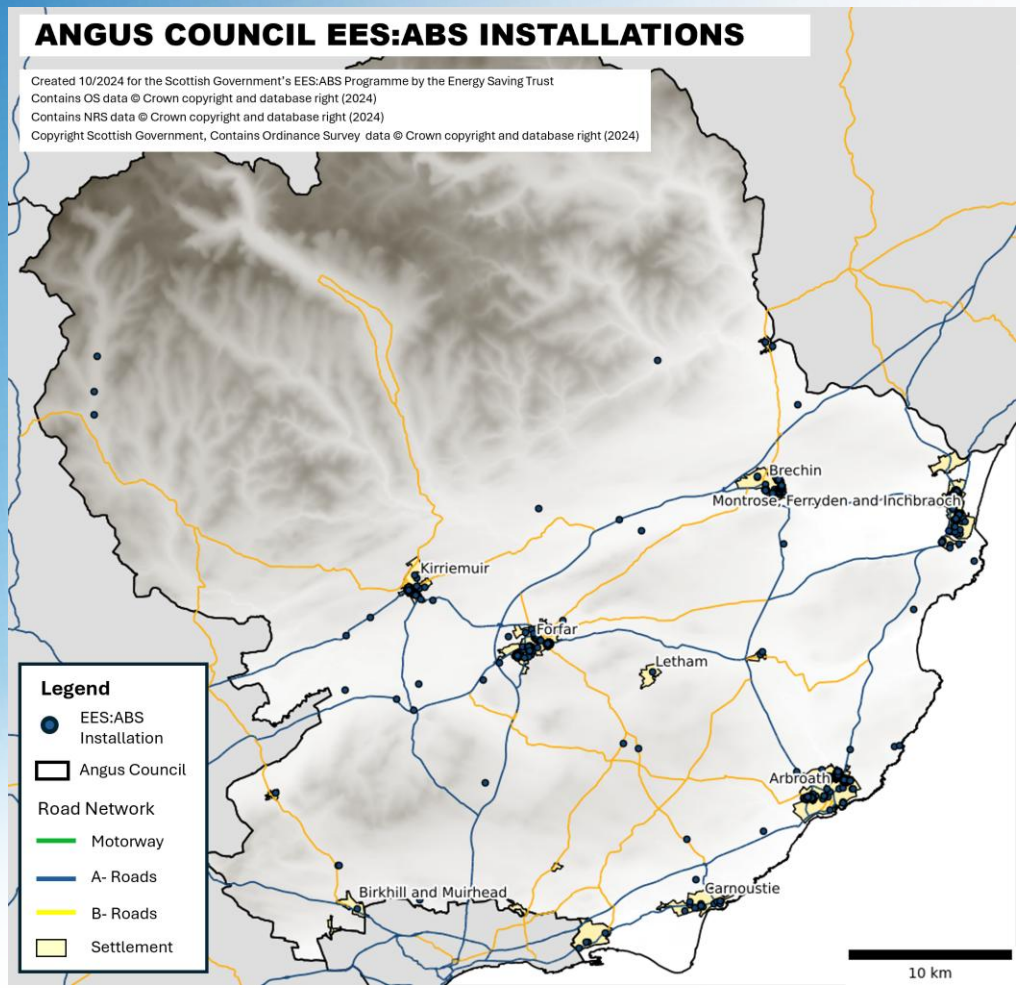
Angus Council EES: ABS Case Study

energy saving trust

Energy Saving Trust
September 2024



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

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

Angus Council EES: ABS dataset

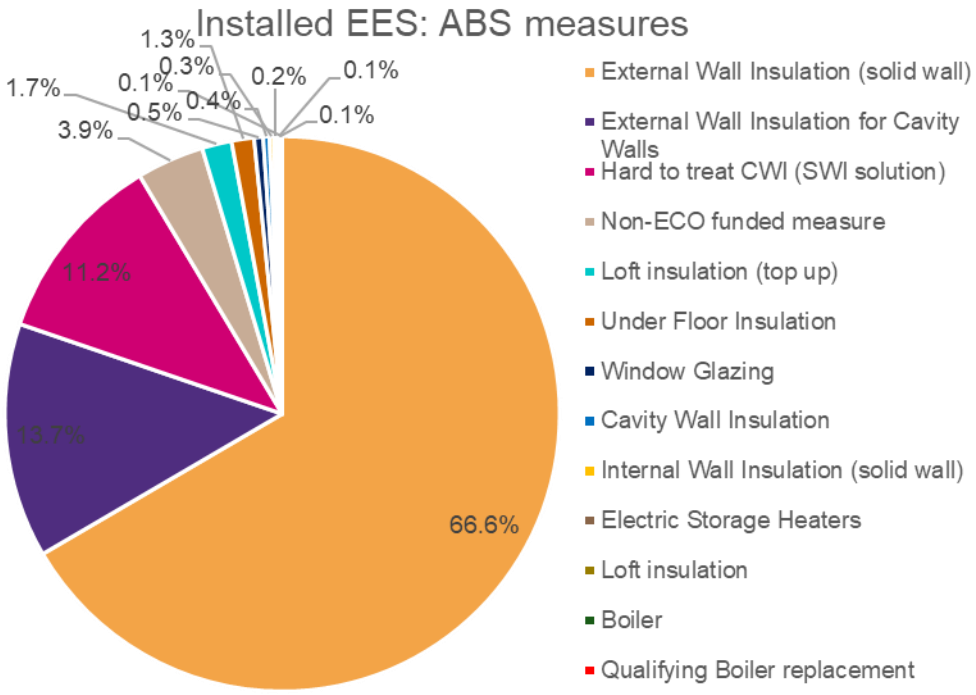
Financial Year	Number of records*	% of records
2013/14	NIL	0.00
2014/15	360	18.01
2015/16	223	11.16
2016/17	414	20.72
2017/18	373	18.66
2018/19	206	10.31
2019/20	114	5.70
2020/21	84	4.20
2021/22	31	1.55
2022/23	138	6.90
2023/24[1]	*76*	3.80
Total Installs	***1,998***	**100.00**

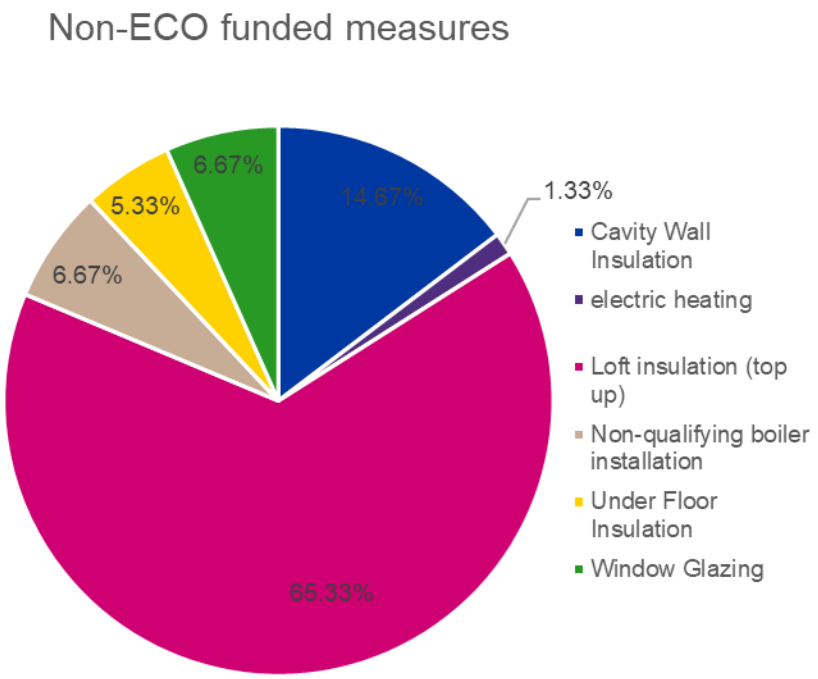
Reference numbers	Number of records	% of records
With pre-installation EPC	1,132	83.03
With post-installation EPC	486	35.62
With pre and post-installation EPC	479	35.15
With GDAR	0	0.00
With measure reference number	186	13.62

The Angus Council has contributed 1.62% 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 Angus Council.

Installed Measures I





Angus Council has offered a variety of measures as part of their EES: ABS programme. Nearly 93% 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.

The graph on the right shows the distribution of the Non-ECO funded measures during the programme.

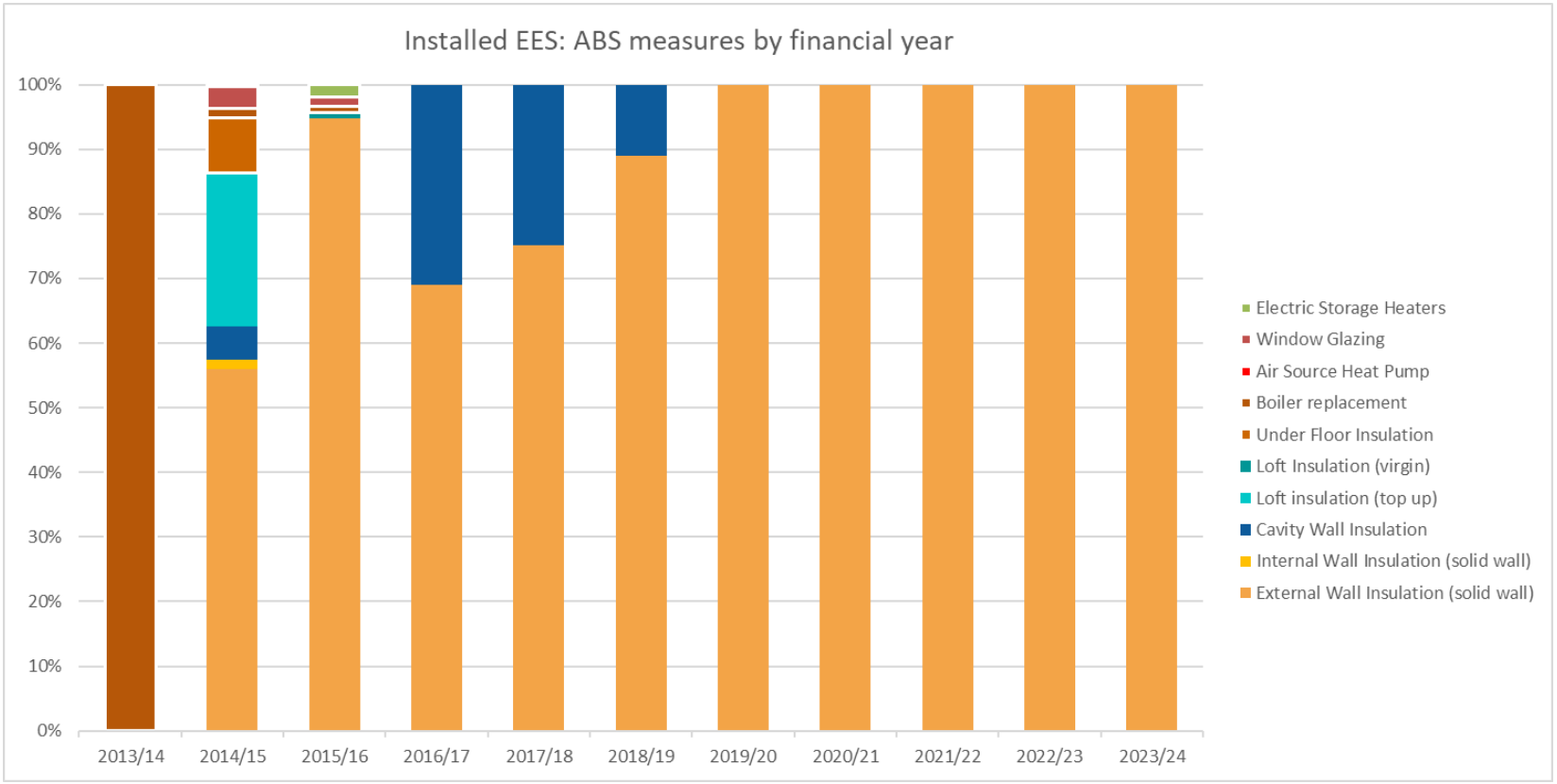
Installed Measures II

Measure Name	Number of records*	% of records
External Wall Insulation (solid wall)	1,271	66.6
External Wall Insulation for Cavity Walls	261	13.7
Hard to treat CWI (SWI solution)	213	11.2
Loft insulation (top up)	33	1.7
Under Floor Insulation	25	1.3
Window Glazing	10	0.5
Cavity Wall Insulation	7	0.4
Internal Wall Insulation (solid wall)	5	0.3
Electric Storage Heaters	4	0.2
Qualifying Boiler replacement	3	0.1
Loft insulation	2	0.1
Non-ECO funded measure	75	3.9
Total Installs	**1,909**	**100.00**

