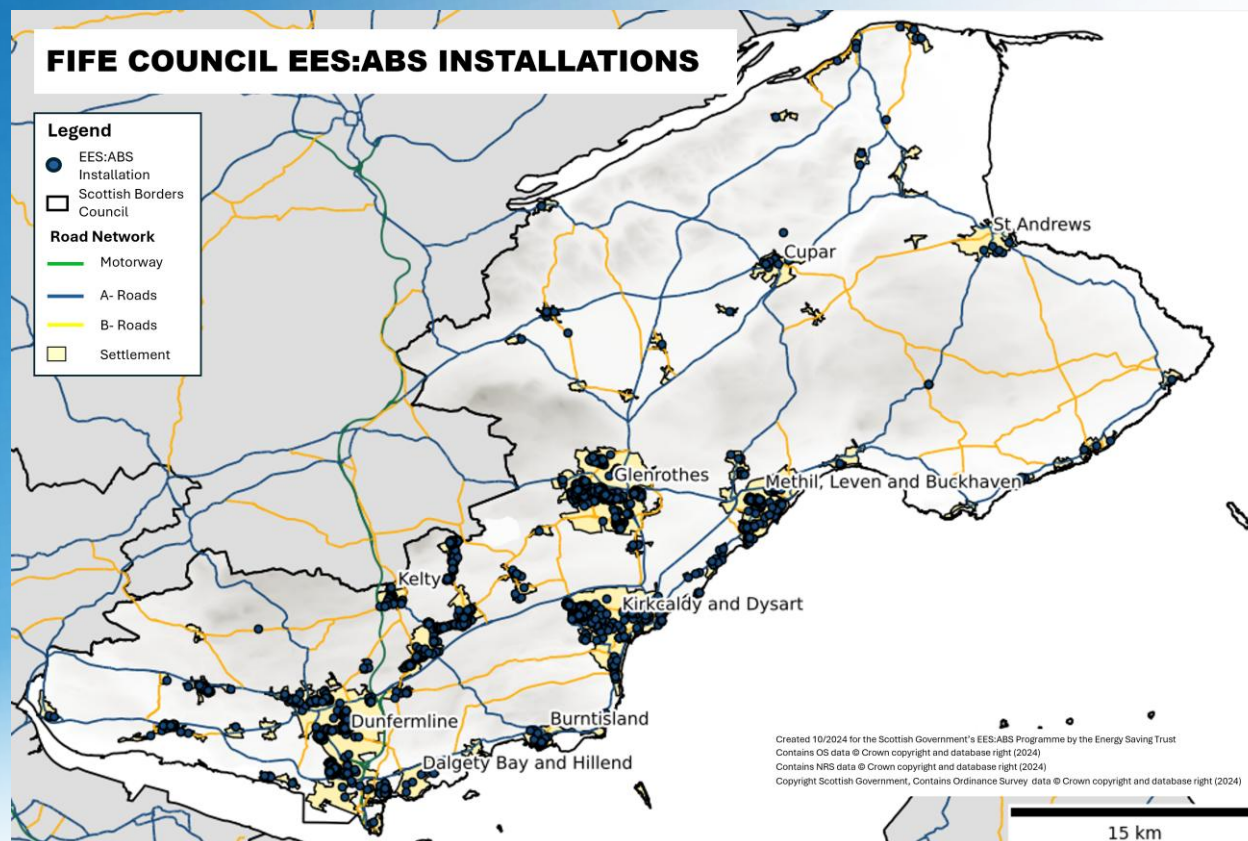


Fife Council EES: ABS Case Study

Energy Saving Trust
September 2024



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 Fife Council EES: ABS activity reported to date (Sept 2024).**

Fife Council EES: ABS dataset

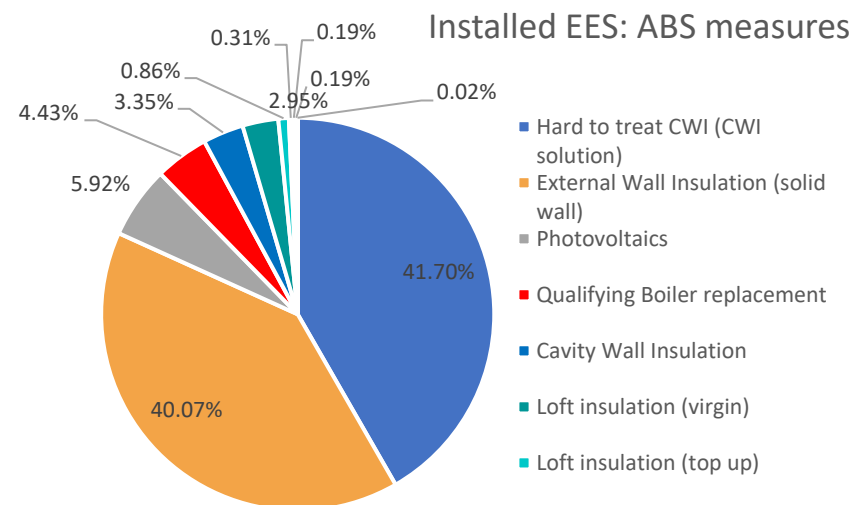
Financial Year	Number of records*	% of records
2013/14	2,856	32.85
2014/15	2,801	32.22
2015/16	768	8.83
2016/17	552	6.35
2017/18	216	2.48
2018/19	433	4.98
2019/20	136	1.56
2020/21	145	1.67
2021/22	222	2.55
2022/23	275	3.16
2023/24 ¹	290	3.34
Total Installs	8,694	100.00

Reference numbers	Number of records ¹	% of records
With pre installation EPC	3875	92.86
With post installation EPC	875	20.97
With pre and post installation EPC	833	19.96
With GDAR	0	0.00
With measure reference number	0	0.00

The Fife Council has contributed 6.75% of the total EES: ABS installs across Scotland reported to date (Sept. 2024).

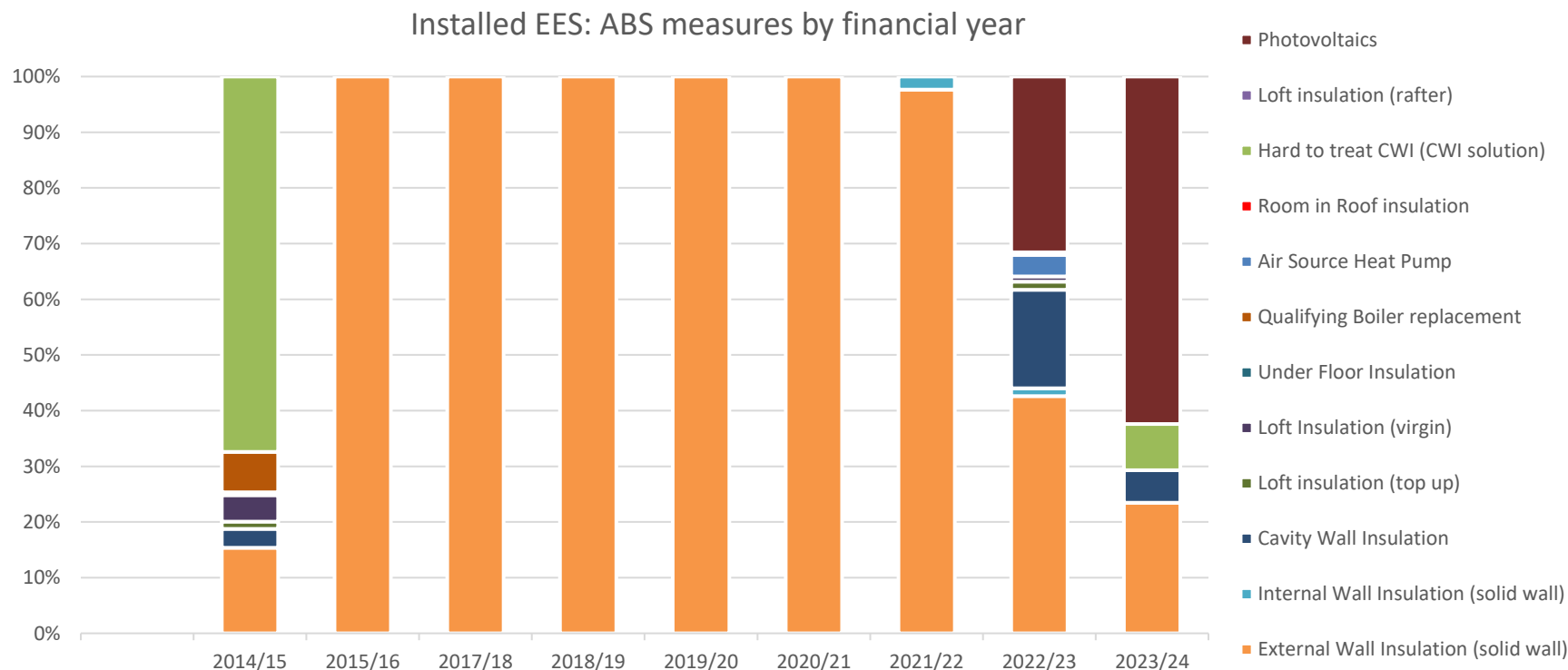
Installed Measures

Measure Name	Number of records*	% of records
Hard to treat CWI (CWI solution)	1,741	41.70
External Wall Insulation (solid wall)	1,673	40.07
Photovoltaics	247	5.92
Cavity Wall Insulation	140	3.35
Qualifying Boiler replacement	185	4.43
Loft insulation (virgin)	123	2.95
Loft insulation (top up)	36	0.86
Under Floor Insulation	13	0.31
Air Source Heat Pump	8	0.19
Internal Wall Insulation (solid wall)	8	0.19
Room in Roof insulation	1	0.02
Total Installs	4,175	100.00



Hard to treat CWI (41.70%) and External wall insulations (40.07%) cover 81.77% of all completed measures throughout the programme.

Installed Measures by Financial year



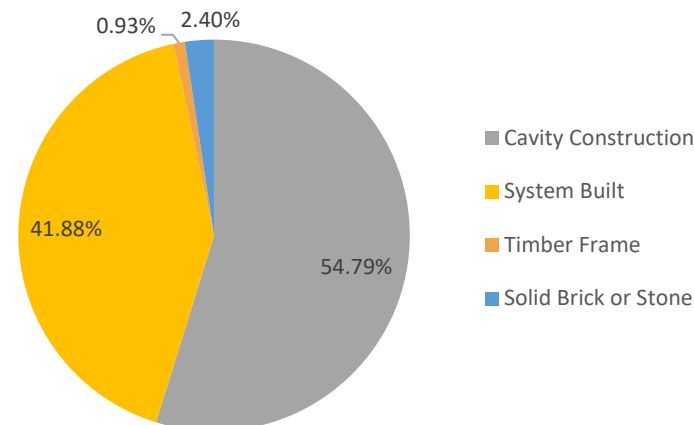
The first year of the programme saw a variety of measures installed. However, the project changed its focus, and a fabric-first approach was adopted. This prioritised system-built properties receiving external wall insulation. In the most recent years, an increasing amount of photovoltaics (PV) were being installed.

