



GLASGOW'S
HOUSING
STRATEGY

SUSTAINABLE COMMUNITIES, AFFORDABLE HOMES

Glasgow's Housing Strategy 2017-2022

Affordable Warmth Strategy
December 2016



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EXECUTIVE SUMMARY



Fuel Poverty and Climate Change

1. Glasgow will continue to encourage and enable as many homeowners and housing providers as possible to improve the thermal efficiency of their own residential properties.
2. The Council will work with communities, landlords, owners and businesses to access funding to all eligible energy efficiency schemes.
3. The Climate Change (Scotland) Act requires emissions to be reduced by 42% by 2020 and by at least 80% by 2050. It also requires Scottish Ministers to set annual emissions targets, as well as including measures relating to adaptation, energy efficiency and waste reduction.
4. Fuel poverty and climate change are linked, particularly in terms of the “carbon footprint” left by individual properties and the resultant cumulative effect on emissions produced within the city. Our Affordable Warmth Strategy, whilst primarily focussed on the means of improving the quality of life for our citizens in respect of energy costs, also takes into account innovative ways of reducing emissions.
5. The City is aiming to join up and connect its approach to the reduction of carbon emissions in both the domestic and non-domestic fields. The Affordable Warmth Strategy covers the domestic element and the Energy and Carbon Masterplan addresses the non-domestic element.
6. This is already being reflected in a more holistic ‘community centred’ approach which aims to maximise the opportunities of the successful area based Home Energy Efficiency Programmes for Scotland or (HEEPS) domestic programme of housing improvement moving onto the Scotland’s Energy Efficiency Programme (SEEP) which seeks to tackle un-insulated buildings where there is a mix of residential; commercial and/or community use at a local level.
7. Opportunities to join up district heating schemes between housing providers and local businesses are to be encouraged.

EXECUTIVE SUMMARY

Fuel Poverty target

8. The Housing (Scotland) Act 2001, Section 89(5)(b), places a statutory duty on Scottish Ministers 'to ensure, so far as reasonably practicable, that people are not living in fuel poverty in Scotland by November 2016'.
9. As of August 2016, 34% of Glasgow residents were considered to be living in fuel poverty with 8% in extreme fuel poverty.
10. The fuel poverty target has not been met, and cannot be achieved at national or Glasgow City level within the foreseeable future, principally because of increases in domestic fuel bills and the number of low income households. These conditions have been a feature of the economic landscape for the last 5 years.

Causes of fuel poverty

11. The main causes of fuel poverty are:
 - ◆ fuel price,
 - ◆ household income and
 - ◆ energy efficiency.

Extent of fuel poverty in Glasgow

12. Approximately a third of households in Glasgow were in fuel poverty during the period 2012-2014. This figure is higher than in cities such as Edinburgh (25%) and Aberdeen (29%), but it is lower than the figure for Dundee (41%).(Source: Glasgow Indicators Project)
www.understandingglasgow.com/indicators/environment/fuel_poverty/scottish_cities
13. Fuel bills in Scotland have risen six times faster than household incomes since 2003. Scottish Government (2014b) www.gov.scot/Publications/2015/01/2420/4
14. Gross Household Disposable Income (GHDI) income in Scotland in 2014 was £17,095 compared to the UK average of £17,965. (GHDI) is the total amount of money households have available for spending or saving after tax and National Insurance contributions. This is the money individuals have to spend on household bills, food and other items. In 2014, Glasgow had the lowest level of disposable income in Scotland at £14,757 (Source SPICE, 2016)
www.parliament.scot/ResearchBriefingsAndFactsheets/S5/SB_16-72_Disposable_Household_Income_in_Scotland_2014.pdf

EXECUTIVE SUMMARY

15. The average annual income for Glasgow pensioners is currently less than £14,000. The Council provides an affordable warmth payment of £100 pa for pensioners over 80 years of age.
16. There is a particular problem with the use of pre-payment meters, which are often installed to help energy company customers budget. However there is a weekly charge levied on the first top-up. A debt over £500 is a barrier to switching. A credit check will also be carried out for under £500 debit to allow change to a “dry” meter
17. Nearly all social rented landlords provide some direct advice or have a referral system for customers who find themselves in fuel poverty. Such a service is not readily available in the private sector, which has some of the highest levels of extreme fuel poverty and the least energy efficient properties.

