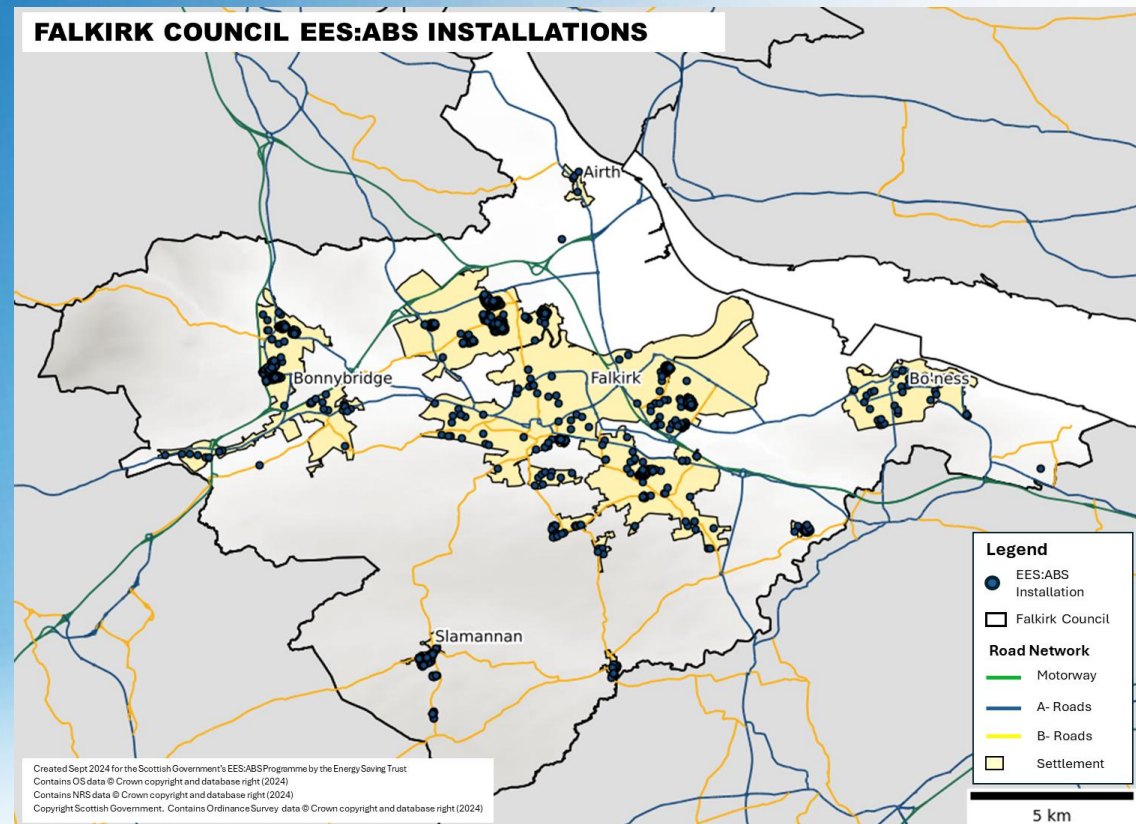


# The Falkirk Council EES: ABS Case Study

energy  
saving  
trust

Energy Saving Trust  
September 2024



# Overview

The Scottish Government's EES: ABS\* team requested 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 The Falkirk Council EES: ABS activity to end of financial year 2023/24.\*\*

# The Falkirk Council EES: ABS dataset

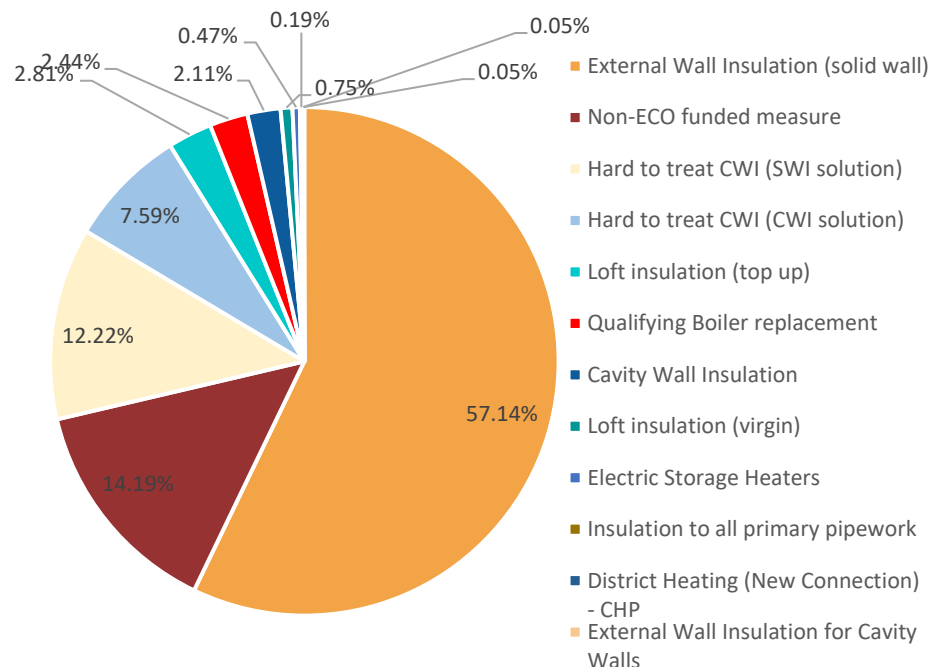
Financial Year	Number of records*	% of records
2013/14	998	37.56
2014/15	605	22.77
2015/16	246	9.26
2016/17	144	5.42
2017/18	111	4.18
2018/19	118	4.44
2020/21	111	4.18
2021/22	122	4.59
2019/20	35	1.32
2022/23	59	2.22
2023/24 <sup>1</sup>	108	4.06
<b>Total Installs</b>	<b>2,657</b>	<b>100.00</b>

Reference numbers	Number of records <sup>1</sup>	% of records
With pre installation EPC	1,630	76
With post installation EPC	838	39
With pre and post installation EPC	599	28
With GDAR	0	0
With measure reference number	474	22

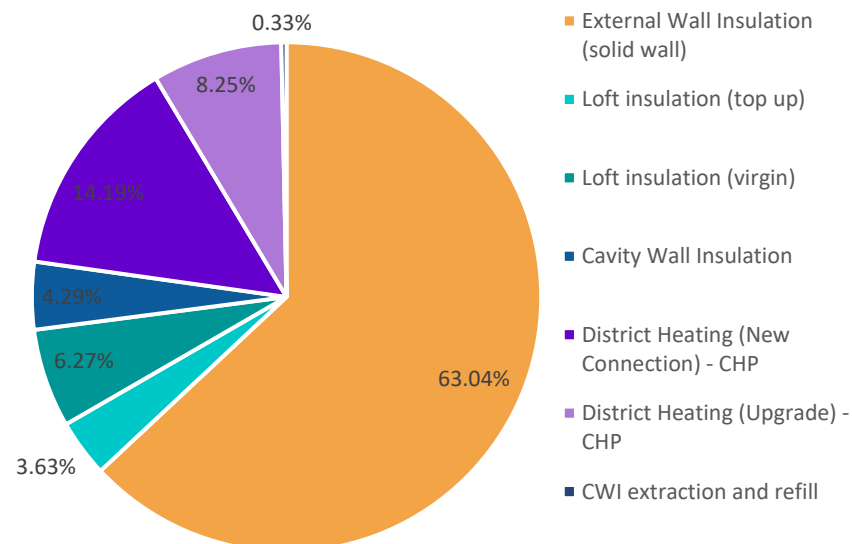
The Falkirk Council has contributed 2.07% of the total EES: ABS installs across Scotland reported to date (Sept 2024).

# Installed Measures

Installed EES: ABS measures



Non-ECO Funded Measures



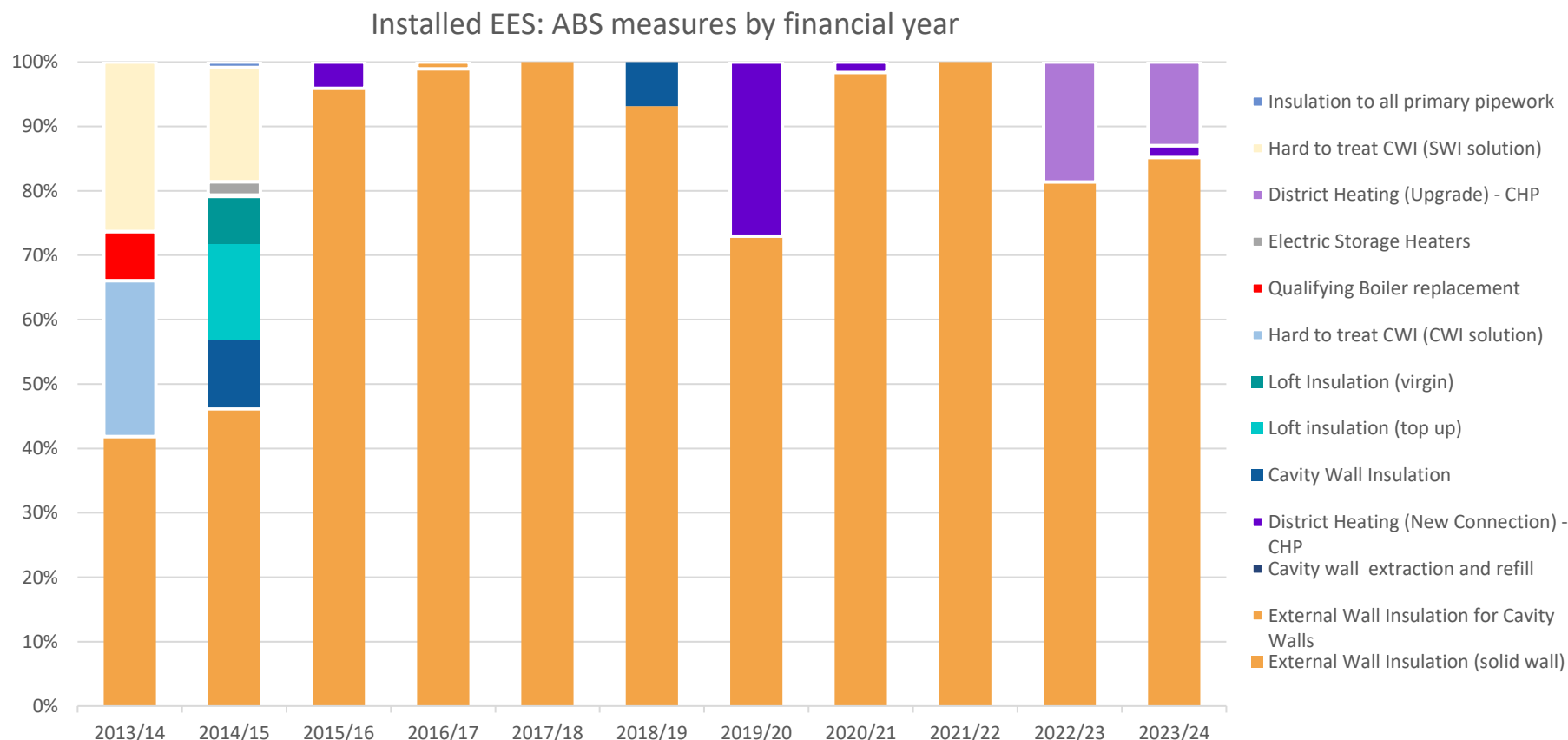
The council has particularly focused on providing wall insulation to tackle heat loss. 88.7% of measures were for solid wall, system built or hard to treat cavity wall properties. Others were loft insulation, qualifying boiler replacement and electric storage heaters installation. The graph on the right shows the distribution of the Non-ECO funded measures during the programme.

