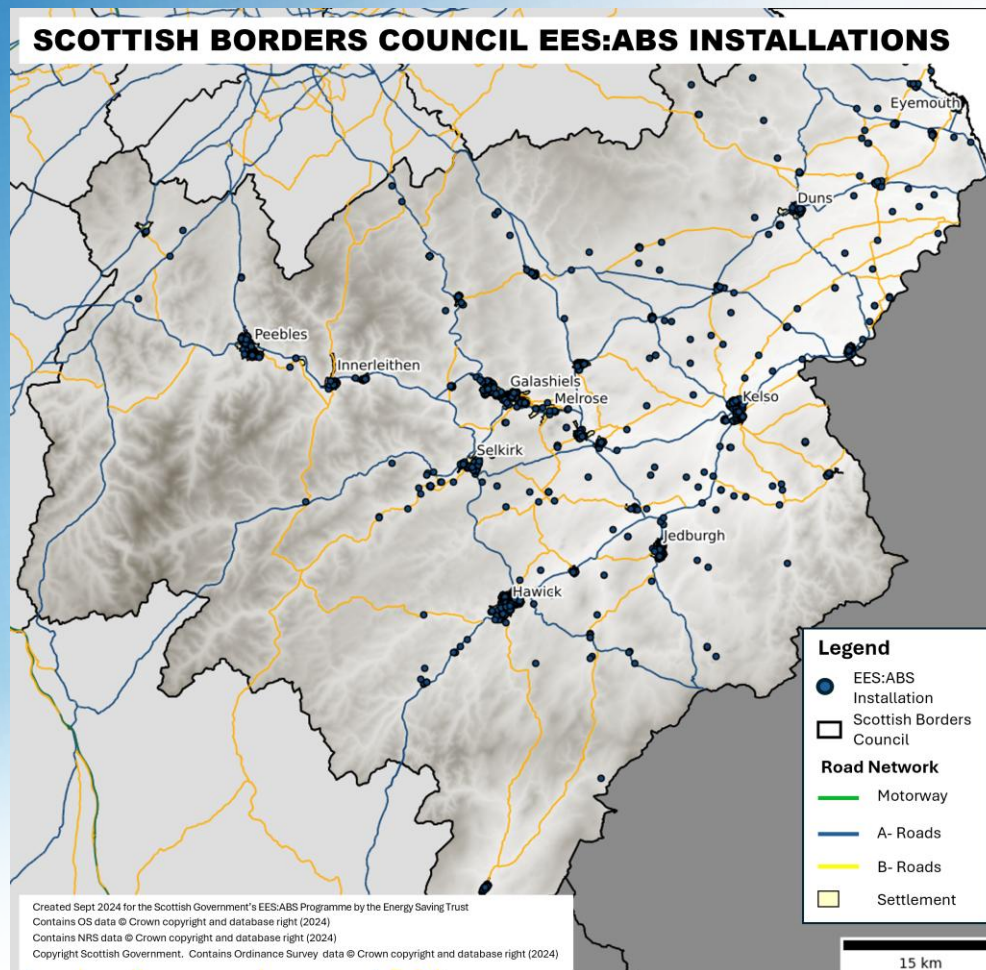


Scottish Borders Council

EES: ABS Case Study

energy
saving
trust

Energy Saving Trust
September 2024



Overview

The Scottish Government's EES: ABS* team requested the 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 Scottish Borders Council EES: ABS activity reported to date (Sept 2024).**

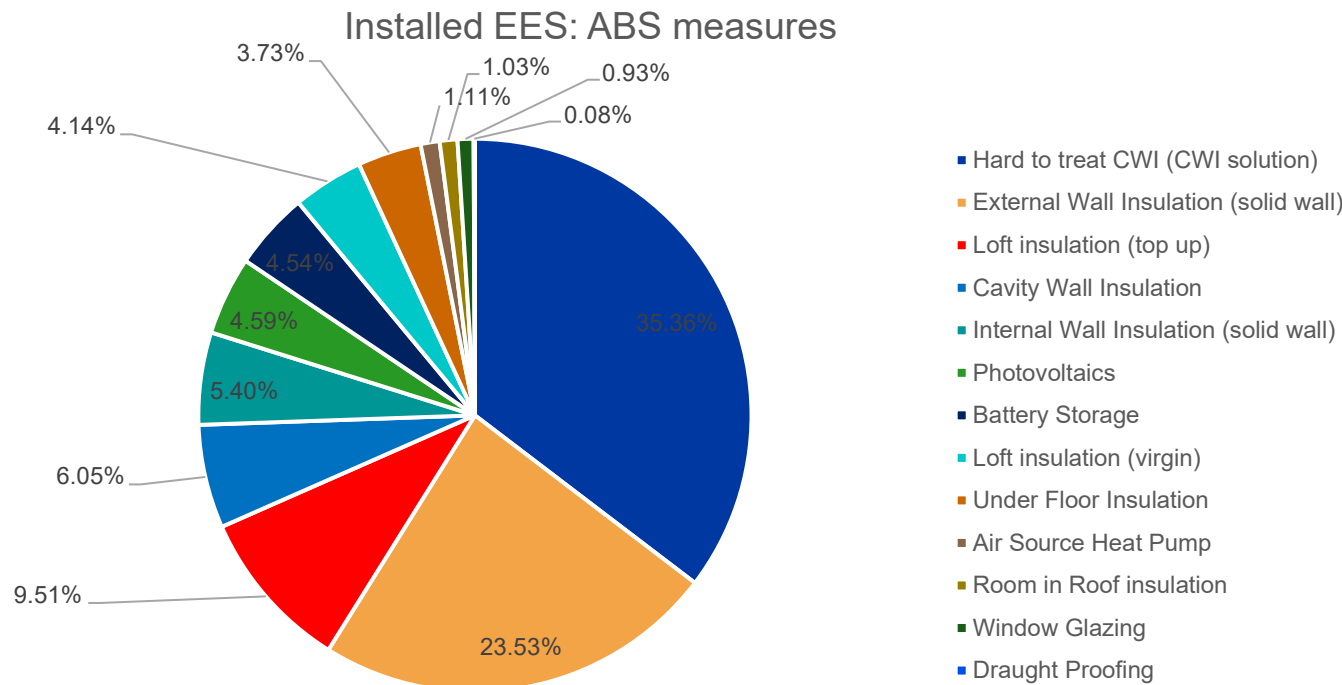
Scottish Borders Council EES: ABS dataset

Financial Year	Number of records*	% of records
2013/14	833	16.73
2014/15	328	6.59
2015/16	311	6.25
2016/17	1,256	25.23
2017/18	735	14.76
2018/19	400	8.03
2019/20	102	2.05
2020/21	173	3.47
2021/22	192	3.86
2022/23	325	6.63
2023/24 ¹	324	6.51
Total Installs	4,979	100.00

Reference numbers	Number of records	% of records
With pre-installation EPC	3,124	78.87
With post-installation EPC	1,315	33.20
With pre and post-installation EPC	1267	31.99
With GDAR	0	0.00
With measure reference number	0	0.00

The Scottish Borders Council has contributed 3.99% of the total EES: ABS installs across Scotland reported to date (Sept 2024).

Installed Measures I

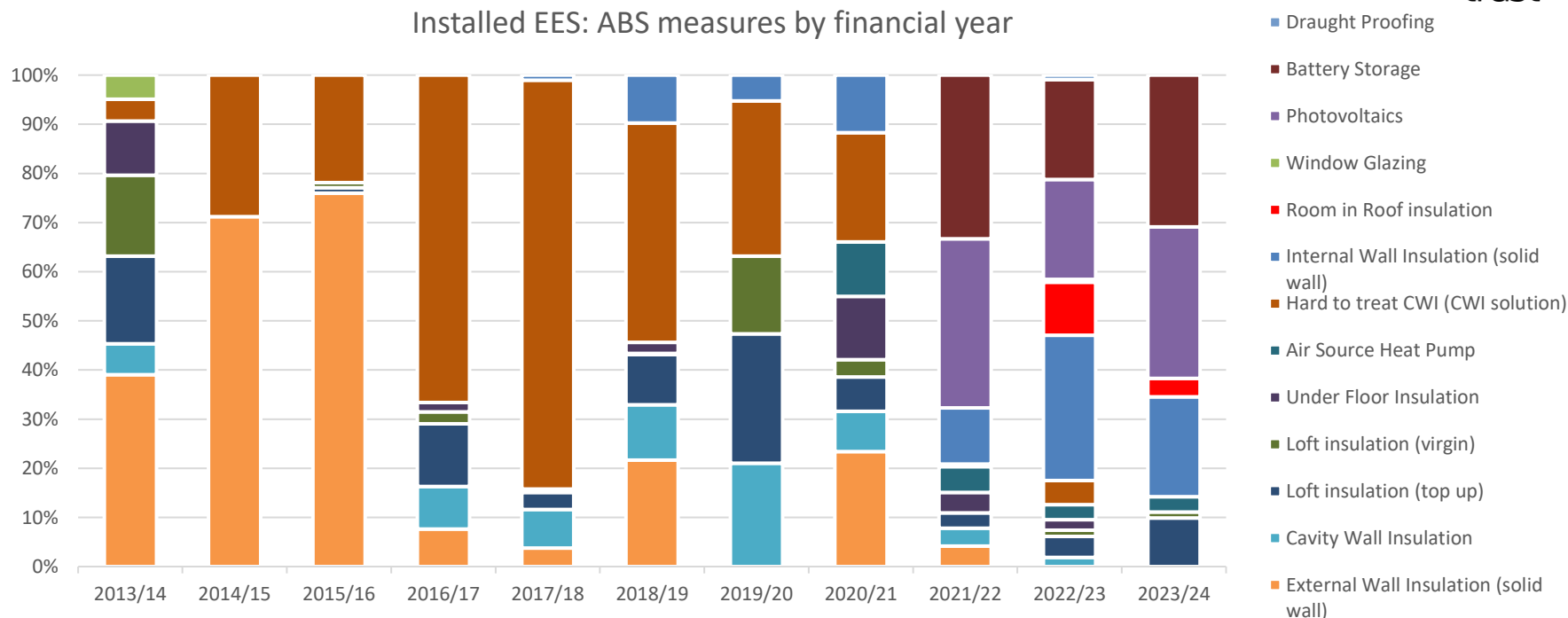


Scottish Borders Council has offered a variety of measures as part of their EES: ABS programme. Over 70% of all measures have been for wall insulation including external wall insulation for solid wall, hard to treat cavity wall solution, standard cavity wall and internal wall insulation for solid wall.

