Developing an Energy Efficiency Standard for Social Housing

A Consultation

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SCOTTISH GOVERNMENT

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A Consultation

The Scottish Government, Edinburgh 2012

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Ministerial Foreword

This document sets out the Scottish Government's proposals for a new energy efficiency standard for social housing (EESSH). The standard aims to improve the energy efficiency of social housing and thereby help to reduce energy consumption, fuel poverty and the emission of greenhouse gases. Social landlords clearly recognise the need to invest in the quality of their housing stock and have made great strides toward achieving the Scottish Housing Quality Standard (SHQS). The draft standard set out in this consultation paper is about building on the work done to date and further improving the energy efficiency in Scotland's social housing stock.

This standard is part of our wider Sustainable Housing Strategy (SHS) which aims to provide for warm, high quality, low carbon homes and contribute to the establishment of a successful, low carbon economy. The SHS will also consider the possibility of introducing regulation of private sector housing to support these aims.

The intention is to set a rating that is challenging for landlords, but achievable in the proposed timescales. We have stressed from the beginning that the financial sustainability of landlords will be a key consideration and we believe that the proposed ratings are achievable without significant additional investment beyond that planned for meeting the SHQS.

Meeting the energy efficiency standard will mean that tenants will live in warmer homes with the potential to manage their energy consumption more efficiently, giving them the scope to reduce their fuel bills. It will also make a significant contribution towards meeting our climate change and energy efficiency targets.

We are offering these suggestions to encourage social landlords and others to discuss their own ideas for the proposed energy efficiency standard. We hope that landlords, individual tenants, tenant groups and other stakeholders will take this opportunity to feed their ideas about what social landlords should be achieving for energy efficiency for their customers. We will take account of these views in preparing a finalised standard.

KEITH BROWN MSP
Minister for Housing & Transport

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1. Introduction

This chapter looks at:

- ***How the proposed Energy Efficiency Standard fits with wider Scottish Government housing policy***
- ***What the Energy Efficiency Standard is***
- ***What is in the consultation document***

'Homes Fit for the 21st Century' and the Sustainable Housing Strategy

1.1 'Homes Fit for the 21st Century'[1] was published in February 2011. It sets out the Scottish Government's vision for housing for the coming decade, drawing on the housing consultation which took place in 2010. The paper included a commitment to develop a Sustainable Housing Strategy (SHS) to bring together our policies on climate change, housing quality, energy efficiency, fuel poverty, planning and the built environment. The Sustainable Housing Strategy Group, chaired by the Cabinet Secretary for Infrastructure and Capital Investment and including representatives from leading organisations in the housing, fuel poverty, environmental and consumer protection interests[2], is advising the Scottish Government on the development of that strategy.

1.2 The Sustainable Housing Strategy will set out our vision for warm, high quality, affordable, low carbon homes and a housing sector that helps to establish a successful low carbon economy across Scotland. Our route-map to 2030 sets out the key steps we need to take. The strategy's objectives are to:

- deliver a step-change in provision of energy efficient homes to 2030 through retrofit and new build, as promised in the Infrastructure Investment Plan;
- ensure that no-one in Scotland has to live in fuel poverty, as far as practicable, by 2016;
- make a full contribution to the Climate Change Act targets, as set out in the Report on Proposals and Policies; and
- enable the refurbishment and house-building sectors to contribute to and benefit from Scotland's low carbon economy and to drive Scotland's future economic prosperity.

For more information on the Sustainable Housing Strategy, please see the separate consultation document http://www.scotland.gov.uk/Topics/Built-Environment/Housing/sustainable.

[1] Homes Fit for the 21st Century: The Scottish Government's Strategy and Action Plan for Housing in the Next Decade: 2011-2020, February 2011, http://www.scotland.gov.uk/Publications/2011/02/03132933/0 .

[2] Further details on the SHSG, including the remit and membership, can be found on the Scottish Government website at: http://www.scotland.gov.uk/Topics/Built-Environment/Housing/sustainable/Strategygroup

Summary of the Energy Efficiency Standard for Social Housing

1.3 'Homes Fit for the 21st Century' also included a commitment to introduce a new standard for energy efficiency in social housing. Further details on the proposed standard are set out in Chapter 5, but in summary the EESSH will be a variable EPC rating depending on the type of house and the fuel source, for example a mid-floor flat with gas central heating will be expected to reach a higher rating than an end-terrace house with electric storage heaters. The intention is to set a rating that is challenging for landlords, but achievable in the proposed timescales. We have stressed from the beginning that the financial sustainability of landlords will be a key consideration[3] and we believe that the proposed ratings are achievable without significant additional investment beyond the SHQS.

Proposed energy efficiency standard. Based on modelling work and through consultation with our working groups the proposed energy efficiency standard for social rented housing is to establish a minimum EPC Rating (***which we propose should be the Environmental Impact score***) which every social rented dwelling will be required to meet by 2020. The standard will be different for different dwelling types. This would enable the Scottish Government to measure reductions in emissions from the 1990 baseline.

1.4 A baseline energy rating, based on the building type and space heating fuel, has been derived for all building types listed on page 20, assessed using the reduced data Standard Assessment Procedure (RdSAP) 2005 v9.83, although the final standard will relate to the most up-to-date version of the software available at that time. The baseline energy rating has been developed by modelling standard assumptions for each dwelling type in 1990, or later if appropriate.

1.5 Example measures are applied to each example dwelling to improve the energy performance, to achieve both the Scottish Housing Quality Standard and to set a target rating for the Energy Efficiency Standard (see paragraphs 5.17-5.22 for further information). If appropriate, advanced measures have also been modelled to signpost further improvements that can be made. The measures identified represent some commonly applicable, cost effective solutions; however landlords can achieve the Energy Efficiency Standard target rating using any measures that they consider appropriate.

1.6 For dwellings where no baseline has been modelled, such as 'hard to treat' properties or for dwellings where the actual baseline varies significantly to the assumption, it is suggested that landlords will derive the baseline using the appropriate standard assumptions identified and set the target Energy Efficiency rating by applying a percentage improvement to the baseline model.

1.7 In proposing a new energy efficiency standard for social housing, this consultation document looks at:

[3] Homes Fit for the 21st Century, page 49, para. 171

- The background to energy efficiency and social rented housing
- The work done to date to improve energy efficiency in the social housing sector;
- Why the Scottish Government thinks a new energy efficiency standard is necessary
- The options considered for an energy efficiency standard for social housing;
- The financial implications of introducing a new standard;
- How progress towards any new standard would be measured and monitored; and
- The timetable for implementation.

We would welcome views on all of the above. The consultation closes on Friday, 28 September and details for submitting responses are in Chapter 10. Please note that responses to this consultation should be submitted separately to any responses to the Sustainable Housing Strategy consultation.

1.8 There are also a range of supporting documents, in particular the various impact assessments, which we would encourage people to read and consider, including:

- Equalities Impact Assessment
- Business and Regulatory Impact Assessment
- Strategic Environmental Assessment

All these documents, as well as other relevant information, are available on the consultation web pages at: http://www.scotland.gov.uk/Topics/Built-Environment/Housing/sustainable/standard.

1.9 The Scottish Government will be attending seminars and workshops on the Sustainable Housing Strategy and the proposed energy efficiency standard during the consultation period. Details of these events are available on the Scottish Government website at: http://www.scotland.gov.uk/Topics/Built-Environment/Housing/sustainable.

1.10 As part of your response to this consultation, we would also welcome experiences of how landlords have improved the energy efficiency of their houses, particularly any inexpensive innovative solutions and measures that have gone beyond the SHQS or indeed any solutions that would meet the proposed energy efficiency standard as set out in this document.

2. Glossary

List of acronyms

ALACHO	Association of Local Authority Chief Housing Officers
APSR	Annual Performance and Statistical Return
ARC	Annual Return on the Charter
CERT	Carbon Emissions Reduction Target
CESP	Community Energy Saving Programme
CO_2	Carbon dioxide
COSLA	Convention of Scottish Local Authorities
ECO	Energy Company Obligation
ESSACs	Energy Saving Scotland Advice Centres
EIB	European Investment Bank
EPC	Energy Performance Certificate
EST	Energy Savings Trust
GHG	Greenhouse gases
GWSF	Glasgow and West of Scotland Forum of Housing Associations
JESSICA	Joint European Support for Sustainable Investment in City Areas
LHS	Local Housing Strategies
LSVTs	Large scale Voluntary Transfers
$MtCO_2$	1 million tonnes of CO_2
NAEI	National Atmospheric Emissions Inventory
SFHA	Scottish Federation of Housing Associations
SHCS	Scottish House Condition Survey
SHQS	Scottish Housing Quality Standard
SHR	Scottish Housing Regulator

Glossary

Asset management	Refers to the monitoring and maintenance of a landlord's housing stock
Energy Efficiency (EE) rating	The EE rating is based on the energy costs associated with the energy delivered to the dwelling to provide heating, ventilation and lighting (sometimes referred to as the SAP rating).
Environmental Impact (EI) rating	The Environmental Impact (CO_2) Rating relates to the dwellings annual CO_2 emissions.
Mixed tenure	A reference to blocks of flats with a mix of owner-occupied, social rented and private rented properties
NHER	National Home Energy Rating - a rating scale for measuring the energy efficiency of housing
RdSAP	Reduced data Standard Assessment Procedure. This is used in EPC calculations typically for existing dwellings, as full SAP data is not available.
SAP	Standard Assessment Procedure – a rating scale for measuring the energy efficiency of housing, used in EPCs

3. Background

This chapter looks at:

- ***A brief summary of changes in social rented housing in the last 20 years***
- ***Progress towards the Scottish Housing Quality Standard***
- ***Other factors affecting the energy efficiency of housing***

Scottish social rented housing: changes since 1990

3.1 The term "social rented sector" is used to describe housing provided by local authorities and registered social landlords (RSLs) that are registered with the Scottish Housing Regulator. In 1991, when the first Scottish House Condition Survey (SHCS) took place, there were 854,000 social rented homes in Scotland, which accounted for 42% of the whole housing stock. Currently there are 596,000 homes in the social rented sector, just under a quarter of Scotland's housing stock[4].

3.2 In 1991, 86% of the social housing stock was owned by local authorities and only 14% by RSLs. In 2011, local authority stock accounted for 54% of the total and 46% was owned by RSLs. Stock transfer (such as the Community Ownership Programme) where a local authority transfers either all or part of its housing stock to a RSL and the housing association new build programme are the main reasons for this shift. Six local authorities (Argyll & Bute, Scottish Borders, Glasgow, Dumfries & Galloway, Inverclyde and Comhairle nan Eilean Siar) have transferred their housing stock to RSLs via Large Scale Voluntary Transfers (LSVTs) and therefore do not own any homes themselves. The remaining 26 local authorities own nearly 320,000 homes and around 170 Registered Social Landlords own nearly 275,000 homes (as at 31 March 2011).[5]

Social rented stock profile – 1991 to 2010

	1991	**2010**	
Type of dwelling	**Proportion of stock**		**Change**
detached	0.7	0.5	0
other houses	45	42	-3
tenement	33	35	2
4-in-a-block	14	15	1
tower/slab	7	7	0
flat from converted house	0.3	0.7	0
Total	100	100	0
Source: Scottish House Condition Survey[6]			

3.3 As the table above shows, the different types of dwelling within the social rented housing sector has not changed very much over this period. In both 1991 and 2010, semi-detached and terraced housing account for the largest proportion of

[4] http://www.scotland.gov.uk/Topics/Statistics/Browse/Housing-Regeneration/HSfS
[5] *ibid.*
[6] http://www.scotland.gov.uk/Topics/Statistics/SHCS

the stock, followed by tenements, then '4-in-a blocks'. The number of dwellings in tower/slab blocks has remained constant at less than 10% of the stock.

3.4 One key change has been the increase in the number of timber-framed dwellings. In 1991 cavity wall construction (excluding timber frame) accounted for 83% of the social housing stock, but this had fallen to 75% by 2009. In contrast, timber frame construction accounted for 9% in 2009, compared to just 1% in 1991.

Progress towards the Scottish Housing Quality Standard

3.5 Social landlords are working towards meeting the Scottish Housing Quality Standard (SHQS) by the end of March 2015. The SHQS has 5 elements that social rented landlords need to meet, one of which is being energy efficient, which means that properties should have:

- 100mm of roof insulation (minimum);
- Cavity wall or equivalent insulation (where technically feasible and appropriate);
- Hot water tank and pipe and cold water tank insulation;
- Full and efficient central heating[7]; and
- Any other energy efficiency measures that will bring the property up to a minimum energy efficiency rating[8] subject to technical feasibility and proportionate cost.