# Installed Measures

Measure Name	Number of records*	% of records
External Wall Insulation (solid wall)	1220	57.14
Hard to treat CWI (SWI solution)	261	12.22
Hard to treat CWI (CWI solution)	162	7.59
Loft insulation (top up)	60	2.81
Qualifying Boiler replacement	52	2.44
Cavity Wall Insulation	45	2.11
Loft insulation (virgin)	16	0.75
Electric Storage Heaters	10	0.47
Insulation to all primary pipework	4	0.19
External Wall Insulation for Cavity Walls	1	0.05
District Heating (New Connection) - CHP	1	0.05
Non-ECO funded measure	303	14.19
<b>Total Installs<sup>1</sup></b>	<b>2,135</b>	<b>100.00</b>

Non-ECO funded measures	Number of records*	% of records
External Wall Insulation (solid wall)	191	63.04
District Heating (New Connection) - CHP	43	14.19
District Heating (Upgrade) - CHP	25	8.25
Loft insulation (virgin)	19	6.27
Cavity Wall Insulation	13	4.29
Loft insulation (top up)	11	3.63
CWI extraction and refill	1	0.33
<b>Total Installs</b>	<b>303</b>	<b>100.00</b>

# Installed Measures by Financial year

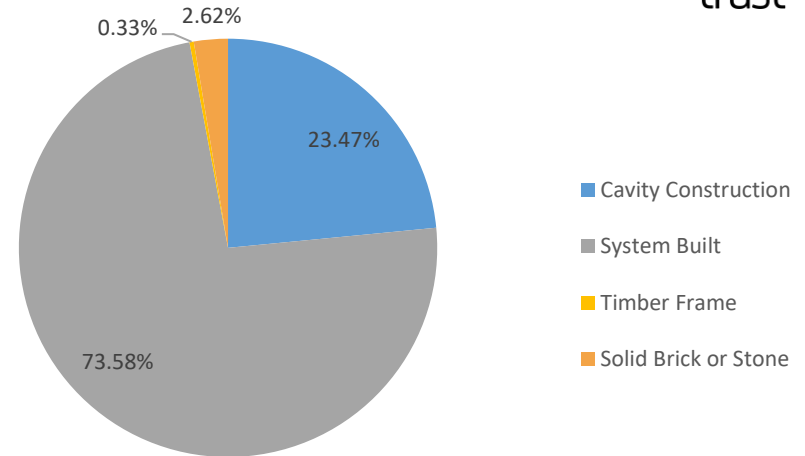


We can see how the measure type has changed over time. The first two years included a variety of measures in the programme. Thereafter, the focus has switched predominantly to installation of external wall insulation for solid wall.

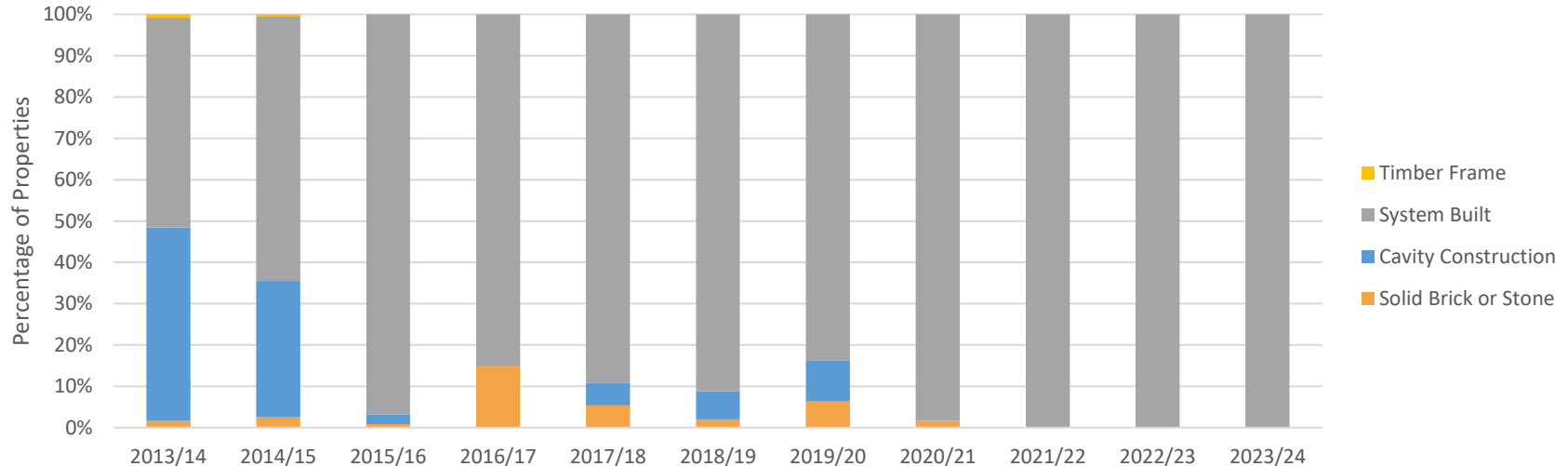
# Wall Type

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

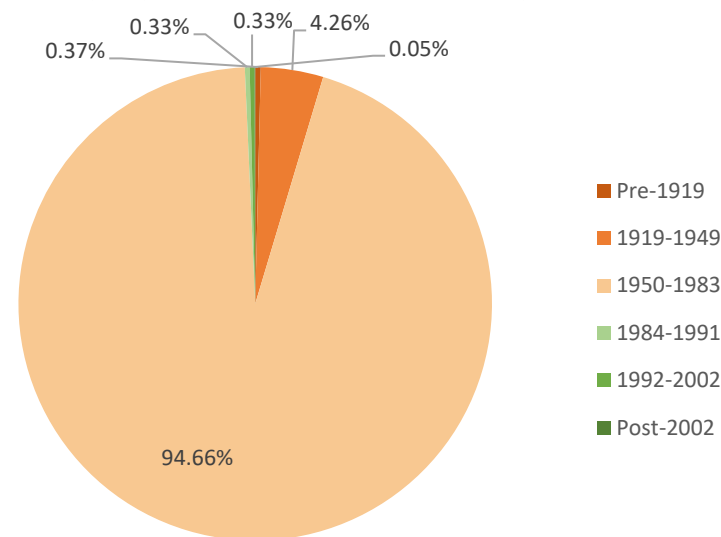


# Construction Age

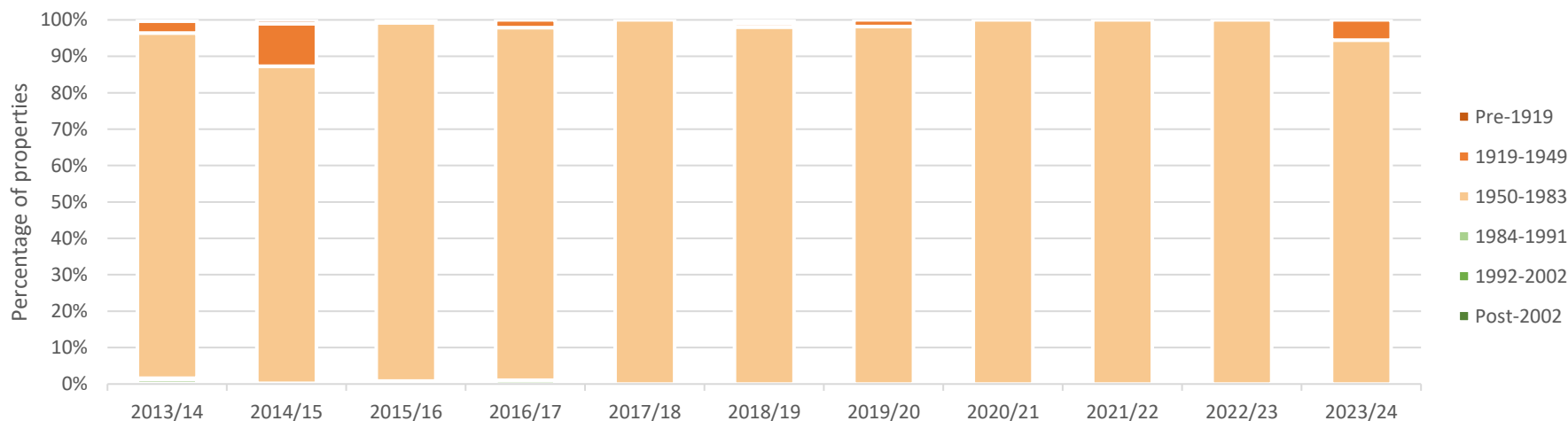
The vast majority (94.66%) of properties treated were constructed sometime between 1950 and 1983. A portion of older properties constructed pre-1919 and between 1919 and 1949 (a total of 4.64%) was also included.

15 properties built between 1984 and 1991, and Post 2002 were also included in the programme.

EES: ABS properties by construction age



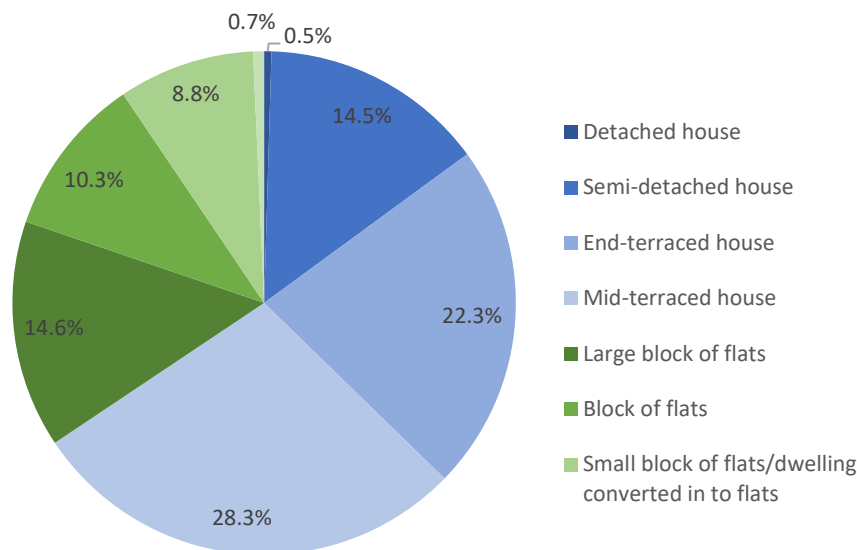
EES: ABS Properties and Construction Age by Financial Year



