

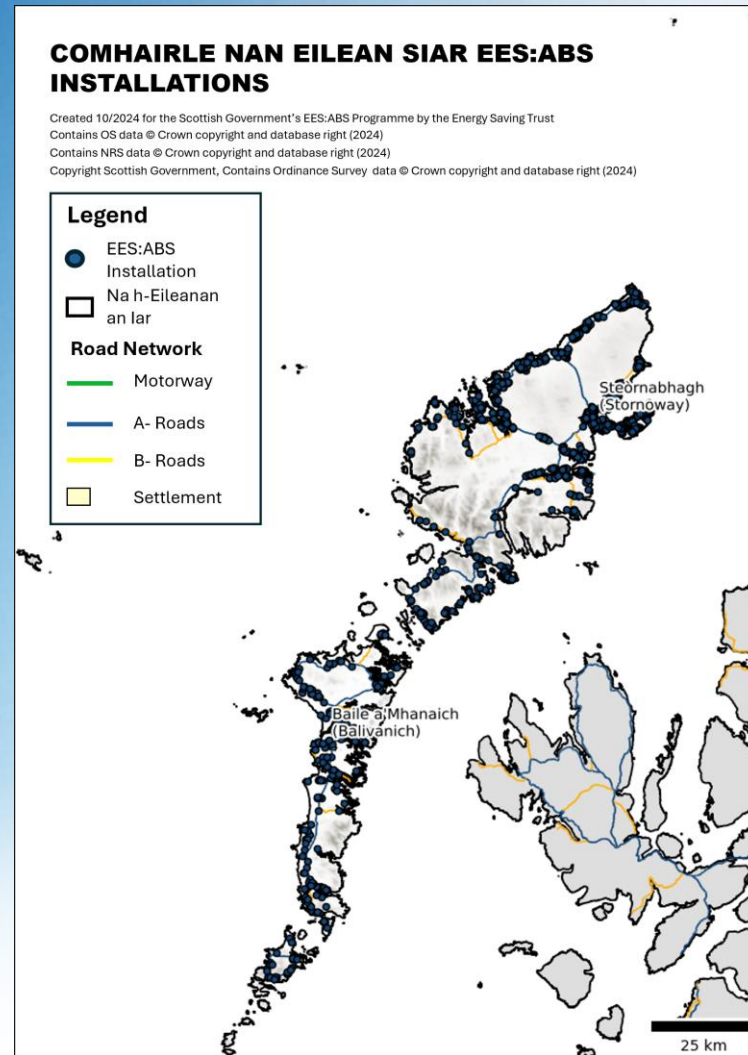
Comhairle nan Eilean Siar

EES: ABS

Case Study

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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 reported Na h-Eileanan Siar EES: ABS activity to end of financial year 2021/22.**

Na h-Eileanan Siar EES: ABS dataset

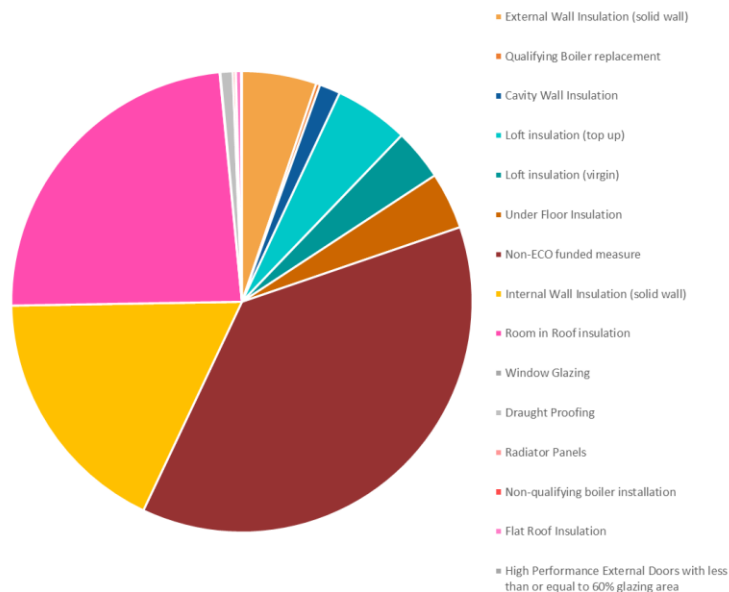
Financial Year	Number of records*	% of records
2013/14	528	14.29
2014/15	574	15.53
2015/16	548	14.83
2016/17	582	15.75
2017/18	371	10.04
2018/19	343	9.28
2019/20	295	7.98
2020/21	136	3.68
2021/22	319	8.63
2022/23	0	0
2023/24 ¹	0	0
Total Installs	3,696	100.00

Reference numbers	Number of records	% of records
With pre-installation EPC	2,096	56.72
With post-installation EPC	0	0
With pre and post-installation EPC	0	0
With GDAR	0	0
With measure reference number	0	0

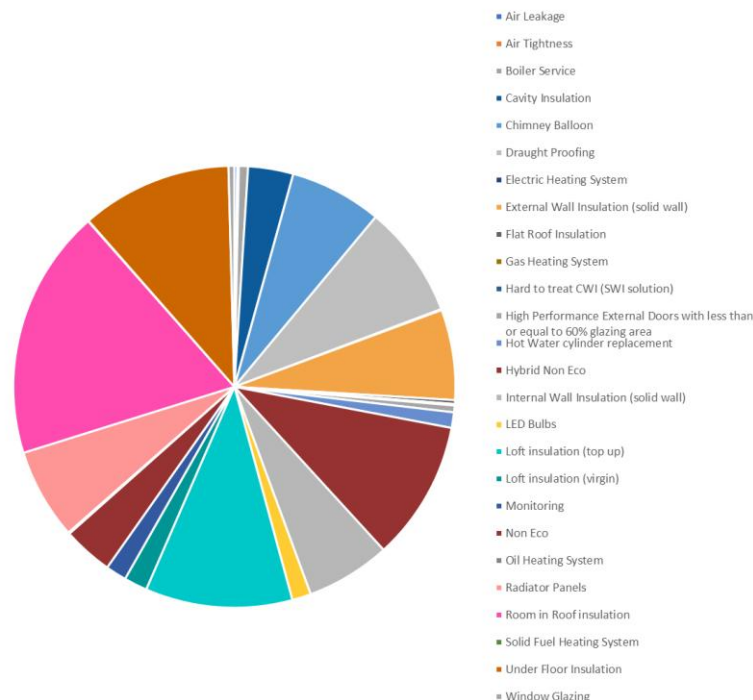
Na h-Eileanan Siar has contributed 2.91% of the total EES: ABS installs across Scotland reported to date (Sept 2024).

Installed Measures I

Installed EES: ABS measures



Non-ECO Funded Measures



Around 23.6% of Na h-Eileanan Siar's installs were for wall insulation, and 45.53% of installs treated the loft or roof spaces – the two largest sources of heat loss within the typical home. There is also a considerable amount of Non-ECO* funded measures. The most frequently installed non-ECO funded measures tend to be those which are less expensive and quicker to install, such as loft insulation top ups. Many of Na h-Eileanan Siar's non-ECO funded measures either cannot be installed using ECO at all, such as radiator panels, or can only be installed in combination with a more impactful primary measure.

