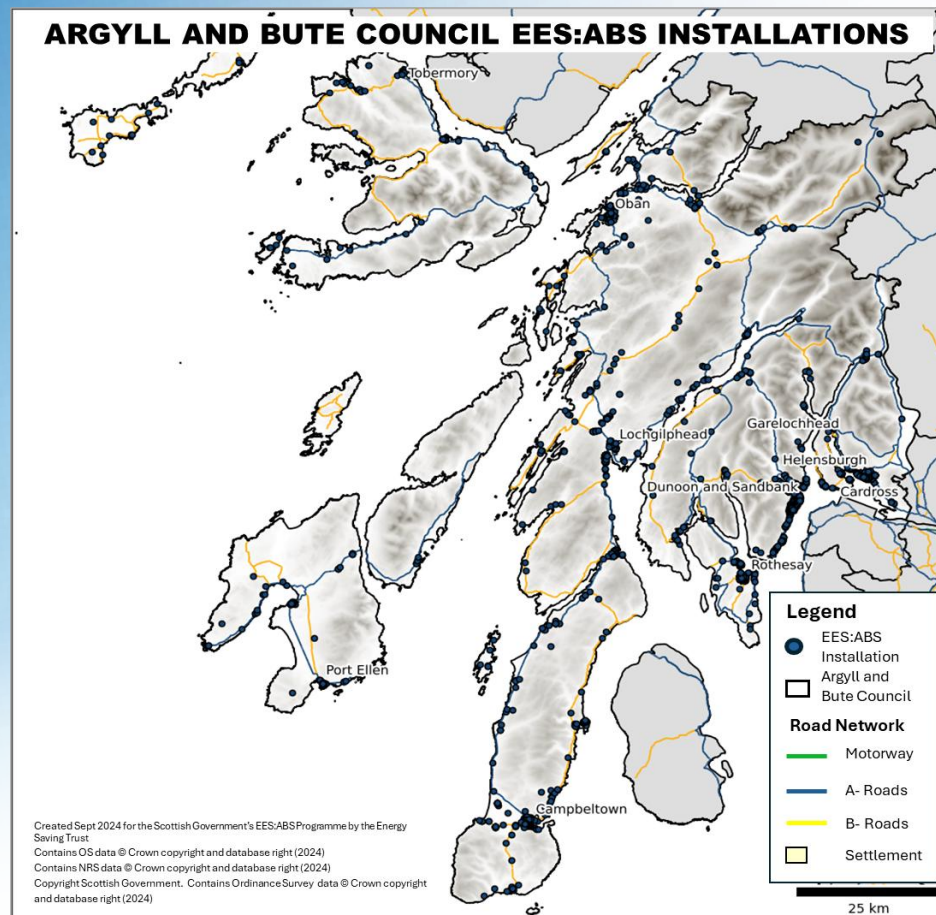


Argyll and Bute Council EES: ABS Case Study

energy
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Energy Saving Trust
September 2024



Overview

The Scottish Government's EES: ABS* team requested 8 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 full case study and illustration set for Argyll and Bute.

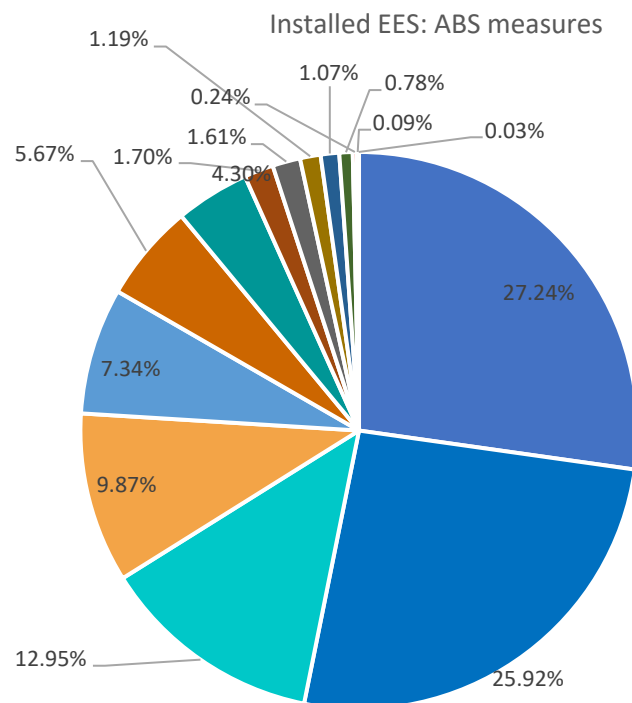
Argyll and Bute EES: ABS dataset

Financial Year	Number of records*	% of records
2013/14	565	13.58
2014/15	509	12.23
2015/16	223	5.36
2016/17	266	6.39
2017/18	442	10.62
2018/19	404	9.71
2019/20	476	11.44
2020/21	372	8.94
2021/22	243	5.84
2022/23	438	10.53
2023/24 ¹	223	5.36
Total Installs	4,161	100.00

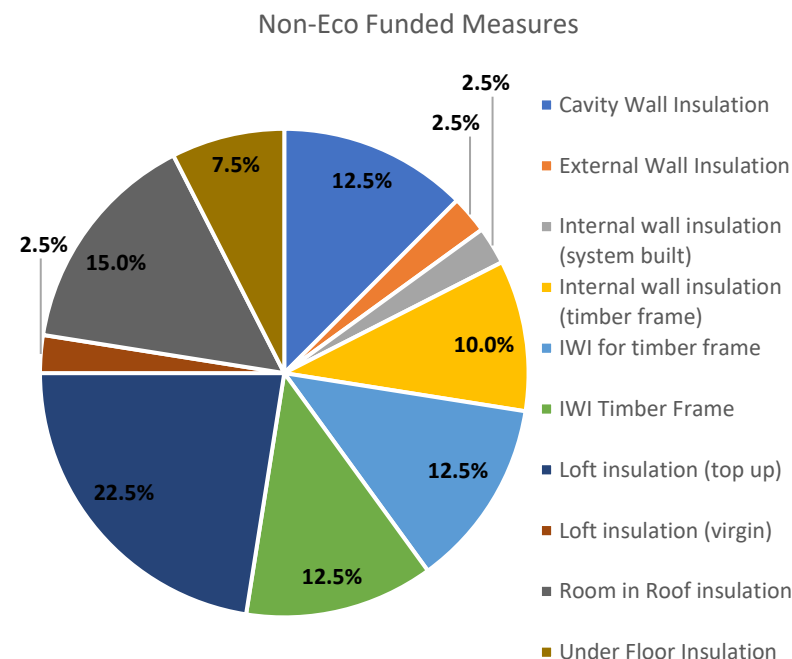
Reference numbers	Number of records	% of records
With pre-installation EPC	3,243	96.72
With post-installation EPC	1,042	31.08
With pre and post-installation EPC	1,036	30.90
With GDAR	0	0.00
With measure reference number	0	0.00

The Argyll and Bute Council has contributed 3.25% of the total EES: ABS installs across Scotland reported to date (Sept 2024).

Installed Measures I



- Internal Wall Insulation (solid wall)
- Cavity Wall Insulation
- Loft insulation (top up)
- External Wall Insulation (solid wall)
- External Wall Insulation for Cavity Walls
- Under Floor Insulation
- Loft insulation (virgin)
- Internal Wall Insulation for Cavity Walls
- Room in Roof insulation
- Non-ECO funded measure
- Electric Storage Heaters
- Park Home External Wall Insulation
- Qualifying Boiler replacement
- Window Glazing
- Loft insulation (rafter)



A wide variety of measures have been offered throughout the programme. A total of 72.83% of all measures have been for wall insulation including external wall insulation for solid wall, cavity wall and internal wall insulation for solid wall. The graph on the right shows the distribution of the Non-ECO funded measures during the programme.

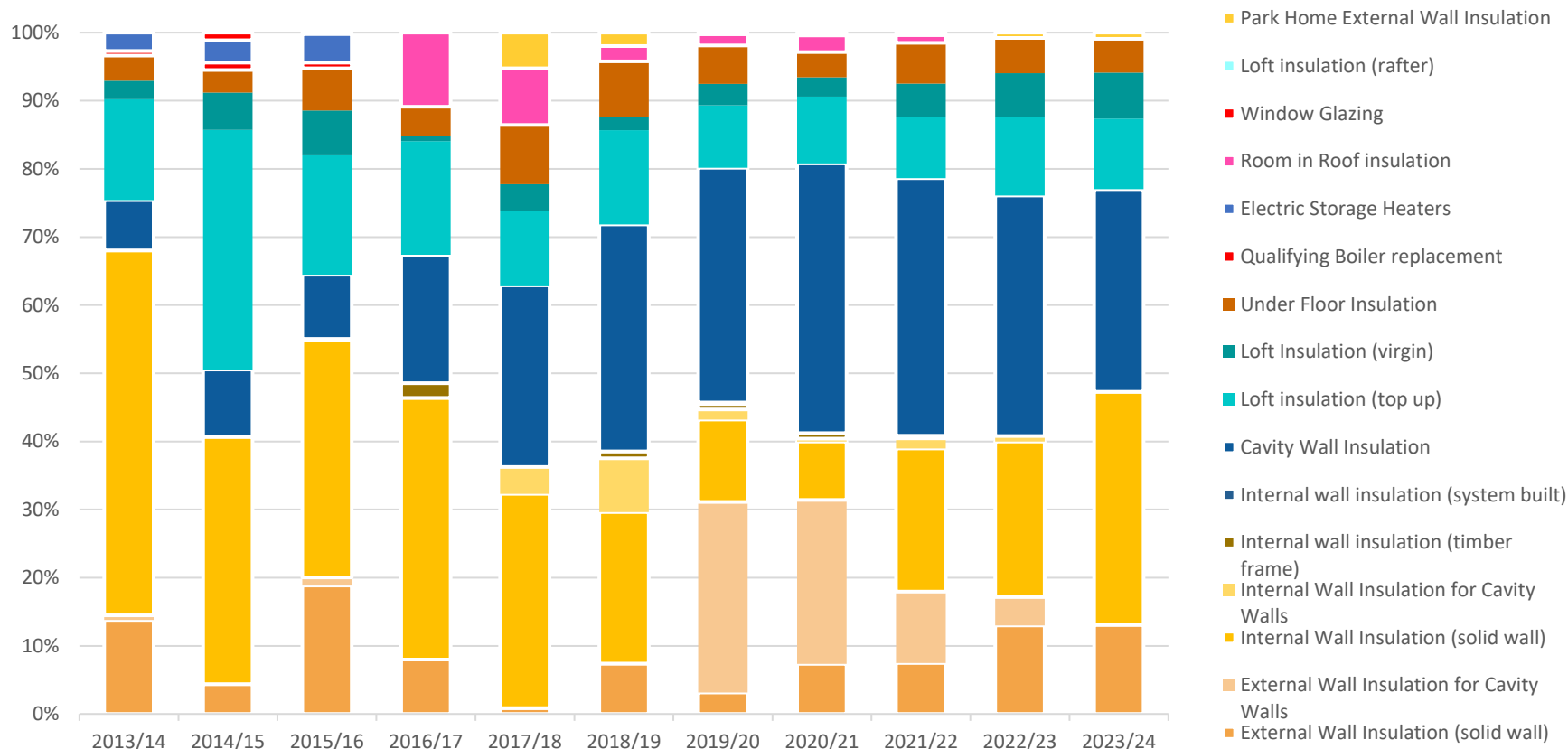
Installed Measures II

Measure Name	Number of records*	% of records
Internal Wall Insulation (solid wall)	913	27.23
Cavity Wall Insulation	869	25.92
Loft insulation (top up)	434	12.94
External Wall Insulation (solid wall)	331	9.87
External Wall Insulation for Cavity Walls	246	7.34
Under Floor Insulation	190	5.67
Loft insulation (virgin)	144	4.29
Internal Wall Insulation for Cavity Walls	57	1.70
Room in Roof insulation	54	1.61
Non-ECO funded measure	40	1.19
Electric Storage Heaters	36	1.07
Park Home External Wall Insulation	26	0.78
Qualifying Boiler replacement	8	0.24
Window Glazing	3	0.09
Loft insulation (rafter)	1	0.03
*Unknown	1	0.03
Total Installs	3,353	100.00