Installed Measures II

Measure Name	Number of records*	% of records
Air Source Heat Pump	44	1.14
Battery Storage	180	7.96
Cavity Wall Insulation	240	5.60
Draught Proofing	3	0.10
External Wall Insulation (solid wall)	933	19.07
Hard to treat CWI (CWI solution)	1,402	28.66
Internal Wall Insulation (solid wall)	214	4.61
Loft insulation (top up)	377	12.29
Loft insulation (virgin)	164	3.79
Photovoltaics	182	8.00
Room in Roof insulation	41	1.42
Under Floor Insulation	148	5.72
Window Glazing	37	1.64
Total Installs	3,965	100.00

Installed Measures by Financial year

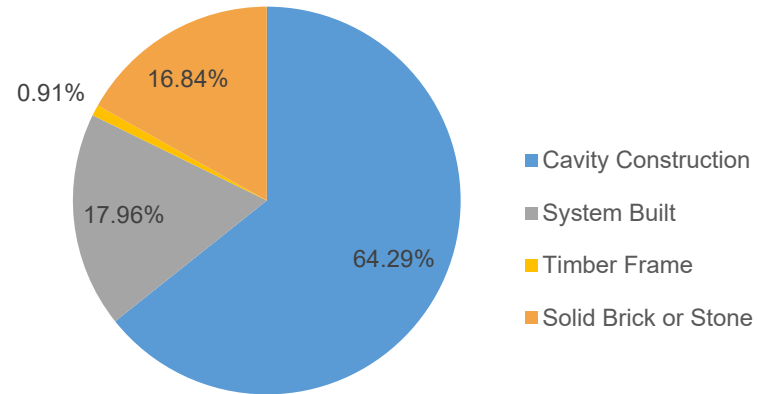


At the start of the programme in 2013/14, the work was divided between seven different measures, while 2014/15 focused solely on external wall insulation (71.28%) for solid wall and hard to treat cavity solution (28.72%). In 2017/18 a new measure was introduced as three properties (1.02%) received internal wall insulation for solid walls. In 2018/2019, the Scottish Borders Council confirmed that providing internal wall insulation for solid walls has been picked as one of the main focuses of the programme going forward. From 2021/22 till date, the council has focused more on installation of alternative energy sources (Photovoltaics and Battery storage) which in total has been 53.3% of all installations done in the last three years.

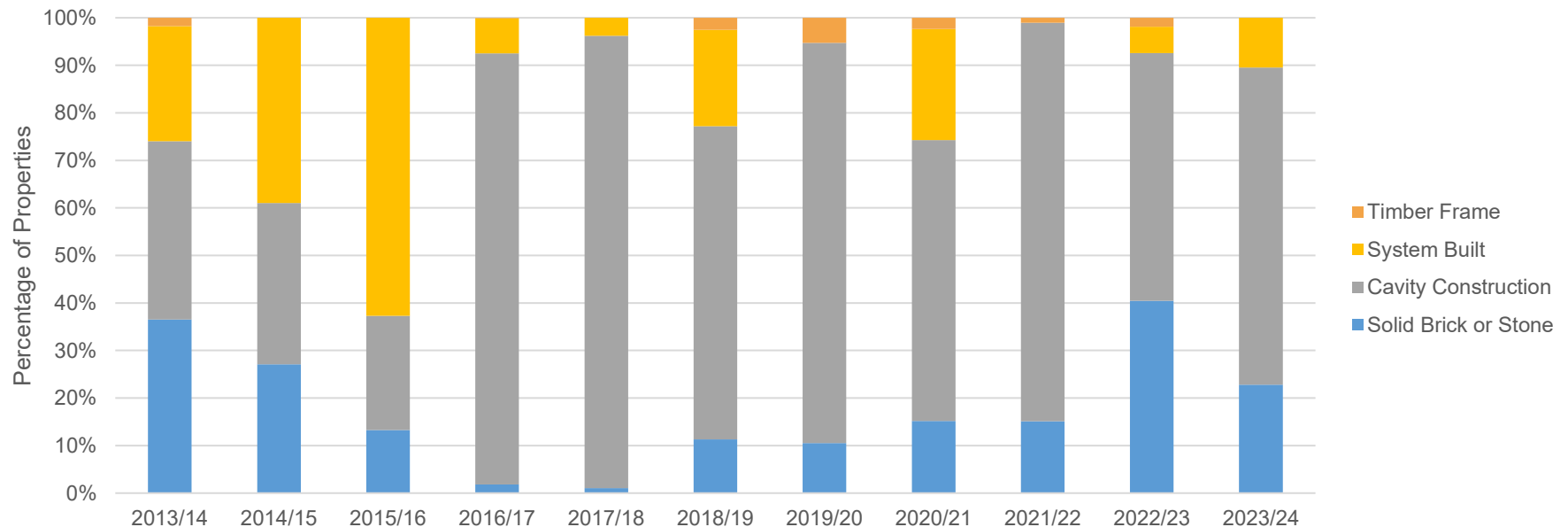
Wall Type

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.

EES: ABS Properties by wall type

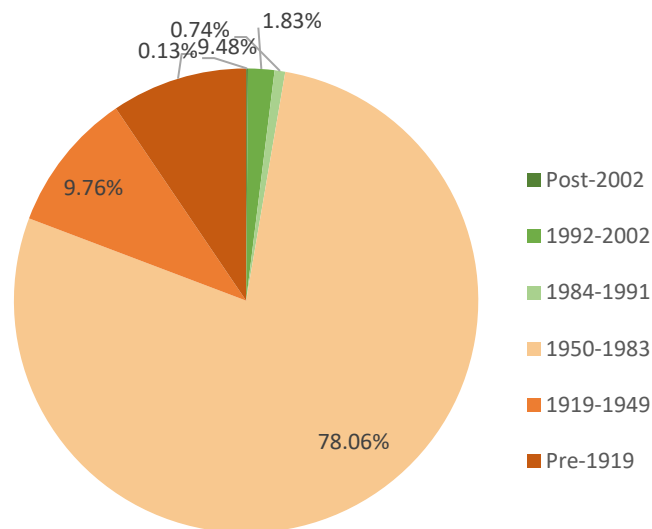


EES: ABS properties and construction type by financial year

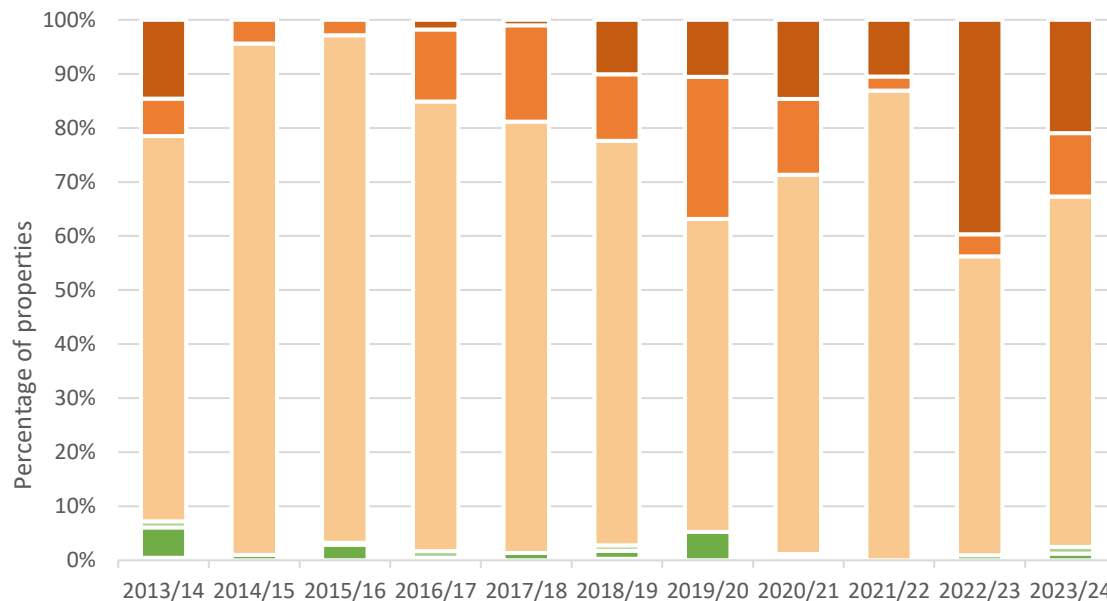


Construction Age

EES: ABS properties by construction age



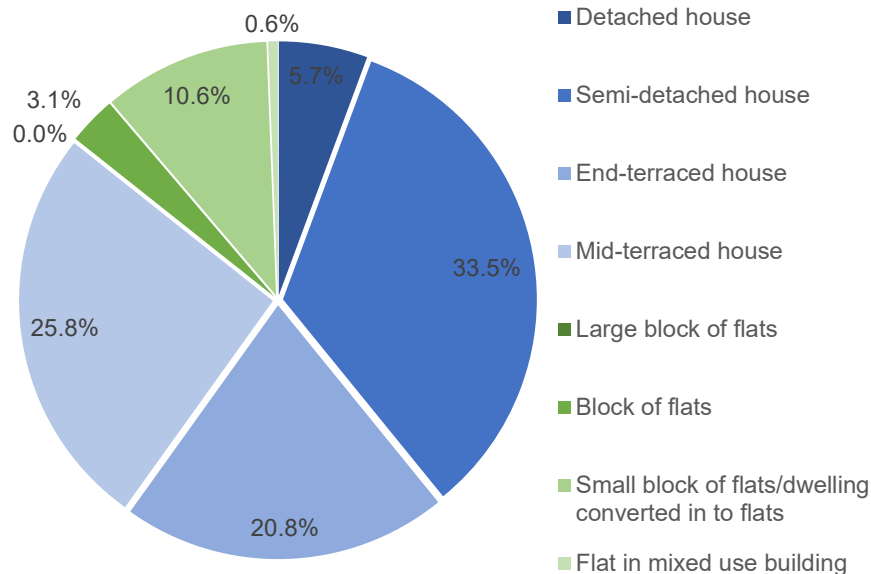
EES: ABS Properties and Construction Age by Financial Year



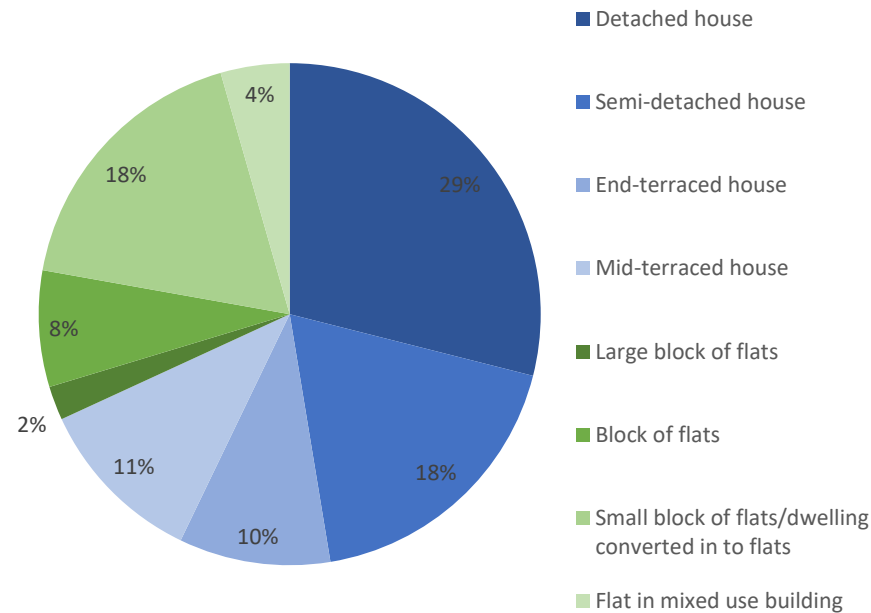
The majority of all participating properties were constructed between 1950 and 1983 (78.06%) and this has been the Scottish Borders Council's approach for most of the programme. 19.24% of all properties were constructed between 1919 and 1949 or pre-1919. The older pre-1919 properties are mostly traditional solid brick or stone built properties (90.32%) including some cavity constructions (7.53%) and timber frame constructions (2.15%).

