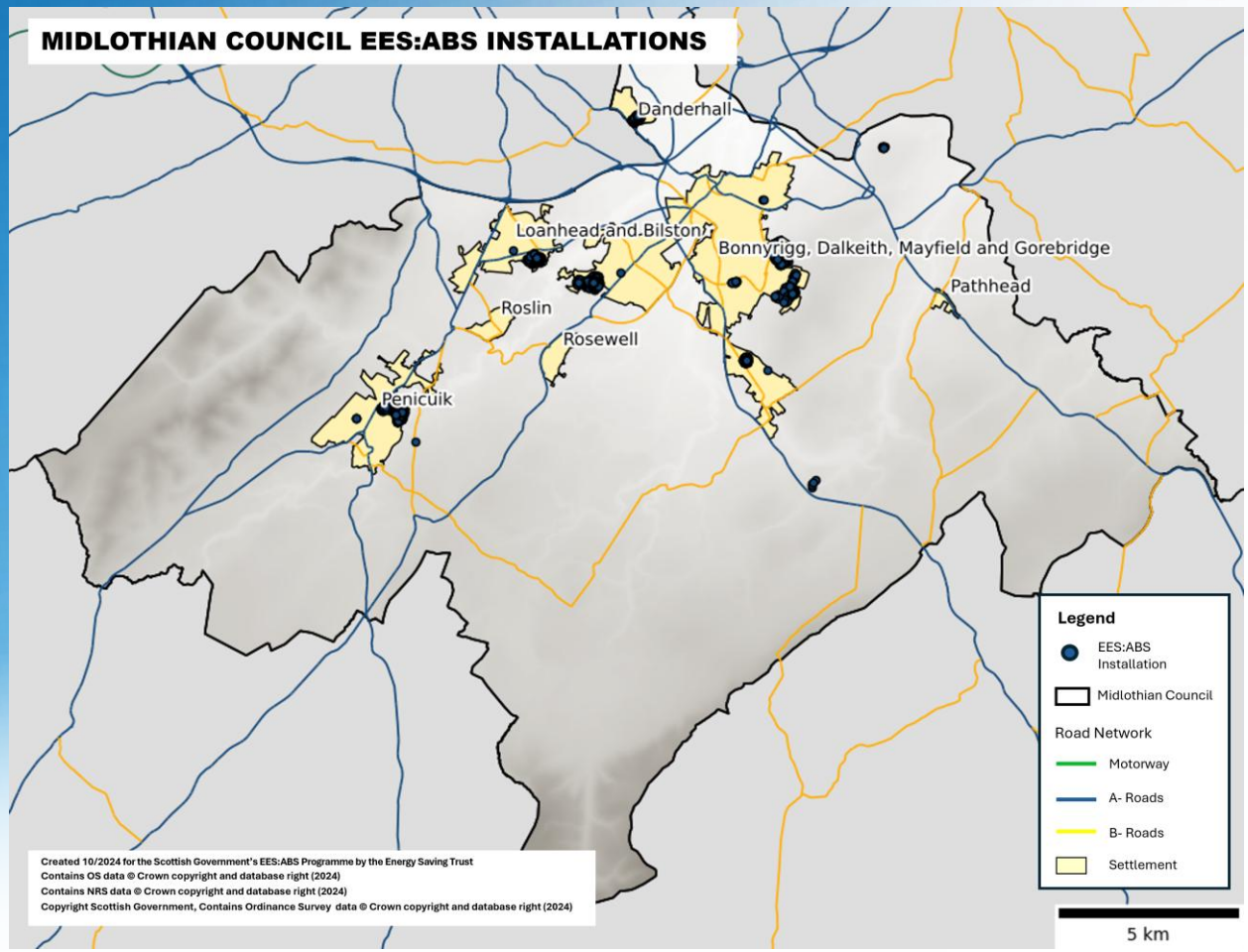
Midlothian Council
EES: ABS Case Study

Energy Saving Trust
September 2024



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Overview

The Scottish Government's EES: ABS* team requested for case studies to compare the available EES: ABS install data, alongside other energy efficiency related characteristics, with three goals in mind:

- To provide a more detailed breakdown of the installed measures data to date.
- To allow greater comparison between the different local authorities as well as across the duration of the EES: ABS programme.
- To provide a series of illustrations that the Scottish Government or local authorities can use to promote the work achieved under the EES: ABS programme.

This presentation contains the case study and illustration set for Midlothian Council EES: ABS activity reported to date (Sept 2024).**

*Note: *Energy Efficient Scotland: Area Based Schemes*
***Some data gaps may exist – to be submitted by the local authority.*

Midlothian Council EES: ABS dataset

energy saving trust

Financial Year	Number of records*	% of records
2013/14	804	36.74
2014/15	268	12.25
2015/16	384	17.55
2016/17	91	4.16
2017/18	65	2.97
2018/19	132	6.03
2019/20	34	1.55
2020/21	52	2.37
2021/22	214	9.78
2022/23	38	1.74
2023/24[1]	*106*	4.84
Total Installs	***2,188***	**100.00**

Reference numbers	Number of records*	% of records
With pre installation EPC	1,068	76%
With post installation EPC	496	35%
With pre and post installation EPC	487	35%
With GDAR	0	0%
With measure reference number	0	0%

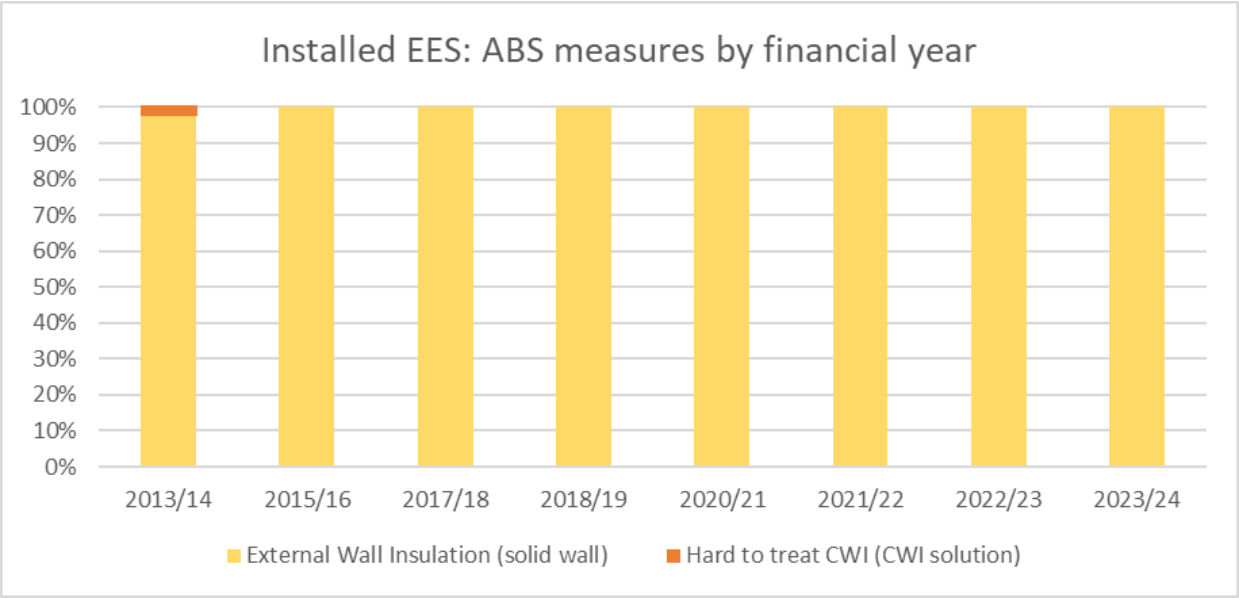
The Midlothian Council has contributed 1.72% of the total EES: ABS installs across Scotland reported to date (Sept 2024).

*Published at https://www.gov.scot/publications/area-based-schemes-annual-final-measures-reports/.
[1]Preliminary figure reported to EST by Midlothian Council.

Installed Measures

External wall insulation for solid walls has been the main measure offered throughout the programme with a total of 99.86% of all installs.

Two Hard to treat CWI (CWI solution) installations were completed in 2013-14.



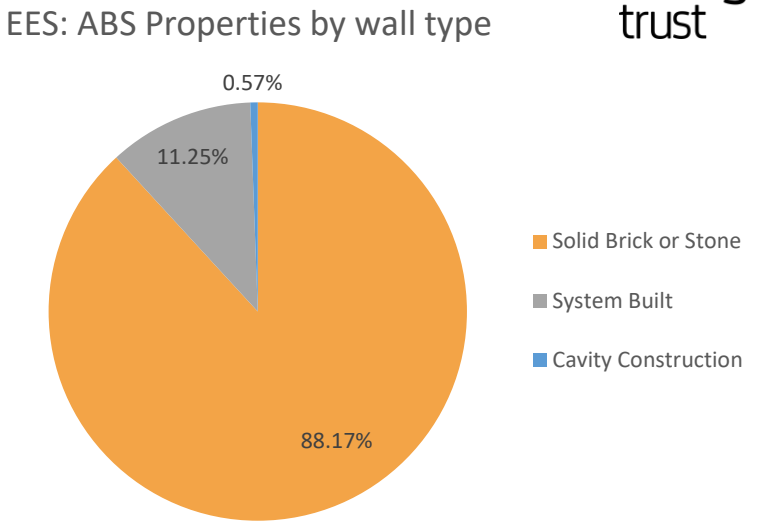
Measure Name*	Financial year								
	2013/14	2015/16	2017/18	2018/19	2020/21	2021/22	2022/23	2023/24	Grand Total
External Wall Insulation (solid wall)	338	295	65	133	52	370	38	106	1,397
Hard to treat CWI (CWI solution)	2								2
Total Installs	**340**	**295**	**65**	**133**	**52**	**370**	**38**	**106**	**1,399**

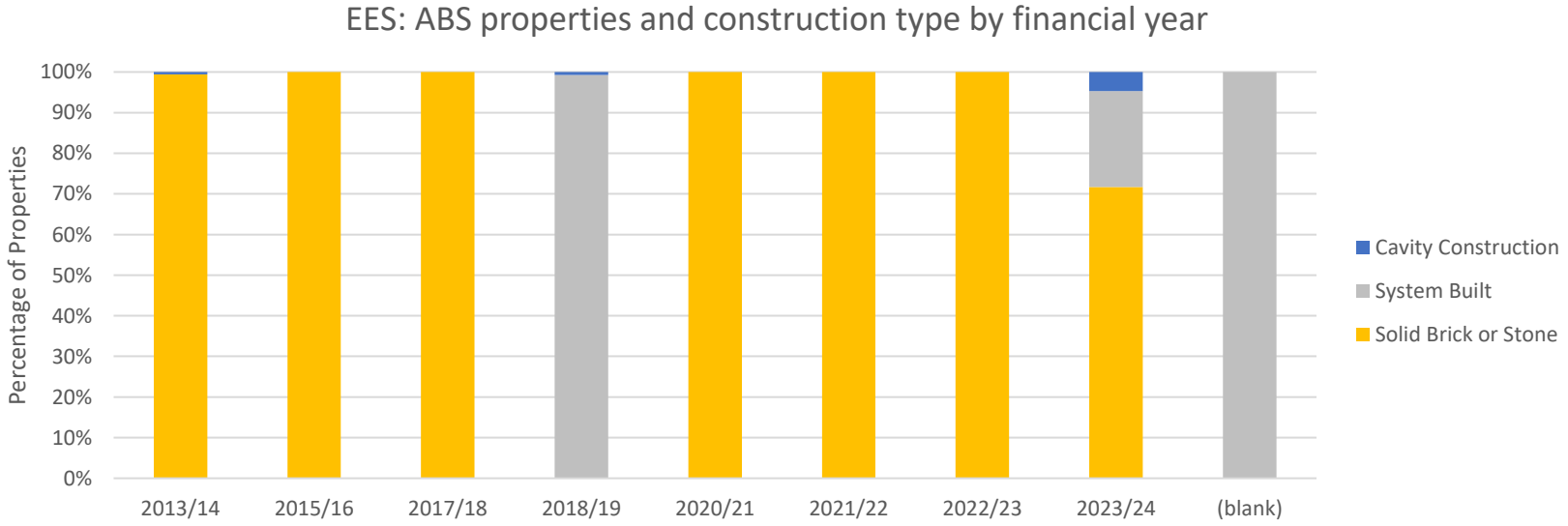
**As reported to Energy Saving Trust. Some data gaps may exist – to be submitted by the local authority*

Wall Type

The chart on the right shows the distribution of different wall types within the programme. Below you can see the division of these wall types throughout the years.