Key findings from the review of installed energy efficiency measures in Glasgow

18. An estimated 184,000 dwellings have received some form of energy efficiency works. However this leaves over 115,000 (38%) dwellings untreated.
19. 75% of stock suitable for cavity fill insulation has been treated.
20. Nearly 70% of traditional solid wall properties have not been insulated. The majority of these are Pre-1919 tenements, which represent 25% of total housing stock.
21. The city still has many challenging building construction types which are difficult and/or expensive to treat.
22. There has been a steady if unspectacular improvement in average energy efficiency ratings in the city, which remains slightly better than the national average. Over 50% of stock has achieved the highest efficiency rating (Bands A to C)
23. The recent focus and priority has been to make use of The Home Energy Efficiency Programme Scotland: Area Based Schemes (HEEPS:ABS) funding to tackle energy inefficiency on a more systematic estate by estate basis. In practice this has been difficult to deliver as a number of criteria must be met often involving multiple agencies and individual owners within an annualised programme with very narrow completion time targets.

EXECUTIVE SUMMARY

Policy strands

24. The policy strands arising from the analysis are:

- ◆ Improving energy efficiency as the first line of attack on fuel poverty
- ◆ Raising awareness of the extent of fuel poverty and what measures are in place to provide support and advice to low income households
- ◆ Considering ways of reducing consumer dependency on gas and electricity
- ◆ Influencing lifestyle behaviours to encourage energy saving, reduce fuel costs and carbon emissions.
- ◆ Maximising income of householders to cover fuel costs.

Sustainable Glasgow

25. The Energy and Carbon Masterplan (ECM) sets out a vision of a transformed energy economy for Glasgow that is based on low carbon and increasingly de-centralised energy sources that are better able to meet Glasgow's energy needs and help Glasgow tackle climate change. It is the framework for leading Glasgow through the transition to a low carbon economy. Its focus includes:

- ◆ the development of low carbon heating systems,
- ◆ more energy efficient buildings and
- ◆ developing further renewable energy projects.

26. Sustainable Glasgow was established in 2010 and it has set a target of reducing the city's carbon emissions by 30% by 2020 from a 2006 baseline. Latest data from DECC (the UK Department of Energy & Climate Change) shows that Glasgow has made almost 15% reductions in its emissions. This means that the city is half way towards its overall target.

27. The Council is setting up a SEEP Delivery Group to consider routes to identifying potential projects which will bring together combined residential, commercial /community buildings for energy efficiency measures. The group will also monitor progress. The Affordable Warmth Team located within Development and Regeneration Services will report all SEEP projects to the Regeneration and the Economy Policy Development Committee and the Sustainability and the Environment Policy Development Committee.

28. The Strategy calls for the Scottish and UK governments to provide incentives and pump priming, and to encourage joint procurement with housing providers wherever possible and within inter-government rules with the minimum of process and bureaucracy. In this respect the decision to devolve to Scotland some powers with respect to ECO is to be welcomed.

EXECUTIVE SUMMARY

Affordable Warmth Action Plan - proposals

29. In summary, the Affordable Warmth Action Plan themes are:
- 1 Improving Glasgow's housing stock and new build standards.
 - 1a Ensure new build housing meets current standards and beyond including renewable technologies whilst achieving value for money.
 - 1b Work with industry and research partners to access all opportunities to deliver innovative cost effective energy efficiency solutions for existing properties within the city.
 - 1c Work with registered social landlords, owner occupiers and private landlords to improve housing stock and reduce fuel poverty.
 - 2 Maximising the Benefits of HEEPS/SEEP for the residents of Glasgow.
 - 2a Maximise opportunities to identify and develop HEEPS: ABS projects in partnership with owners, private sector landlords, and RSL's within mixed tenure blocks.
 - 2b Identify and take forward projects eligible for SEEP funding and work with commercial and housing provider partners to maximise funding and leverage brought into the city.
 - 2c Maximise Scottish Government and other funding opportunities to deliver energy efficiency measures and reduce fuel poverty.
 - 3 Affordable Warmth Advice and Assistance.
 - 3a Support the provision of free and impartial energy advice and advocacy services to all households in the city to mitigate against the effects of increasing fuel costs.
 - 3b Ensure signposting is in place to support maximum uptake of financial assistance to alleviate fuel poverty for all Glasgow residents.
 - 4 Sustainability & Resilience.
 - 4a Take action to ensure the city is resilient to the effects of climate change.
 - 4b Contribute to an energy efficient future to help reduce the carbon footprint of the city