Dwelling Type

EES: ABS properties by dwelling type



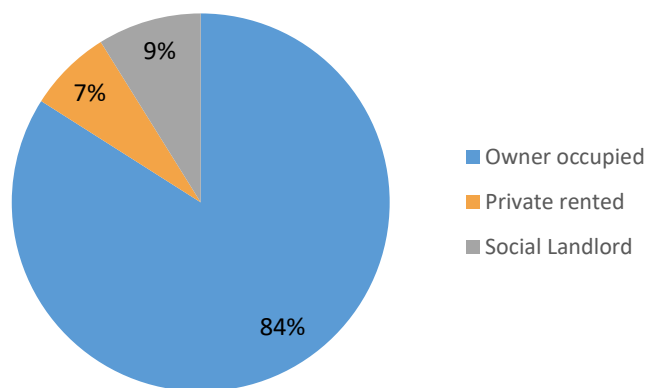
Scottish Borders properties by dwelling type



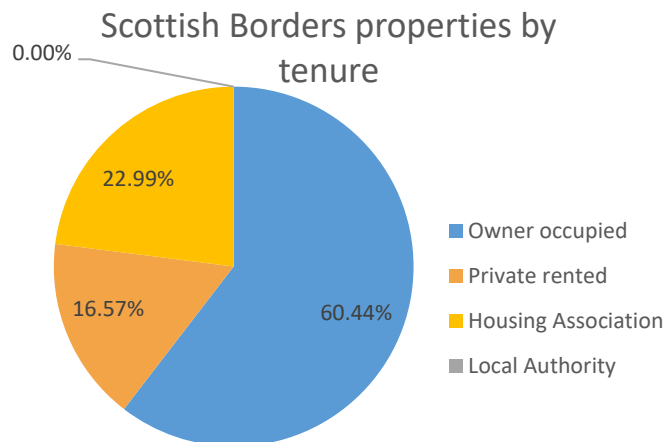
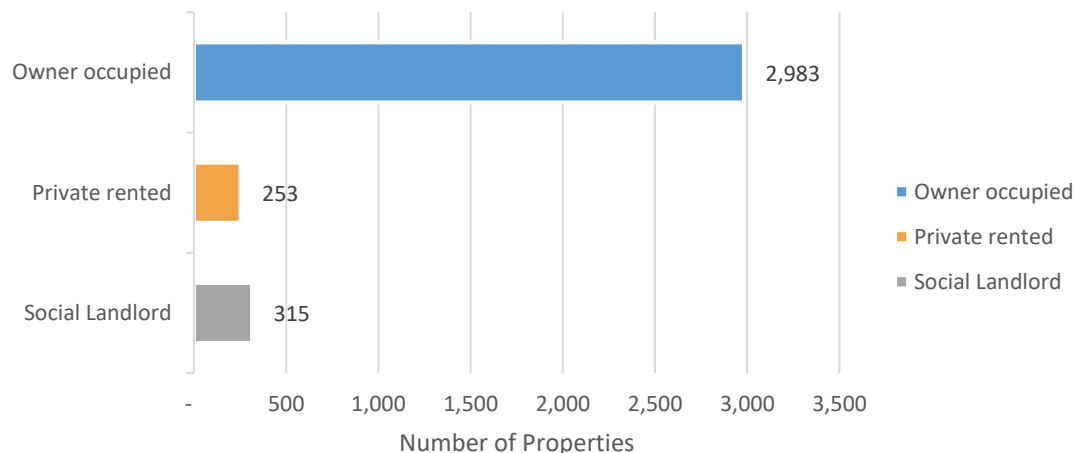
Throughout the programme the most consistent focus has been treating houses (80.1%) while the remaining 19.9% targeted flats. As a whole, 68% of the dwelling types within Scottish Borders Council consists of houses and 32% of flats

Property Tenure

EES: ABS properties by tenure



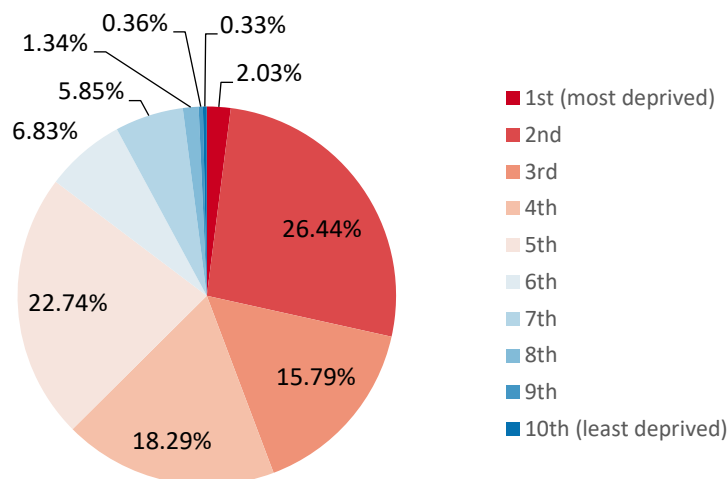
EES: ABS properties by tenure



The Scottish Borders council targets mixed tenure property types to include all tenure types in the programme within the allocated area. The council has also been able to engage registered social landlords to include these properties on a number of projects. The high presence of owner-occupied housing (84%) includes right-to-buy properties.

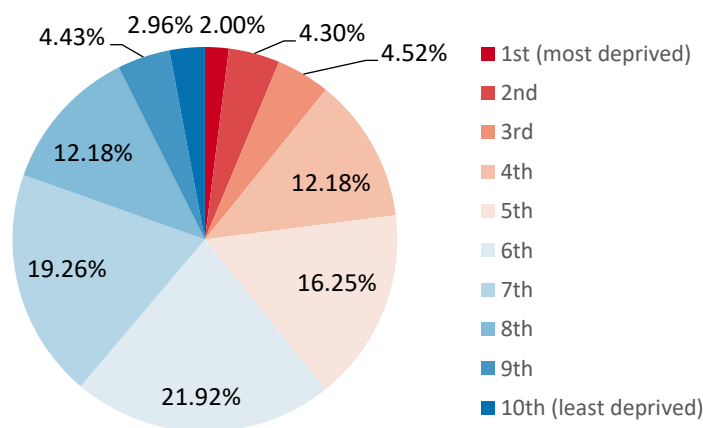
Scottish Index of Multiple Deprivation (SIMD) I

EES: ABS properties by overall SIMD decile ranking



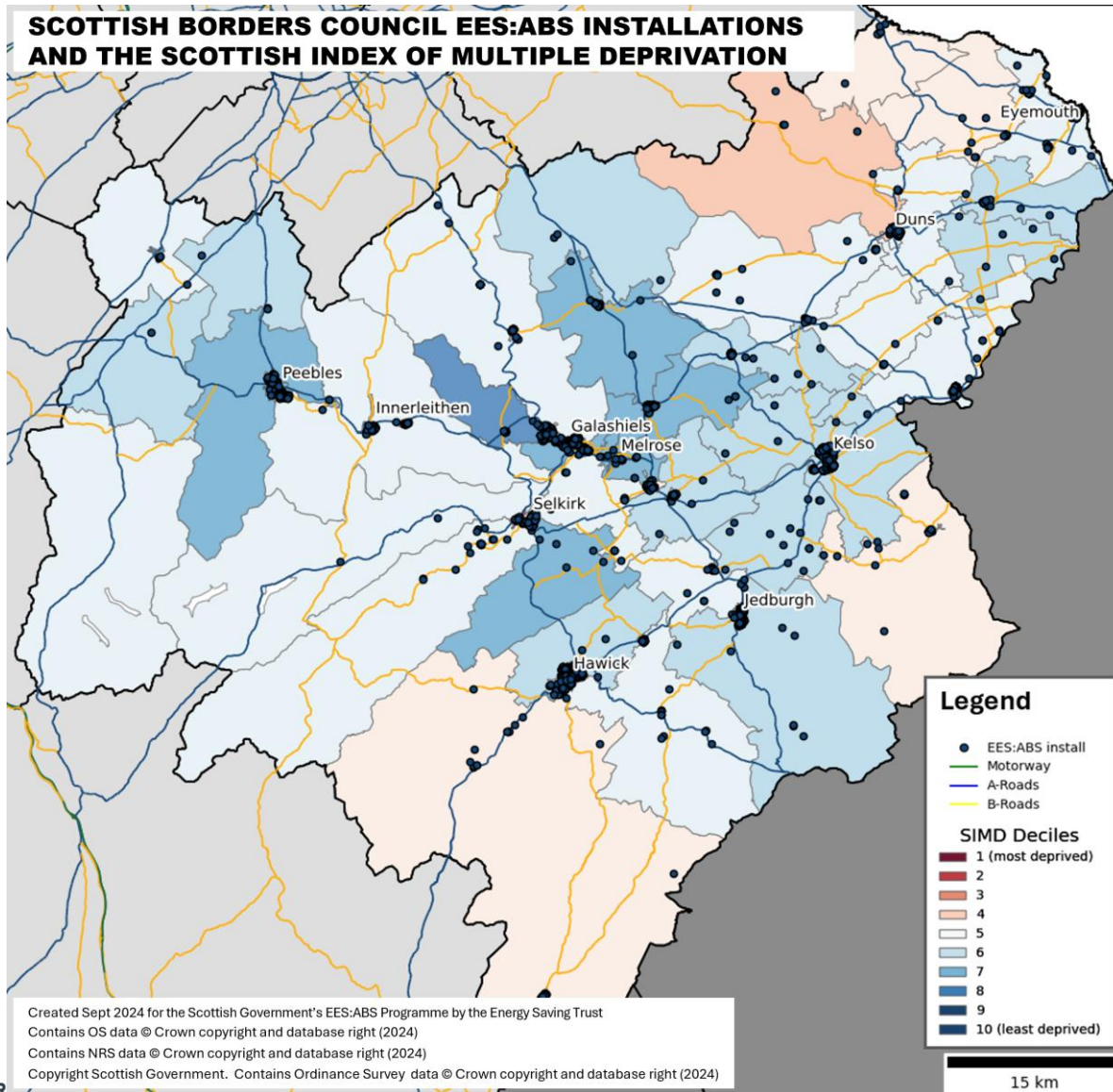
Comparison of these two illustrations shows the correlation between the overall SIMD ranking of Scottish Borders Council properties and of those targeted in the EES: ABS programme. A total of 78.61% of all participating properties are in the most deprived areas of the council and can be found within the six lowest SIMD ranks as seen in the top chart.