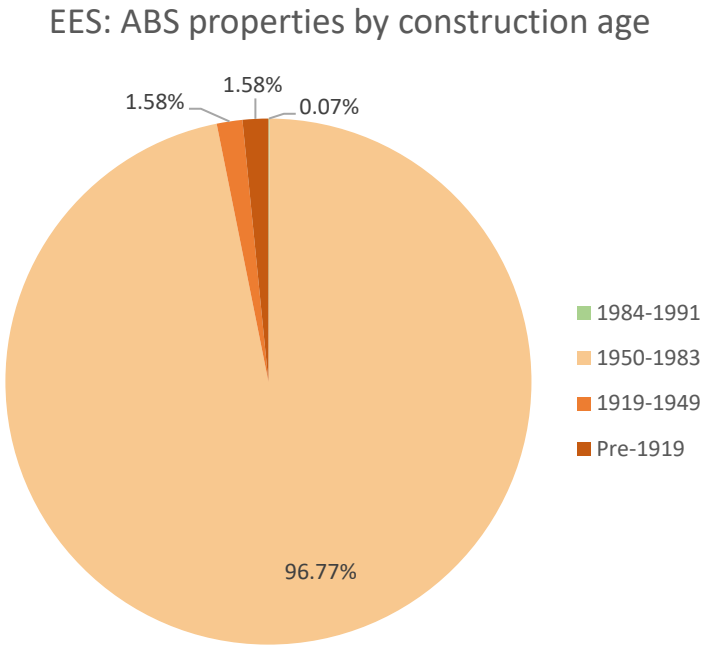
The wall types of the participating properties are 88.17% solid brick or stone, 11.25% system built and 0.57% cavity construction.

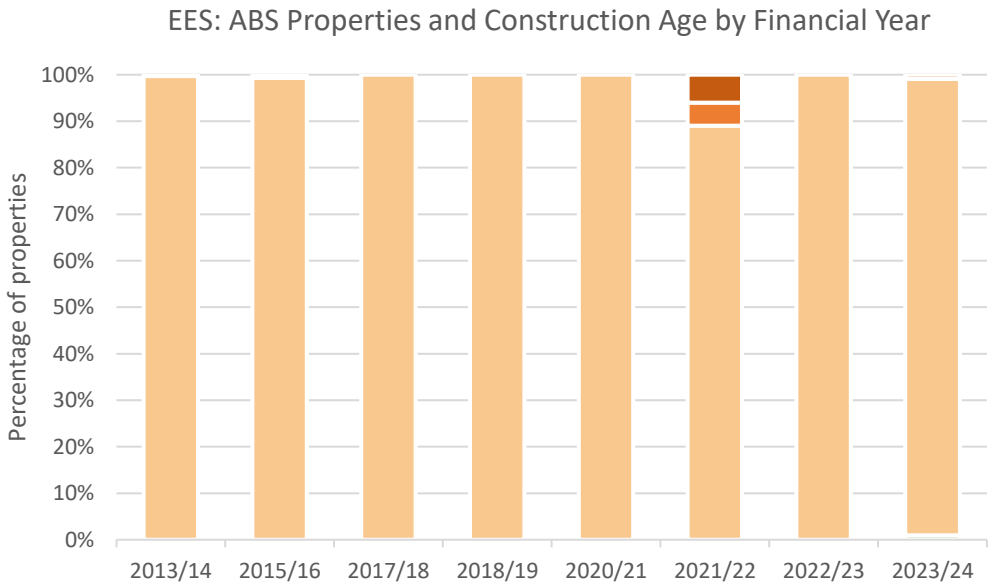




Note: Wall type is taken from EST's Home Analytics dataset which is a combination of EPC and modelled data.

Construction Age





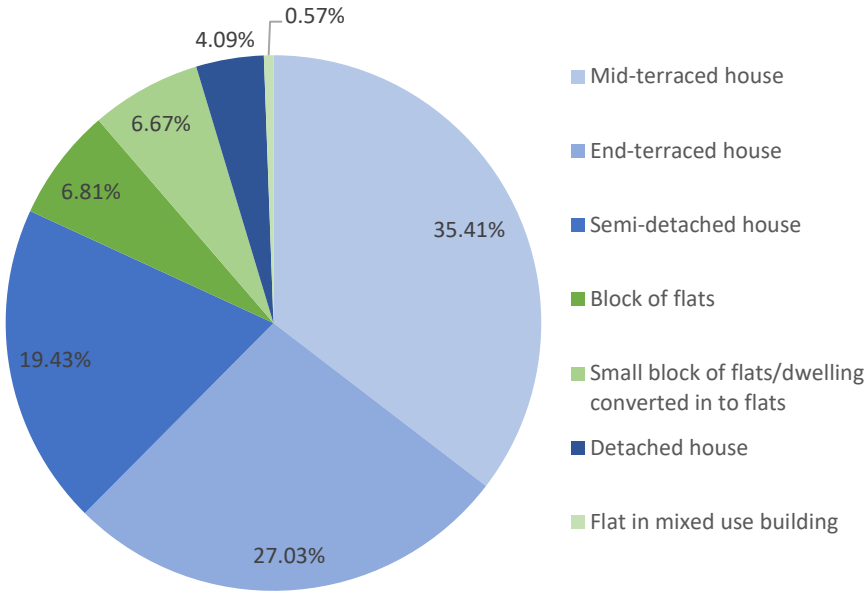
Nearly all participating properties were constructed between 1950 and 1983 (96.77%), with small numbers of earlier properties (1.58% Pre-1919 and 1919-1949 respectively).

The construction type of properties built between 1950 and 1983 are solid brick or stone (87.93%), system built (11.63%) and cavity construction (0.44%). The older properties (1919-1949) are solid brick or stone).

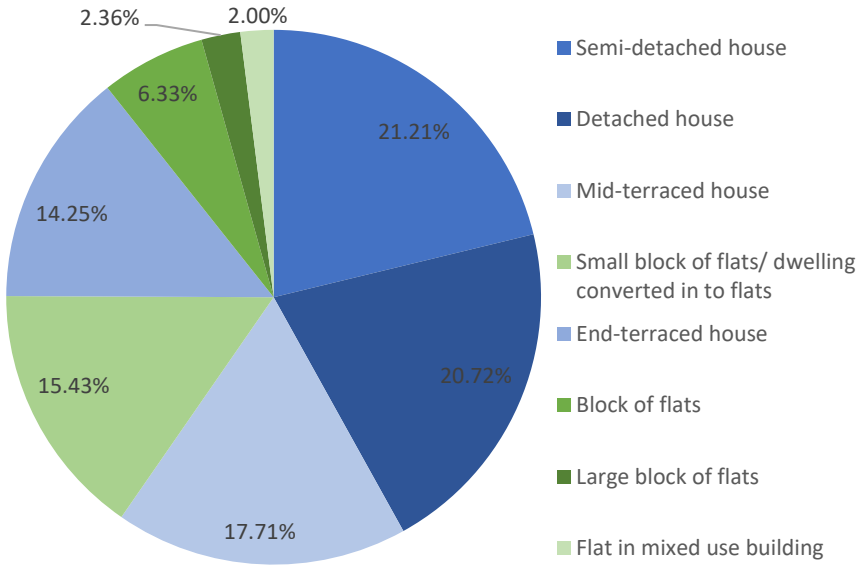
Note: Construction age is taken from EST's Home Analytics dataset which is a combination of EPC and modelled data.

Dwelling Type

EES: ABS properties by dwelling type



Midlothian properties by dwelling type

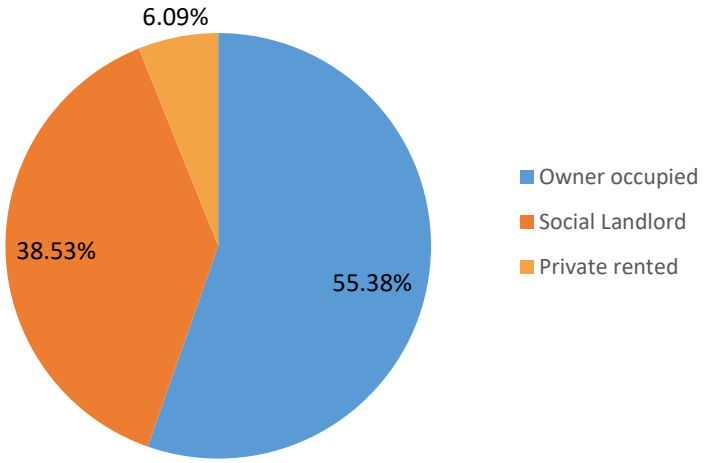


Throughout the programme the most consistent focus has been treating houses (85.9%). This is roughly in line with the general dwelling types within Midlothian Council, as over 73% of all types consists of houses. A total of 14.1% of the work treated flats, which is an under representation when compared to the council area (25.8%).

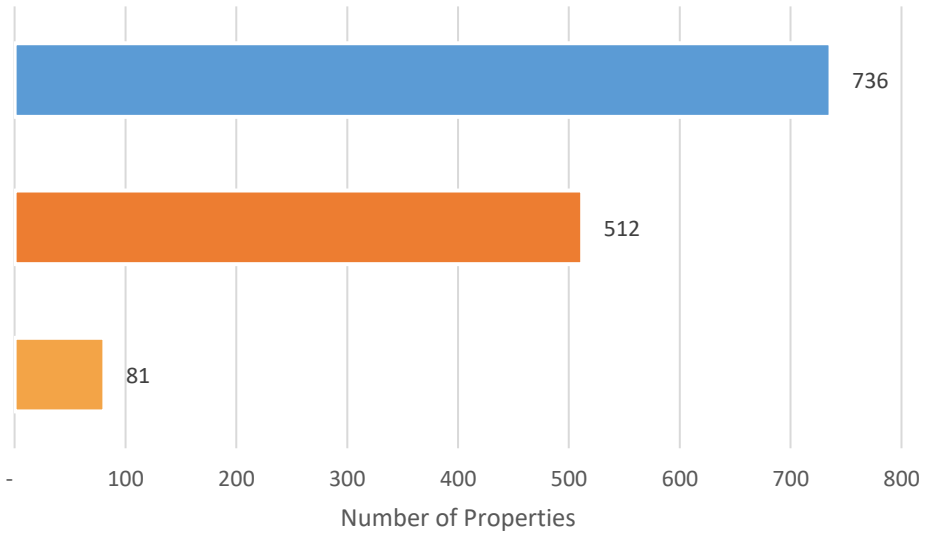
Note: Dwelling type is taken from EST's Home Analytics dataset which is a combination of EPC and modelled data.