3.6 Landlords should have plans in place to achieve all of this where practicably possible. The most recent (2010) Scottish House Condition Survey (SHCS)[9] shows that 53% of RSL properties are failing to meet the SHQS and 69% of local authority properties are failing to meet the SHQS. Across the social sector, most failures (44% of dwellings) are on the energy efficiency element. Nonetheless, according to the 2010 SHCS, social rented housing is more energy efficient than the housing stock as a whole and 73% of social rented housing had a 'good' National Home Energy Rating (NHER) rating of at least 7[10]. We are seeking further information on why the failure rate for this criterion is relatively high, given the energy efficiency of the sector appears to be improving.

3.7 Some landlords have been making significant progress towards meeting the SHQS and improving the energy efficiency of their homes and we have taken this into account in developing the standard. Whilst social landlords are implementing the delivery of SHQS, they should not see the delivery of SHQS and the new proposed standard as separate entities. Instead it will be more practical if implementation of both is integrated, and we will review any reporting practicalities. The proposed energy efficiency standard builds on the SHQS and the suggested ratings (see the tables on page 28) for many homes do not go much beyond what

[7] The Scottish Government's guidance on the SHQS defines what constitutes an inefficient central heating system: http://www.scotland.gov.uk/Resource/Doc/1125/0116691.pdf
[8] Houses need to reach 5 on the National Home Energy Rating (NHER) scheme or 50 (for properties with gas)/60 (other fuels) on the Standard Assessment Procedure (SAP) 2001
[9] Scottish House Condition Survey (SHCS), November 2011, http://www.scotland.gov.uk/Publications/2011/11/23172215/0, pp. 39-43
[10] *ibid.*, p.15

would be expected to meet the SHQS. In fact for certain house types, meeting the SHQS should mean that the 2020 target has also been met.

3.8 In one particular instance (detached houses and bungalows with electrical space heating), the proposed standard is below that expected for the SHQS to reflect the difficulty of reaching the required energy efficiency rating of 60 for such properties. This is dealt with in more detail in Chapter 6.

Climate Change

3.9 The Climate Change (Scotland) Act 2009 requires the Scottish Government to set out how Scotland will meet targets to reduce carbon emissions from 1990 levels across all sectors by 42% by 2020 and 80% by 2050 (with annual targets for each year between 2010 and 2050 set by Ministers at five-yearly intervals). In order to deliver the targets set in the Climate Change (Scotland) Act 2009, there must be a step-change reduction in energy use and a move to non-carbon alternatives. The Energy Efficiency Action Plan[11] reinforces the urgent need for action on energy efficiency. It outlines the challenge, the Scottish Government's vision, and our approach. Section B of the plan introduces a headline target to reduce Scottish final energy consumption by 12% by 2020 from a 2005 baseline, with an indication of how this will be monitored.

3.10 Part 3 of the Climate Change (Scotland) Act requires Scottish Ministers to lay reports in Parliament setting out proposals and policies for meeting the targets, once they have been set. The first of these reports – covering targets, proposals and policies for the current decade – was published in March 2011[12]. Proposals and policies for Homes and Communities are set out in chapter 4 of the report. It recognises that meeting the targets is not just a matter for Scottish Government action and funding but depends on funding and action on the part of everyone – national and local government, private and third sector, individual households and communities. A second Report on Proposals and Policies, which will include targets and proposals for the 2020s and an update on progress with our current proposals and policies, will be laid in Parliament later this year.

3.11 While the Report on Proposals and Policies sets the basic framework for the housing contribution to the Climate Change Act targets, the Sustainable Housing Strategy (see paragraphs 1.1-1.2 above) will be a more detailed plan of action for the next two decades. So the two documents will complement each other.

3.12 The Climate Change (Scotland) Act 2009 requires public bodies, such as councils, to ensure that they are acting sustainably through their actions and through the decisions they make. Councils also have statutory duties, through the requirement to have Local Housing Strategies (LHS) in place, and specific guidance[13] has been issued on addressing climate change.

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[11] Conserve and Save: Energy Efficiency Action Plan

[12] Low Carbon Scotland: Meeting the Emissions Reduction Targets 2010-2022: The Report on Proposals and Policies, Scottish Government, March 2011

[13] Local Housing Strategy - Climate Change, Scottish Government, March 2011, http://www.scotland.gov.uk/Topics/Built-Environment/Housing/supply-demand/deliveryframework/lhs/cc

3.13 Climate change will affect almost all aspects of Scottish society and the challenges of adapting to climate change have been mapped in the Climate Change Adaptation Framework, with a specific Action Plan for the Built Environment[14]. This deals with how we should adapt our buildings to deal with increased winter rainfall and increased summer temperatures due to climate change. For new housing, Planning and Building Standards are reviewing synergies between sustainability and adaptation policies. This underlines our strategic approach to address the effects of climate change, not just for housing, but our whole built environment.

Scottish Government programmes

3.14 A range of Scottish Government programmes aimed at reducing carbon emissions and tackling fuel poverty are currently in operation. In 2011-12, a total budget of £57.5 million was available to support these Home Energy Efficiency programmes, and this will rise to £65 million in 2013-14 and to £66.250m in 2014-15. One major blockage to undertaking work in social rented housing is the inability or unwillingness of owners and private landlords to undertake energy efficiency improvements. This year's programmes, which are restricted to owner-occupiers and tenants in the private rented sector, include:

- £38m for the Energy Assistance Package
- £14m for the Universal Home Insulation Scheme
- £5m for the Boiler Scrappage Scheme

3.15 In 2012-13 we will launch our new Warm Homes Fund, making available £50 million over the next five years, to deliver renewable energy and energy-efficient homes to those communities worst affected by fuel poverty. The aim of this fund will be to support initiatives such as district heating schemes, and community-owned renewable power and it will be open to the social rented sector. A National Retrofit Programme will be launched in 2013 to draw in all relevant forms of support from local, Scottish and UK governments, EU sources, energy companies, revenue from renewable heat and energy and support from the private sector.

3.16 In addition to the above, the Scottish Government has an Energy Efficiency budget of around £18m in 2012-13 for the provision of energy efficiency advice to support landlords, tenants and owner occupiers. Advice is delivered by Energy Savings Scotland Advice Centres managed by the Energy Saving Trust. The funding is also targeted at conducting research, delivering pilot programmes, ensuring robust data is available and delivering the Energy Efficiency Action Plan and Climate Change objectives.

Fuel Poverty

3.17 The above programmes are helping to tackle fuel poverty, for example, between the Energy Assistance Package's launch in 2009 and September 2011,

[14] The Built Environment Sector Plan, Scottish Government, 15 March 2011, http://www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/adaptation/AdaptationFramework/SAP/BuiltEnvironment

over 210,000 households have taken up offers of help. These range from benefit checks to switching to lower tariffs and to delivering over 21,000 heating measures (complete systems and boilers).

3.18 The Cabinet Secretary for Infrastructure and Capital Investment has tasked the Scottish Fuel Poverty Forum with undertaking a Review of the fuel poverty strategy, the interim report of which was published on 6 June[15]. The Review looks at the current Scottish definition and the alternative proposed by the Hills Review.

3.19 The Forum has been tasked with bringing forward innovative ideas as part of the review, an early example being the £5m announced to extend the gas grid to off-grid communities within a reasonable distance of the mains. The Forum is also examining options to reduce costs for consumers through the bulk buying of electricity.

UK Government Welfare Reform

3.20 The UK Government is reforming the welfare system, and this will affect the social rented sector. Around two-thirds of tenants in the social rented sector receive housing benefit [16]. The UK Government intends that the majority of working age claimants receive their housing benefit direct, rather than being paid to the landlord. Social sector tenants who rely on housing benefit and who have one or more spare rooms will have their benefit restricted. The exact impact of these changes is hard to predict, though social landlords who take action to prepare are likely to fare better than those who do not. In this context, investing in more energy efficient measures will generally help tenants reduce their heating costs for the long term, and is all the more crucial.

Low Carbon Economy

3.21 The transition to a low carbon economy in Scotland will mean taking full advantage of business opportunities that enable us to both meet our Climate Change Act targets and boost the Scottish economy. Scotland is uniquely placed to lead global progress in the low carbon arena. As a country we are blessed with the natural resources to generate massive amounts of renewable energy. And our experience, expertise and skills in developing our energy resource are world class. Scotland's competitive advantage can secure tens of thousands of green jobs and billions of pounds in investment[17]. This approach is fundamental to our drive to deliver economic, social and environmental benefits for everyone in Scotland. .

3.22 The low carbon market is already worth £8.8 billion to Scotland – by 2015 this could rise to over £12 billion, representing over 10% of the Scottish economy. By

[15] http://www.scotland.gov.uk/Topics/Built-Environment/Housing/warmhomes/fuelpoverty/ScottishFuelPovertyForum/SFPFinterimreportmay012
[16] DWP, Family Resources Survey 2009-2010, Chapter 3, Tenure, http://research.dwp.gov.uk/asd/frs/2009_10/index.php?page=intro
[17] A Low Carbon Economic Strategy for Scotland: Scotland - A Low Carbon Society: http://www.scotland.gov.uk/Publications/2010/11/15085756/0

2020, there could be 130,000 low carbon jobs in Scotland, around double the current number, representing over 5% of the Scottish workforce[18].

Ageing Population

3.23 Scotland's population is ageing, and according to recent statistics[19] the population aged 75 and over is projected to increase in all Council areas from 2010 to 2035. The largest percentage increases are projected in West Lothian (146 per cent – an increase of 13,700) and Aberdeenshire (131 per cent – an increase of 23,400), with the smallest increase in Glasgow City (36 per cent – an increase of 14,200). Overall, by 2035 the Scottish population aged 75 and over is projected to increase by 82 per cent, an increase of 332,000.

3.24 Older people consistently tell us that they want to live in their own homes for as long as possible, instead of in hospitals and care homes. The Scottish Government is working to enable them to do this and published a national strategy for housing for older people in December 2011[20]. Having a safe, comfortable and warm home is particularly important to older people, who tend to spend more time at home than the general population. Older people are also more likely to have mobility or other health issues, which make them more susceptible to cold. However, with high fuel prices, keeping the home warm is a major challenge for many older people, particularly those on low incomes. Homes that are well insulated will provide greater comfort and should help to reduce fuel costs, thus helping older people to remain there safely and comfortably.

Conclusion

3.25 Social landlords are working hard to meet the SHQS and improve the quality of housing provided to their tenants, including the energy efficiency of it. However, the SHQS standard was introduced in 2004 since when there has been an increased recognition of everybody's role in meeting climate change responsibilities. And by making a significant contribution to meeting Scotland's Climate Change targets, there is the chance to also improve the thermal fabric of homes, install new renewable technologies and help address Fuel Poverty. These social benefits will also help wider economic benefits to be realised.

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[18] A Low Carbon Economic Strategy for Scotland

[19] Population Projections for Scottish Areas (2010-based), National Records of Scotland, http://www.gro-scotland.gov.uk/statistics/theme/population/projections/sub-national/2010-based/index.html

[20] Age, Home and Community: A Strategy for Housing for Scotland's Older People 2012 – 2021 http://www.scotland.gov.uk/Publications/2011/12/16091323/0

4. Why is a new standard necessary?

This chapter looks at:

- ***Reasons for introducing a new Energy Efficiency Standard***
- ***Owner-occupiers and private rented housing***
- ***The benefits to tenants and encouraging energy efficient behaviour***

Reasons for an Energy Efficiency Standard for Social Housing

4.1 The Climate Change (Scotland) Act 2009 requires the Scottish Government to set out how Scotland will meet targets to reduce greenhouse gases from 1990 levels across all sectors by 42% by 2020 and 80% by 2050. There are no sectoral targets for meeting the 42% reduction, the 2020 target relates to Scotland as a whole.

4.2 Meeting the Scottish Housing Quality Standard (SHQS) in 2015 will be a significant contribution to meeting Climate Change and fuel poverty targets, but more needs to be done, for three main reasons:

- Just because the building fabric is better than it was in 1990, does not necessarily mean that emissions are reduced. The National Atmospheric Emissions Inventory (NAEI) suggests that between 1990 and 2008 emissions only fell by 11%. Indeed, figures for domestic energy consumption in 2010 suggest that emissions for that year may actually be similar to 1990 levels, despite more and more homes meeting the SHQS.