Scottish Borders properties by overall SIMD decile ranking



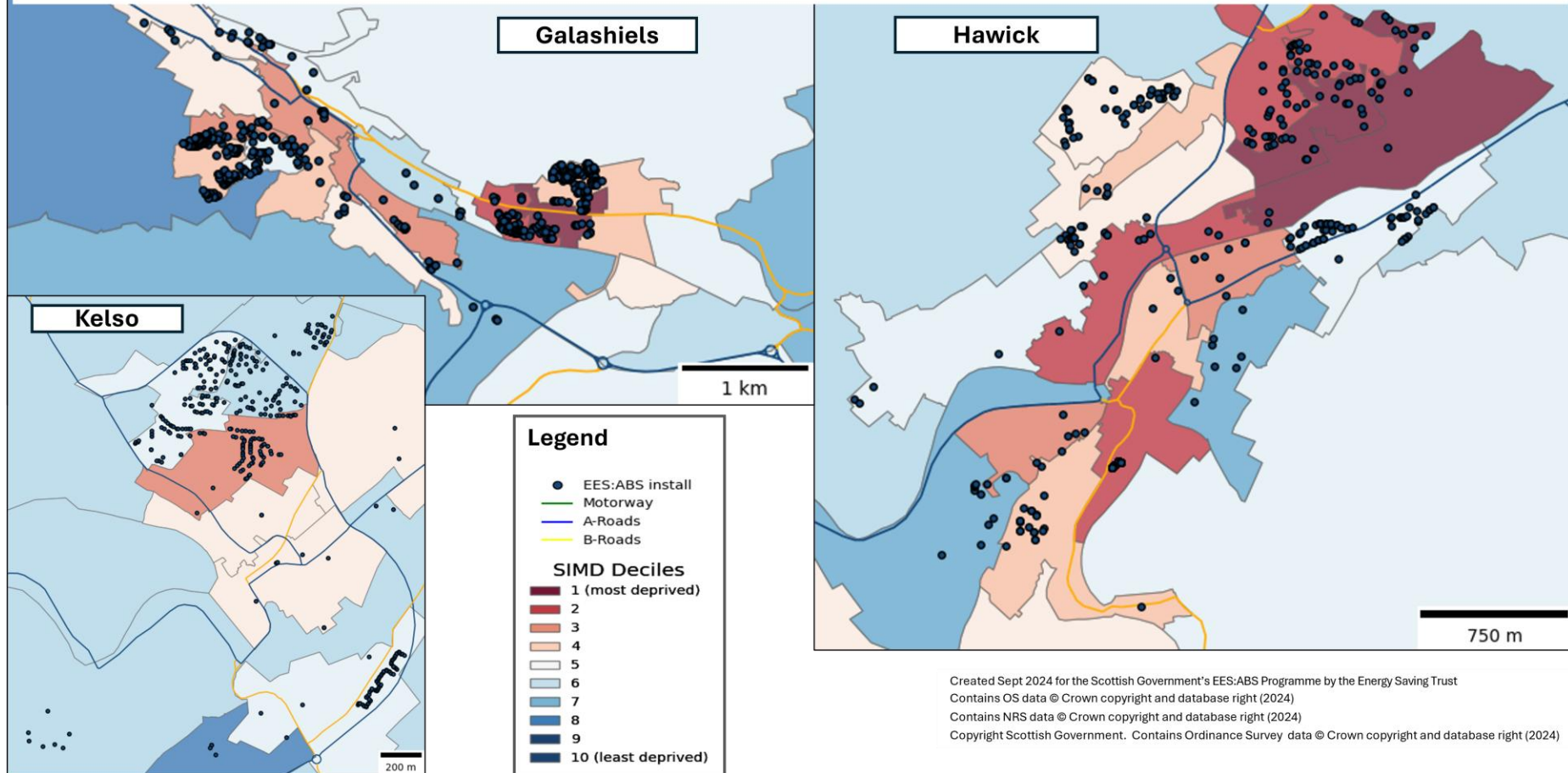
It is good to note that the SIMD can be a slightly problematic indicator for rural settings as each data zone contains between 500 and 1000 properties. Rural populations are very dispersed, so this means that very large catchments are created in order to reach the required range. Larger areas are more 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.

Scottish Index of Multiple Deprivation (SIMD) II



Scottish Index of Multiple Deprivation (SIMD) III

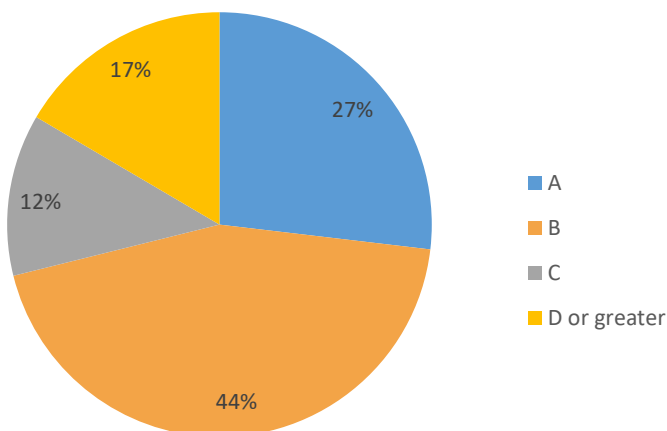
SCOTTISH BORDERS COUNCIL SETTLEMENTS. EES: ABS INSTALLATIONS AND SIMD



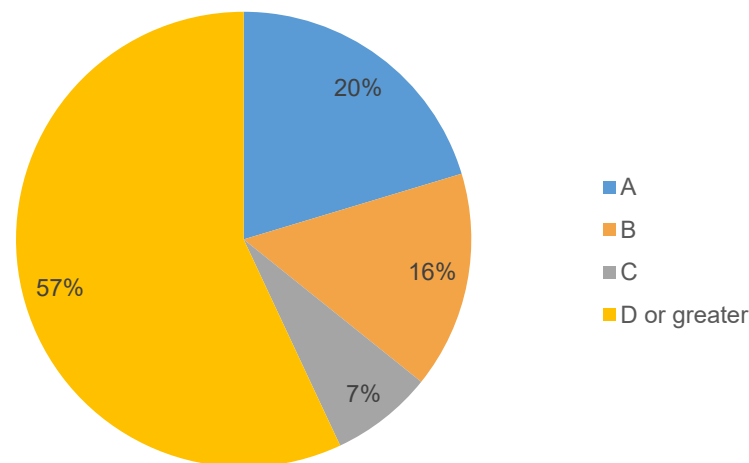
Created Sept 2024 for the Scottish Government's EES:ABS Programme by the Energy Saving Trust
 Contains OS data © Crown copyright and database right (2024)
 Contains NRS data © Crown copyright and database right (2024)
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EES: ABS Installs by Council Tax Band

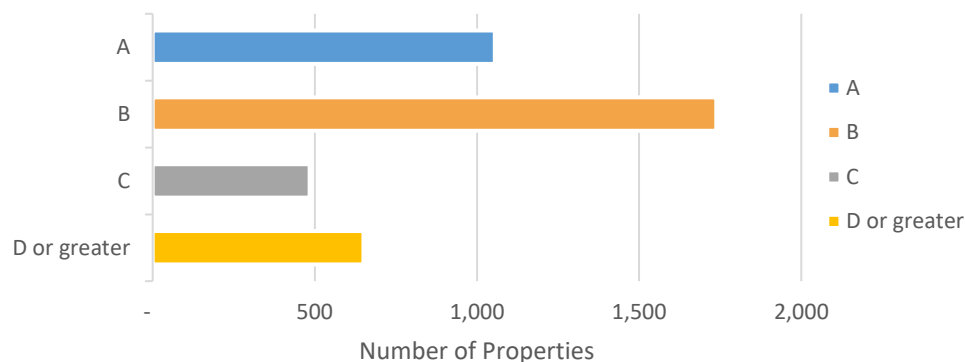
EES: ABS properties by council tax band



Scottish Borders properties by council tax band



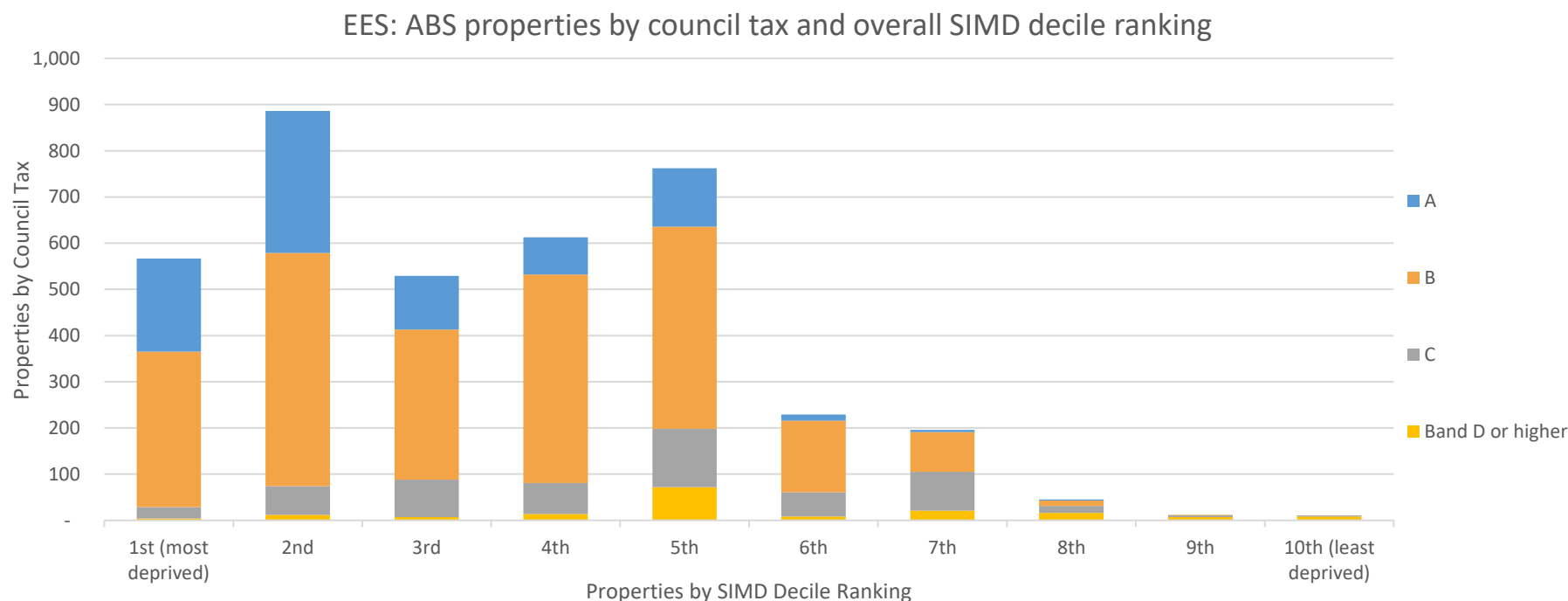
EES: ABS properties by council tax band



The Scottish Borders EES: ABS programme specifically targets A, B and C council tax banded properties and 83% of the properties in the programme fall into this category as shown in the charts. While 17% of the treated properties are band D or greater.

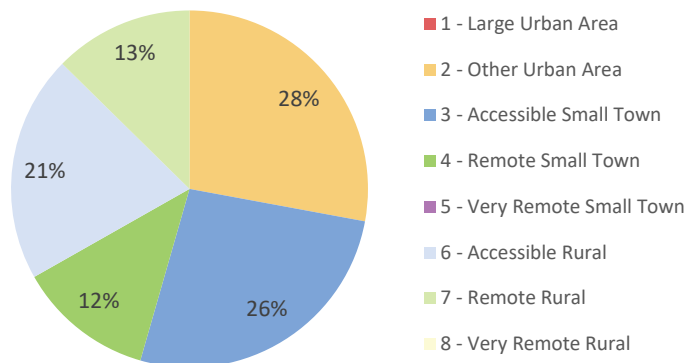
EES: ABS Installs by Council Tax Band and SIMD

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. 65.2% 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.