Property Tenure

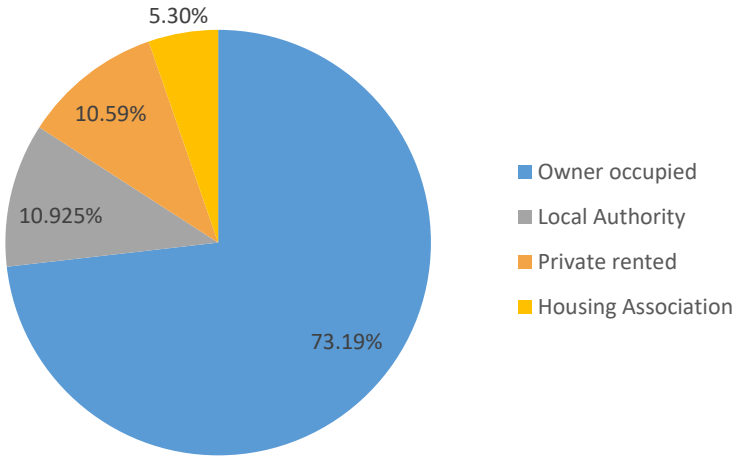
EES: ABS properties by tenure



EES: ABS properties by tenure



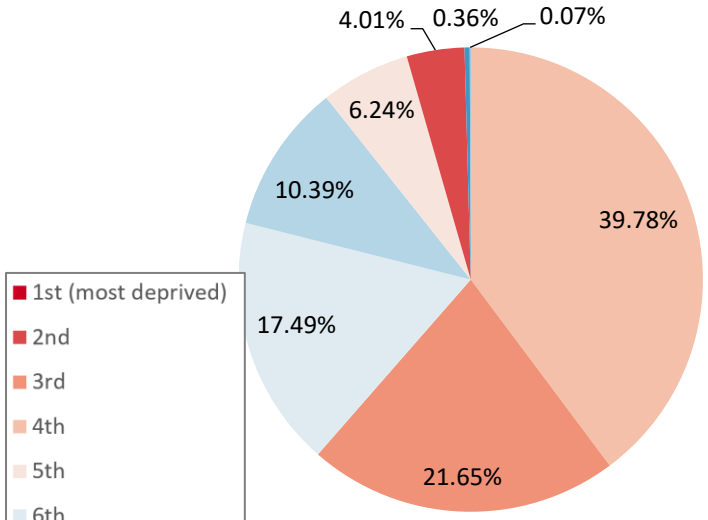
Midlothian properties by tenure



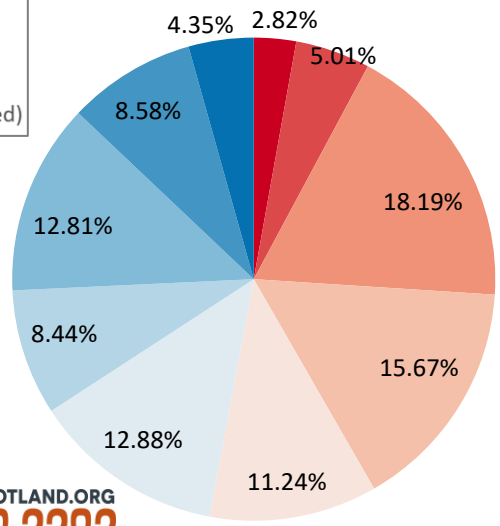
A significantly higher proportion of social tenure properties have been included than the local authority percentage (38.5% vs c.17%), and the owner-occupied sector is underrepresented at 55.38% compared to just over 73% for Midlothian as a whole.

Scottish Index of Multiple Deprivation (SIMD) I

EES: ABS properties by overall SIMD decile ranking



Midlothian properties by overall SIMD decile ranking

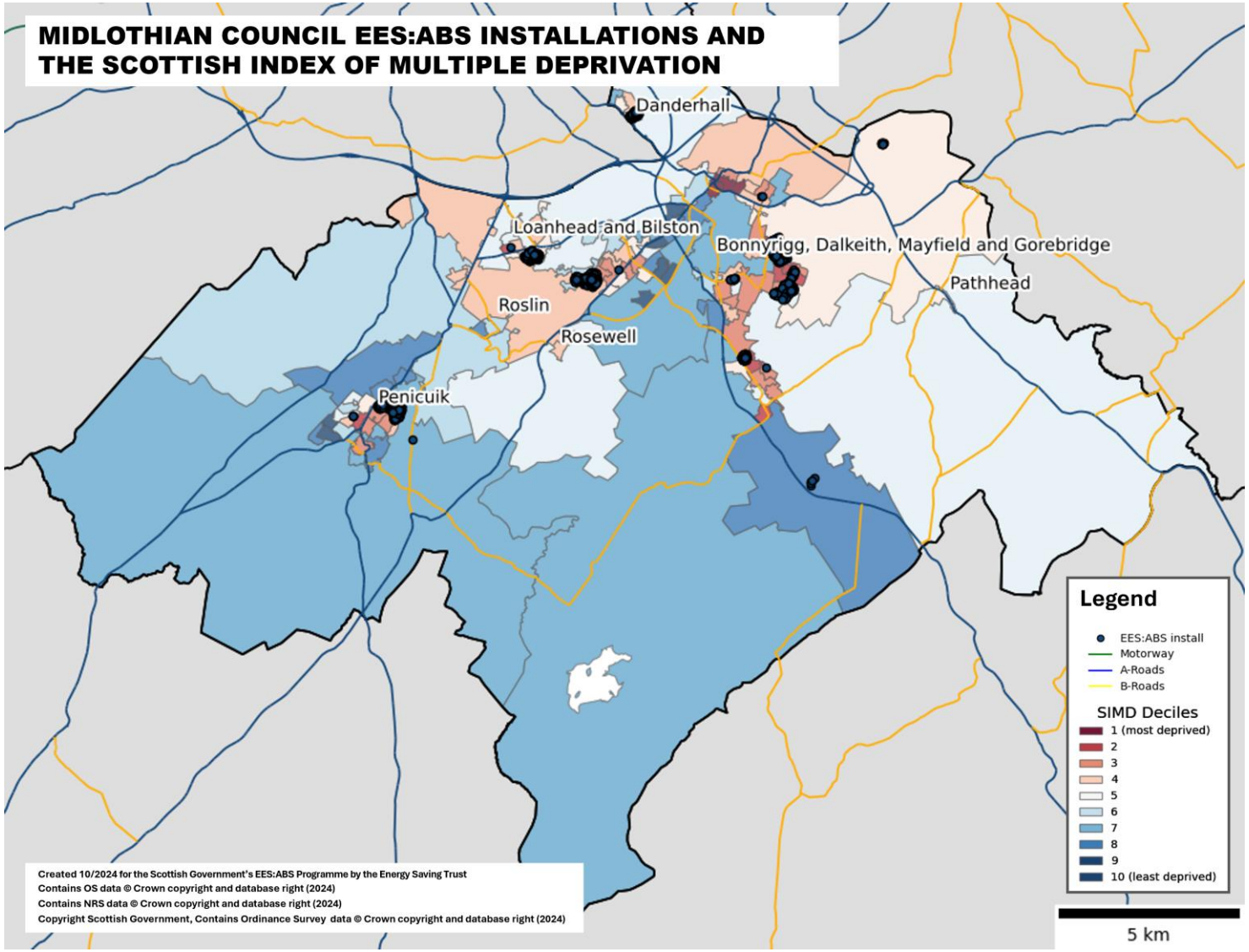


Comparison of these two illustrations shows the correlation between the overall SIMD ranking of Midlothian Council properties and of those targeted in the EES: ABS programme. A total of 89.18% of all participating properties are in the most deprived areas of the council and can be found within the six lowest SIMD ranks, as seen in the top chart.

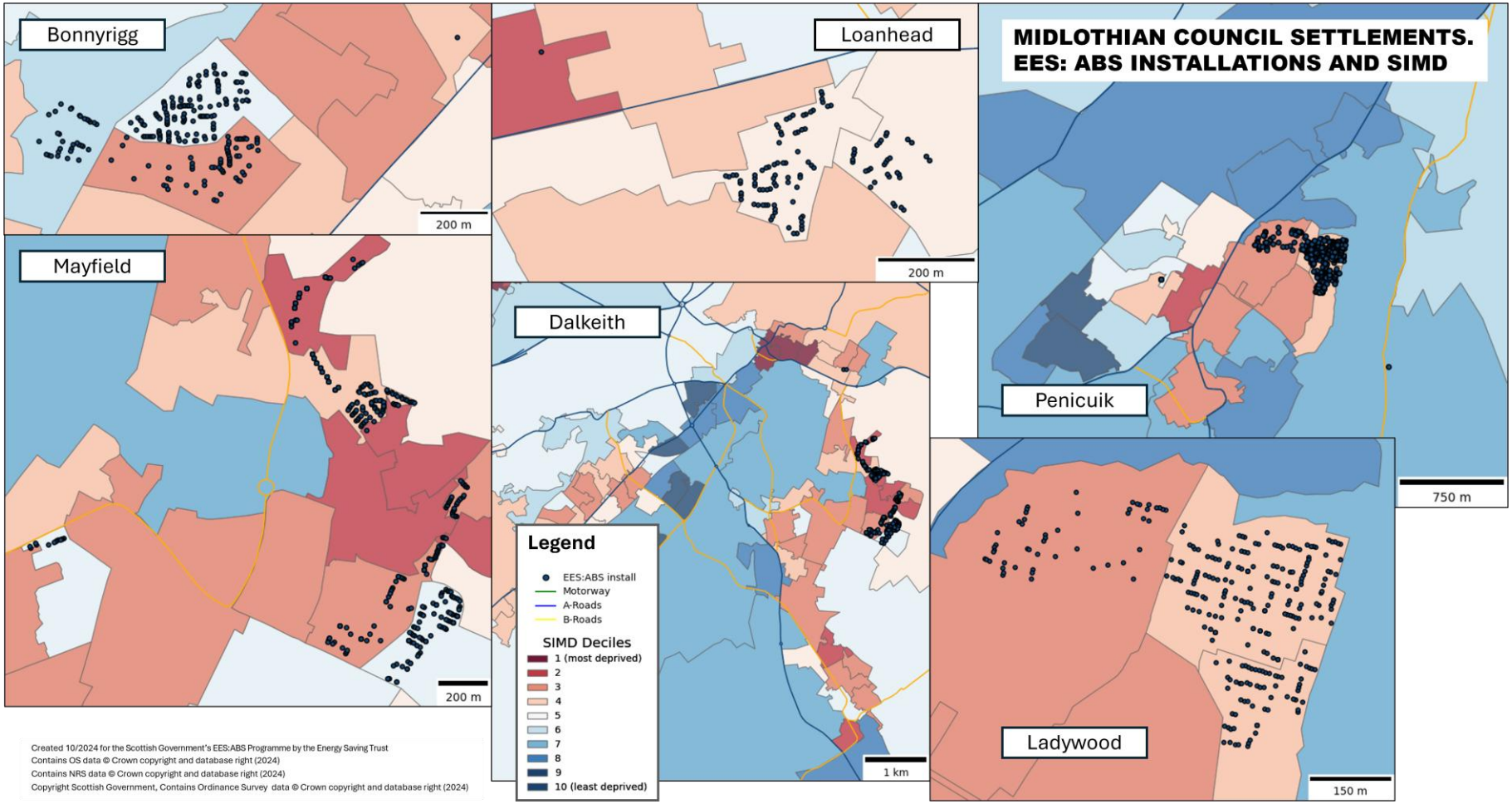
However, the SIMD can be a slightly problematic indicator for rural settings, since each data zone contains between 500 and 1000 properties. Rural populations are very dispersed, so this means that very large catchments are created in order to reach the required range. Larger areas are more likely to group deprived and non-deprived households together, and this results in rural SIMD rankings shifting towards the median. Whilst the programme is most likely helping deprived areas, the SIMD ranking can be a slightly inaccurate method to fully test this hypothesis.

Note: For more information see next slides for the EES: ABS Installs by SIMD maps.