- Some landlords have already applied for exemptions from the SHQS for their properties. Landlords are not required to specify the reason for the exemption, but it is reasonable to assume that at least some of the requests are due to a difficulty in meeting the energy efficiency element of the SHQS. And the more homes that don't meet the SHQS means that the total reduction in greenhouse gas emissions will be reduced and fewer tenants will have warmer, more energy efficient homes. The new standard proposes to remove the need for exemptions[21] by ensuring that all stock makes a proportional contribution to the target.

- The high incidence of low income households in the social housing sector means that continuing to increase energy efficiency standards can also contribute to the alleviation of fuel poverty.

4.3 Social landlords are well placed to act as pioneers for the housing sector because of their ability to plan and manage improvement programmes and offer economies of scale. This is attractive to energy companies seeking to fulfil existing obligations under the Carbon Emission Reduction Target (CERT) and Community Energy Saving Programme (CESP), both of which will be replaced by the Green Deal and the Energy Company Obligation (ECO)[22]. This should also help to drive

[21] In most cases, see paras. 6.12-6.18 for more detail

[22] Please see Chapter 7 and the Department for Energy and Climate Change (DECC) website for further information: http://www.decc.gov.uk/en/content/cms/funding/funding.aspx

down the cost of more expensive measures and develop new approaches that can then be adopted more widely.

Question 1: Do you have experience, or know of, social landlords acting as 'pioneers' in addressing energy efficiency?

Question 1(a): If 'yes', please provide details, including any web links/contact details you may have.

Question 2: For landlords, what is the greatest cause of SHQS exemptions in your stock? Is there anything that the Scottish Government could do to assist in reducing exemptions?

4.4 Social landlords also have a duty, as part of the Scottish Secure Tenancy agreement to ensure their properties are "wind and watertight, habitable and in all other respects reasonably fit for human habitation"[23]. The model tenancy agreement requires landlords to:

"provide and maintain the house so that any tenant who we might reasonably expect to live in the house can heat the house to a reasonable temperature at a reasonable cost, so as to avoid condensation dampness and mould. If during the tenancy, the house suffers from condensation dampness which is partially or wholly caused by a deficiency in, or absence of, any feature of the house (including insulation, provision for heating or ventilation), we will carry out repairs (including, where appropriate, replacement, addition or provision of insulation, ventilation or heating systems) within a reasonable time so that that feature is not a cause of the condensation dampness"[24].

4.5 For all the above reasons, it is necessary to set an energy efficiency standard for social housing, as set out in Homes Fit for the 21st Century.

Owner-occupiers and private rented sector

4.6 Whilst this consultation is focused on the social rented sector, the Scottish Government is considering the need for regulations to improve the energy efficiency of Scotland's housing in the owner-occupied and private rented sectors as well. This could further assist local councils and social landlords undertaking energy efficiency improvement works in mixed tenure areas.

4.7 Section 64 of the Climate Change (Scotland) Act 2009 gives the Scottish Government powers to regulate both owner occupiers and the private rented sector to improve the energy efficiency of Scotland's housing. In its report 'Regulation of Energy Efficiency in Housing'[25], the Scottish Government said it would not be

[23] Model revised Scottish Secure Tenancy, July 2002: http://www.scotland.gov.uk/Publications/2002/09/15391/10792
[24] *ibid.*
[25] http://www.scotland.gov.uk/Publications/2011/03/22093051/0

appropriate to introduce regulations before 2015 to allow a further opportunity to provide assistance and incentives to take up energy efficiency measures.

4.8 The Energy Act 2011 also provides powers to set minimum standards for energy efficiency only in the private rented sector. This power will apply to Scotland, but not before 2015. This is consistent with our position in relation to the Climate Change (Scotland) Act powers and means that the Scottish Government has flexibility as to when any minimum standards might apply from. In England and Wales, the intention is that the minimum standards for the private rented sector will apply from 1 April 2018.

4.9 The Scottish Government's Sustainable Housing Strategy (SHS) is seeking views on the possibility of introducing private sector regulation, and some of the issues that need to be considered. These will include timing of regulation, what it should look like, how regulation and incentives will fit together and how it will be enforced. For more information on the possible regulation of the private sector, please see the consultation on the Sustainable Housing Strategy: http://www.scotland.gov.uk/Topics/Built-Environment/Housing/sustainable.

Question 3: What has been your experience in improving properties in mixed tenure estates?

Question 3(a): If you have developed solutions to work with owners and/or private sector tenants, please provide details.

Benefits to tenants

4.10 The standard will focus on the fabric of the building, rather than occupant energy use. However, it should be emphasised that energy efficient homes will not automatically reduce fuel bills or carbon emissions. For example, people may find they can afford to heat their homes at lower cost so they may choose to turn their thermostat up or have their heating on for longer and therefore not reduce energy consumption. In cases of under-heating, where tenants on low incomes are unable to heat their homes adequately, this is a positive step (though for under-heated homes with poorer insulation levels, this can result in increased surface condensation which can lead to mould growth)[26]. Nonetheless, there is a risk of landlords investing in their stock to improve its energy efficiency, whilst the occupant behaviour means that the potential benefits of this, in terms of lower fuel bills and reduced emissions and fuel poverty being addressed, are not fully realised.

4.11 It is essential that tenants understand the need to become more energy efficient, the potential benefits to them and why work is being done to their homes. Occupants also need to understand what they can do to play their part in meeting climate change targets, whilst managing their fuel use. Landlords have an important

[26] Energy Savings Trust, Reducing Emissions from Social Housing, http://www.energysavingtrust.org.uk/Professional-resources/Existing-Housing/Reducing-Emissions-from-Social-Housing, Technical Annexes, Section B.5

role to play here, and they should also make sure that tenants are given appropriate advice and support so that they know how to maximise the benefits of heating systems and other measures. There are a number of potential benefits for tenants that landlords can highlight, including:

- A minimum level of thermal efficiency will be of benefit to all tenants. A more energy efficient home should help a tenant to manage their fuel use more effectively, with any savings going into tenants' pockets.

- As with all properties, there are some social rented tenants who may spend proportionally more time in their homes (caring responsibilities, unemployment) and they are generally more likely to be vulnerable households. Increased thermal comfort (coupled with likely more cost-effective energy usage) will help.

4.12 Tenants in the social rented sector are entitled to a certain level of quality and service from their landlord, which is reflected in the principles of the Social Housing Charter. However, as with all housing, this doesn't mean that the occupant of a social rented home acts in an energy efficient manner. Whilst people cannot be compelled to reduce their energy consumption, they can be encouraged to do so. It is therefore proposed that the standard includes a duty on social landlords to encourage tenants to reduce their energy consumption. This would range from advice about basic steps (such as switching off lights and appliances when not in use, buying energy efficient appliances, etc.) to more detailed education and support about how to use any new energy efficient technologies that had been installed. This should not just be a one-off visit, but should include follow-up visits to make sure people are using any new technologies correctly and are getting the benefit of them.

Question 4: The Energy Efficiency Standard for Social Housing will directly affect a diverse group of social sector tenants who have individual needs and experiences. In your view, is improving the energy efficiency of social rented housing a priority for tenants? Yes/No

Question 4(a): If 'yes', are the suggested 'potential benefits' broadly the right ones? Are there any others you would suggest?

Question 4(b): If no, why is this? How would you suggest we increase tenant awareness of the importance of energy efficiency?

Question 5: Do you consider any particular equality groups[27] will be at significant risk as a result of this new policy? If so, please outline what measures you consider appropriate to minimise risk.

Question 6: Do you think the implementation of the Standard will cause an undue financial burden on any particular equality group? If so, we would welcome your views on what action could be taken to minimise that burden.

Question 7: What else would you suggest to help tenants better manage their energy consumption?

Smart Meters

4.13 Smart meters enable households to monitor real-time energy use via an in-home display. Studies have shown this can have an impact on energy use behaviour.[28] The mass roll-out of smart meters is a reserved matter and is led by the Department of Energy and Climate Change (DECC). The mass roll-out is expected to start in 2014 and to be completed in 2019. The majority of consumers will receive their smart meters during the mass roll-out.

4.14 According to the DECC website[29], Smart Meters will deliver a range of benefits to energy consumers including:

- Giving domestic consumers near real time information on their energy consumption through an In-Home Display to help them control energy use, save money and reduce emissions.
- Providing more accurate information and bringing an end to estimated billing
- New products and services will be supported in a vibrant market in energy and energy management
- Smart meters will also give suppliers access to accurate data for billing and to improve their customer service, in turn benefiting consumers.

4.15 A combination of advice and information (from landlords, public sector bodies, energy companies and others) with the ability to monitor energy consumption should help people manage their energy consumption more efficiently. This will also mean that tenants will see the benefits of, and better understand the need for, their landlord's investment in energy efficiency improvements.

[27] Further details on equality groups can be found on the Scottish Government website at: http://www.scotland.gov.uk/Topics/People/Equality

[28] Energy Savings Trust, smart meters technology, http://www.energysavingtrust.org.uk/In-your-home/Your-energy-supply/Smart-meters

[29] http://www.decc.gov.uk/en/content/cms/consultations/cons_smip/cons_smip.aspx

5. Developing the standard

This chapter looks at:

- ***How the standard has been developed***
- ***The research, modelling work and methodology used***
- ***Dealing with hard/expensive to treat properties***

Process

5.1 A working group was set up to develop a draft energy efficiency standard for public consultation, including representatives from the Scottish Government, the Energy Saving Trust (EST), the Scottish Federation of Housing Associations (SFHA), the Glasgow and West of Scotland Forum of Housing Associations (GWSF), the Convention of Scottish Local Authorities (COSLA) and the Association of Local Authority Chief Housing Officers (ALACHO).

5.2 To support the working group, two further sub-groups were established: one to consider the technical issues around a standard; the other to look at financial and asset management issues. The technical group considered the method for setting a standard and the possible measures that can be installed to reduce emissions and increase energy efficiency. The financial and asset management group focussed on what funding is available to landlords as well as how to measure and monitor progress against the standard. Both sub-groups reported to the main working group.

5.3 The remits, agendas and notes of meetings of the different stakeholder groups are available on the Scottish Government website[30]. The groups have been working on the development of the standard for over a year, considering all the relevant issues and assessing the implications of different options.

5.4 Scottish Government officials gave presentations on the energy efficiency standard at workshops and conferences to raise awareness of this work, including:

- SFHA Rural & Islands conference, Dunblane, October 2011
- Energy Action Scotland conference, Clydebank, November 2011
- SFHA Property Maintenance conference, Crieff, November 2011

Research – dwelling types and modelled case studies

5.5 Through examination of the Scottish House Condition Survey (SHCS), the most common house types in Scottish social housing were identified, listed below**.** This allowed case studies to be developed based on these house types by modelling the impact of different energy efficiency improvements, as well as the likely cost of installation. A draft case study is attached below; further versions are available on the Scottish Government website at: http://www.scotland.gov.uk/Topics/Built-Environment/Housing/sustainable/standard.

[30] http://www.scotland.gov.uk/Topics/Built-Environment/Housing/sustainable/standard/stakeholder/working/group

1. Pre 1919 solid wall flat – ground floor
2. Pre 1919 solid wall flat – mid-floor
3. Pre 1919 solid wall flat – top floor
4. Interwar cavity flat – mid-floor
5. Interwar cavity house – mid-terrace
6. Interwar cavity house – semi-detached
7. Four in a block – lower
8. Four in a block – upper
9. Post war 1950-64 – mid-floor
10. Post war 1950-64 – mid-terrace
11. Post war 1950-64 – semi-detached
12. 1976-83 – mid-floor
13. 1976-83 – mid-terrace
14. 1976-83 – semi-detached
15. 1984-91 – mid-floor
16. 1984-91 – mid-terrace
17. 1984-91 – semi-detached
18. 1992-98 – mid-floor
19. 1992-98 – mid-terrace
20. 1992-98 – semi-detached
21. 2003-07 – mid-floor
22. 2003-07 – mid-terrace
23. 2003-07 – semi-detached

5.6 Whilst it was considered informative to repeat such modelling on a wide variety of house types, there was also the risk that too many case studies would lead to confusion and make it harder for landlords to identify which case studies were relevant to their stock. The list above is thought to provide an indicative range of the most common dwelling types so that social landlords can gauge their stock as they work towards achieving the standard.