Non-ECO funded measures	Number of records*	% of records
Loft insulation (top up)	9	22.50
Room in Roof insulation	6	15.00
IWI Timber Frame	5	12.50
Cavity Wall Insulation	5	12.50
IWI for timber frame	5	12.50
Internal wall insulation (timber frame)	4	10.00
Under Floor Insulation	3	7.50
External Wall Insulation	1	2.50
Internal wall insulation (system built)	1	2.50
Loft insulation (virgin)	1	2.50
Total Installs	40	100.00

Installed Measures by Financial year

Installed EES: ABS measures by financial year



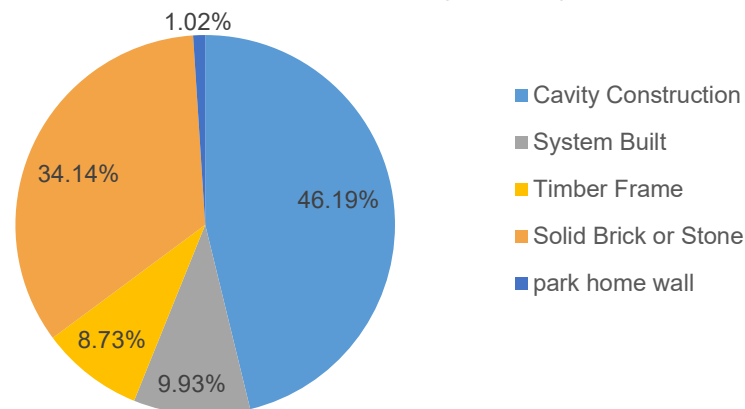
Argyll and Bute Council offered a variety of measures from the start of the programme with major focus on external wall and internal wall insulation.

Wall Type

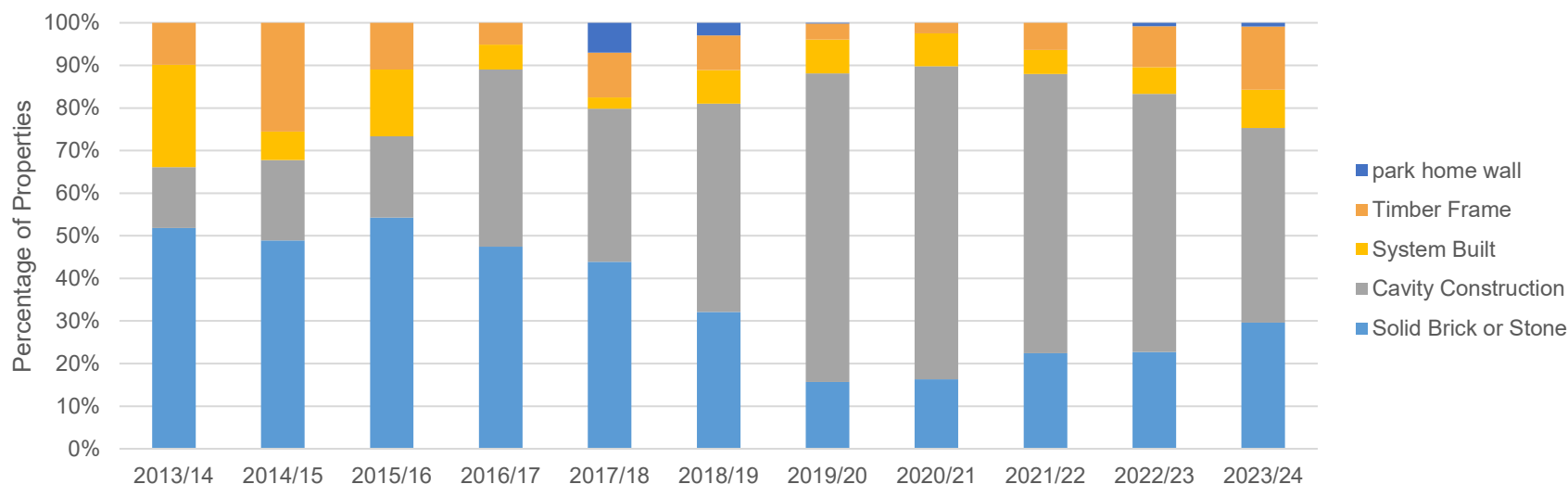
Most of the participating properties are cavity construction, system built and solid brick or stone (90.25%). There have also been some timber framed, and park home wall properties included in the programme.

Below you can see the division of these wall types throughout the years.

EES: ABS Properties by wall type

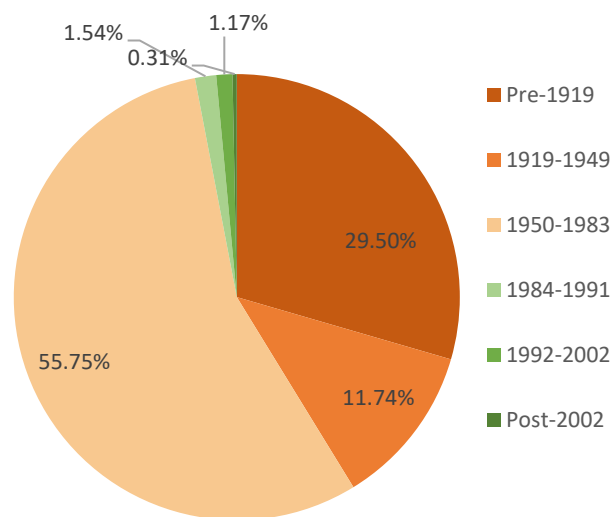


EES: ABS properties and construction type by financial year

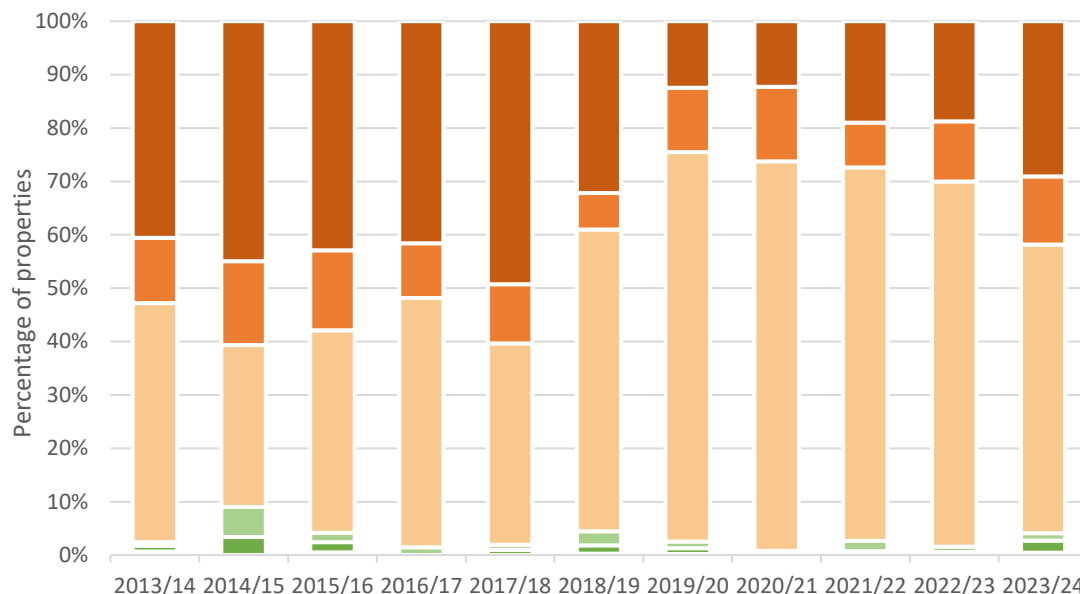


Construction Age

EES: ABS properties by construction age

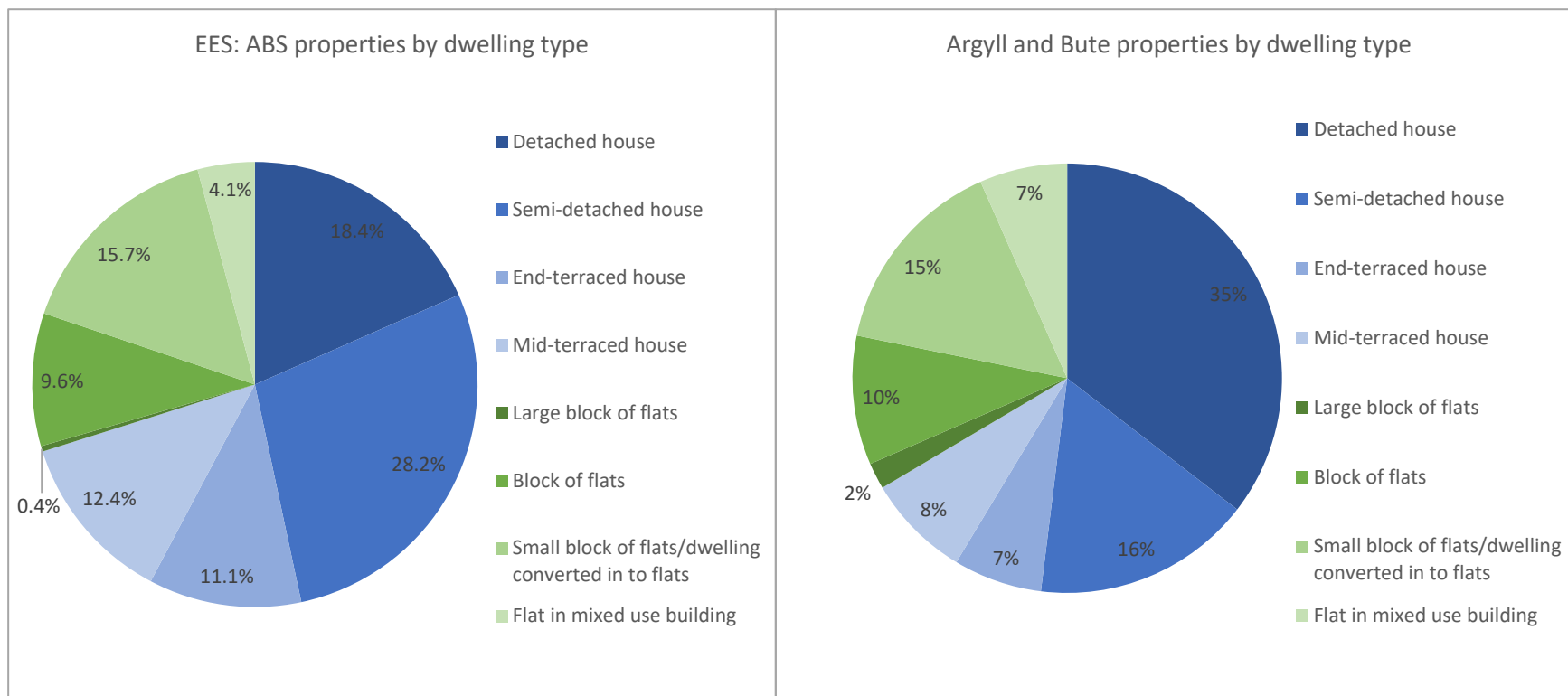


EES: ABS Properties and Construction Age by Financial Year



More than half of all participating properties were constructed between 1950 and 1983 (55.75%). 41.24% 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 (93.86%).