Scottish Index of Multiple Deprivation (SIMD) II

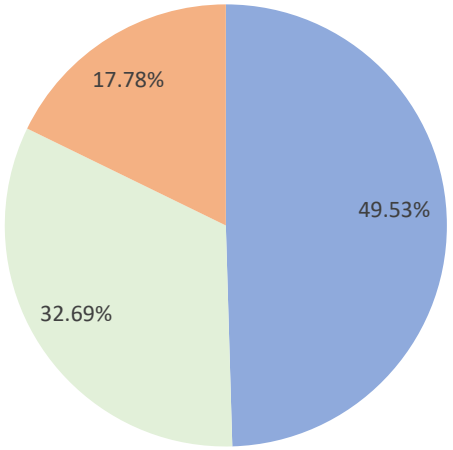


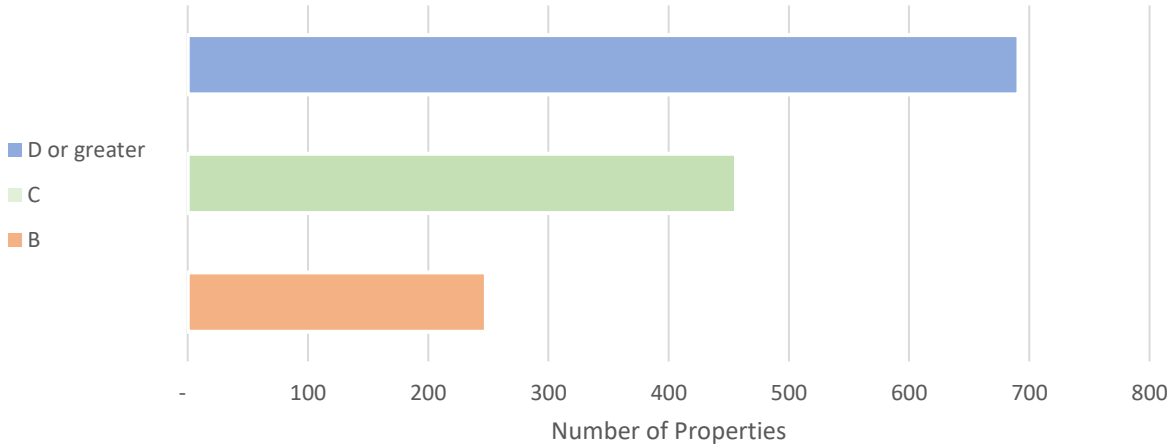
Scottish Index of Multiple Deprivation (SIMD) III



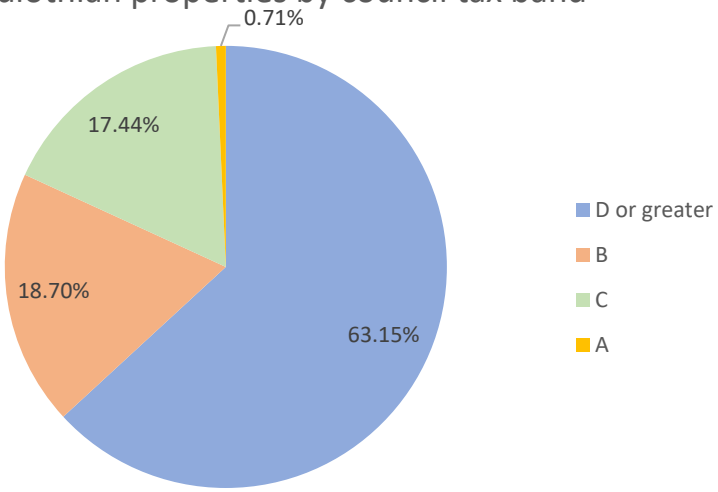
EES: ABS Installs by Council Tax Band

EES: ABS properties by council tax band





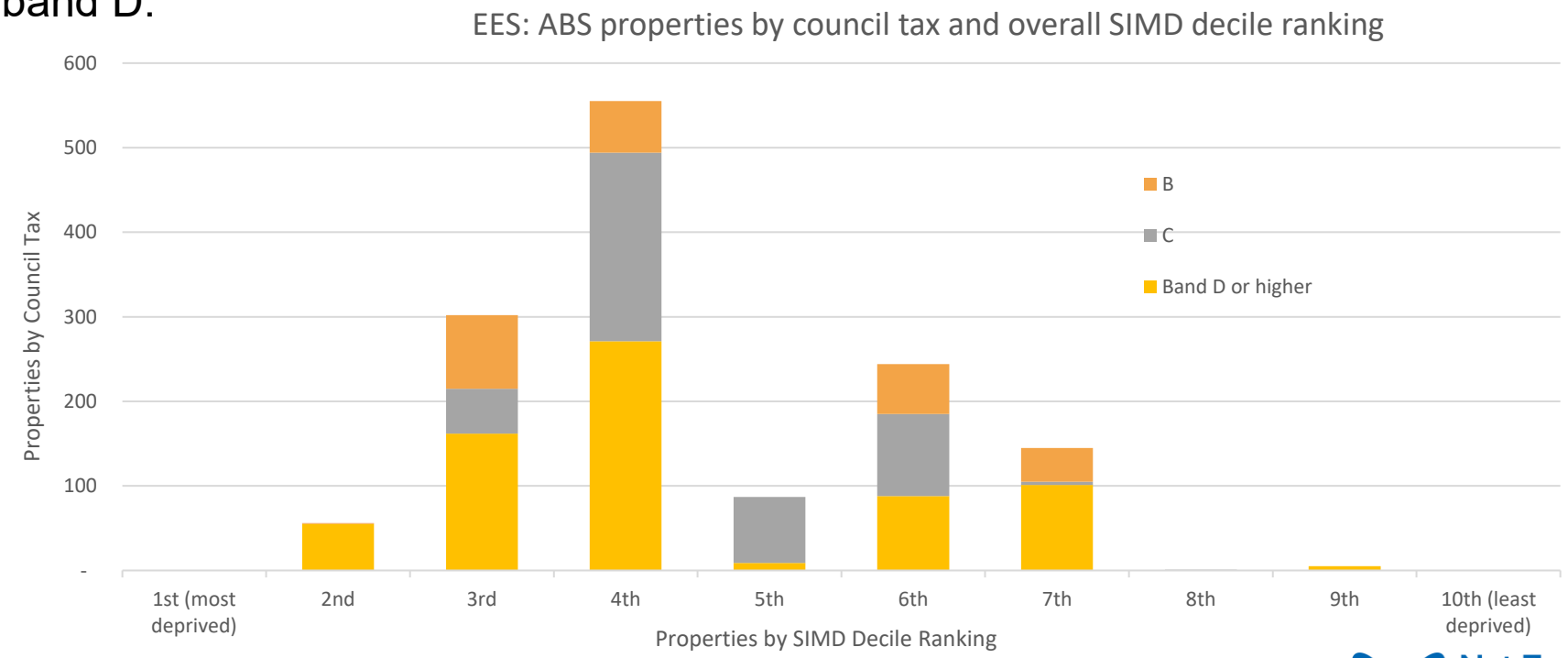
Midlothian properties by council tax band



Just over 82.2% of properties receiving measures fall into council tax bands B and C compared to 36.2% in the council as a whole. The majority of Council Tax bands included for EES: ABS work are band D (49.53%), and the proportion of band C properties is almost double the council rate.

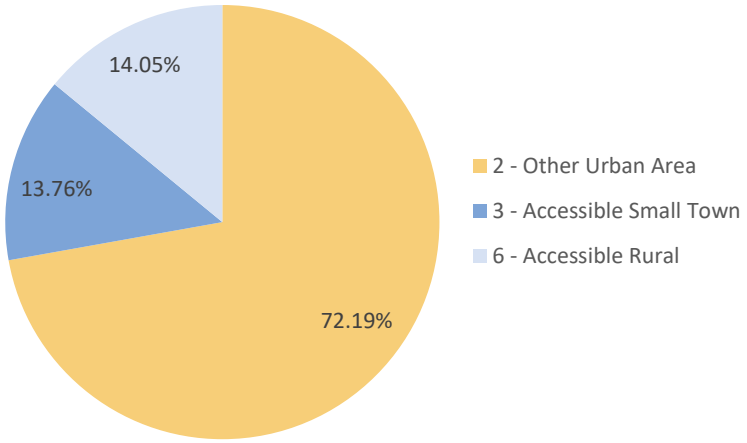
EES: ABS Installs by Council Tax Band and SIMD

Council tax banding can often be seen as an indicator for income and this illustration examines the property council tax bands against the income SIMD ranking of the areas involved. 36.1% of the installations treating A, B and C council tax banded properties are located within the five most SIMD deprived areas when ranked by income as seen below. This increases to 71.7% with the inclusion of band D.

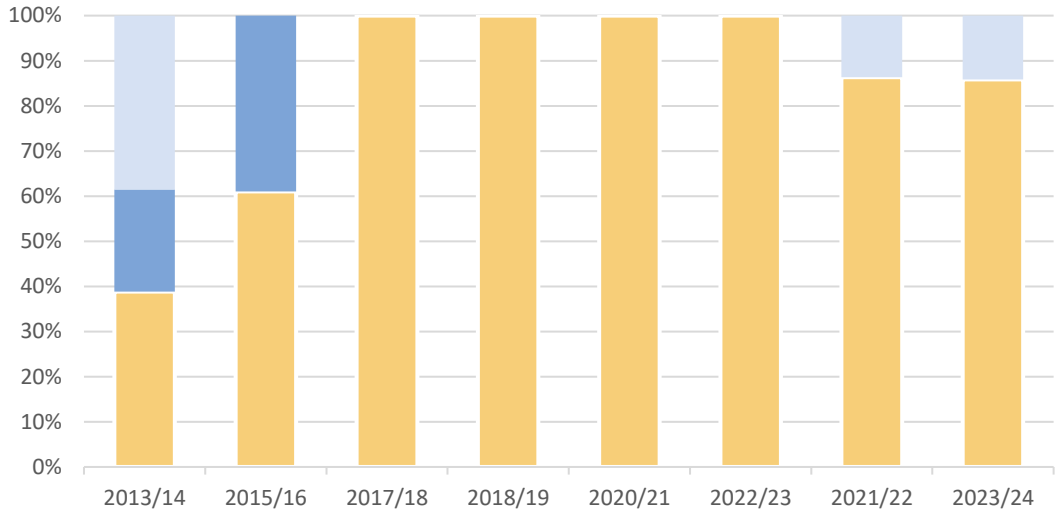


Urban Rural Classification I

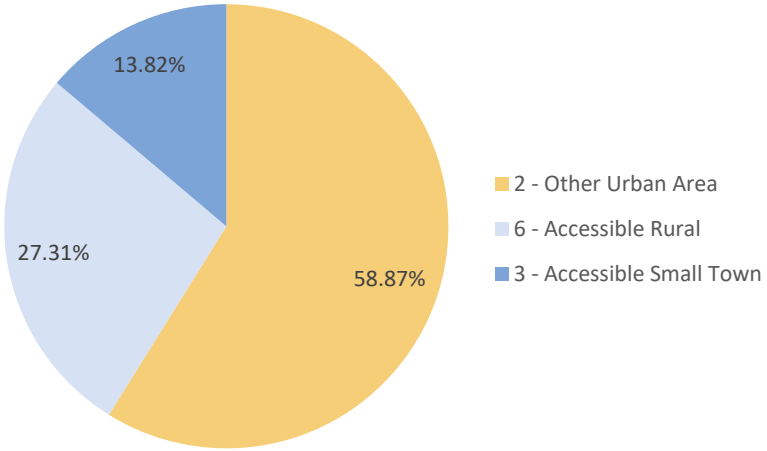
EES: ABS properties by urban rural classification