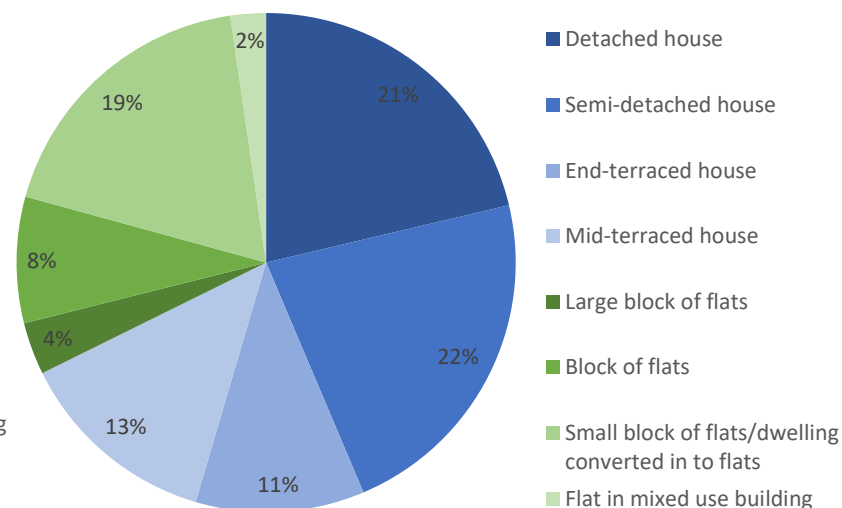


# Dwelling Type

EES: ABS project properties by dwelling type



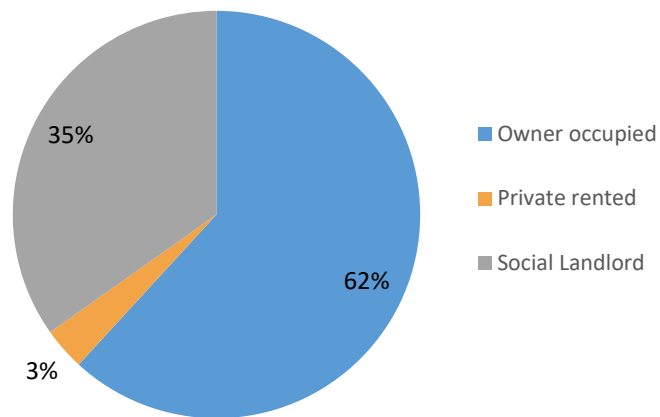
Falkirk properties by dwelling type



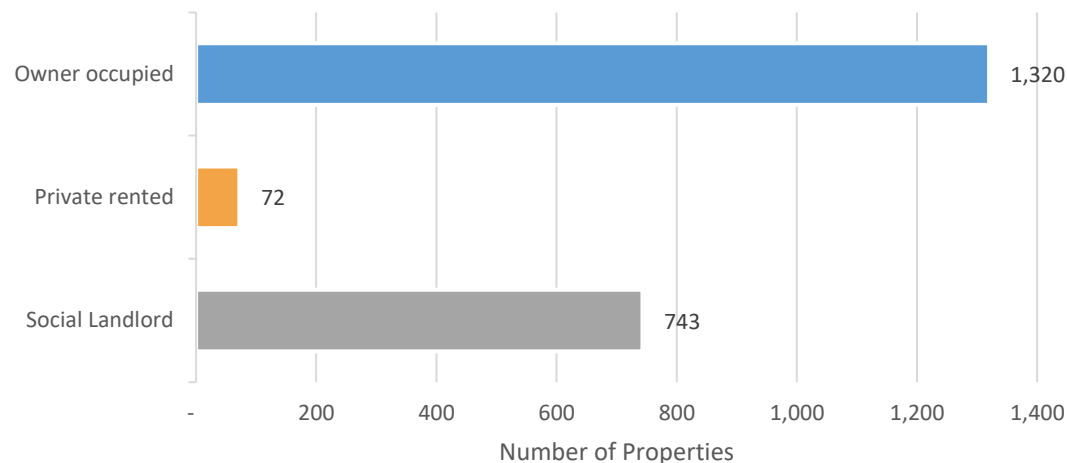
The distribution of installs is broadly in line with the dwelling types in the Falkirk Council area. When comparing the two illustrations here, we can see that 65.62% of dwelling types in the programme are houses and 67.29% of Falkirk Council's dwelling types consists of the same.

# Property Tenure

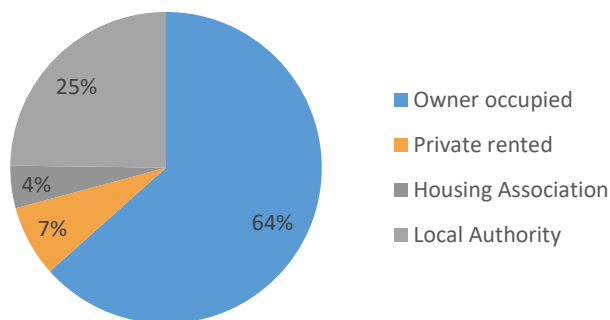
EES: ABS project properties by tenure



EES: ABS project properties by tenure



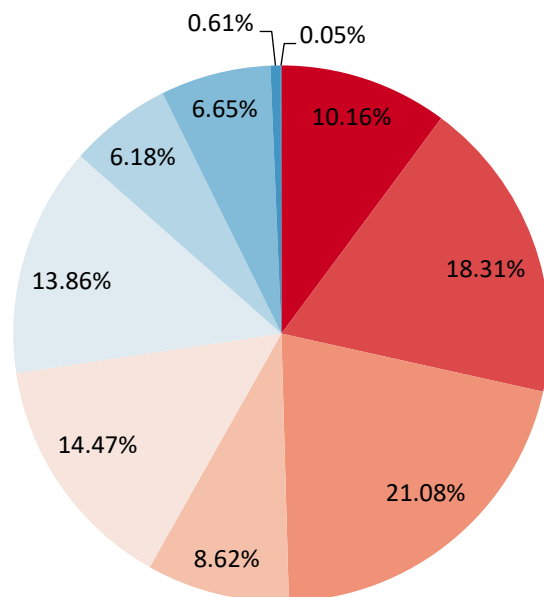
Falkirk properties by tenure



The distribution of EES: ABS property tenures correlates closely with the owner-occupied sector within the Falkirk Council area. Social let properties are also well represented in the programme (34.80%) when compared to the 29.02% in Falkirk as a whole. As expected with EES: ABS, private rented is notably low at 3.37% of all properties included in the programme.

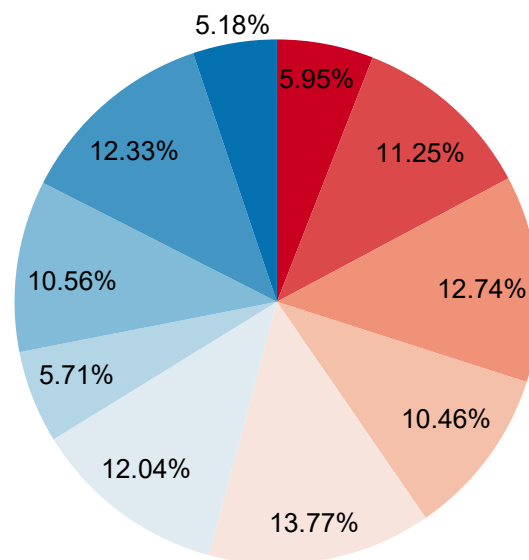
# Scottish Index of Multiple Deprivation (SIMD) I

EES: ABS project properties by overall SIMD decile ranking



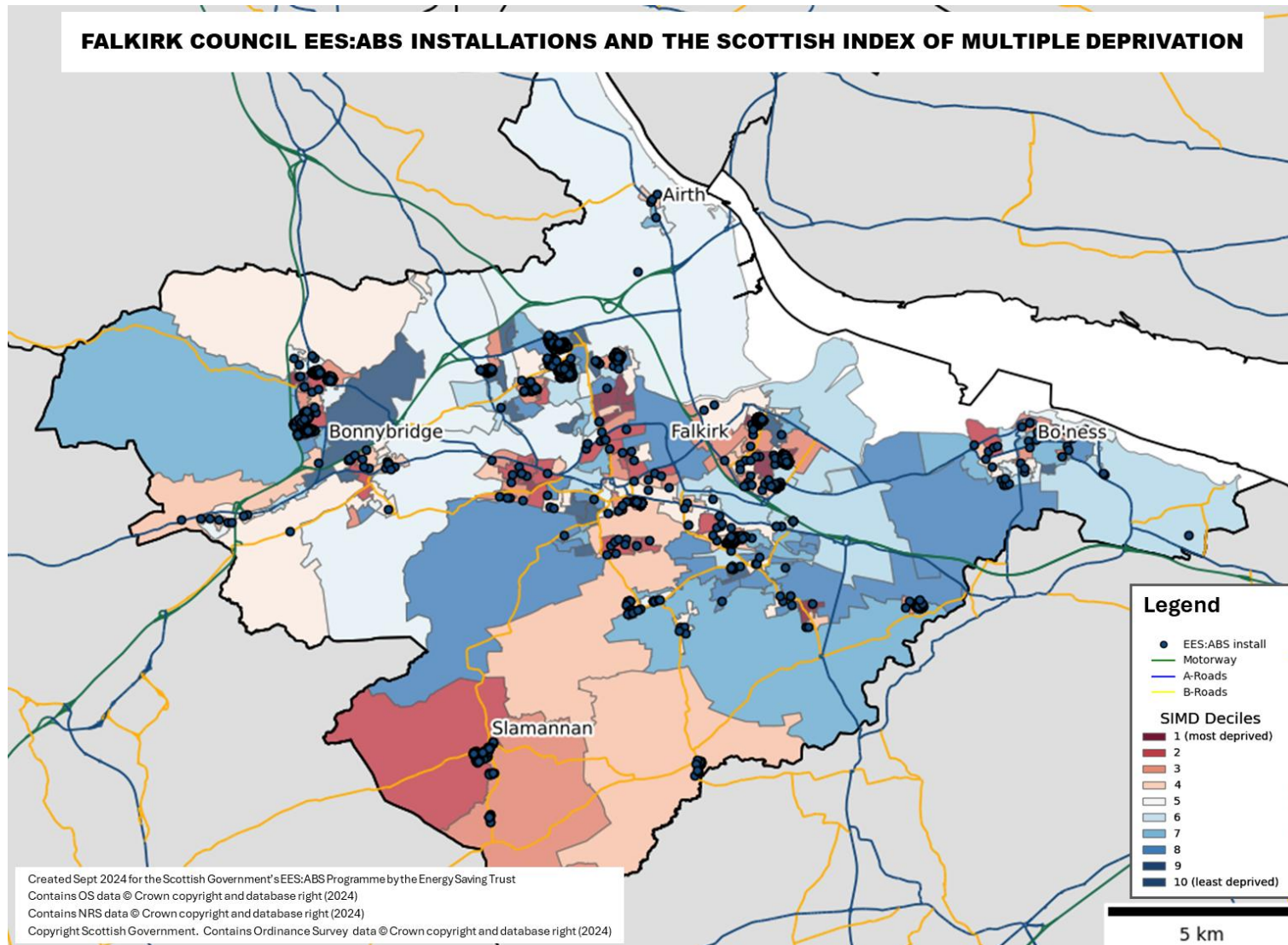
Falkirk properties by overall SIMD decile ranking

■ 1st (most deprived)  
 ■ 2nd  
 ■ 3rd  
 ■ 4th  
 ■ 5th  
 ■ 6th  
 ■ 7th  
 ■ 8th  
 ■ 9th  
 ■ 10th (least deprived)