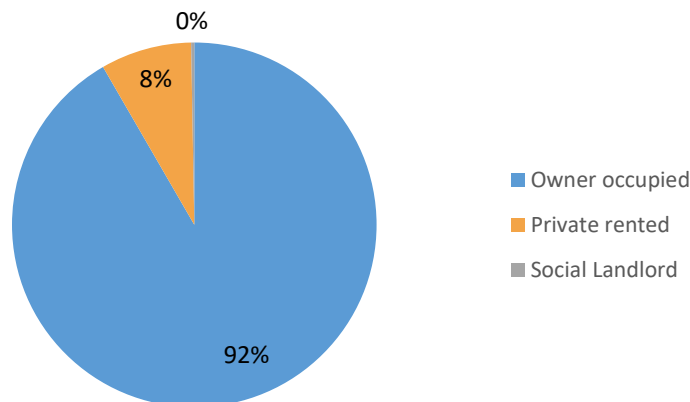
Dwelling Type



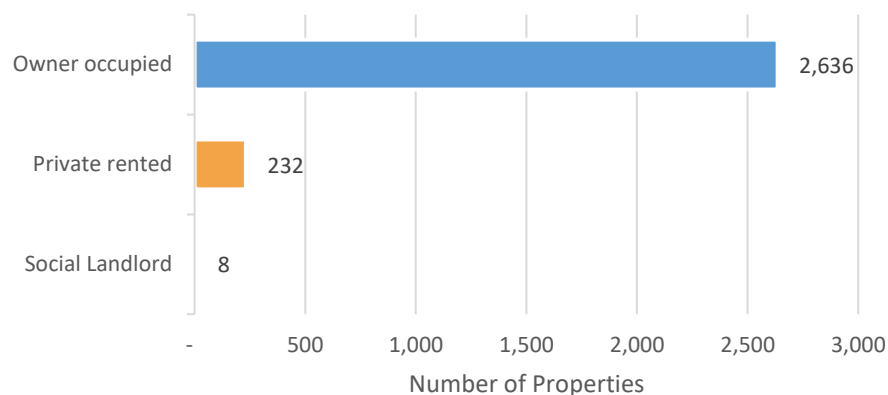
Throughout the programme the most consistent focus has been treating houses (70.1%) while the remaining 29.9% targeted flats. As a whole, 66.5% of the dwelling types within Argyll and Bute Council consists of houses and 33.5% of flats.

Property Tenure

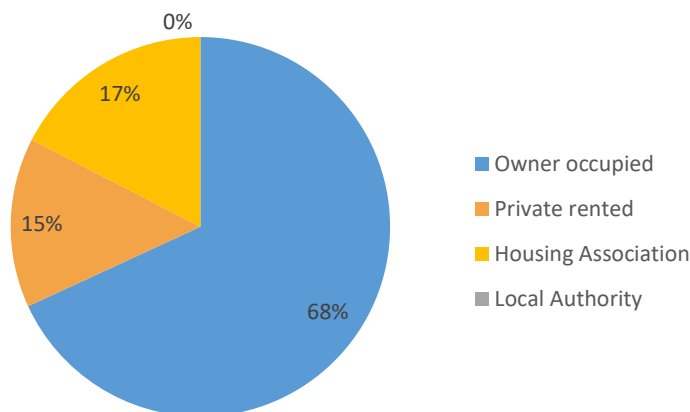
EES: ABS properties by tenure



EES: ABS properties by tenure



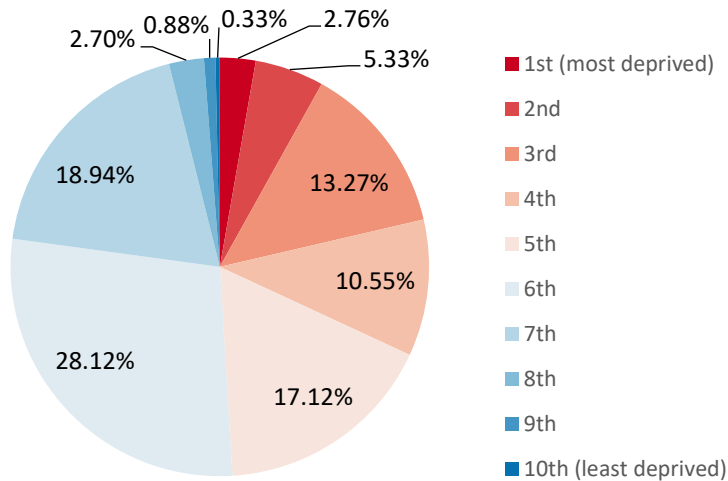
Argyll and Bute properties by tenure



The Argyll and Bute 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 (92%) includes right-to-buy properties.

Scottish Index of Multiple Deprivation (SIMD) I

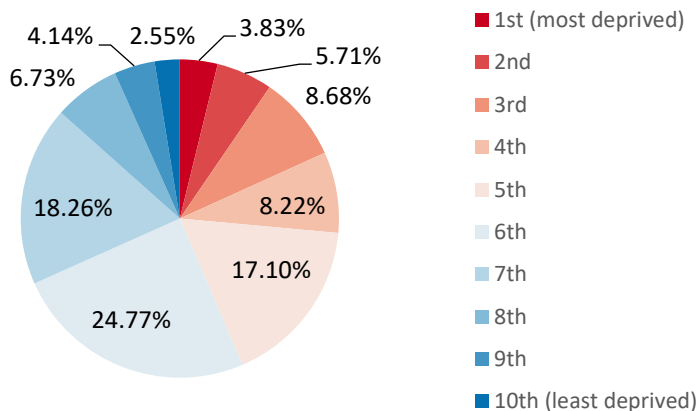
EES: ABS properties by overall SIMD decile ranking



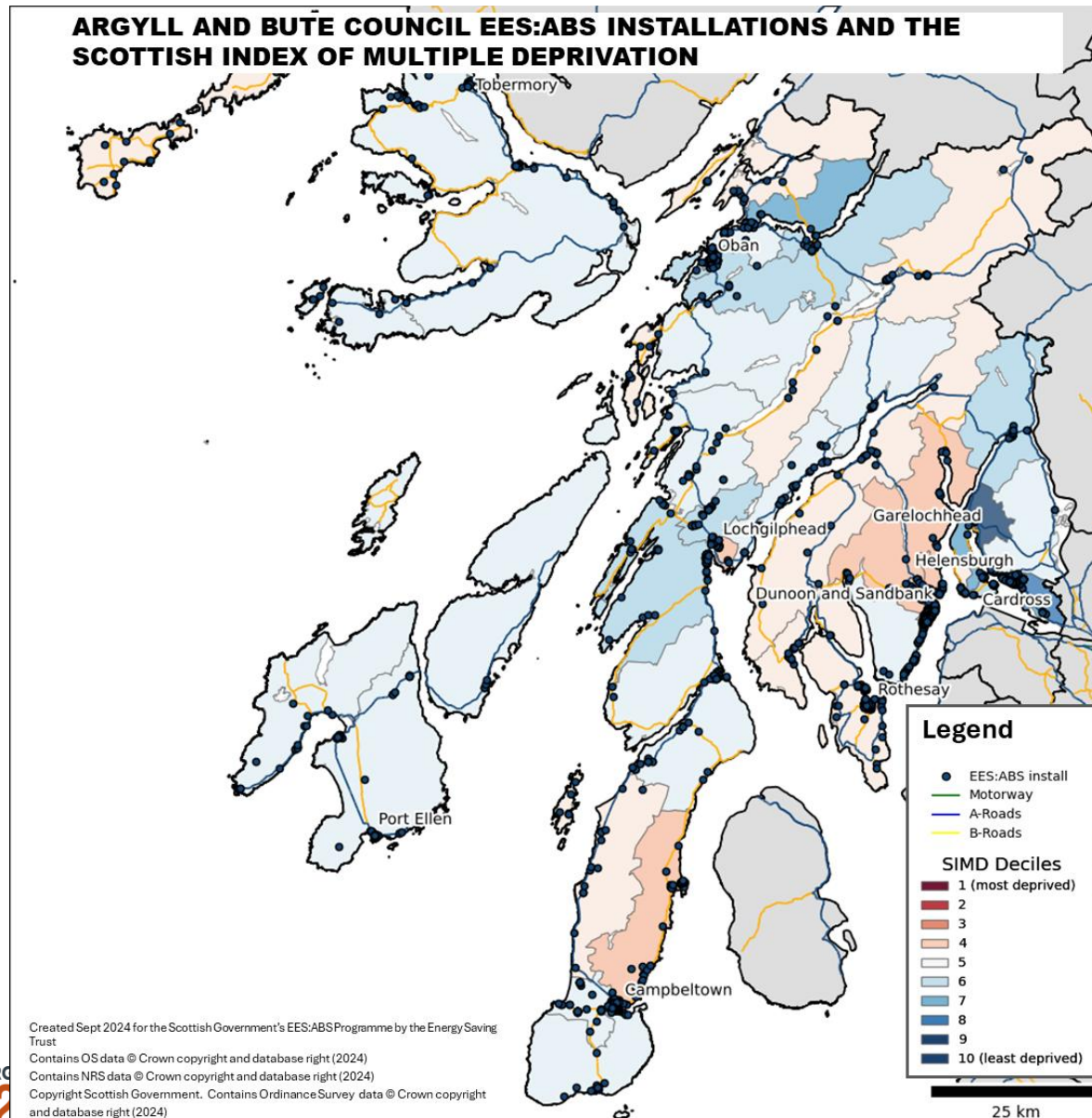
Comparison of these two illustrations shows the correlation between the overall SIMD ranking of Argyll and Bute properties and of those targeted in the EES: ABS programme. A total of 74.39% of all participating properties are in the most deprived areas of the council and can be found within the six lowest SIMD ranks as seen in the top chart.

However, the SIMD can be a slightly problematic indicator for rural settings 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.