The key outcomes, measures and targets are set out at **Appendix A (Affordable Warmth Action Plan)**

EXECUTIVE SUMMARY

Priorities for available expenditure

30. During the term of the Glasgow's Housing Strategy 2017 – 22, we aim to increase the energy efficiency of as many residential properties as possible in the city, within the UK and Scottish funding support frameworks. There should be a focus on targeting areas which meet HEEP/SEEP eligibility criteria including:
 - ◆ Pre-1919 tenements and related premises such as shop units below flats and difficult to treat properties
 - ◆ Mixed tenure inter war and post war estates where synergies can be obtained from RSL and owner contributions
 - ◆ Wholly owner occupied area based schemes
31. The main vehicle for delivery will be to continue and expand the Home Energy Efficiency Programmes Scotland: Area Based Schemes (HEEPS: ABS) and the Energy Company Obligation (ECO) funding stream and to continue to pilot the wider Energy Efficiency Programme for Scotland. The Council will act as principal enabler, ensuring value for money from HEEPS, ECO or successor funding.
32. Priority for available resources will go to areas of multiple deprivation, meeting HEEP/SEEP guidelines, which may also include areas with concentrations of private sector housing.
33. There is an expectation that RSLs will prioritise resources to achieve the new Energy Efficiency Standard for Social Housing (EESHS) by 2020 in its existing stock and will deploy the latest building techniques and technology to reduce dependency on carbon based fuels in new build developments.
34. We aim to mitigate as far as possible, the impact of increasing energy costs on the level of fuel poverty in the city. Initiatives include:
 - ◆ The Council and partner organisations continuing to provide independent advice to householders through Home Energy Scotland or G. Heat
 - ◆ Addressing billing issues
 - ◆ Benefits maximisation
 - ◆ HEEPS /SEEP project criteria where unit costs are above the current grant threshold.



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TO LET
554 6400

226 2267
KEYHOLE

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INTRODUCTION

Glasgow City Council produced its first Fuel Poverty Strategy in 2002, which was updated in 2005. Subsequent to the publication of the Local Housing Strategy (LHS) 2011 and in response to the latest guidance from the Scottish Government (1), it is necessary to produce an Affordable Warmth Strategy going forward taking into account progress already made and the preferred approach of the Council in the period to 2022.

Glasgow's Affordable Warmth Strategy sets out to

- ◆ Describe the links between fuel poverty and energy efficiency and other policy areas, such as climate change **(Chapter 1)**
- ◆ Define the extent, location and nature of fuel poverty (in the Glasgow LHS Area), explaining the contributing factors that influence levels of fuel poverty locally. The root causes of fuel poverty locally are identified and compared with regional and national trends **(Chapter 1)**
- ◆ Explain how a changing climate is likely to affect the housing stock, identifying threats and opportunities, the vulnerability of different groups to climate risks, describing and prioritising what needs to be done to manage climate risks. **(Chapter 1)**
- ◆ Show how the nature of the housing stock in Glasgow impacts upon the speed at which properties can be made more energy efficient, including stock characteristics, levels of energy efficiency and how tackling fuel poverty assists in addressing local issues with Below Tolerable Standard (BTS) housing. A broad estimate of progress made and scale of requirements is considered. **(Chapter 2)**
- ◆ Set out the local context of Glasgow's Affordable Warmth Strategy and how this sits within the broader Sustainable Glasgow agenda **(Chapter 3)**
- ◆ Describe the proposed policy and operational levers which could be used to further reduce fuel poverty in the city within the Scottish and UK Government policy and financial support framework **(Chapter 4)**
- ◆ Describe Glasgow City Council's use of available resources to achieve the maximum contribution for tackling fuel poverty and reducing greenhouse gas emissions, and how we will maximise uptake in the numbers of householders and property owners benefitting from eligible fuel poverty and energy efficiency programmes **(Chapter 4)**
- ◆ Consider what can be done to accelerate the rate of improvement in the owner-occupied and private-rented sectors, whilst maintaining rates of improvement in the social rented sector and the implications for housing arising from any plans for major energy infrastructure, such as district heating **(Chapter 4)**