Wall Type

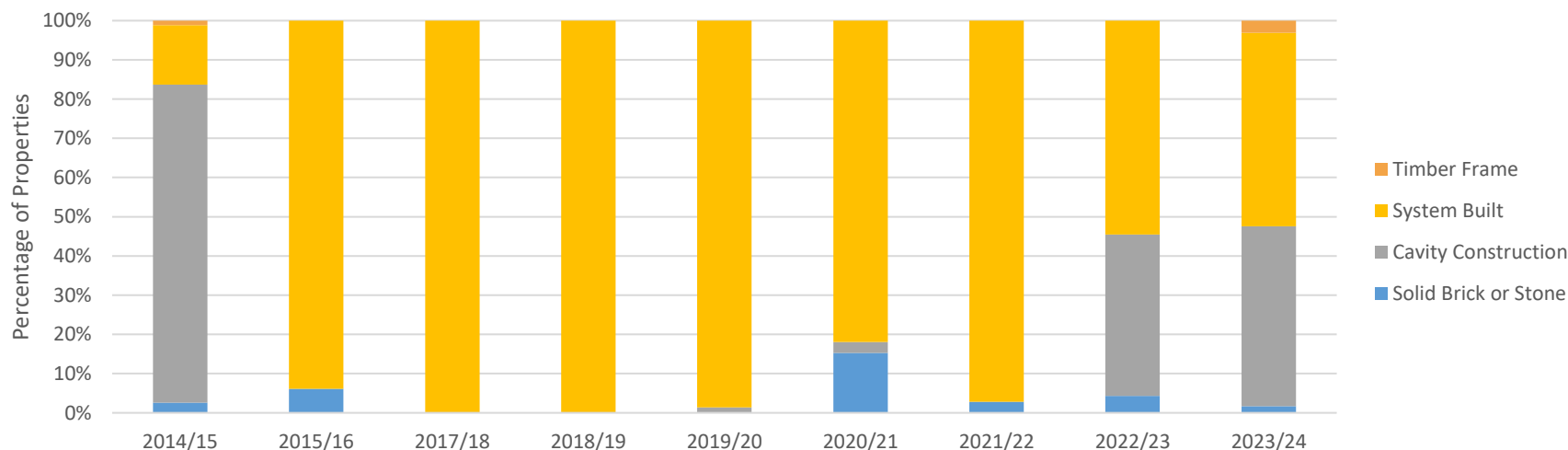
One of Fife Council's biggest targets has been focusing on no-fine and solid wall properties, including right-to-buy stock.

The below chart shows the spread of different construction types throughout the years.

EES: ABS Properties by wall type

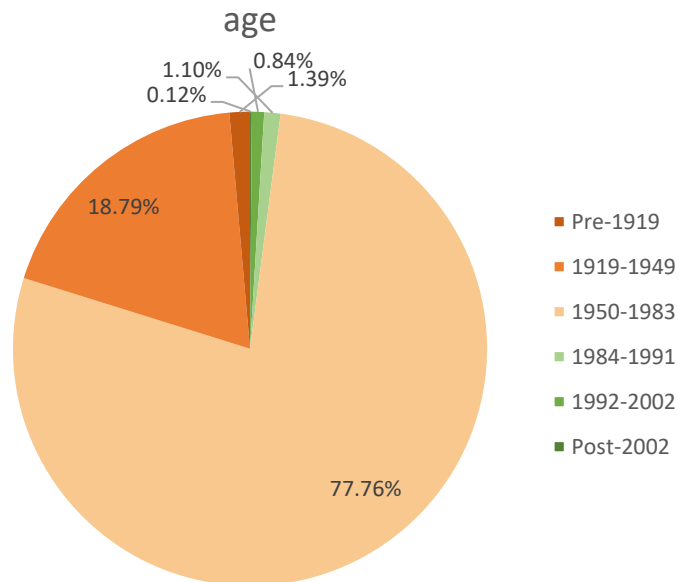


EES: ABS properties and construction type by financial year

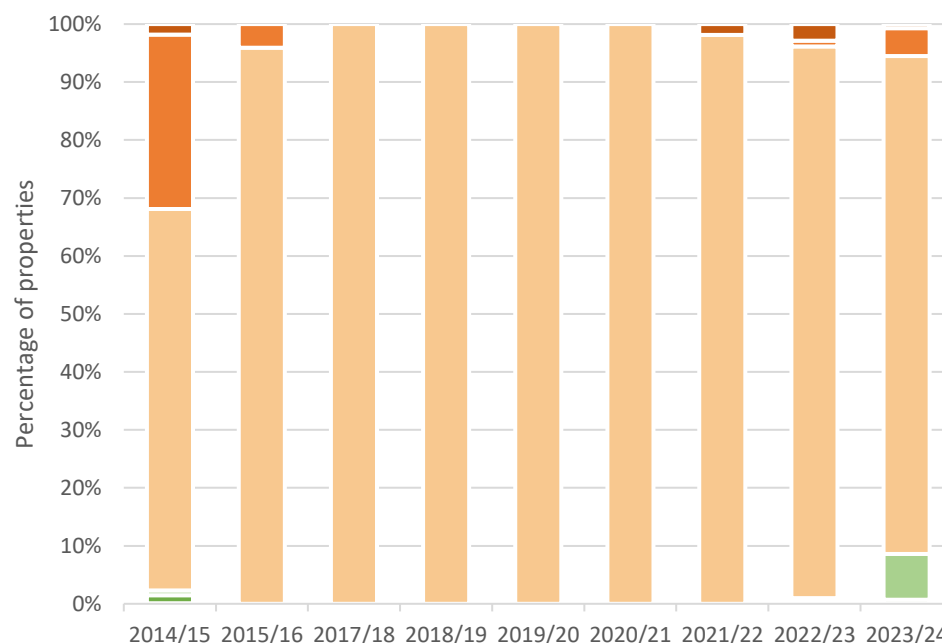


Construction Age

EES: ABS properties by construction age



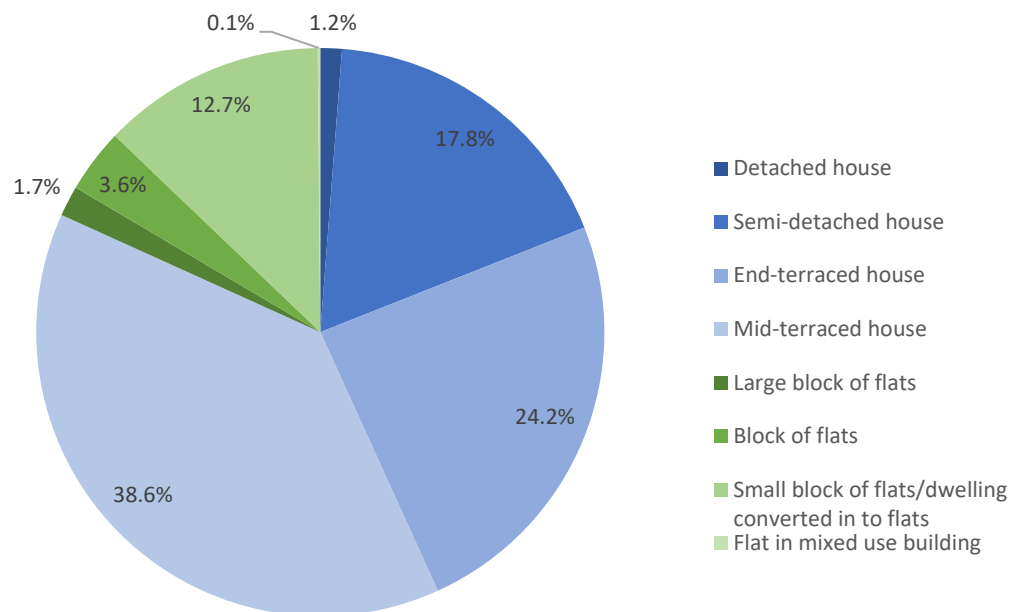
EES: ABS Properties and Construction Age by Financial Year



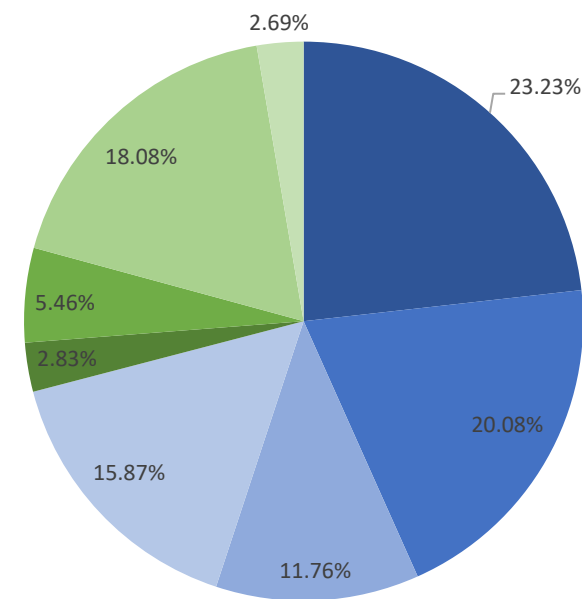
Nearly 78% of all participating properties were constructed between 1950 and 1983. This group includes many no-fine properties which has been one of Fife Council's main targets along with the SIMD ranking (Scottish Index of Multiple Deprivation), tenure and fuel poverty ranking. A significant number (18.79%) were of 1919-49 build.

Dwelling Type

EES: ABS properties by dwelling type



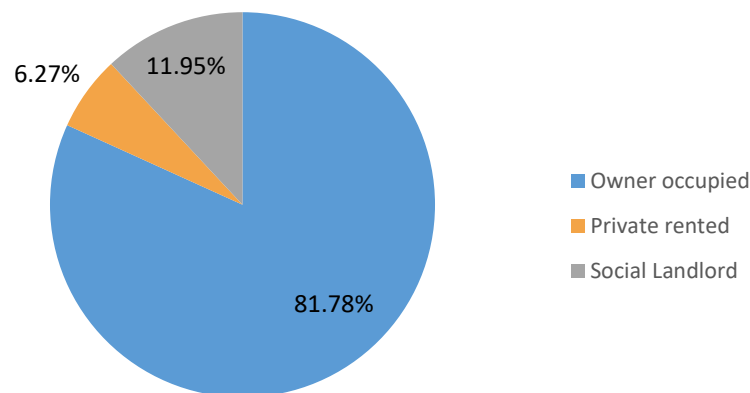
Fife properties by dwelling type



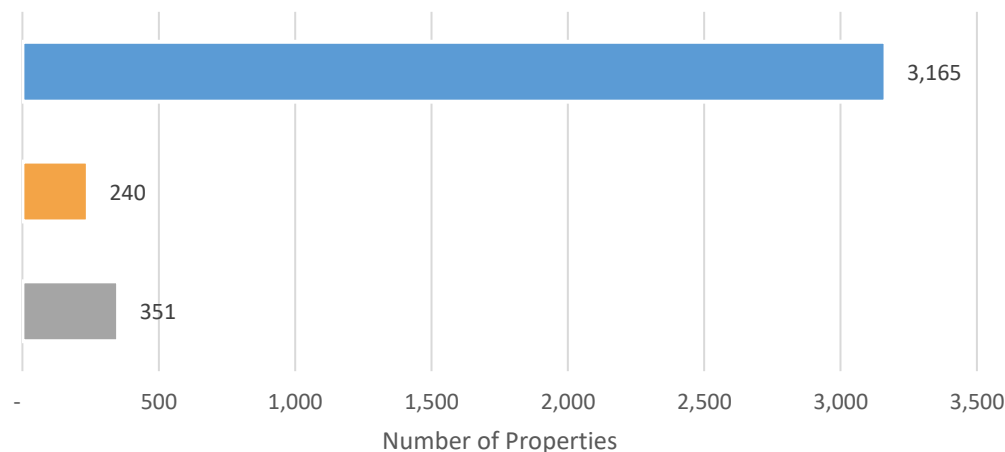
Throughout the programme houses have made up the majority (81.8%) of all participating properties. This is slightly greater than in Fife Council where 71% of dwelling types within Fife Council consists of houses.