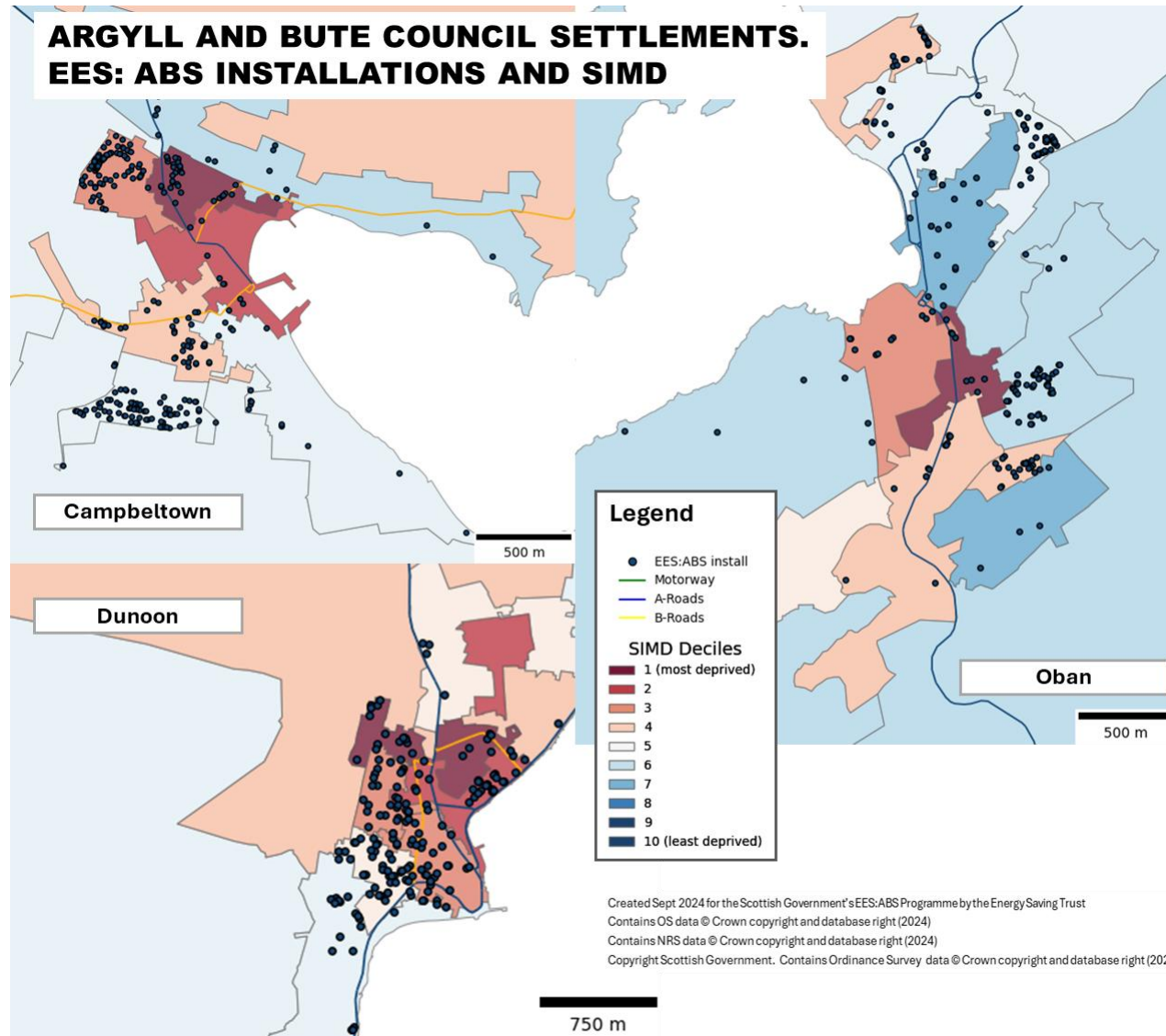
Argyll and Bute properties by overall SIMD decile ranking



Scottish Index of Multiple Deprivation (SIMD) II



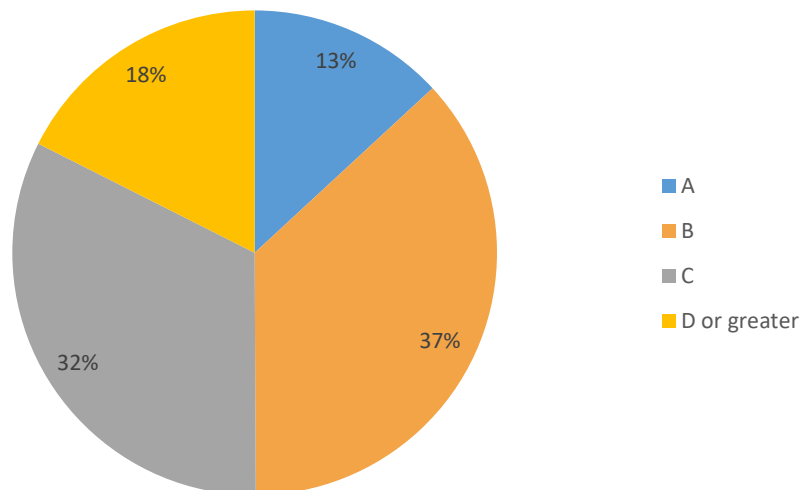
Scottish Index of Multiple Deprivation (SIMD) III



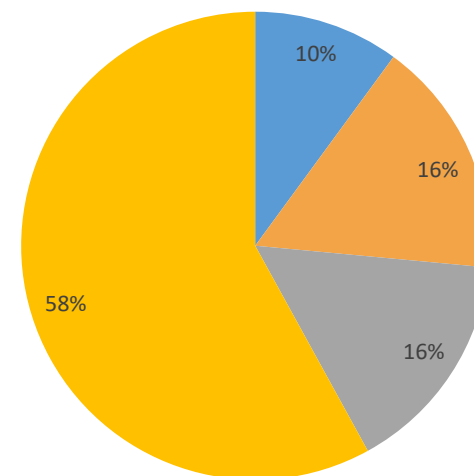
Created Sept 2024 for the Scottish Government's EES:ABS Programme by the Energy Saving Trust
Contains OS data © Crown copyright and database right (2024)
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EES: ABS Installs by Council Tax Band

EES: ABS properties by council tax band



Argyll and Bute properties by council tax band



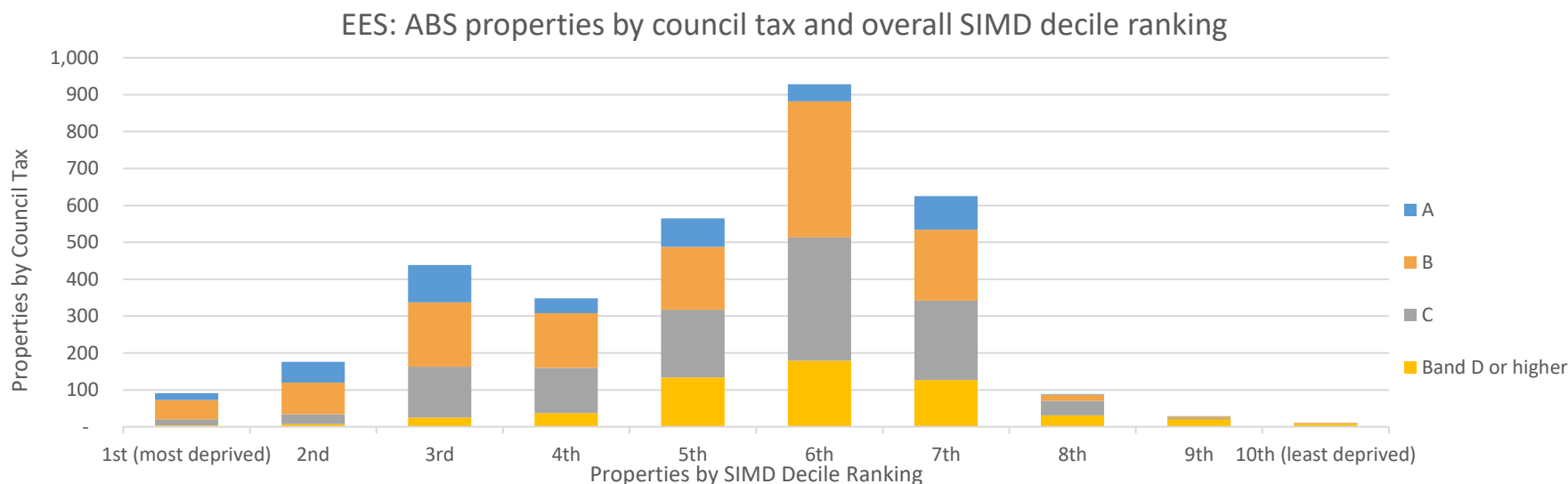
82% of properties receiving measures fall into council tax bands A, B and C. 18% of the treated properties are band D or greater. The chart on the top right side represents all properties in Argyll and Bute based on the council tax band and this further proves that the EES ABS scheme successfully focused on properties in the council tax band A, B and C.

EES: ABS properties by council tax band



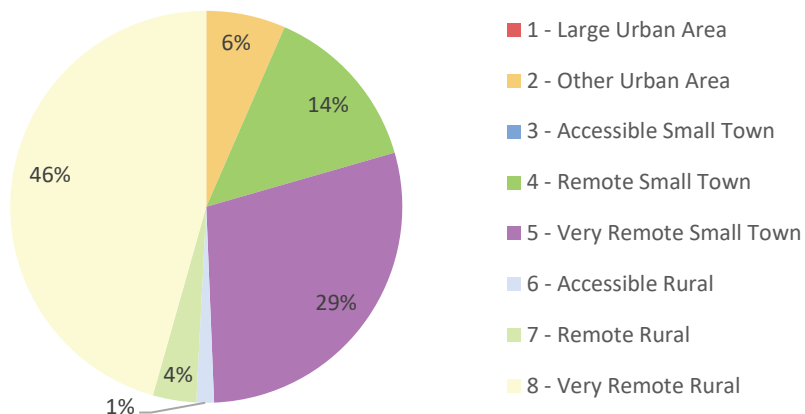
EES: ABS Installs by Council Tax Band and SIMD

While council tax banding can often be seen as an indicator for income, this is generally not true in many rural areas like Argyll and Bute as there are limited supply of housing where properties are often inherited and kept in the family irrespective of individual income. The illustration below examines the property council tax bands against the income SIMD ranking of the areas involved, 79.2% of the installations treating A, B and C council tax banded properties are located within the six most SIMD deprived areas when ranked by income as seen below.