- ◆ Identify the programmes and actions required to meet fuel poverty and climate change targets. This includes robust fuel poverty outcomes and targets with indicators to measure progress, making particular reference to the Home Energy Efficiency Programmes Scotland: Area Based Schemes (HEEPS:ABS). We describe what the funding will be used for and what outcomes are likely to be achieved. **(Appendix A)**

(1) Scottish Government (2016) Sustainable Housing Advice Note: Fuel Poverty and Climate Change (February 2016)

<http://www.gov.scot/Topics/Built-Environment/Housing/supply-demand/deliveryframework/lhs/Sustainable-Housing-Advice-Note-Fuel-Poverty-and-C>



1 STRATEGIC CONTEXT

The Local Housing Strategy, Fuel Poverty and Climate Change

National fuel poverty priorities, energy efficiency and climate change

- 1.1. The Housing (Scotland) Act 2001, Section 89(5)(b), places a statutory duty on Scottish Ministers 'to ensure, so far as reasonably practicable, that people are not living in fuel poverty in Scotland by November 2016'. This target will not be met, and cannot be achieved at national or Glasgow city level, principally because of increases in domestic fuel bills and low incomes of households which have been a feature of the economic landscape for the last 5 years.
- 1.2. At local level, the Act requires that local authorities set out within their Local Housing Strategies how they intend to enable the objective of eradicating fuel poverty. This obligation relates to housing in all tenures. In its enabling capacity, Glasgow will continue to encourage and where practicable, enable as many homeowners and housing providers as possible to improve the thermal efficiency of their own residential properties. The Council will also enable joint working between communities, landlords, owners and businesses to access funding to all eligible energy efficiency schemes.
- 1.3. This programme has been evolving since the early 2000s and is principally being delivered through a range of measures. These include the application of internal and external insulation, more efficient heating systems, stand alone and shared district heating and hot water schemes (sometimes referred to as 'combined heat and power') and the provision of energy advice to householders.
- 1.4. At the same time, the United Kingdom, at an international level is committed to reducing harmful "green-house gas" emissions in the environment. The Climate Change (Scotland) Act 2009 created a statutory framework for reducing greenhouse gas emissions. It requires emissions to be reduced by 42% by 2020 and by at least 80% by 2050. It also requires Scottish Ministers to set annual emissions targets, as well as including measures relating to adaptation, energy efficiency and waste reduction.

"To achieve Scotland's world leading targets concerted and co-ordinated action is required across the public and private sectors, by central and local government, and at individual and community level....."

Scottish Government (2014a) : Local Housing Strategy Guidance 2014 Paragraph 11.8
<http://www.gov.scot/Resource/0045/00458185.pdf>

- 1.5. The Council views the two issues as being linked, particularly in terms of the "carbon footprint" left by individual properties and the resultant cumulative effect on emissions produced within the city. Our Affordable Warmth Strategy, whilst primarily focused on the means of improving the quality of life for our citizens in respect of energy costs, also takes into account innovative ways of reducing emissions.