Urban Rural Classification I

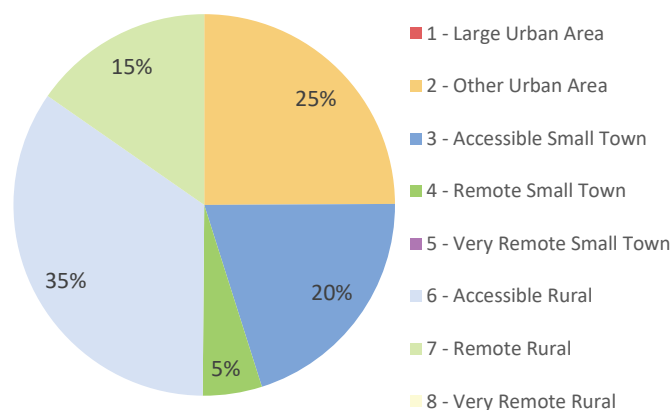
EES: ABS properties by urban rural classification



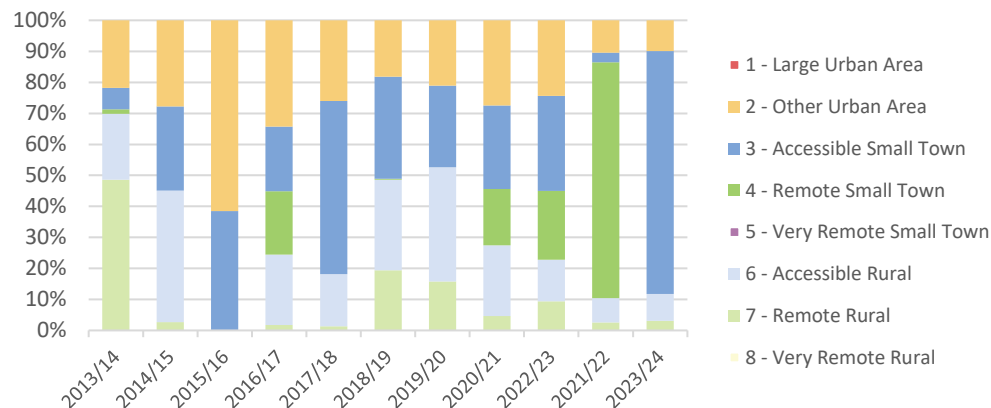
The Scottish Borders area consists of five different urban rural classifications. Other urban area, accessible small town, remote small town, accessible rural and remote rural are all represented in the programme.

All five of these areas have been represented in the programme and the distribution of work broadly follows the division of classifications in the Scottish Borders area as a whole. The bottom chart demonstrates that in 2023/24 the work has majorly focused on accessible small towns.

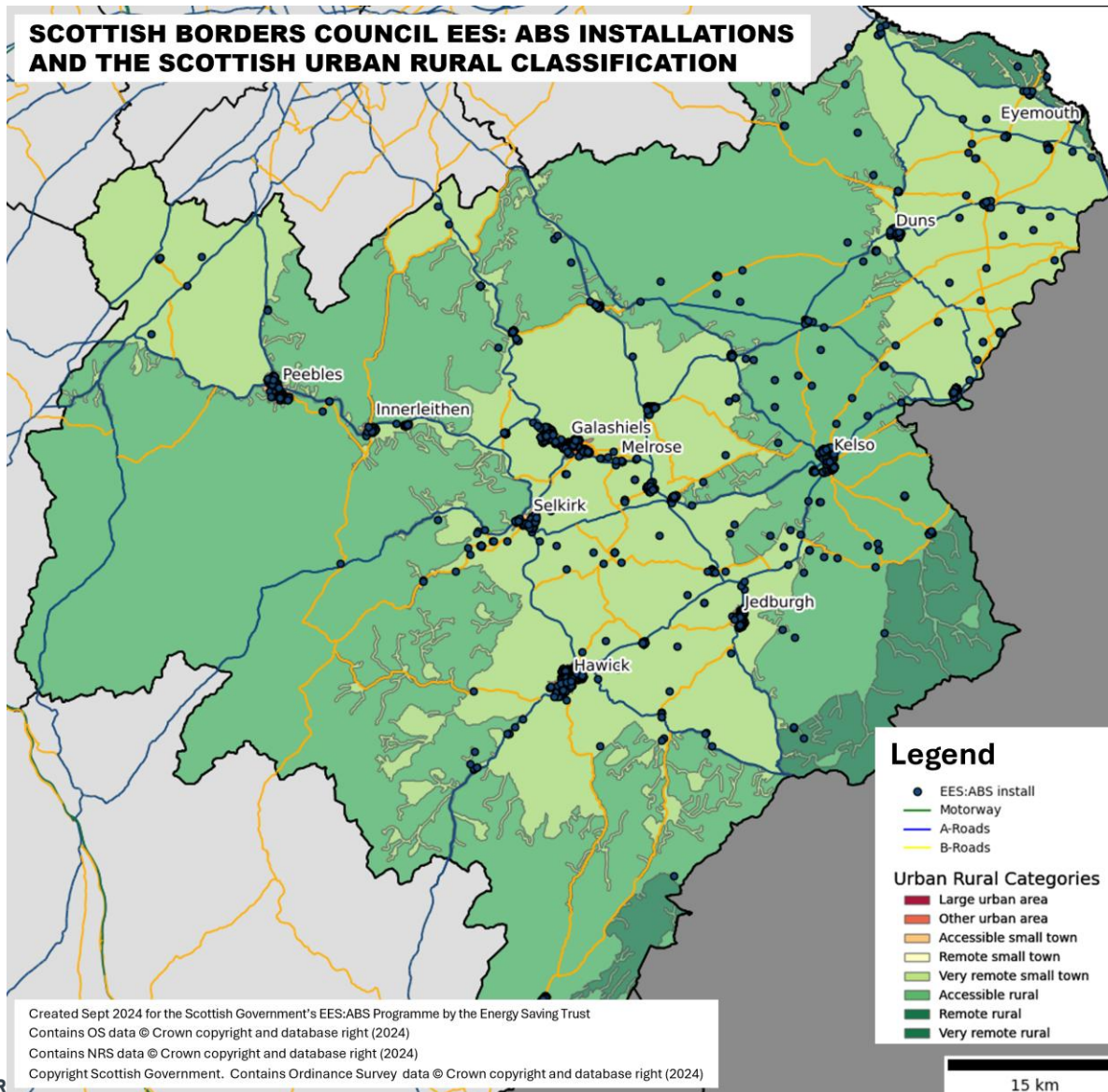
Scottish Borders properties by urban rural classification



EES: ABS properties by urban rural classification



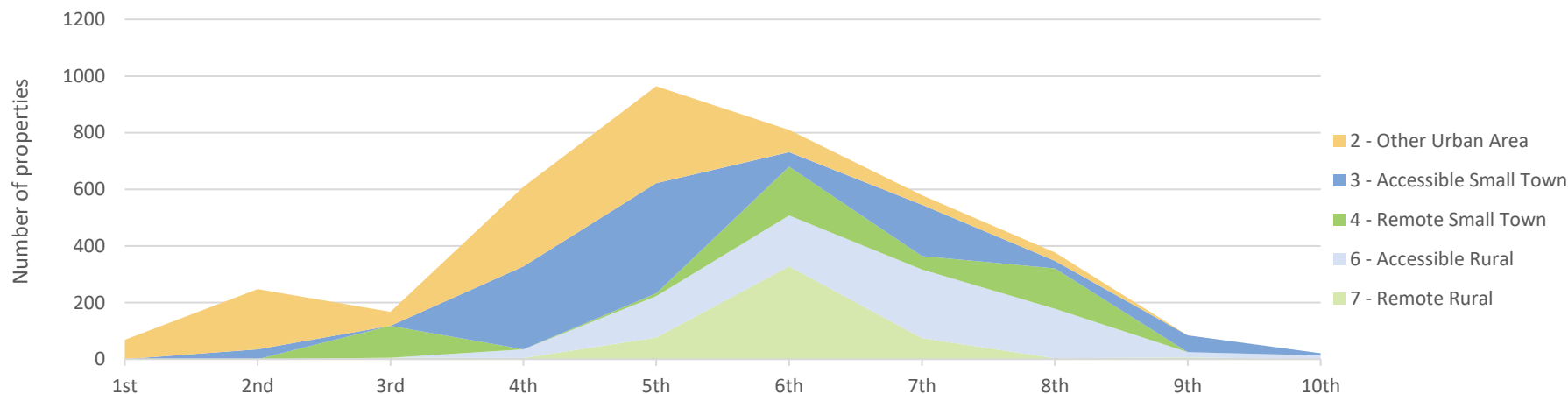
Urban Rural Classification



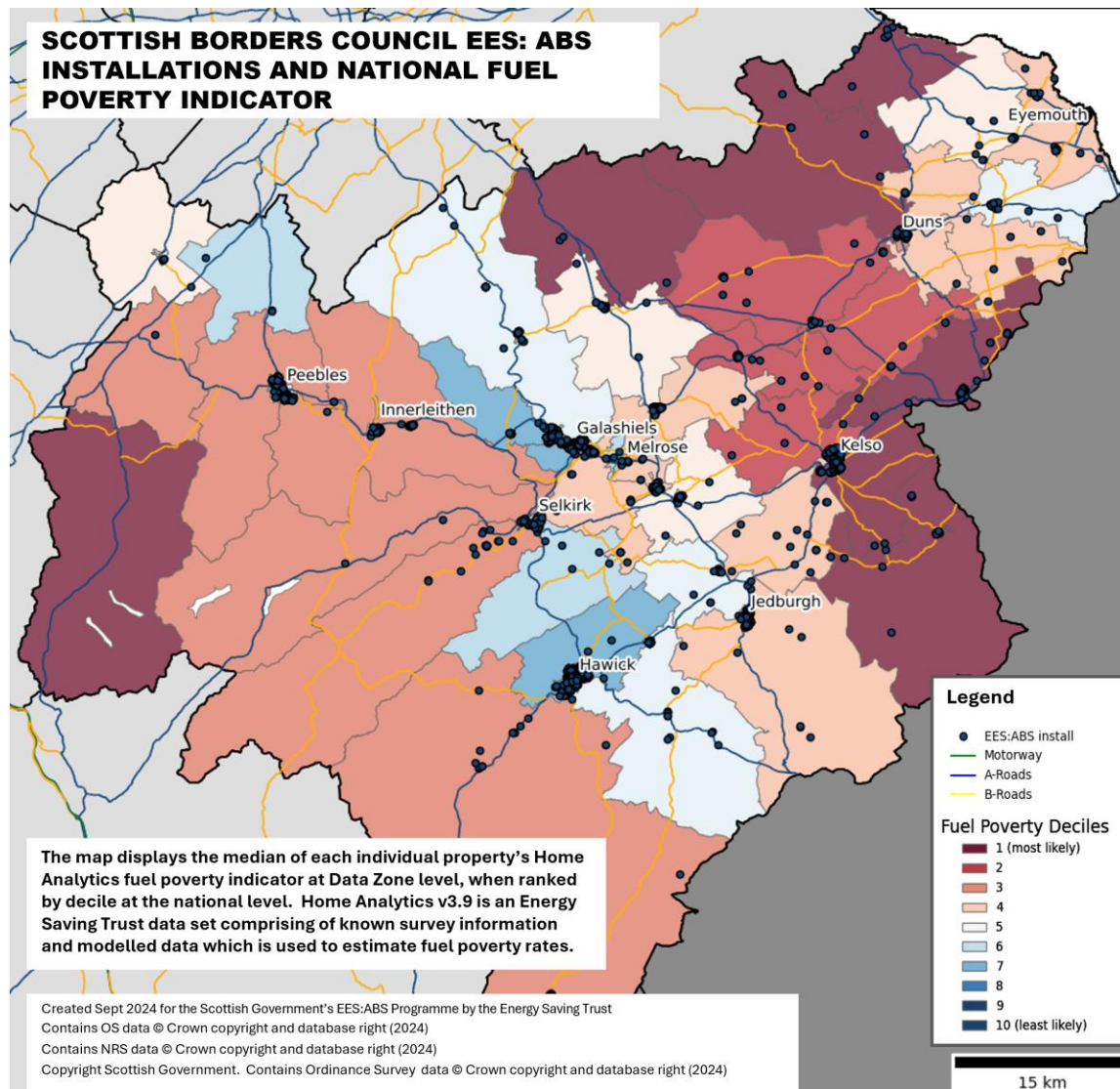
Urban Rural Classification and SIMD

This illustration demonstrates how 78.11% of the work that was completed within the five most deprived SIMD ranks fall within other urban area and accessible small towns. According to the Scottish Borders Council, urban rural classification alone is not one of the key features for participating properties, as factors such as SIMD ranking, council tax, income and the condition of the property are considered. Furthermore, it is 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.