Non-ECO funded measures	Number of records*	% of records
Loft insulation (top up)	49	65.3
Cavity Wall Insulation	11	14.7
Non-qualifying boiler installation	5	6.7
Window Glazing	5	6.7
Under Floor Insulation	4	5.3
Electric Storage Heaters	1	1.3
Total Installs	**75**	**100.00**

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

Installed Measures by Financial year

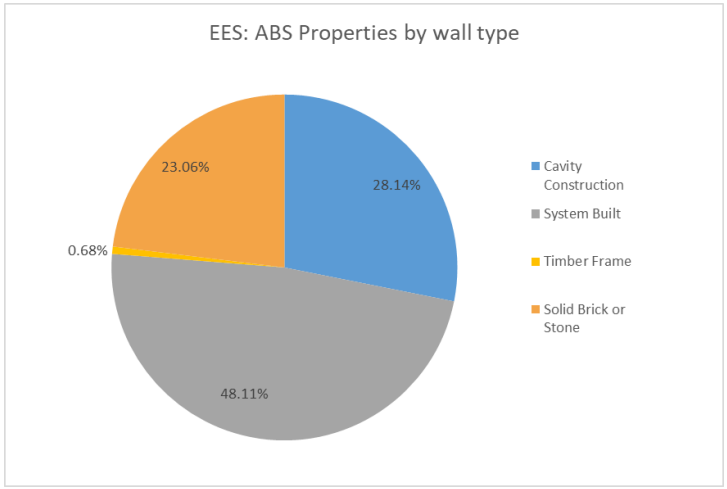


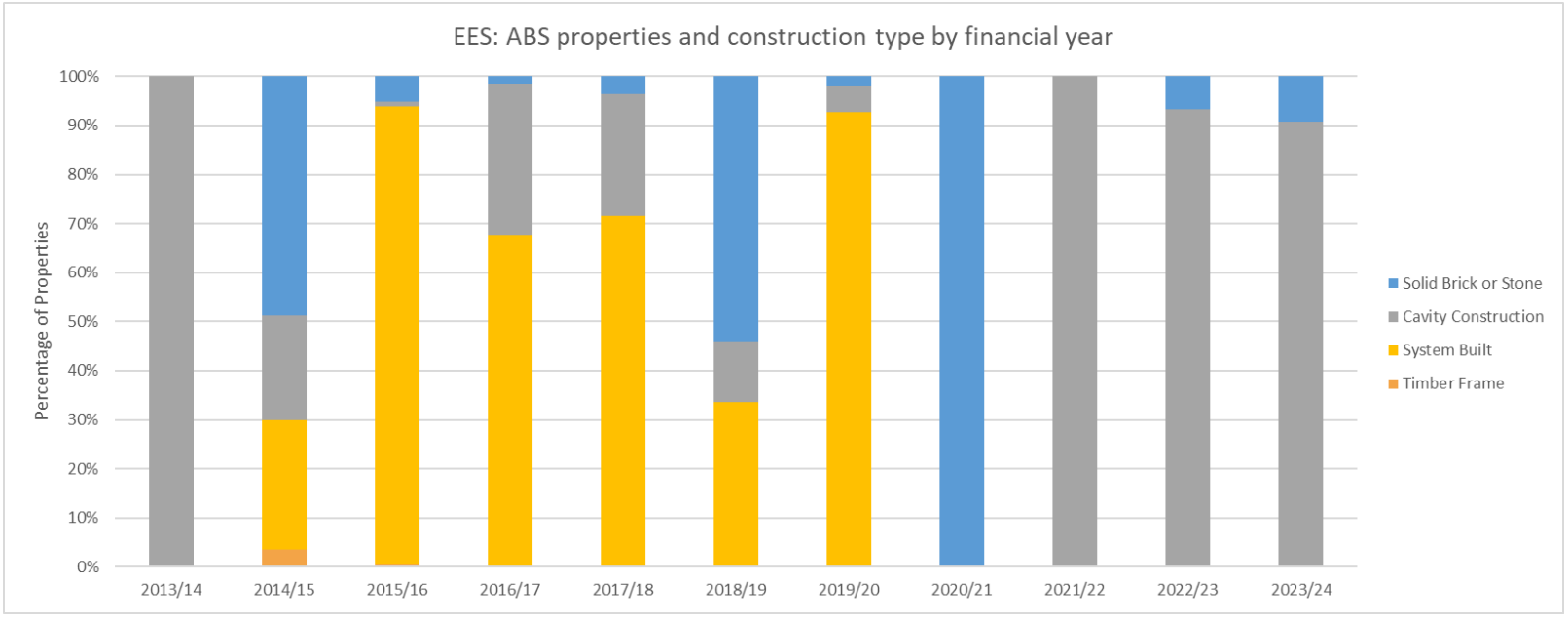
For the first few years of the programme, Angus Council offered a variety of measures. However, the project changed its focus, and a fabric-first approach was adopted. This prioritised solid wall no-fine properties receiving external wall insulation, and this focus is still being applied going forward.

Note: No-fine properties refer to a construction method where concrete with no fine aggregates has been used.

Wall Type

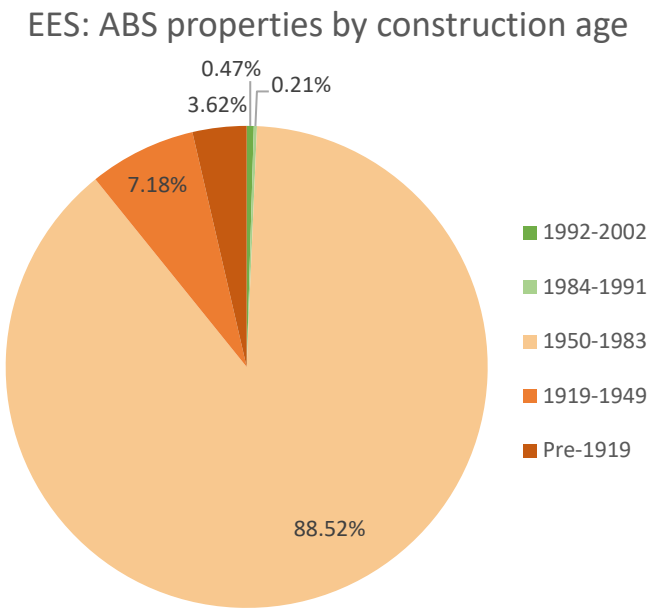
The chart on the right shows the distribution of different wall types within the programme. Below you can see the division of these wall types throughout the years.

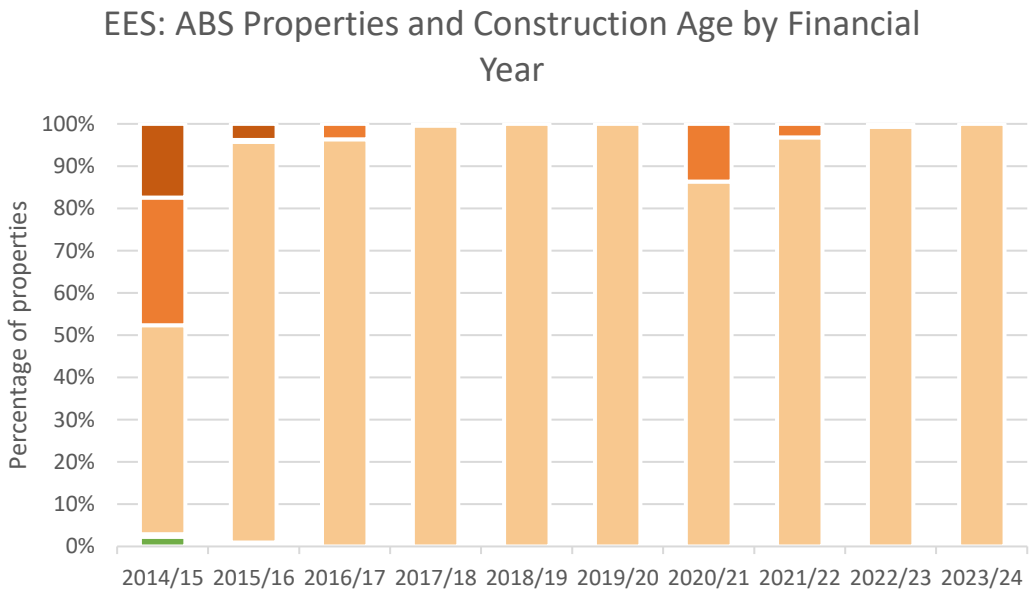




Note: Wall type is taken from EST's Home Analytics dataset.

Construction Age

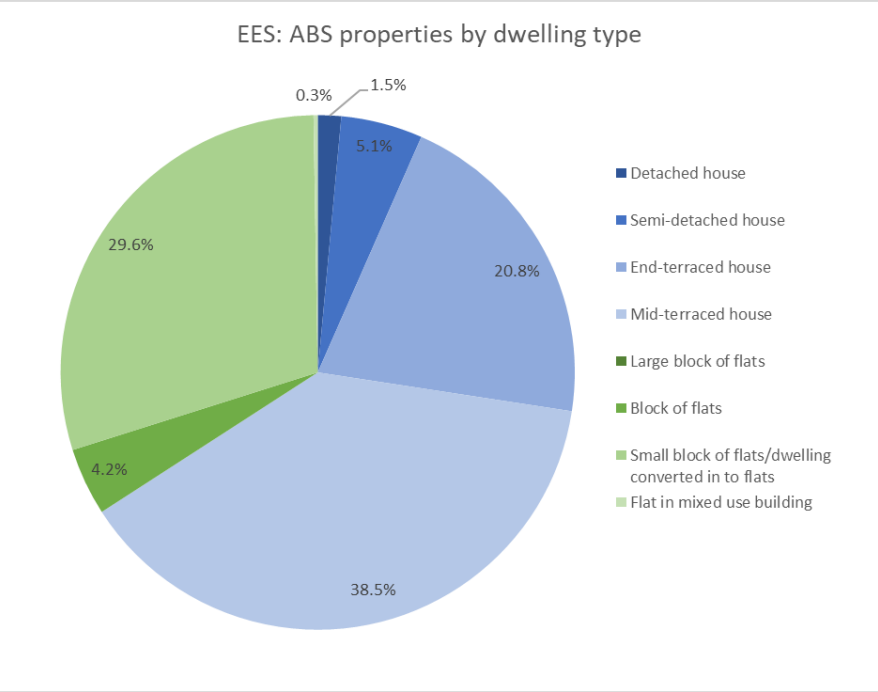


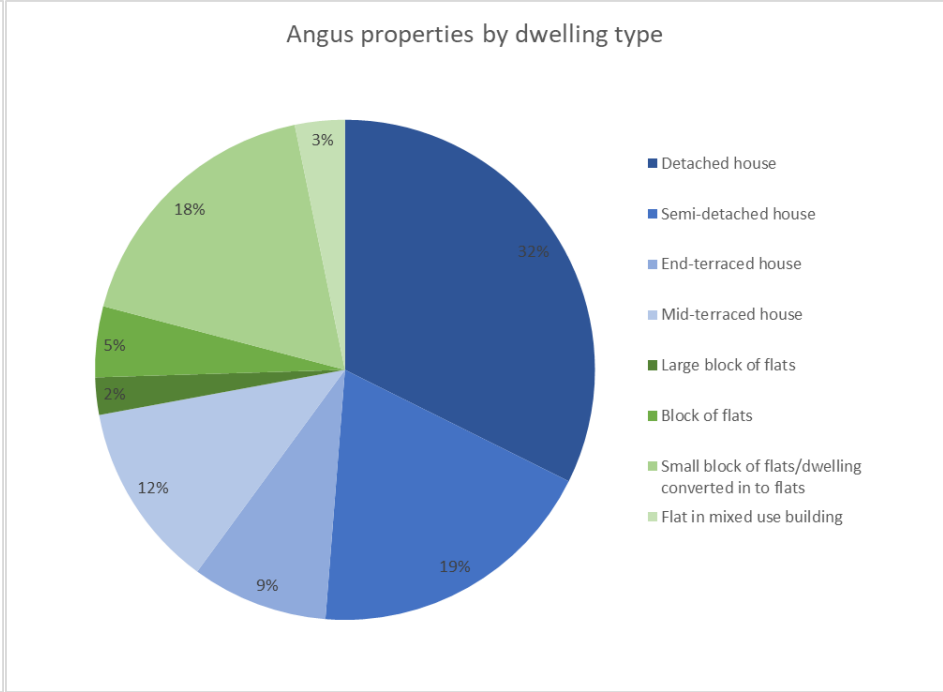


The majority of all participating properties were constructed between 1950 and 1983 (88.5%) and this has been the Angus Council's approach for the majority of the programme. A fabric first approach has been followed where the majority of the participants have been no-fine properties receiving external wall insulation, built post-war between 1950 and 1983.