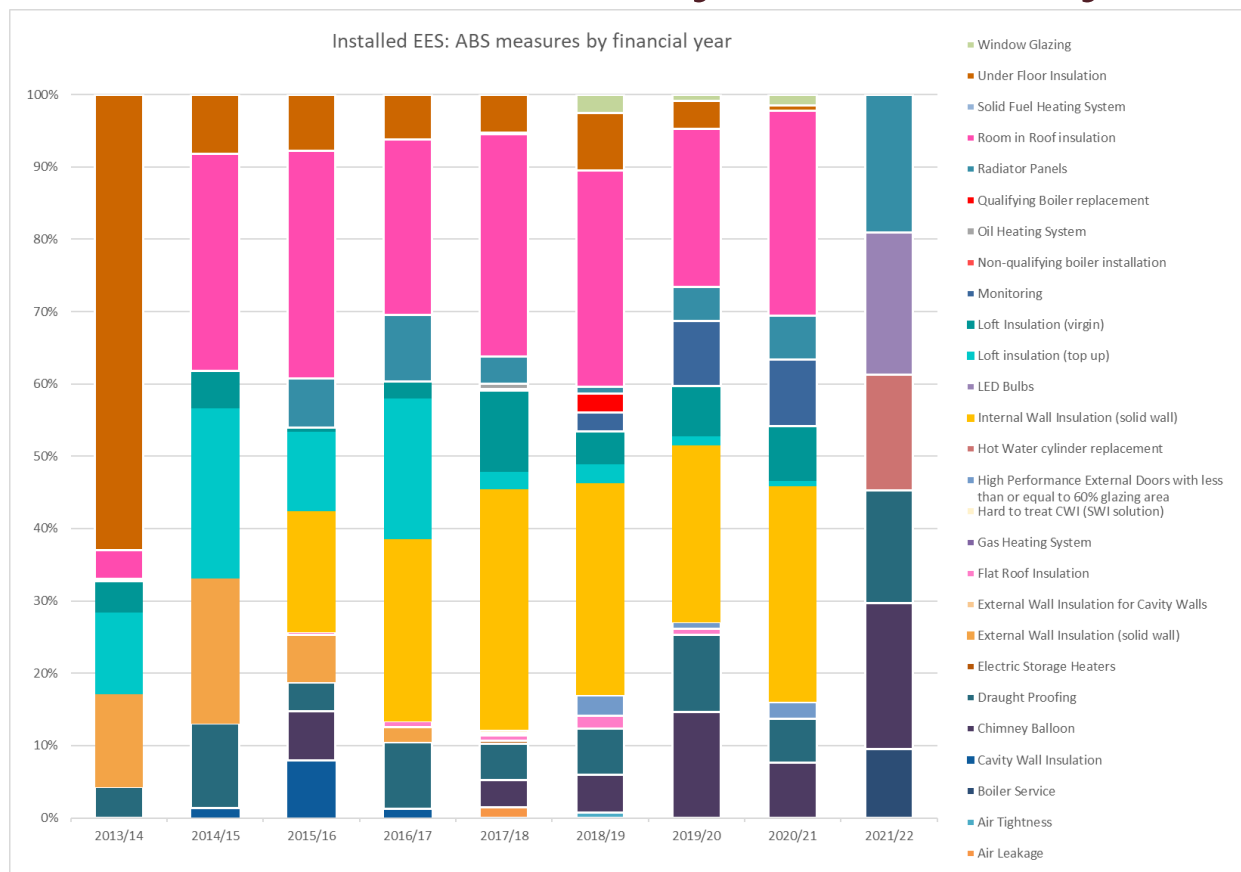
Installed Measures II

Measure Name	Number of records*	% of records
Room in Roof insulation	857	23.71
Internal Wall Insulation (solid wall)	640	17.71
External Wall Insulation (solid wall)	189	5.23
Loft insulation (top up)	188	5.20
Under Floor Insulation	144	3.98
Loft insulation (virgin)	130	3.60
Cavity Wall Insulation	53	1.47
Draught Proofing	31	0.86
Flat Roof Insulation	13	0.36
Qualifying Boiler replacement	10	0.28
Radiator Panels	7	0.19
High Performance External Doors	2	0.06
Window Glazing	2	0.06
Non-qualifying boiler installation	1	0.03
Non-ECO funded measure	1347	37.27
Total Installs	3,614	100.00

Other non-ECO funded measures include: Electric Heating System (2); Hard to treat CWI (SWI solution) (2); Solid Fuel Heating System (1); Window Glazing (1); Gas Heating System (1); blank (1).

Non-ECO funded measures	Number of records*	% of records
Room in Roof insulation	516	18.32
Under Floor Insulation	311	11.04
Loft insulation (top up)	303	10.76
Hybrid (Non ECO)	288	10.23
Draught Proofing	232	8.24
Chimney Balloon	190	6.75
Radiator Panels	187	6.64
External Wall Insulation (solid wall)	186	6.61
Internal Wall Insulation (solid wall)	174	6.18
Cavity Insulation	53	1.88
Loft insulation (virgin)	48	1.70
Cavity Wall Insulation	40	1.42
LED Bulbs	39	1.38
Monitoring	33	1.17
Hot Water cylinder replacement	32	1.14
Boiler Service	19	0.67
High Performance External Doors	14	0.50
Window Glazing	12	0.43
Monitoring	10	0.36
Flat Roof Insulation	8	0.28
Air Leakage	6	0.21
Air Tightness	3	0.11
Oil Heating System	3	0.11
Electric Heating System	2	0.07
Hard to treat CWI (SWI solution)	2	0.07
Gas Heating System	1	0.04
Solid Fuel Heating System	1	0.04
Others	103	3.66
Total Installs	2,816	100.00

Installed Measures by Financial year

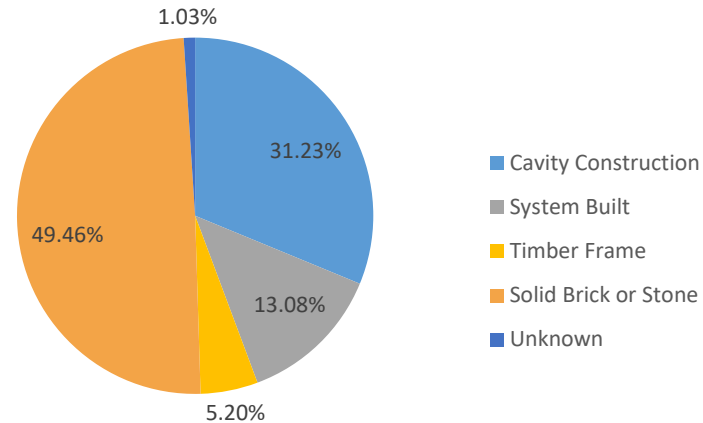


Most of the measures installed are present from one year to the next. One exception is EWI which decreases as IWI increases throughout the duration of the programme. Large percentages of Non-ECO funded measures are consistently present, ranging from 65% (2013/14) to 100% (2021/22) of each financial year's total installs.