Hard/Expensive to treat properties

5.7 The draft case studies profile the most common constructional types (based on type of dwelling and when it was built). The age bands for the date of construction 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 type of house or flat also has a bearing. For a house, this is likely to be a semi-detached, end–terraced or mid-terraced. Detached houses were not modelled as they represent less than 1% of the stock. For flats, modelling was done on top, middle and ground floors. Modelling for the draft case studies was done for both gas central heating and electric storage heating.

5.8 The housing typologies in the list above account for a substantial majority of the social rented housing stock. The remaining dwellings mainly consists of non-traditional dwelling types, which can often be harder (or at least more expensive) to treat. The modelling work is being peer reviewed by external technical experts at the

same time as this consultation process and final versions of the case studies will be published at the same time as the energy efficiency standard. As part of the peer review process, we have also asked the reviewers to model further case studies for some of the non-traditional/harder to treat types as well as for other fuel sources, such as oil and coal. These additional case studies will be published towards the end of the year alongside the final version of the standard.

Question 8: Do you think that example case studies will be helpful or unhelpful in taking forward the Standard? If you think they are helpful:

Question 8 (a): Are these the right range of dwelling types to be represented as case studies?

Question 8 (b): Are there any other types (including hard to treat) that you would like to be included as a case study? Yes/No

Question 8 (c): If yes please state type and say why you think they should be included?

Energy Performance of Buildings Directive – methodology used to model case studies

5.9 The most common assessment of the energy efficiency of dwellings is the Energy Performance Certificate (EPC). The Energy Performance of Buildings Directive 2002/91/EC (EPBD)[31] was introduced to promote the improvement of the energy performance of buildings. A key aspect of this Directive has been the introduction of EPCs, which are produced using the UK Government's Standard Assessment Procedure for the Energy Rating of Dwellings (SAP), which is compliant with the Energy Performance of Buildings Directive. Reduced data SAP (RdSAP) follows the same methodology as SAP but has been developed to handle situations where less data is known about an existing dwelling. With reduced data input the RdSAP methodology uses standard assumptions to model energy efficiency.

5.10 RdSAP has been developed by the UK Government for use in the energy assessment of existing dwellings. The methodology meets the requirements of the Energy Performance of Buildings Directive and the calculation itself is carried out using computer software, approved for use in Scotland. The software tool produces both the Energy Efficiency and Environmental Impact Ratings (see below).

5.11 RdSAP is reviewed from time to time to take account of regulatory and technical developments that have arisen. The current published edition of RdSAP is RdSAP 2009 (v9.90). However, RdSAP 2009 (v9.91) will be implemented in Scotland in October 2012; this is to take account of the Green Deal and the Energy Company Obligation (ECO). The final standard will be drafted in relation to RdSAP V9.91. Scottish Government will monitor any subsequent changes in the SAP or RdSAP methodology to ensure that it remains relevant to the standard.

[31] http://www.epbd-ca.eu/

5.12 EPCs are also subject to periodical reviews and, following a recent consultation, a revised format for the EPC will be available from October 2012. The Sustainable Housing Strategy is also seeking people's views on how EPCs can drive behaviour change[32].

5.13 EPCs have two ratings: the Energy Efficiency (EE) rating and the Environmental Impact (EI) Rating. The proposed energy efficiency standard will be based on one or both of these ratings (see paragraphs 6.2-6.3 below). The EE rating (which is also known as the SAP rating) is based on the energy costs associated with the energy delivered to the dwelling to provide heating, ventilation and lighting. The EE rating assumes standard conditions of occupancy and use, calculated using UK average weather data. The rating is expressed on a scale of 1 to 100, the higher the number the lower the running costs.

5.14 The Environmental Impact Rating relates to the annual CO_2 emissions. To assess the rating the amount of kilograms of CO_2 emissions per square metre of a dwelling's floor area per year is calculated. Again the rating is based on standard conditions of occupancy and use, calculated using UK average weather data. The result is then converted into a scale ranging from 1 to 100, where an EI rating of 100 represents zero net emissions. An EI rating of 1 means that a dwelling has a very poor rating and will produce a large amount of CO_2 per square metre.

5.15 The Environmental Impact rating is calculated from an assessment of the carbon emissions resulting from the energy delivered to a dwelling based on the set assumptions. The assessment takes account of the carbon emissions generated by different fuel types.

5.16 Either RdSAP or full SAP calculations will be allowable for the purpose of the energy efficiency standard.

Question 9: What are your views on using the SAP/RdSAP methodology for regulating energy performance in the social rented sector?

Modelling dwelling types

5.17 Both ratings in the EPC (Environmental Impact rating and Energy Efficiency rating) were used in modelling the impact of different measures on different dwelling types. The modelling was done using RdSAP 2005 v9.83, but as part of the peer review process we have asked the external experts to redo the modelling using RdSAP 2009 v9.91 (if available, otherwise v9.90 will be used).

[32] See Chapter 2 of the Sustainable Housing Strategy consultation document

1930-49 mid floor flat (78m2)				
Fuel type : Gas				
Energy Efficiency Measure	**Baseline: 1990**	**SHQS 2015**	**Further Measures 2020**	**Advanced Measures 2050**
Walls	No insulation	Cavity filled	-	-
Floor	-	-	-	-
Roof	-	-	-	-
Windows	100% single glazing	-	100% double glazing (post 2003)	-
Open chimneys	None	-	-	-
Heating system	Full central heating, boiler efficiency 60%	-	Full central heating, boiler efficiency 90.9% (combi boiler)	-
Heating system controls	Programmer	-	Time and temperature zone control	-
Hot water system	Cylinder thermostat and 25mm factory applied foam	-	-	-
Secondary space heating	Gas room heater	-	-	-
Ventilation	natural	-	-	-
Low energy lighting	None	100%	-	-
Solar PVs	None	-	-	-
Solar water heating	None	-	-	-
SAP Rating	D (66)	C (73)	B (86)	-
Approximate energy use (kWh/m^2/year)	273	223	106	-
Percentage Improvement	-	18%	61%	-
EI Rating	D (61)	C (68)	B (85)	-
Approximate CO_2 emissions kg/m^2/year	46	37	18	-
Percentage Improvement	-	20%	61%	-

5.18 As shown in the table above, for each case study four scenarios were modelled:

- Baseline: 1990 Measures
- Measures likely to be installed to meet the SHQS in 2015
- Further Measures 2020
- Advanced Measures 2050

Further examples can be found on the consultation pages of the Scottish Government website at: http://www.scotland.gov.uk/Topics/Built-Environment/Housing/sustainable/standard.

5.19 The 'Baseline' represents the typical condition of each dwelling type in 1990 (or at the date of construction if this is later than 1990). We would welcome views on whether this is an accurate reflection of the typical condition of the housing stock in the 1990s. It is important that this assessment is reasonably accurate as improvements are measured from this baseline, and so the ratings used in the energy efficiency standard will be affected by the accuracy of the baseline.

Question 10: Do the 'Baseline: 1990 Measures' accurately reflect the energy efficiency performance of dwellings at that time? Yes/No
If not, please provide details.

5.20 The 'SHQS' column is the type of improvements likely to be installed to meet the SHQS in 2015. Some of the measures may exceed SHQS requirements, but are likely to be measures that landlords would consider installing. The 'Further Measures' column models improvements beyond the SHQS which would help contribute towards energy efficiency. The 'Advanced Measures' takes this even further to represent some of the more expensive improvements which are currently technically feasible. It is worth bearing in mind that, over time, these improvements should reduce in cost and there are likely to be more advanced solutions to consider.

5.21 Ideally, social landlords should work towards the 'Advanced Measures' where technically feasible to help to take their properties towards the more challenging longer term milestones (see Chapter 9). This level of improvement will be required in the longer term and it may be more cost effective and pragmatic to work towards that now rather than carry out two (or more) retro-fit programmes.

5.22 The modelling work only highlights suggested measures; there are many other options available to landlords to improve the energy efficiency of their stock. In particular, district heating and combined heat and power schemes may well provide the double benefit of improved energy efficiency and generating an income stream.

Question 11: Are the suggested improvements in the 'Further Measures' and 'Advanced Measures' columns of the case studies realistic and feasible? Yes/No

Question 11 (a): Please provide further explanation of any measures that you think should not be included within the modelled case studies.

Question 11 (b): Please provide further explanation of any measures not currently included in the case study modelling that you would like to see included?

6. Proposed energy efficiency standard for social housing

This chapter looks at:

- ***The draft Energy Efficiency Standard***
- ***The alternatives that have been considered***
- ***The possible role of exceptions to the Standard***

6.1 The aim of the proposed standard is to improve the energy efficiency of, and minimise carbon emissions from, existing social rented housing. This is important both to help landlords provide warmer, more energy efficient homes for their tenants, and to contribute to the Climate Change targets of 2020 and 2050.

Proposed energy efficiency standard. Using the modelling work and through consultation with our working groups the proposed energy efficiency standard for social rented housing is to establish a minimum EPC Rating (***which we propose should be the Environmental Impact score***) which every social rented dwelling will be required to meet by 2020. The standard will be different for different dwelling types. This would enable the Scottish Government to measure reductions in emissions from the 1990 baseline.

6.2 Both the Environmental Impact (EI) and the Energy Efficiency (EE) ratings are generated as part of the EPC process. The proposed standard is based on the Environmental Impact Rating (i.e. carbon dioxide emissions) which is generated as part of the EPC assessment. It is proposed that a minimum Environmental Impact Rating would be established for broad categories of similar house types based on the modelling. For example, a top floor flat on the gas grid would be expected to achieve an EI rating of "X", whereas a mid-terraced house heated by electricity would be expected to achieve a rating of "Y".

6.3 In most scenarios both scores are improved in tandem, therefore achieving a higher EI rating should lead to a more energy efficient home. However as the EE rating is based on the cost of fuel, in a minority of cases where high emissions reductions can be achieved, the cost of the fuel is actually higher. This could be the case for technologies such as biomass.

6.4 Therefore to act as a safeguard, it is proposed that should a minimum Environmental Impact (EI) rating be used for the energy efficiency standard, the dwelling's *current* energy efficiency rating should not decrease as measures are installed.

Benefits of the proposed energy efficiency standard

6.5 As described above, we have drafted detailed case studies modelling the impact of a range of measures, providing assessment of appropriate improvements to the energy performance of that dwelling type. Landlords would have flexibility to assess their stock and implement energy improvements that they consider are most appropriate, which are not necessarily the same improvements identified in the case studies, in order to meet the required EI Rating identified for that dwelling type.

Depending on the case study type, the efficiency of services and the fuel type, the indicated emissions reduction will vary, taking account of these variables.

6.6 A summary of the key aspects of the proposed standard is set out below:

- It's fair in that all landlords will be expected to make an equivalent contribution, relevant to their stock.
- It would allow the Scottish Government to measure reduction in emissions since 1990.
- Landlords will have full flexibility in the measures they install.
- As the target will be a minimum EPC rating, landlords can take into account any improvements that have already been made.
- All tenants would benefit from a minimum level of energy efficiency.
- The information required is generated when an EPC is produced.
- It only considers space and water heating and lighting, so concentrates on areas where landlords can make a difference.
- Landlords would need to have a good understanding of their stock, though some may have been working towards a 100% survey of their stock as part of the SHQS.

Question 12: Taking into account the reasons above, do you agree that establishing a minimum Environmental Impact Rating for the main dwelling types is the most practicable format for the standard? Yes/No.
If not, please explain why.

Question 13: If you think that the standard should be a minimum Environmental Impact rating, do you think that there should also be a safeguard that the dwelling's *current* Energy Efficiency rating should not reduce?

Question 14: In assessing your stock against the proposal for a new standard for social housing, do you foresee any significant challenges in obtaining individual property details across your stock? Yes /No
If yes, please explain why.

Proposed ratings

6.7 The tables below set out the proposed scores to be met by the main dwelling types:

Standard for gas heated homes for 2020

Broad Type	Minimum EPC (EI) rating for the standard	Minimum EPC (energy efficiency) rating
Top floor flats heated by gas	C (70)	C (75)
Mid floor flat heated by gas	C (80)	C (80)
Ground floor flat heated by gas	D (65)	C (70)
Mid-terraced house heated by gas	C (70)	C (75)
End terrace / Semi-detached heated by gas	D (65)	C (70)
Four in a block – Lower heated by gas	D (60)	D (65)
Four in a block – Upper – heated by gas	D (60)	D (65)
Detached / bungalow heated by gas	D (55)	D (60)

Standard for electrically heated homes for 2020

Broad Type	Minimum EPC (EI) rating for the standard	Minimum EPC (energy efficiency) rating
Top floor flats heated by electricity	D (60)	D (65)
Mid floor flat heated by electricity	C (70)	C (70)
Ground floor flat heated by electricity	E (50)	D (60)
Mid-terraced house heated by electricity	D (55)	D (60)
End terrace / Semi-detached heated by electricity	E (50)	D (60)
Four in a block – Lower heated by electricity	E (50)	D (60)
Four in a block – Upper – heated by electricity	D (55)	D (60)
Detached / bungalow heated by electricity	E (50)	D (55)

NB It is proposed that the energy efficiency standard is based on the EI rating. The Energy Efficiency rating is also included in the tables above to give an idea of what a standard based on that rating may look like and to help inform responses to the consultation.