Note: Construction age is taken from EST's Home Analytics dataset.

Dwelling Type

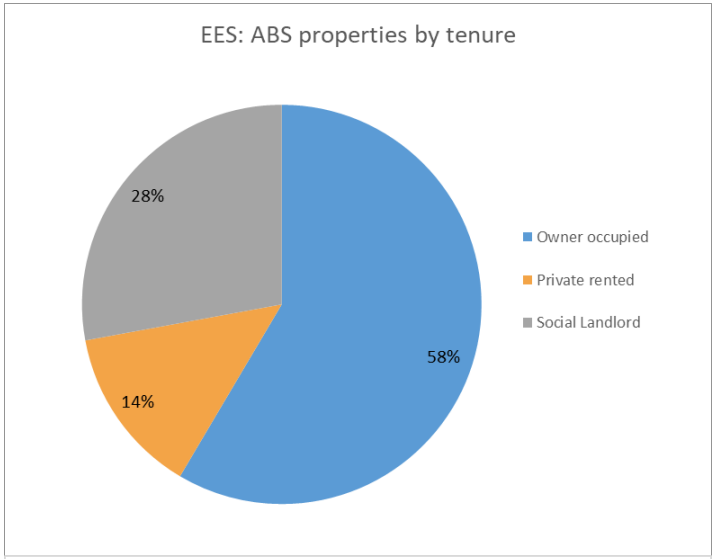


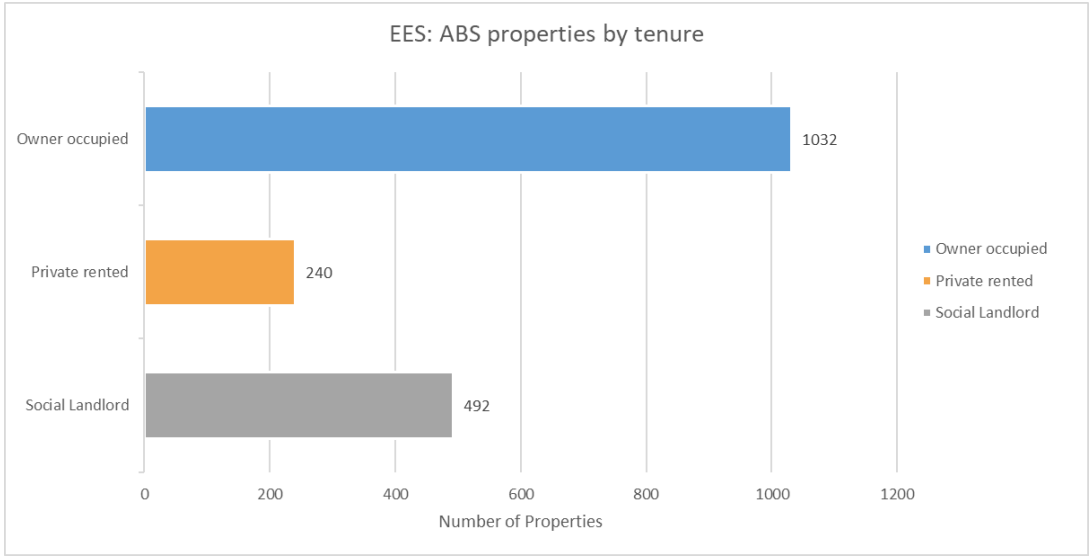


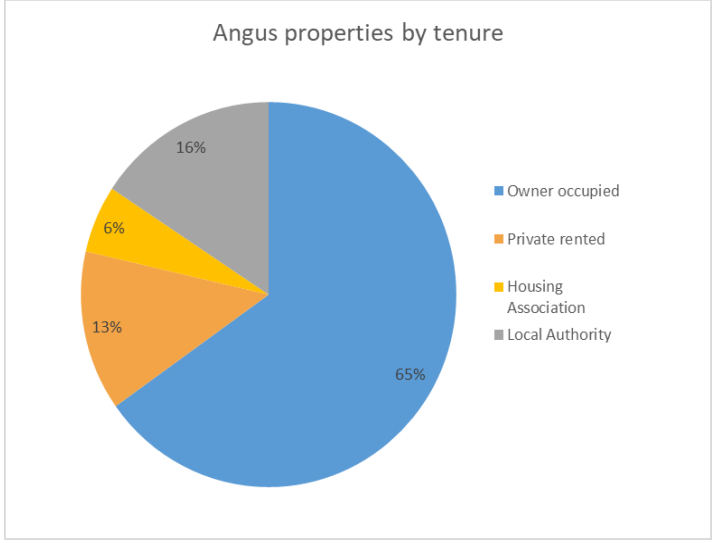
The Angus Council has targeted a mixture of houses (65.9%) and flats (34.1%). As a whole, 72% of the dwelling types within Angus Council consists of houses and 28% of flats.

Note: Dwelling type is taken from EST's Home Analytics dataset.

Property Tenure

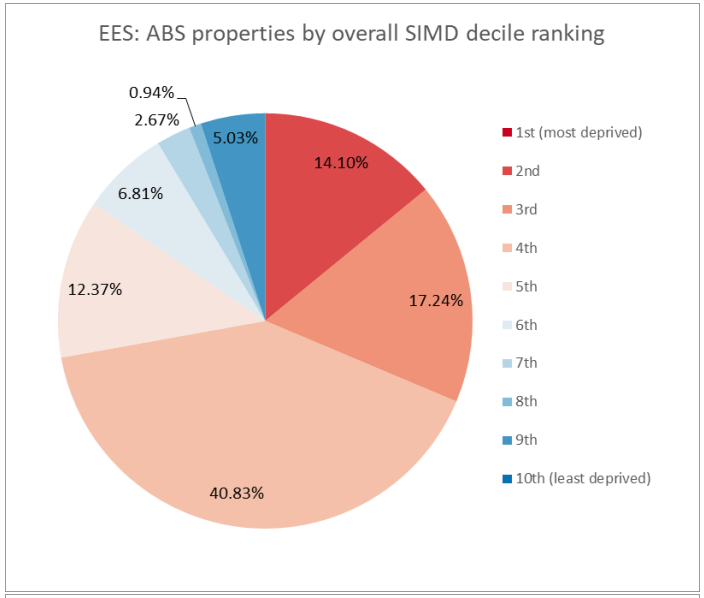


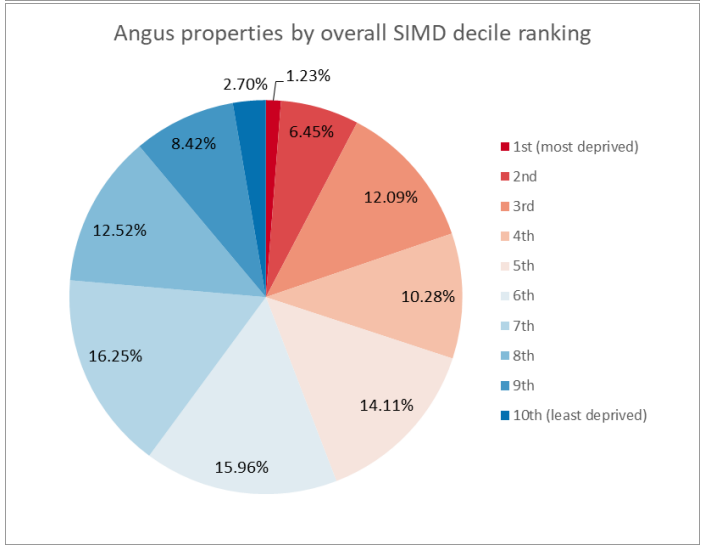




Angus Council has targeted mixed tenure types within the allocated area. Many ex-council right-to-buy properties have been included in the owner-occupied tenure.

Scottish Index of Multiple Deprivation (SIMD) I



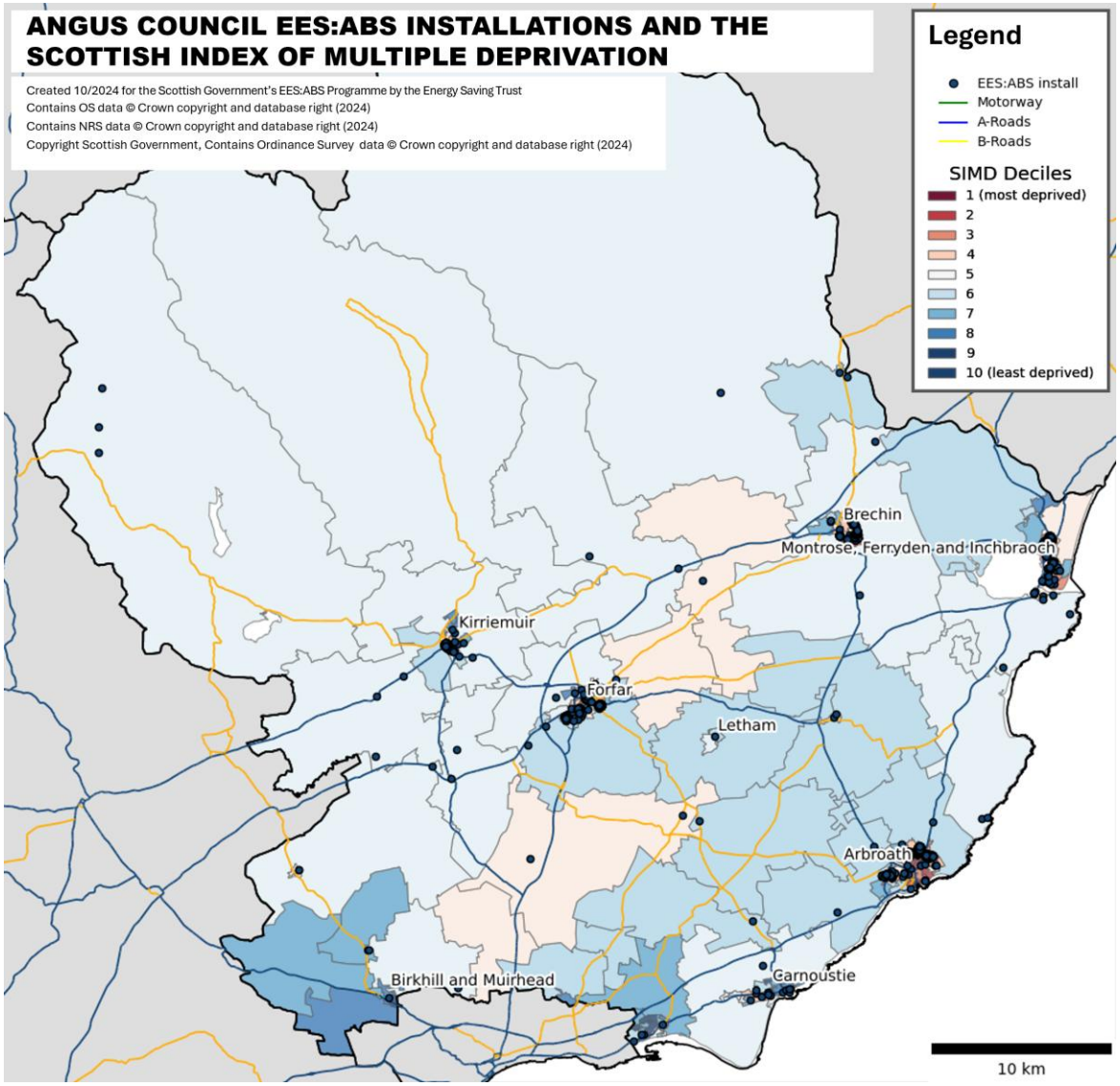


Comparison of these two illustrations shows the correlation between the overall SIMD ranking of Angus Council properties and of those targeted in the EES: ABS programme. A total of 91.35% of all participating properties are in the most deprived areas of the council and can be found within the six lowest SIMD ranks as seen in the top chart.