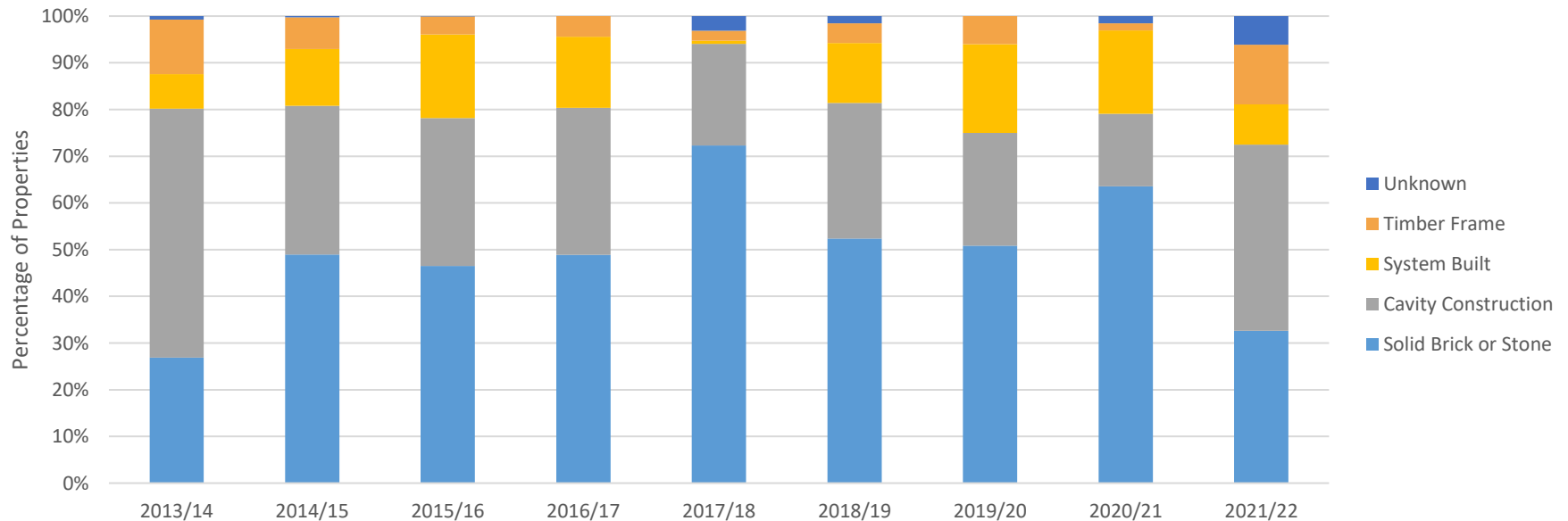
Wall Type

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

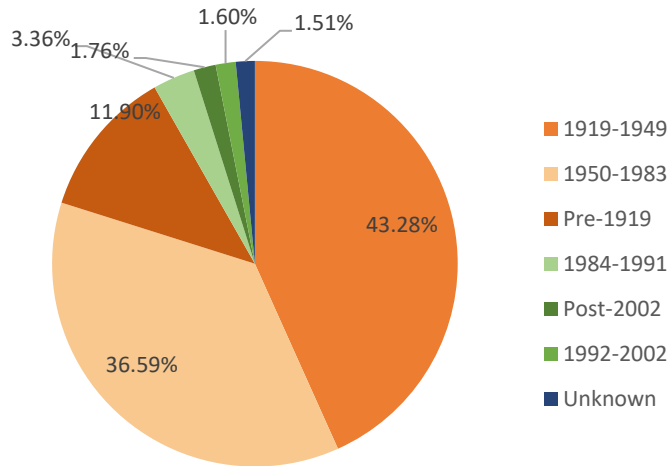


EES: ABS properties and construction type by financial year

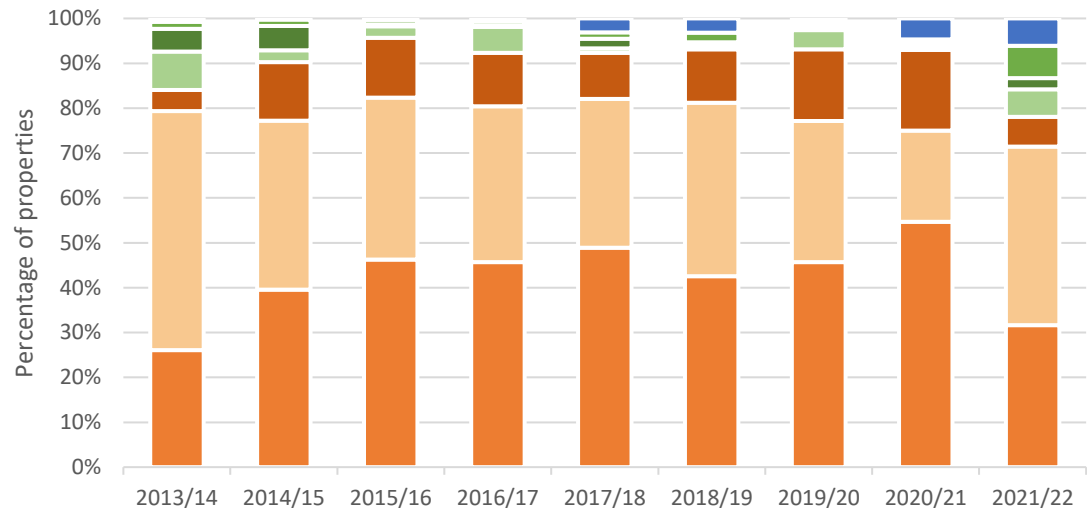


Construction Age

EES: ABS properties by construction age



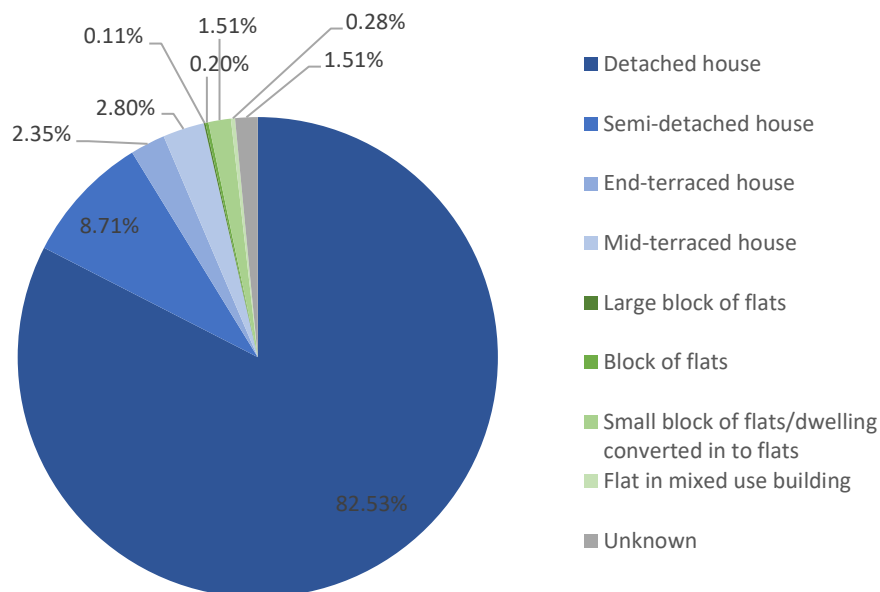
EES: ABS Properties and Construction Age by Financial Year



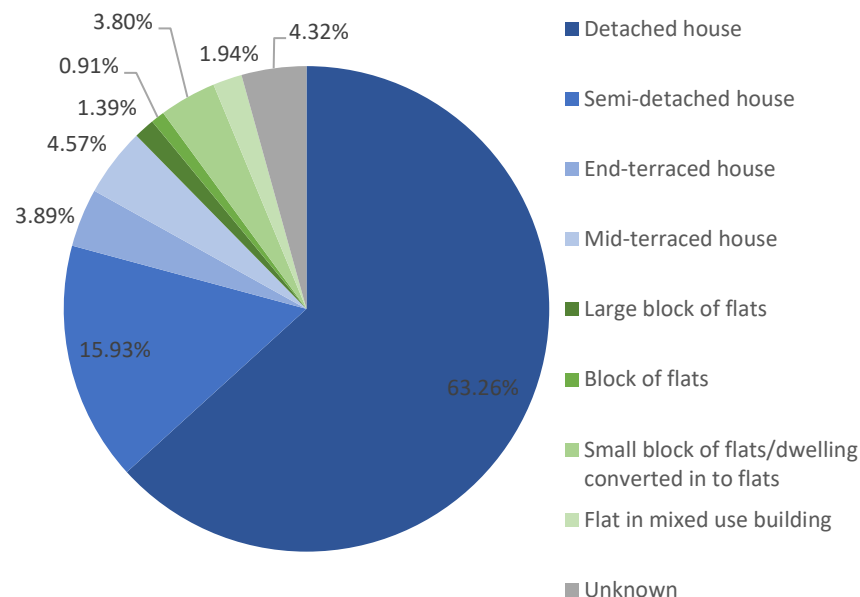
The majority of properties treated in Na h-Eileanan Siar were built shortly before or after WWII (43.28%), or between 1950 and 1983. The distribution of properties being included vs construction age shows a similar pattern across the time of the scheme.

Dwelling Type

EES: ABS properties by dwelling type



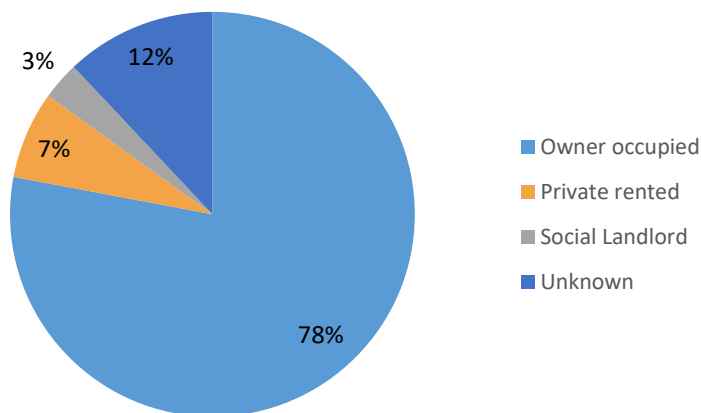
Eilean Siar properties by dwelling type



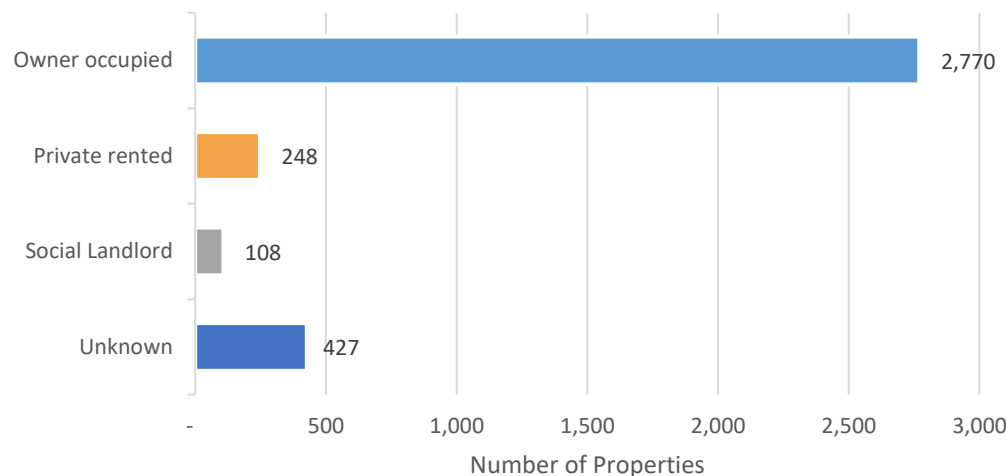
Detached houses are overrepresented when compared to the council distribution (82.53% vs 63.26%), with semi-detached properties slightly underrepresented at 8.62% vs 15.86%. As a whole, 87.65% of the dwelling types within Na h-Eileanan Siar consists of houses and 8.03% of flats.

Property Tenure

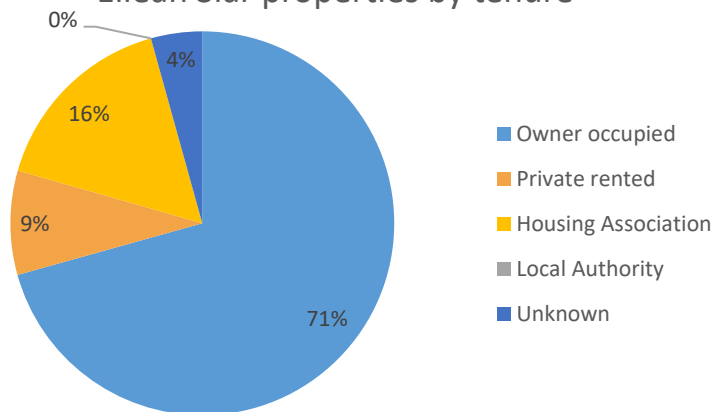
EES: ABS properties by tenure



EES: ABS properties by tenure



Eilean Siar properties by tenure

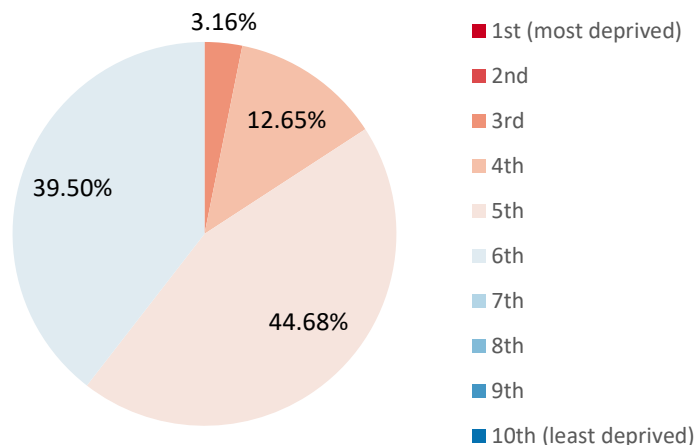


Na h-Eileanan Siar has primarily targeted the owner-occupier sector, proportionally slightly more than the council figure (78 vs 71%). Most of the EES: ABS work has been in the owner-occupied sector and for detached or semi-detached homes.