EES: ABS properties by urban rural classification



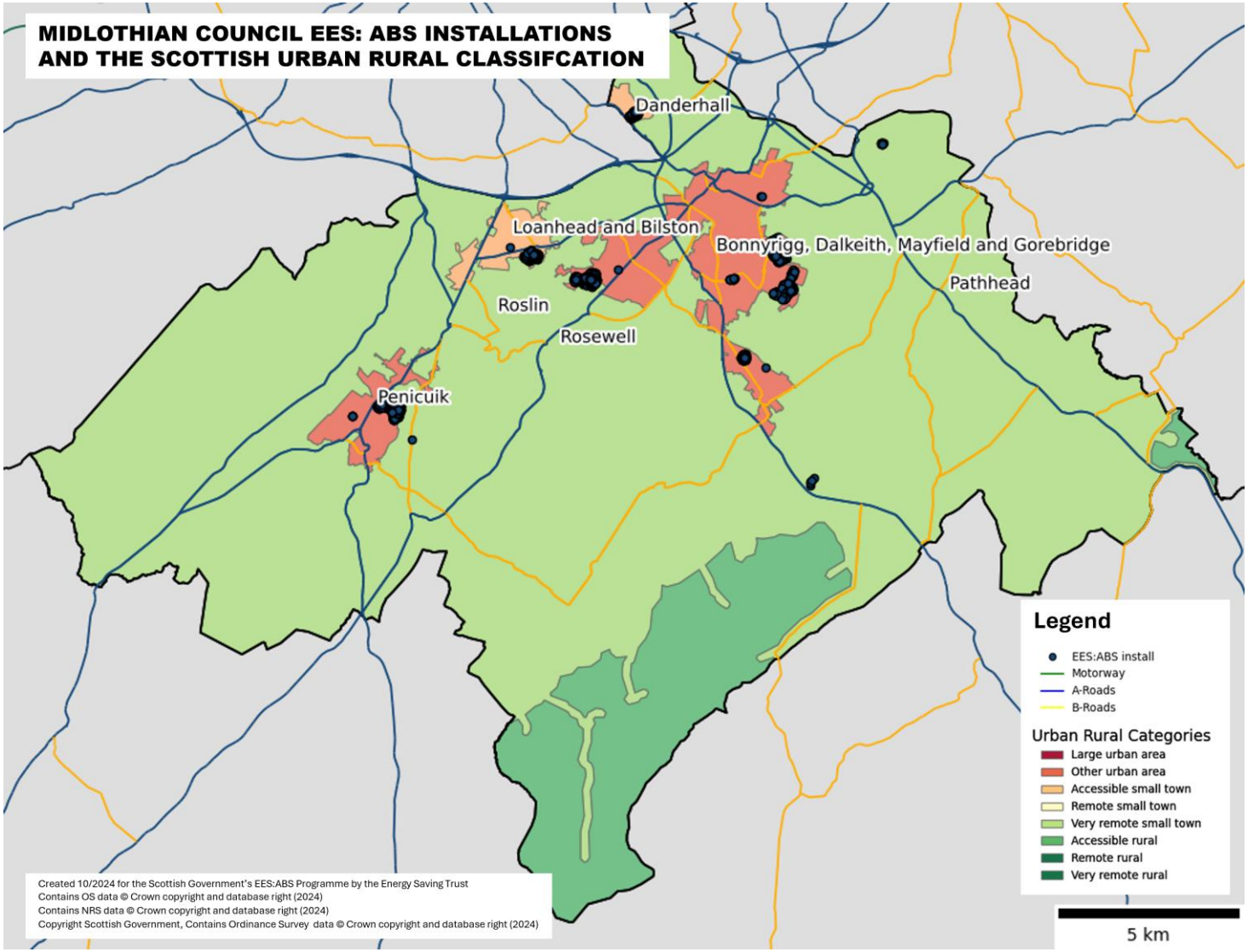
Midlothian properties by urban rural classification



The Midlothian Council area consists of three different urban rural classifications: Other Urban Area, Accessible Small Town and Accessible Rural. The majority of work has been in the Other Urban Area (72.19%), with an equal proportion of activity in the other two areas. The top chart shows the distribution of the work over the years of the programme.

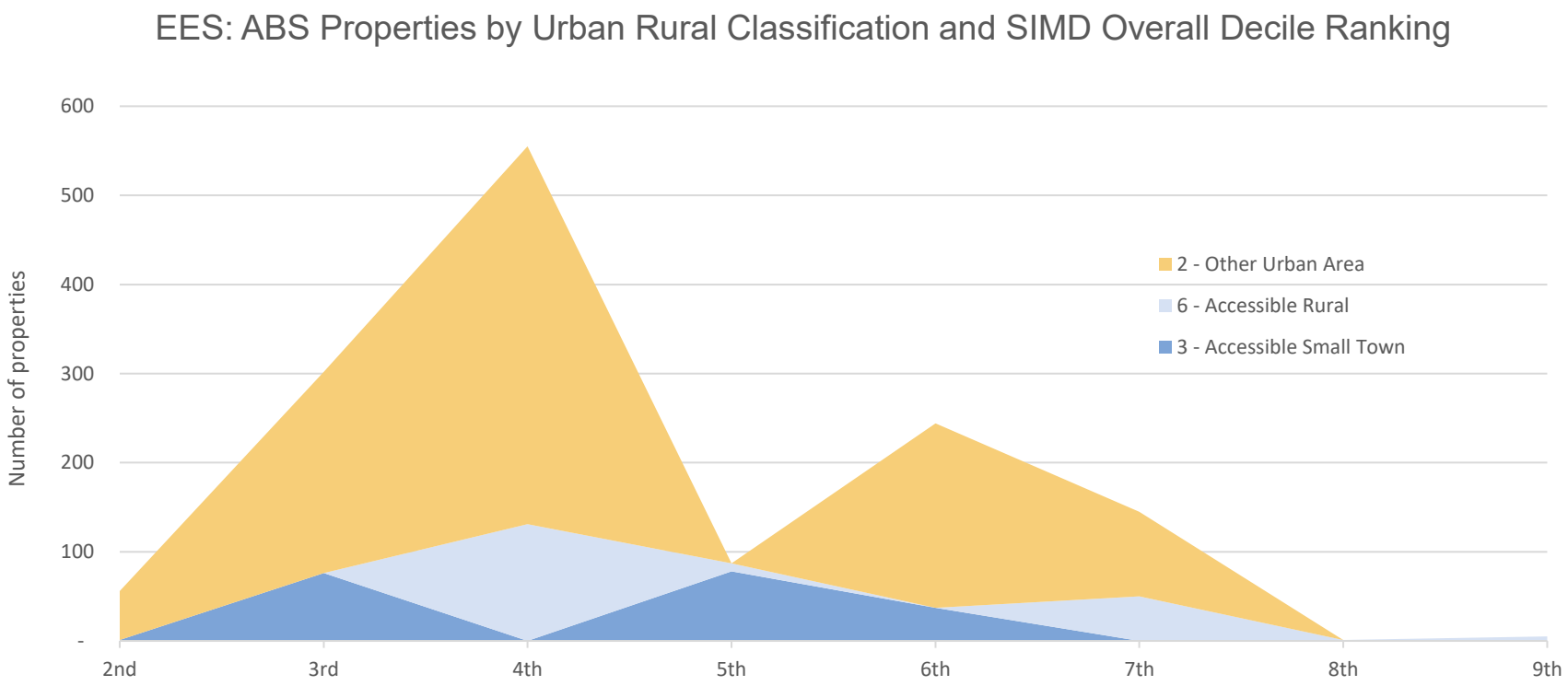
Note: For more information see next slide for the EES: ABS Installs by Urban Rural Classification map.

Urban Rural Classification II

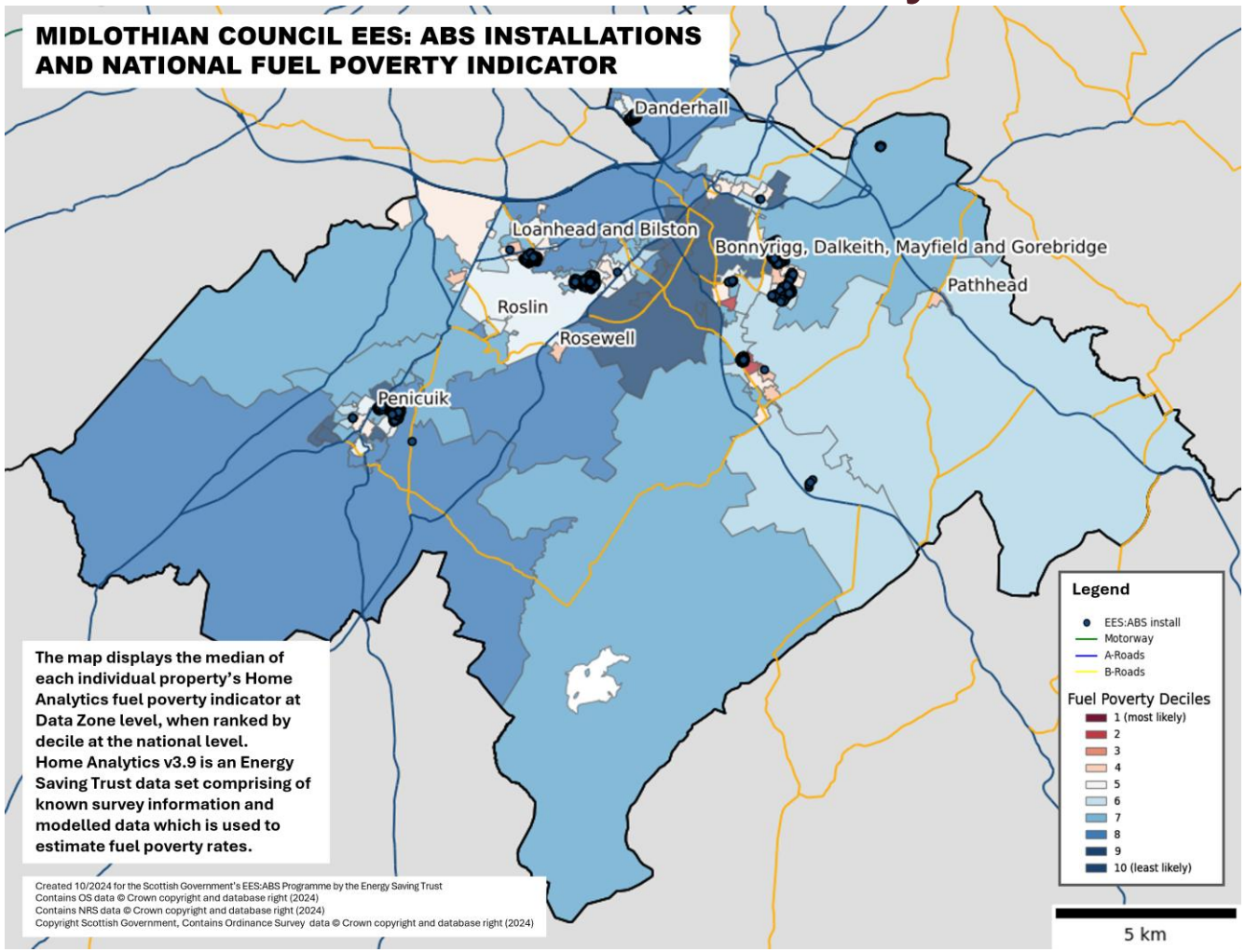


Urban Rural Classification and SIMD

This illustration demonstrates that 89.18% of installations took place within the six most deprived SIMD ranks and within all three urban rural classifications in the council's area. It is also worth noting that in addition to rural data zones tending to lean towards the average SIMD ranks, not all deprived households can be found within highly deprived areas.

