

The Energy Efficiency Standard for Social Housing (ESSH)

**Scottish Government Guidance for
Social Landlords (Revised December 2017)**

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1 Purpose and Background

1.1 The Energy Efficiency Standard for Social Housing (ESSH) aims to encourage landlords to improve the energy efficiency of social housing in Scotland. This supports the Scottish Government's vision of warm, high quality, affordable, low carbon homes and a housing sector that helps to establish a successful low carbon economy across Scotland.

1.2 The ESSH will contribute to reducing greenhouse gas emissions by 42% by 2020, and 80% by 2050, in line with the requirements set out in the Climate Change (Scotland) Act 2009. In June 2017, the Cabinet Secretary for the Environment, Climate Change and Land Reform announced proposals to increase the 2050 target to achieve a 90% reduction in greenhouse gas emissions, with new interim targets of a 56% reduction by 2020, at least 66% by 2030 and at least 78% by 2040. A new Climate Change Bill will be introduced to Parliament in 2017/18.

1.3 The ESSH was introduced in March 2014 and set a first milestone for social landlords to meet for social rented homes by 31 December 2020. The ESSH is a crucial part of Scotland's Energy Efficiency Programme (SEEP), which is the cornerstone of delivering the Scottish Government's designation of energy efficiency as a National Infrastructure Priority and sets out a 15-20 year programme that will significantly improve the energy efficiency and greenhouse gas emissions of our homes and buildings.¹ The ESSH should also be considered within the wider context of our Energy Strategy, which looks at meeting the country's energy needs over the next 20-50 years.²

1.4 When ESSH was introduced, a review was proposed for 2017 to assess progress towards the 2020 target and to consider future milestones beyond 2020. To deliver this, the ESSH Review Group was set up in March 2017, including representatives from: Scottish Government; Local Authorities; Registered Social Landlords; Historic Environment Scotland; the Scottish Federation of Housing Associations; the Glasgow and West of Scotland Forum of Housing Associations; the Convention of Scottish Local Authorities; and the Scottish Housing Regulator.

1.5 The Review was to be delivered in two phases: phase 1 of the Review, which was completed in October 2017, assessed progress towards the 2020 target. One of the actions agreed by the Review Group was that the guidance for landlords should be consolidated and revised. Phase 2 of the Review is considering milestones beyond 2020 and is currently ongoing.

1.6 This guidance brings together and revises previous guidance issued by the Scottish Government.

¹ More information on SEEP is available at: <http://www.gov.scot/Topics/Business-Industry/Energy/SEEP>

² More information on the Energy Strategy is available at: <http://www.gov.scot/Topics/Business-Industry/Energy/energystrategy>

- Scottish Government: The Energy Efficiency Standard for Social Housing - Background and Guidance for Social Landlords (<http://www.gov.scot/Publications/2014/03/3154/4>)
- Scottish Government: Guidance for Social Landlords on Temporary Exemptions in Connection with The Energy Efficiency Standard for Social Housing (<http://www.gov.scot/Publications/2014/03/5101/0>)

The Scottish Housing Regulator has separately issued EESSH Technical Guidance for Landlords, and this is available on the Regulator's website.

1.7 The Review Group also proposed that an online forum should be established to keep the guidance under review. This would be useful to provide an online space for landlords to flag issues and share ideas regarding the guidance and EESSH more generally. Working papers from the Review Group will also be made available through this forum, along with any relevant analytical data to provide comparative data for landlords.

2 Developing the EESSH

2.1 A working group was set up in 2011 to develop the EESSH, including representatives from the Scottish Government, Local Authorities, Registered Social Landlords, the Energy Saving Trust, the Scottish Federation of Housing Associations, the Glasgow and West of Scotland Forum of Housing Associations, the Convention of Scottish Local Authorities and the Scottish Housing Regulator.

Building up from the case studies

2.2 Draft case studies were produced to profile the most common constructional types and age bands of the housing stock. The age bands represent typical levels of thermal performance for that period, where revisions to building regulations have increasingly improved these levels. The mix of bands also reflects the Scottish House Condition Survey (SHCS) categories of housing stock. It was recognised that the built form of the dwelling also has a bearing. For a house, this is likely to be a semi-detached, end-terrace or mid-terrace. Detached houses were not modelled as they represent less than 1% of the stock. For flats, modelling was undertaken on top, middle and ground floors. Modelling for the draft case studies was undertaken for both gas central heating and electric storage heating. Further dwellings, for example non-traditional building typologies which can often be harder (or at least more expensive) to treat were also modelled. The modelling work has also been peer reviewed by external technical experts.

2.3 These modelled case study examples inform the EESSH, and it was therefore important that the original work was peer reviewed and in effect 'validated'. Alongside a stakeholder consultation on the proposed standard, this peer review was undertaken to ensure that information could be provided on what stakeholders regarded as these 'Harder-to-Treat' dwelling types, and what actions could be undertaken to improve the energy efficiency of these dwellings.

Reasonable measures methodology

2.4 The working group developed the proposed EESSH ratings by applying a set of "reasonable measures" to representative stock types, assuming that the dwellings were already compliant with Scottish Housing Quality Standard (SHQS). These reasonable measures were chosen on the grounds that they offer reasonable improvements in energy efficiency relative to the cost of installing them. Most measures are also eligible for external funding.

3 The EESSH Ratings and Methodology

3.1 The EESSH aims to encourage landlords to improve the energy efficiency of social housing in Scotland. It sets a single minimum Energy Efficiency (EE) rating for landlords to achieve that varies dependent upon the dwelling type and the fuel type used to heat it. The ratings reflect that some dwelling types can be more or less challenging to improve than others.

3.2 The minimum EE ratings for the 2020 milestone are set out in Table 1. The target was defined by reference to minimum ratings in the UK Government’s Standard Assessment Procedure for Energy Rating of Dwellings (SAP 2009). The table also includes the equivalent ratings for SAP 2012. Note that the SAP ratings for gas are the same for both iterations of SAP. In terms of Energy Performance Certificates (EPCs), these ratings straddle Band D (55-68) and Band C(69-80).³

Table 1: EESSH minimum ratings for 2020 (by dwelling type)

EE Rating	SAP 2009		SAP 2012	
	Gas	Electric	Gas	Electric
Flats	69	65	69	63
Four-in-a-block	65	65	65	62
Houses (other than detached)	69	65	69	62
Detached	60	60	60	57

3.3 For dwellings that do not use gas or electricity for heating, the EESSH target is the same as the SHQS. SHQS element 35 sets an energy efficiency target for “other fuels” at *either* National Home Energy Rating (NHER) rating of 5 *or* SAP 2001 rating 60. The equivalent ratings for SAP 2009 and 2012 are shown in Table 2.