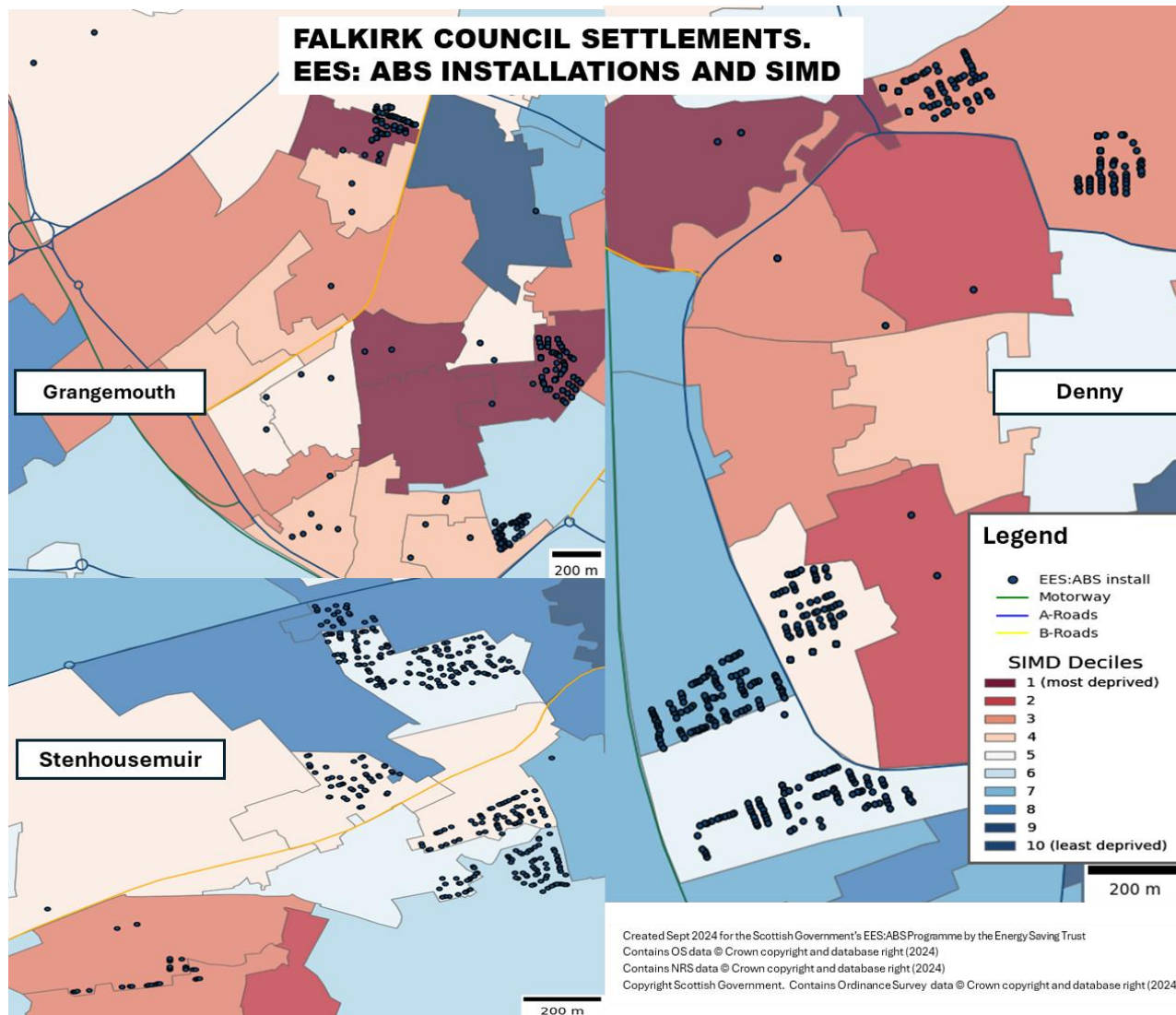


There is a clear correlation between the targeting of EES: ABS properties and SIMD deprivation in Falkirk Council Area. This pattern shows that the programme focuses on the most deprived areas of the council area, as 72.65% of the installations occurred within the five lowest (most deprived) SIMD ranks. By comparison, the lowest five SIMD areas represent 54.17% of Falkirk's housing stock.

# Scottish Index of Multiple Deprivation (SIMD)II

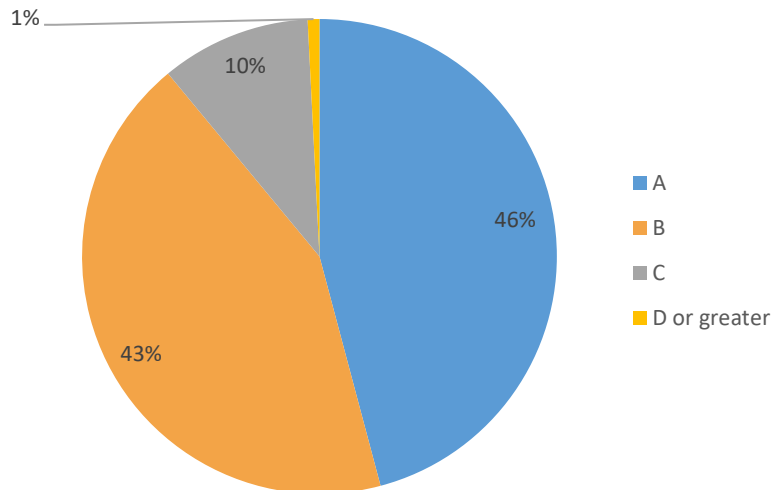


# Scottish Index of Multiple Deprivation (SIMD)II

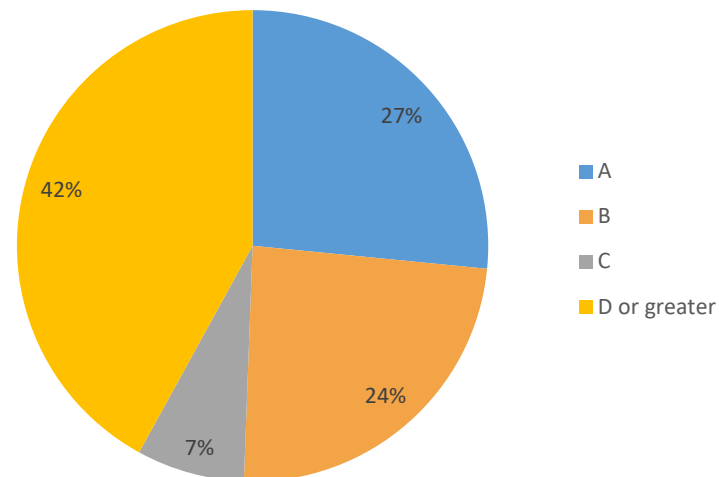


# EES: ABS Installs by Council Tax Band

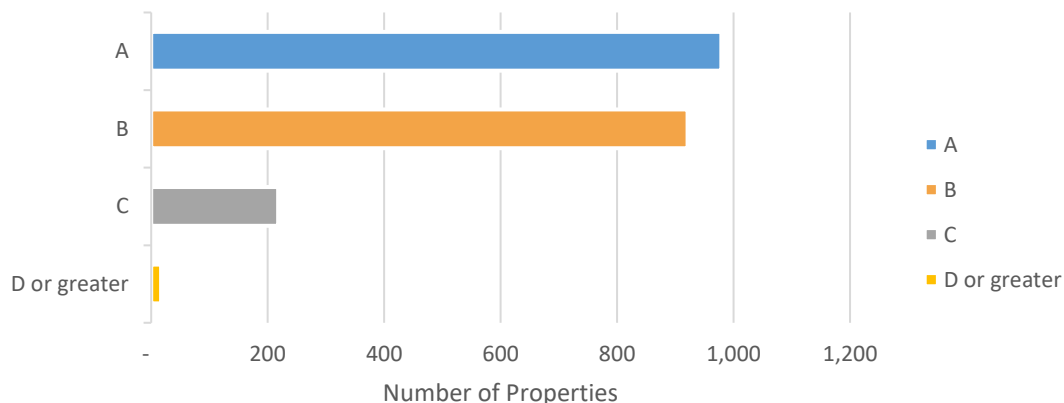
EES: ABS project properties by council tax band



Falkirk properties by council tax band



EES: ABS project properties by council tax band

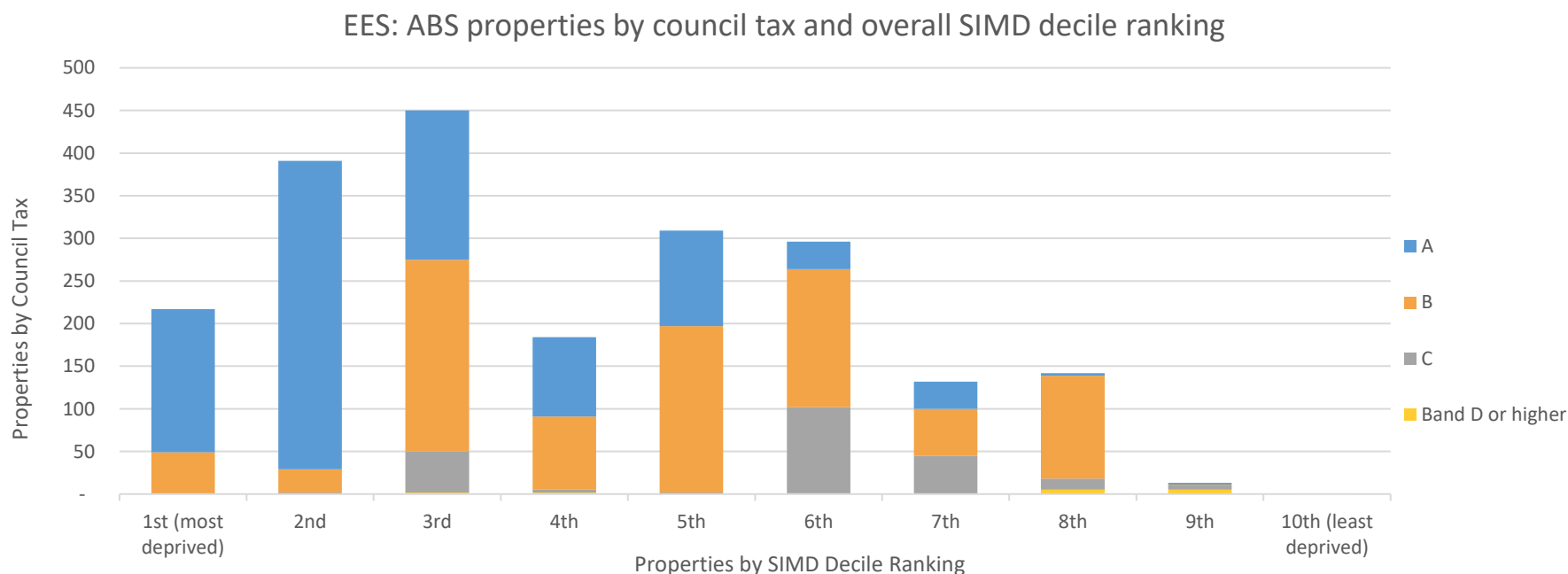


99.20% of properties receiving measures fall into council tax bands A, B and C. For comparison, 58.0%\* of Falkirk housing stock is in bands A to C.



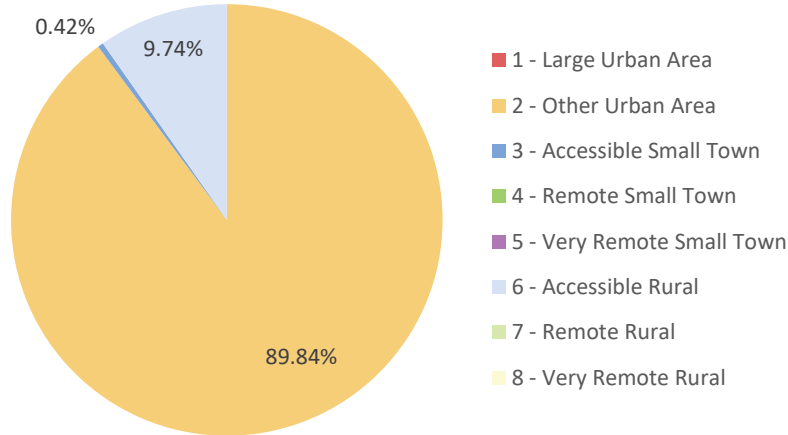
# EES: ABS Installs by Council Tax Band and SIMD

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. 73% 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.