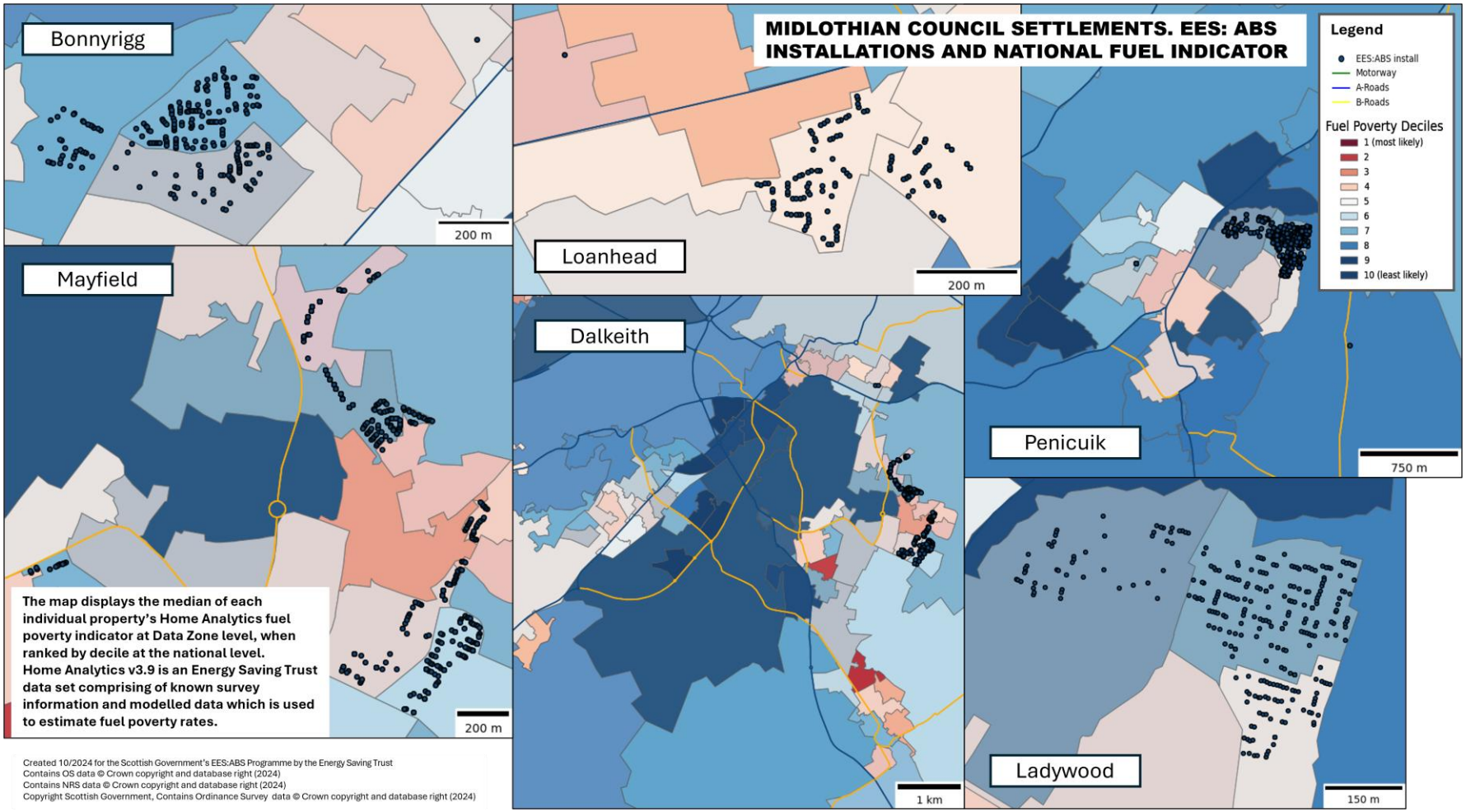


National Scottish Fuel Poverty Indicator I

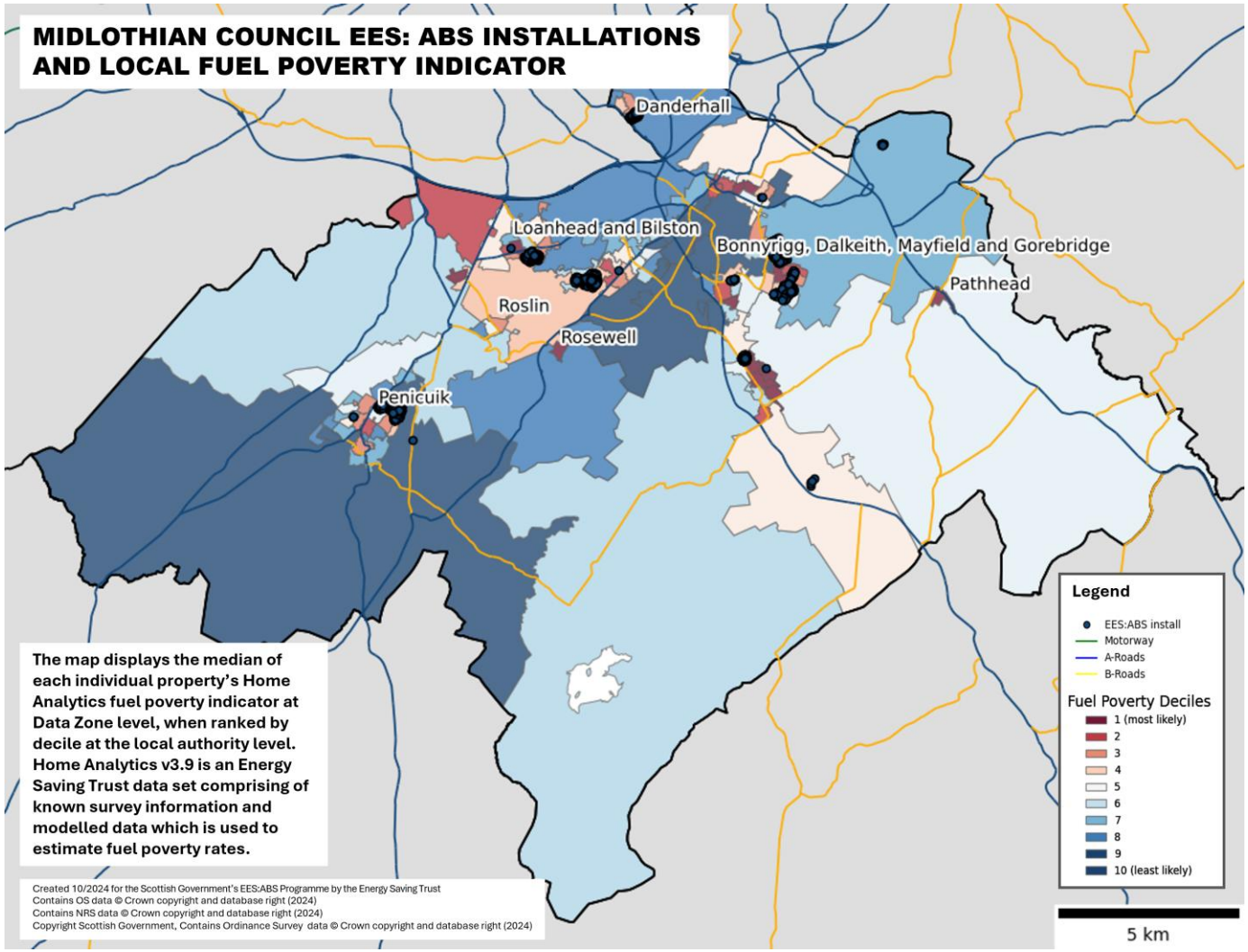


This map compares the fuel poverty indicator for Midlothian Council compared to the rest of Scotland. The blue areas have the lowest fuel poverty rates on a national scale when fuel poverty by data zone is ranked for all local authorities in the country. According to the Scottish Housing Condition Survey (SHCS) the average fuel poverty rate in the Midlothian Council area is around 19% of all homes. This is 5% lower than the current Scottish national average (24%) and places Midlothian as the 3rd best ranked local authority out of 32 in the country. The high prevalence of mains gas is one of the factors contributing to an average or above SAP score for many of the properties in the area.