Table 2: EESSH minimum ratings for 2020 (other fuels, all dwellings)

Fuel	SAP 2001	SAP 2009	SAP 2012
Oil	60	54	47
Liquid Petroleum Gas	60	63	59
Solid Fuel	60	63	60
Biomass	60	64	65

³ SAP 2016 methodology is currently being developed. Upon completion, Scottish Government will consider commissioning analysis to enable the extension of the relevant Tables within this guidance to include SAP 2016.

3.4 Social landlords must ensure that they achieve the relevant minimum EE ratings by the first milestone of 31 December 2020 for all applicable social housing. The scope of ESSH is the same as SHQS: they both apply to self-contained homes, including a full range of facilities for the use of occupiers, provided for the purpose of social rents, and usually subject to tenancy agreements based on the model agreement for secure tenancies. (see SHQS guidance Annex L at: <http://www.gov.scot/Topics/Built-Environment/Housing/16342/shqs/guidance/annexl>).

4 The EESSH and the SHQS

4.1 The EESSH will replace element 35 of the SHQS. Landlords will not be required to demonstrate that they comply with SHQS element 35 from 1 January 2021.

4.2 From April 2015 all social housing should be compliant with the SHQS unless it is exempt. **Social housing should continue to meet the energy efficiency elements of the SHQS until December 2020.** The SHQS standard for energy efficiency is set by fuel type as follows:

Table 3: SHQS minimum energy efficiency ratings (current minimum standard)

Fuel	SAP 2009	SAP 2012
Gas	48	48
Electric	63	61
Other Fuels	see table 2 on page 4	

4.3 Note that the SHQS minimum standard for electrically heated detached houses is higher than the standard required by EESSH. This is because EESSH recognises the difficulties faced in making improvements to this type of property.

4.4 SHQS also requires landlords to ensure that properties have the following additional elements:

Table 4: Other SHQS energy efficiency elements

Element	Description
31	Cavity wall insulation – if there is an appropriate cavity (see table 5 below)
32	Loft insulation (270 mm) – if there is an appropriate loft space
33a	Hot water tank insulation (spray-on 25 mm or jacket 80 mm) unless inside an insulated loft space
33b	Any hot or cold pipes or cold water tank must be suitably insulated unless in an insulated loft space (NB although this is listed under energy efficiency the insulation of cold water installations is intended to protect against freezing conditions).
34a	Full central heating – i.e. a heating system covering at least 50% of the floor space of “habitable rooms” as defined in SAP (this excludes kitchens and bathrooms) and with a central point of control for all heaters in the system.
34b	Efficient central heating – a boiler with a seasonal efficiency of 55% or less (65% or less for oil heating) and some types of electric storage heating are classed as inefficient.

4.5 For more detail on the SHQS energy efficiency elements see Annex C of the SHQS guidance at <https://beta.gov.scot/publications/shqs-technical-guidance-for-social-landlords/>.

4.6 As the EESSH does not prescribe specific measures needed to meet overall minimum levels of energy efficiency, landlords will not be required to demonstrate that they comply with SHQS elements 31-34b from 1 January 2021. Generally, it can be assumed that homes which comply with the EESSH will meet most if not all of these individual elements. Some of these measures have been included in the list of reasonable measures for the EESSH.

4.7 The SHQS guidance includes advice on cavity wall insulation to help identify where a suitable cavity exists and should be insulated. This is summarised below:

Table 5: Cavity wall insulation in different types of wall construction

Wall construction and insulation	Description	Should the cavity be filled?
Standard construction with cavity	Standard post-1982 construction with two brick leaves and a cavity of at least 100 mm	Yes – subject to necessary consent
Standard construction with equivalent insulation	Cavity unfilled but there is equivalent insulation on inner or outer surface	It is not necessary to fill the cavity because the wall is already insulated
Standard construction with unsuitable cavity	Insulation is technically inappropriate because e.g. the cavity is too narrow, too high or filling it would cause penetrating damp	No – this can either be due to the design of the cavity or due to existing problems such as rubble or damage which should be addressed first
Timber kit construction.	The cavity is a ventilation cavity between the brickwork and the timber frame (post-1982 construction will be designed to be energy efficient)	No – the cavity needs to be preserved to prevent any moisture making its way from the brickwork to the timber frame and then spreading throughout the frame.
Pre-cast reinforced concrete	Precast reinforced concrete houses where cavities should be kept free of insulation in order to facilitate planned structural inspections.	No.

Wall construction and insulation	Description	Should the cavity be filled?
Double skin masonry, partially insulated cavity	Double skin masonry built with a partially insulated cavity, e.g. post-1982 construction with a 25 mm cavity and 25 mm insulation against the internal leaf.	No – the cavity already has a partial insulation and should not be completely filled
Double skin masonry, external cladding	Double skin masonry with external cladding.	No - drilling through the external cladding would breach the insulation and allow water penetration and may cause other problems such as "cold spots" on the wall.
Solid wall	Some pre 1919 traditional Scots sandstone construction has a 25 mm cavity	No – the cavity is too narrow for insulation and should be treated as solid wall.
One wall with 4" sandstone cover, 15 mm cavity and brick inner leaf	Treat as solid wall as in previous example. Cavity insulation is not required for this face of the building	Not in this face of the building, but the landlord should consider whether it is required elsewhere in the structure.

5 Using SAP and EPC Data

5.1 Under the Energy Performance of Buildings (Scotland) Regulations 2008, landlords are required to provide a copy of a valid EPC to any prospective tenant. An EPC is valid for a period of ten years from the date of issue. This means that EPC data will be available for an increasing proportion of social housing stock, but not for all stock and not necessarily in the most recent iteration of SAP. **Landlords are not required to obtain additional current EPCs for all their housing stock**, nor are they required to obtain a new EPC after completing energy efficiency improvements. However, they should be satisfied that they can calculate or estimate the current SAP rating for the property, and they may opt to obtain an EPC in order to demonstrate the current rating when a house is re-let.

5.2 Landlords should model the energy performance of all applicable housing in their stock. This should include the following sources of data:

- EPC data where this is available;
- SAP calculations made to evaluate energy efficiency improvements;
- Energy performance assessments carried out for other purposes;
- Data collected to demonstrate compliance with element 35 of SHQS; and
- Modelling based on similar properties in stock.