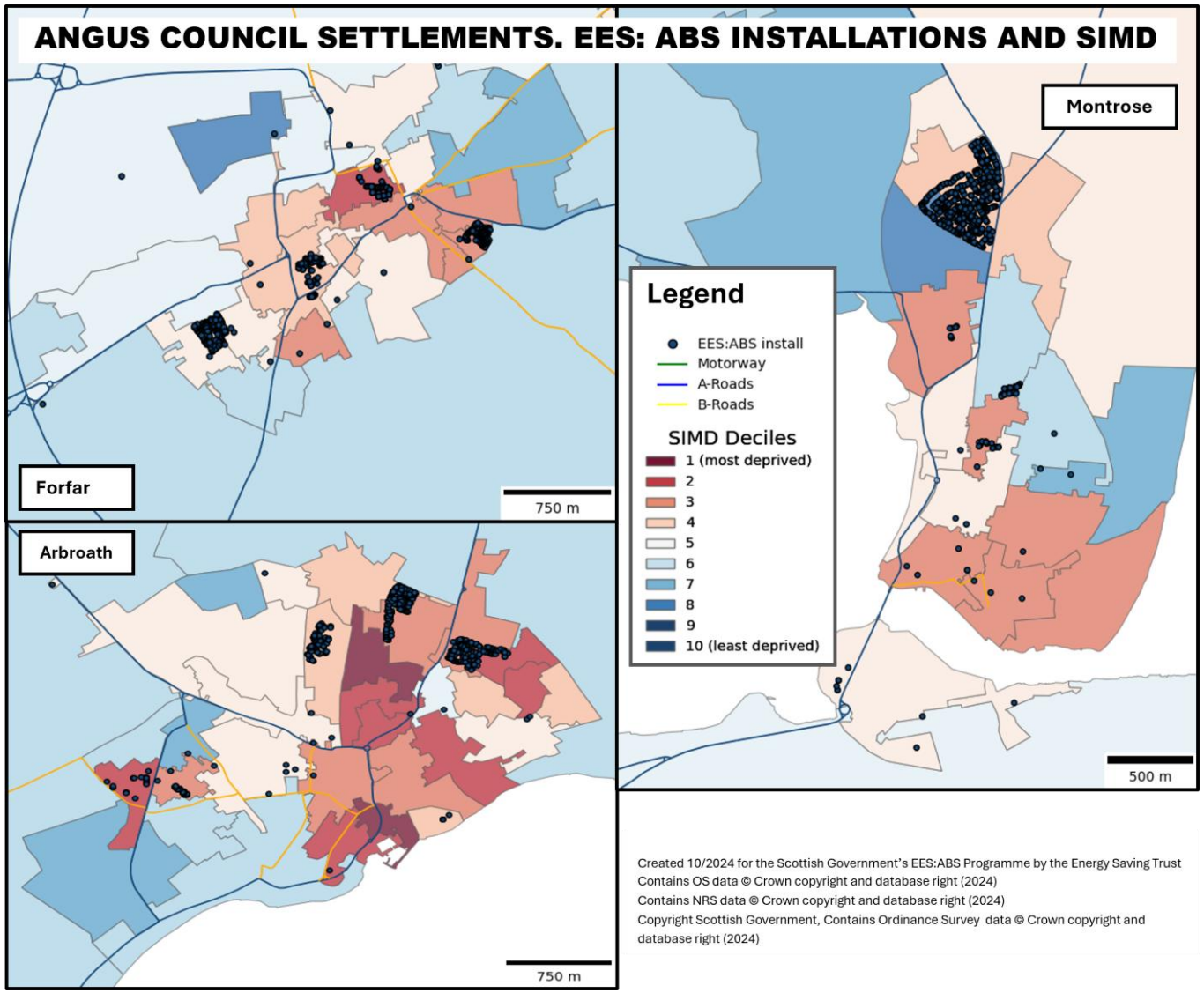
It is good to note that the SIMD can be a slightly problematic indicator for rural settings as each data zone contains between 500 and 1000 properties. Rural populations are very dispersed, so this means that very large catchments are created in order to reach the required range. Larger areas are more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

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



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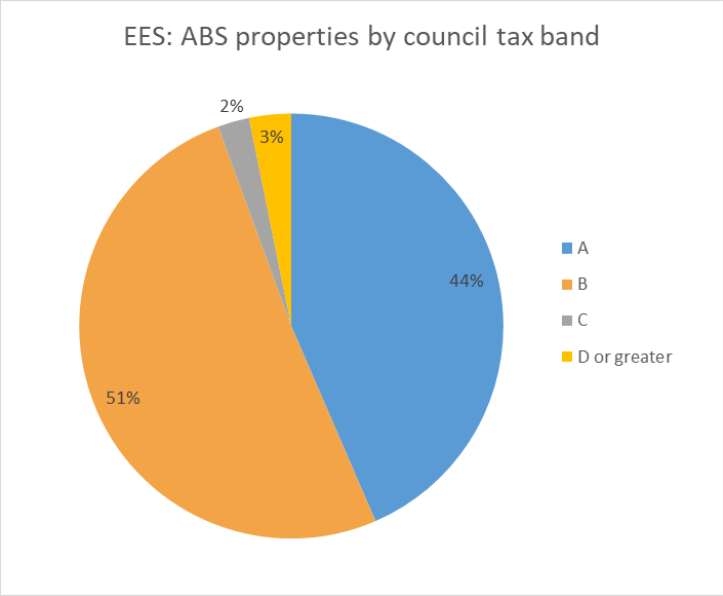
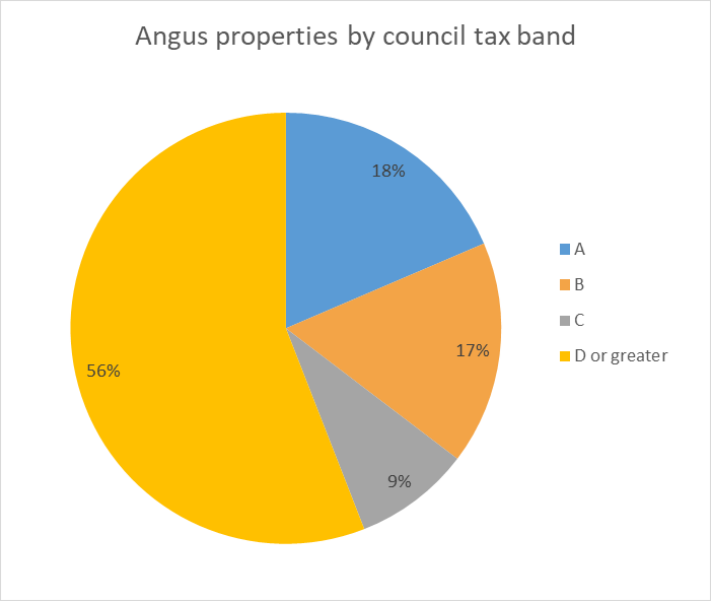
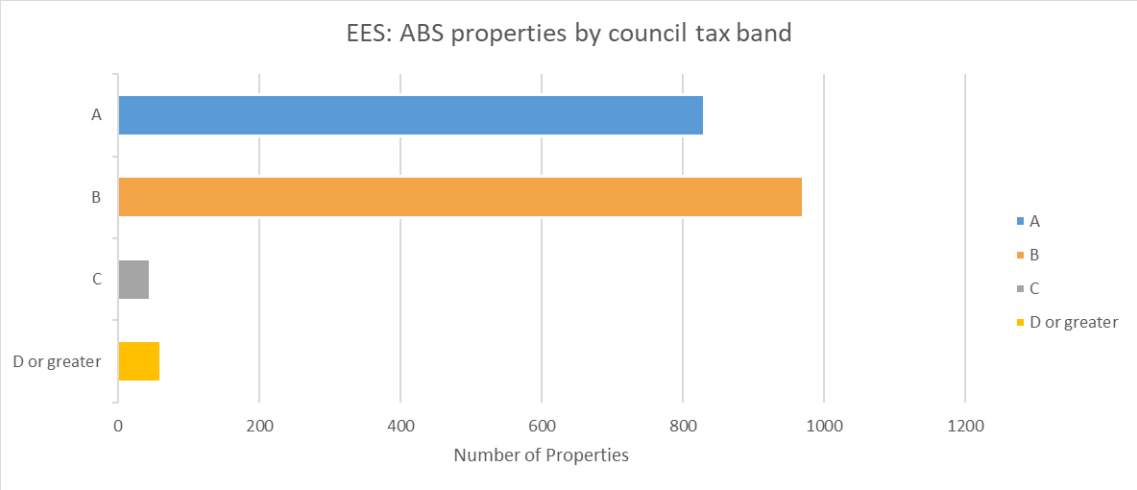
EES: ABS Installs by Council Tax Band



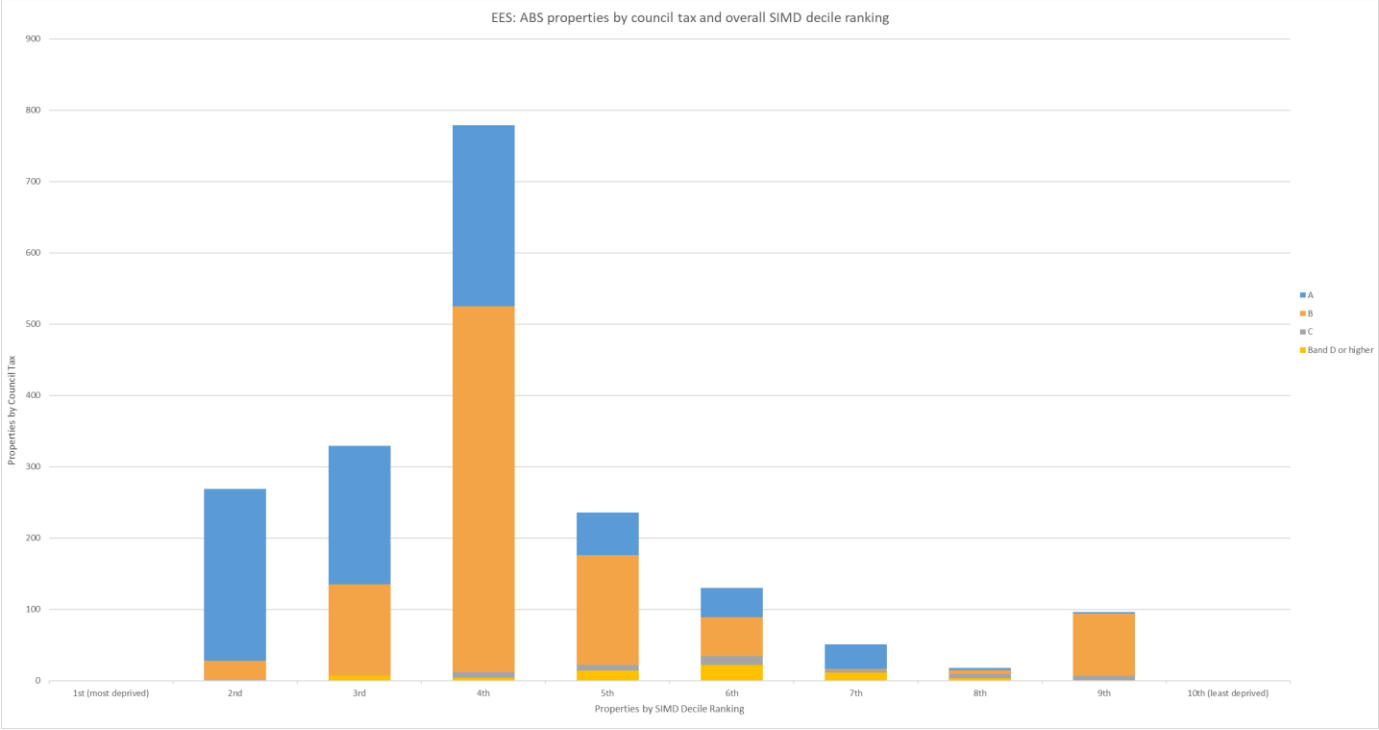




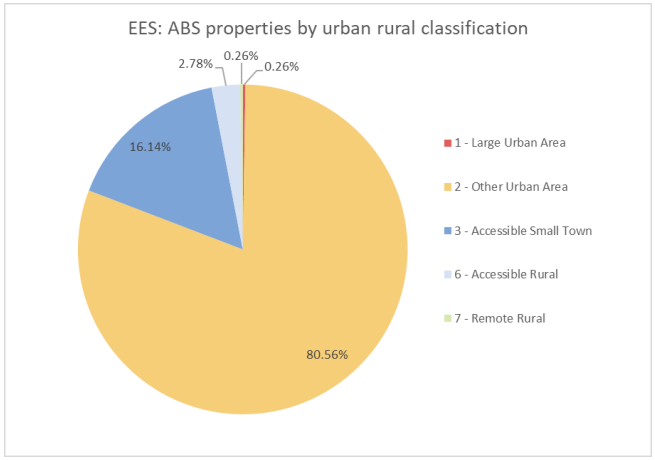
Just over 97% of properties receiving measures fall into council tax bands A, B and C. The Angus Council has specifically targeted bands A-C for the EES: ABS work.

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. 83.3% of the installations treating A, B and C council tax banded properties are located within the 5 most SIMD deprived areas when ranked by income as seen below.