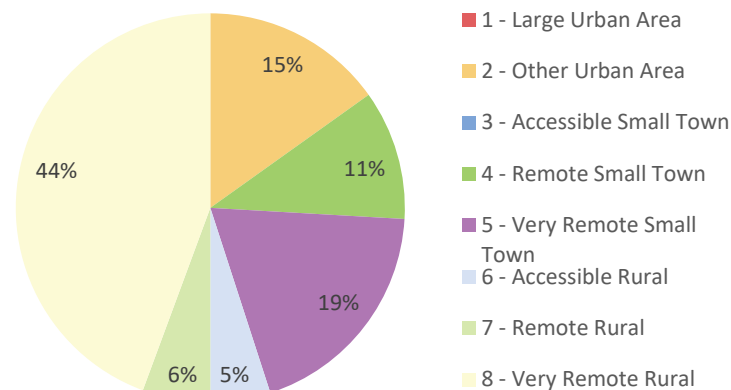


Urban Rural Classification I

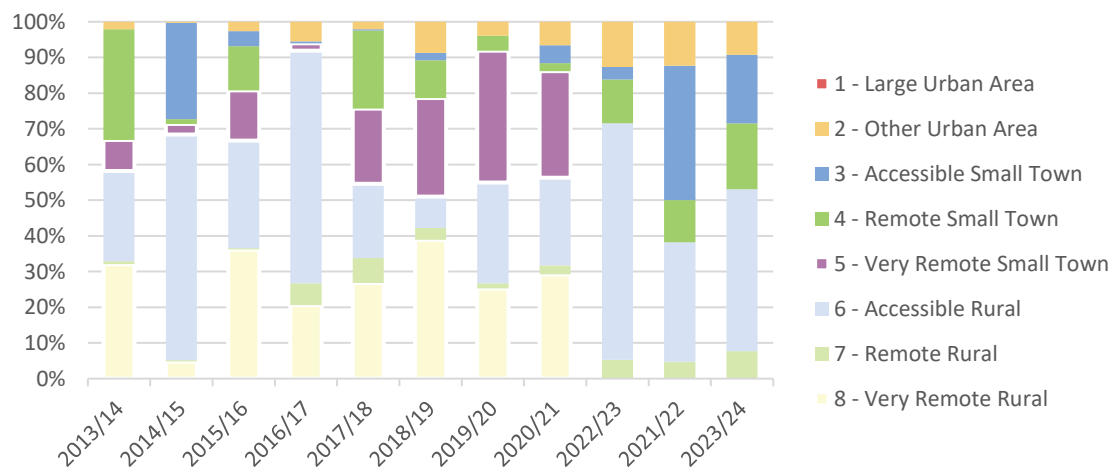
EES: ABS properties by urban rural classification



Argyll and Bute properties by urban rural classification

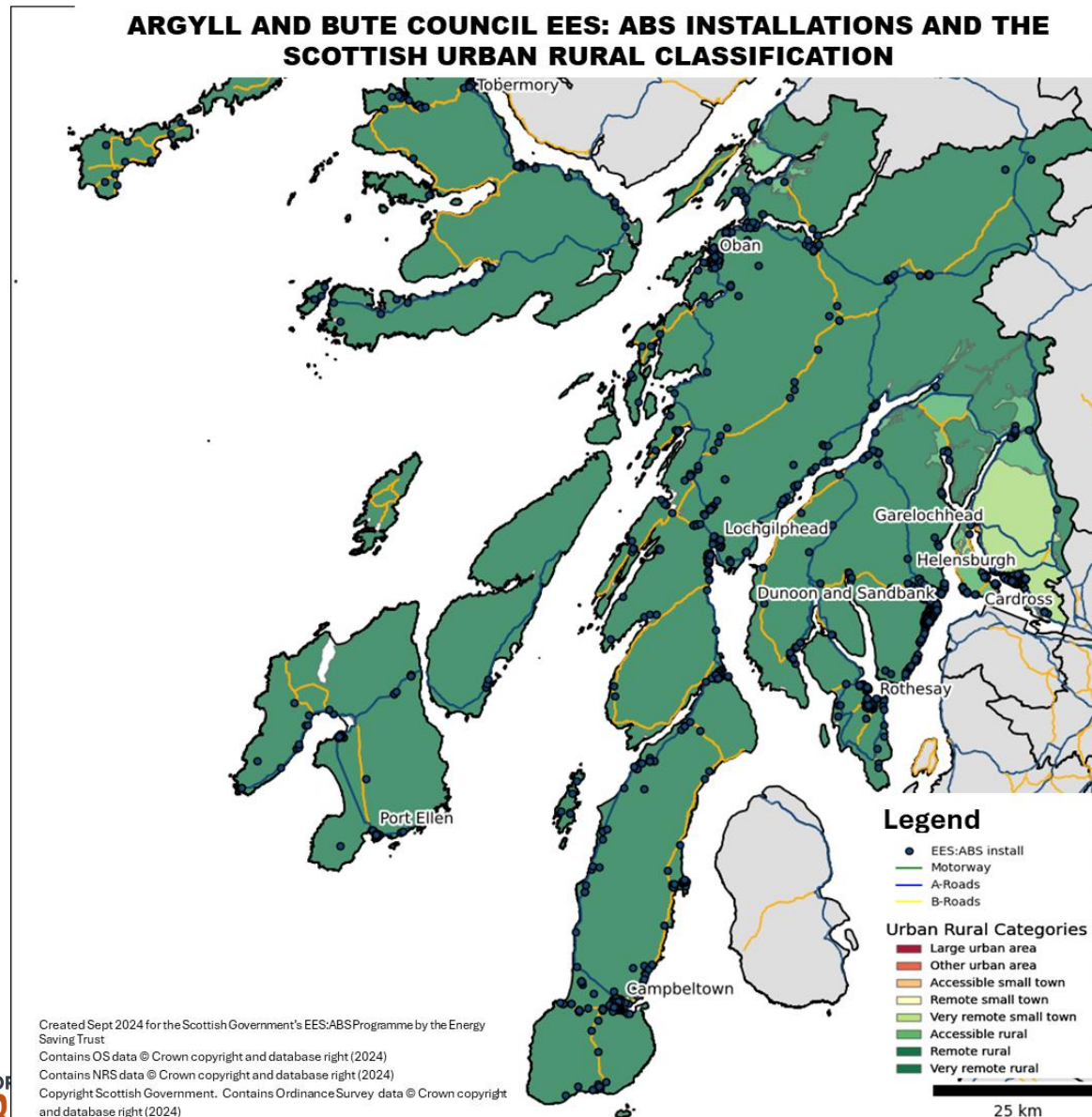


EES: ABS properties by urban rural classification



The Argyll and Bute area consists of six different urban rural classifications: Other urban area, remote small town, very remote small town, accessible rural, remote rural and very remote rural. The distribution of work broadly follows the division of classifications in the Argyll and Bute Council area as a whole.

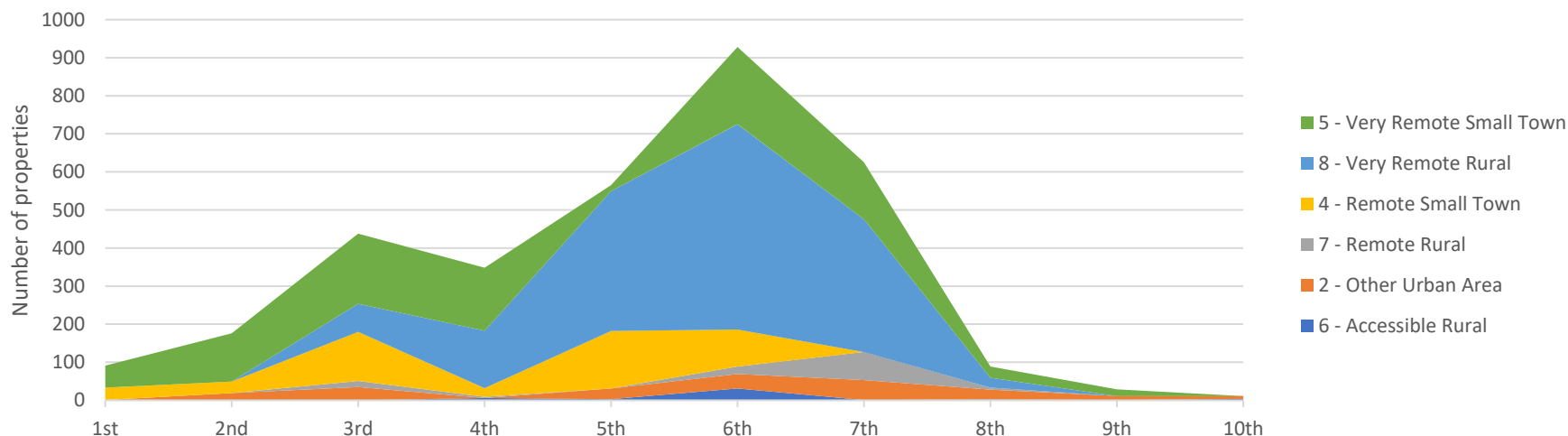
Urban Rural Classification II



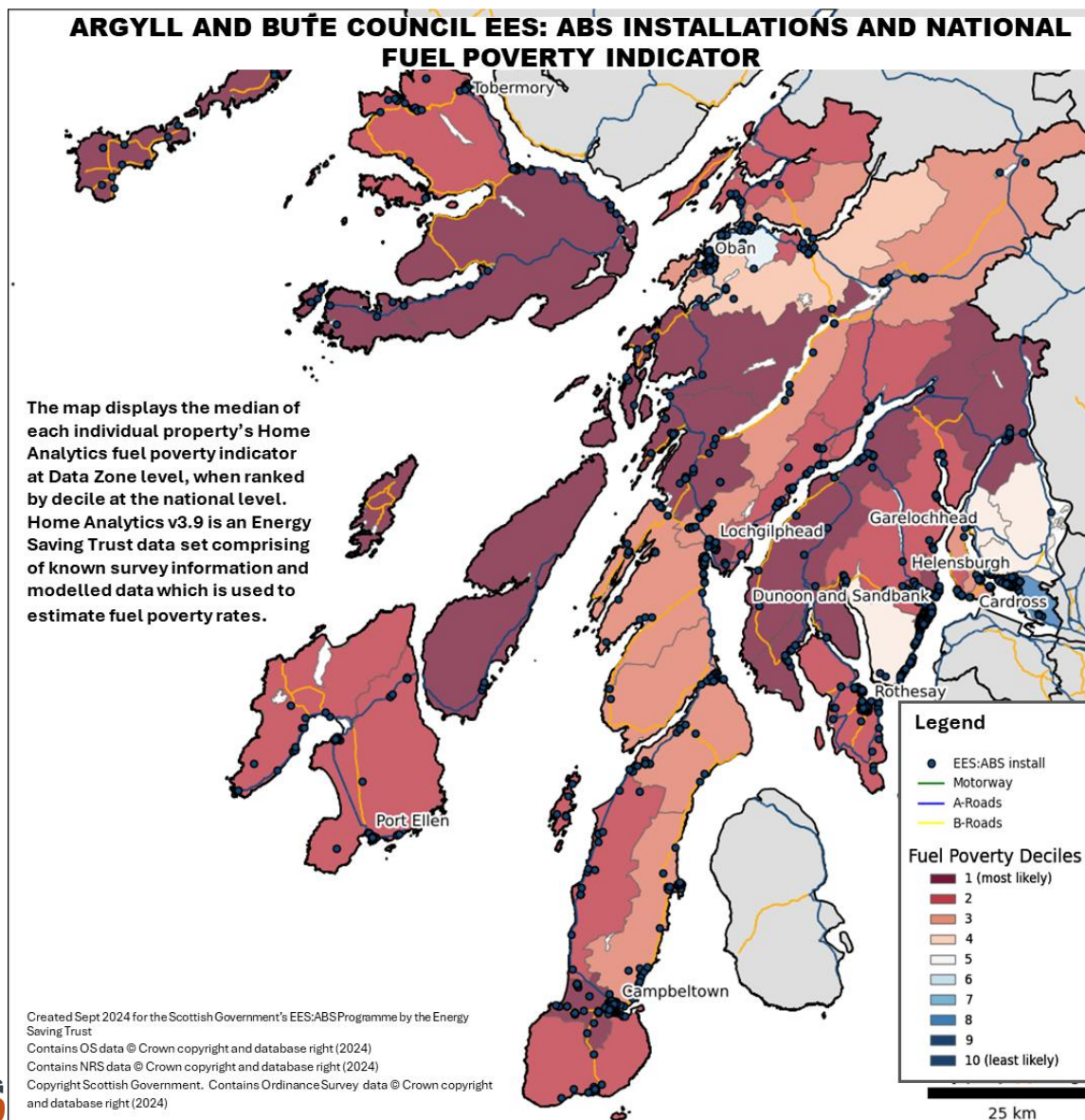
Urban Rural Classification and SIMD

This illustration demonstrates how 74% of the work that was completed within the six most deprived SIMD ranks fall within very remote rural and very remote small towns. According to the Argyll and Bute 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.