Property Tenure

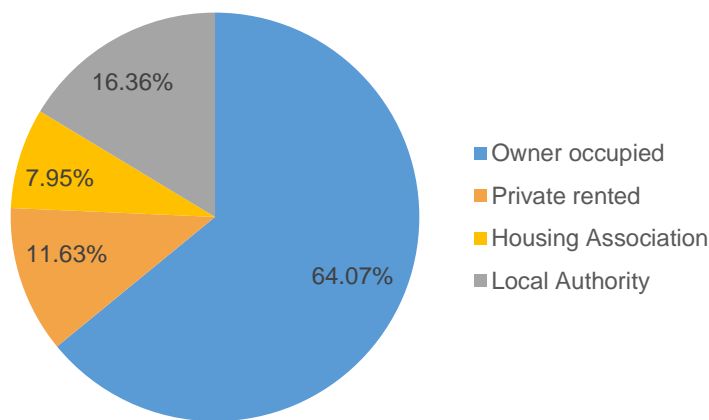
EES: ABS properties by tenure



EES: ABS properties by tenure



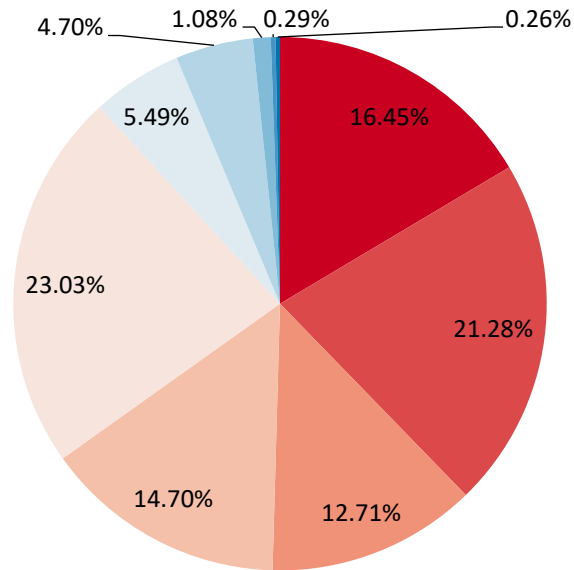
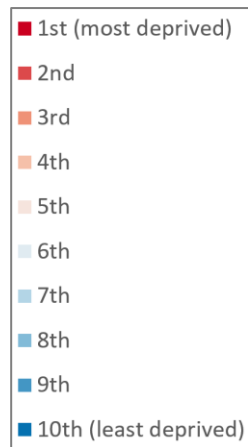
Fife properties by tenure



Fife Council has primarily targeted owner-occupier properties (81.78%) and includes many ex-council right-to-buy properties. This is an overrepresentation when compared to the owner-occupier percentage for the council as a whole (64%).

Scottish Index of Multiple Deprivation (SIMD) I

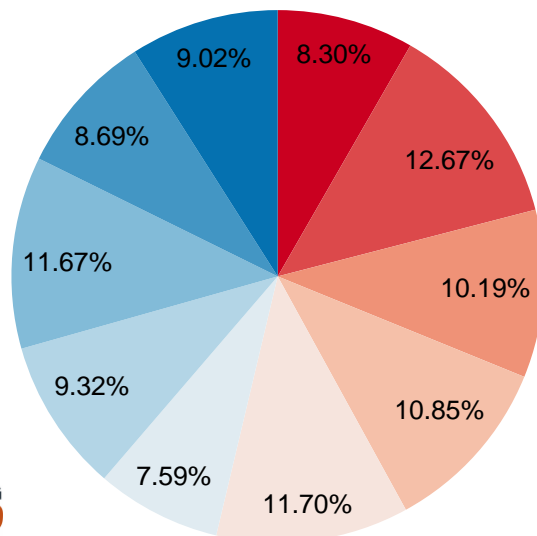
EES: ABS properties by overall SIMD decile ranking



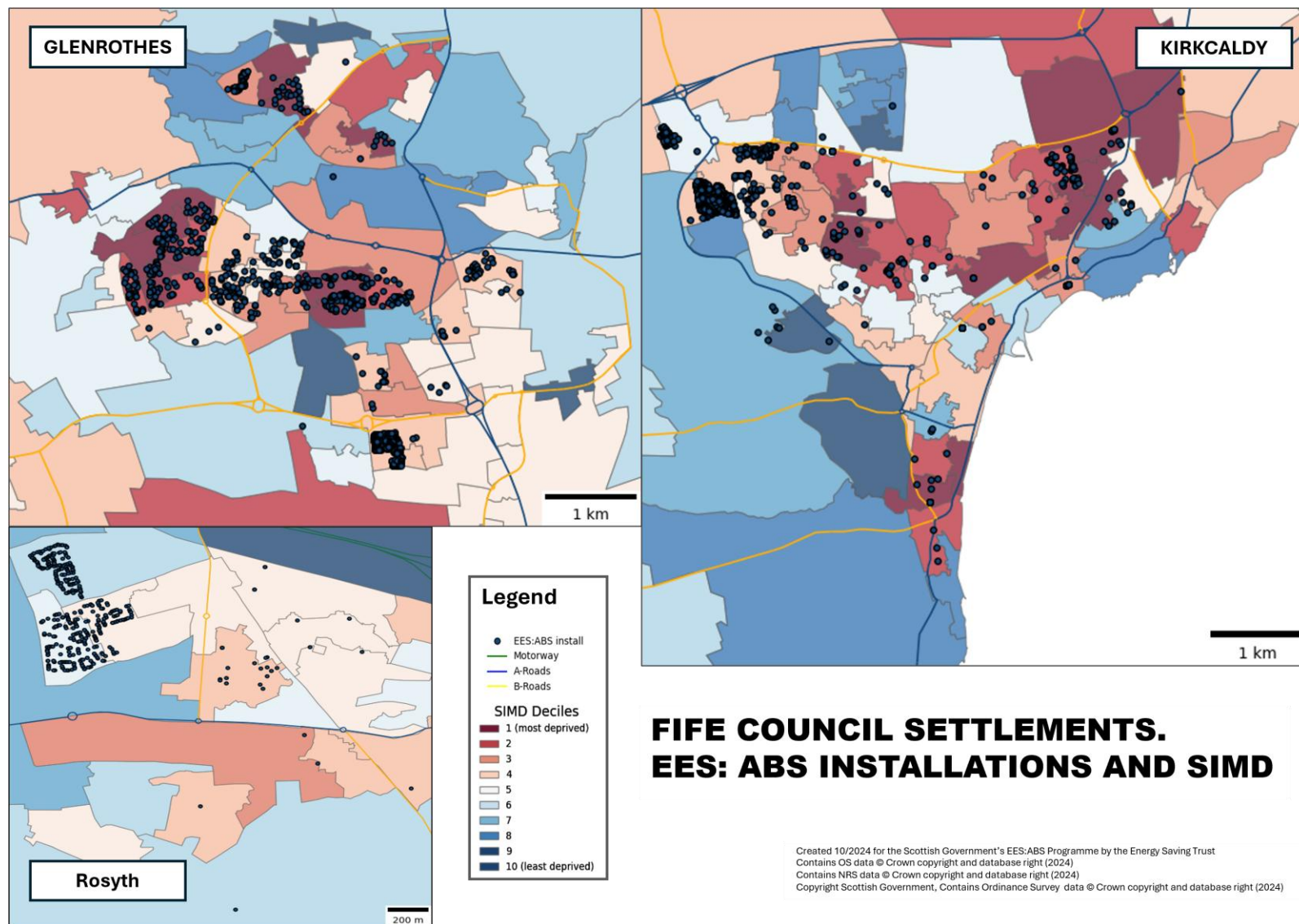
Comparison of these two illustrations shows the correlation between the overall SIMD ranking of Fife Council properties and of those targeted in the EES: ABS programme. 88% of all participating properties are in the most deprived areas of the council and can be found within the five lowest SIMD ranks and 94% in the lowest six, 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.

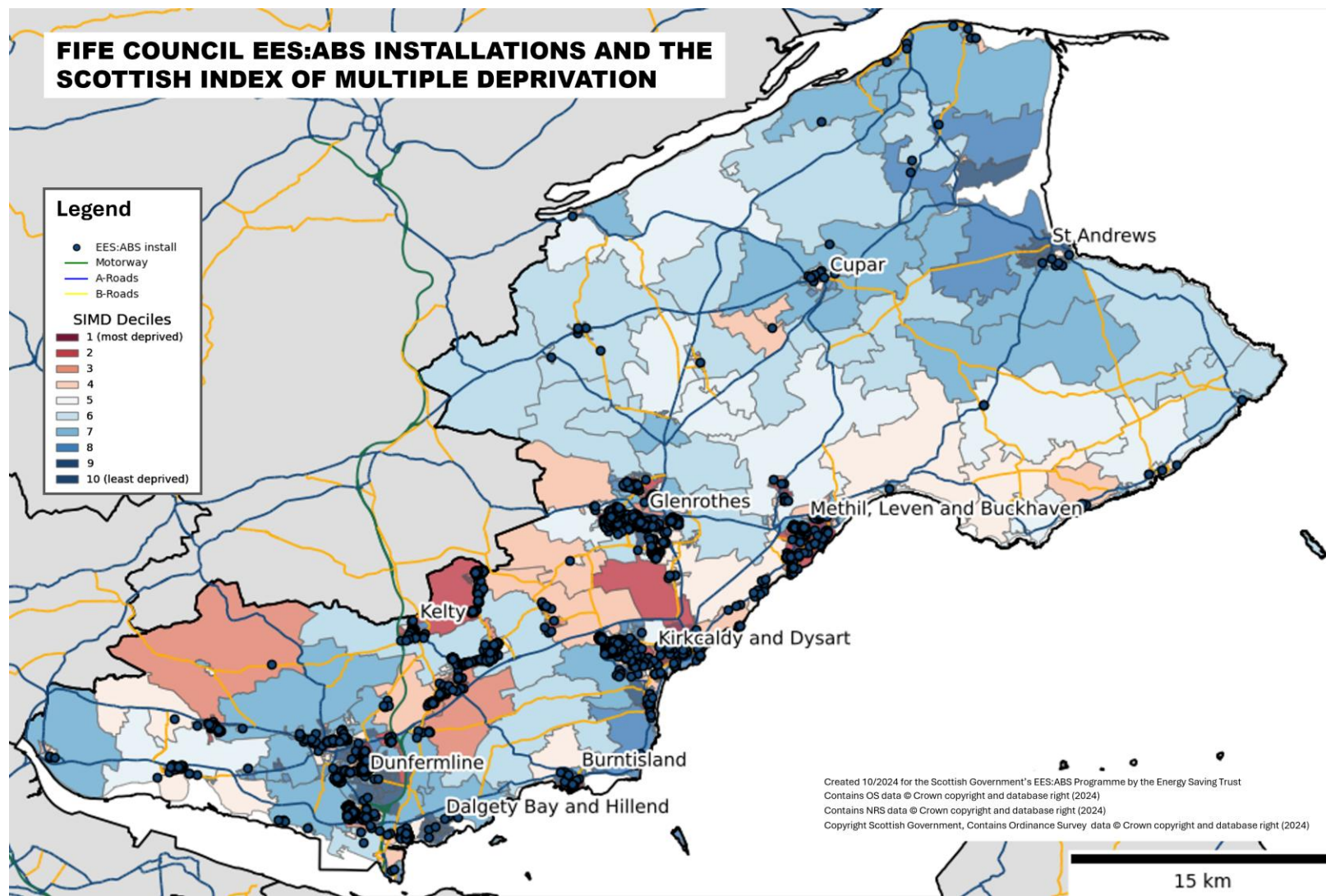
Fife properties by overall SIMD decile ranking