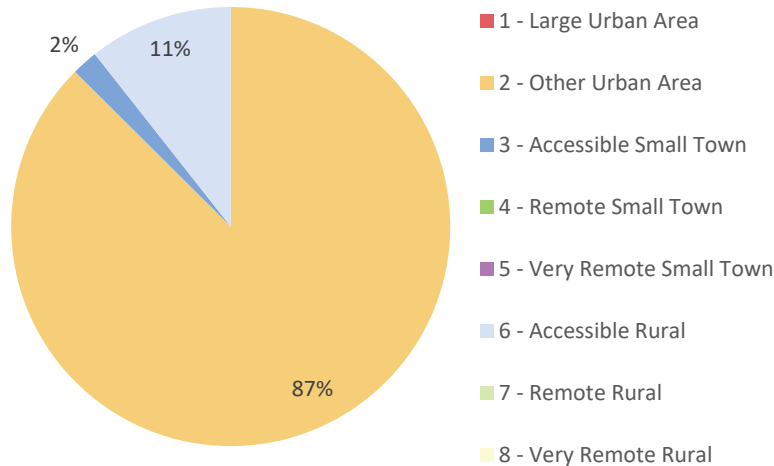
# Urban Rural Classification I

EES: ABS project properties by urban rural classification

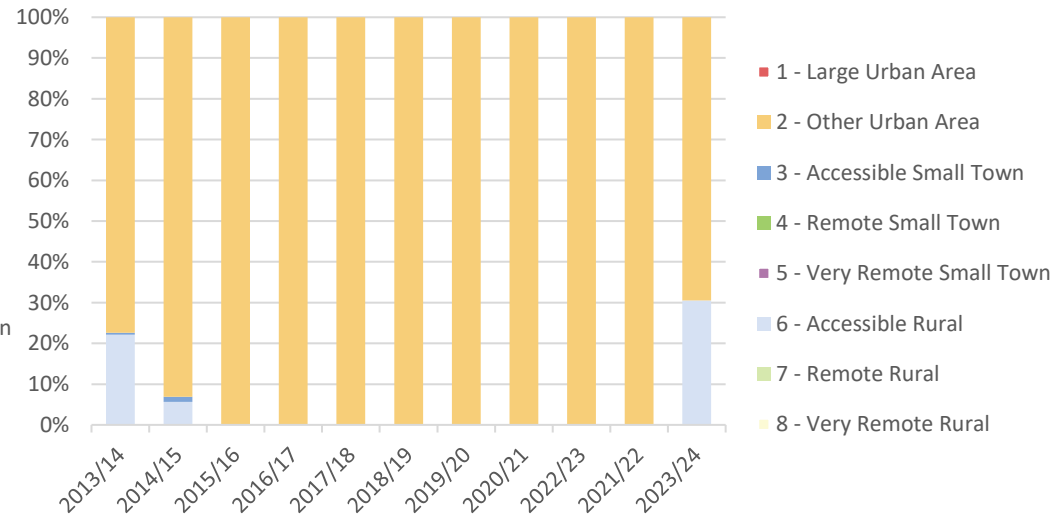


The Falkirk Council's area consists of three different urban rural classifications: Other Urban Area, Accessible Small Town and Accessible Rural areas. All of these areas have been represented in the programme. The distribution of work has mostly focused in the Other Urban Area (89.84%).

Falkirk properties by urban rural classification

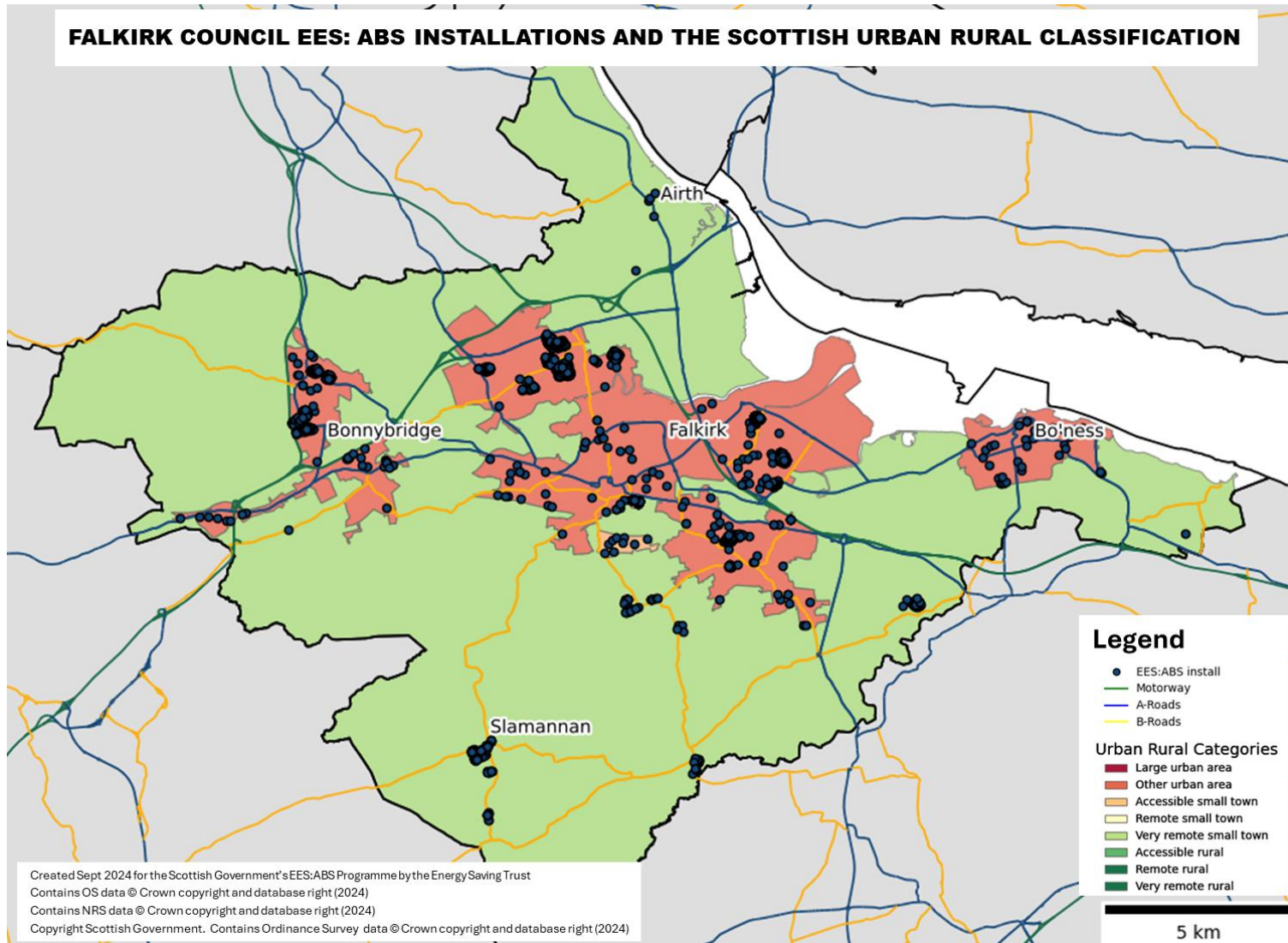


EES: ABS project properties by urban rural classification





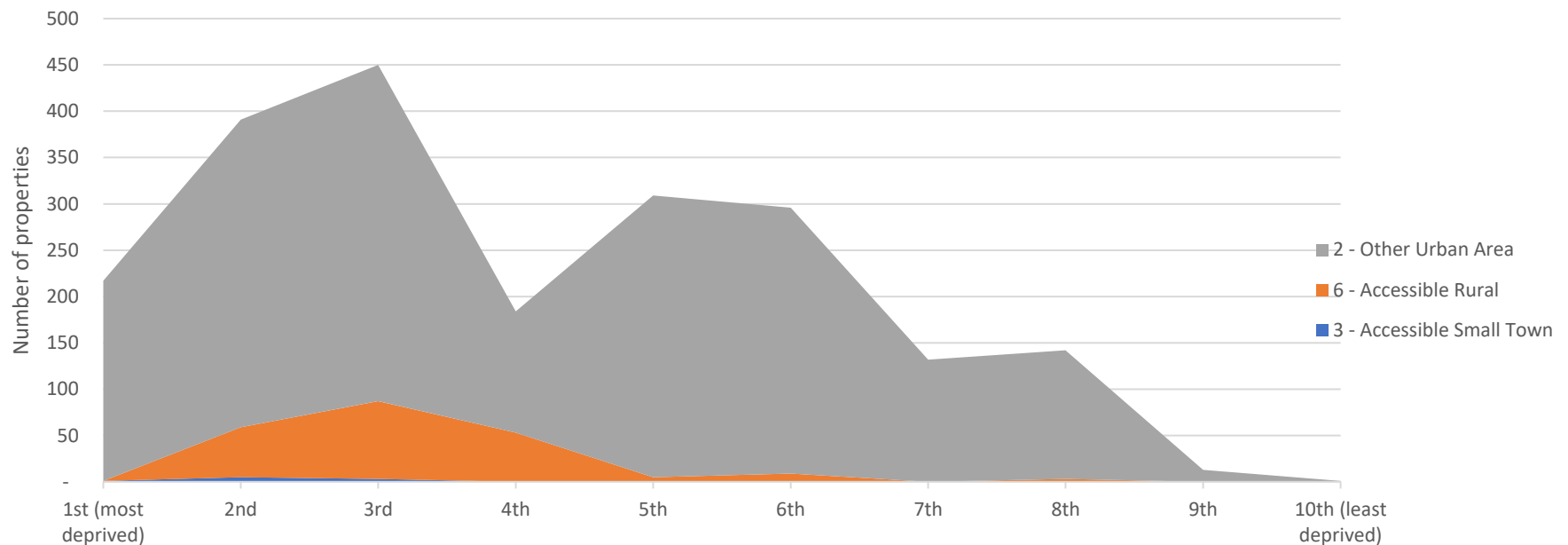
# Urban Rural Classification II



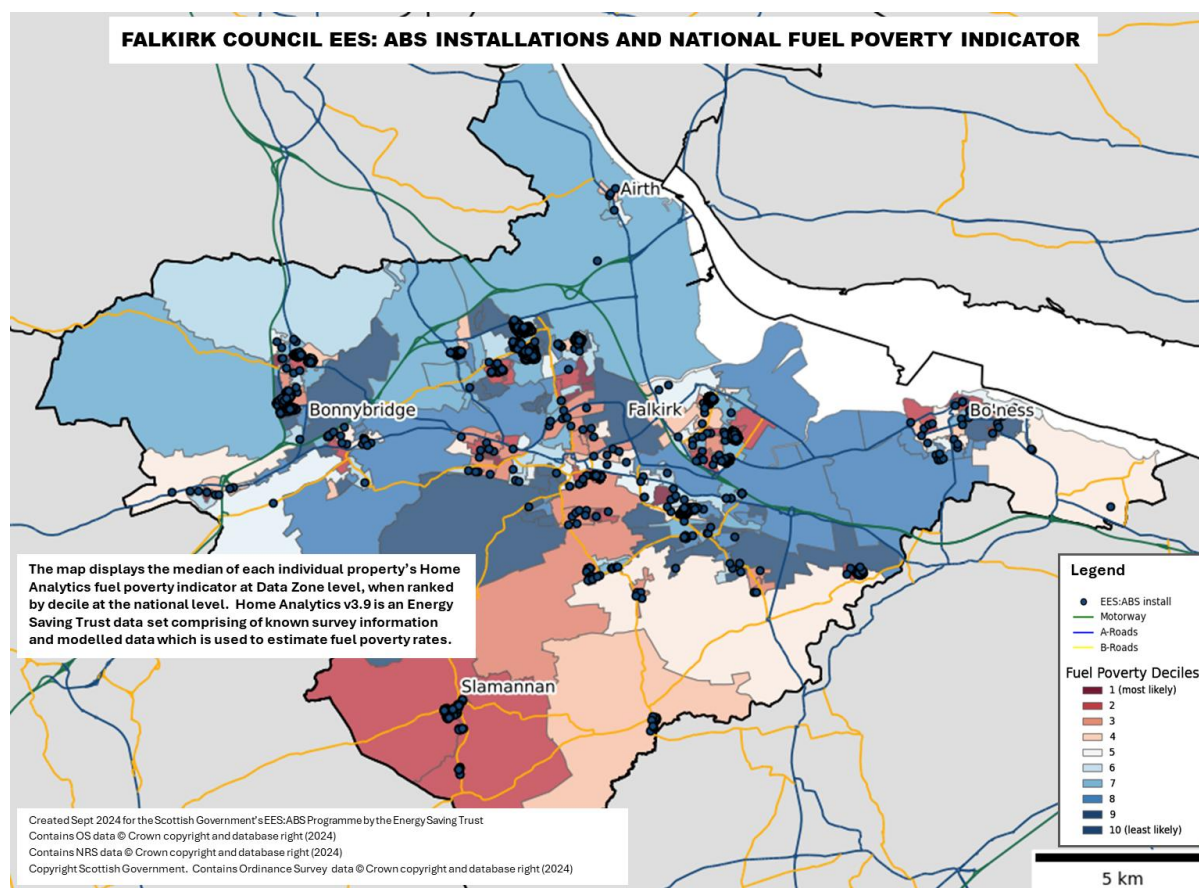
# Urban Rural Classification and SIMD

This illustration demonstrates that most installs (72.65%) 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