EES: ABS Properties by Urban Rural Classification and SIMD Overall Decile Ranking

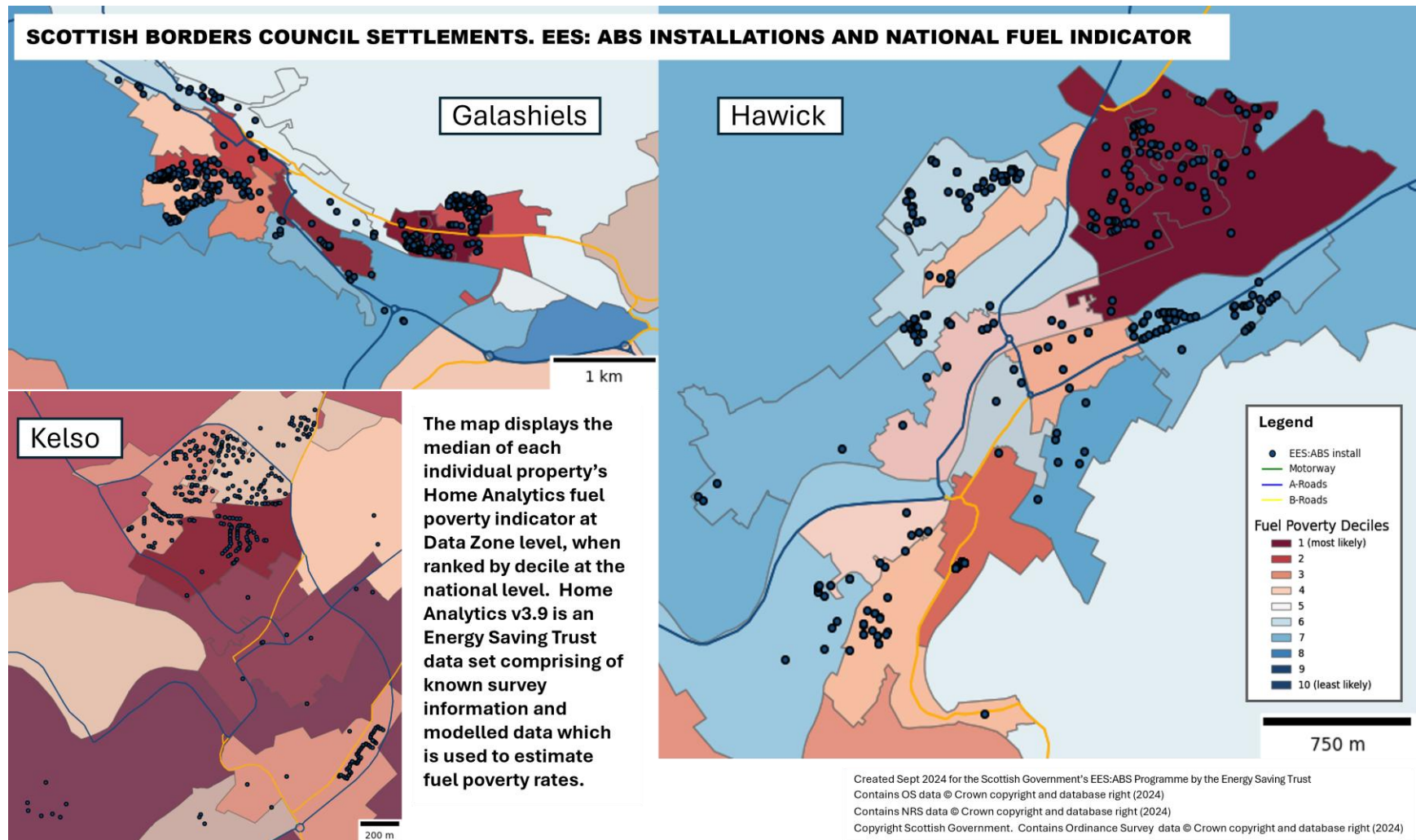


National Scottish Fuel Poverty Indicator I

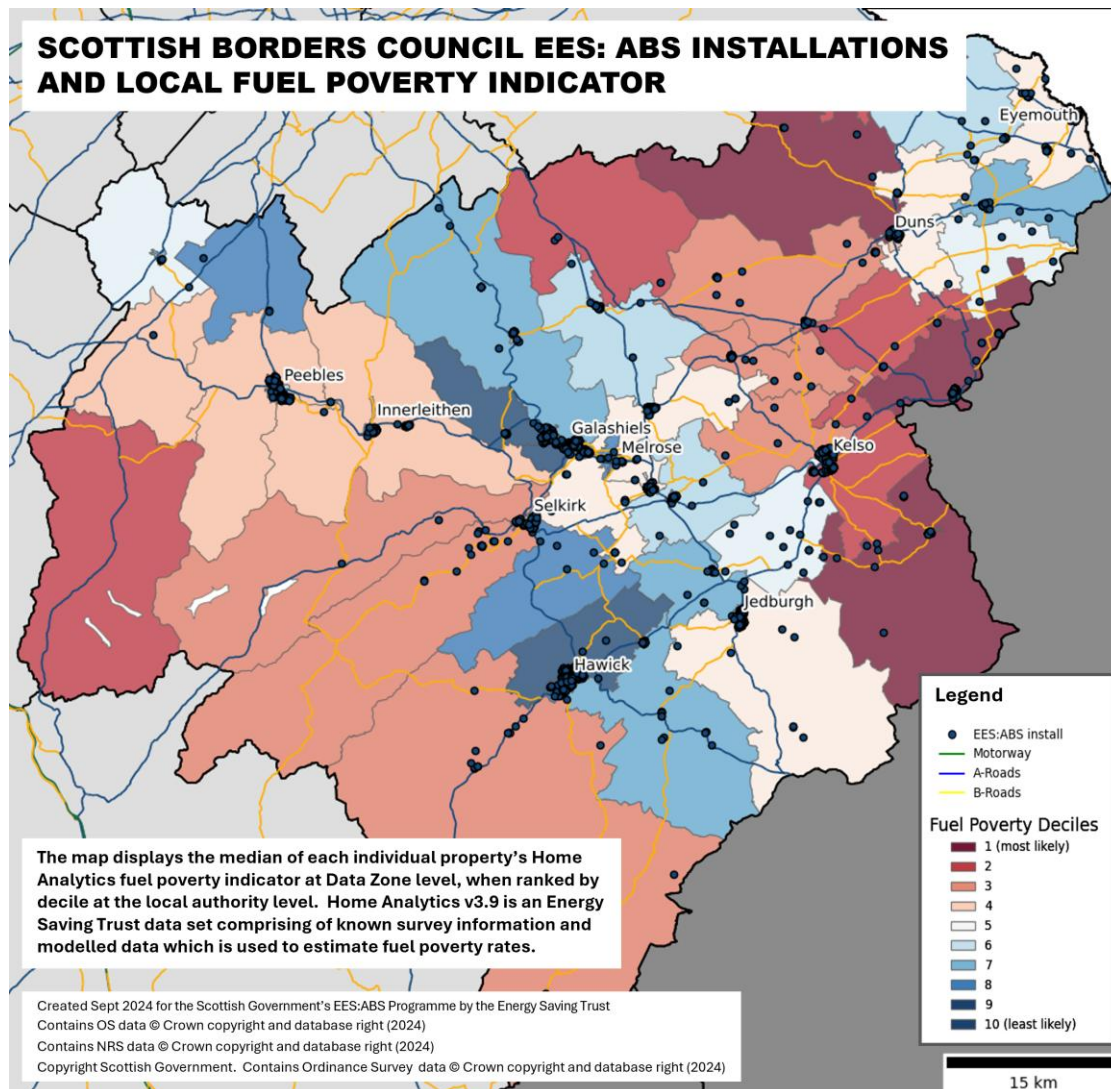


Here we can see the state of fuel poverty in Scottish Borders Council compared to the rest of Scotland. The blue areas have the lowest fuel poverty rates on a national scale when fuel poverty by Data Zone is ranked for all local authorities in the country. According to the Scottish Housing Condition Survey (SHCS), the average fuel poverty rate in the Scottish Borders Council area is around 29% of all homes. This is five percent higher than the Scottish national average (24%) and places the Scottish Borders Council as 23rd of all 32 local authorities in the country.