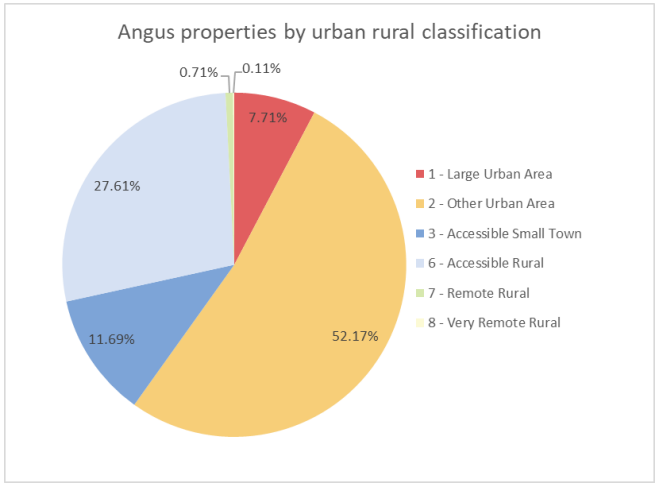


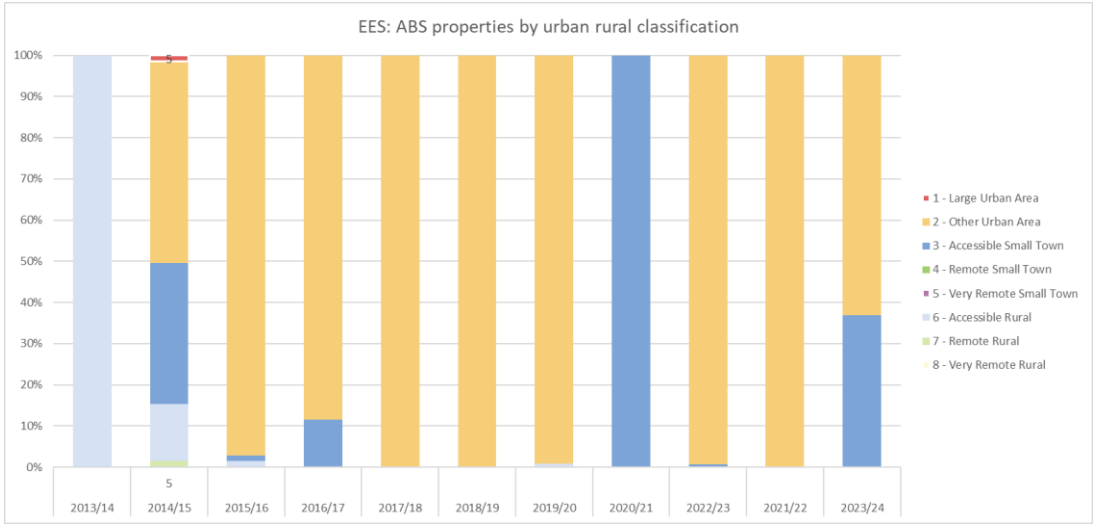
Urban Rural Classification I



The Angus Council area consists of six different urban rural classifications: Large Urban Area, Other Urban Area, Accessible Small Town, Accessible Rural, Remote Rural and Very Remote Rural areas.

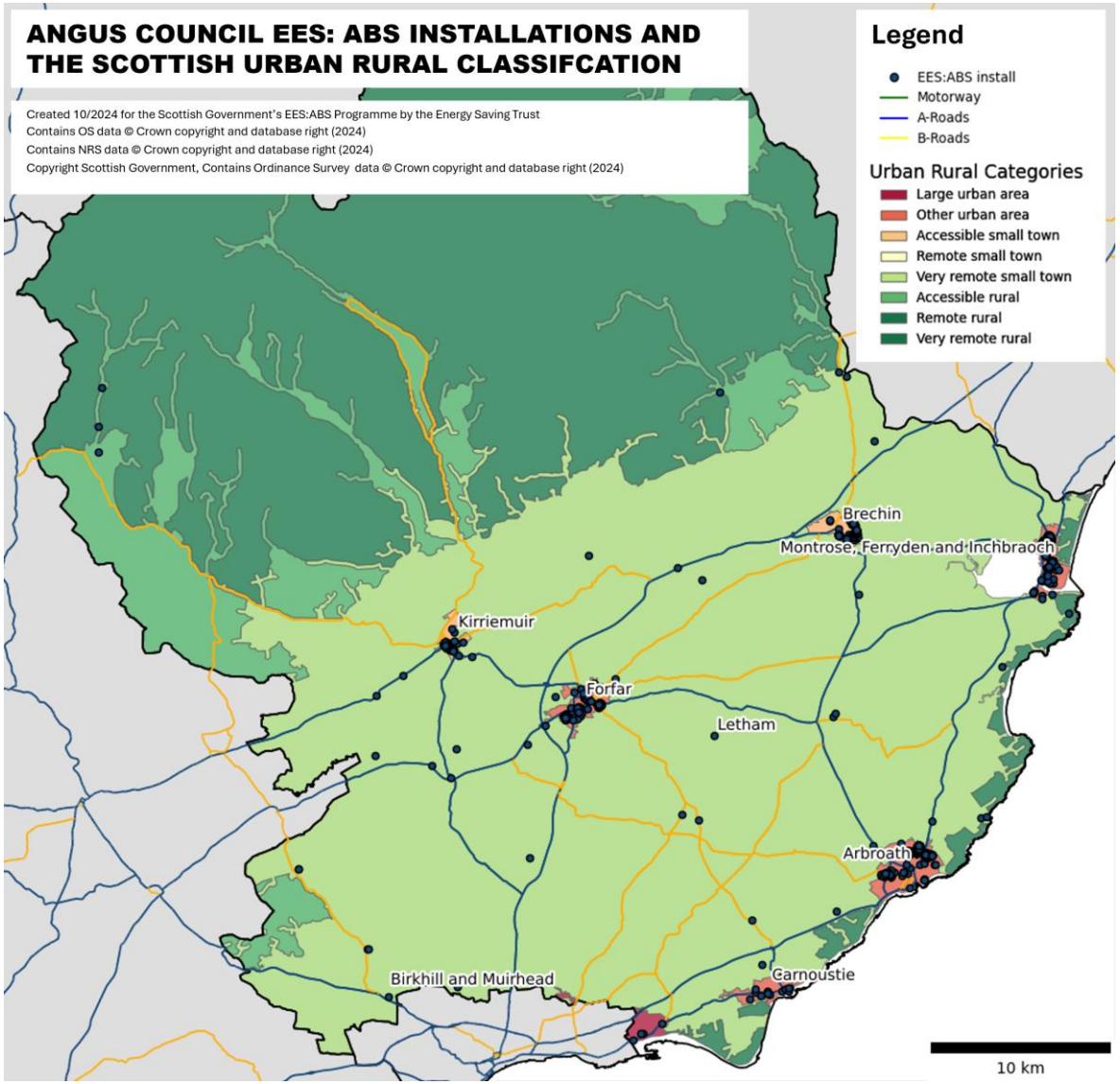
Five of these areas have been represented in the programme. The distribution of work has mostly focused in the other urban area. The bottom chart demonstrates that in 2020/21 the work has focused on accessible small towns specifically.





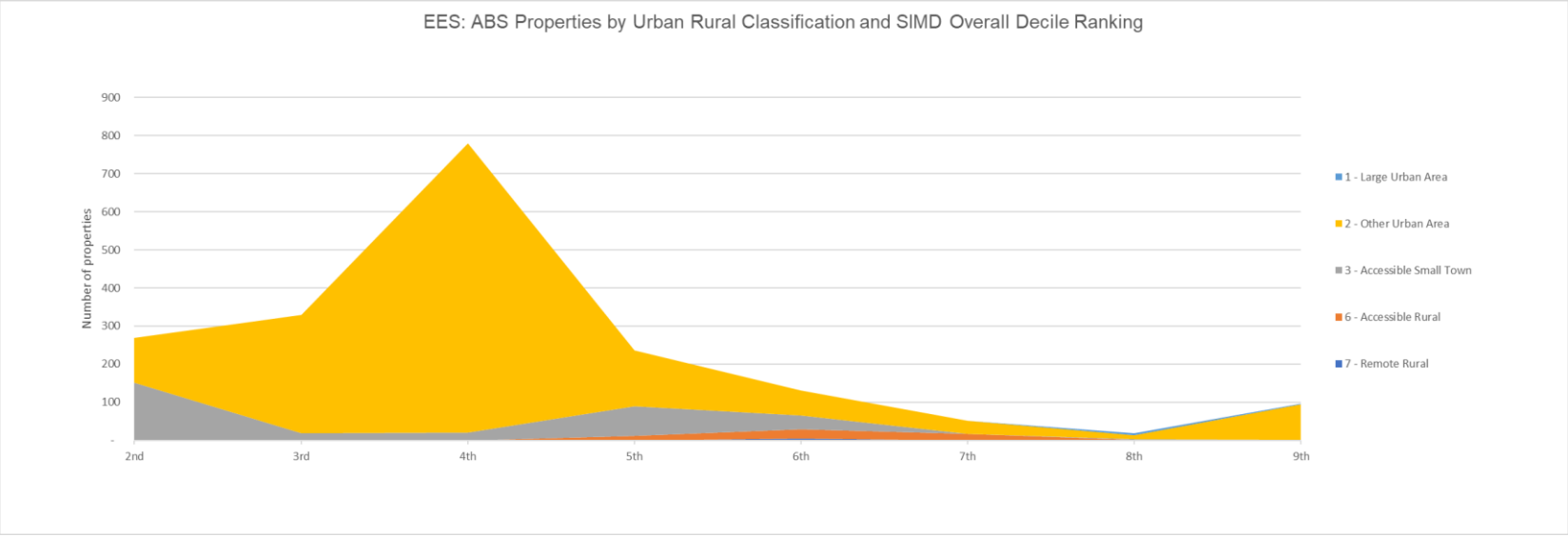
Note: For more information see next slide for the EES: ABS Installs by Urban Rural Classification map.

Urban Rural Classification II

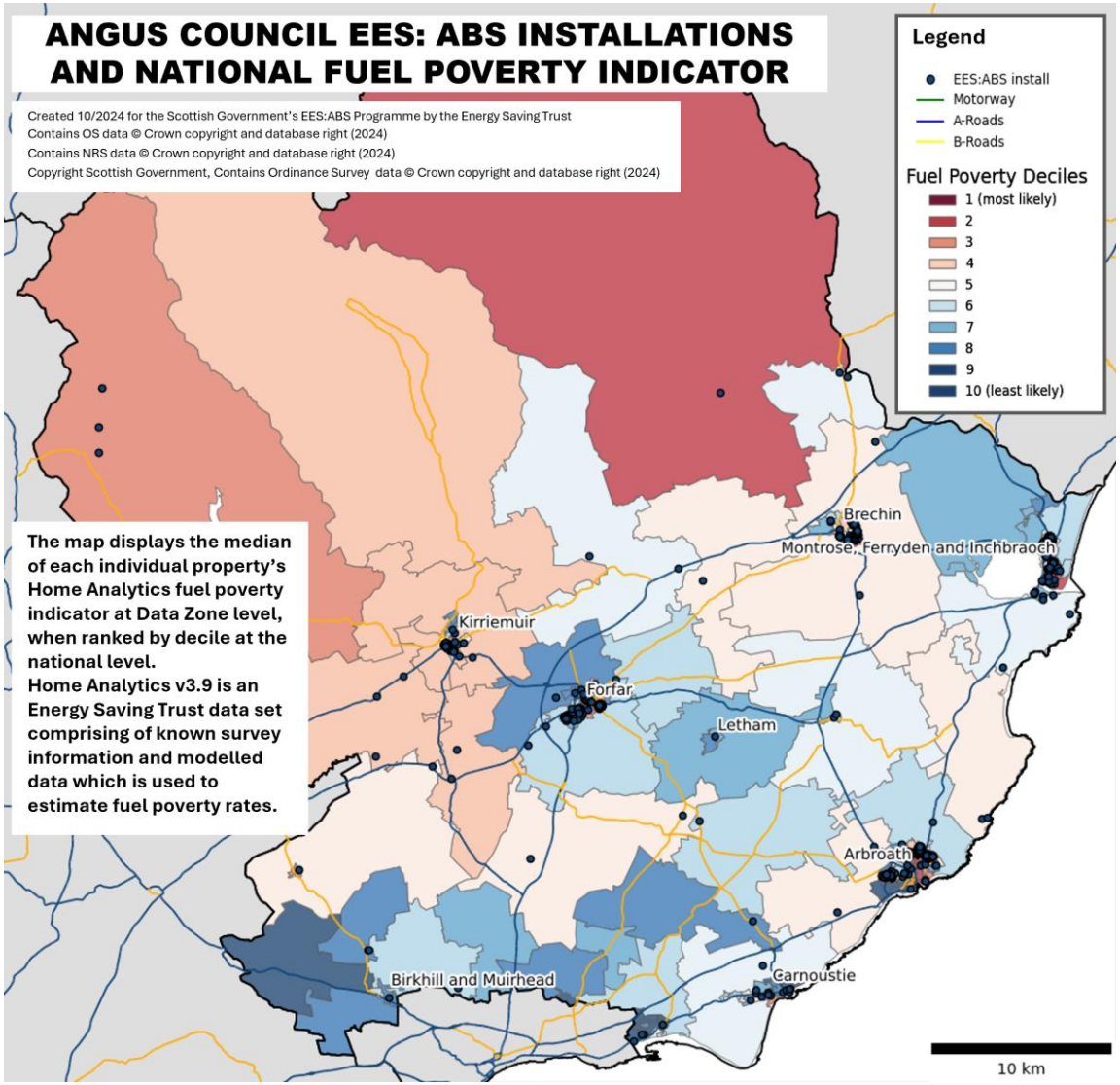


Urban Rural Classification and SIMD

This illustration demonstrates how 91.35% of the work that was completed within the six most deprived SIMD ranks fall within other urban areas, accessible small towns, accessible rural and remote rural areas. According to the Angus Council, urban rural classification alone is not one of the key factors for participating properties, as elements such as construction type (specifically solid wall no-fine properties), fuel poverty indicators, SIMD ranking and the overall condition of the properties have been taken into consideration. Furthermore, it is worth noting that in addition to rural data zones tending to lean towards the average SIMD ranks, not all deprived households are to be found within highly deprived areas.