National Scottish Fuel Poverty Indicator II

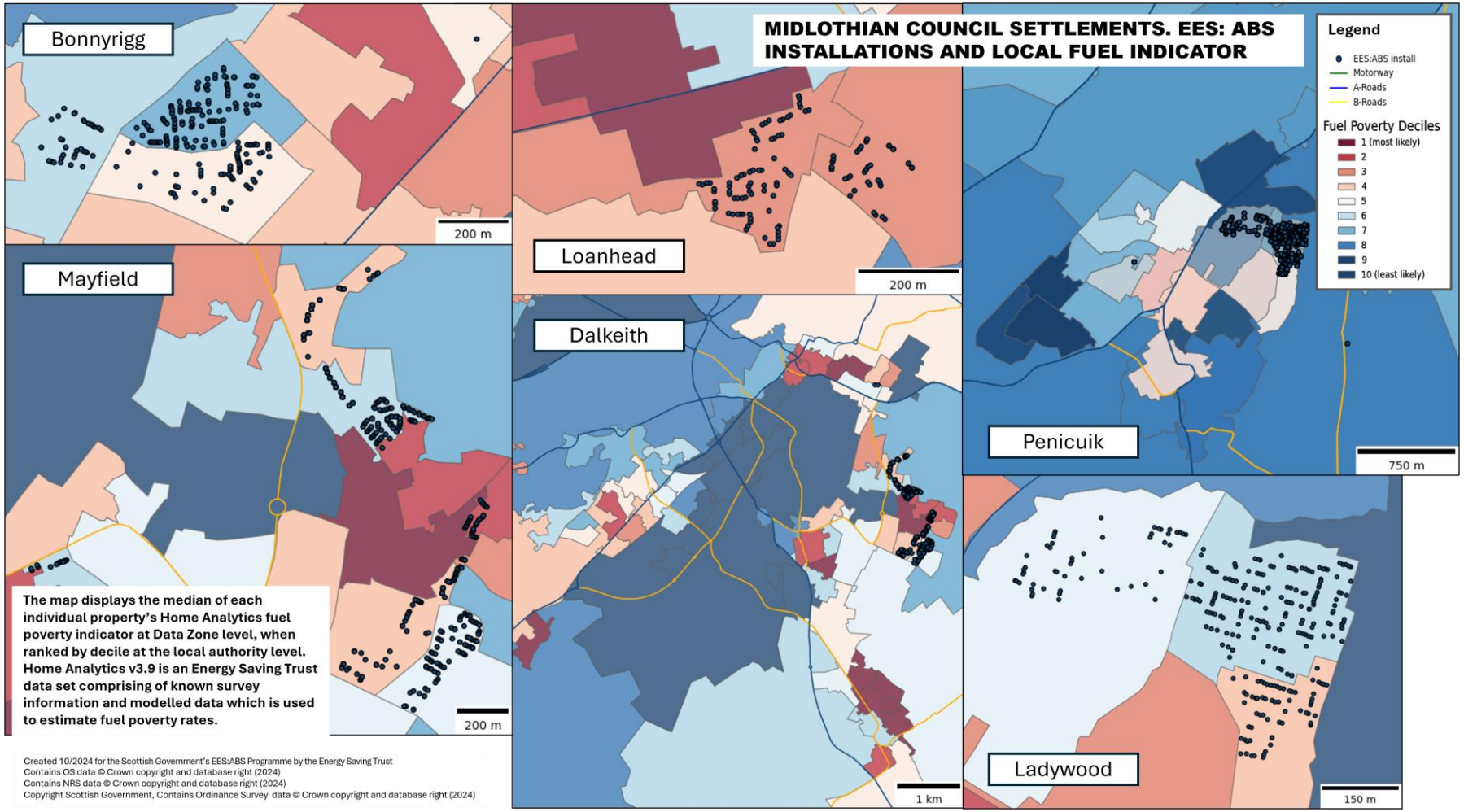


Midlothian Council Fuel Poverty Indicator I



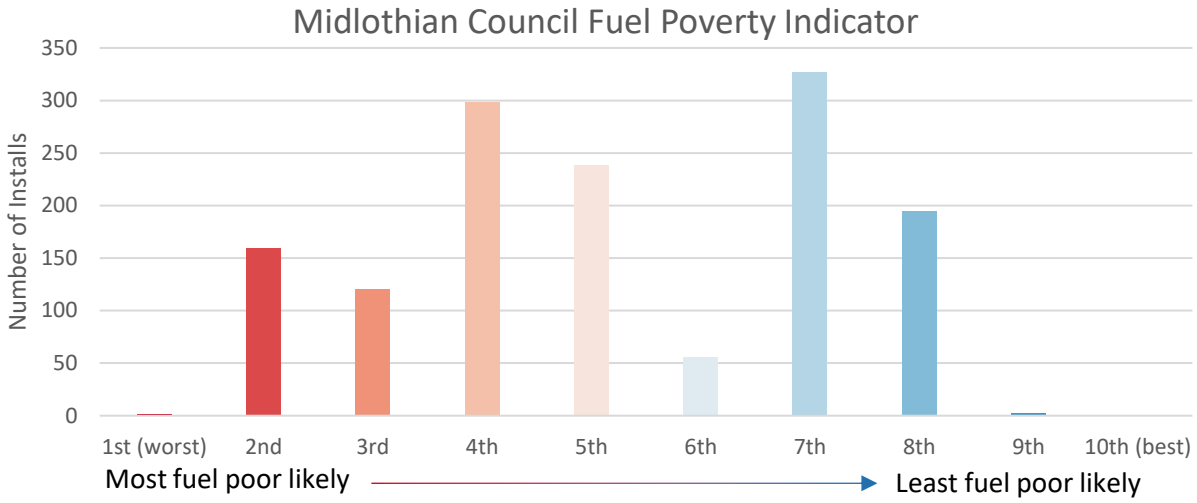
This map demonstrates the probability of fuel poverty by data zone ranked on a local authority level for Midlothian Council only. Highest fuel poverty areas within the council are shown here in red colour. The fuel poverty indicator used here is a snapshot of the situation and in some cases the past work completed by energy efficiency programmes, such as EES: ABS, will be contributing to the lower fuel poverty rates at present.

Midlothian Council Fuel Poverty Indicator II

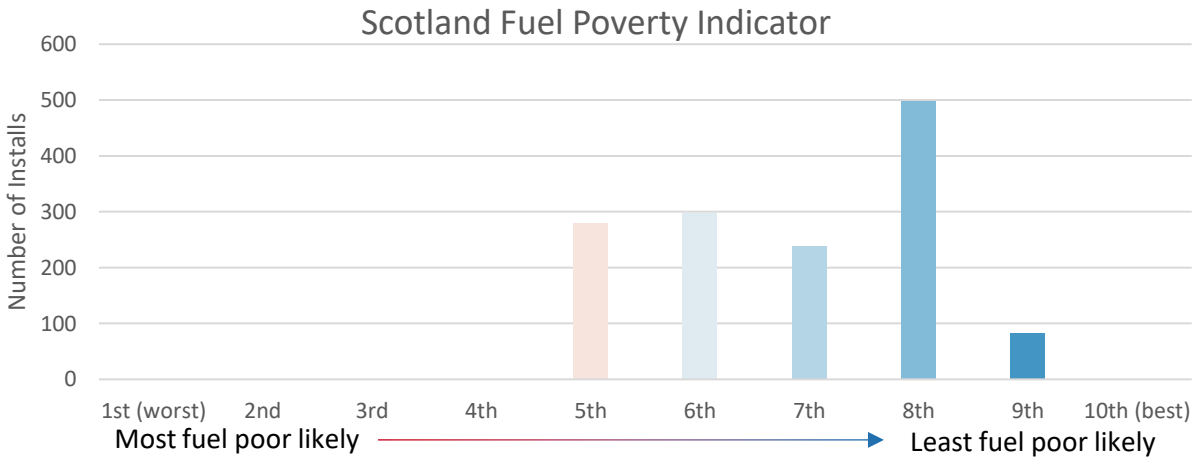


Midlothian Council Fuel Poverty Indicator III

41.33% of all EES: ABS installs took place within the five most fuel poor ranked data zones as seen in the top illustration. This chart is examining the local authority specific fuel poverty indicator for the Midlothian Council.



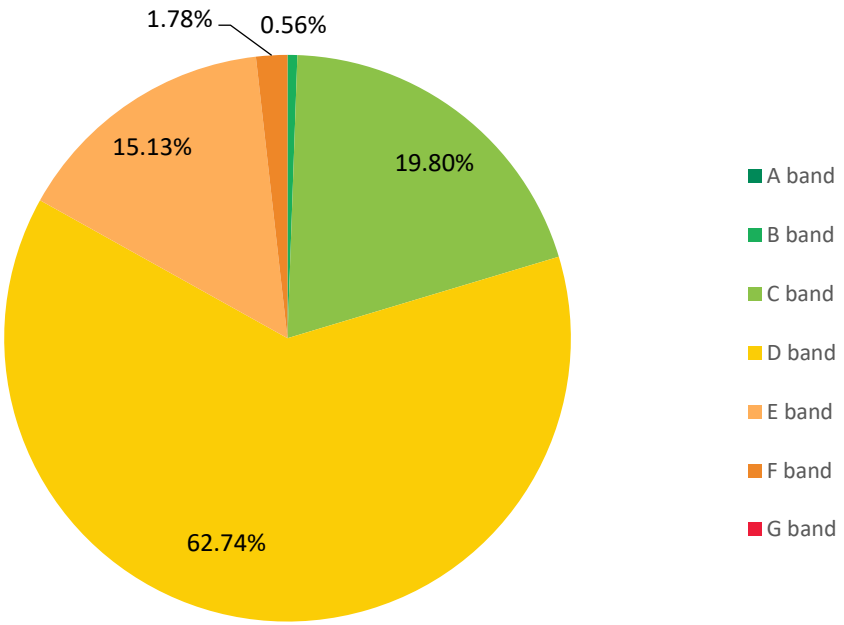
When examined on a national scale of Scotland (bottom illustration), 62.46% of participating properties fit within the five most fuel poor ranks when compared to the national figures.



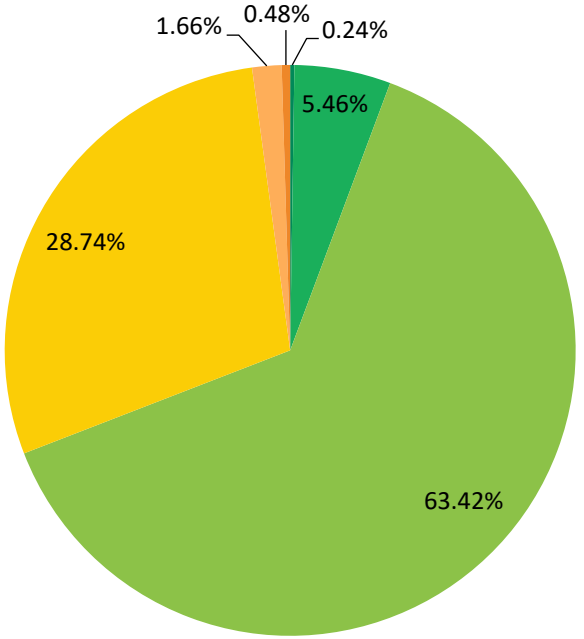
Note: Decile ranked average fuel poverty indicator by data zone for: Midlothian (top) and Scotland (bottom)

EES: ABS SAP Band Analysis I

EES: ABS properties by pre-installation EPC banding



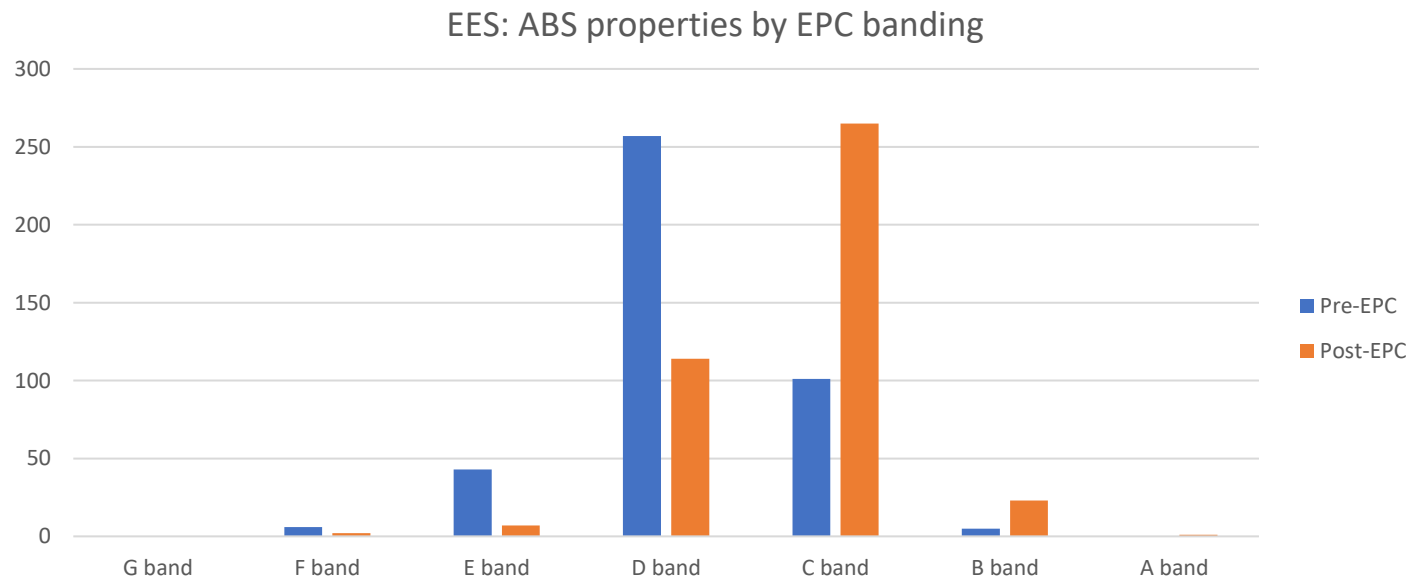
EES: ABS properties by post-installation EPC banding



A valid pre-installation EPC was provided for 899 (out of 1,395) properties participating in the programme. 79.64% of these were within the national band D average or lower. A total of 421 participants had a valid post-installation EPC regardless of the validity of the pre-EPC. After the completion of the installations, most of these properties (97.86%) are in the D band or above.