6.8 As noted in paragraph 3.8, the proposed minimum energy efficiency rating for electrically heated detached homes and bungalows is lower than the SHQS. There are not significant numbers of such house types within the social rented stock, and it is likely that some of them will be exempted from the SHQS. Landlords will still be expected to meet all other relevant elements of the SHQS for these properties and will now have a more realistic level of energy efficiency to reach (as well as also having to attain the proposed EI rating). This will help to ensure that the energy efficiency of all social rented properties is improved, which may not necessarily be the case with the SHQS as landlords can apply for exemptions for certain properties.

Question 15: Do you think that the ratings above are suitably challenging? Yes/No
If not, please give explanations why not and suggest more suitable ratings.

Question 16: Do you think the suggested energy efficiency rating for electrically heated detached homes and bungalows undermines the SHQS? Yes/No. Please explain your choice.

'Other' fuel sources

6.9 The table above only refers to homes heated by gas or electricity. It is clear that dwellings heated by oil, liquid petroleum gas or solid fuel will be unable to reach high levels of energy efficiency without a change in fuel source. The Scottish Government is therefore considering whether all homes heated by such fuel sources should be converted to a renewable heating system or electricity or gas by 2030. For the 2020 milestone, we propose that such homes be insulated as effectively as possible and progress measured as explained in paragraph 6.14 below.

Question 17: What are your views on whether all social rented dwellings should be heated by gas, electricity or renewable heat sources by 2030?

Alternatives to the proposed energy efficiency standard

6.10 The two main other options that were considered by the working groups were:

6.10.1 Establish a set of measures that all homes would be required to meet. However, this was rejected for the following reasons:

- Does not consider actual energy usage and actual carbon emissions.
- Landlords are restricted in how they meet the standard.
- Would require substantial detailed development of the technical specification of a standard and equivalent guidance for each dwelling type.
- Would require exemptions/abeyances, which would mean some homes aren't energy efficient.

6.10.2 Set a minimum percentage reduction in emissions for each of the different dwelling types. This approach has been proposed for unusual dwellings (see below) but was considered to be too complicated to apply and to regulate for the vast majority of homes. This method would require that landlords had complete details for every dwelling in their stock from which they would calculate their own baseline for each dwelling from which a required set reduction would be made. The resultant standard would be highly complex to regulate. It was felt that EPC ratings were widely recognised and understood by landlords and tenants and would be a preferred method for the vast majority of dwellings.

Question 18: Do you think that either of the options above should be reconsidered? Yes/No.
If yes, please explain which option you prefer and why.

Aggregation

6.11 The working group considered whether the energy efficiency standard should be aggregated across a social landlord's entire stock or set at an individual dwelling level. The latter was preferred as it would help to improve *all* stock and provide a minimum level of energy efficiency to all social rented tenants.

Question 19: Do you agree that the standard should apply to all individual homes and not be aggregated across a landlord's stock? Is this practicable?

Possible role of exceptions

6.12 Currently, where it is not possible for certain aspects of particular stock to achieve the SHQS, allowances have been made for exemptions. This process has been agreed by the Scottish Government with the assistance of a panel of social landlord representatives nominated by COSLA and the SFHA.

6.13 As already mentioned, the more homes that are excepted from an energy efficiency standard, then the greater the reduction in emissions will need to be to meet Climate Change targets. There would also be a risk of tenants in such homes being treated unfairly by comparison with others in homes that meet the standard.

6.14 As the case studies are designed to cover the main dwelling types, it is envisaged that there would be no requirement for any exceptions in the new standard. However, as noted above the modelling work and case studies don't cover all social rented housing; there are some more unusual types of dwelling in the sector. Even within common house types there are individual dwellings where circumstances differ. The ongoing peer review process is considering how best to handle the approximately 10% of the stock which isn't covered by the work done to date. However, one suggestion is that a methodology is set out for landlords to follow. This would require them to use the 1990 base assumptions to record a

baseline for their individual dwelling and calculate a set percentage reduction to identify a required improvement. This method could be used for all unusual dwelling types, including types where the 1990 baseline is significantly below the generic baseline for a similar dwelling type. The percentage reduction would be set by Scottish Government to recognise the different dwelling circumstances and be in line with the burden on other dwelling types. This is set out in more detail in the example box below.

Example of the Proposed Methodology for dealing with Hard-to-Treats.

Example: no-fines concrete, semi-detached, gas heated dwelling, constructed in 1978.

1. The landlord enters survey details from the individual property into RdSAP using the same assumptions for the building services elements as for the generic dwelling type (as discussed in 4.20). The relevant generic building type for this example will be 1976-1983 built gas heated semi-detached house.

2. The landlord calculates the baseline Environmental Impact rating. For this example dwelling the baseline EI rating is F (28) with approximate CO_2 emissions of 103 kg/m2/year. This is lower than the generic building type which is E rated.

3. The Scottish Government will set the required percentage reduction and the landlord will calculate what the reduction in emissions should be for that individual dwelling. For example, the dwelling must achieve a minimum 42% reduction in CO_2 emissions, reducing the emissions to approximately 60 kg/m2/year.

4. The landlord considers the range of appropriate cost effective options by which the dwelling can meet the required reduction in energy and emissions. These are likely to include:

- 100% low energy lighting;
- A condensing boiler;
- Time and temperature zone controls;
- Roof insulation; and
- Double glazing.

5. The landlord chooses the best combination of measures and undertakes the required work

6.15 This approach will only be permissible for certain house types and certain circumstances, which will be defined in the final version of the standard. We have asked earlier for people's views on which house types should be defined as hard or expensive to treat and we are also asking the peer reviewers to consider ways to deal with such properties. Responses to the consultation and the conclusions of the peer reviewers will be used to finalise the relevant house types and the proposed percentage improvement to be achieved.

Question 20: Do you agree that the approach to unusual dwellings outlined above could offer a reasonable way forward for applying a standard to these dwellings?

Question 20(a): Do you agree that the percentage reduction should correspond to Climate Change targets and be set at 42%? Yes/No. If not, at what level do you think the reduction should be set that will be achievable but provide a meaningful contribution to the improved energy efficiency of social rented housing?

6.16 There are also other potential obstacles landlords would face in bringing properties up to the standard, in particular:

- tenants refusing to consent to improvements in their homes; and
- other owners/landlords in a mixed tenure block refusing to consent to external or communal improvements.

6.17 The design of any future standards for energy efficiency for private sector housing may have an impact on this second issue. The Sustainable Housing Strategy consultation raises this issue in Chapter 2.

6.18 However, as the social sector is likely to be working towards this new standard before any regulation might be brought in to private sector housing, and any such regulation would not affect tenants of social housing, there may need to be a continued role for abeyances for specific instances. Where a landlord is unable to get the consent of the tenant (for improvements to a particular home) or another owner (for communal improvements), then these would be treated on a case-by-case basis and landlords would potentially be given more time to meet the proposed rating.

Question 21: Do you think that there should be exceptions to the proposed energy efficiency standard? If so, how should they be treated?

7. Financial implications – costs and funding sources

This chapter looks at:

- ***The indicative cost of meeting the Energy Efficiency Standard***
- ***The potential funding streams available***
- ***The financial benefits***

7.1 The Scottish Government has been clear from the start that we will help landlords to minimise the financial implications of any new energy efficiency standard. We recognise that the financial capacity of both local authorities and RSLs is limited by existing commitments to build new housing and/or meet the SHQS, and other priorities identified in the investment plan. There are potential tensions between improving existing stock and increasing stock through building new homes. Equally, tenants are facing financial pressures, whether this is due to the ongoing economic downturn or other factors such as the forthcoming welfare reforms by the UK Government.

Cost of meeting the standard

7.2 The modelling work we have done (see chapter 5 for more details) included some estimated costs of installing the measures needed to meet the proposed energy efficiency standard. The case study attached at Annex A gives an example of indicative costs for improving one house type. The costs will be highly variable depending on the dwelling, the location and the economies of scale that landlords can achieve by buying measures at scale. It is our view that for many house types, the likely cost of meeting the new standard will not be much more than for meeting the energy efficiency element of the SHQS. Indeed in some instances, meeting the SHQS will mean that the dwelling meets the 2020 target.

Scottish Government funding

7.3 The table at Annex B sets out a list of funding streams for domestic energy efficiency improvements. As made clear in the table, a number of the available funds are loans rather than grants and not all of them are available across Scotland or indeed to the social rented sector (though they may help social landlords by encouraging owner-occupiers or private landlords to contribute to communal improvements.

7.4 The Scottish Government has offered a wide range of support for Scotland's housing and we are currently reviewing the landscape of a number of funding programmes such as the Energy Assistance Package, Universal Home Insulation Scheme (UHIS) and the Boiler Scrappage programme as part of the Fuel Poverty Forum's Review[33], to best meet Scotland's needs. Whilst these schemes have been targeted at private tenures, the Energy Assistance Package provides free advice to everybody.

[33] Fuel Poverty Review, Scottish Fuel Poverty Forum, Scottish Government, http://www.scotland.gov.uk/Topics/Built-Environment/Housing/warmhomes/fuelpoverty/ScottishFuelPovertyForum

7.5 The Warm Homes Fund[34], a key manifesto pledge, is also being developed so that this complements our District Heating Loans Scheme[35], and the Community And Renewable Energy Scheme (CARES[36]) scheme, both of which support renewable energy projects (for both domestic and non-domestic properties). The District Heating Loans Scheme is open to social landlords (including local authorities) and CARES is open to social enterprises, which includes social landlords.

UK Government Funding

7.6 The UK Government's Energy Act 2011 introduced 2 new schemes which should help improve domestic energy efficiency; the Energy Company Obligation (ECO) and the Green Deal (GD) finance scheme. The ECO will replace the current Carbon Emissions Reduction Target (CERT) and Community Energy Saving Programme (CESP) which are due to end in 2012. Secondary legislation will be required for the detailed processes of both the ECO and the GD schemes. Both schemes are expected to be implemented in late 2012, the intention being to provide a smooth transition from CERT and CESP to the new schemes.

7.7 The ECO will include carbon reduction, affordable warmth and carbon saving communities obligations. The additional support from energy companies is estimated to be £1.3bn per year across the UK, to support households in fuel poverty and those with hard-to-insulate homes[37]. DECC has said that ECO will now target support, worth an estimated £540m every year, to fund energy saving improvements in the worst off households. Following the consultation on the Energy Bill, DECC is increasing the eligibility for the Affordable Warmth element of the ECO to include more fuel poor families. There will also be a wider range of measures qualifying for the Carbon element beyond solid wall insulation, including hard to treat cavity walls. The Carbon Saving Communities obligation has been developed following DECC's consultation. This will provide support to households in low income areas, including for loft and cavity wall insulation and is expected to be of significant benefit to social landlords. It is for energy companies to determine where this investment takes place in order to meet their targets, so there is no guarantee of a specific level of investment in Scotland. However, the Scottish Government is keen to maximise leverage of ECO funding into Scotland as part of its National Retrofit Programme and enable energy companies to discharge their obligations in Scotland.

7.8 The Green Deal will allow householders to make energy efficiency improvements to their homes and meet the cost through the expected savings on their electricity bill. The scheme will primarily be for individual tenants and occupants of properties rather than landlords. However, both Green Deal and ECO could also assist private owners to undertake work in mixed tenure blocks. Higher cost measures, such as external wall cladding and solid wall insulation could potentially

[34] SNP Party Manifesto 2011, details of Warmer Homes Fund http://manifesto.votesnp.com/scottish_futures_fund
[35] District Heating Loan Fund, Energy Savings Trust, http://www.energysavingtrust.org.uk/scotland/Take-action/Business-funding/District-heating-loan-fund2
[36] Community And Renewable Energy Scheme (CARES), Scottish Government, http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-sources/19185/Communities
[37] http://www.decc.gov.uk/en/content/cms/news/dpm_eco/dpm_eco.aspx

be funded under ECO. Lower cost measures, such as cavity wall insulation in a '4-in-a-block', can also be funded, enabling private owners and social landlords to co-operate and access the Green Deal jointly. The Green Deal could therefore help overcome the financial barrier that was previously one of the factors blocking communal improvements. This 'cross-tenure' approach will be reflected in the forthcoming national retrofit strategy which will be a key element of the Sustainable Housing Strategy (SHS).