5.3 It is important for landlords to collect available data on the energy performance of their stock. This should include records of energy efficiency measures installed to allow the modelling of data for similar types of property. New EPC data and SAP calculations should be used on an ongoing basis to check and refine the quality of modelling. Whatever approach is taken, landlords will need to be assured that their information is fully robust, supports business and investment planning processes and enables accurate reporting to the Scottish Housing Regulator.

SAP and RdSAP

5.4 Reduced Data Standard Assessment Procedure (RdSAP) uses the same calculation methodology and algorithms as SAP to calculate energy performance. For new buildings SAP calculates individual U-values for heat loss through the different fabric components of the building. In existing buildings, it would be very difficult to identify all the layers of an existing wall construction to allow a U-value to be calculated without intrusive surveys. U-values measure how effective a material is as an insulator. The lower the U-value, the better the material is as a heat insulator.

5.5 RdSAP was developed as a way of completing the SAP calculation for existing dwellings. Rather than entering the specific dimensions of all of the fabric components, default U-values were adopted taking account of the known insulation levels, construction type of the component, and the age of the building. The overall difference in the SAP score produced by full SAP 2012 and RdSAP 2012 programs is usually small, but there is a difference, especially for more complicated buildings.

5.6 For a more detailed discussion of the technical differences between SAP and RdSAP see the summary of technical assumptions in the research on developing an energy efficiency standard for private sector housing at <http://www.gov.scot/Publications/2015/11/4536/7>. For the purposes of EESSH it will usually be sufficient to note that an EPC for an existing building will normally be based on RdSAP. While a model exact evaluation might make a small difference to the overall rating, the use of RdSAP is sufficient for the purposes of evaluating the overall energy efficiency of social housing stock.

Using different versions of SAP

5.7 Different versions of SAP may produce different results. The overall rating band for energy performance is the same for all versions of SAP (see Table 6).

Table 6: SAP ratings and EPC bands

SAP Rating	EPC Band	SAP Rating	EPC Band
92+	A	39-54	E
81-91	B	21-38	F
69-80	C	1-20	G
55-68	D		

5.8 The SAP guidance includes conversion tables from previous versions of SAP. A conversion table for SAP 2005 to SAP 2009 for different fuel types is at table 15 on page 205 of the BRE guidance at https://www.bre.co.uk/filelibrary/SAP/2009/SAP-2009_9-90.pdf, and a similar table for SAP 2009 to SAP 2012 is at table 15 on page 231 of the BRE guidance at https://www.bre.co.uk/filelibrary/SAP/2012/SAP-2012_9-92.pdf. These tables are given at ten point intervals but the scales are linear. However, the differences between ratings will also be affected by the differences in the range of data collected in different versions of SAP. The values for SAP 2012 given in Table 1 on page 4 above are based on recalculation of case studies used in the development of EESSH.

5.9 Landlords should make use of the best data available to them. Data from previous versions of SAP can be used to model compliance with EESSH. Landlords should, however, appreciate that later iterations of SAP are more accurate and should be given greater weight in their comparison of data. It is recognised that in specific circumstances (i.e. where identical characteristics apply across a number of houses), it would be appropriate for social landlords to advise SAP assessors of common technical data to assist in the production of accurate assessments.

Discrepancies in EPC data

5.10 Landlords in the Review Group identified examples of inconsistencies between SAP ratings carried out in different assessments. Landlords should be aware that it is possible for SAP calculations to include errors, and with accepted margins of error within the SAP rating, these can vary slightly between two EPCs of the same

property carried out by different assessors. Where a landlord has strong archetype data of their stock and may wish to clone SAP ratings, they can choose EPCs that provide most comfort but they must have robust reasons to justify their choices. It is also recognised that modelling software will provide an estimated SAP rating which at times may vary slightly from an actual SAP rating once an EPC has been completed. In circumstances where the actual SAP rating is lower than the modelled SAP rating, and this results in the property not meeting the EESSH (despite all the energy improvements being carried out as per the modelling), the landlord may regard the property as EESSH compliant. The landlord must be prepared to prove they have a robust modelling methodology when making such decisions.

5.11 Landlords should also bear in mind that all versions of SAP are models and may not correspond to the actual energy performance of individual buildings. For example, SAP methodology assumes that buildings are in good condition and will not reflect problems such as disrepair and dampness which makes homes harder to heat. In some cases, landlords will have independent data on the energy use of a house from smart technology. The energy efficiency improvements driven by the EESSH are intended to make it easier for tenants to heat their homes comfortably. While the Scottish Government considers that a specific target is a useful measure of performance across the housing sector and the SAP is currently the best tool for measuring that performance, landlords will have to take account of the real life impact of change. Good quality data will be helpful if landlords find that it is necessary to evidence difficult decisions on appropriate measures in individual cases.

Anticipating new technology

5.12 New technology is not always well-reflected in SAP assessments. Appendix Q of the SAP methodology includes a process for evaluating innovative technology. For more information see <http://www.ncm-pcdb.org.uk/sap/page.jsp?id=18>. This process takes time and requires evidence from product testing. The EESSH provides a measure for progress in the improvement of social housing stock but it is not intended to act as a barrier to investment in innovative technology. The Review Group considered the example of infra-red heating systems, which have a relatively low running cost and are suitable for traditional buildings, but which are classed for the purposes of SAP methodology as storage heaters. This methodology gives a much lower modelled energy efficiency than is actually experienced by tenants. If landlords are satisfied that an innovation provides tangible benefits for energy efficiency and is in the best interests of tenants, they can consider a measure which, on paper, does not meet the minimum standard. Landlords must be satisfied that they have robust evidence to support this decision. This should include:

- Evidence that the technology provides an improvement in the thermal efficiency of a building;
- A reasonable expectation that future improvements in the evaluation of energy efficiency will recognise the benefits of the technology;
- Engagement with tenants to show support for the technology; and
- Ongoing monitoring to demonstrate benefits.

5.13 In all cases, landlords should seek to act in the best interests of tenants in the selection of appropriate energy efficiency measures. The EESSH should not dictate against appropriate and sensible investment, and innovative and creative approaches are encouraged.

SAP and traditional buildings

5.14 SAP methodology treats traditionally constructed buildings in the same way as other buildings. Pre-1919 construction is recognised as an area where homes are particularly hard to treat. Energy efficiency improvements should take account of appropriate materials and the need for ventilation to allow buildings to breathe. The SAP methodology does not allow for building specific construction data to be factored into assessments. This means, for example, that lists of proposed measures generated with an EPC may not be appropriate for these buildings. For further discussion of traditional buildings see paragraph 7.4.