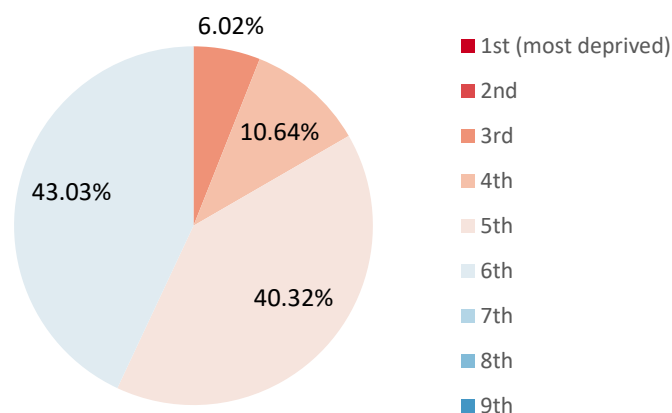
Many ex-council right-to-buy properties have been included in the owner-occupied tenure.

Scottish Index of Multiple Deprivation (SIMD) I

EES: ABS properties by overall SIMD decile ranking



Eilean Siar properties by overall SIMD decile ranking

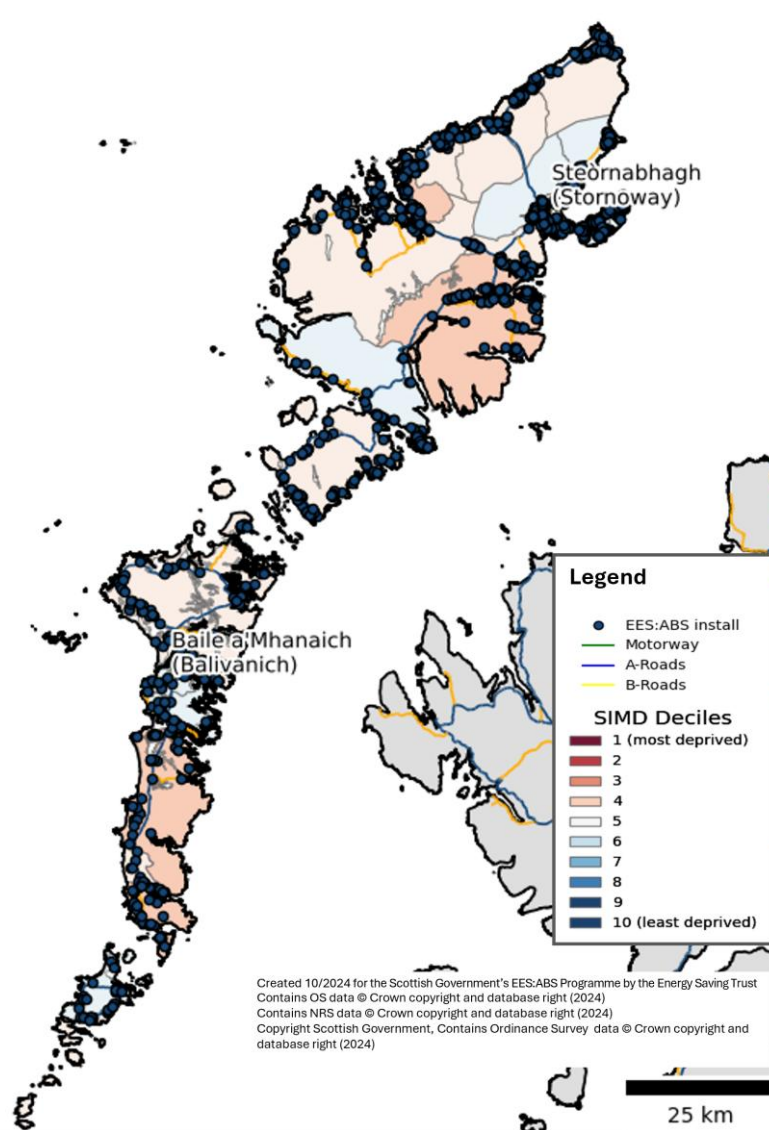


Comparison of these two illustrations shows a close correlation between the overall SIMD ranking of Na h-Eileanan Siar properties and of those targeted in the EES: ABS programme. All the participating properties are in the most deprived areas of the council and can be found within the six lowest SIMD ranks as seen in the top chart.

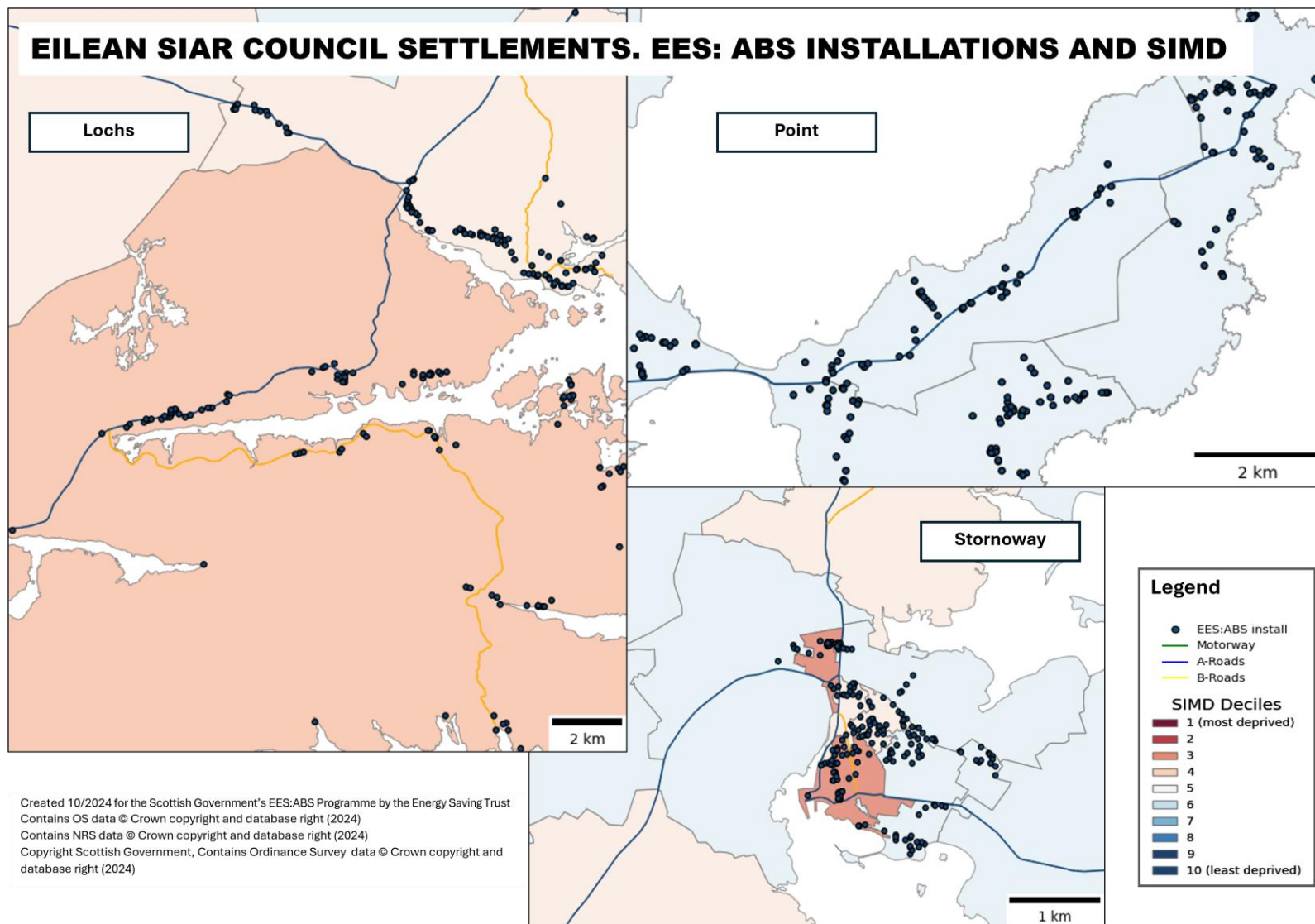
It is good to note that the SIMD can be a slightly problematic indicator for rural settings as each data zone contains between 500 and 1000 properties. Rural populations are very dispersed, so this means that very large catchments are created in order to reach the required range. Larger areas are more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