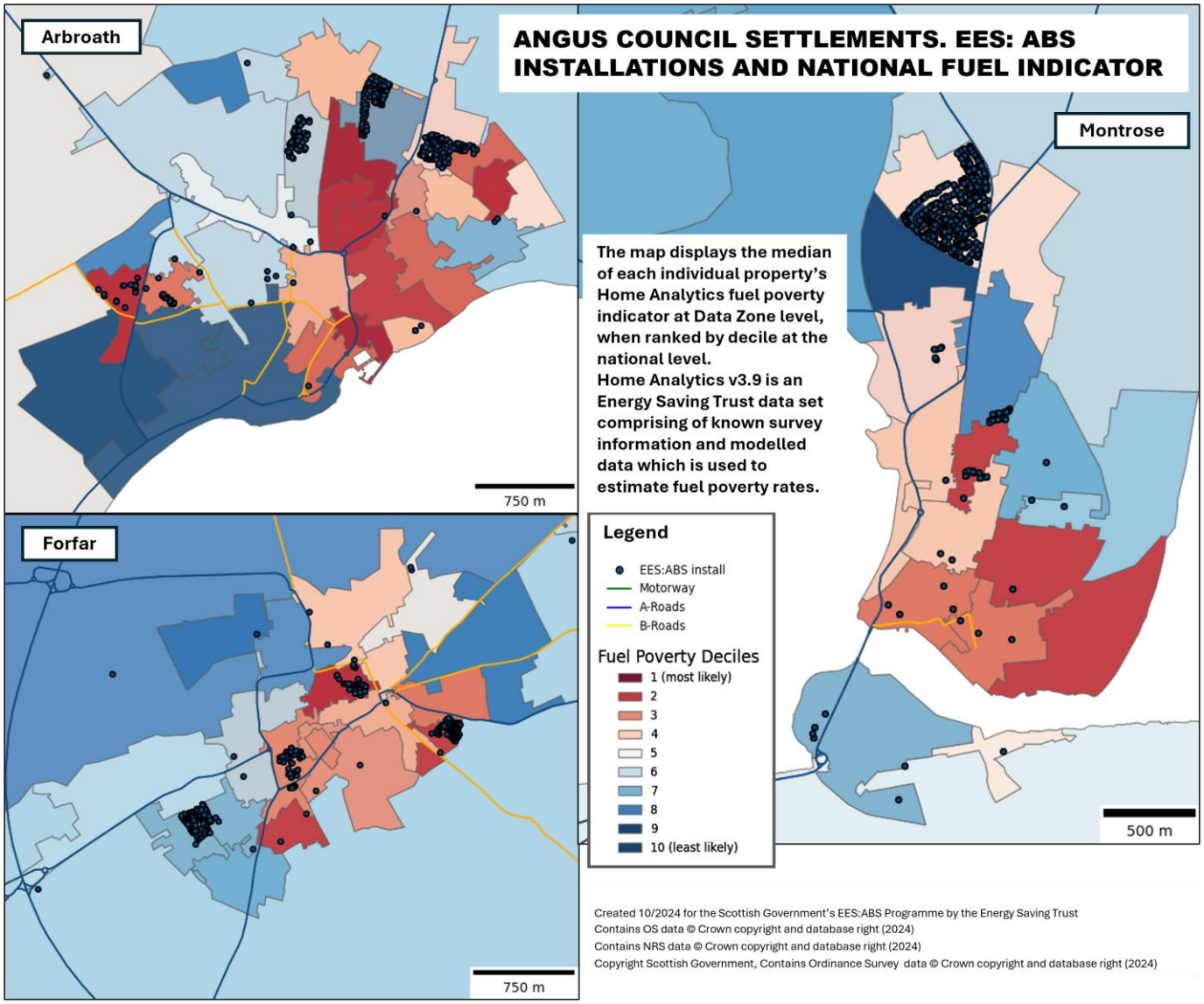


National Scottish Fuel Poverty Indicator I

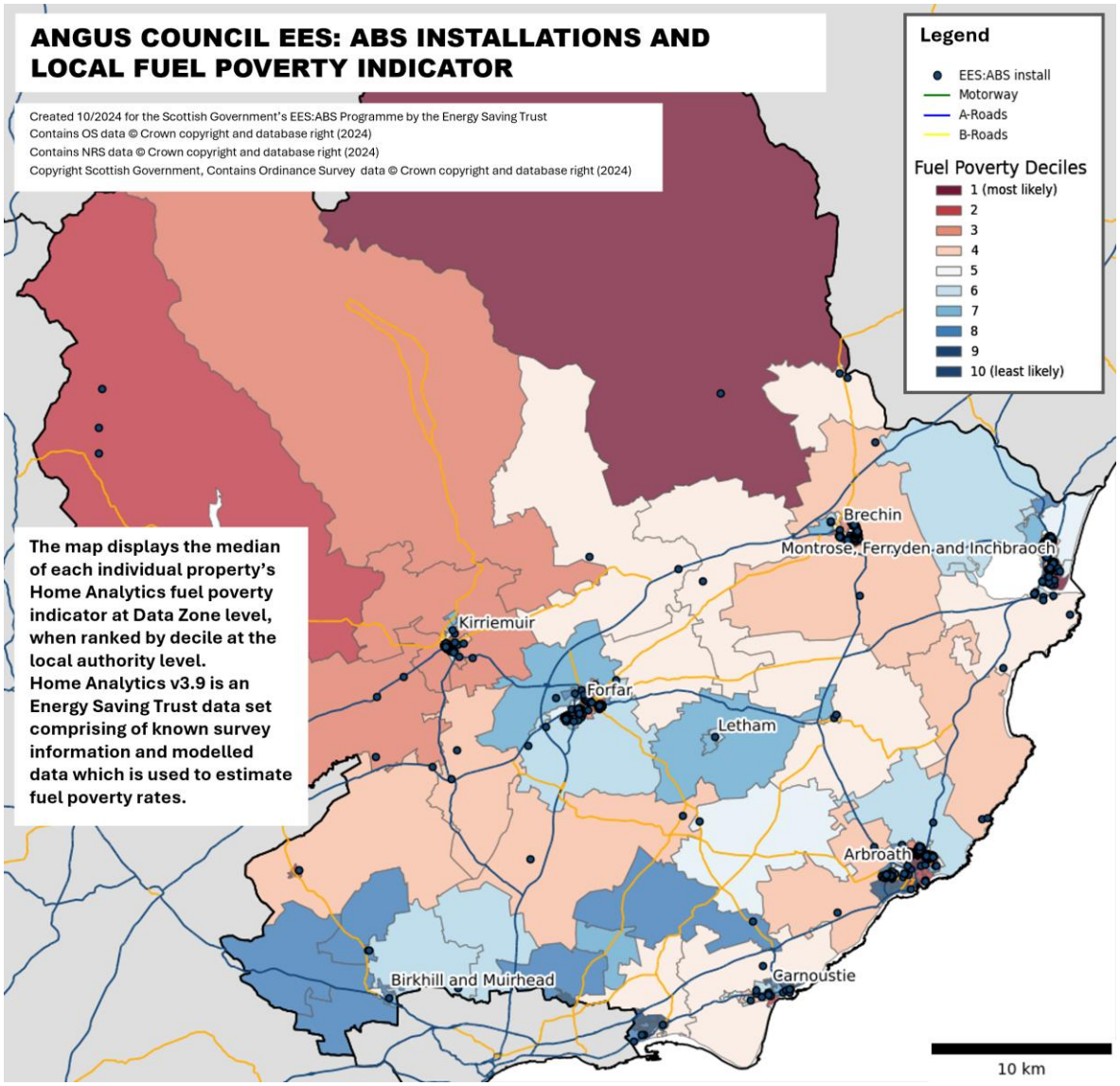


Here we can see the state of fuel poverty in Angus Council compared to the rest of Scotland. The blue areas have the lowest fuel poverty rates on a national scale when fuel poverty by data zone is ranked for all local authorities in the country. According to the Scottish Housing Condition Survey (SHCS), the average fuel poverty rate in the Angus Council area is around 22% of all homes. This is two percent lower than the Scottish national average (24%) and places the Angus Council as 9th of all 32 local authorities in the country.