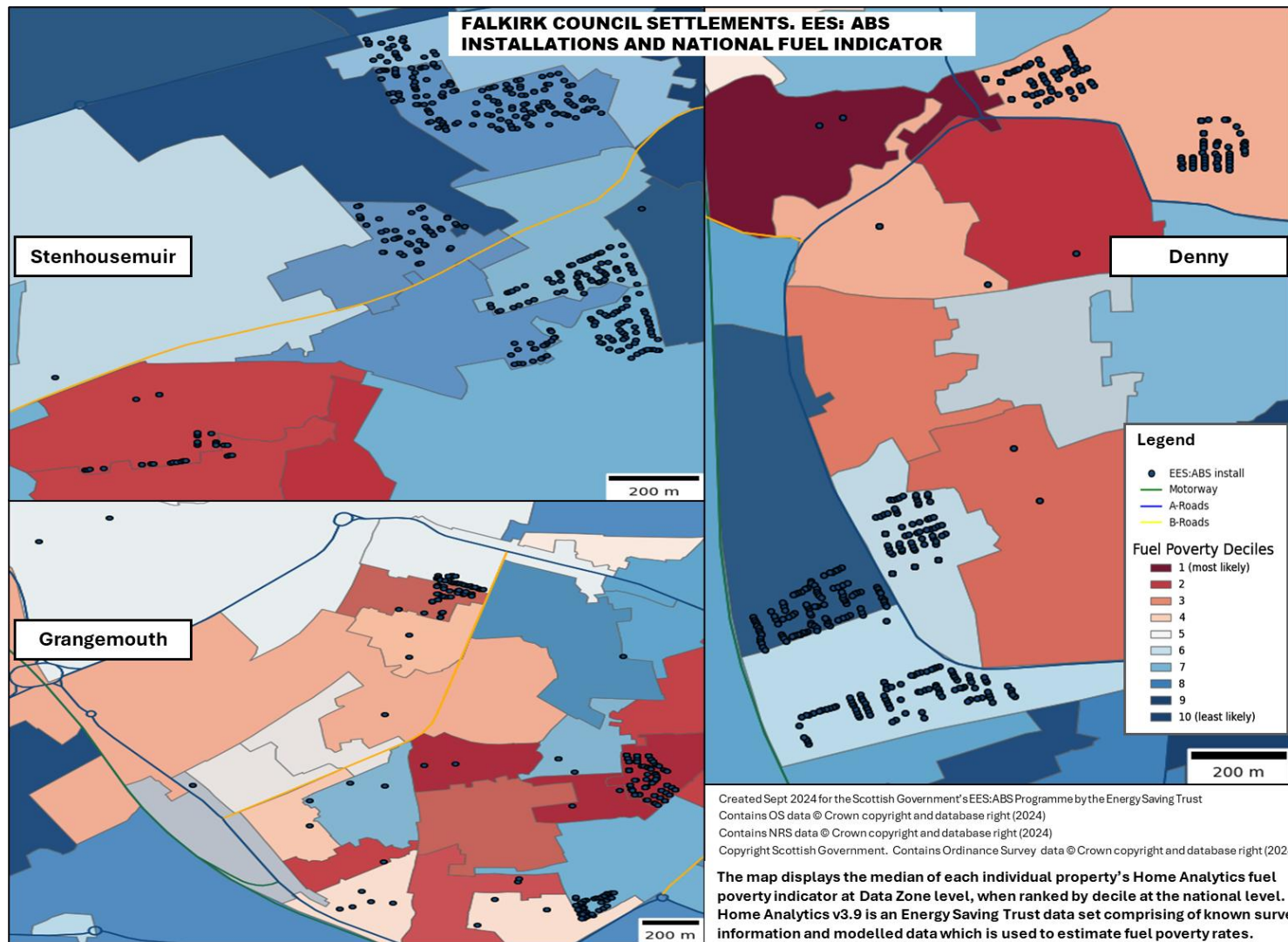


This map compares the state of fuel poverty in Falkirk to the rest of Scotland. The blue areas have lowest fuel poverty rates on a national scale when fuel poverty by data zone is ranked for all local authorities in Scotland. The Scottish Housing Condition Survey (SHCS) states that the average fuel poverty rate in Falkirk is around 22% of all homes in the area. This is two percent lower than the Scottish

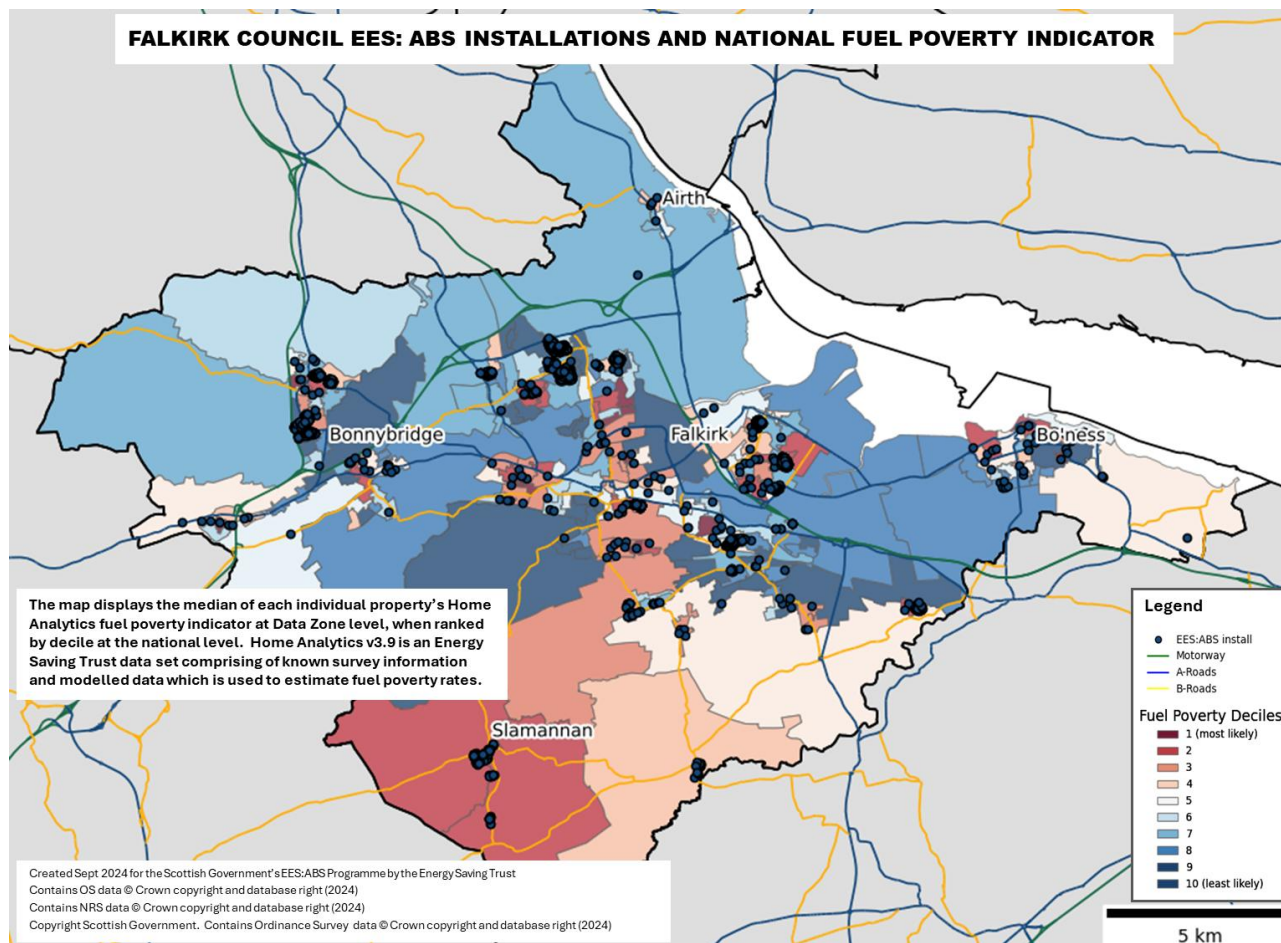
national average 24%) and places the Falkirk Council as the 10<sup>th</sup> ranked local authority out of the 32 in the country. The high prevalence of mains gas is one of the factors contributing to an average or above SAP score for many of the properties in the area.



# National Scottish Fuel Poverty Indicator II



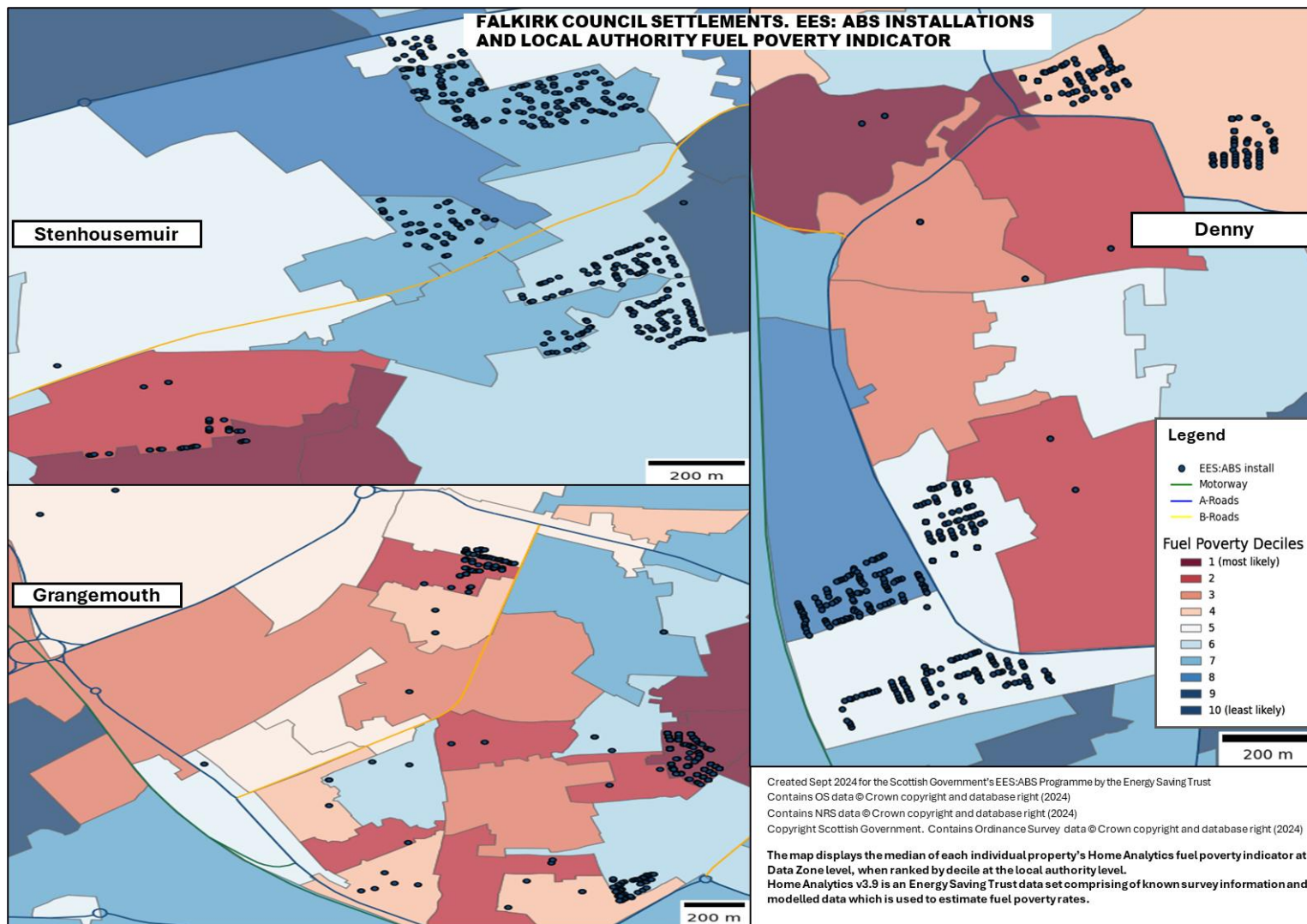
# Falkirk Council Area Fuel Poverty Indicator I