Scottish Index of Multiple Deprivation (SIMD) II

COMHAIRLE NAN EILEAN SIAR EES:ABS INSTALLATIONS AND THE SCOTTISH INDEX OF MULTIPLE DEPRIVATION

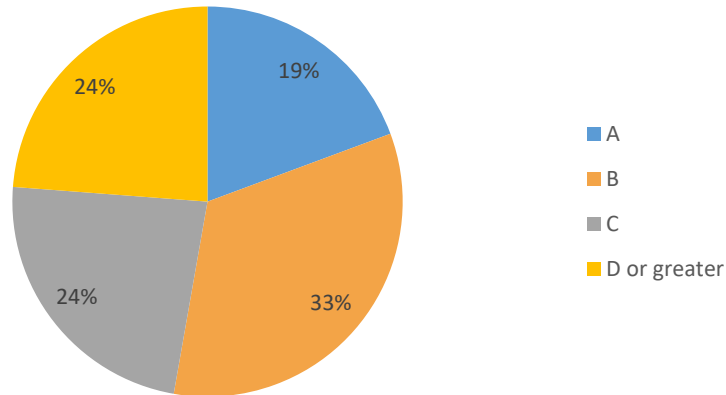


Scottish Index of Multiple Deprivation (SIMD) III

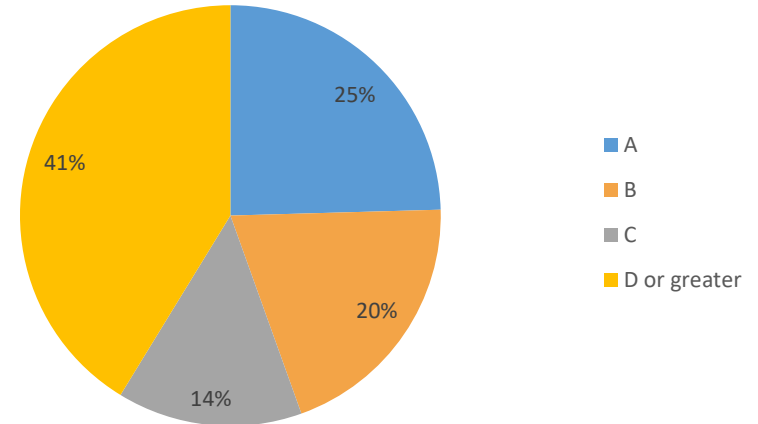


EES: ABS Installs by Council Tax Band

EES: ABS properties by council tax band



Eilean Siar properties by council tax band



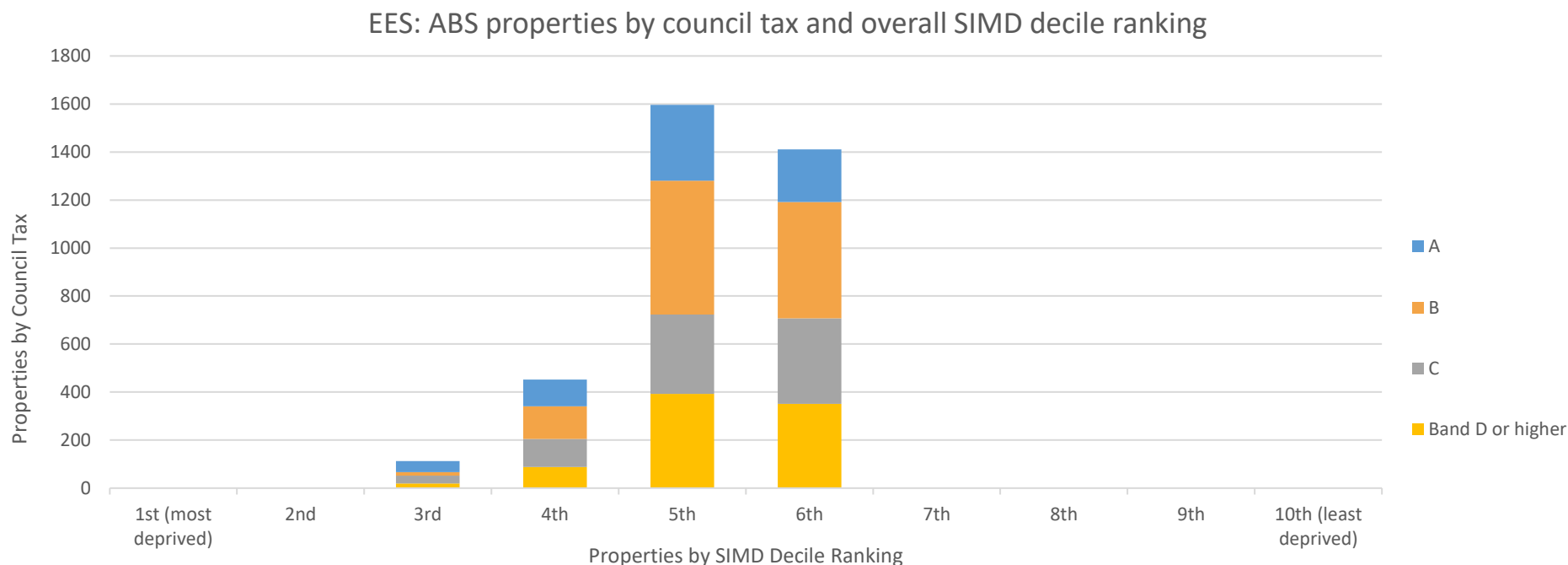
EES: ABS properties by council tax band



Just over 70% of properties receiving measures fall into council tax bands A to C. With both B and C properties overrepresented by EES: ABS when compared to the council as a whole.

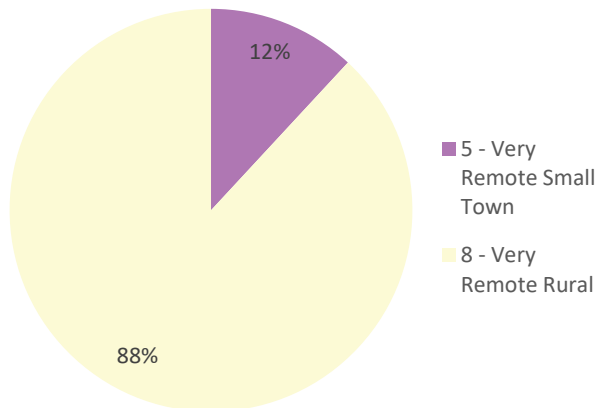
EES: ABS Installs by Council Tax Band and SIMD

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. 46.5% 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

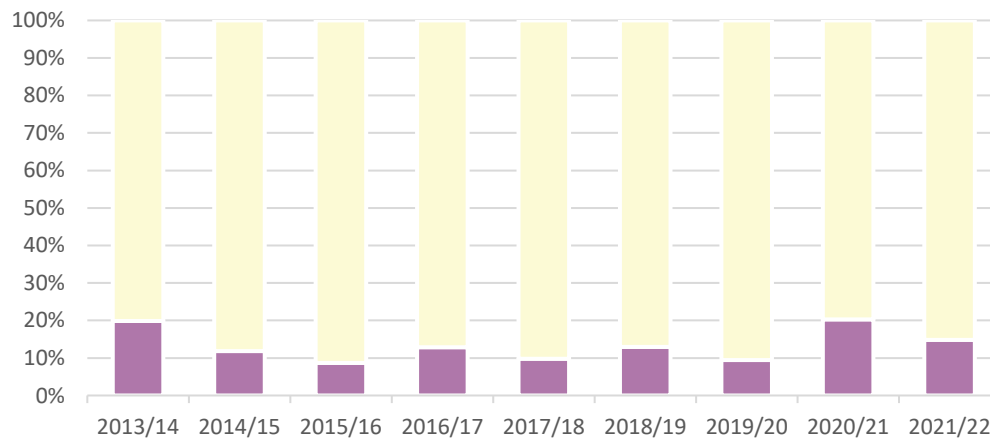
EES: ABS properties by urban rural classification



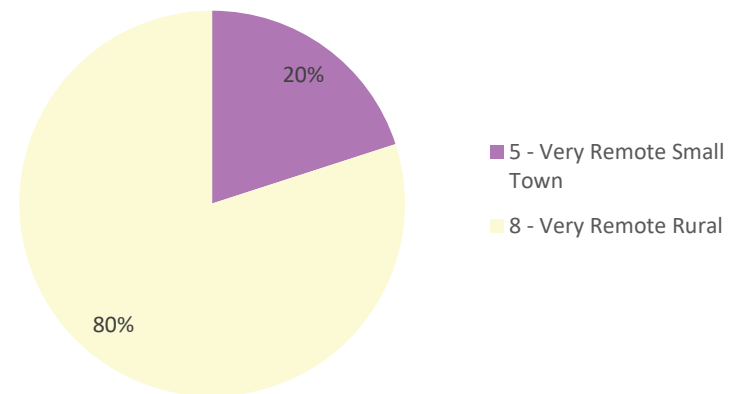
The Rural Urban classification of Na h-Eileanan Siar has only two categories. Stornoway is the only town large enough to fit the 3,000 – 9,999 population bracket required to be classified as a Very Remote Small Town. The remainder of Eilean Siar is classed as Very Remote Rural.

The breakdown of installs between these two classifications broadly aligns with the total dwellings found within each. Whilst installs outside of Stornoway are slightly over-represented, the properties outside the town are also more likely to be uninsulated and thereby in greater need of energy efficiency retrofit.