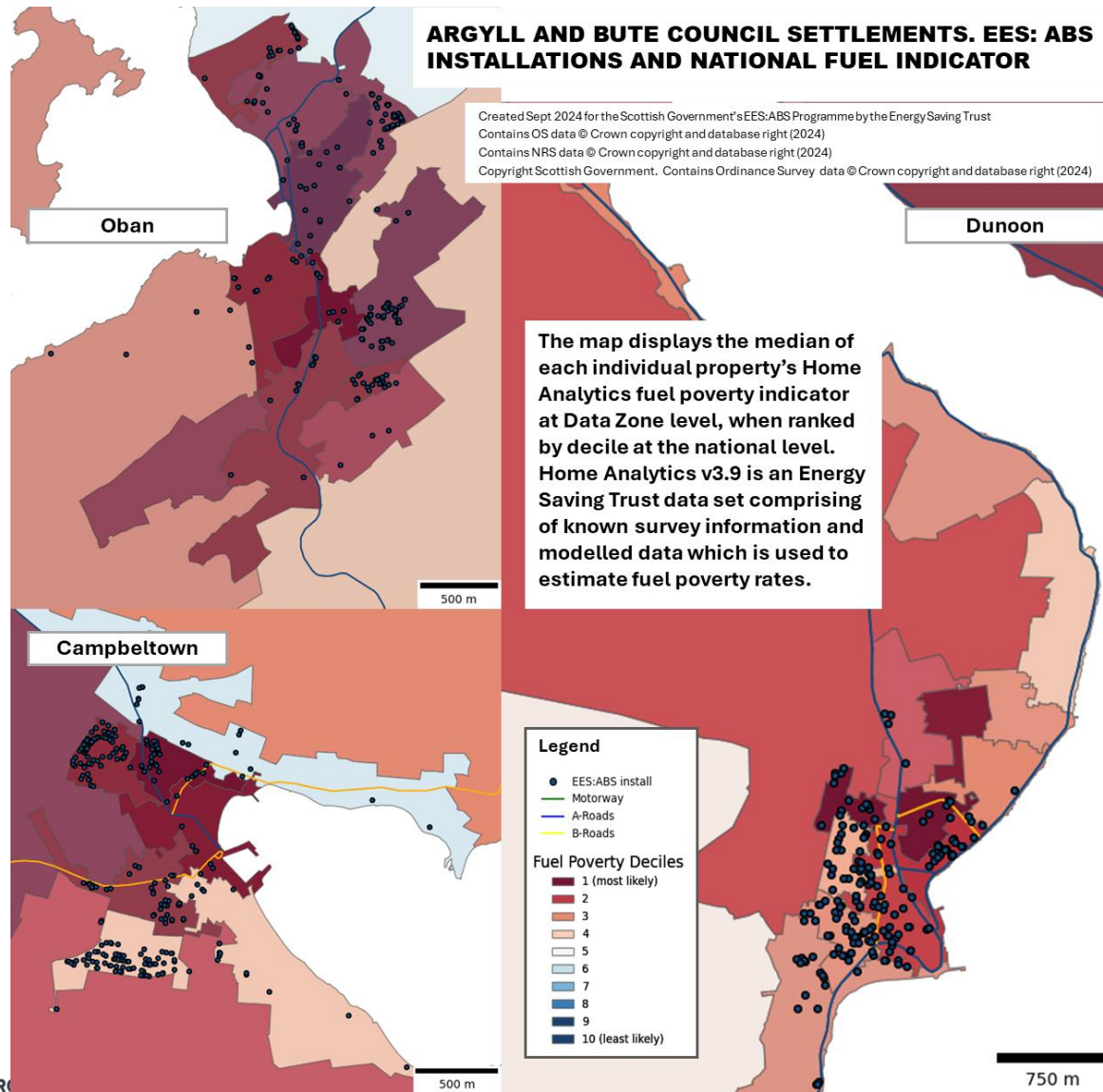
EES: ABS Properties by Urban Rural Classification and SIMD Overall Decile Ranking



National Scottish Fuel Poverty Indicator I

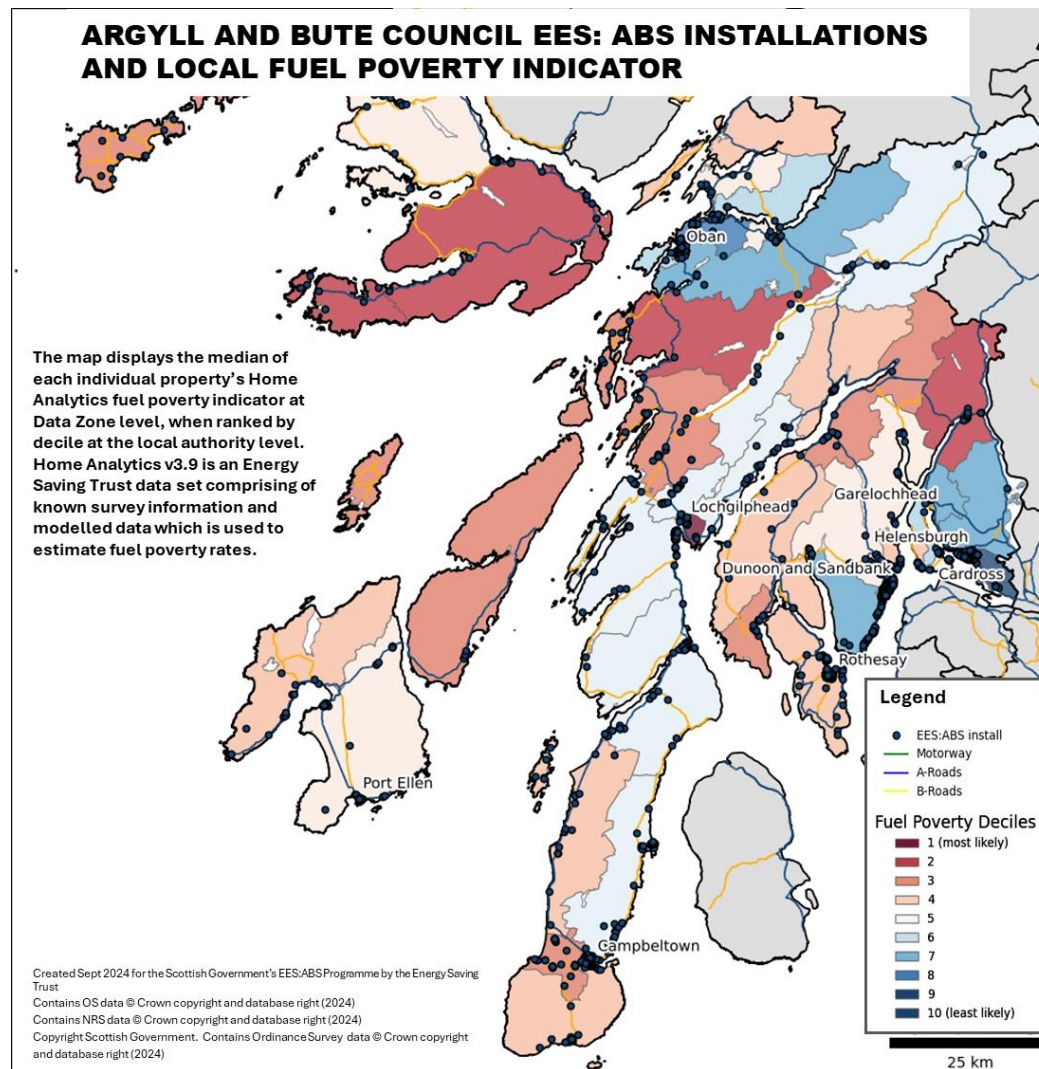


National Scottish Fuel Poverty Indicator II

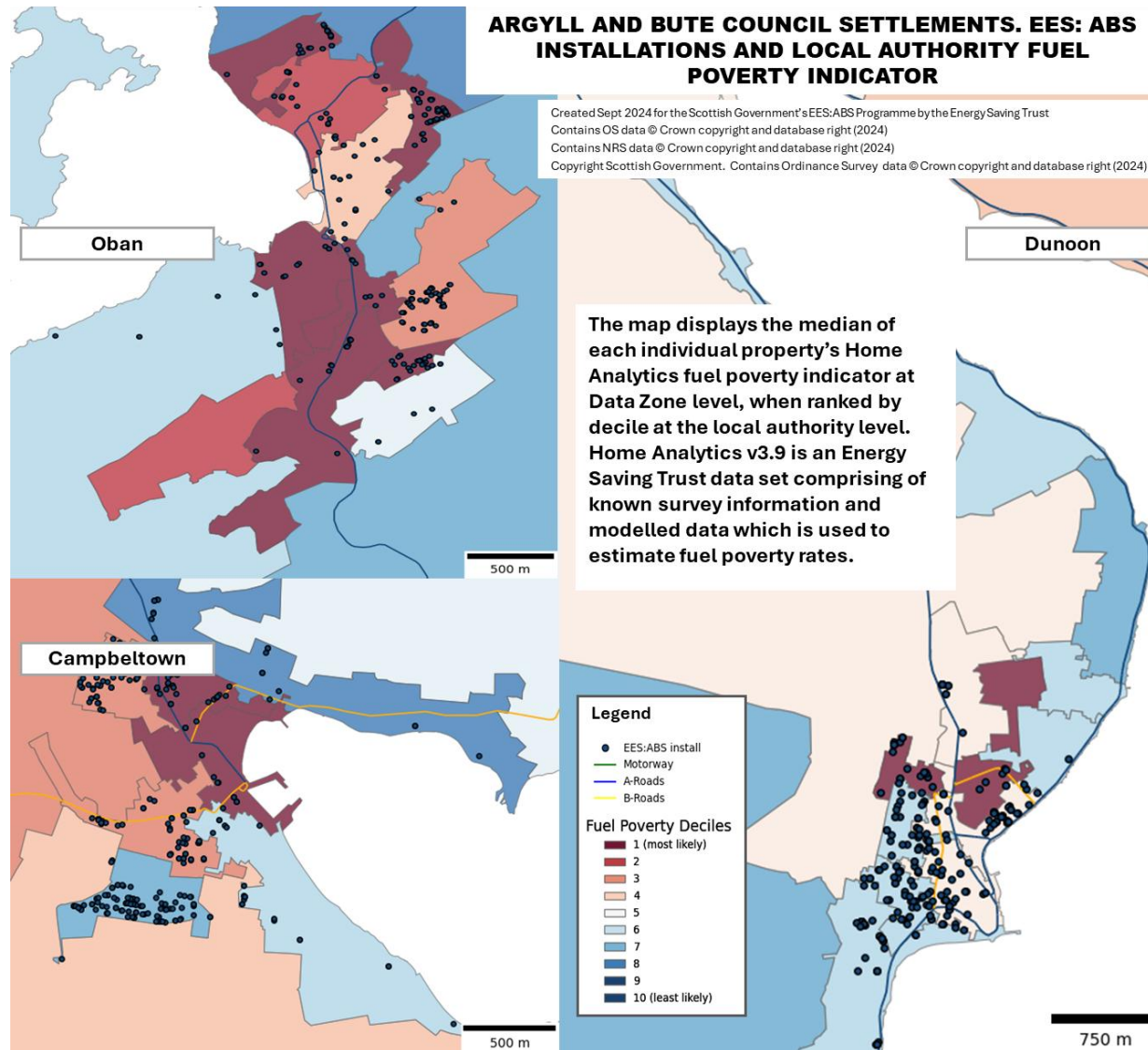


Argyll and Bute Fuel Poverty Indicator I

This map demonstrates the probability of fuel poverty by data zone ranked on a local authority level for the Argyll and Bute 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.