Definition of fuel poverty

- 1.6. Section 95 of the (Housing Scotland 2001) Act, defines a household as being fuel poor if it is living in a home which cannot be kept warm at reasonable cost. The Scottish Fuel Poverty Statement (2002 <http://www.gov.scot/Resource/Doc/46951/0031675.pdf>) refines this definition to determine that a household is in fuel poverty if, in order to maintain a satisfactory heating regime, it would be required to spend more than 10% of household income (including Housing Benefit and Income Support for Mortgage Interest), on household fuel use. This more precise definition assists the monitoring of progress and is the definition against which Scottish Government fuel poverty policy objectives are measured.
- 1.7 The currently accepted, satisfactory heating regime as defined by the means achieving
- a) For elderly and infirm households a temperature of 23°C in the living room and 18°C in other rooms, for 16 hours in every 24.
 - b) For other households a temperature of 21°C in the living room and 18°C in other rooms should be achieved, for a period of 9 hours in every 24 (or 16 in every 24 hours over the weekend) – with 2 hours being in the morning and 7 hours in the evening.
- (SHCS Technical Advice Note <http://www.gov.scot/Resource/Doc/1125/0048118.pdf>)
- 1.8 This health-related standard belies the complexity and range of factors which fundamentally cause fuel poverty. They include:
- a) Low household income
 - b) Variable fuel costs, depending on the wholesale price of oil, gas and electricity
 - c) The energy rating of a given property – basically the amount of heat lost through roofs, walls and windows
 - d) Under-occupation where spare and underused rooms are rarely heated.
- 1.9 There are sound health and social reasons for eradicating fuel poverty. Sustained exposure to damp conditions over time can lead to longer term underlying health complaints such as influenza and bronchial conditions. Lack of a balanced heating arrangement can also exacerbate breathing conditions such as childhood asthma.

- 1.10 The price of fuel impacts particularly on household expenditure: '.....households that have to spend a high proportion of their income on fuel have to compensate in other parts of their family budgets. This can lead to poor diet, or reduced participation in social and leisure activities, both of which can also impact on health and quality of life. These negative effects of fuel poverty can be particularly significant for vulnerable groups'

(Scottish Fuel Poverty Statement, 2002)

<http://www.gov.scot/Resource/Doc/46951/0031675.pdf> pp5)

- 1.11 These words were written in 2002. As of 2016, and in spite of advances in heating and insulation technology and a substantial programme of housing investment involving thermal insulation, window replacement and provision of whole house central heating in the social rented sector in Glasgow, income related poverty and the cost of fuel remain the most difficult aspects of fuel poverty to overcome. This is evidenced by the growth in food banks and the relatively slow rise in incomes between 2011 and 2015.