EES: ABS properties by urban rural classification

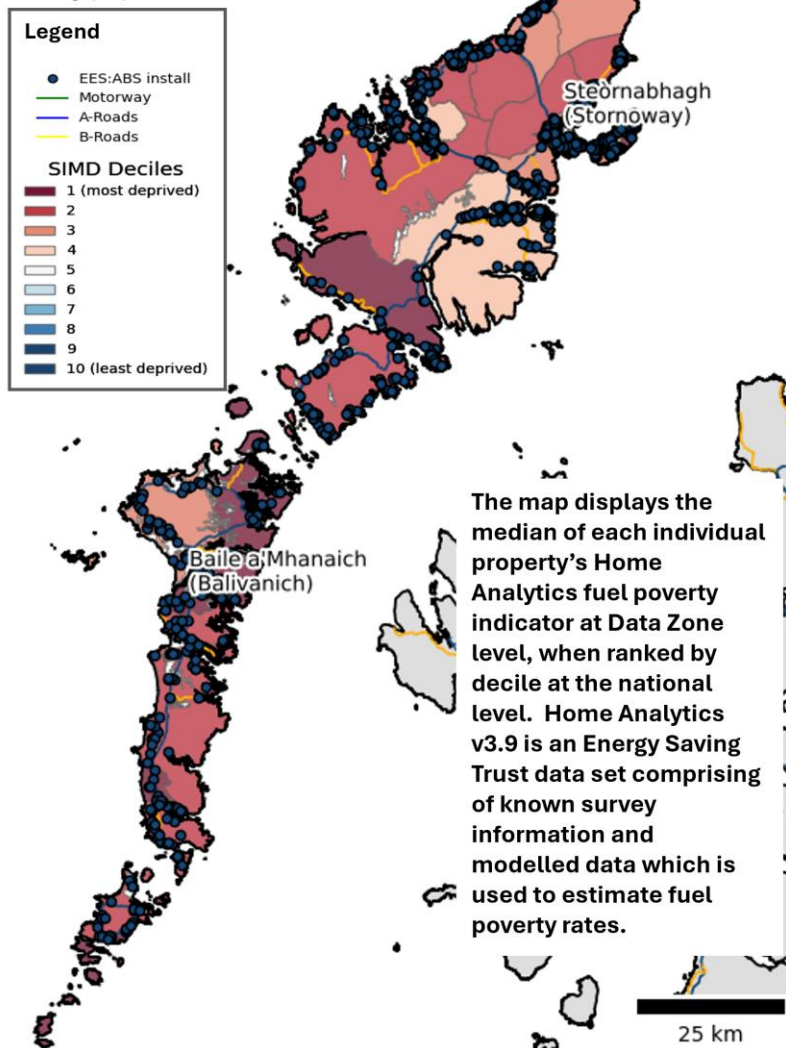


Eilean Siar properties by urban rural classification



COMHAIRLE NAN EILEAN SIAR EES: ABS INSTALLATIONS AND NATIONAL FUEL POVERTY INDICATOR

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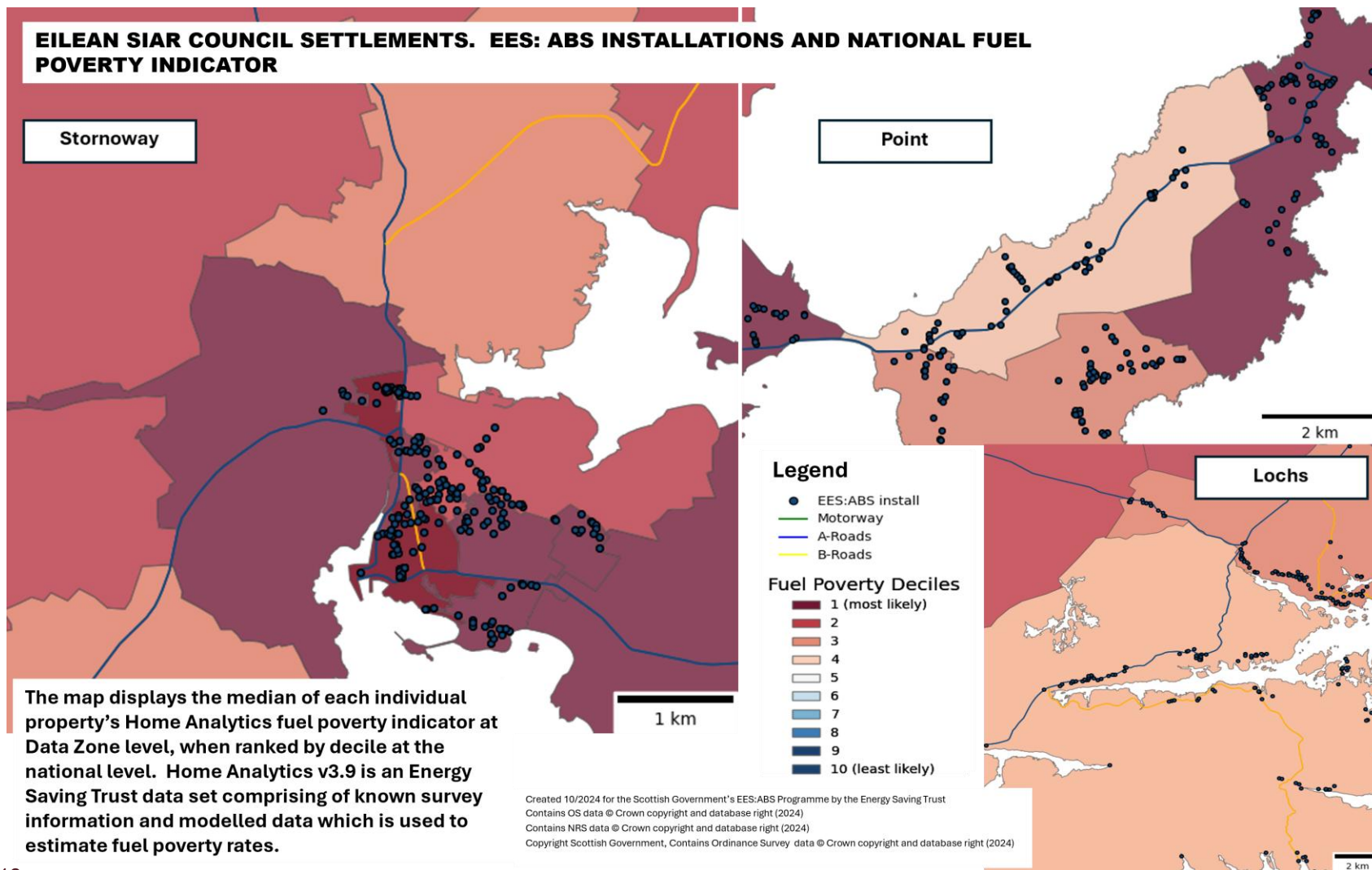
National Scottish Fuel Poverty Indicator I

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According to the Scottish Housing Condition Survey (SHCS); Na h-Eileanan Siar has an average fuel poverty rate of 40%. This is considerably higher than the Scottish national average of 24% and places them with the highest rate of fuel poverty in Scotland.

There are many factors which will contribute to this reality, including a low number of households being able to access mains gas or off-gas grid renewables. Many of the properties on the Isles are uninsulated. The electricity tariffs are much more limited than what is available on the mainland and many off-gas grid properties will use electricity as the main fuel type. All these issues contribute to a low overall SAP, high fuel bills and a higher rate of fuel poverty.

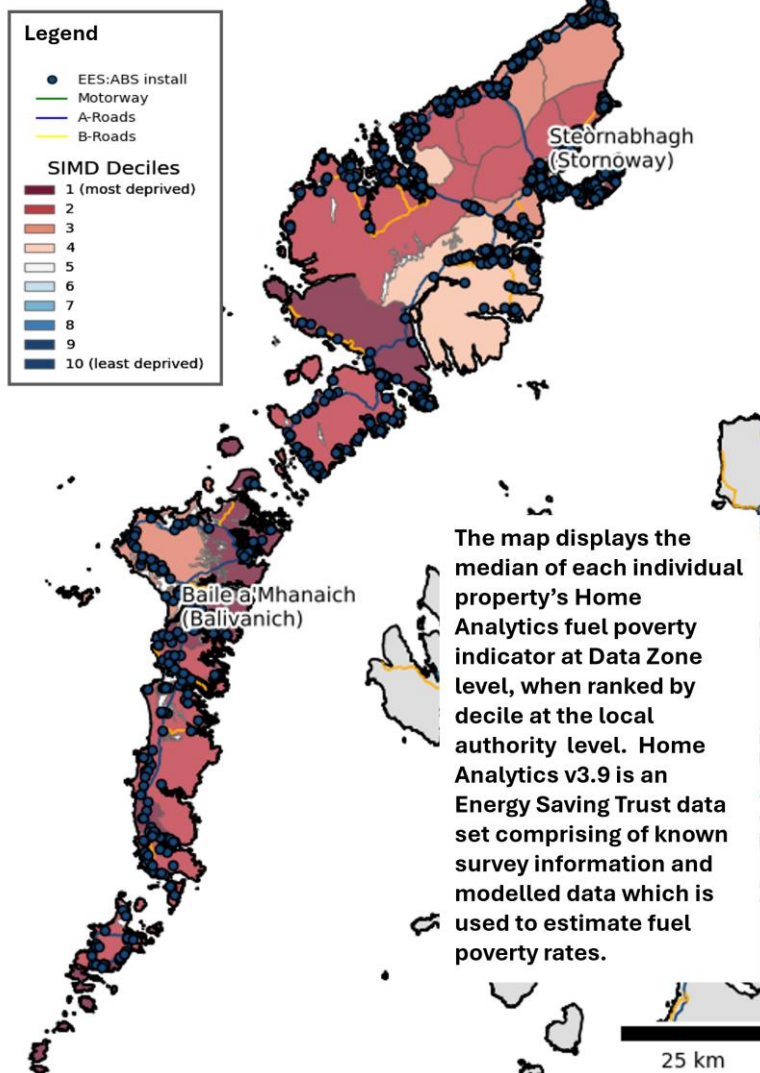
National Scottish Fuel Poverty Indicator II