National Scottish Fuel Poverty Indicator II

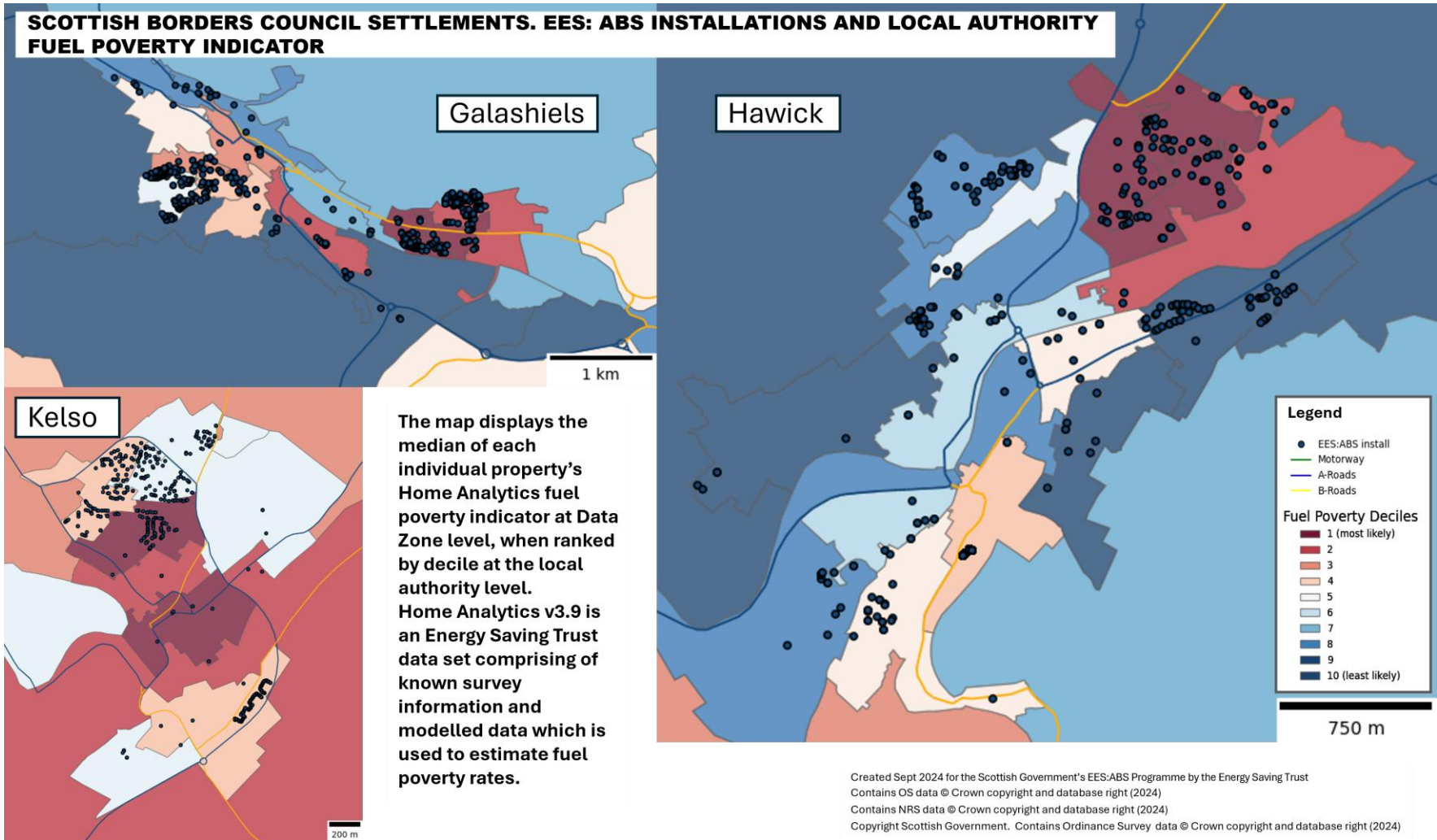


Scottish Borders Fuel Poverty Indicator I



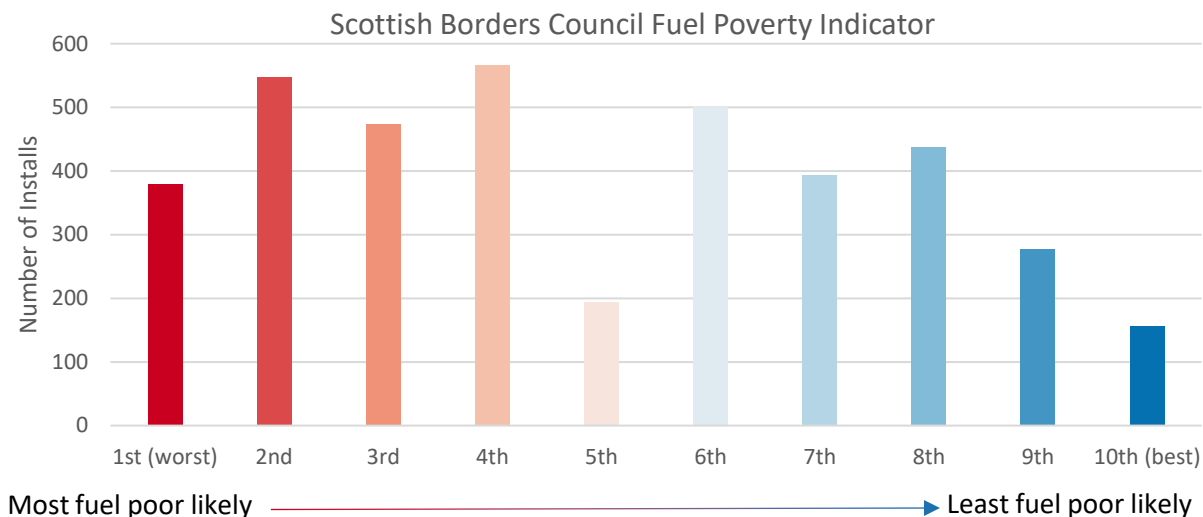
This map demonstrates the probability of fuel poverty by data zone ranked on a local authority level for the Scottish Borders Council only. The highest fuel poverty areas within the council are shown here in red. It is worth noting that the fuel poverty indicator used here is a snapshot of the situation. Thereby, 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.

Scottish Borders Fuel Poverty Indicator II

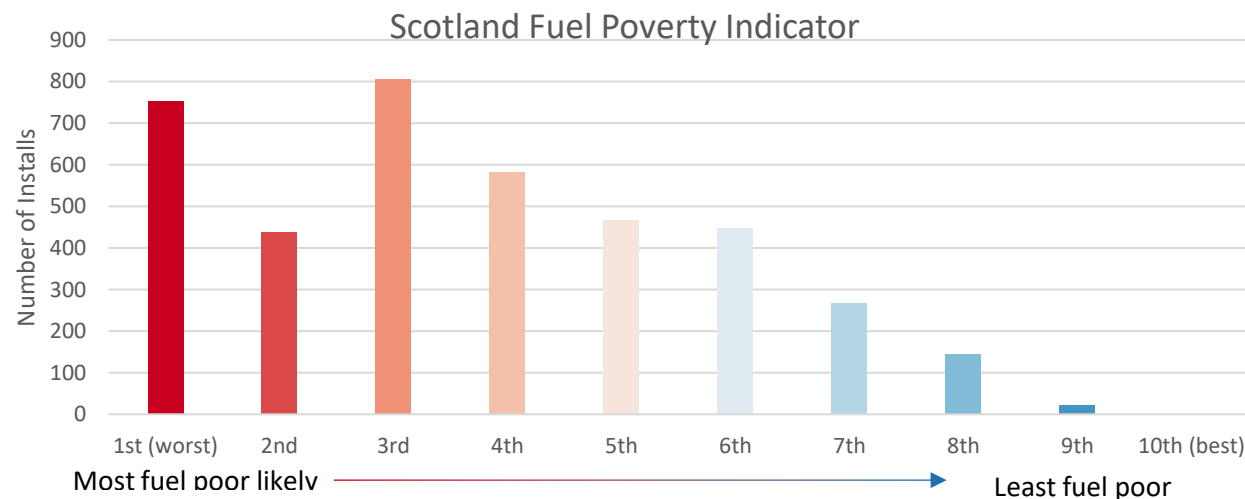


Scottish Borders Fuel Poverty Indicator III

67.81% of all EES: ABS installs took place within the six most fuel poor ranked data zones as seen in the top illustration. This is looking at the local authority specific fuel poverty indicator for the Scottish Borders Council.

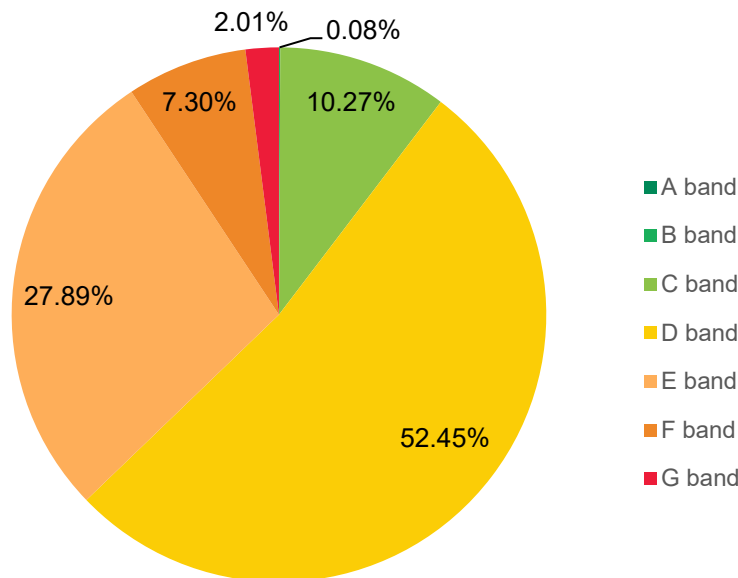


The bottom chart shows the difference when the installs are looked at on a national scale for Scotland. 88.95% of the installs are within the six most fuel poor ranks when compared to the national figures.

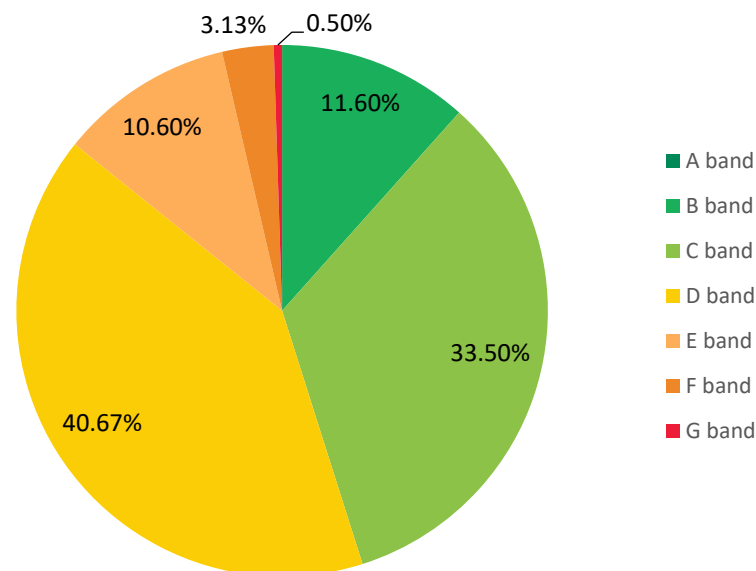


EES: ABS SAP Band Analysis I

EES: ABS properties by pre-installation EPC banding



EES: ABS properties by post-installation EPC banding



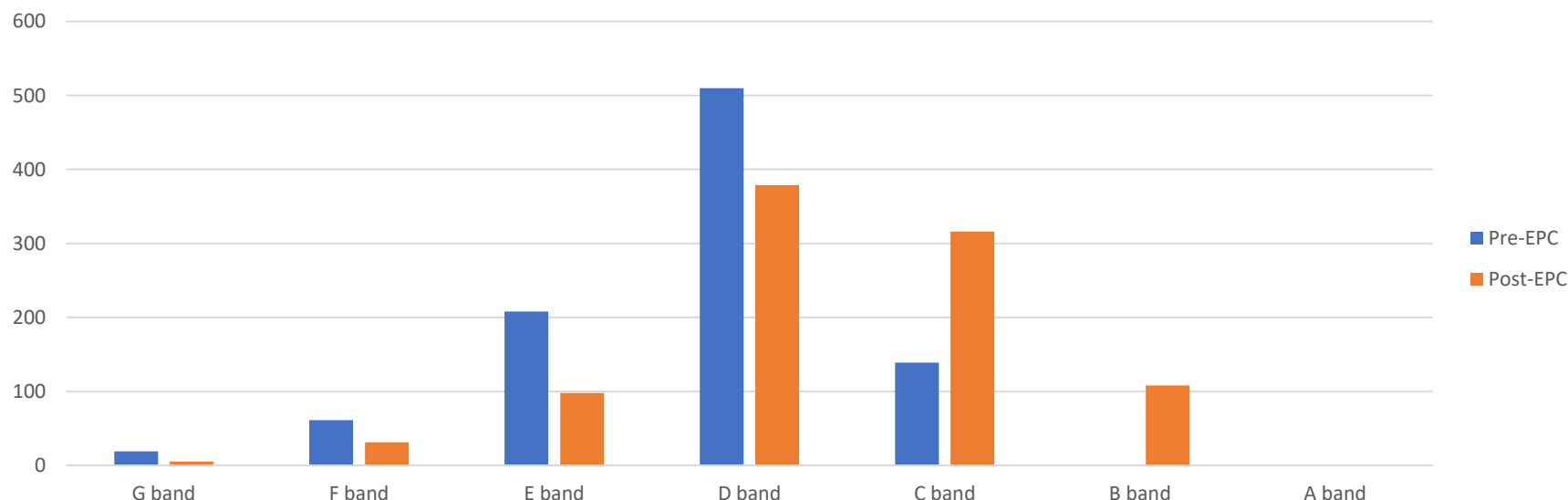
A valid pre-installation EPC was provided for 2,589 properties participating in the programme. 89.6% of these were within the national band D average or lower.