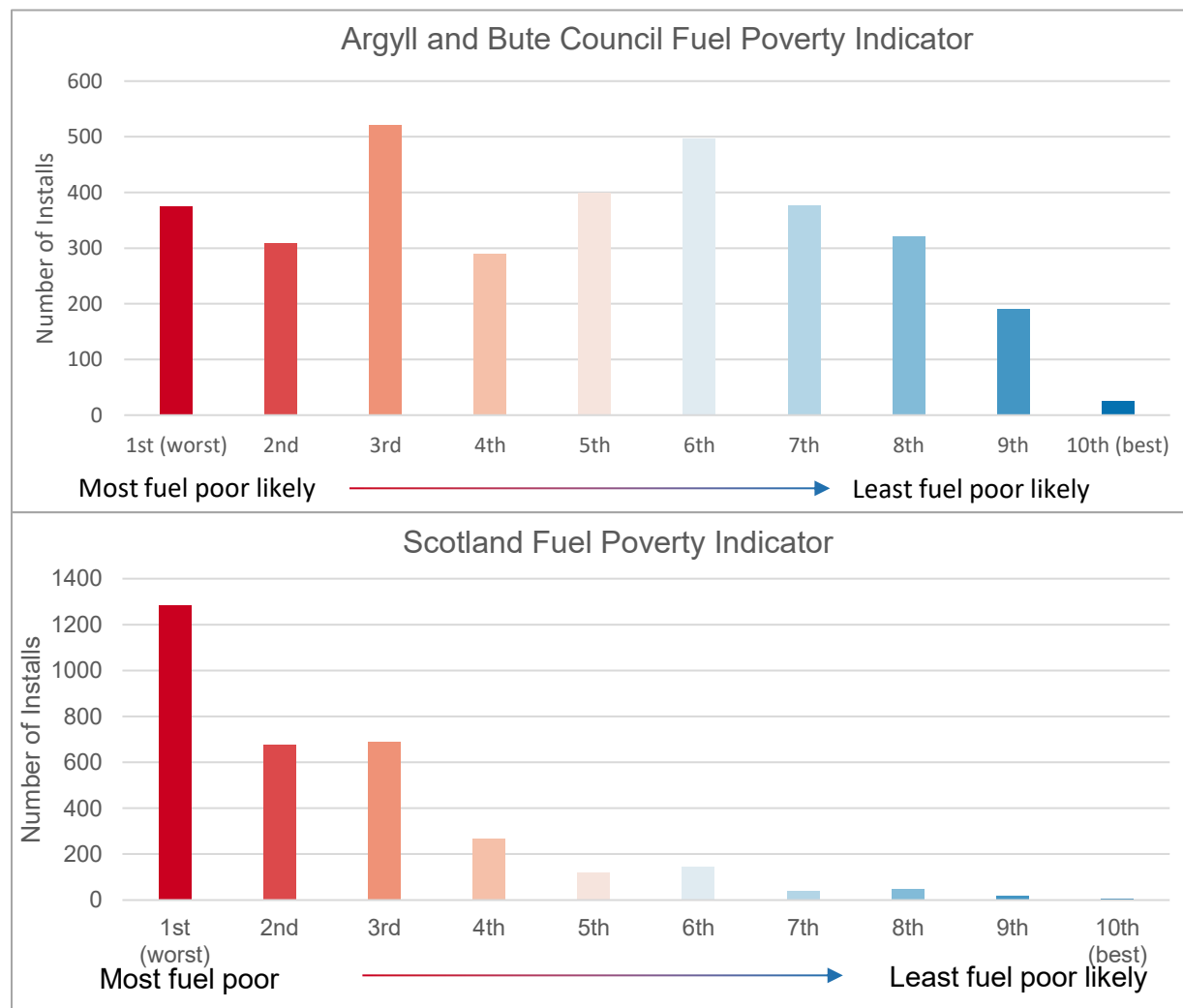
Argyll and Bute Fuel Poverty Indicator II



Argyll and Bute Fuel Poverty Indicator III

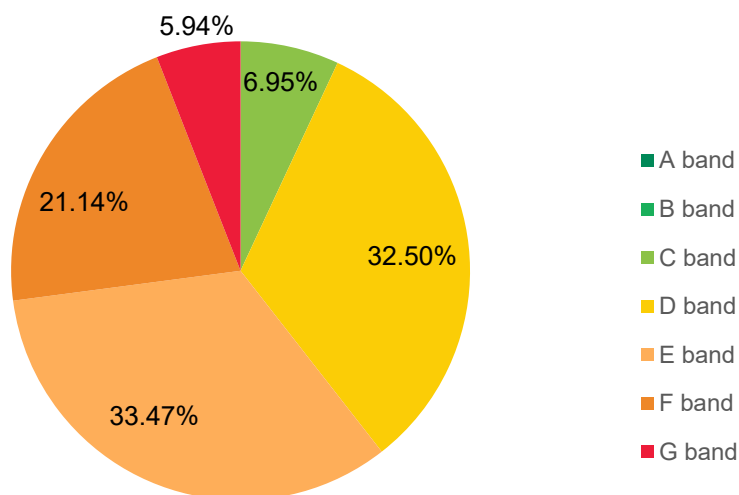
59.65% of all EES: ABS installs took place within the five most fuel poor ranked data zones as seen in the top illustration. This is looking at the local authority specific fuel poverty indicator for the Argyll and Bute Council.

The bottom chart shows the difference when the installs are looked at on a national scale for Scotland. 68.78% of the installs are within the five most fuel poor ranks when compared to the national figures.

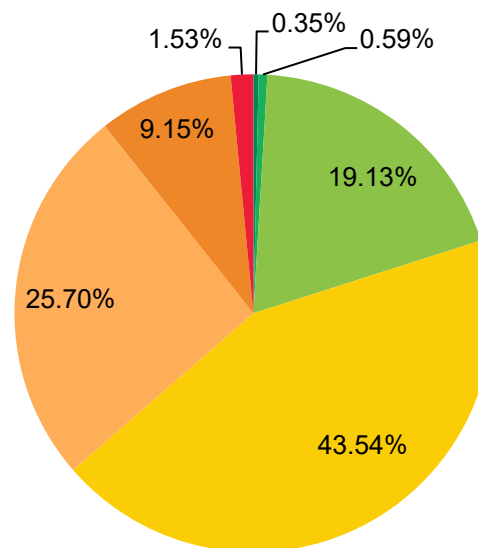


EES: ABS SAP Band Analysis I

EES: ABS properties by pre-installation EPC banding



EES: ABS properties by post-installation EPC banding

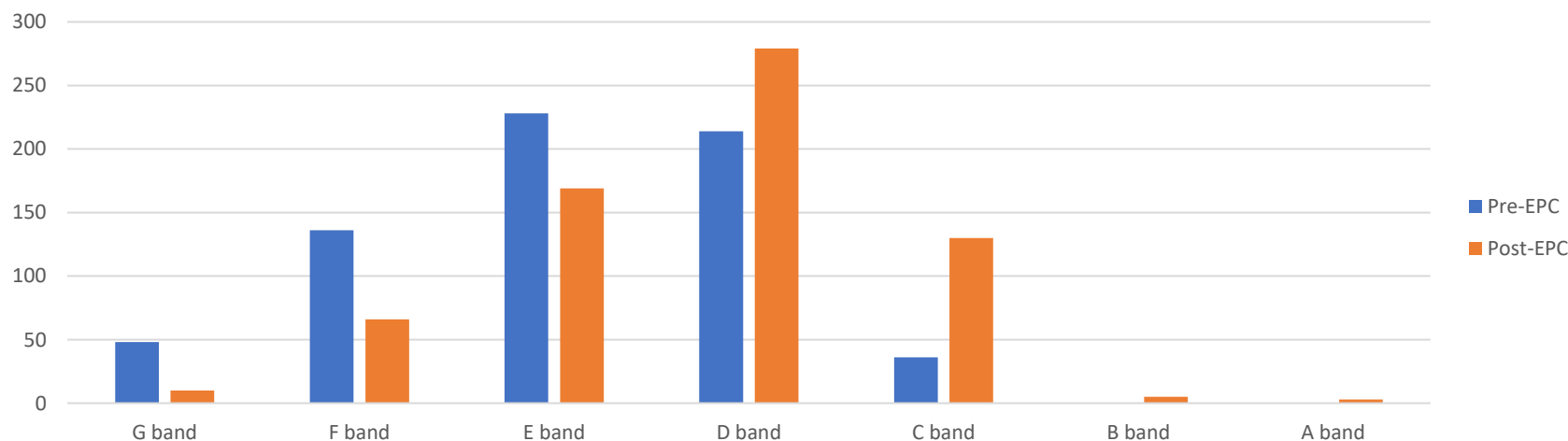


A valid pre-installation EPC was provided for 2,474 properties participating in the programme. Most of these, 93.05%, were within the national band D average or lower. A total of 852 participants had a valid post-installation EPC regardless of the validity of the pre-EPC. After the completion of the installs, 20.07% of these properties made it to band C or higher.

EES: ABS SAP Band Analysis II

Out of the 2,474 properties with valid pre-EPCs, a total of 662 had valid pre- and post-installation EPC numbers and this sets certain limitations to the EPC analysis. However, most of these 662 properties had a starting SAP band of D (94.56%) or lower. The Post-EPC's show that after the completion of installs, 19.64% of properties have reached band C and 42.15% reached band D. Five properties (0.76%) also moved up to band B and three properties moved up to band A. Around 37.01% have a post-installation EPC band of E or lower, despite of the impact of the EES: ABS treatment.