7.9 Another DECC scheme is the Renewable Heat Incentive[38] (RHI) which provides long-term tariff support to encourage the replacement of fossil fuel heating with renewable alternatives. It opened for applications in November 2011 and currently supports non-domestic renewable heat schemes (non-domestic includes district heating schemes).

7.10 The Renewable Heat Premium Payment Scheme (RHPP) has provided support to the domestic sector since August 2011. A second phase of the RHPP scheme, worth £25m, was recently announced. This second phase includes a new social landlords' competition building on the experiences of Phase 1 of the RHPP and a new Communities Competition which will help to bring renewable heat to a wider pool of householders. Further details on eligibility criteria and the competitions are available on the DECC website[39].

7.11 DECC intends to consult on the provision of support for renewable heating for households in the longer term in September 2012 and will set out a timetable for delivering this support at that point.

7.12 Some landlords are looking at different financial models which could work with Green Deal, ECO, RHI, etc. and combine different funding schemes into a cross-subsidy model. The Scottish Government is exploring possible new funding models to help support the step change we need to see in the scale of energy efficiency and renewables activity. These are set out in the Sustainable Housing Strategy. In addition, a range of local authority Green Deal delivery models are starting to emerge. These include:

- ***Limited promotion*** – where the local authority's role is limited to promoting energy efficiency works, for example through a portal of local, accredited Green Deal suppliers

- ***Framework of Green Deal Providers*** – where the local authority establishes a framework of preferred Green Deal providers and promotes demand.

- ***Green Deal Delivery Partner*** – where the local authority (or a group of local authorities) procures a Green Deal Delivery Partner who will work

38 http://www.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/premium_pay/premium_pay.aspx

39 http://www.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/premium_pay/premium_pay.aspx

exclusively to deliver the Green Deal, with the local authority providing strategic direction and monitoring of agreed outcomes. (Funding may be provided either through the Public Works Loan Board, the Green Deal Finance Company or other sources, including capital contributions from RSLs utilising this delivery route.)

- ***Green Deal Provider*** – where the local authority becomes an accredited Green Deal provider delivering its strategy and outcome directly (funding may be provided either through the Public Works Loan Board or the Green Deal Finance Company).

7.13 It is also likely there will be opportunities for RSLs to work collaboratively with local authorities on the development of these models and to make use of them in terms of delivering energy efficiency work and maximising draw down of ECO.

European Funding

7.14 The Scottish Government will help social landlords identify other forms of green investment, including potential European funding streams and engaging with the European Investment Bank (EIB).

7.15 A new £50m regeneration fund offering loans to eligible regeneration developments and energy efficiency projects is now in place for Scotland. The Scottish Partnership for Regeneration in Urban Centres (SPRUCE) is part of the Joint European Support for Sustainable Investment in City Areas (JESSICA) investment fund. SPRUCE will be managed by Amber Fund Management Limited. The Scottish Government, using European Regional Development Funds, has contributed £50 million to establish the fund which will offer loans and equity investment to revenue-generating projects in Scotland. As it is part-funded by the European Union, it is a regional fund and so can only operate in 13 local authority areas[40] from the Lowlands and Uplands Scotland ERDF Programme, which have been selected according to the Scottish Index of Multiple Deprivation (SIMD).

7.16 SPRUCE includes up to £15m which can be invested in energy efficiency retrofit projects. This can include energy production from renewable and low carbon technologies and schemes which pilot new or innovative approaches to energy efficiency, including the retrofit of existing social housing stock. More details, including eligible measures are listed on the Amber Green SPRUCE website[41].

7.17 The advantages of SPRUCE are flexible loan terms and keen pricing compared with traditional bank finance. As loans are repaid, the funding will continue to be invested in urban areas after the Structural Funds Programmes that created them are closed down.

[40] Clackmannanshire, Dundee, East Ayrshire, Edinburgh, Fife, Glasgow, Inverclyde, North Ayrshire, North Lanarkshire, Renfrewshire, South Lanarkshire, West Dunbartonshire, West Lothian

[41] Amber Green SPRUCE website, http://www.ambergreenspruce.co.uk/events/index.html

Financial benefits of improved energy efficiency

7.18 In terms of monetary gains it is recognised that the 'pay back' savings will go to the tenant's pocket (through potentially lower fuel bills). Given the more likely incidence of fuel poverty in this sector, this is a positive outcome. Nonetheless, social landlords will need to recognise this in calculating their cash flows. Further, 'pay back' for a measure is not the same as the life-span of a measure. Some measures will provide a 'quick pay back' (for tenants) and equally should likely provide a corresponding pay back of carbon emissions saved for the social landlord. Other measures may take longer to achieve pay back, or indeed never achieve payback financially, but are worthwhile in terms of saving carbon emissions.

Question 22: Are there any other relevant sources of funding that can help social landlords improve the energy efficiency of their stock?

Question 23: Given the range of financial assistance available to landlords, do you agree that the standard can be achieved without disproportionate cost? If not, please explain why.

Question 24: We see an opportunity to advance gender equality in the creation of jobs to undertake the retrofitting works in industries that have traditionally been male-dominated. Your views on how we can maximise gender equality in job creation would be welcome

8. Measuring and monitoring progress of the energy efficiency standard

This chapter looks at:

- ***The Scottish Social Housing Charter and the potential role of the Scottish Housing Regulator***
- ***The available data sources for measuring progress towards the Energy Efficiency Standard***

The Scottish Social Housing Charter

8.1 Social landlords and their tenants have recently contributed to the development of the first Social Housing Charter. The Charter sets the standards and outcomes that all social landlords should aim to achieve when performing their housing activities. The Charter was approved by the Scottish Parliament on 14 March 2012 and came into effect from 1 April[42].

8.2 Whilst the Charter doesn't have a specific reference to the energy efficiency standard, it does make clear that social landlords should be thinking about improvements beyond the SHQS to provide even warmer homes for their tenants.

> Social landlords manage their businesses so that:
>
> • tenants' homes, as a minimum, meet the Scottish Housing Quality Standard (SHQS) by April 2015 and continue to meet it thereafter, and when they are allocated, are always clean, tidy and in a good state of repair.
>
> This standard describes what landlords should be achieving in all their properties. It covers all properties that social landlords let, unless a particular property does not have to meet part of the standard. Beyond SHQS, landlords should be looking for cost-effective ways of achieving higher energy-efficiency standards for their properties, to provide warmer homes for their tenants and help to meet climate change targets.
>
> During this Charter's lifetime, the Scottish Government will consult on higher standards. If adopted, these new standards will form part of the next Charter.

8.3 The energy efficiency standard will form part of the next Charter, and therefore be included in future annual monitoring returns that landlords provide to the Scottish Housing Regulator (SHR – see below for more detail). However, this is not likely to take place until 2017-18 at the earliest and the standard is not currently included in the returns. Some form of data collection will be required in the interim period to monitor progress towards the standard.

[42] The Scottish Social Housing Charter, http://housingcharter.scotland.gov.uk/.

Data sources

8.4 The main possible data sources which could help monitor the proposed energy efficiency standard include the Scottish House Condition Survey (SHCS); and the Home Energy Efficiency Database (HEED), as well landlords' annual returns to the Scottish Housing Regulator.

8.5 At present, all EPCs which are produced for existing dwellings are lodged on the Energy Saving Trust's **Home Energy Efficiency Database** (HEED). HEED is designed to help monitor and target carbon reduction and fuel poverty work. It is an activity database hosted by the Energy Savings Trust, which tracks house-by-house energy efficiency characteristics. Social landlords can use this to upload EPCs when dwellings are re-let. Also, when suppliers undertake relevant work they are supposed to enter this into the HEED activity database. As an activity database it is useful, however this only represents the self-reported work, which is not necessarily all the relevant work undertaken. It may be possible to work with social landlords to stress the importance of data uploading. The percentage coverage varies widely by housing attribute, with attributes like property age and type being far better populated than attributes like microgeneration technologies installed. More details can be found at the EST website http://www.energysavingtrust.org.uk/Professional-resources/Existing-Housing/Homes-Energy-Efficiency-Database. A bespoke database is being developed which will allow EPCs for non-domestic buildings to be lodged. This facility will help to deliver a number of Government policies which are using EPCs as an energy measure – Green Deal, Renewable Heat Initiative. The data held will be instrumental in developing future policies.

8.6 The **Scottish House Condition Survey (SHCS)** is a continuous sample survey designed to provide data that is representative of the household. This is the data source tracking the overarching SHQS progress. The SHCS will therefore continue to provide a strategic measure on an annual basis. SHCS also provides energy per dwelling, energy per m^2, emissions from space and water heating and lighting as well as total emissions by fuel type. SHCS data is suitable for use as a baseline analysis. More details can be found at the SHCS website: http://www.scotland.gov.uk/Topics/Statistics/SHCS/LA0810

The Scottish Housing Regulator

8.7 The Scottish Housing Regulator (SHR) is an independent body and it will carry out its functions according to the Social Housing Charter. The SHR continues to be responsible for monitoring SHQS compliance. Within this there is an energy efficiency element and social landlords are already reporting progress to the Regulator. There is therefore a logical argument for the independent SHR to monitor the proposed energy efficiency standard, as annual returns are already made to the Regulator to report progress. This will continue in the form of the Annual Return on the Charter (ARC). For future versions of the Social Housing Charter, it would be possible to include the energy efficiency standard. For these reasons, discussions are ongoing with the SHR to ask if it would consider monitoring the standard on behalf of the Scottish Government.

Question 25: Are there any other data sources you could suggest to monitor the proposed energy efficiency standard?

Question 26: Would you welcome the SHR monitoring the proposed standard both in the interim period and longer-term or would you prefer an alternative body to carry out this role? If so, who and how?

Costs associated with monitoring

8.8 As the SHR will continue to monitor SHQS compliance, there is a case that costs can be minimised to all parties if the Regulator also monitors the new energy efficiency standard.

8.9 In addition to the submission of annual returns, social landlords also incur the costs of generating and lodging an Energy Performance Certificates (EPCs) for new lets, where a valid EPC does not exist. This is a legal requirement, in which case these costs would be part of existing business running costs.

8.10 The cost of generating (as opposed to lodgement) of an EPC for a dwelling is around £30. The actual cost of EPC lodgement itself is minimal[43], and landlords may decide to do this, even when not required to do so.

8.11 The capacity to generate energy assessments using RdSAP software may be an option for some social landlords, particularly if they have the technical capacity to do this. Many social landlords are training their staff to undertake EPC assessments, as this could be a more cost-effective option, rather than outsourcing.

Question 27: Are there any other costs associated with monitoring landlords' progress towards the energy efficiency standard?

[43] Introduction of an Energy Performance Certificate Lodgement Transaction, Scottish Government, October 2011, http://sh45inta/Publications/2011/11/16154018/17

9. Timescales for the Energy Efficiency Standard

This chapter looks at:

- ***Further milestones for the Energy Efficiency Standard***

9.1 The proposed energy efficiency standard is part of the wider Sustainable Housing Strategy, which will encompass all housing tenures. The consultation process for both the SHS and the energy efficiency standard for social housing will run in parallel, and both consultations will take place from 25 June to 28 September. This approach will enable respondents to reflect issues and potential impacts across all housing tenures.

Milestones

9.2 Given how important the UK Government funding streams will be (see above, chapter 7), and to enable full consideration of the responses to this consultation document, we propose finalising the new energy efficiency standard in late 2012 with the first milestone being 2020. However, given the longer-term climate change target for 2050, it is important that the standard will be seen as an interim milestone with the ultimate aim being to achieve even greater levels of energy efficiency in social housing in the longer term.