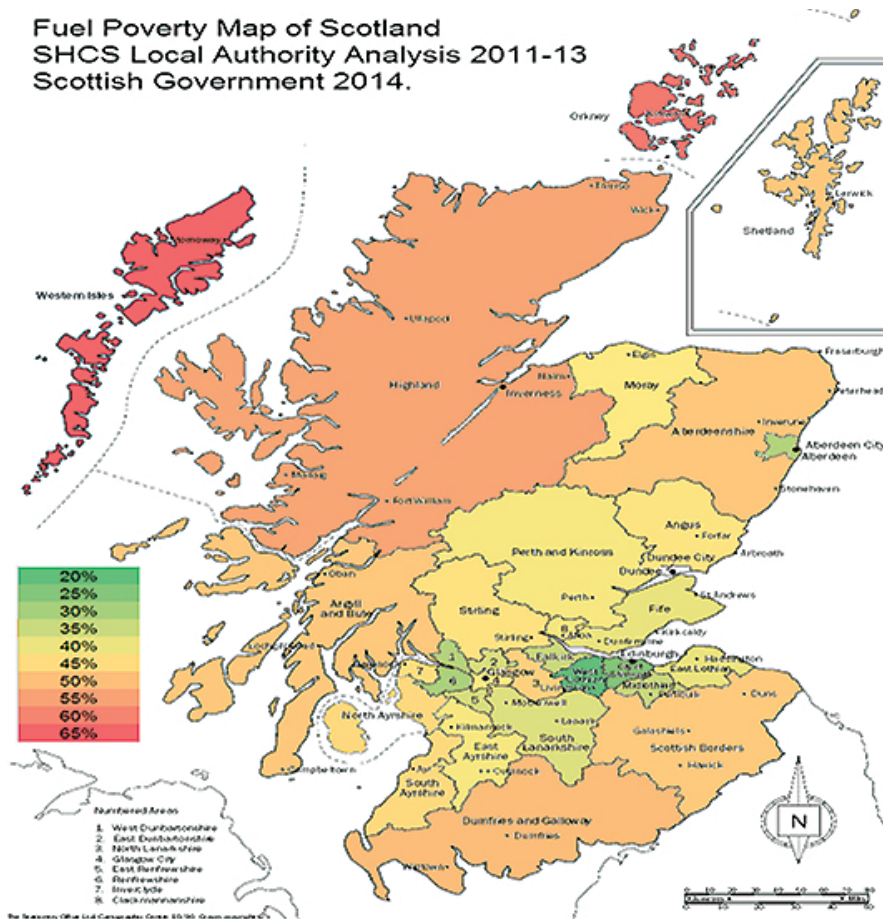


The extent and nature of fuel poverty in Glasgow

- 1.12 Glasgow City Council has adopted the Scottish Government's definition of fuel poverty (set out in 1.6 above):
- 1.13 Fuel poverty is the result of overlapping factors from income, fuel price and energy efficiency.
- 1.14 According to the Scottish Government Scottish House Condition Survey, 34% of households in Glasgow were in fuel poverty between 2012 and 2014, with 8% estimated to be in extreme fuel poverty. This compares with the national averages of 35% and 10% respectively. Whilst considerably lower than rural regions of Scotland, Glasgow's position remains worse than the averages for the majority of local authorities which make up the Clyde Valley Planning Authority area e.g. East Dunbartonshire 28% and 6%; West Dunbartonshire 29% and 6%; South Lanarkshire 30% and 7%. Compared to the capital, Edinburgh at 25% and 6%, Glasgow continues to lag behind as Scotland's largest lowland city.
- 1.15 Fuel poverty in Glasgow is strongly linked to health and wellbeing. The WHO report of 2007 'Housing, Energy and Thermal Comfort' http://www.euro.who.int/__data/assets/pdf_file/0008/97091/E89887.pdf established the link between poor health and low indoor temperatures in properties. Since then, further research has cemented the view that living in cold conditions can have an adverse effect on the physical and mental health of all age groups e.g. 'The Health Impacts of Cold Homes and Fuel Poverty', (Friends of the Earth, 2011) https://www.foe.co.uk/sites/default/files/downloads/cold_homes_health.pdf
- 1.16 The latter report, argues that the health risks associated with cold homes can include:
- ◆ Increased respiratory disease e.g. asthma
 - ◆ Cardiovascular diseases such as strokes, heart attacks and hypertension
 - ◆ More frequent colds and flus
 - ◆ Exacerbated existing medical conditions such as arthritis and rheumatism
 - ◆ Increased risk of accidents and injuries in the home as dexterity is affected
 - ◆ Increased risk of mental health issues, especially amongst adolescents
-1 in 4 adolescents are at risk of multiple mental health issues who live in cold homes, compared to 1 in 20 who live in warm homes)
 - ◆ Stress and anxiety
 - ◆ Children's educational and behavioural attainment, emotional well-being and resilience
 - ◆ Higher mortality rates in older people

- 1.17 It is estimated that 3.3 million households in the UK are unable to adequately heat their homes, which is a 10% increase on 2012. (National Energy Action /Energy Action Scotland UK Fuel Poverty Monitor 2014-2015).
<http://www.eas.org.uk/en/uk-fuel-poverty-monitor-506081>
- 1.18 Analysis carried out by National Energy Action (NEA) and Energy Action Scotland (EAS) also published in the same UK Fuel Poverty statement 2014-15, revealed that, over the last 5 years, there were over 41,000 deaths across the UK directly attributable to vulnerable households living in cold, damp homes. They project that another 125,000 vulnerable people in the UK are likely to die between 2015-2030 as a direct result of inhabiting cold homes. Scotland will account for 9,207 of those excess deaths in this time period. In 2013-14, 1,600 excess deaths were recorded in Scotland due to living in cold homes.
- 1.19 In total there were 18,675 winter deaths in the winter months (December-March) in 2013-14 in Scotland (National Records of Scotland, 2014) This had decreased slightly since 2012-13, however the mean temperature was higher in 2013-14 (+4.15 degrees C). This improvement could be linked to a higher external temperature. The position subsequently changed again in 2014/15, with an increase in winter deaths (provisionally to 22,011)
- 1.20 Seasonal increases in mortality usually affects the elderly, especially those aged 75 and over and in the Glasgow City Council area, there were an additional 150 excess winter deaths in those aged 75 and over in 2013-14. In 2013-14, there were a total of 2,179 excess winter deaths in the Glasgow area.
- 1.21 The problem of living in cold homes is exacerbated when fuel poverty is factored in. Those living in fuel poverty are more likely to “turn their heating down below the level adequate for their well-being, and more likely to live in energy inefficient homes which are poorly insulated and prone to dampness”
 (Energy Action Scotland 2014. http://www.eas.org.uk/en/fuel-poverty-and-health_50442/)
- 1.22 The map below, issued by the Scottish Government shows the levels of fuel poverty across Scotland by Local Authority area between 2011 and 2013. The percentage of households in fuel poverty within the Glasgow City Council area was 34%, with 8% in extreme fuel poverty (i.e. spending more than 20% of income on household fuel) (source: SHCS, 2013).
- 1.23 According to figures recently released by the Scottish House Condition Survey, as of 2015, fuel poverty in Scotland declined by about 4 percentage points, equivalent to around 97,000 fewer households living in fuel poverty compared to 2014. 30.7% (or around 748,000) households were fuel poor and 8.3% (or 203,000 households) were estimated to be living in extreme fuel poverty.(Source SHCS, 2016)
<http://www.gov.scot/Resource/0051/00511081.pdf>