EES: ABS properties by EPC banding



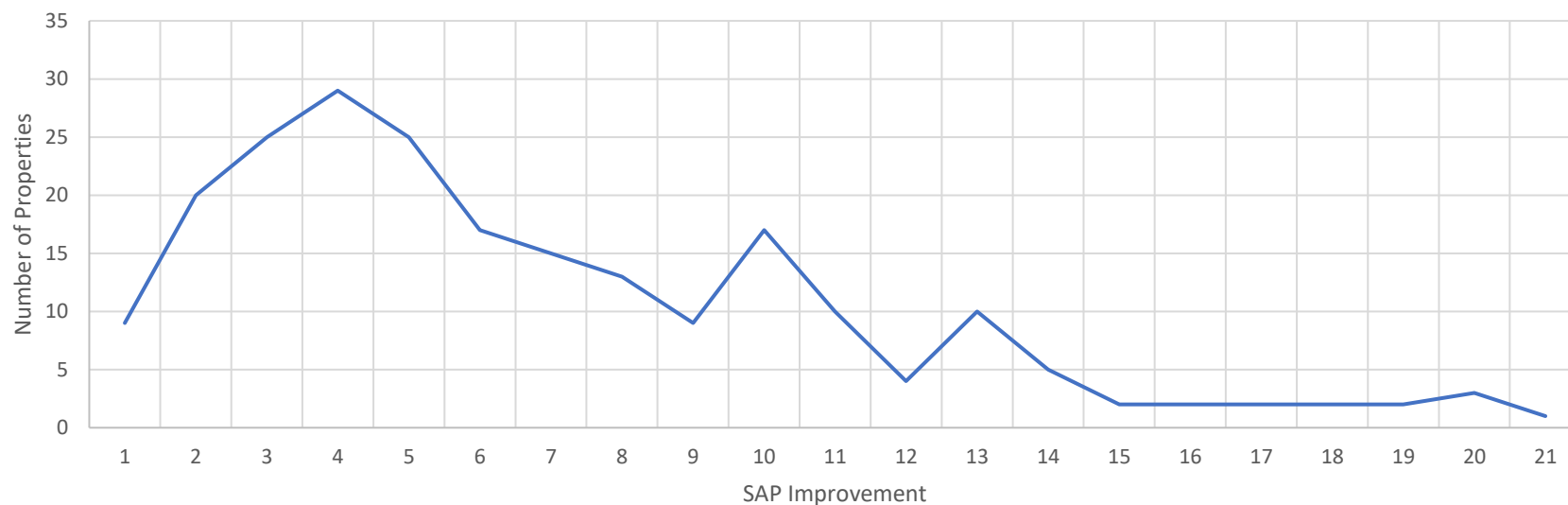
Note: It is possible for the same property to appear in this chart more than once if it received multiple measures across two or more financial years and a distinct pre-installation EPC was carried out before each installation.

EES: ABS SAP Band Analysis III

40.7% of the participating properties in the programme increased in SAP score by around 2 to 5 points.

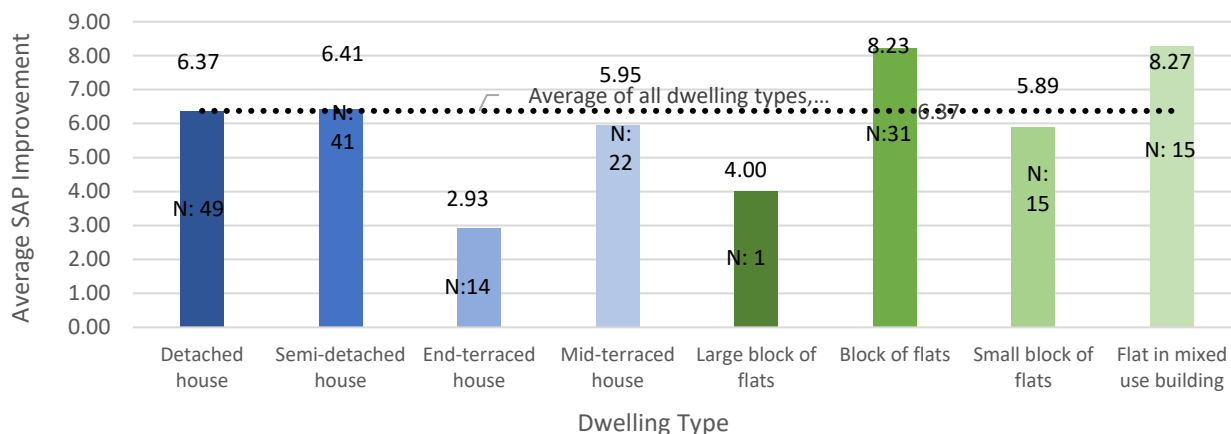
The larger SAP increases (10 to 21 points) included in this case study were due to installation of internal wall insulation, external wall insulation for solid walls, standard cavity wall insulation, loft and under floor insulation solutions across all dwelling types in the council area.

EES: ABS Property Count by SAP Improvement



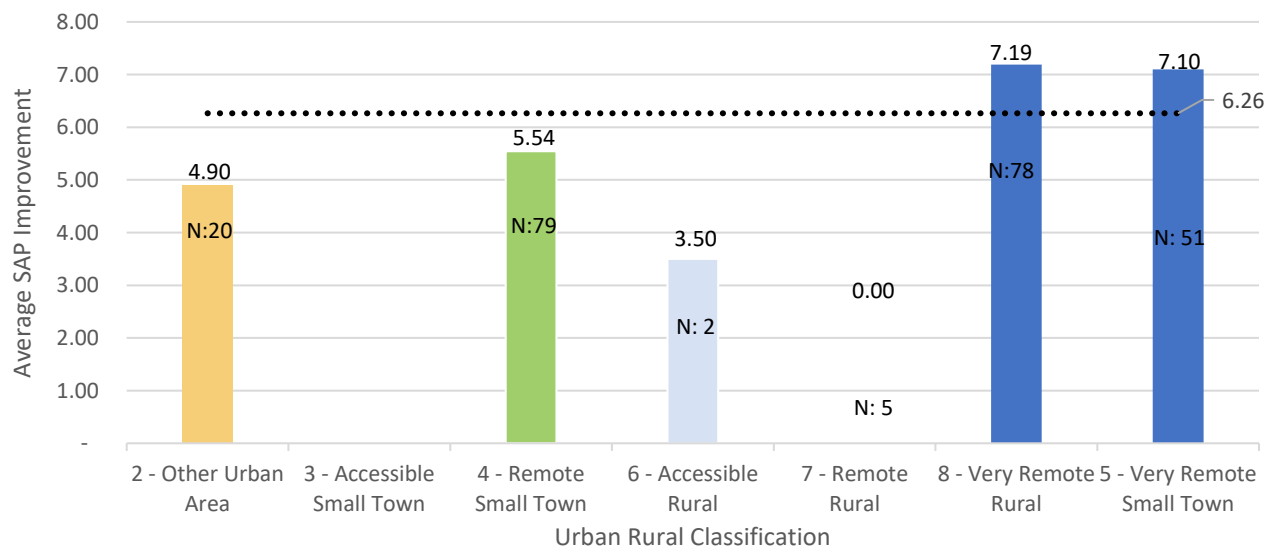
EES: ABS SAP Band Analysis IV

Average SAP improvement by dwelling type



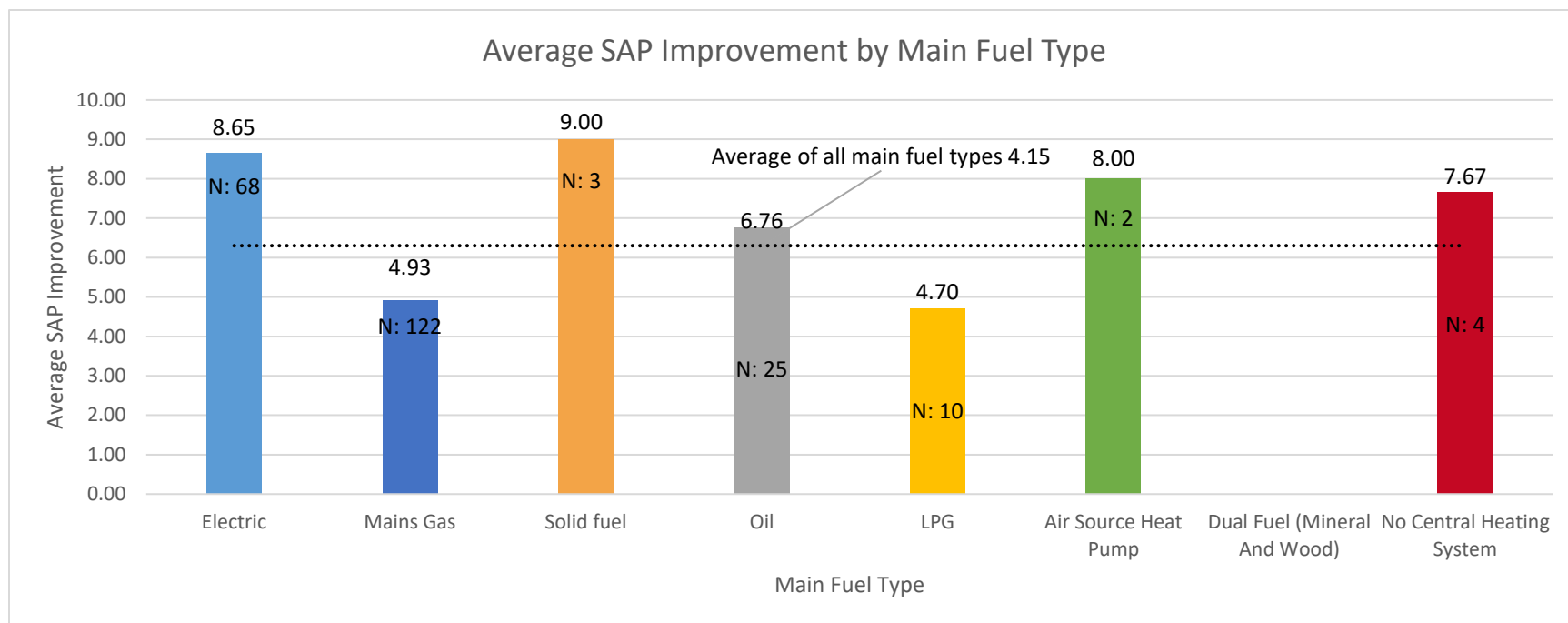
The average SAP improvement for all dwelling types is 6.37. The biggest sample size is for detached houses (N:49) and the average increase for this dwelling type has been 6.37.

Average SAP improvement by urban rural classification



The average SAP improvement for all urban classifications where data was available for further analysis, has been 6.26. The biggest sample size is for remote small town (N:79) where the average improvement was 5.54.

EES: ABS SAP Band and Main Fuel Type



Solid fuel properties improved their SAP score the most by an average of 9.00. Properties with electric heating and oil also gained a better improvement than average. Four included property had no central heating system in place, and the biggest sample size was for properties connected to mains gas (N:122), with an average improvement of 4.93.

Conclusions and notes

Overall, The Argyll and Bute Council's EES: ABS programme achieves several points:

- A variety of properties were included in the programme with major focus on internal wall insulation for solid walls and cavity wall insulation.
- The typical participating property is a house (70.1%) which are largely owner-occupied(92%) and constructed between 1950 and 1983 (55.75% of all properties).
- 76% 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 (93.05%) and 20.07% of these properties reached band C or higher.
- The programme had a positive impact on the participating properties as a whole and most increased their SAP score between 2 to 5 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 2014-16 used.
SIMD	Scottish Government	Available online. SIMD (2016) used.
Urban Rural Classification	Scottish Government	Available online. 8-Fold classification (2013/14) used.

Special thanks to Jacqueline Westerman, the Home Energy Efficiency Project Officer in Argyll and Bute Council, for providing insight and assistance towards the completion of this case study.

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