9.3 To help meet the longer-term target of 2050, it may make sense to set a series of interim milestones to be met, so that progress can be gauged. The obvious dates for the milestones are 2020, 2030, 2040, and 2050. In terms of the level of standard to be met for each of the later deadlines, the 'advanced measures' column in the case studies gives an idea of the kind of further improvements that can be made and the impact on the EPC rating. This gives an indication of the likely longer-term rating to be achieved. However, we propose deferring the final decision on this until nearer 2020 when it will be clearer what progress is being made, what the impact of UK Government schemes (such as the Green Deal) have had and what new technologies have been successfully piloted and are becoming more commonplace. For these reasons, we propose defining the 2030 standard around 2020 (and likewise the 2040 milestone around 2030, and the final 2050 target around 2040).

Question 28: Should there be regular milestones to measure progress towards 2050? If so, what dates would you suggest?

Question 29: Do you agree that setting the longer-term milestones should be deferred until progress towards 2020 can be reviewed?

Question 30: Do you consider there to be any further opportunities within the Energy Efficiency Standard for Social Housing to promote equality issues. If so, please outline what action you would like us to take.

10. Replying to the consultation and list of questions

10.1 This paper is intended to stimulate further discussion, particularly among social landlords and tenants. We would welcome your views and will take them into account in deciding whether to introduce a new energy efficiency standard for social rented housing and, if so, what form that standard should take.

10.2 The intention is for any finalised standard to set out the required rating or list of measures that need to be met for the main different house types and to provide guidance on potential measures to install, as well as indicative costs.

10.3 Through this consultation, we would welcome your views and comments on the work done so far, including:

- The proposed national standard for the energy efficiency of the social rented housing stock;
- How the standard should inform the setting of investment plans;
- How to benchmark and measure progress in delivering the standard;
- The draft modelling typology showing how different Scottish house types could be improved to meet the proposed standard.

10.4 Social landlords' housing stock differs across Scotland, with urban and rural situations and each with its own thermal properties. We would therefore welcome a wide range of responses from landlords across the country reflecting in their specific circumstances and the impact of the proposed standard on them.

10.5 A list of all the questions in the consultation document is set out below. Please let us have your comments by **28 September 2012.** Please use the respondent information form and consultation questionnaire for your response. **Please fill in the respondent information form at the beginning of the questionnaire** as this will make sure we treat your response in the way you ask. If you ask for your response not to be published we will treat it as confidential.

10.6 This is published as a separate Word document on the website (under 'Associated downloadable documents'). You can save the form as a file on your computer and return to us at eessh@scotland.gsi.gov.uk. Or, fill in a hard copy and send to:

Angus Macleod
Housing Sustainability
Scottish Government
Highlander House
58 Waterloo St
Glasgow
G2 7DA

You do not need to answer every question unless you want to. We welcome all responses.

10.7 If you have any questions about responding to the consultation, please contact eessh@scotland.gsi.gov.uk or call 0141 2712476.

10.8 If you give permission for your response to be made public, and after we have checked that it contains no material which could damage someone's reputation, we will make the response available to the public in the Scottish Government Library by 26 October and online by 02 November. You can make arrangements to see the responses by contacting the SG Library on 0131 244. We can also copy them and send them to you. However, we may charge you for this service.

10.9 Please be aware that we are governed by the Freedom of Information (Scotland) Act 2002 and so would have to consider any request made to us under the act for information relating to responses made to this consultation exercise. Please be aware that we are governed by the Freedom of Information (Scotland) Act 2002 and so would have to consider any request made to us under the act for information relating to responses made to this consultation exercise.

Summary of consultation questions

Question	Page
Question 1: Do you have experience, or know of, social landlords acting as 'pioneers' in addressing energy efficiency? Question 1(a): If 'yes', please provide details, including any web links/contact details you may have.	14
Question 2: For landlords, what is the greatest cause of SHQS exemptions in your stock? Is there anything that the Scottish Government could do to assist in reducing exemptions?	14
Question 3: What has been your experience in improving properties in mixed tenure estates? Question 3(a): If you have developed solutions to work with owners and/or private sector tenants, please provide details.	15
Question 4: The Energy Efficiency Standard for Social Housing will directly affect a diverse group of social sector tenants who have individual needs and experiences. In your view, is improving the energy efficiency of social rented housing a priority for tenants? Yes/No Question 4(a): If 'yes', are the suggested 'potential benefits' broadly the right ones? Are there any others you would suggest? Question 4(b): If no, why is this? How would you suggest we increase tenant awareness of the importance of energy efficiency?	16
Question 5: Do you consider any particular equality groups will be at significant risk as a result of this new policy? If so, please outline what measures you consider appropriate to minimise risk.	17
Question 6: Do you think the implementation of the Standard will cause an undue financial burden on any particular equality group? If so, we would welcome your views on what action could be taken to minimise that burden.	17
Question 7: What else would you suggest to help tenants better manage their energy consumption?	17
Question 8: Do you think that example case studies will be helpful or unhelpful in taking forward the Standard? If you think they are helpful: Question 8 (a): Are these the right range of dwelling types to be represented as case studies? Question 8 (b): Are there any other types (including hard to treat) that you would like to be included as a case study? Yes/No Question 8 (c): If yes please state type and say why you think they should be included?	20
Question 9: What are your views on using the SAP/RdSAP methodology for regulating energy performance in the social rented sector?	21
Question 10: Do the 'Baseline: 1990 Measures' accurately reflect the energy efficiency performance of dwellings at that time? Yes/No If not, please provide details.	23

Question 11: Are the suggested improvements in the 'Further Measures' and 'Advanced Measures' columns of the case studies realistic and feasible? Yes/No Question 11 (a): Please provide further explanation of any measures that you think should not be included within the modelled case studies. Question 11 (b): Please provide further explanation of any measures not currently included in the case study modelling that you would like to see included?	24
Question 12: Taking into account the reasons above, do you agree that establishing a minimum Environmental Impact Rating for the main dwelling types is the most practicable format for the standard? Yes/No. If not, please explain why.	26
Question 13: If you think that the standard should be a minimum Environmental Impact rating, do you think that there should also be a safeguard that the dwelling's *current* Energy Efficiency rating should not reduce?	26
Question 14: In assessing your stock against the proposal for a new standard for social housing, do you foresee any significant challenges in obtaining individual property details across your stock? Yes /No If yes, please explain why.	26
Question 15: Do you think that the ratings above are suitably challenging? Yes/No If not, please give explanations why not and suggest more suitable ratings.	28
Question 16: Do you think the suggested energy efficiency rating for electrically heated detached homes and bungalows undermines the SHQS? Yes/No. Please explain your choice.	28
Question 17: What are your views on whether all social rented dwellings should be heated by gas, electricity or renewable heat sources by 2030?	28
Question 18: Do you think that either of the options above should be reconsidered? Yes/No. If yes, please explain which option you prefer and why.	29
Question 19: Do you agree that the standard should apply to all individual homes and not be aggregated across a landlord's stock? Is this practicable?	29
Question 20: Do you agree that the approach to unusual dwellings outlined above could offer a reasonable way forward for applying a standard to these dwellings? Question 20(a): Do you agree that the percentage reduction should correspond to Climate Change targets and be set at 42%? Yes/No. If not, at what level do you think the reduction should be set that will be achievable but provide a meaningful contribution to the improved energy efficiency of social rented housing?	31
Question 21: Do you think that there should be exceptions to the proposed energy efficiency standard? If so, how should they be treated?	31
Question 22: Are there any other relevant sources of funding that can help social landlords improve the energy efficiency of their stock?	36
Question 23: Given the range of financial assistance available to landlords, do you agree that the standard can be achieved without disproportionate cost? If not, please explain why.	36

Question 24: We see an opportunity to advance gender equality in the creation of jobs to undertake the retrofitting works in industries that have traditionally been male-dominated. Your views on how we can maximise gender equality in job creation would be welcome.	36
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ANNEX A

CASE STUDY

Purpose

In order to assist landlords in their planning for the Energy Efficiency Standard for social housing we have developed a series of case studies showing how various measures can improve the energy efficiency of their dwellings and help them to meet the standard.

The types of upgrades which can be made depend on the exact location and nature of the property. These are case study examples. They are not meant as technical guidance. You should ensure that any improvements are assessed by a technically competent professional to take into account the unique construction and location of your dwellings. You should also consider the level of information and advice given to tenants to ensure that they can utilise the dwelling to reduce their energy bills and emissions.

Methodology

The case studies are based on RdSAP methodology. All landlords should be familiar with this because of their requirement to provide new tenants with Energy Performance Certificates. Dwellings are graded from A to G and given scores for energy efficiency and environmental impact between 0 and 100.

Each case study provides an example of the 1990 baseline data for the dwelling type and an example of the energy efficiency improvements likely to be implemented by a reasonably performing landlord to achieve the Scottish Housing Quality Standard. It then provides additional suggestions of the types of improvements that landlords could use to meet the new Energy Efficiency Standard and any further measures. The case studies cover examples of gas and electrically heated dwellings. For each fuel type an example of a ground, mid and top floor flat has been provided along with a semi-detached and a mid terraced house. The case studies have been modelled on an older version of RdSAP, although the final version will be based on RdSAP 2009 (v9.91) to ensure its compatibility with the new Green Deal software being utilised from October 2012.

Range of Energy efficiency measures

A full list of improvement measures is available in Appendix T of the SAP 2012 methodology: http://www.bre.co.uk/filelibrary/SAP/2009/SAP-2009_9-90.pdf

A summary is provided below:

Loft insulation
Cavity wall insulation
Floor insulation
Hot water cylinder insulation
Draught proofing

Cylinder thermostat
Heating controls – Programmer, room thermostat and TRVs
Heating controls – Time and temperature zone control
100% low energy lighting
Upgrade boiler – condensing (mains gas)
New or replacement storage heaters (electricity)
Air Source Heat Pumps
Solar water heating
Secondary glazing
Double or triple glazing
Solid wall insulation
Photovoltaics

Applying Energy Efficiency Improvements in the Model

Improvements have been applied on a cost basis, starting with lower cost measures.

Installation costs, fuel bill savings and cost effectiveness of different technologies will vary depending on the type, size and location of dwellings.

Considering Costs, Savings and Carbon

To calculate fuel bill savings you will need to multiply the change in energy use for the fuel (KWh per m2) by the current fuel price. Fuel prices can be found here: http://www.decc.gov.uk/en/content/cms/statistics/energy_stats/prices/prices.aspx

To calculate cost effectiveness you will need to divide the estimated cost of the measures installed by the amount of carbon saved.

The following table can be used as example installation costs for measures but if you procure measures in bulk you may expect to get a reduced cost. The source of this data is from DEMScot (the Scottish Government's carbon model where approximate costs were gathered in an industry survey in 2009) and the UK Government's call for market information from the industry in 2011 as part of the Green Deal consultation process. In some cases, e.g. remote locations, larger properties, difficult to access or expensive to treat properties, costs will be significantly higher. Many landlords will already have a good idea of the costs of installation of energy efficiency measures.

Measure	DEMScot Cost	Green Deal Market Information for Impact Assessment [44]
Solid wall (external)	£5500	£4800 for LA semi or £3160 for a flat. Individual installations are costed at £7600 up to U=0.35
Solid wall (internal	Inc above	£5,000 including time and lost floor space factors
Cavity wall	£500	Range from hard at £1,620 to easy at £376
Loft insulation	£500	Loft top-ups £283
Floor insulation	£1200 per dwelling	n/a
Heating controls	£300	n/a
Condensing boiler	£2500	n/a
Double glazing (single to A or C to A)	£3700	£450 per window
Secondary glazing	Inc above	n/a
Under floor heating	n/a	n/a
Biomass boiler	£9,000	n/a
Solar water	£4,000	n/a
PhotoVoltaic Cells	£8,000	n/a
Ground Source Heat Pump	£10,000	n/a
Air Source Heat Pump	£8,400	n/a
Micro CHP	£4,500	n/a
Wind turbine	£8,000	n/a

Example 1 - A post-1982 gas heated flat

The dwelling used as the case study[45] for an urban dwelling of this age and type has a SAP rating of 76, a NHER rating of 8.7 and passes the SHQS energy efficiency criterion. Its external walls are timber frame (rendered) and it is a tenement. For modelling purposes we have situated this dwelling in Edinburgh.

At present the dwelling has:

- 200mm loft insulation
- Double glazing
- Mains gas
- Full central heating
- Combi boiler
- Programmer and TRV

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http://www.decc.gov.uk/publications/basket.aspx?filetype=4&filepath=11%2fpolicylegislation%2fEnergy+Act+2011%2f3223-EA2011-green-deal-impact-assessment.pdf#basket (page 118)

[45] Case studies were chosen to be a typical dwelling in this category

Although this dwelling passes the current SHQS there are still some upgrades which would make it more energy efficient and decrease its carbon emissions. The below table shows the type of upgrades which could be made and the difference this would make to the SAP and NHER ratings as well as the CO2 emissions.