National Scottish Fuel Poverty Indicator II

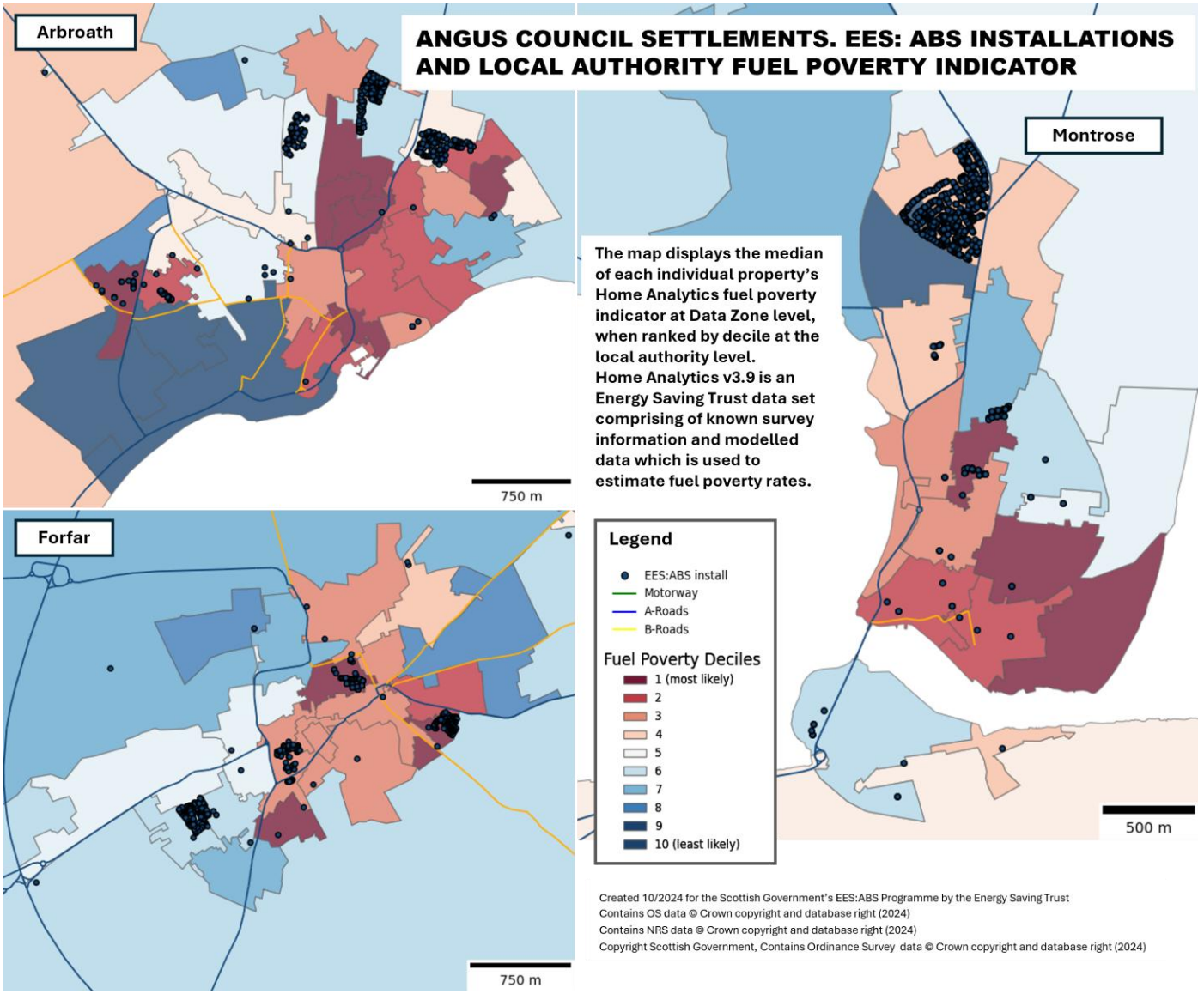


Angus Fuel Poverty Indicator I



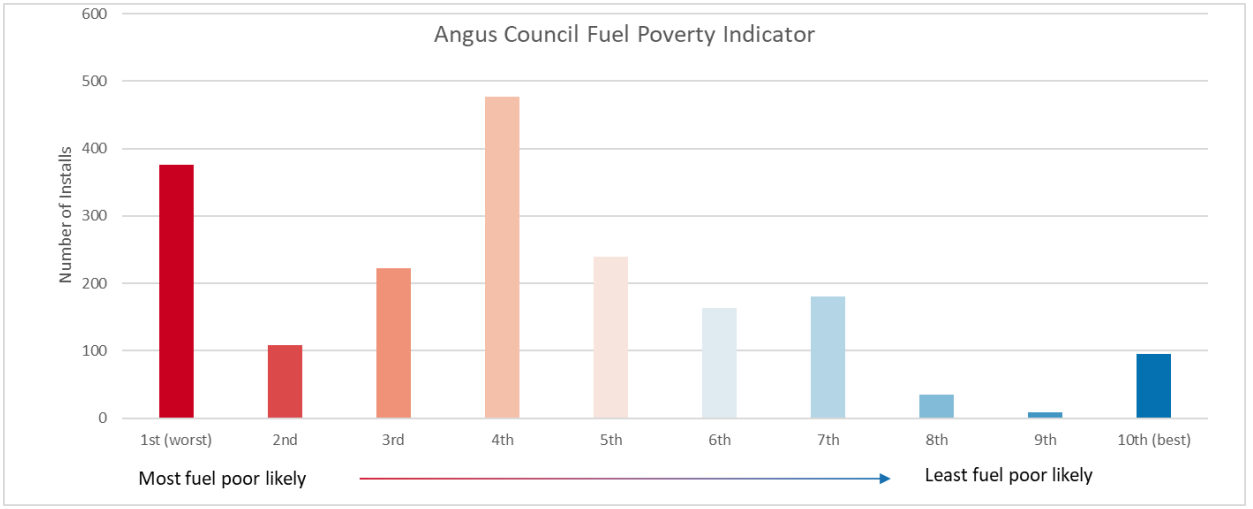
This map demonstrates the probability of fuel poverty by data zone ranked on a local authority level for the Angus Council only. The highest fuel poverty areas within the council are shown here in red. It is worth noting that the fuel poverty indicator used here is a snapshot of the situation. Thereby,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

Angus Fuel Poverty Indicator II

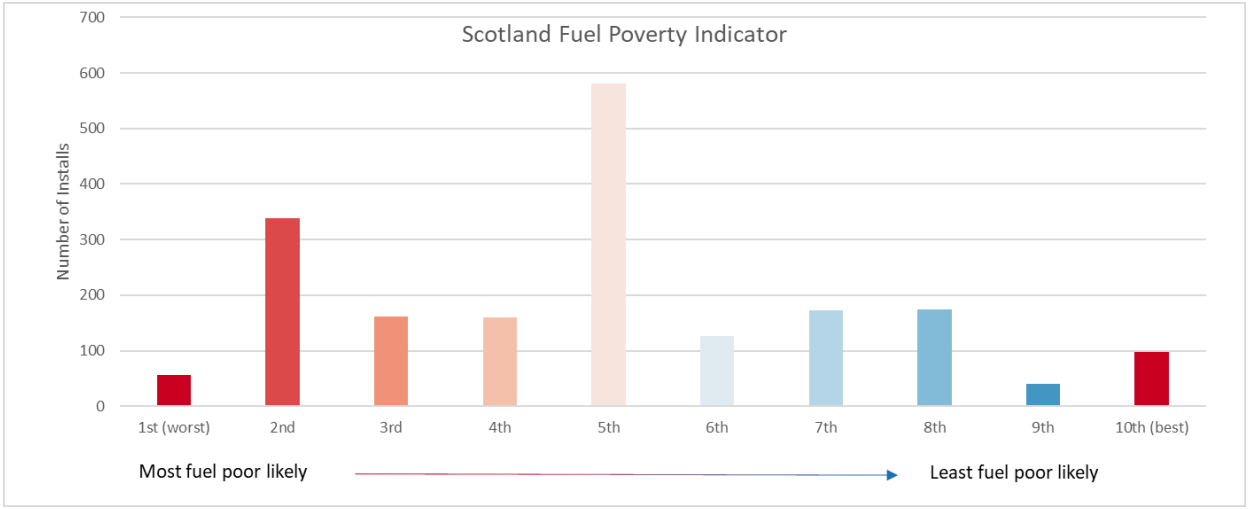


Angus Fuel Poverty Indicator III

82.2% of all EES: ABS installs took place within the 6 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 Angus Council.

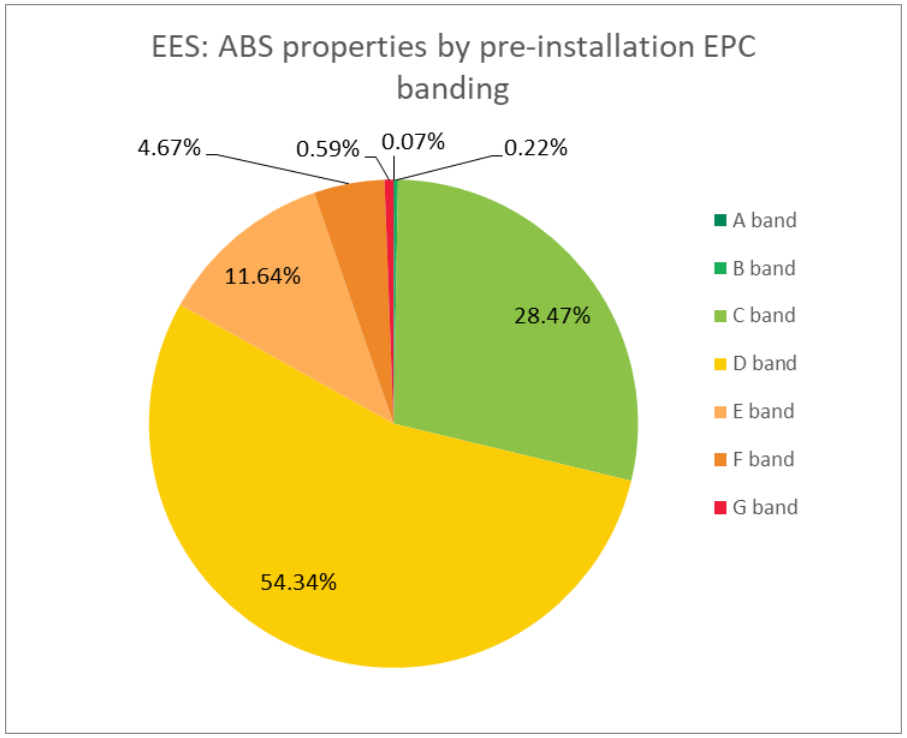


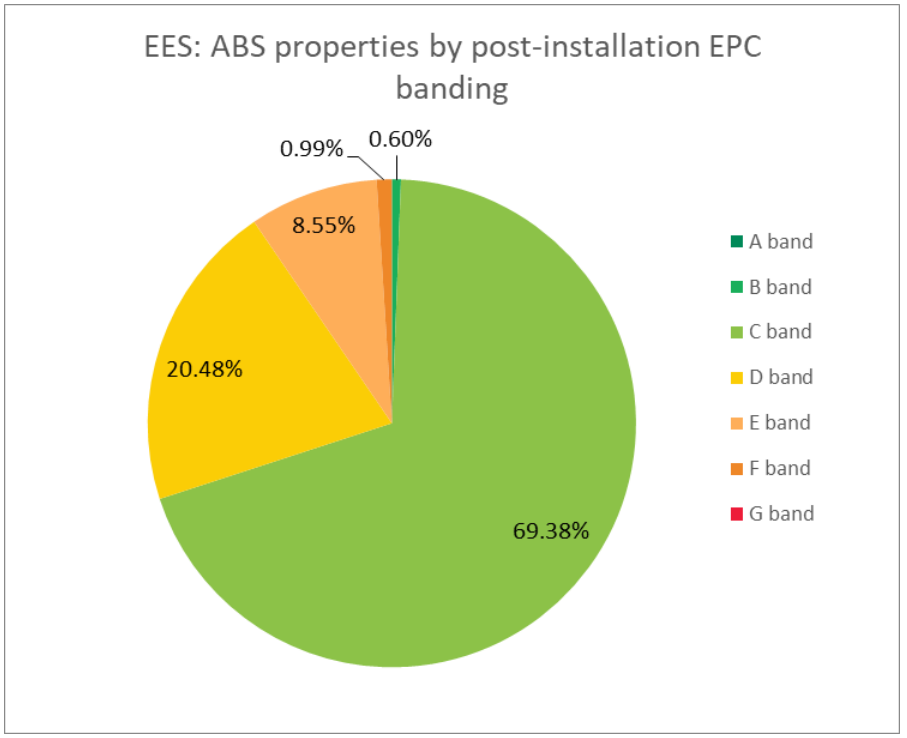
The bottom chart shows the difference when the installs are looked at on a national scale for Scotland. 74.6% of the installs are within the six most fuel poor ranks when compared to the national figures.



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

EES: ABS SAP Band Analysis I



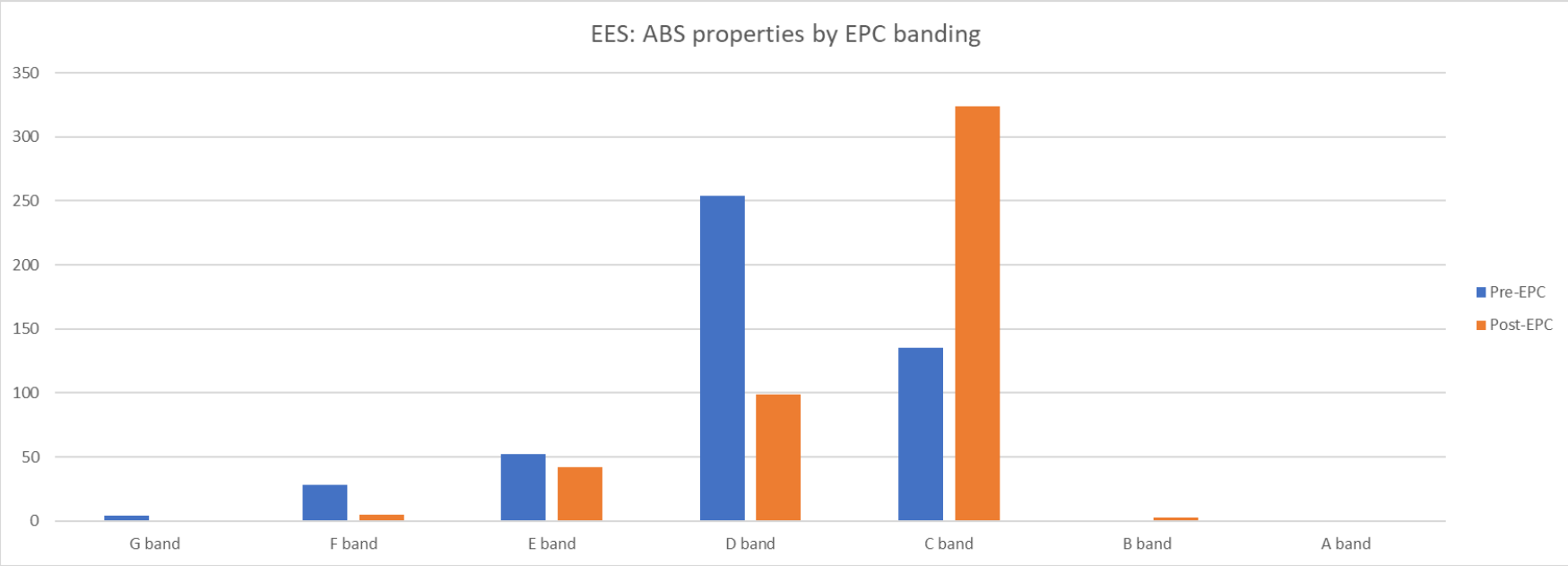


A valid pre-installation EPC was provided for 1,349 properties participating in the programme. 71.2% of these were within the national band D average or lower.