Fuel Poverty Map of Scotland
SHCS Local Authority Analysis 2011-13
Scottish Government 2014.



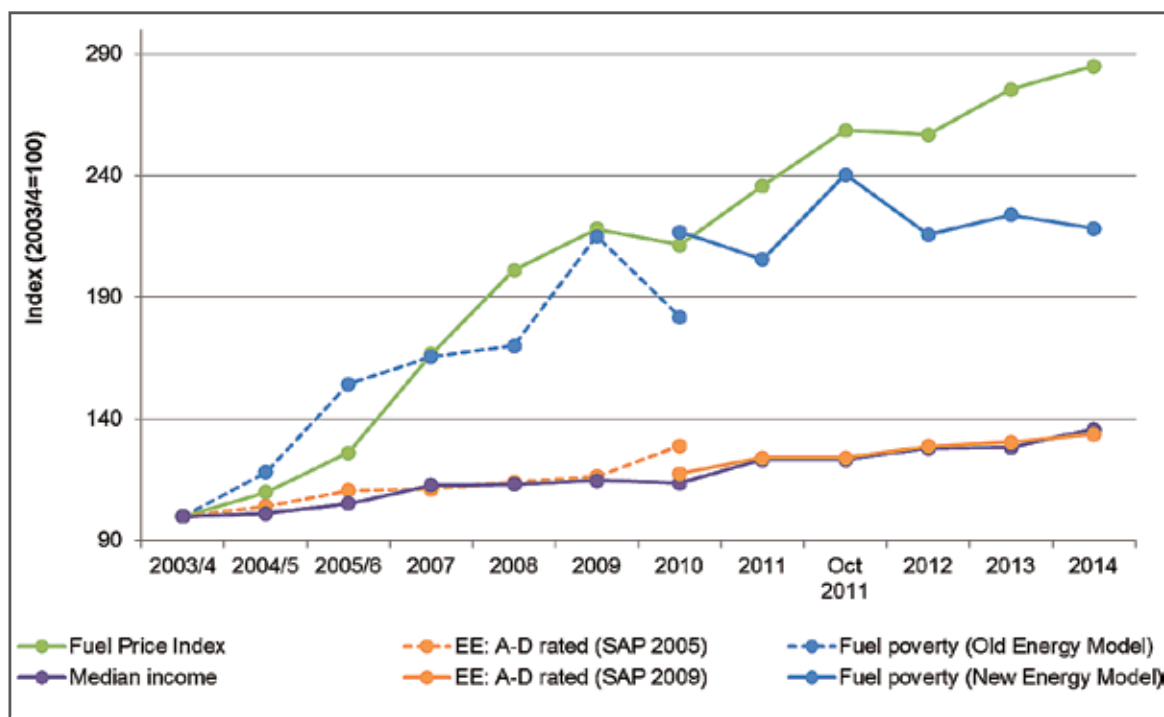
Fuel pricing

1.24 Fuel bills have risen nearly six times faster than household incomes since 2003, which is the major contributing factor in the increase of households categorised as being fuel poor. Since 2010, energy efficiency measures have led to an 8% drop in energy needs of average households in Scotland, however the cost of that energy has risen by 20% (source: SHCS, 2013).