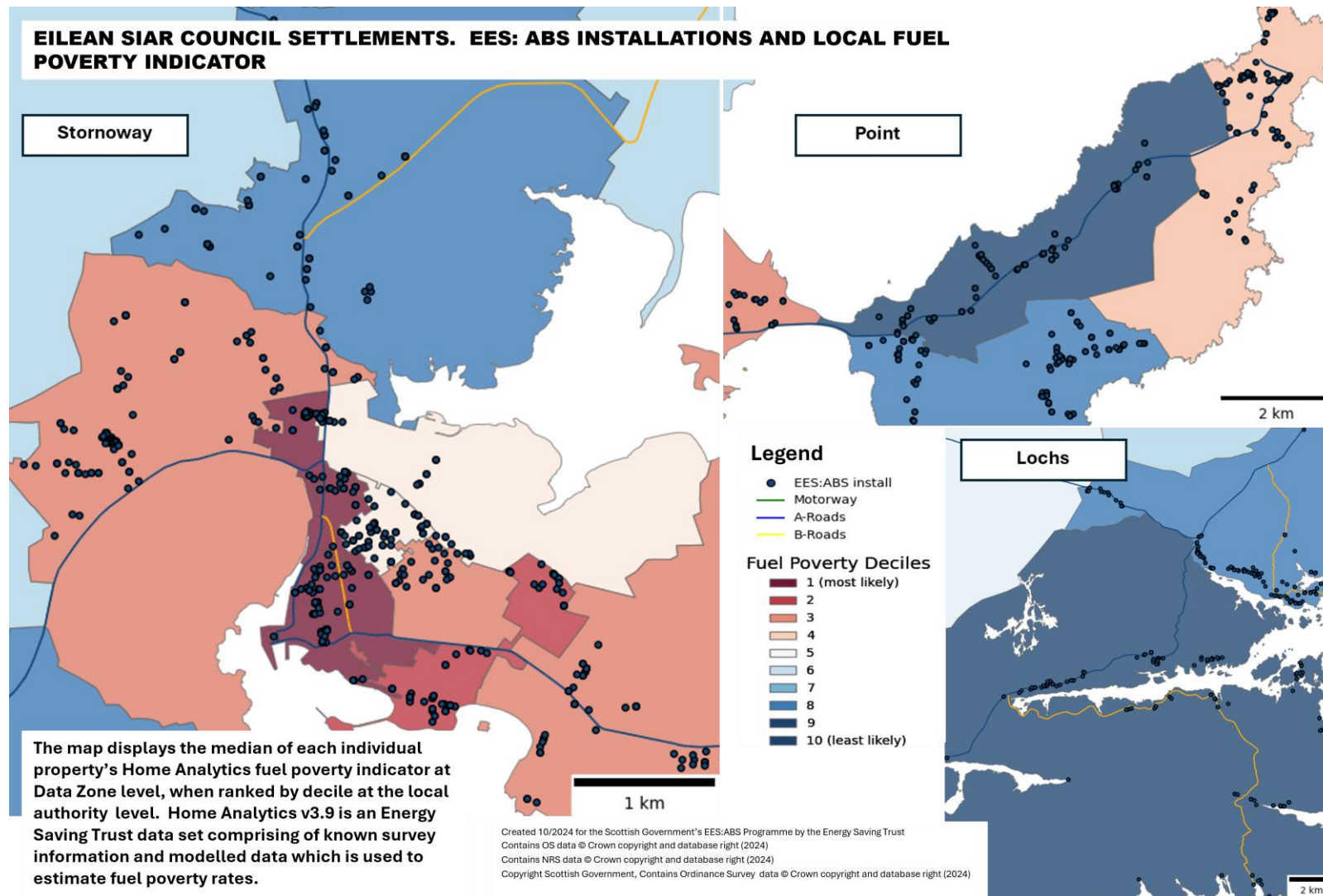
Na h-Eileanan Siar Fuel Poverty Indicator I

COMHAIRLE NAN EILEAN SIAR EES: ABS INSTALLATIONS AND LOCAL FUEL POVERTY INDICATOR

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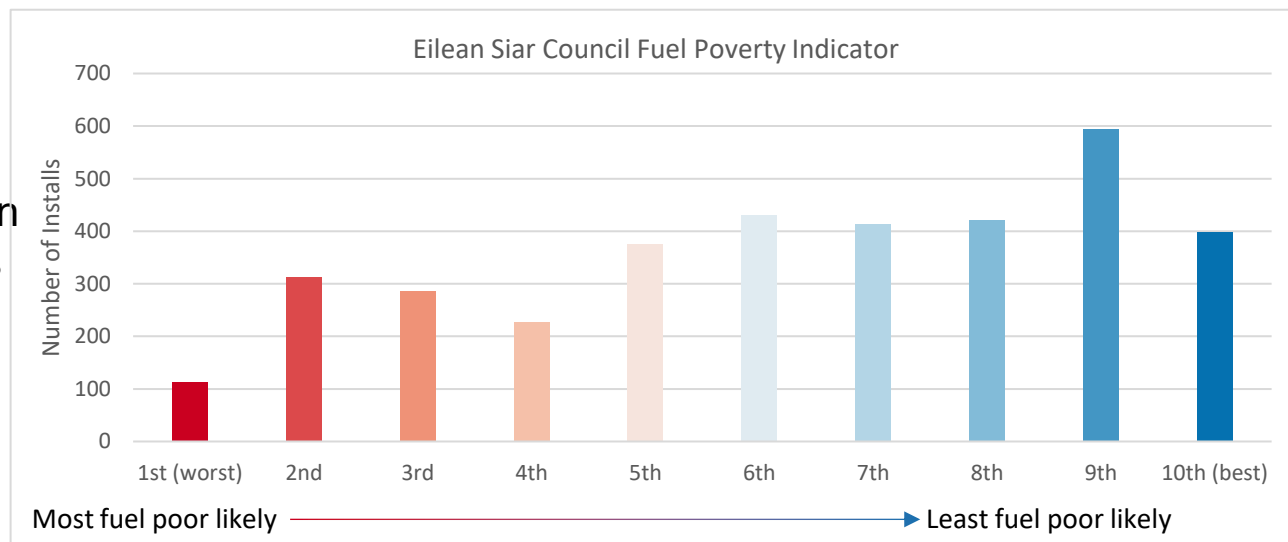


Na h-Eileanan Siar Fuel Poverty Indicator II

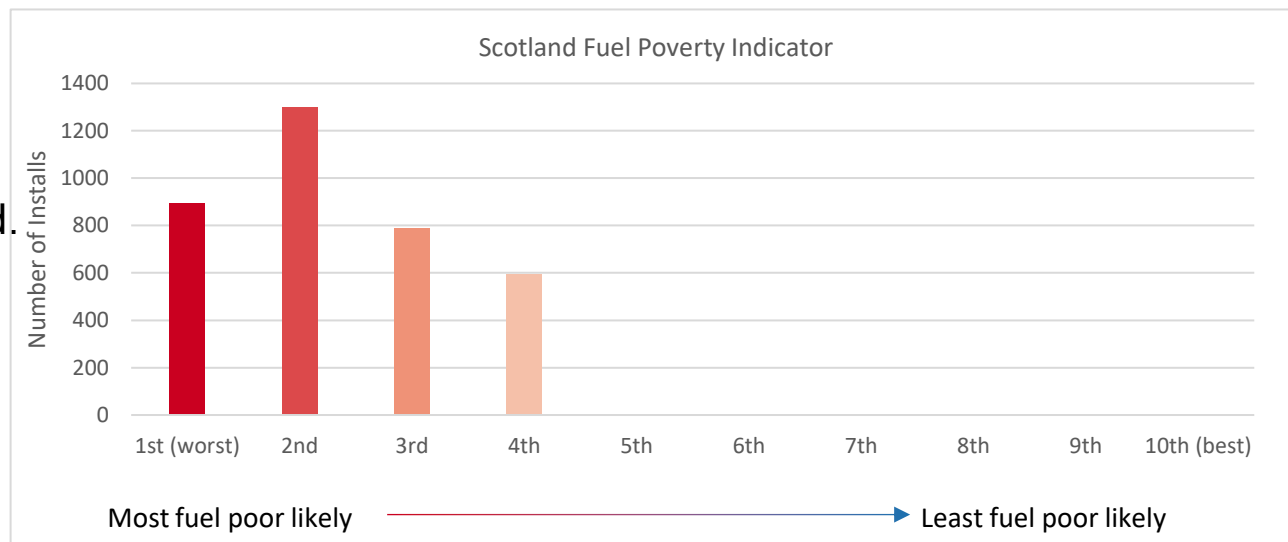


Na h-Eileanan Siar Fuel Poverty Indicator

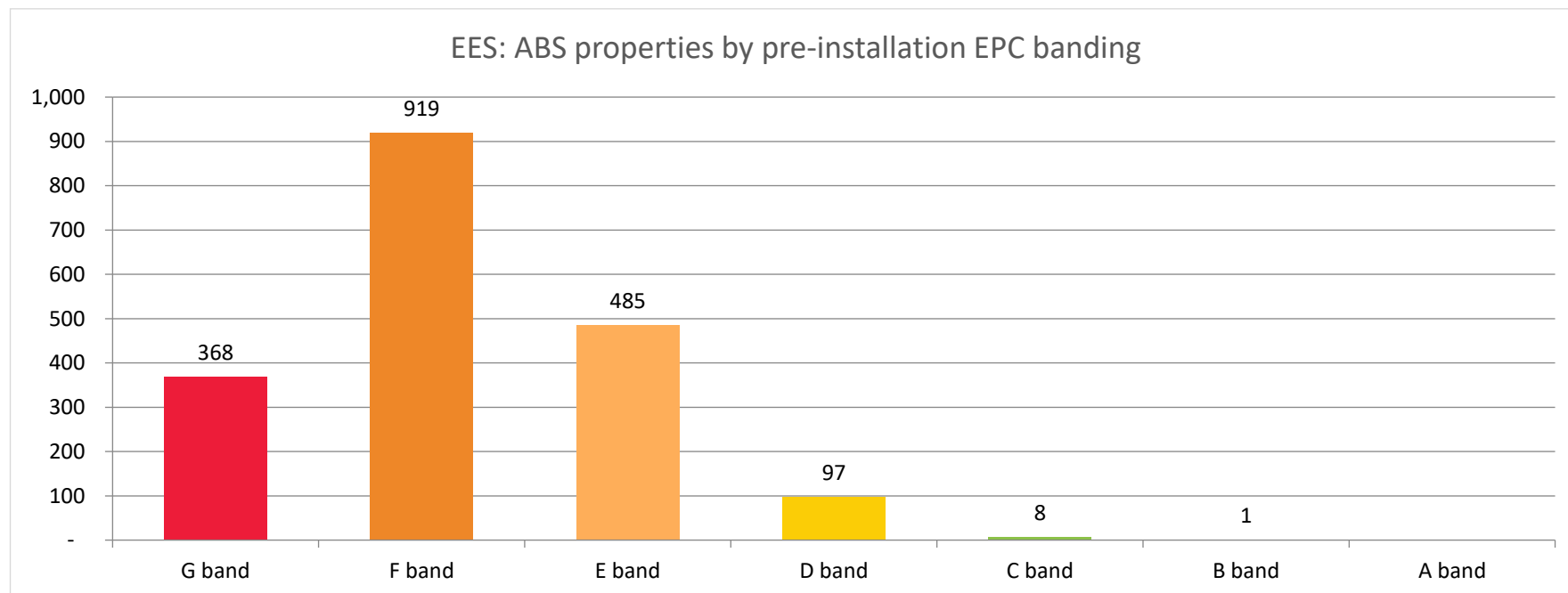
49% of all EES: ABS installs took place within the six most fuel poor ranked data zones as seen in the top illustration. This is looking at the local authority specific fuel poverty indicator for Na h-Eileanan Siar.