A total of 503 participants had a valid post-installation EPC regardless of the validity of the pre-EPC. After the completion of the installs, 69.9% of these properties made it to band C or higher.

EES: ABS SAP Band Analysis II

Out of the 1,349 properties with valid pre-EPCs, a total of 473 had a valid pre- and post-installation EPC and can be used for further analysis. 71.5% of these 473 properties had a starting SAP band of D or lower. The Post-EPC's show that after the completion of installs, 69.1% of the properties have reached band C and 20.9% reached band D. Three properties also moved up to band B. 10% of the properties have a post-installation EPC band of E or F, despite of the impact of the EES: ABS treatment.

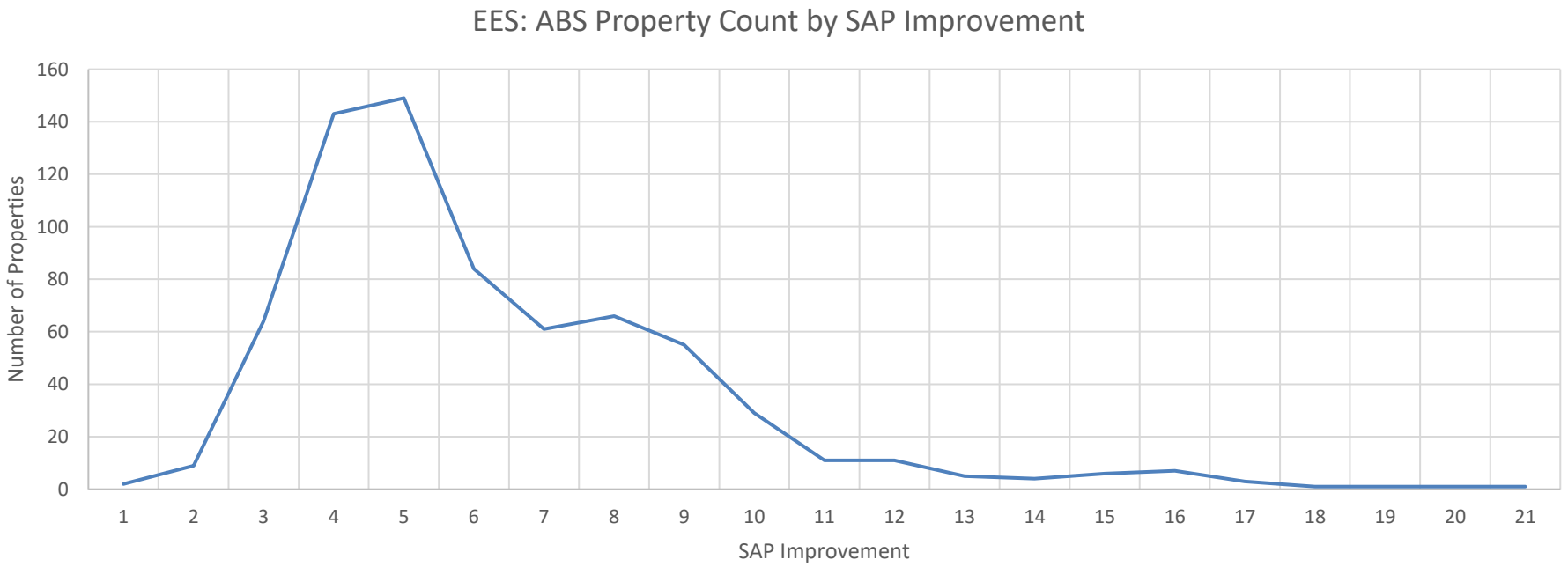


Note: It is possible for the same property to appear in this chart more than once if it received multiple measures across two or more financial years and a distinct pre-installation EPC was carried out before each installation.

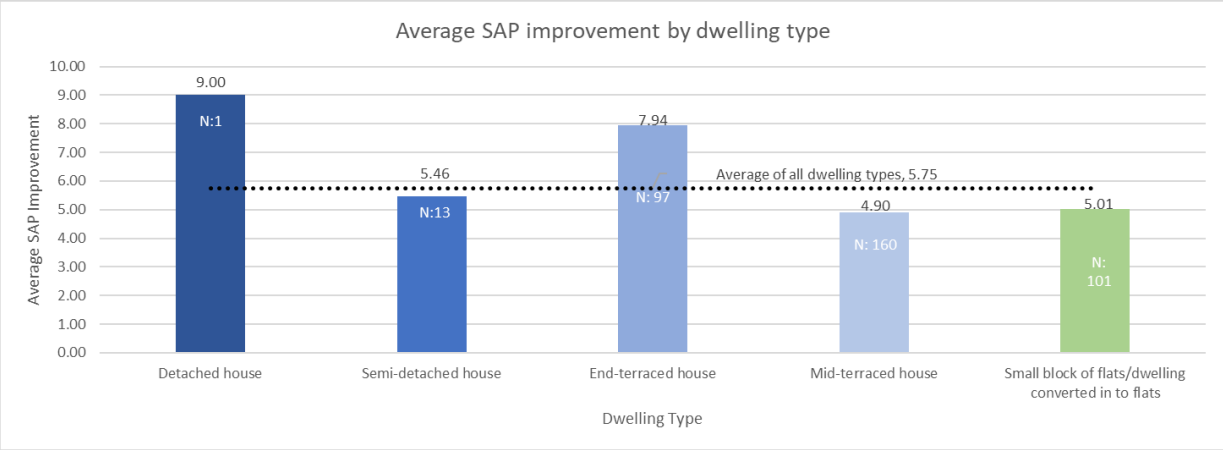
EES: ABS SAP Band Analysis III

The most common outcome of the EES: ABS programme within the Angus Council was for a property to increase in SAP score for around 2 to 5 points (78.6% of properties where the EPC's were valid to use for further analysis).

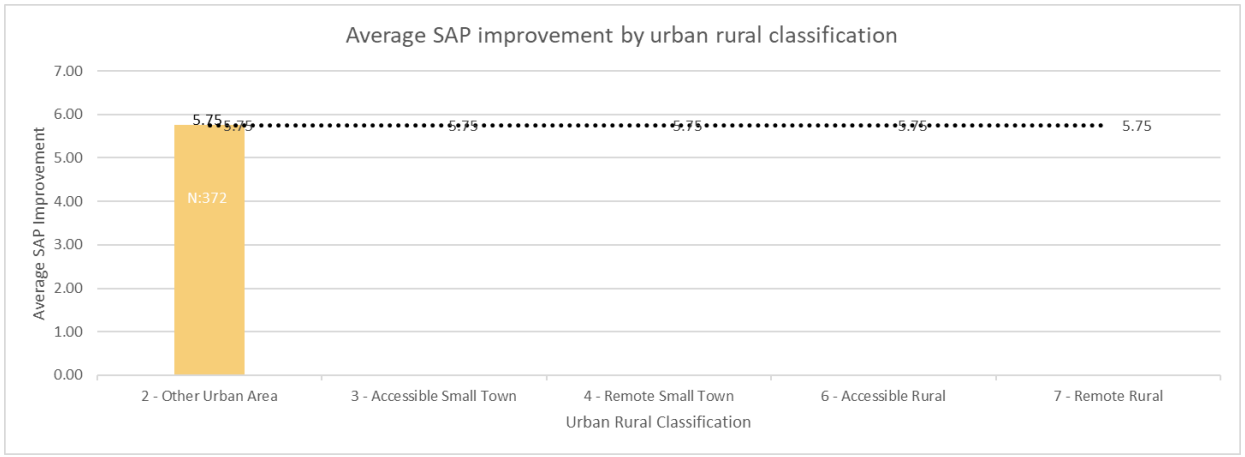
The larger SAP increases (10 to 21 points) included in this case study were due to installation of external wall insulation for solid walls and hard to treat CWI solution within end-terraced houses and small blocks of flats/dwelling converted in to flats.



EES: ABS SAP Band Analysis IV



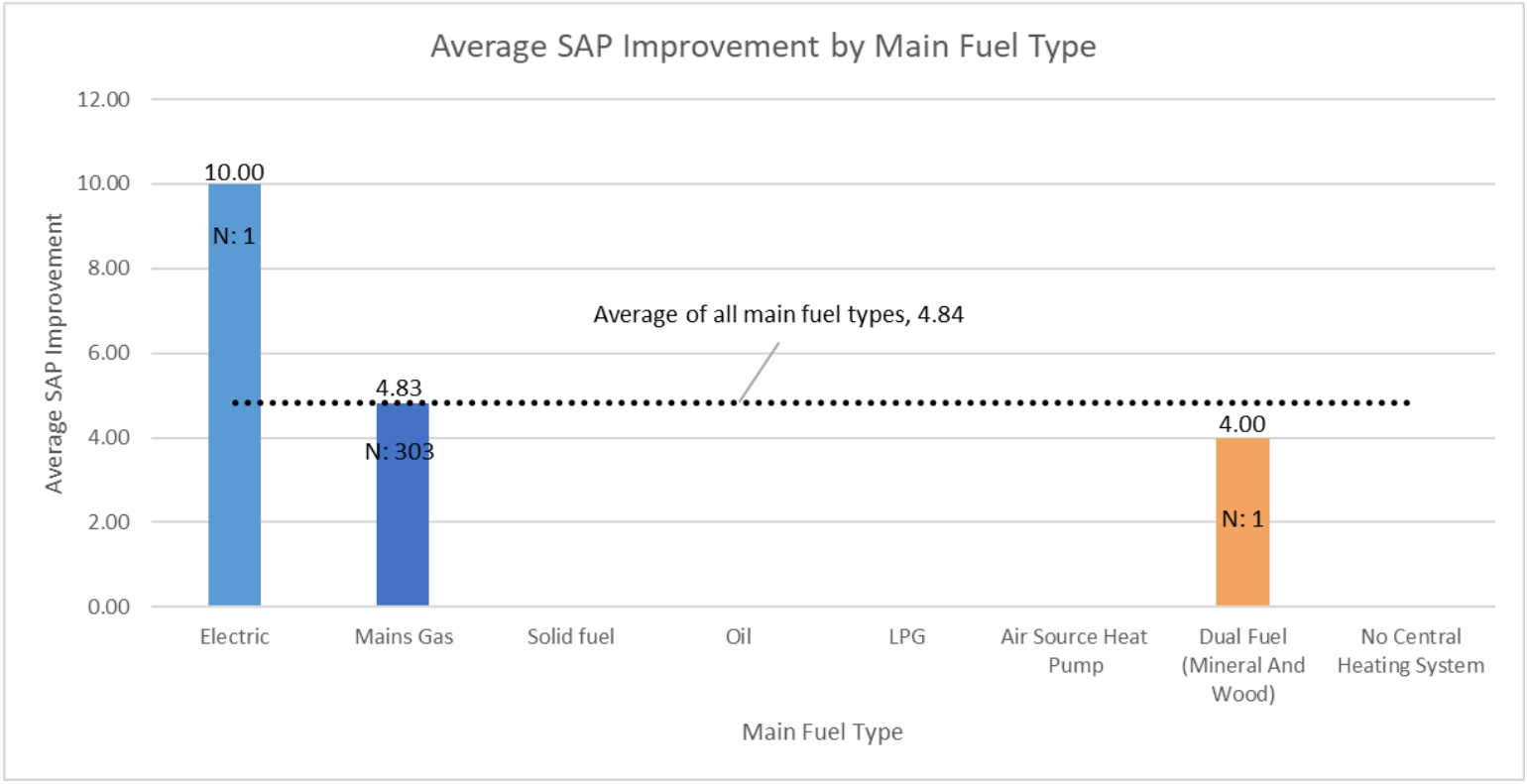
The average SAP improvement for all dwelling types is 5.75. The biggest sample size is for mid-terraced houses (N:160) and the average increase for this dwelling type has been 7.94.



The average SAP improvement for all urban classifications where data was available for further analysis, has been 5.75. The biggest sample size is for other urban area (N:372) where the average improvement was 5.75.

Note: Dwelling type is taken from EST's Home Analytics dataset.

EES: ABS SAP Band and Main Fuel Type



The average SAP improvement for all main fuel types was 4.84. The biggest sample size available was for mains gas properties where the average improvement was 4.83. Properties with electric heating improved by their SAP rating by 10.0 on average, and dual fuel properties by 4.0. However, the sample sizes for these were very low (1 record each).

Conclusions and notes

- A variety of measures have been included in the programme since outset and the last five years have focused exclusively on external wall insulation.
- The typical participating property is a house (66%) and constructed between 1950 and 1983 (88% of all properties).
- 91% 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 (71%) and 70% 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 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 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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