Scottish Index of Multiple Deprivation (SIMD) III

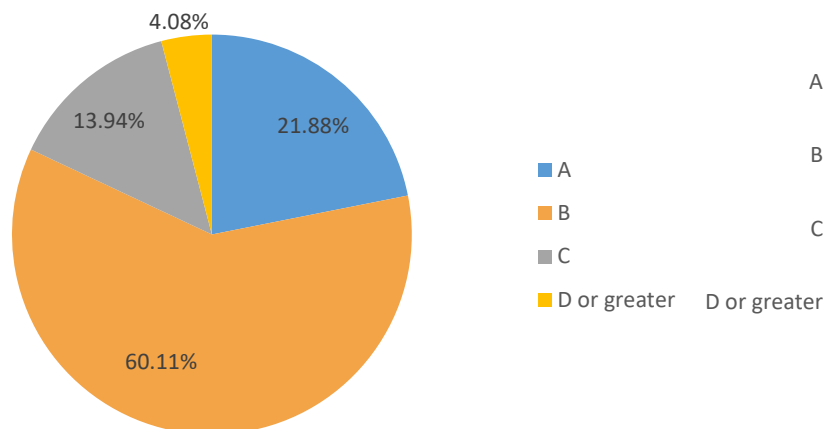


Scottish Index of Multiple Deprivation (SIMD) II

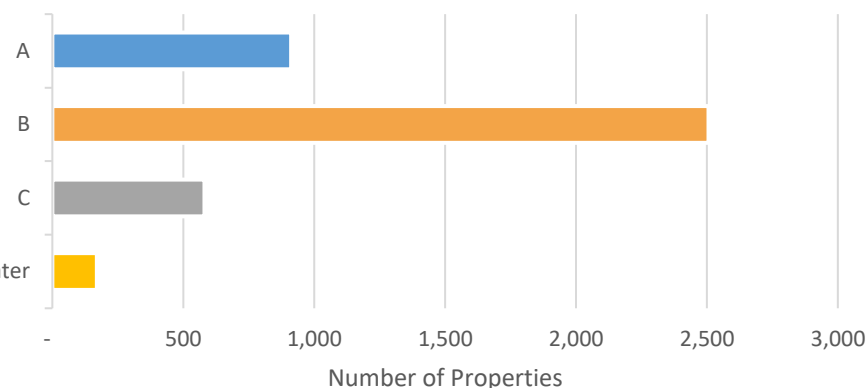


EES: ABS Installs by Council Tax Band

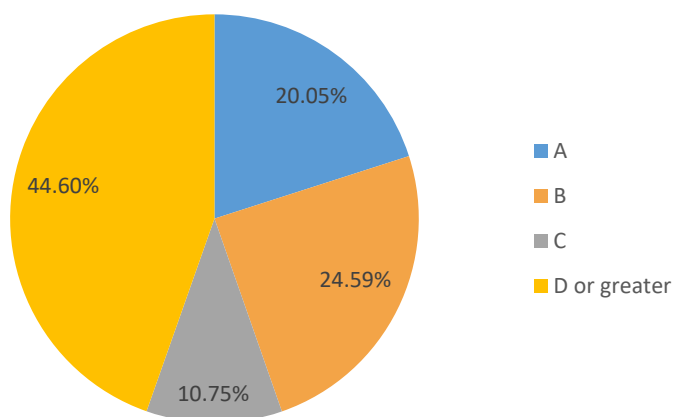
EES: ABS properties by council tax band



EES: ABS properties by council tax band



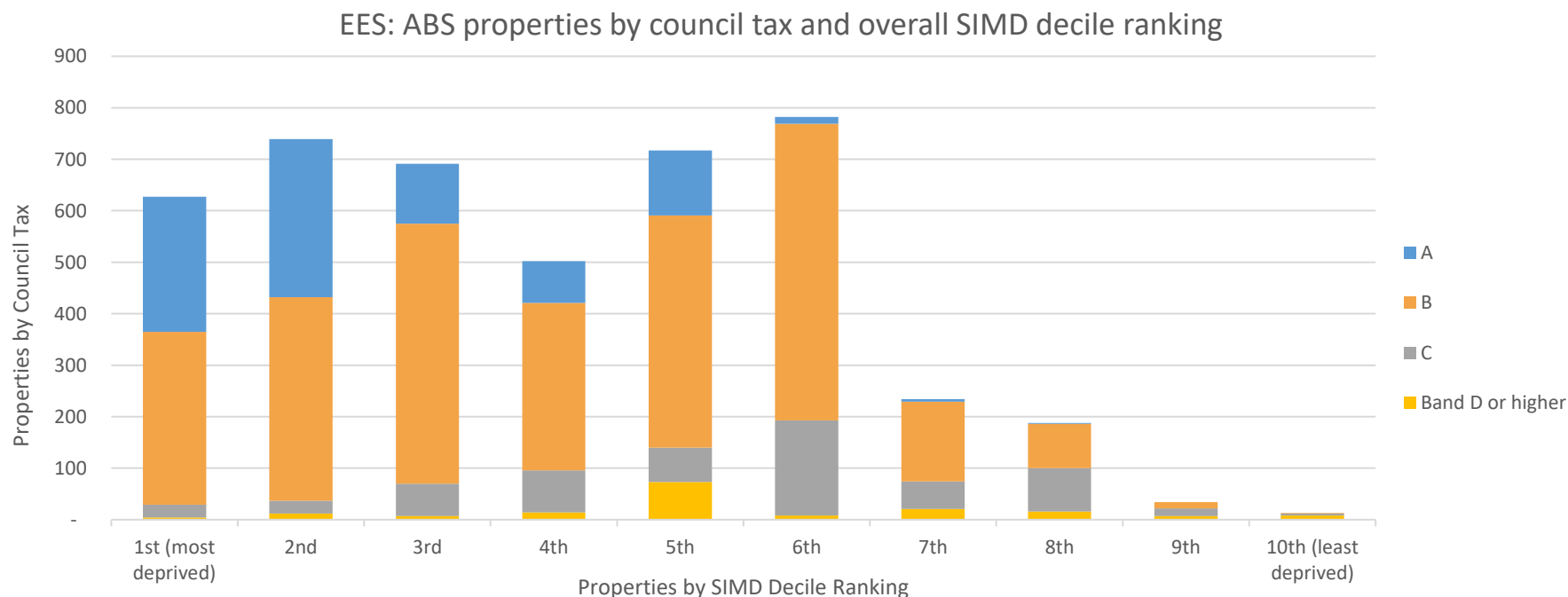
Fife properties by council tax band



Just over 95.9% of properties receiving measures fall into council tax bands A, B and C. For comparison, 55.4% of Fife housing stock is in bands A to C.

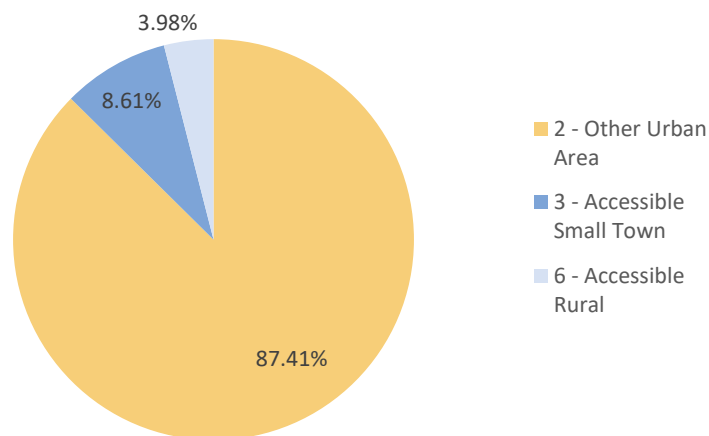
EES: ABS Installs by Council Tax Band and SIMD

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. 72.66% 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.



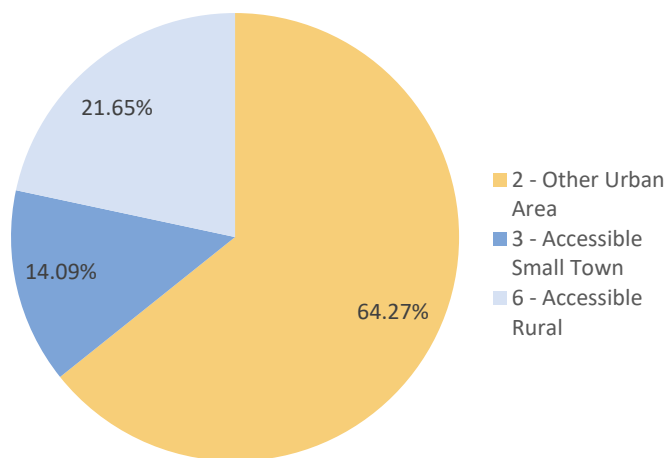
Urban Rural Classification

EES: ABS properties by urban rural classification

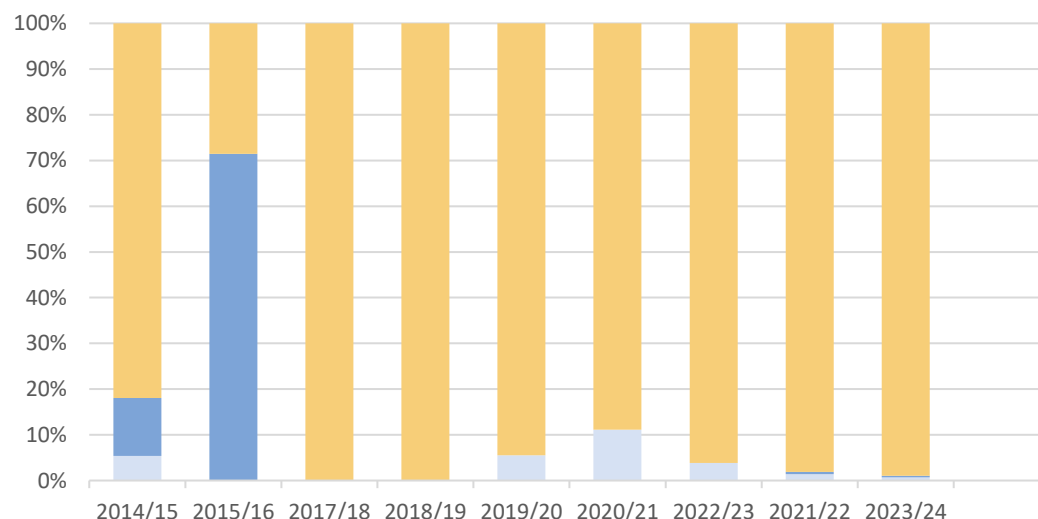


The Fife Council area consists of three different urban rural classifications: Other Urban Area, Accessible Small Town and Accessible Rural areas. All these areas have been represented in the programme. The distribution of work has mostly focused in the Other Urban Area. However, the bottom chart demonstrates that in 2015/16 the work was focused largely on accessible small towns.