This map shows the probability of fuel poverty by data zone ranked on a local authority level for Falkirk Council only. Highest fuel poverty areas within the council are shown here in red colour. Note that the fuel poverty indicator used here is a snapshot of the situation and therefore in some cases the work completed

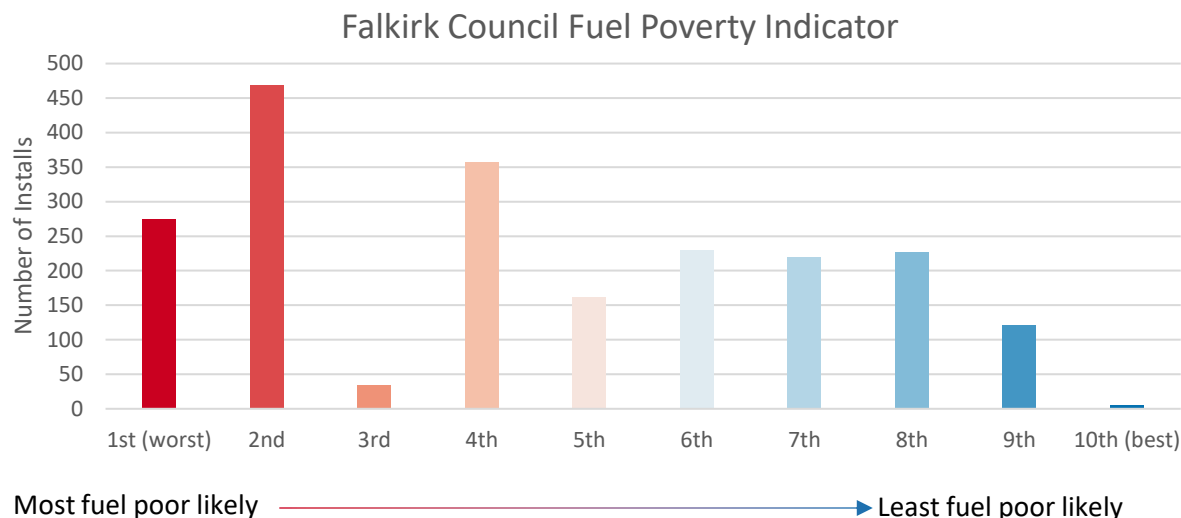
by energy efficiency programmes, such as EES: ABS, will have already had a positive impact on the fuel poverty rating in the region.

# Falkirk Council Area Fuel Poverty Indicator II

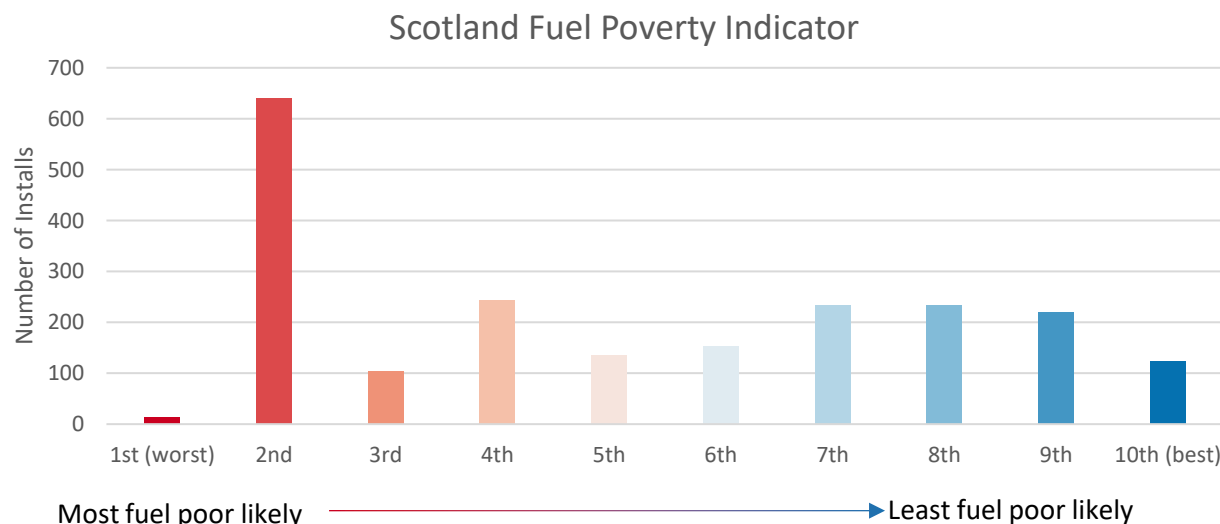




# Falkirk Council Area Fuel Poverty Indicator III



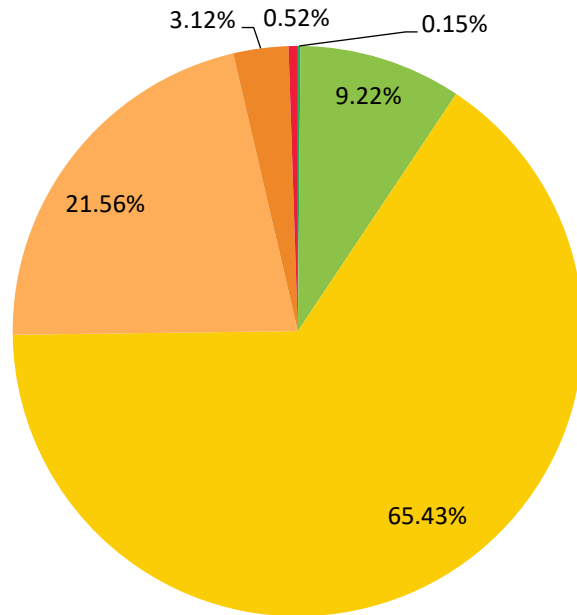
A total of 36.35% of all EES: ABS installs took place within the three most fuel poor ranked data zones when looking at the local authority specific fuel poverty indicator for the Falkirk Council. 60.66% occur within the five most fuel poor ranked data zones.



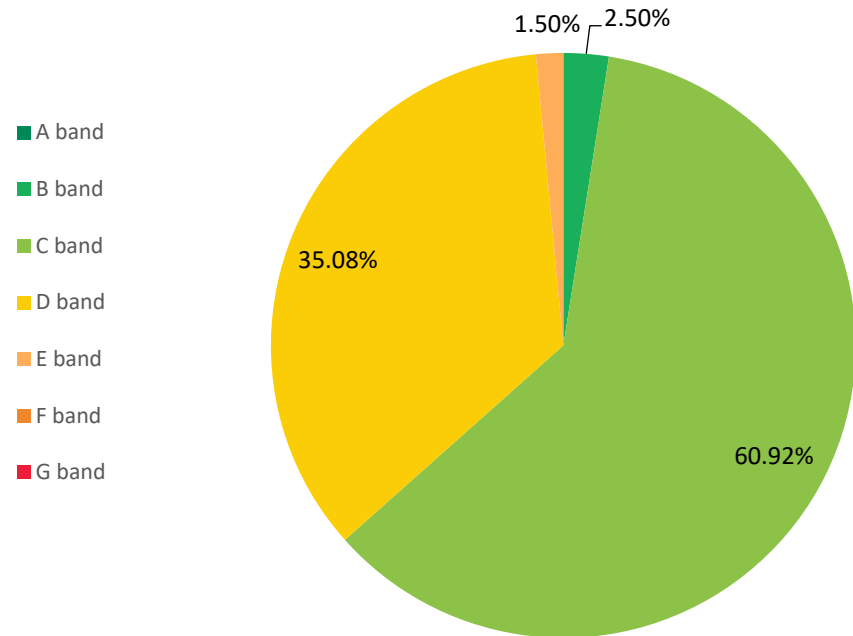
The bottom chart shows the difference when the installs are looked at on Scotland's national scale. 53.21% of the installs are within the five most fuel poor ranks when compared to the national figures.

# EES: ABS SAP Band Analysis I

EES: ABS properties by pre-installation EPC banding



EES: ABS properties by post-installation EPC banding



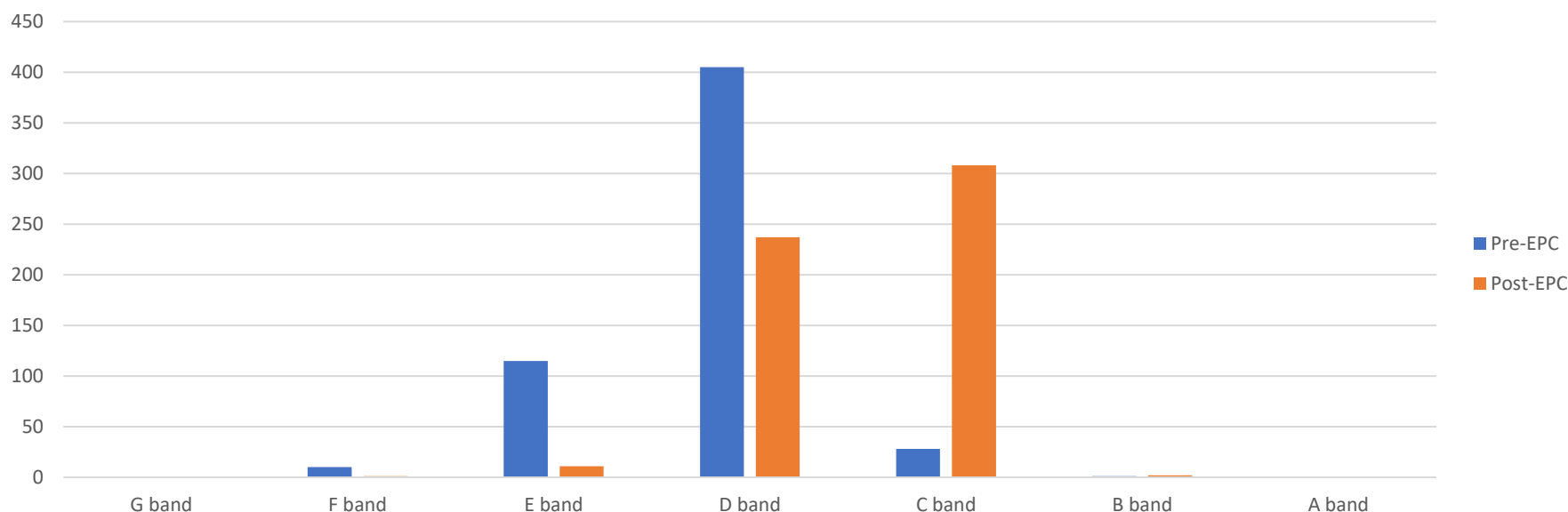
A valid pre-installation EPC was provided for 1,345 properties participating in the programme. 90.63% of these properties, were within the national band D average or lower. A total of 802 participants had a valid post-installation EPC regardless of the validity of the pre-EPC. After the completion of the installs, 63.34% of these properties reached band C and above.



# EES: ABS SAP Band Analysis II

Out of the 1,345 properties with valid pre-EPCs, a total of 559 had a valid pre- and post-installation EPC and could be used for further analysis. 94.81% of these 559 properties had a starting SAP band of D or lower. The Post-EPC's show that after the completion of installs, 55.10% of the properties have reached band C and 42.40% reached band D. Only 12 (2.15%) properties remain with a post-installation EPC band of E or lower, illustrating the positive effect of the Falkirk Council EES: ABS programme.