6 Reasonable Measures

6.1 The EESSH methodology assumes that most social housing can be brought up to the 2020 target by installing reasonable measures. Table 7 sets out a revised list of reasonable measures. It is based on data and comments provided by members of the Review Group, and also from the analysis of measures made in the research carried out in connection with the development of an energy efficiency standard for the private sector.⁴

6.2 The cost and benefit figures are indicative estimates, provided as a guide to help identify and compare potential measures for installation. Actual costs and benefits will vary. Landlords should also take account of the notes that follow the table, which identify additional factors that might affect the costs or benefits of individual measures.

6.3 Landlords are not required to install every item listed as a reasonable measure. Rather, landlords are expected to take them into consideration, and evaluate whether they are appropriate for their stock, as part of the process of identifying what measures should be used to meet EESSH.

6.4 In addition, to act as a safeguard, **the current environmental impact rating of any house should not decrease as new measures are installed.**

Table 7. List of reasonable measures

Measures	Indicative Cost	Est. SAP points	Note
Condensing boilers	£5,500	10+	A
Loft insulation top-up	£350	3-9	B
Double or secondary glazing	£3,500-6,000	3	C
Under-floor insulation	£1000	3	D
Heating controls	£300-£400	2-4	
Compact fluorescent lighting	£60	3	E
Storage heaters	£3,500	8	F
Solid wall insulation (external, post 1919 construction)	£7,500-£9,000	8-12	G

⁴ Developing regulation of energy efficiency of private sector housing: modelling improvements to the target stock - Main Research Report, table A8.6, <http://www.gov.scot/Publications/2015/11/4536/15>

Measures	Indicative Cost	Est. SAP points	Note
Water heat reclamation	£300	6	
Thermostatic radiator valves	£400	2	
Cavity wall insulation	£700	6	H
Hot water tank and pipe insulation	£50	1	H
Replace secondary heating	£500	5	
Room-in-the-roof insulation	£2000	10	
Overall benefit of switching from storage heaters to ...			
... electric wet	£6,000	23	
... gas	£6,500	24	
.... air source heat pump	£8,500	29	
... Quantum storage	£3,000	14	

Note A. This estimate is for a condensing boiler replacing an existing electric heating system. The cost will be lower (c. £2,500-£3,000) for replacing an older existing gas boiler, but the impact on SAP will be also lower (est. 4 points).

Note B. The impact of this measure will vary with the level of existing insulation. There are diminishing returns from increasing insulation thickness.

Note C. The cost of windows is significantly higher if there are restrictions on design, e.g. sash-and-case required in conservation areas.

Note D. Under-floor insulation is disruptive and may be impractical unless it can be combined with other work scheduled during voids. Insulation will require a minimum existing cavity depth. Additional work may also be needed to alter skirting boards, doors, electrical wiring and plumbing, and this will increase the cost of the measure significantly and may make it unreasonable.

Note E. The benefits are for moving from zero to 100% energy efficiency lighting. Landlords may also consider LED lighting, which may incur increased initial costs but can result in greater long-term efficiencies.

Note F. Cost will vary with the size and number of panels needed. Benefits are reduced (to around 4 points) if replacing older existing storage panels.

Note G. Solid wall insulation is an expensive measure and landlords should carefully consider whether it is cost effective in individual cases.

Note H. Cavity wall and water tank insulation are current SHQS measures, so are likely to be in place as standard.

7 Additional Measures

7.1 The EESSH does not prescribe which measures are to be installed so **social landlords are free to meet the EESSH minimum ratings as they see fit, using any available measures. It is for landlords to identify the most cost-effective measures, in their individual operating context, and use these to achieve the standard.**

7.2 It is anticipated that social landlords will generally look to install reasonable measures **first** before looking at other additional measures. This will follow on from an initial consideration of what Business as Usual (BaU) work (i.e. cyclical replacement of existing elements, for example boilers, windows and storage heaters) is planned to occur anyway. In most cases, the use of BaU and reasonable measures should achieve the relevant EESSH rating. Social landlords, subject to cost/benefit decisions, may also decide to install measures which achieve significantly higher ratings at the outset.

Additional measures

7.3 Additional measures are likely to be required for the minority of properties where social landlords cannot achieve the minimum EE rating using only reasonable measures. Landlords are encouraged to be creative and innovative in their approaches to improving energy efficiency and to assess all available options. A range of renewables solutions may be considered, such as Biomass, Solar Hot Water, PV, Air or Ground Source Heat Pumps, Micro Combined Heat and Power. Options such as district heating, heat recovery and flat-roof insulation may also be appropriate in specific circumstances. As noted previously, the decision on what measures are installed to ensure compliance with the standard lies with the individual social landlord.

Traditional housing

7.4 Older housing, especially housing built before 1919, may fall into the “hard to treat” category for energy efficiency improvements. Housing of this age may be in a poor state of repair, sometimes exacerbated by poor knowledge of appropriate repairs in older construction. Energy efficiency improvement can also be more problematic in properties in mixed tenure blocks, including those where sub-division has occurred. Historic Environment Scotland have carried out extensive research on this issue. It is accepted that thermal improvement is important and that all categories of building should be improved where possible, but there is often a condition deficit as well as a thermal one in traditional buildings, and improvements should be appropriate to the construction of the building.

7.5 In traditional buildings it may not be appropriate to select measures on the basis of minimising U-values and maximising air tightness. Technically appropriate measures mean that materials used are vapour and capillary open, allowing dispersal of water vapour in the fabric. In general existing building elements are improved with additional materials, as opposed to their removal and replacement. This fulfils the wider sustainability agenda as well reducing disruption, waste to landfill and to some extent costs. Historic Environment Scotland's research has shown successful projects on traditional buildings can include double glazing, floor insulation, warm and cold roof measures, internal wall insulation and ventilation improvements.⁵

⁵ <https://www.historicenvironment.scot/archives-and-research/publications/?q=Refurbishment>