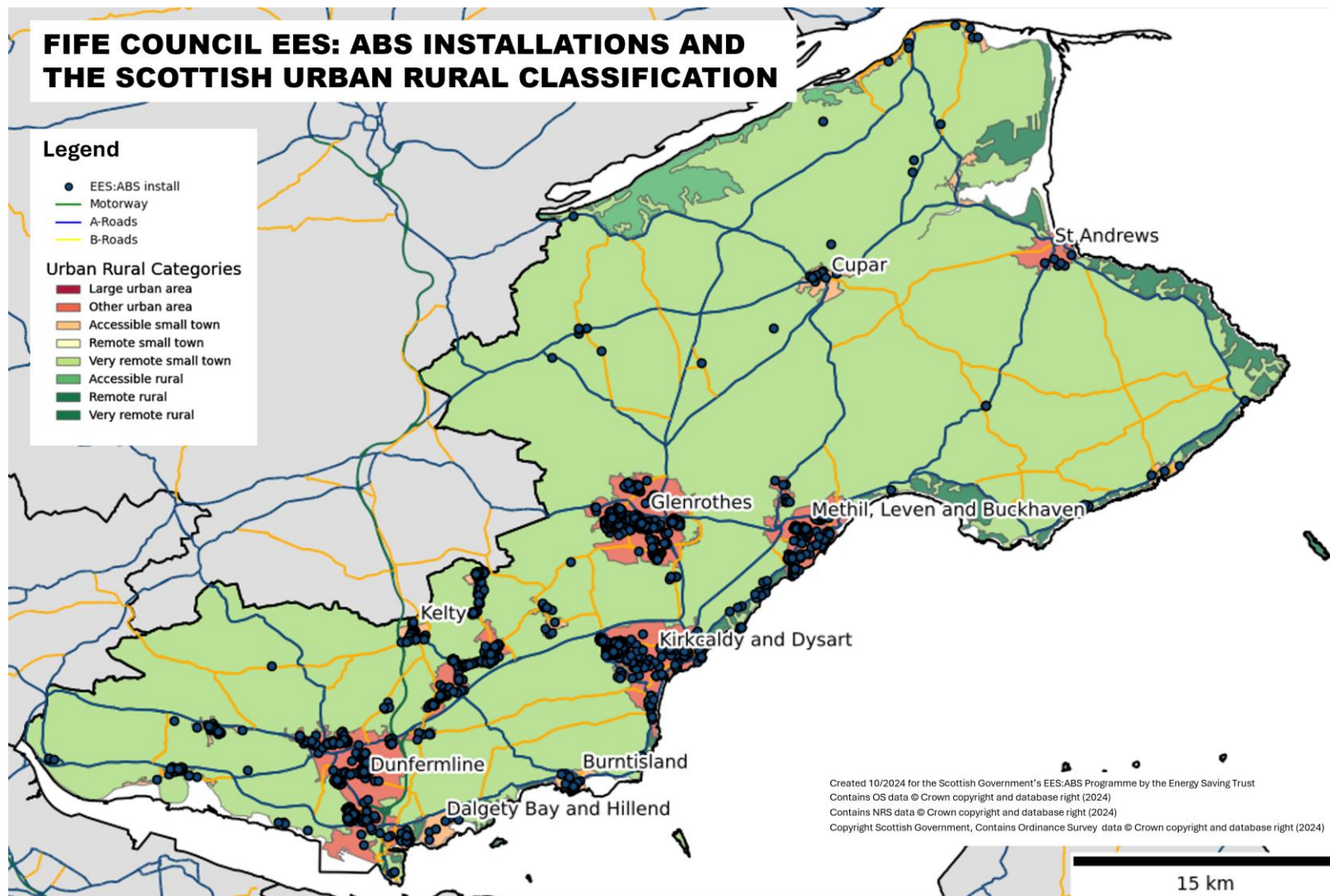
Fife properties by urban rural classification



EES: ABS properties by urban rural classification



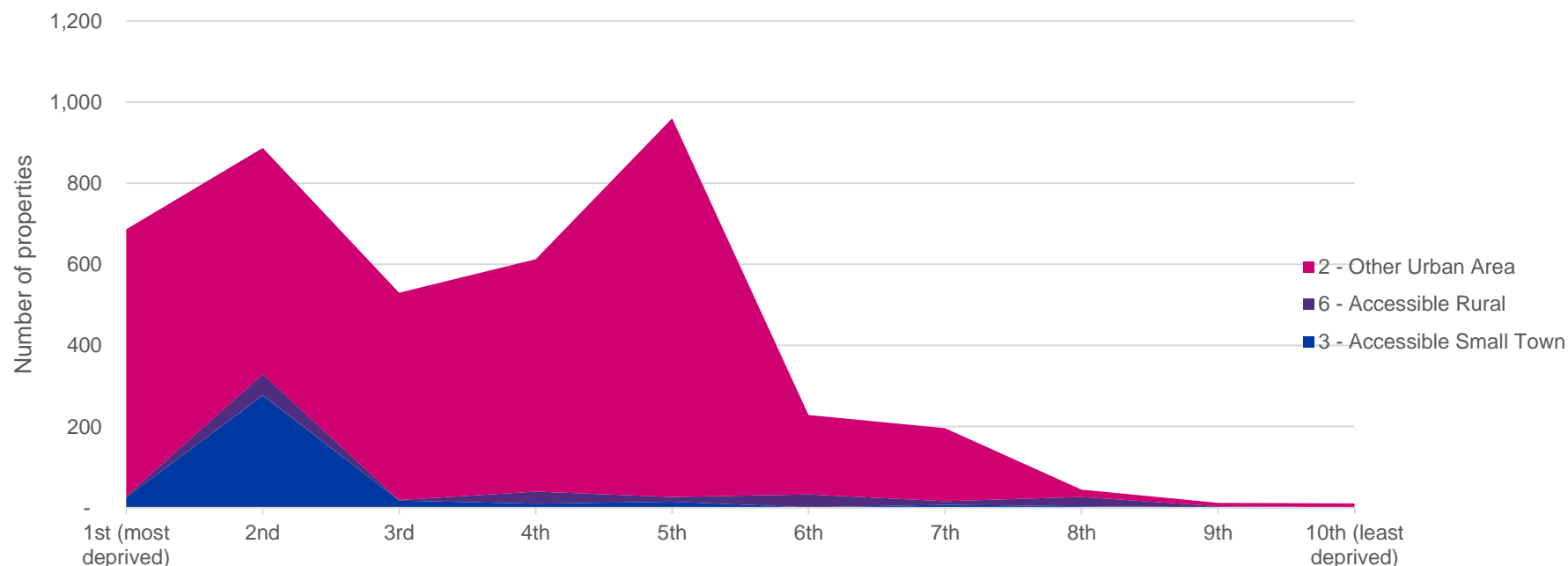
Urban Rural Classification II



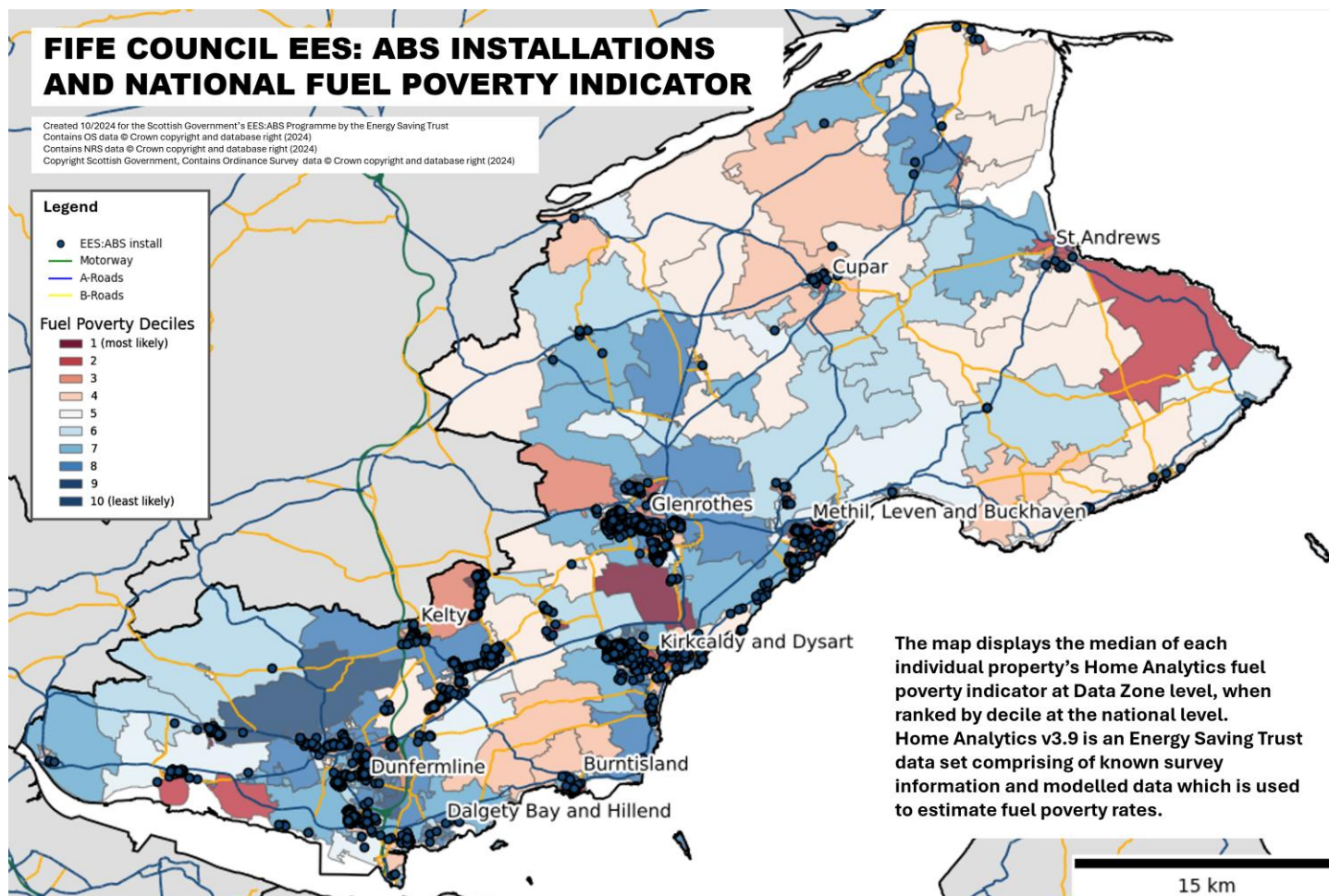
Urban Rural Classification and SIMD

This illustration demonstrates that most installs (88.2%) took place within the five most deprived SIMD ranks. 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.