EES: ABS properties by EPC banding

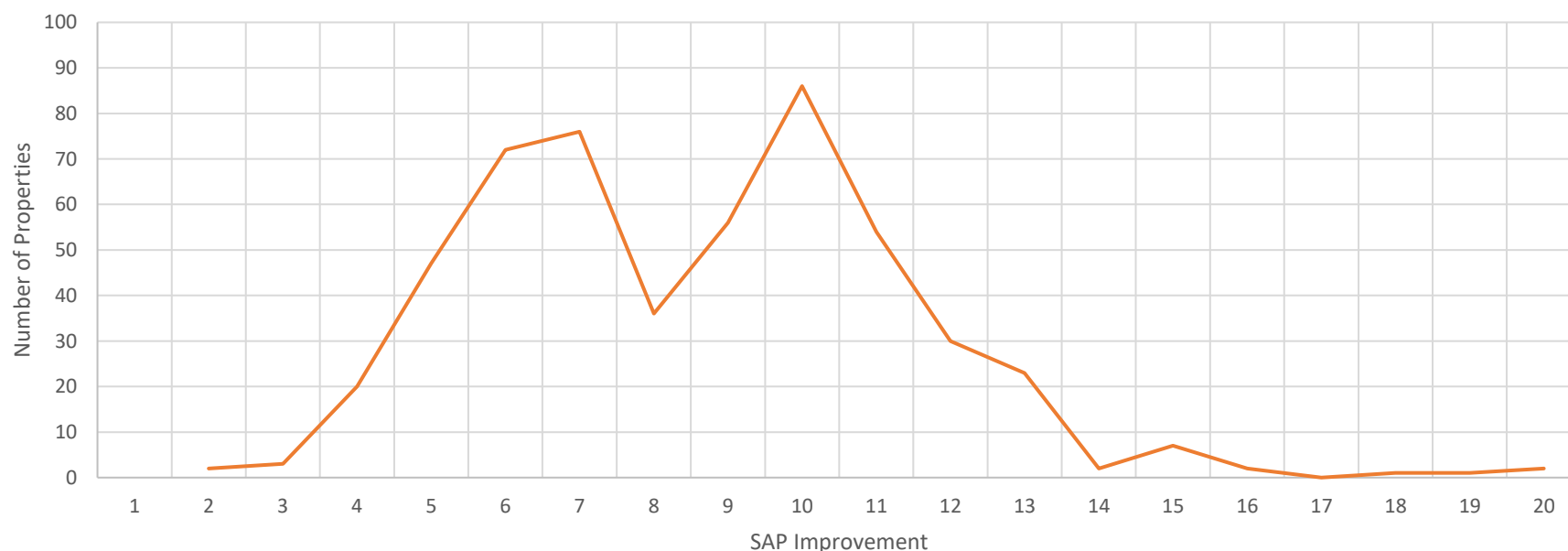


# EES: ABS SAP Band Analysis III

The most common outcome of the EES: ABS programme within the Falkirk Council was for a property to increase in SAP score for around 5 to 13 points (88.04% of properties where the EPCs were valid to use for further analysis).

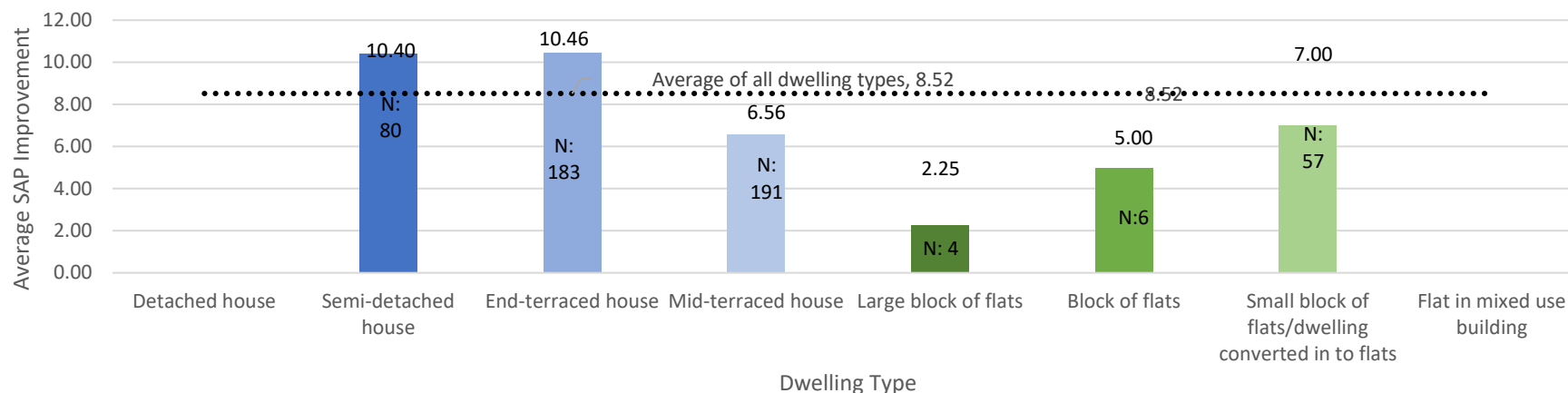
The larger SAP increases (14 to 20 points) included in this case study were due to installation of external wall insulation for solid walls within end-terraced, mid-terraced and semi-detached houses.

EES: ABS Property Count by SAP Improvement



# EES: ABS SAP Band Analysis IV

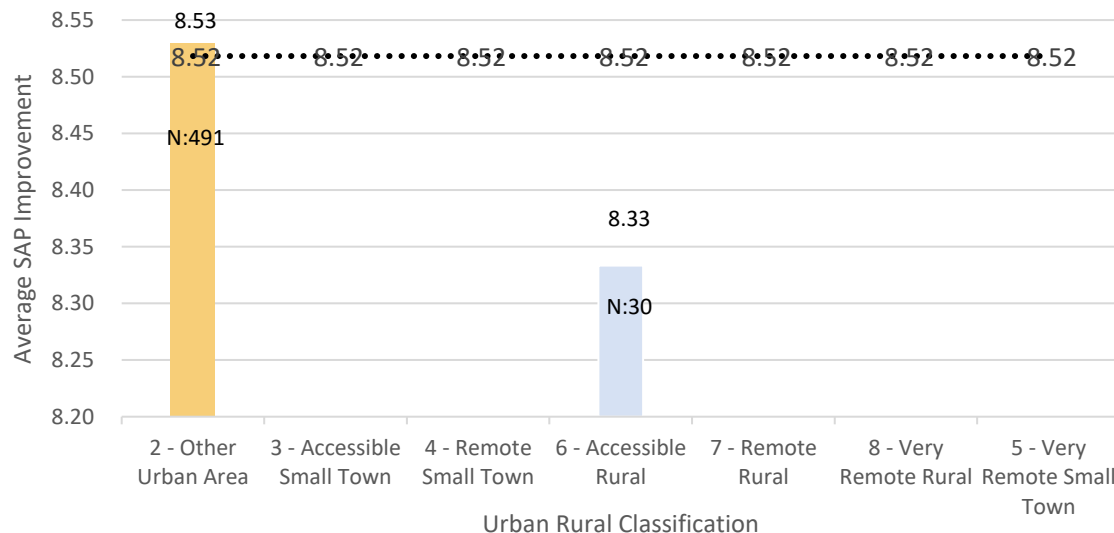
Average SAP improvement by dwelling type



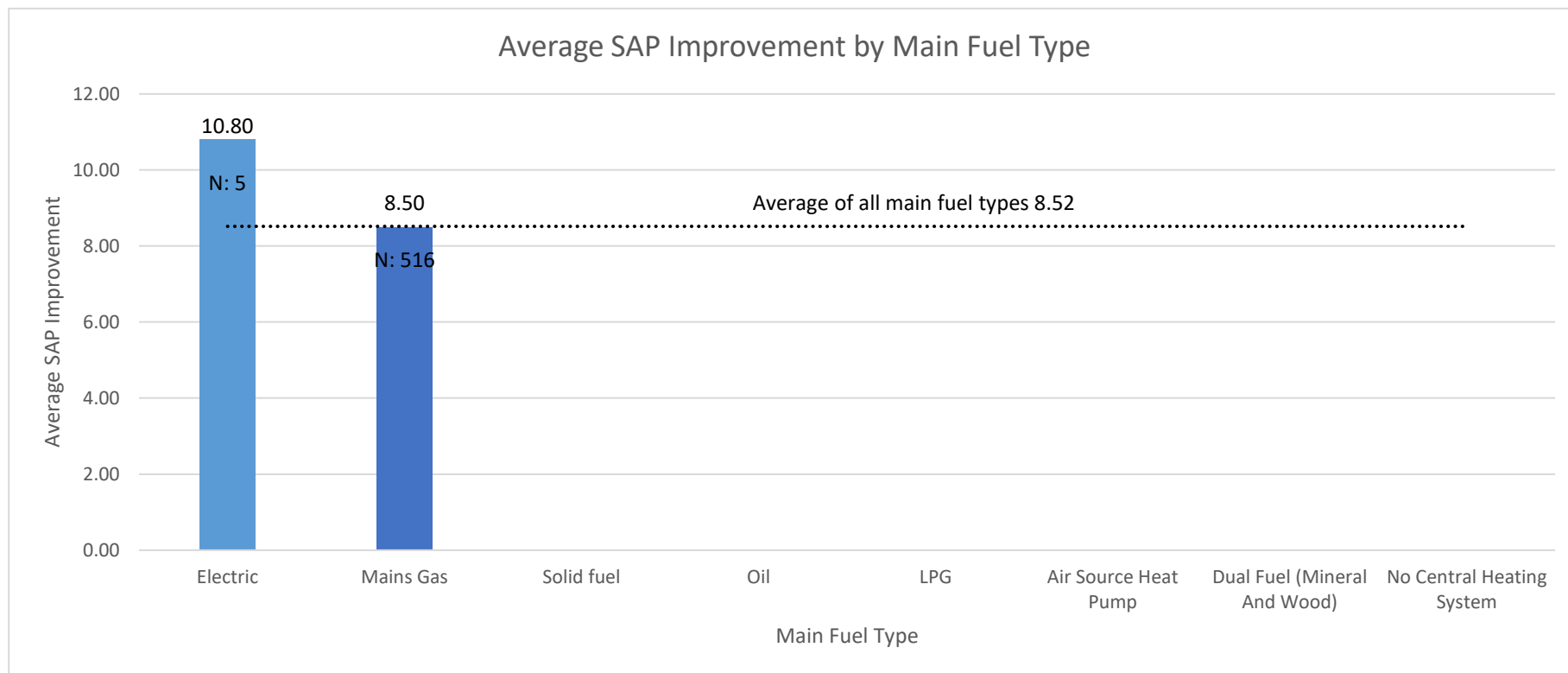
The average SAP improvement for all dwelling types is 8.52. End-Terraced houses benefitted from the biggest average improvement (10.46), with semi-detached houses next with an average increase of 10.40 points.

Other Urban Areas benefitted from an average SAP improvement of 8.53 and Accessible Rural had an average SAP improvement of 8.33.

Average SAP improvement by urban rural classification



# EES: ABS SAP Band and Main Fuel Type



The average SAP improvement for all fuel types was 8.52. The biggest sample size available was for mains gas (N:516) properties where the average improvement was 8.78. Properties with electric heating improved by their SAP rating the most by 10.80 on average. However, the sample size for this was low (5 records) and so confidence is low.

# 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.
- The typical participating property is within the owner-occupied sector (62% of all properties included in the programme) and constructed between 1950 and 1983 (95%). The main property type was a house with a system built or hard to treat cavity wall construction.
- 86.51% of the participating properties can be found within the six most deprived SIMD areas.
- 71.43% 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 (90.63%) and 63.34% 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 5 to 13 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 2019 used.
SIMD	Scottish Government	Available online. SIMD 2020 used.
Urban Rural Classification	Scottish Government	Available online. 8-Fold classification (2020) used.

Special thanks to Carole Glass, the Home Energy Strategy Officer in the Falkirk Council, for providing insight and assistance towards the completion of this case study.

# Contacts

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