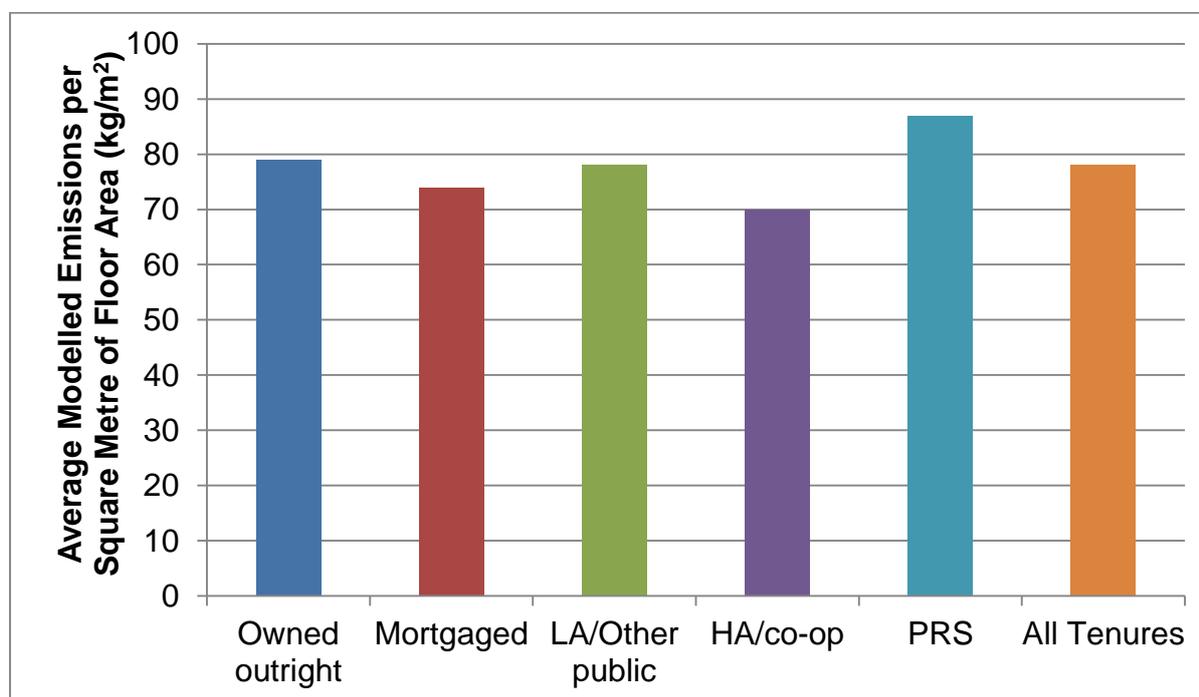
8 Costs and Benefits of the EESSH

Benefits of delivering the EESSH

8.1 For tenants, attainment of the EESSH will mean that in the main no social property will be lower than a C or D band energy efficiency rating. Tenants should benefit from a warmer home, which could mean lower fuel consumption, lower energy bills and fewer tenants in fuel poverty. Attaining the EESSH, in addition to regulations specifying minimum energy efficiency of new boilers, is projected to provide benefits to social tenants of around £127m each year in reduced fuel bills due to improved energy efficiency. This is equivalent to an average of around £210 per year per household.

8.2 For climate change carbon abatement, attainment of the EESSH is projected to reduce carbon output by 760kT per annum from the social rented sector – equivalent to the combined annual household emissions of Aberdeen and Dundee. The residential sector produced 12.7% of Scotland’s greenhouse gas emissions in 2015 (6.1 MtCO₂e).⁶ Chart 1 shows the modelled average contribution of emissions from housing in different tenures.⁷

Chart 1: Average Modelled Emissions per Square Metre of Floor Area by Tenure, 2015



⁶ Scottish Greenhouse Gas Emissions, 2015, table B1, <http://www.gov.scot/Publications/2017/06/9986/342095>.

⁷ Scottish House Condition Survey 2015: Key Findings, section 3.5.2, <https://beta.gov.scot/publications/scottish-house-condition-survey-2015-key-findings/pages/4/#f15>.

8.3 The estimates of the benefits of the EESSH were made during the development work for the Business Regulatory Impact Assessment and the EESSH case studies in 2014. We intend to carry out similar assessment as part of the development of the next EESSH milestone from 2020 onwards.

Estimated costs of compliance with the EESSH

8.4 The Scottish Government worked with case study landlords to produce estimates of EESSH compliance rates and associated additional costs. The EESSH modelling showed that compliance with the SHQS would mean that 64% of social housing would already meet the relevant EESSH rating at 1 April 2015. It was estimated that a further £310m would be needed to achieve 88% compliance using only reasonable measures (made up of £166m for local authority housing and £144m for RSLs), and that a total of £892m would be needed to achieve 99% compliance with the EESSH (made up of £478m for local authorities and £415m for RSLs).

Actual costs in first two years of the EESSH

8.5 Table 8 below collates data on investment from the performance returns made by social landlords to the Scottish Housing Regulator for the business years 2015/16 and 2016/17.⁸

Table 8: Investment in the first two years of EESSH

	2015/16		2016/17	
	Local authority	RSL	Local authority	RSL
Investment from subsidy	£6.15m	£11.61m	£11.12m	£4.86m
Investment from own resources	£64.37m	£28.05m	£49.29m	£30.41m
Investment from other sources	£0.95m	£0.72m	£1.17m	£3.05m
Total	£71.47m	£40.38m	£61.60m	£38.33m

8.6 Table 9 summarises the performance data. This shows encouraging progress towards the EESSH target for 2020, but with reliance on landlords' own resources to achieve it.

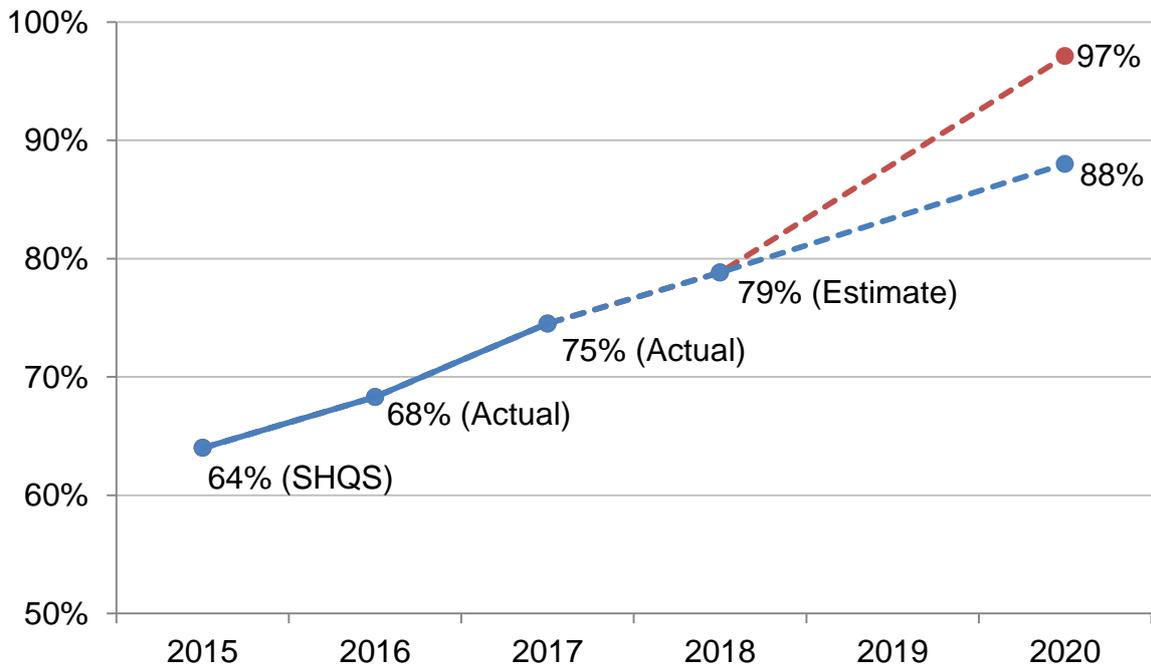
⁸ EESSH data - all social landlords complete datasets 2015/16 and 2016/17, <https://www.scottishhousingregulator.gov.uk/publications/eessh-data-all-social-landlords-complete-dataset-2015-16>, and <https://www.scottishhousingregulator.gov.uk/publications/eessh-data-all-social-landlords-complete-dataset-2016-17>.