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



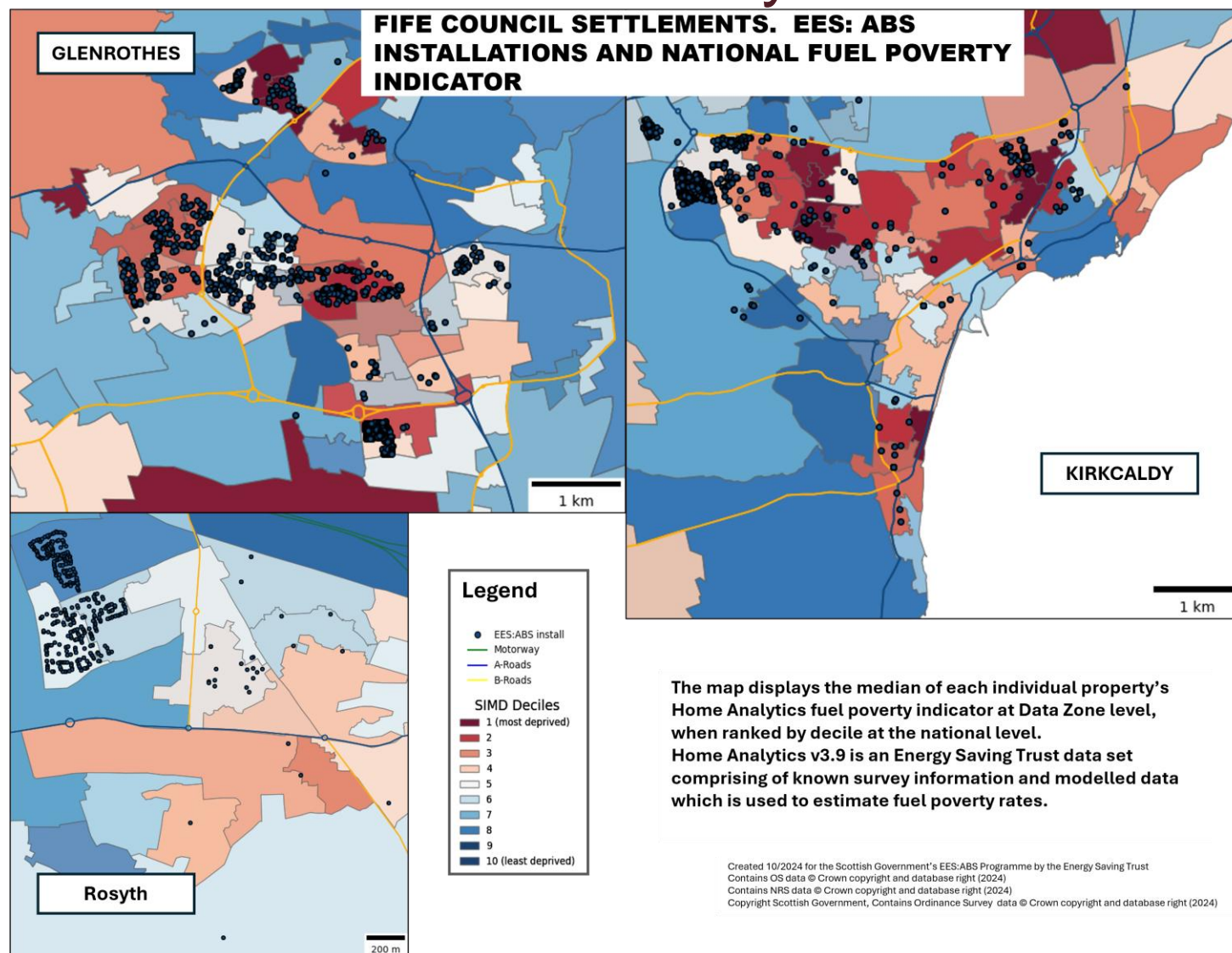
National Scottish Fuel Poverty Indicator I



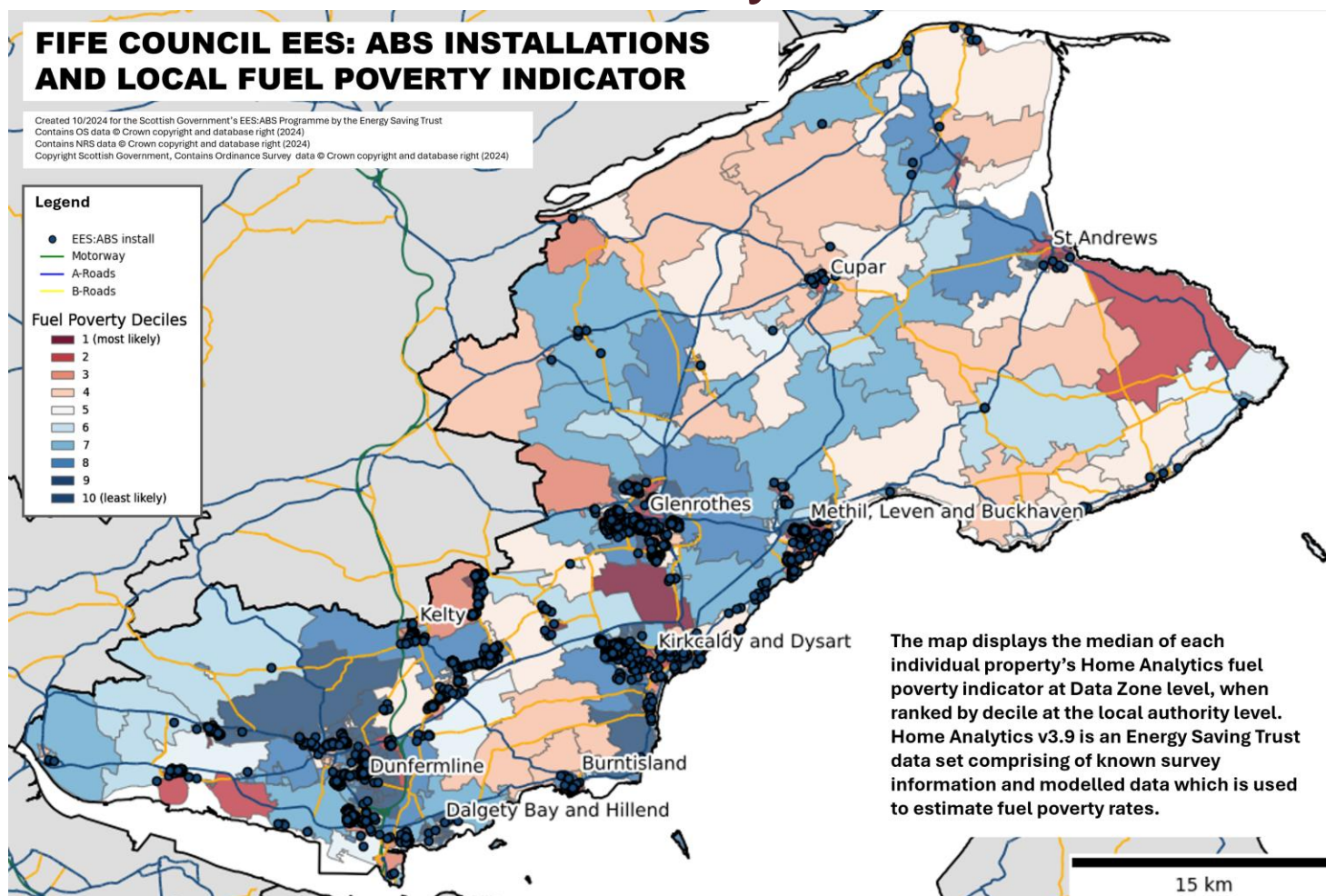
This map compares the fuel poverty indicator for Fife Council compared to the rest of Scotland. The blue areas have the lowest fuel poverty rates on a national scale when fuel poverty by data zone is ranked for all local authorities in the country. According to the Scottish Housing Condition Survey (SHCS) the average fuel poverty rate in the

Fife Council area is around 24% of all homes. This is equals the Scottish national average and places Fife as 15th ranked local authority out of 32 in the country.

National Scottish Fuel Poverty Indicator II



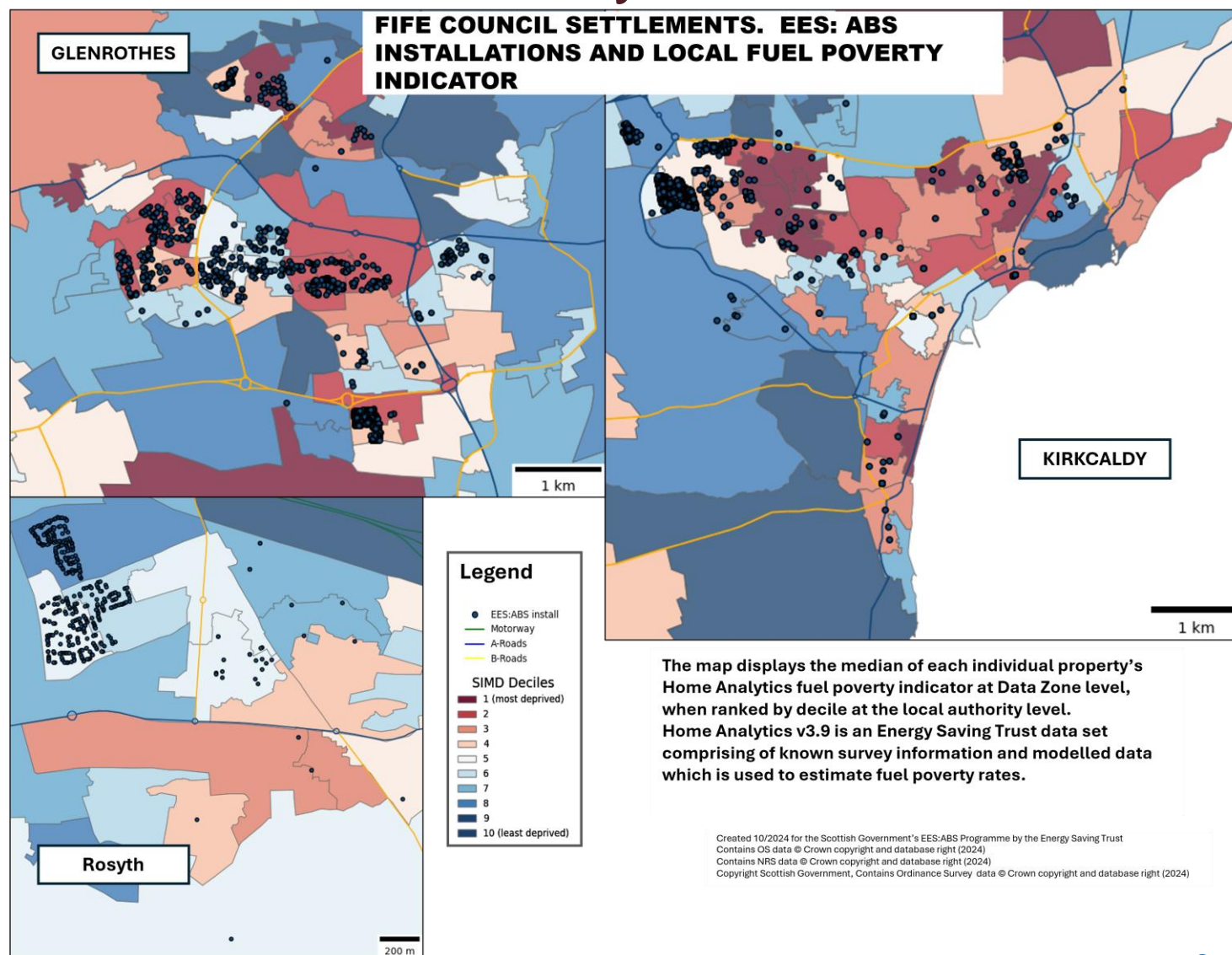
Fife Council Fuel Poverty Indicator I



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

This means that 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.