The bottom chart shows the difference when the installs are looked at on a national scale for Scotland. 100% of the installs are within the six most fuel poor ranks when compared to the national figures.



EES: ABS SAP Band Analysis I

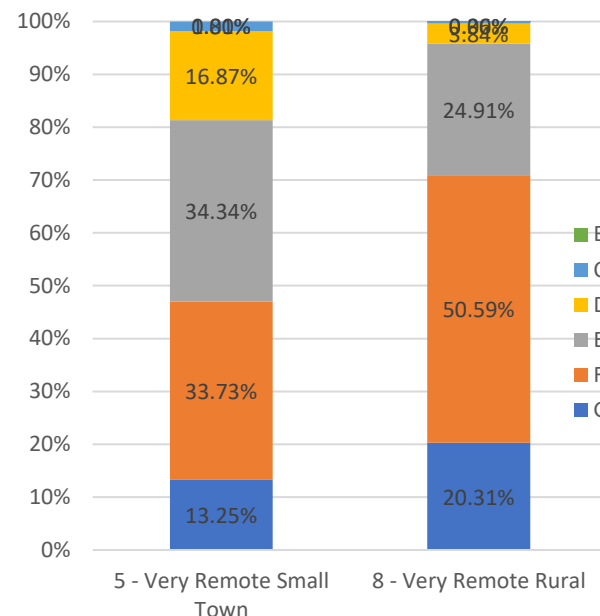


No post installation data was reported, so improvement analysis was not possible. The vast majority of properties (94.36%) treated in Na h-Eileanan Siar's programme are found within bands E, F or G. Only 106 properties started off the programme with an EPC banding of or above the national average of D. This is a considerably higher percentage of the lowest performing energy efficient properties than is found in the EES: ABS projects of other local authorities.

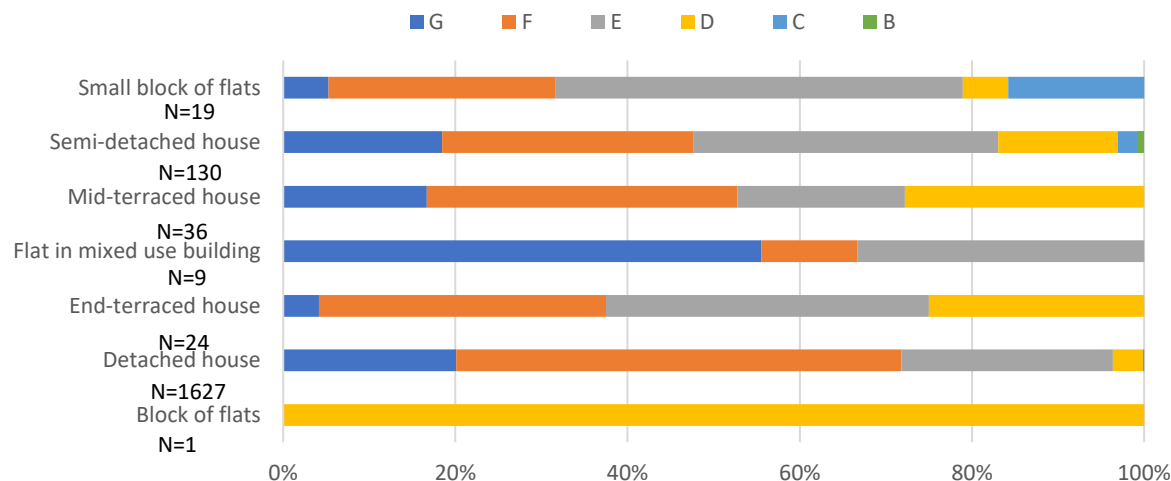
EES: ABS SAP Band Analysis II

There are small differences between the starting EPC bands of the Very Remote Small Towns and the Very Remote Rural Areas. Stornoway has less F and more D band treated properties. This again implies that the starting state of the Very Remote Rural properties is on average worse than those found within Stornoway.

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Pre installation SAP band by dwelling type



The (presumably) smaller flats also tend to have a higher starting SAP band than the more detached properties. However, as the counts of many property types are very low it is unlikely any correlations here are statistically significant.

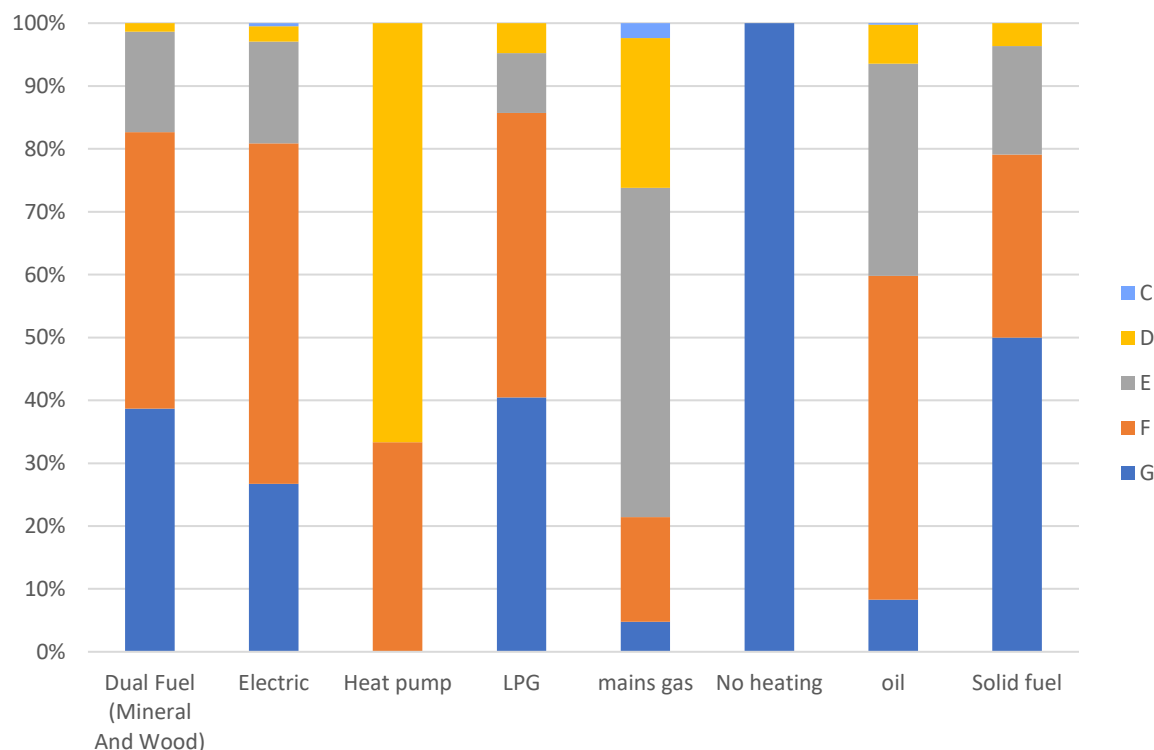
EES: ABS SAP Band Analysis III

Of the properties with no central heating, or with main fuel types of electricity, oil or solid fuel, over 95.12% had starting SAP bands of E, F or G. Dual fuel and LPG properties had 97.4% E, F or G. 73.8% of the mains gas were in those same below-average bandings of E, F or G. The one heat pump property was a band D.

However, this trend is

complicated further because many of the properties have more than one main fuel type listed and often a secondary fuel type too. Where this occurred, the main fuel type with the highest pence/kWh cost was chosen, as detailed on the EST website.

Pre installation SAP band by fuel type



Conclusions and notes

Overall, Na h-Eileanan Siar's EES: ABS programme achieves several aims:

- The installs are well dispersed between Stornoway, the Isle of Lewis and Harris and the other islands of Na h-Eileanan Siar.
- The typical property treated is solid walled and built shortly before or after WWII. Most of the installs were in the owner-occupied sector, but this is in line with the housing stock breakdown of the area.
- The majority of properties targeted started the programme with a below-average SAP banding of E, F or G. Na h-Eileanan Siar has improved many of the worst performing energy efficient properties in the EES: ABS programme, but post installation data was not available for further analysis.
- The properties with the lowest starting SAP bands tend to be detached homes outside of Stornoway, with high fuel cost heating systems such as oil or electricity.

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 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.

Contacts

Energy Saving Trust EES: ABS Contact:

Christiana Osuolale

Data Management Officer

est_eesabs.reporting@est.org.uk

Scottish Government EES: ABS Contact:

SGareabasedschemes@gov.scot

Jonathan Cairney

Delivery Manager

jonathan.cairney@gov.scot

Josh Kumar

Delivery Manager

Josh.Kumar@gov.scot

Tighean Innse Gall (TIG) EES: ABS Contact:

Katherine Macleod

Administrator – Insulation Section

kmacleod@tighean.co.uk

(TIG are Na h-Eileanan Siar's EES: ABS project managing agent)