		Roof	Heating System	Renewables		
	Now	Upgrade loft insulation	Replace boiler (increasing efficiency to 91%)	Add photovoltaic panels to roof	100% LEL	All three combined
NHER	8.7	8.8	9.5	9.9	9.1	11.5
SAP	76 (C)	76 (C)	80 (C)	84 (B)	78 (C)	91 (B)
Environmental impact rating	76 (C)	77 (C)	82 (B)	84 (B)	77 (C)	92 (B)
CO2 emissions (kg/year)	2,705	2,645	2,292	2,131	2,636	1,591
CO2 savings (kg/year)	-	60	413	574	69	1114
Fuel bill savings (£/year)	-	£10	£85	£106	£25	£213
Install cost	-	£500	£2,500	£8,000	£20	£11,120
Lifetime of install	-	30	30	30	5	30
Cost per tonne of CO2	-	£111	£278	-£4	-£304	£142
Pay back period (years)	-	50	75	29	1	52

Although the dwelling already has 200mm of loft insulation this could be upgraded to 300mm, this would make little difference to the SAP or NHER scores but would decrease annual CO2 emissions by about 2%.

If the boiler was upgraded to a more efficient boiler (example uses a boiler of 90.8% efficiency) then the SAP would increase to 80 (band C), NHER to 9.5 and there would be a 15% reduction in CO2 emissions per year.

Note: If the boiler already in place is relatively new and efficient the full value of a change to a newer very energy efficient boiler may not be received by the tenant and landlord.

If photovoltaics were added to 20% of the roof area, then this would also increase the SAP and NHER to 84 and 9.9 respectively and CO2 emissions would decrease by just over 20% per year.

Installing 100% low energy lighting will increase both the SAP and NHER ratings, plus reduce carbon emissions by about 3%.

If all of these upgrades were made to the dwelling then there would be an overall increase of 15 SAP points from current stock, to 91 and an increase of 2.8 NHER points to 11.5. CO2 emissions would also reduce by about 40%.

Example 2 – Four in a block (lower) 1920-1950

The dwelling used as the case study for an urban dwelling of this age and type has a SAP rating of 63, an NHER rating of 6.6 and fails the SHQS energy efficiency criterion. It is a ground floor, 4-in-a-block style flat constructed from rendered brick. For modelling purposes we have situated this dwelling in Falkirk. At present the dwelling has:

- Uninsulated cavity walls;
- Double glazing;
- Full mains gas central heating from a condensing boiler, which also supplies hot water;
- Programmer and TRVs;
- Secondary heating – gas fire; and
- 50% low energy lighting.

The table below shows the type of upgrades which could be made and the difference this would make to the SAP and NHER ratings as well as the CO2 emissions.

	Now	cavity wall insulation	upgrade boiler to 90.8% efficiency	100% LEL	Solar water heating	All measures
NHER	6.6	7.9	7.7	6.7	6.8	9.1
SAP	63	70	71	64	64	79
SAP band	D	C	C	D	D	C
Environmental impact rating	D	D	D	D	D	C
CO2 emissions (kg/year)	5,966	4,825	4,983	5,931	5,747	3,816
CO2 savings (kg/year)		1141	983	35	219	2150
Fuel bill savings (£/year)		199	173	17	34	387
Install cost		500	2500	60	4000	7360
Lifetime of install		30	30	30	30	30
Cost per tonne of CO2		-£159.80	-£91.22	-£428.57	£453.58	-£65.89
Pay back period (years)		3	14	4	118	19

Cavity wall insulation would add 7 SAP points – or 1.3 NHER points – to this home, reducing carbon emissions by a fifth and reducing annual heating costs by £200.

The addition of a more efficient boiler and removal of the secondary heating system would increase SAP to 71 and NHER to 7.7. This would translate to a 16% carbon reduction.

Note: If the boiler already in place is relatively new and efficient the full value of a change to a newer very energy efficient boiler may not be received by the tenant and landlord.

If solar water heating were added there would be marginal changes to NHER, SAP and fuel costs. The combined package would improve this house to NHER 9.1, over a third off carbon emissions and nearly £400 of savings on fuel per year.

ANNEX B

TABLE OF RELEVANT FUNDING SOURCES

General

Name of programme	Delivered by	Type of funding/assistance	Timing	Eligibility	Amount of funding
Climate Challenge Fund	Keep Scotland Beautiful on behalf of the Scottish Government	Support to communities to reduce carbon emissions. A maximum funding limit of £150,000 per year is in place. From 2012, a Junior Climate Challenge Fund has been introduced. The aim of the JCCF is that 10% of the overall fund will be allocated to projects run by and for young people. CCF can support eligible projects which promote increased take up of energy efficiency measures across all housing types, leading to carbon savings. Funding for infrastructural improvement can only be considered for community owned buildings, where projects meet the overall eligibility criteria.	2008- 2015	Since 2008 365 different communities across Scotland have received 504 individual awards totalling £44.6 million to undertake carbon reduction projects. The main criteria for the fund are: ○ The community must be at the heart of the project ○ Projects should deliver measurable carbon reduction and help create a low carbon future ○ Projects should leave a legacy for the future	£10.3m annually

Name of programme	Delivered by	Type of funding/assistance	Timing	Eligibility	Amount of funding
SPRUCE	AMBER – as the fund manager (with the European Investment Bank acting as Holding Fund Manager)	Financed through JESSICA and the SG, the programme is split between property & infrastructure investments and energy efficiency investments. On the 2nd of these, social housing providers are invited to develop renewable energy projects and energy efficiency schemes as part of the retrofit of their existing housing stock. 13 local authority areas as determined by the Scottish Index of Multiple Deprivation are eligible.	Funding to be utilised from now until 2015. Loan funding will however be recycled by the SG into new projects beyond that deadline.	13 LAs are eligible	JESSICA, Scotland investment fund is £50m. £15m to be used for energy efficiency

Supplier Investments

Name of programme	Delivered by	Type of funding/assistance	Timing	Eligibility	Amount of funding
The Carbon Emission Reduction Target (CERT)	Main energy suppliers	CERT is the obligation on the six main energy suppliers to facilitate reductions in domestic carbon dioxide emissions.	Launched April 2008, ends December 2012.	Social housing providers use this to support a number of measures including: ▪ insulation (cavity wall, solid wall, loft, underfloor and external wall. ▪ switching heating systems from solid fuel and electric to gas or oil ▪ replacement of gas boilers rated as below	Estimated supplier investment across UK around £5.5bn (April 2008 to Dec 2012) Generally calculated on the basis of a price for lifetime Carbon Dioxide emissions savings.

Name of programme	Delivered by	Type of funding/assistance	Timing	Eligibility	Amount of funding
				70% efficient with A rated • connection to district heating schemes • provision of energy saving devices, such as power down plugs to tenants • ground source heat pump installations	
The Community Energy Saving Programme (CESP)	Main energy suppliers and the main electricity generators	The CESP is an obligation placed on the six main energy suppliers and the main electricity generators to fund area-based carbon reduction schemes targeting low income areas	September 2009 – Dec 2012	Tends towards supporting expensive measures that are difficult to fully fund under CERT, such as: • external wall insulation • district heating installation • replacement of solid fuel and electric heating with gas heating • air and ground source heat pumps • solar panels.	The level of funding is dependent on a number of factors including the concentration of measures delivered in the target area (the energy providers get additional credits the higher the concentration of measures). Expected to deliver up to £350m of efficiency measures.
Energy Company Obligation (ECO)	Main energy suppliers	Amended powers underpinning CERT and CESP so as to provide a new obligation which will underpin the Green Deal	Late 2012 (tbc)	It will focus particularly on those householders (e.g. the poorest and most vulnerable) and those types of property (e.g. the hard to treat) which cannot achieve financial savings	Estimated to be worth up to £120m per annum in Scotland.

Name of programme	Delivered by	Type of funding/assistance	Timing	Eligibility	Amount of funding
				without an additional or different measure of support. Will also contain a Carbon Saving Communities obligation This will provide support to households in low income areas, including for loft and cavity wall insulation and is expected to be of significant benefit to social landlords.	
Assisted gas connections	Scotland Gas Networks	Subsidise gas connections for households meeting certain criteria relating to fuel poverty risk.	Commenced April 2009 and likely to continue beyond the current arrangement which expires in 2013	Available to owners or tenants in existing housing who require a gas connection and meet qualifying criteria. It can also apply to community schemes that are off the gas grid. Additional energy efficiency measures must be installed - e.g. gas central heating systems. These subsidies have been taken up by a number of social housing providers	Up to £2,000 subsidy per qualifying household is available.

Householder Investments

Name of programme	Delivered by	Type of funding/assistance	Timing	Eligibility	Amount of funding
Feed- in-tariffs	Energy providers	Savings on energy bills as households will be generating their own electricity. Whoever owns the panels will be paid for any electricity generated and surplus electricity exported to the national grid.	Commenced April 2010. Tariff currently under review. Solar PV new tariffs to be effect from 1 April and other technologies later in 2012.	Individuals, local authorities, community groups and other organisations. Subject to ongoing consultation, home must meet an EPC rating of D to be eligible for FIT.	Each installation of low carbon electricity generating technology up to 5MW will qualify for a payment for each kW produced and a further payment for each kW exported to the grid.
Renewable Heat Incentive (RHI) **Renewable Heat Premium Payment (RHPP)**	RHI – Ofgem RHPP – Energy Saving Trust	The Renewable Heat Incentive is very 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. Renewable heat systems installed, renewable energy generation is estimated and fixed payment is made based on the estimate	From end November 2011 August 2011-March 2013	The RHI is being implemented in phases. Phase 1, from end November 2011, will focus on the industrial, commercial and public sectors. The domestic sector is expected to be introduced in 2013. Support is available for the domestic sector through the RHPP which will focus on those	Amount payable will be based on the estimate of renewable energy generated. £3 million of the RHPP fund was ring-fenced for Social Housing in

Name of programme	Delivered by	Type of funding/assistance	Timing	Eligibility	Amount of funding
				homes not supplied with gas. The RHPP will provide support for Solar Thermal, Air Source Heat Pumps, Biomass Boilers and Ground Source Heat Pumps technologies and householders will need to ensure they have basic energy efficiency measures in place.	year one and a further £10 million in year two.
Green Deal	Certified and accredited Green Deal Finance Providers/and certified installers	Will include a financial framework 'pay as you save' to enable energy saving measures to be paid for in instalments via electricity bills.	Late 2012 (tbc)	Finance to fund energy efficiency improvements of domestic and non-domestic properties.	Market driven initiative therefore no estimation of take up.

Loans

Name of programme	Delivered by	Type of funding/assistance	Timing	Eligibility	Amount of funding
Community and Renewable Energy Scheme	Community Energy Scotland Ltd	Loan finance of up to £150k available to cover pre-planning costs for any renewable project. Projects must demonstrate a wider community benefit.	2011 – 15	Not-for-profit community based organisations	£6.8m for 2011/12, with a further £23.5m allocated to continue the scheme.

Name of programme	Delivered by	Type of funding/assistance	Timing	Eligibility	Amount of funding
District Heating Loan Fund	EST	Will provide loans up to £400,000 on a commercial basis to support district heating networks for both low carbon and renewable technologies in order to overcome a range of infrastructural issues and costs of developing these projects. Technical support will also be available	2011 – 15	Open to Registered Social Landlords, local authorities, SMES and ESCOs. Individuals and householders are not eligible.	£1.9m allocated to projects in 2011/12, with a further £5m allocated to continue the scheme.
Gas Infill Fund	Scottish Government	Provides loans to individual households and 'aggregator' organisations to facilitate gas infill and gas extension projects	2012-2014	Will assist communities within/near to the existing gas grid to assemble the funding for infill/extension infrastructure projects	Estimated at £5m: £1m in 2012/13 £4m in 2013/14

Future programme

Name of programme	Delivered by	Type of funding/assistance	Timing	Eligibility	Amount of funding
Warm Homes Fund	Scottish Government	Primarily loan funding, with some grants for feasibility studies and options appraisals. Focus on the potential of renewable energy to provide a long-term, sustainable means to address fuel poverty	2012 - 15	Will assist communities affected by fuel poverty by providing grants and loans to support renewable energy projects. Eligible organisations include RSLs and locally based development trusts	£50m 2012-16

The Scottish Government

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