Fife Council Fuel Poverty Indicator II

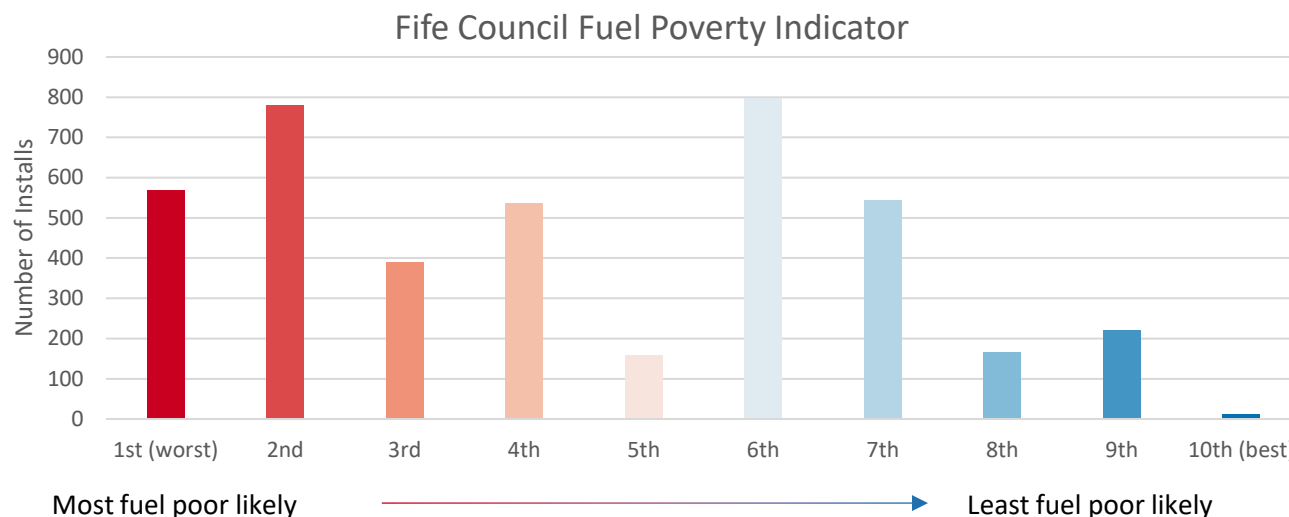


The map displays the median of each individual property's Home Analytics fuel poverty indicator at Data Zone level, when ranked by decile at the local authority level. Home Analytics v3.9 is an Energy Saving Trust data set comprising of known survey information and modelled data which is used to estimate fuel poverty rates.

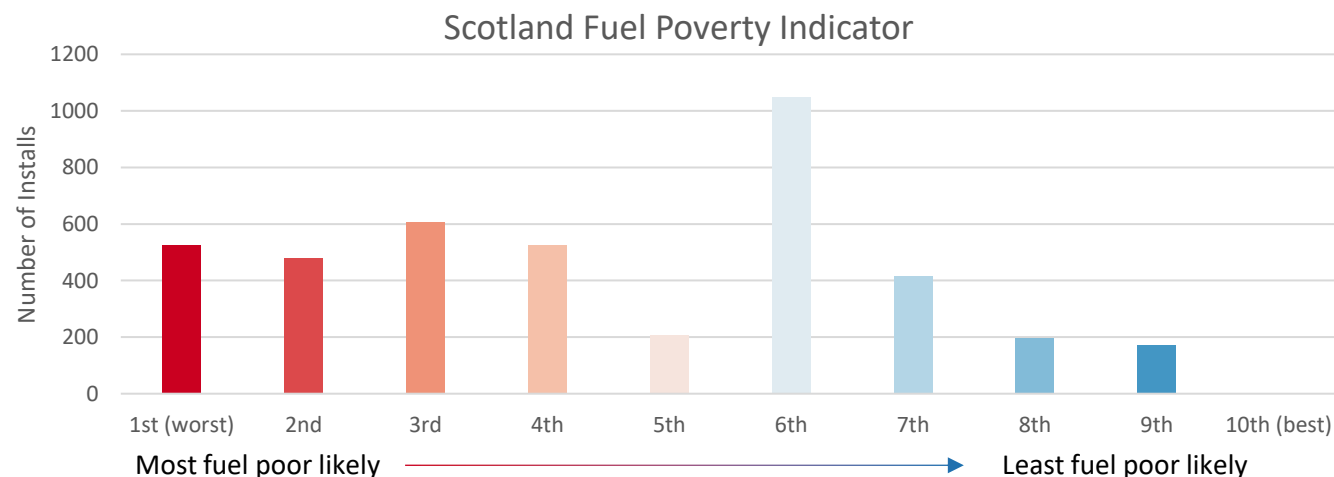
Created 10/2024 for the Scottish Government's EES:ABS Programme by the Energy Saving Trust
Contains OS data © Crown copyright and database right (2024)
Contains NPS data © Crown copyright and database right (2024)
Copyright Scottish Government, Contains Ordnance Survey data © Crown copyright and database right (2024)

Fife Fuel Poverty Indicator III

77.5% of all EES: ABS installs took place within the six 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 Fife Council.

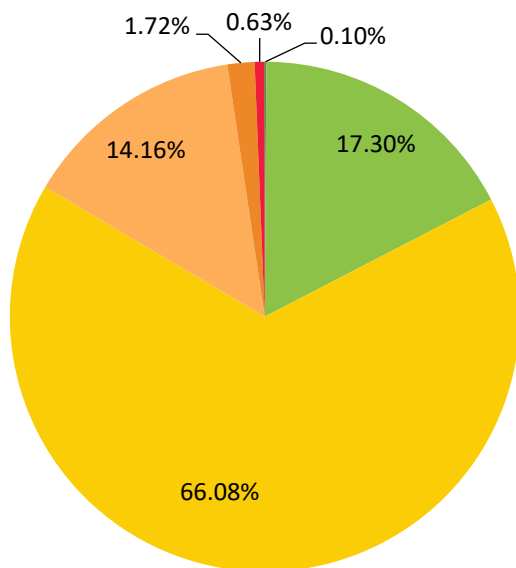


When examined on a national scale of Scotland (bottom illustration), a total of 81.2% fall within the six most fuel poor ranks when compared to the national figures.

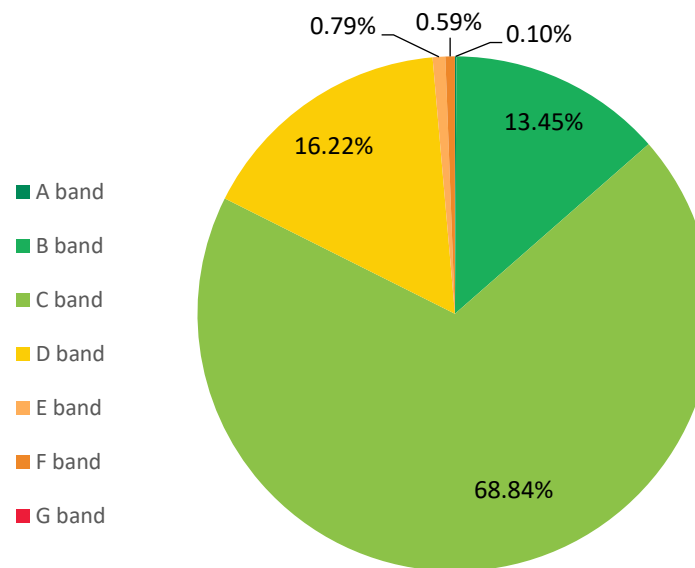


EES: ABS SAP Band Analysis I

EES: ABS properties by pre-installation EPC banding



EES: ABS properties by post-installation EPC banding



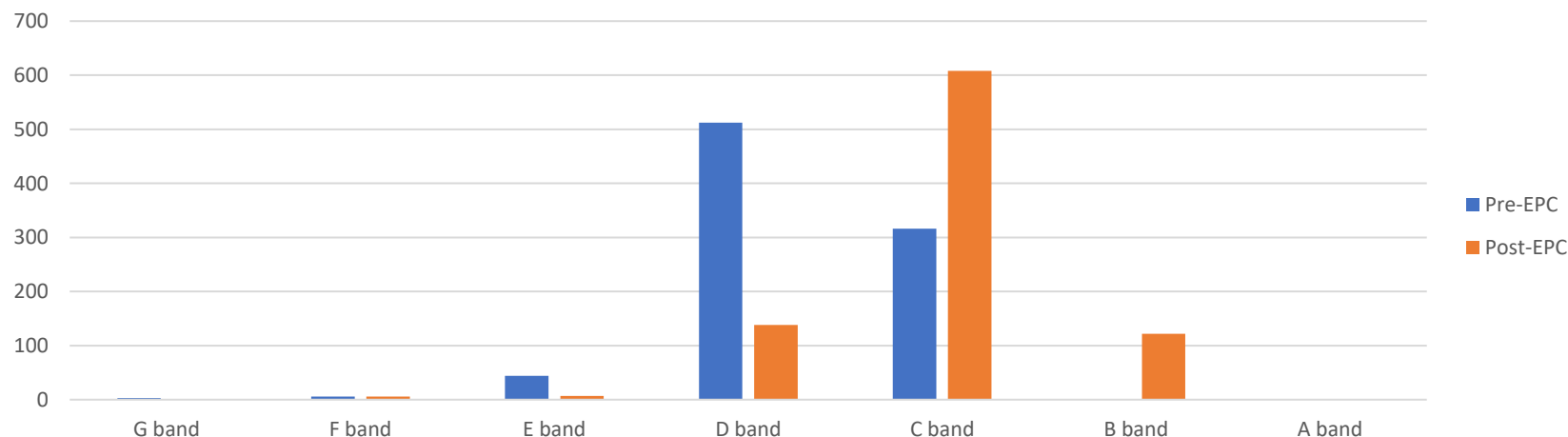
A valid pre-installation EPC* was provided for 94.71% (3,954 out of 4,175) properties participating in the programme. Of these 82.60% were within the national band D average or lower.

A total of 1,011 (24.22%) of records had a valid post-installation EPC regardless of the validity of the pre-EPC. After the completion of the installs, 82.39% reached band C or above.