Table 9: EESSH performance 2015/16 and 16/17

	2015/16	2016/17
Social housing in scope of EESSH	593,936	592,007
Social housing meeting EESSH	407,698	441,252
EESSH compliance	68.6%	74.5%
Total investment in year	£112m	£100m
Investment from landlords' own resources	82.6%	79.8%
Number of homes improved in year	18,666	25,777
Average investment per home improved	£5,992	£3,876
Total anticipated exemptions to EESSH	9,428	17,213

8.7 Chart 2 illustrates progress towards the 2020 target, including landlords' estimates of the houses that will be brought up to EESSH during 2017/18. The red line shows the step-change needed to meet 97% compliance (based on landlords' anticipated exemptions).

Chart 2: Progress towards the 2020 milestone



9 Funding the EESSH

9.1 Data on investment to date indicates that most of the funding for meeting the EESSH has come from landlords own resources. The Review Group highlighted a number of practical difficulties faced by landlords in obtaining funding for energy efficiency works, including:

- The resource implications attached to applying for, and complying with, the Energy Company Obligation (ECO) are not always justified in terms of returns. By comparison, the capital acceleration programme is more effective.
- In some remote areas there is a shortage of local contractors which limits competition.
- There is a need for longer term planning on funding programmes, including HEEPS. Assurance of longer term funding would aid financial planning for both social landlords and contractors, and crucially would also encourage investment in building skills in local areas.

9.2 The Review Group also highlighted examples of successful good practice including:

- Using a local contractor who takes on responsibility for ECO application thus reducing the burden on the social landlord, and similarly for the Renewable Heat Incentive (RHI) and feed-in tariffs. However, landlords may have to include the cost of this work in the tender.
- By using Home Energy Efficiency Programme for Scotland (HEEPS) loans including Area Based Schemes (ABS) funding, landlords could capitalise on ECO.
- In order to take advantage of ECO it is essential to be able to identify housing stock which matches the eligibility criteria.
- By working together, social landlords can capitalise on available funding. There is evidence of frameworks already in place where housing associations are using a collaborative approach. Good working relationships between RSLs and local authorities are also evident.

9.3 A variety of funding sources are available. One of the concerns is that funding sources are changing and some options, such as the Scottish Government successor to ECO are still in development. Current funding sources (correct at December 2017) include:

- **Climate Challenge Fund (CCF)** Delivered by Keep Scotland Beautiful on behalf of the Scottish Government. CCF provides support to communities to take local action on the impacts of climate change.

- **Energy Company Obligation (ECO)** UK Government scheme placing an obligation on energy suppliers to meet carbon and fuel bill reduction targets. Funding available via energy companies for energy efficiency measures, subject to certain criteria.
- **Help to Heat** Subsidises gas connections for households that meet certain criteria relating to fuel poverty risk. This can include connections carried by independent gas transporters.
- **Feed-in Tariffs** Delivered by energy providers. Whoever owns the renewable system will be paid for any electricity generated and surplus electricity exported to the national grid.
- **Renewable Heat Incentive (RHI)** Similar to the feed in tariffs however there are some important differences due to the fact there is no 'National Grid for Heat' and so importing and exporting heat is not relevant.
- **Home Energy Efficiency Programmes for Scotland: Area Based Schemes (HEEPS:ABS)** Delivered by the Scottish Government via local authorities. Provides funding to private sector households for installation of energy efficiency measures. Can be accessed by social landlords to help owners/private landlords in mixed tenure schemes.
- **HEEPS: Loans (Registered Social Landlords Scheme)** Delivered by the Energy Savings Trust. Provides interest-free, unsecured loans from £100,000 to £1m repayable over up to 10 years, to assist RSLs improve the energy efficiency of their stock or reach the EESSH target. 2017-18 scheme now closed for applications.
- **Community and Renewable Energy Scheme** Delivered by Local Energy Scotland. Provides loan finance of up to £150k to not-for-profit community based organisations to cover pre-planning costs for any renewable project.
- **District Heating Loan Fund** Delivered by the Energy Savings Trust. Provides loans up to £400,000 on a commercial basis to support district heating networks.
- **Renewable Energy Investment Fund** Delivered by Scottish Enterprise – Scottish Investment Bank. Key areas for support are: marine, district heating and community energy.
- **Scottish Partnership for Regeneration in Urban Centres (SPRUCE)** The Scottish Government established SPRUCE using European Regional Development Funds in conjunction with the JESSICA (Joint European Support for Sustainable Investment in City Areas) programme. The fund manager is Amber Infrastructure. Social housing providers are invited to develop renewable energy projects and energy efficiency schemes as part of the retrofit of their existing housing stock.

9.4 Further information on available funding, including criteria and timescales, will be made available through the online forum (see para 13.2)

10 Exemptions

10.1 The Scottish Government's starting principle is that all social rented properties in Scotland would benefit from being fully EESSH compliant by 31 December 2020. Furthermore, social landlords and tenants are part of the process that allows the investment to be carried out, and are expected to make every reasonable effort to allow the necessary work to take place. This is essential to ensure that the shared longstanding commitments to tackling fuel poverty and mitigating climate change emissions are achieved.