A total of 991 participants had a valid post-installation EPC regardless of the validity of the pre-EPC. After the completion of the installs, 45.1% of these properties made it to band C or higher.

EES: ABS SAP Band Analysis II

Out of the 2,589 properties with valid pre-EPCs, a total of 937 had a valid pre- and post-installation EPC and can be used for further analysis. 85.17% of these 937 properties had a starting SAP band of D or lower. The Post-EPC's show that after the completion of installs, 45.25% of the properties have reached band C and 40.45% reached band D. 108 properties also moved up to band B. 14.30% of the properties have a post-installation EPC band of E, F or G, despite of the impact of the EES: ABS treatment.

EES: ABS properties by EPC banding

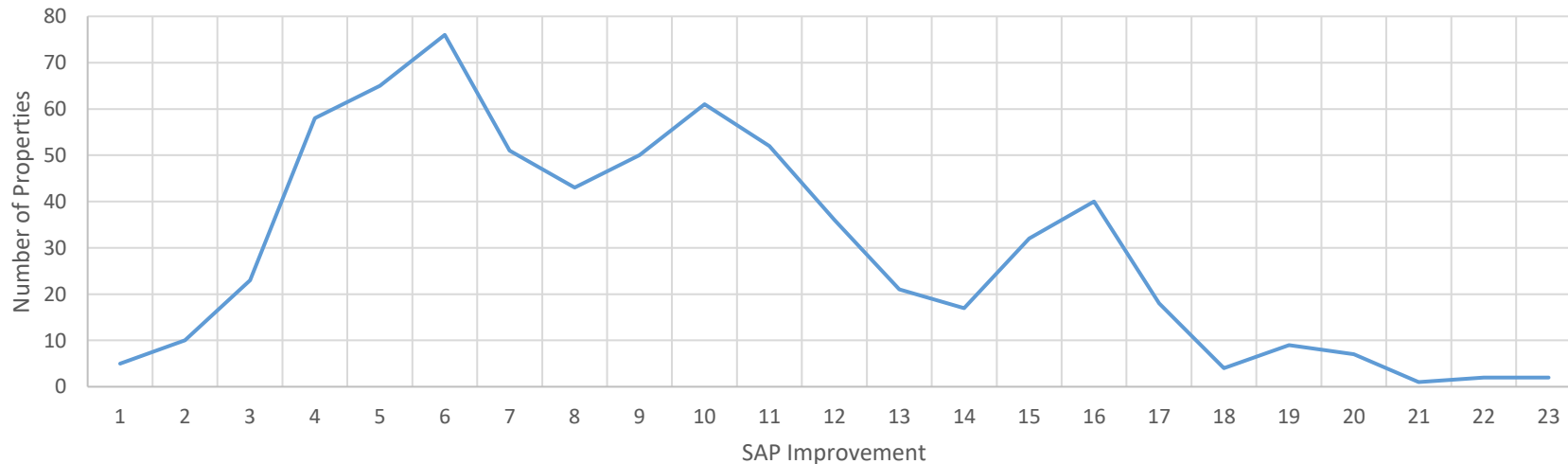


EES: ABS SAP Band Analysis III

The most common outcome of the EES: ABS programme within the Scottish Borders Council was for a property to increase in SAP score for around 4 to 6 points (28.1% of properties where the EPC's were valid to use for further analysis).

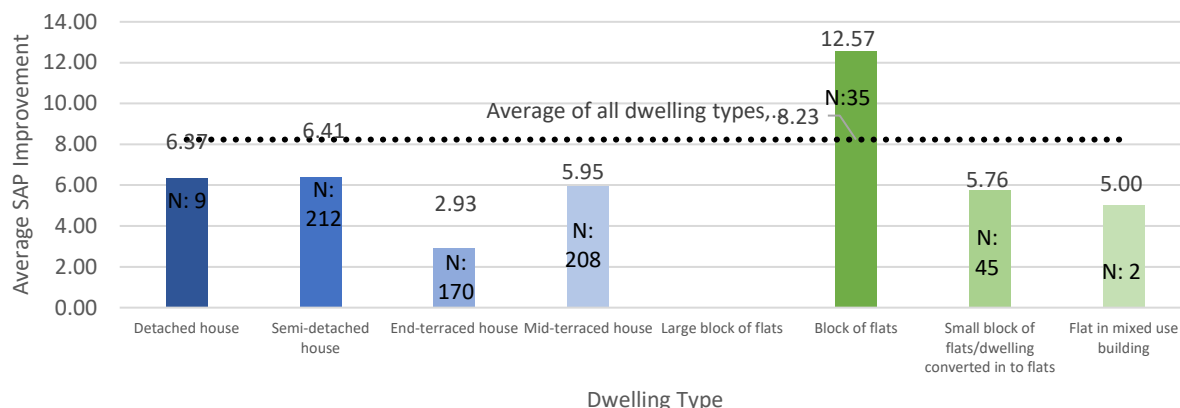
The larger SAP increases (10 to 23 points) included in this case study were due to installation of external wall insulation for solid walls, standard cavity, Battery Storages, Photovoltaics and hard to treat CWI solution across all dwelling types in the council area.

EES: ABS Property Count by SAP Improvement



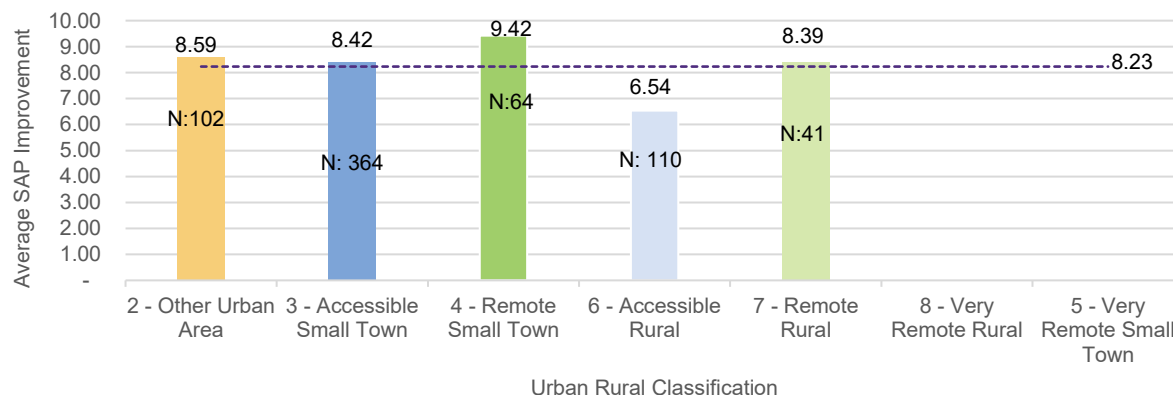
EES: ABS SAP Band Analysis IV

Average SAP improvement by dwelling type



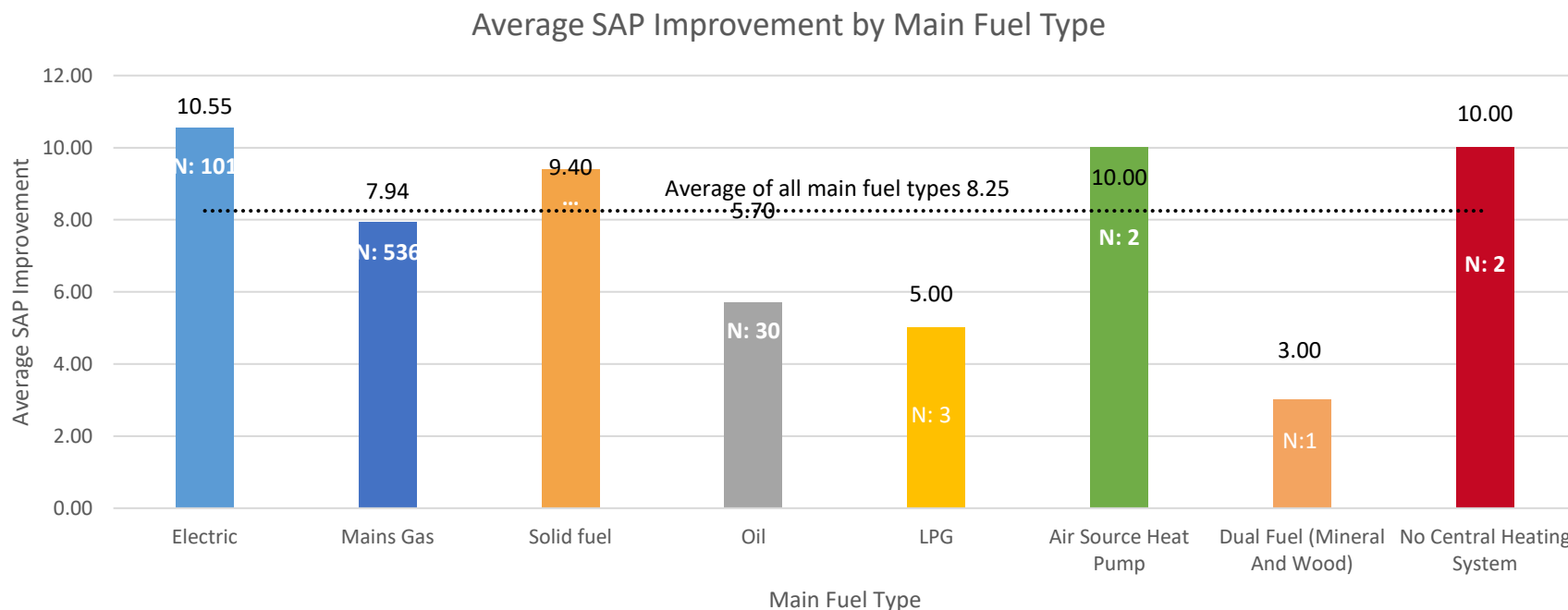
The average SAP improvement for all dwelling types is 8.23. The biggest sample size is for semi-detached houses (N:212) and the average increase for this dwelling type has been 6.41.

Average SAP improvement by urban rural classification



The average SAP improvement for all urban classifications where data was available for further analysis, has been 8.23. The biggest sample size is for accessible small town (N:364) where the average improvement was 8.42.

EES: ABS SAP Band and Main Fuel Type



The average SAP improvement for all main fuel types was 8.25. The biggest sample size available was for mains gas properties where the average improvement was 7.94. Properties with electric heating improved by their SAP rating by 10.55 on average, and dual fuel properties by 3.0. However, the sample size for the dual fuel was very low (1 record).

Conclusions and notes

- A variety of measures have been included in the programme since outset and in the last three years, 53.3% of all measures have focused on creating alternative energy sources (Photovoltaics and Battery Storages).
- The typical participating property is a house (86%) and constructed between 1950 and 1983 (78% of all properties).
- 73% of the properties included can be found within the six most deprived SIMD areas.
- Most properties had a starting EPC of band D or lower (89.6%) and 45% 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 6 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 (2020) used.

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