EES: ABS SAP Band Analysis II

Out of the 3,954 properties with valid pre-EPCs, a total of 882 had a valid pre- and post-installation EPC and can be used for further analysis. 64.1% of these 882 properties had a starting SAP band of D or lower (35.8% were band C). The Post-EPC's show that after the completion of installs, 68.9% of the properties reached band C and 15.7% reached band D. 13.8% reached band B and one property also moved up to band A. Only 1.47% of the properties remain with a post-installation EPC band of E and F, illustrating the positive effect of the Fife Council EES: ABS programme.

EES: ABS properties by EPC banding

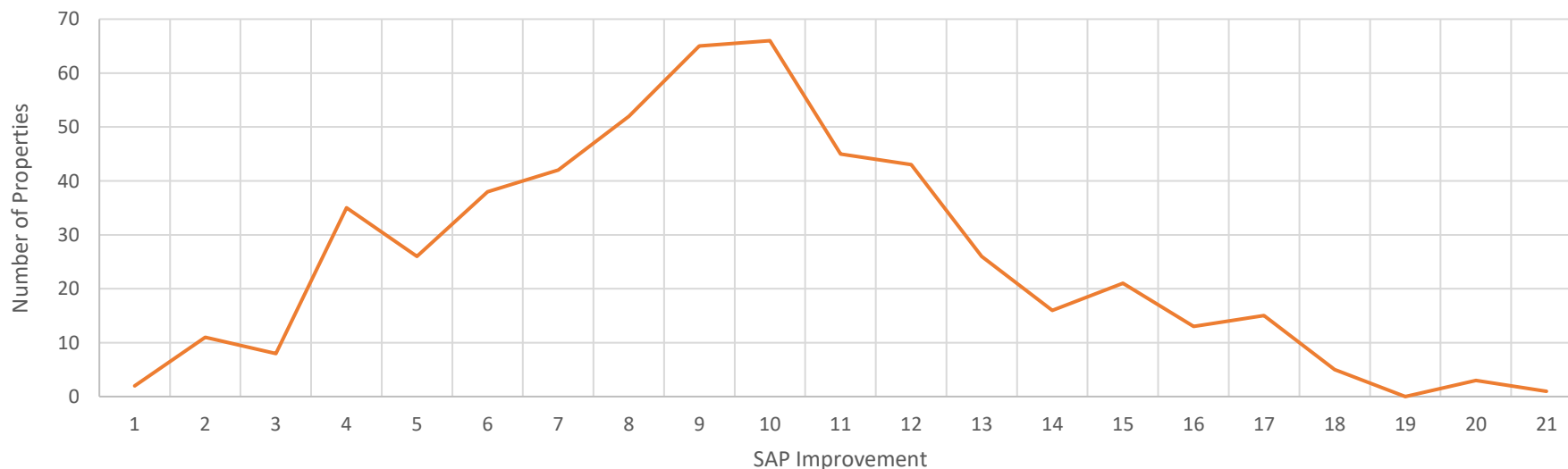


EES: ABS SAP Band Analysis III

The most common outcome of the EES: ABS programme within Fife Council was for a property to increase in SAP score for around 4 to 12 points (50% of properties where the EPCs were valid to use for further analysis).

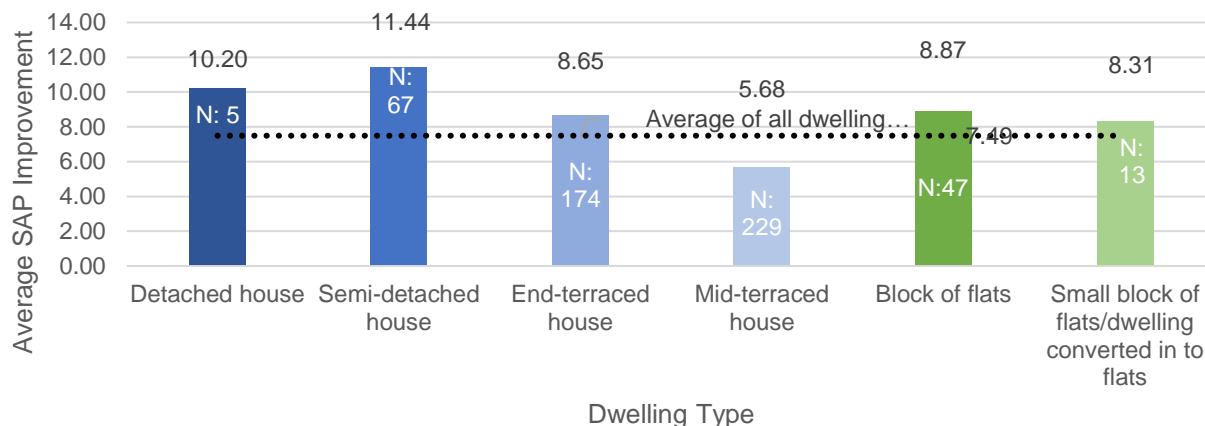
The larger SAP increases (12 to 21 points) included in this case study were due to installation of external wall insulation for solid walls and hard to treat CWI solution within end-terraced houses and small blocks of flats/dwelling converted in to flats.

EES: ABS Property Count by SAP Improvement



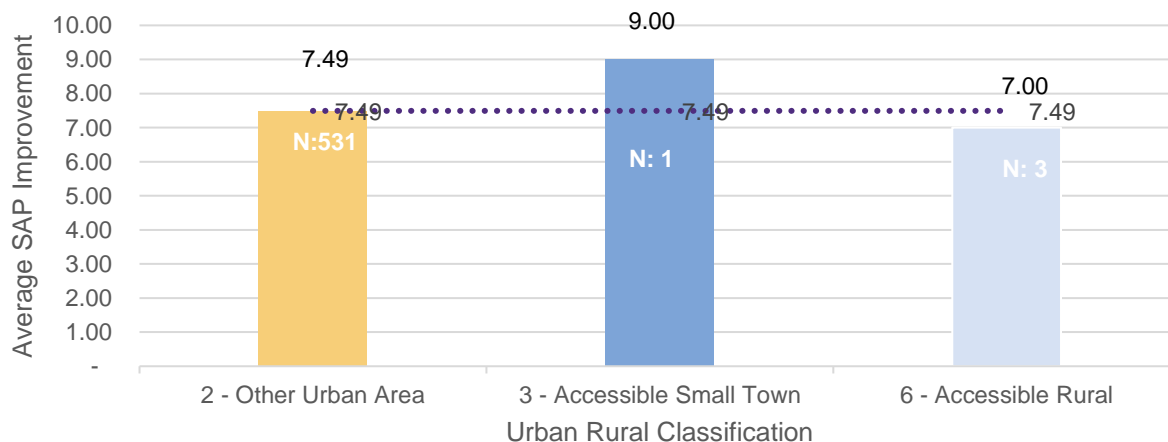
EES: ABS SAP Band Analysis IV

Average SAP improvement by dwelling type



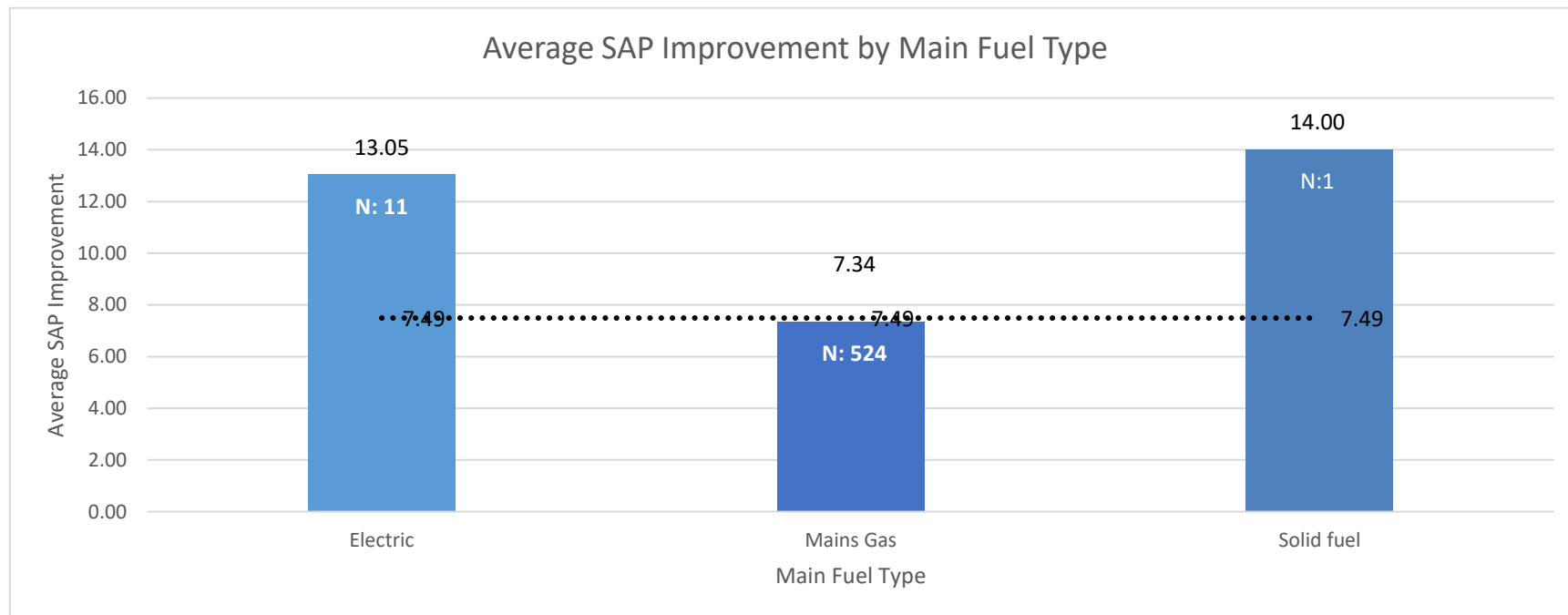
The average SAP improvement for all dwelling types is 7.49. Semi-detached houses benefitted from the biggest average improvement (11.44), with detached houses next with an average increase of 10.20 points.

Average SAP improvement by urban rural classification



Other Urban Areas benefitted from an average SAP improvement of 7.49. The sample sizes for the other classification types are very low and so confidence is low. However, the increases were positive (7 to 9).

EES: ABS SAP Band and Main Fuel Type



The average SAP improvement for all main fuel types was 7.49. The biggest sample size available was for mains gas properties (N:524) where the average improvement was 7.34. Properties with electric heating and solid fuel improved by their SAP rating by 13.05 and 14.00 points on average, respectively. However, the sample sizes for these were low at only 11 records for electric heating and 1 record for solid fuel.

Conclusions and notes

- A variety of measures have been included in the programme since outset and the last five years have focused mainly on wall insulation, with an increasing number of PV systems in the last two.
- The typical participating property is within the owner-occupied sector and constructed between 1950 and 1983. The main property type was a house with a system built or hard to treat cavity wall construction.
- 94% of the participating properties can be found within the six most deprived SIMD areas.
- 77.5% of all EES: ABS installs took place within the six most fuel poor ranked data zones.
- Most properties had a starting EPC of band D or lower (82.6%) and 82.4% 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 12 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.

Special thanks to Szabolcs Kerek, the Project Officer (Sustainability) in Fife Local Council, for providing insight and assistance towards the completion of this case study.

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