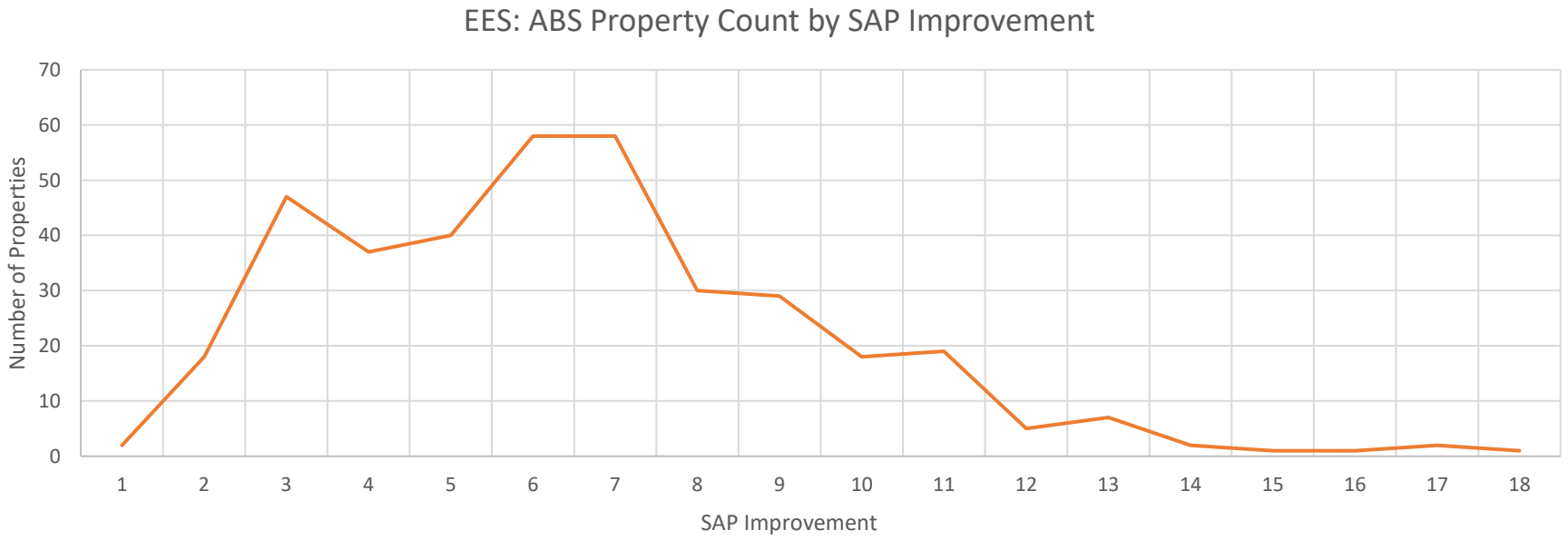
EES: ABS SAP Band Analysis II

Out of the 899 properties with valid pre-EPCs, a total of 412 had a valid pre- and post-installation EPC and could be used for further analysis. More than half of these properties had a starting SAP band of D (62.38%), 24.51% were at band C, 1.21% (23 properties) were at band B, and the rest were split between bands E and F (11.89%). The Post-EPC's show that after the completion of installs, 64.32% reached band C and 27.67% reached band D. One property (0.24%) also moved up to band A. Only 2.18% have a post-installation EPC band of E or F, which illustrates the positive impact of the EES: ABS programme.

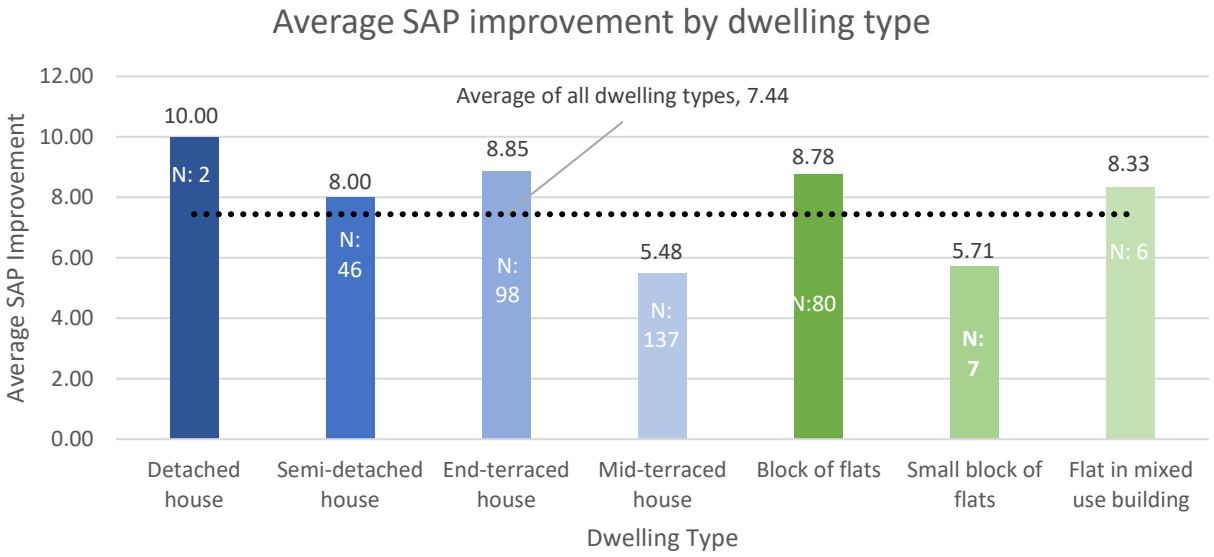


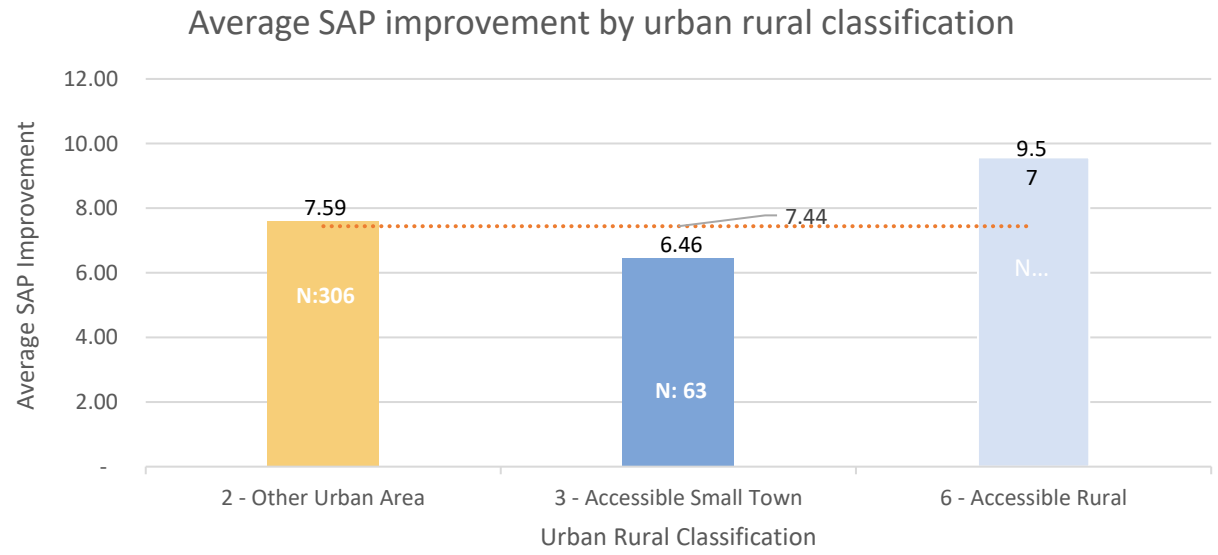
EES: ABS SAP Band Analysis III

The most common outcome of the EES: ABS programme within the Midlothian Council was for a property to increase in SAP score around 4 to 8 points (from 376 properties where the EPC's were valid to use for further detailed analysis). The larger SAP increases (10 to 18 points) included in this case study occurred mostly on properties that were either solid wall or system built construction. The property types benefitting from larger increases were end- and mid-terraced and semi-detached houses.



EES: ABS SAP Band Analysis IV

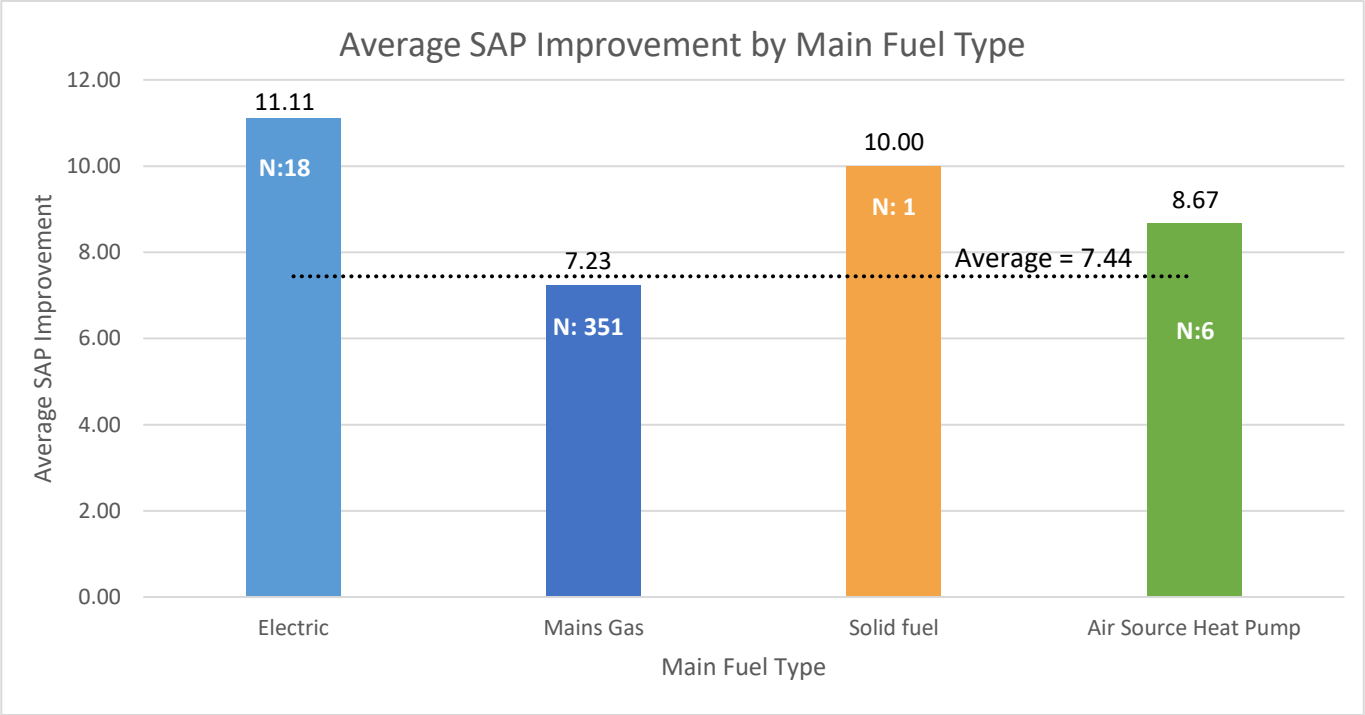




The average SAP improvement for all dwelling types is 7.44. Detached houses benefitted from the biggest increase with a typical 10-point improvement, end terraced and blocks of flats were close second. However, it is worth noting that the sample sizes are rather small. On average, properties in Accessible Rural areas benefitted from bigger SAP improvements than properties in Other Urban Areas.

Note: Dwelling type is taken from EST's Home Analytics dataset which is a combination of EPC and modelled data.

EES: ABS SAP Band and Main Fuel Type



The average SAP improvement for all main fuel types was 7.44. The biggest sample size available was for mains gas properties (N=351) where the average improvement was 7.23. Properties with electric heating improved their SAP rating the most, by 11.11 on average, and solid fuel properties by 10.0. However, the sample sizes for these were very low (1 record).

Conclusions and notes

- The programme since outset has focused almost exclusively on external wall insulation.
- The typical participating property is an on-gas, owner-occupied (55%), solid wall house (88%) constructed between 1950 and 1983 (97% of all properties).
- 89% of the properties included can be found within the six most deprived SIMD areas.
- Just over 41% of installations were in the five most fuel poor Data Zones.
- Most properties had a starting EPC of band D or lower (80%) and 69% of these properties reached band C or higher.
- The programme had a positive impact on the participating properties as a whole and most properties used for this analysis increased their SAP score between 4 to 8 points.

Sources

Variable	Source	Notes
EES: ABS Measure, Address and Tenure	Local Authority	Held on behalf of the Scottish Government's EES: ABS programme by EST.
Dwelling Type, Construction Age, Council Tax Band, Fuel Poverty Probability	Home Analytics	Combination of EPC and modelled data created by EST. Typically not for publication.
Main heating fuel type, EPC SAP scores and SAP bands	Scottish EPC register	Obtained by cross referencing EPC Report Reference Numbers provided by the local authority with Scottish EPC register extracts
Scottish Housing Condition Survey	Scottish Government	Available online. SHCS 2017-19 used.
SIMD	Scottish Government	Available online. SIMD 2020 used.
Urban Rural Classification	Scottish Government	Available Online. 8-Fold classification (2021) used.

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