10.2 In what should be a small proportion of cases, landlords are able to use temporary exemptions from meeting the EESSH minimum ratings. **It is for landlords to decide whether or not any property in their stock should be temporarily exempt.** However, they must be able to show evidence to support exemptions to their tenants and to the Scottish Housing Regulator. **Any property which has an exemption in place should not be treated as failing.**

10.3 Where landlords decide that an exemption is required, **they should still aim to install measures which improve energy efficiency for tenants to the best possible energy efficiency rating in the circumstances** (unless the property is due for demolition) even if these measures will not result in the property achieving the EESSH minimum rating.

10.4 The Scottish Government recognises the following circumstances in which an exemption may be appropriate:

A. Technical

Some properties may have specific construction or design features for which existing energy efficiency measures are unsuitable and this may therefore prevent achievement of the EESSH within the target date. The incidence of this exemption is expected to be very rare as the EESSH provides flexibility for landlords on measures.

B. Social

In circumstances where tenants or owner occupiers refuse to participate in the installation of energy efficiency measures necessary to achieve the EESSH by the target date, then an exemption may be appropriate. This situation can also arise in mixed tenure property if owners are unwilling or unable to contribute to the cost of common works. In such instances the landlord must have made every reasonable effort to inform and explain to the tenant or owner occupier why the work is necessary, when it is being done, and why their participation and co-operation is so important. In such cases landlords should review the exemption when the property becomes vacant or owners move. Landlords should liaise with their local authority if support is needed to allow owner occupiers to participate in common works, to establish if the local authority is willing to provide grant funding, or pay missing shares.

C. Excessive Cost

Where it is only possible to achieve the EESSH by installing measures where the cost far exceeds any possible benefit to tenants, then an exemption may be reasonable. Landlords may decide to set an absolute cost in the context of asset management strategies or affordability to tenants across all stock, and are free to consider and apply different approaches to assessing excessive cost, including:

- Timescale to realise benefits – an alternative approach is to evaluate costs against the long-term benefits to tenants. For example, a landlord may consider that the total projected savings in fuel costs should exceed the cost of the measure within a defined period (e.g. 7 years). The period used for this evaluation might be linked to the repayment for loan finance to support the measure. Landlords should take consideration of the forthcoming standard beyond 2020 in this assessment.
- Relative cost – another approach is for the landlord to evaluate the cost of the measure against similar investment in other property. A significantly larger investment to achieve a broadly similar result in a comparable property might in some cases be considered excessive.
- Combined costs – landlords may also factor in the potential cost savings of combining several measures or with other works such as repairs or upgrades. Costs may be considered excessive if the same result can be achieved more cheaply if postponed to a later planned programme of works.
- Demolition or disposal – there may also be cases where the costs of works exceeds the cost of demolishing or disposing of the property.

D. New Technology

As noted in para 5.12, landlords may want to invest in new technology that delivers improvements in energy efficiency considered to be at least equivalent to the benefits of meeting EESSH by established measures, even if the measures are not fully recognised in the SAP methodology. The evidence needed to support this is noted in para 5.12. Landlords should encourage suppliers to use the Annex Q route to ensure that the impact of new technology can be evaluated. An exemption may however be appropriate if there are reasonable grounds to consider that improvements in the evaluation of energy efficiency of buildings will recognise the impact of measures that have been installed.

E. Legal

There may be legal problems to overcome when embarking on a programme of energy efficiency works. If the necessary work required to achieve the EESSH cannot be carried out legally, then there may be grounds for an exemption. An example of legal issues would be where properties are listed buildings or located in historically significant areas which place restrictions on the installation of specific energy efficiency measures, for example solar PV.

F. Disposal

In the circumstances that a social landlord plans to dispose of a property, either through demolition or sale on the open market, and this has been formally agreed through the landlord's relevant governance arrangements, then the property will be exempt from the requirement to achieve the EESSH. If for any reason the landlord does not dispose of the property then it will be required to meet the EESSH.

G. Long Term Voids

If landlords are aware of any properties which will be void for a long period of time, and energy efficiency investment would not be appropriate, then the property should be considered exempt from the requirement to achieve the EESSH.

H. Unable to Secure Funding

If social landlords can show that funding for a necessary EESSH measure is not available, despite having made all reasonable efforts, and after consideration of the available funding sources, then the affected home would have a temporary exemption from meeting the standard (until such time as external funding was available).

Monitoring exemptions

10.5 Exemptions must be kept continually under review, since changes in technology, funding streams and legal parameters will allow dwellings which were previously exempt to become compliant.

10.6 Landlords should always consider alternative (and creative) ways to achieve the EESSH even if a temporary exemption appears to be the most obvious option. In the area of home energy efficiency, the technical and policy landscape is changing rapidly. Technologies can and will advance and new financial programmes, whether from government, energy providers or other sources, may come on stream and reduce the costs to the landlord of energy efficiency work which was previously considered disproportionate. Building and other regulations can and do change over time. Tenants and owners also change and this may present new opportunities.

10.7 The temporary exemption process does not in any way absolve landlords from their responsibilities to their tenants regarding the EESSH. If a robust EESSH recording system is in place, it should be a straightforward process for landlords to inform individual tenants by 31 December 2020 that their property is likely to be: a) passing EESSH; b) failing EESSH (in which case remedial action would be expected); or c) temporarily exempt from meeting the EESSH (but may be required to pass EESSH in the future subject to changes in the underlying circumstances that have led to the use of the temporary exemption).

11 Risk Management

11.1 There are a range of important factors which affect the costs attributable to EESSH, as well as the approach that landlords should take when determining their strategy for compliance with EESSH. Social landlords will want to carefully consider these when updating their business plans, determining their own estimations of cost and planning their EESSH investment strategy.

Strategic asset management and financial planning

11.2 The rationale for setting EESSH in terms of an Energy Efficiency rating, rather than specifying specific measures which must be installed, is to provide landlords with the maximum flexibility to determine for themselves the most appropriate way to work towards compliance with the standard. In this way landlords will be able to take account of their individual circumstances when constructing business and financial plans for delivery of the standard.

11.3 A landlord's strategic asset management plan will also reflect the individual priorities of the landlord in terms of decisions on investment and wider stock management. This will mean that a social landlord's strategic approach to achieving EESSH will need to consider the long-term future of any stock which is not considered to be contributing toward its strategic direction. This may mean that, for some social landlords, timing of investment will be an important consideration and options appraisals and cost/benefit decisions are likely to be made before investment to achieve EESSH is agreed.

Business as Usual (BaU)

11.4 When undertaking a costing for the EESSH, it is important to identify those costs which are **additional** to those which would have arisen in the business as usual (BaU) case. The BaU case as applied to energy efficiency in social housing would involve: a) complying with the energy-efficiency elements of the SHQS; b) complying with any other relevant regulations applicable to energy efficiency; and c) routine cyclical replacement of elements.

11.5 With respect to b), the regulation of the energy efficiency of boilers is of particular importance in the context of EESSH. Even in the absence of EESSH, boilers would need to be replaced as they come to the end of their working life, and the replacement boiler would have to comply with relevant regulations. For example, since 2010, new gas boilers have had to meet the same level of energy efficiency that has been modelled when setting EESSH ratings. If a boiler life of 10-15 years is assumed, then over the decade to 2020 (the date of attaining EESSH), two-thirds to 100% of relevant boiler upgrades would have to be undertaken even in the absence of the EESSH, and some boilers compliant with the 2010 standards are likely to have been installed in the stock even before 2010. Thus by 2020 almost all boilers would either have been upgraded to the relevant standard or be within a few years of being upgraded.

11.6 As with all its regulatory functions the Scottish Housing Regulator will take a proportionate approach to monitoring EESSH, and expects that social landlords have a robust approach to asset management planning. Where these plans show a commitment to replacing the boilers shortly after the 2020 target date as part of a life-cycle approach to asset management, social landlords will not be forced to incur new costs by unnecessarily accelerating carefully planned investment cycles. Similarly, the cyclical replacement of windows would also have occurred without the introduction of EESSH. It should be borne in mind that replacement windows account for a significant share of the total estimated cost of EESSH compliance. Where landlords have robust replacement programmes, it is also anticipated that landlords would not be expected to incur new costs by unnecessarily accelerating these programmes if the replacement date is shortly after the 2020 target date. If social landlords decide to make use of these provisions they need to ensure they keep good records of the reasons behind the decision and be prepared to explain, if required by the Regulator, why a property or group of properties cannot be brought up to the EESSH by 31 December 2020.

12 Regulation

12.1 The Scottish Social Housing Charter, issued under section 31 of the Housing (Scotland) Act 2010, sets the standards and outcomes that all social landlords should aim to achieve when performing their housing activities. A revised Charter was approved by the Scottish Parliament and came into effect from 1 April 2017.⁹

12.2 Charter Outcome 4 (Quality of Housing) states:

Social landlords manage their businesses so that tenants' homes, as a minimum, meet the Scottish Housing Quality Standard (SHQS) when they are allocated; are always clean, tidy and in a good state of repair; **and also meet the Energy Efficiency Standard for Social Housing (EESH) by 31 December 2020.**

12.3 The Scottish Housing Regulator is responsible for monitoring landlord's performance against outcomes in the Charter, including compliance with the EESH. Social landlords are required to collect robust data on their progress in delivering the EESH and to provide the Regulator with proportionate annual information on compliance.

12.4 The Regulator will seek data from landlords in the Annual Return on the Charter. This will require landlords to provide the information summarised in Table 10. The Regulator published revised technical guidance in December 2017 to assist landlords in completing their return on their progress towards meeting the EESH, and this is available on their website.

Table 10: Charter indicators for EESH compliance

Charter Indicator	Description
C33. Percentage of properties meeting the EESH	How many applicable properties, by dwelling and fuel type, are in scope, and how many of these meet the EESH?
C34. Working towards the EESH	How many properties, by dwelling and fuel type, which the landlord estimated would be brought up to the EESH during the reporting year, how many were actually brought up to the EESH in the reporting year, and how many the landlord estimates will be brought up to the EESH in the next reporting year?
C35. Anticipated exemptions from the EESH	How many properties, by dwelling and fuel type, will require an exemption at the first EESH milestone in December 2020, and the reasons for the exemption?

⁹ <https://beta.gov.scot/publications/scottish-social-housing-charter-april-2017/>

Charter Indicator	Description
C36. Energy Performance Certificates (EPCs)	How many properties have a valid EPC, how many of these were lodged during the reporting year, and what version of SAP was used?
C37. Investment in the EESSH	How many properties were brought up to EESSH in the reporting year and how much was invested, by source

12.6 To assist landlords in deciding who to approach if the need arises, the respective roles of Scottish Government and the Scottish Housing Regulator regarding the EESSH are set out below.

The Scottish Government's role is to:

- A.** Make a clear national policy framework for improving energy efficiency in social housing in Scotland.
- B.** Specify in guidance the minimum standard to be met, the timescale for achievement, the scope of the properties that are expected to meet the minimum standard, and the relevance of all aspects of that standard to social housing.
- C.** Subject to resources, answer any novel or contentious technical queries the public may have regarding the EESSH that guidance cannot answer.

The Scottish Housing Regulator's role is to:

- A.** Take account of Scottish Government guidance in its approach to regulating the EESSH.
- B.** Monitor and regularly report progress on EESSH compliance and non-compliance.
- C.** Seek further information and explanation on aspects of reported compliance, including on exemptions, if necessary.
- D.** Ensure that results of EESSH monitoring are taken into account in its regulatory assessment of landlords.
- E.** Ensure that the provision of EESSH data used for monitoring follows the published process and that landlords are aware that they must satisfy themselves that the data provided is correct.
- F.** As individual issues arise, consult with Scottish Government policy colleagues regarding aspects of the EESSH policy that are novel or contentious.

13 Further Advice for Landlords and Tenants

13.1 This guidance is correct at date of publication but landlords should note that it may be superseded by future changes. It is intended to be a “living” document, subject to amendment and iteration, with the next opportunity for review scheduled for December 2018.

13.2 The EESSH Review Group identified the need for an ongoing forum for landlords to share best practice and for update to key elements of this guidance – for example, to keep up-to-date with changes in sources of funding for improvements. The Scottish Government is currently developing proposals for an online forum for landlords to meet this need.

13.2 The Scottish Government produced a tenant’s guide to the EESSH in 2013. This guide is available online at <https://beta.gov.scot/publications/energy-efficiency-standard-social-housing-eessh-tenants-guide/>.

13.3 The Scottish Government provides energy efficiency advice to support landlords, tenants and owner occupiers. This is delivered by Home Energy Scotland (HES) advice centres and managed by the Energy Saving Trust (EST).¹⁰

**Scottish Government
December 2017**

¹⁰ More information on Home Energy Scotland is available at:
<http://www.energysavingtrust.org.uk/scotland/home-energy-scotland>



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