1.25 According to figures released by the Department for Energy and Climate Change (DECC, 2015a) the price paid for domestic fuel has fallen by 4.3% in the year 2014 to the first quarter of 2015.
<https://www.gov.uk/government/organisations/department-of-energy-climate-change>
However this reduction has not been felt by consumers, with the average UK consumer paying £592 for standard rate electricity and £752 in gas in 2014 across all payment types. This equates to a rise of £15 for electricity and £23 for gas from 2013 to 2014.

1.26 In Scotland this price is even higher, with consumers paying an average of £604 for standard rate electricity and £762 for gas in 2014 (source: SHCS). Social housing tenants are also those most likely to list cost as a factor in finding it difficult to heat their homes (source: SHCS 2013). The most recent estimates suggest that the price of fuel in Scotland continues to outstrip affordability. This is shown in Chart 1.1

CHART 1.1 TRENDS IN FUEL PRICE, ENERGY EFFICIENCY AND MEDIAN INCOME, 2003/4 - 2014



(Source: SHCS 2014 page 62)

Pre-payment meters

1.27 According to an Ofgem report published in June 2015 (Ofgem, 2015), more consumers than ever in the UK are using prepayment meters to pay for their energy, equating to around 15% of the total market. Ofgem state there are more than 7 million electricity and gas prepayment meters being used in the UK. In Scotland, over 20% of households are on prepayment meters, which is 5% above the national average.

https://www.ofgem.gov.uk/sites/default/files/docs/2015/06/prepayment_report_june_2015_finalforpublication.pdf

- 1.28 Consumers on prepayment meters generally use this payment method as it allows them to budget more easily without worrying about large energy bills. However, more than 60% of prepayment meters were installed due to debt. Ofgem state, that while the majority of prepayment meters are installed due to debt, around just 7% of electricity prepayment customers and 10% of gas prepayment gas customers are currently in debt to their energy supplier. Some of the City's most deprived families rely on these prepayment meters but the side effect of such is self-disconnection, where the householder cannot afford to pay for a fuel card.
- 1.29 There are substantial savings available for prepayment customers who are able to switch. For example, customers on a standard variable tariff (the most common tariff) can save up to £300 a year if they switch to the cheapest direct debit tariff (Source: Ofgem, 2015). However, switching can be difficult, as some suppliers prefer prepayment as it reduces debt risk and advanced payment has a financial benefit. However there is a weekly charge levied on the first top-up. A debt over £500 is a barrier to switching. A credit check will also be carried out for under £500 debit to allow change to a "dry" meter

Levels of income and fuel poverty

- 1.30 Glasgow City Council has made significant steps in improving the energy efficiency of the housing stock in recent years, however the mean income in the city remains low. The average income in Glasgow is £20,800 (source: SHCS), compared with the Scottish average of £24,700 and the UK national average of £27,000.
- 1.31 The figure is reduced for those living in social housing, with the average income at £14,700. The average annual income for pensioners in Glasgow is only £13,800, who account for 14% of the City's population, according to the latest census. This relatively low level of income in the City will be putting more pressure on residents when paying increasingly high energy bills.
- 1.32 In spite of significant investment in energy efficiency measures in Glasgow properties over the past 20 years, fuel poverty has not decreased, in fact it has increased. In 2002 we reported fuel poverty in the city to be 14% of the population and in our last strategy we reported that this figure had increased to 33% in 2011. Now in 2016, the Scottish House Condition Survey (2012-2014) reports that fuel poverty in the City is at 34% with 8% being in extreme fuel poverty, that is, spending over 20% of their income on fuel costs. Over 45% of the people in fuel poverty in the city are elderly.

Impact of further climate change on Scottish housing and managing risk

- 1.33 There is some debate as to whether or not it will be possible to keep to the existing the agreed global warming target of 1.5 degrees Celsius. (McGrath, 2016)
<http://www.bbc.co.uk/news/science-environment-36904990>
The consensus appears to be that global warming is likely to continue.
- 1.34 In West Central Scotland this is likely to mean on average milder winters but greater frequency of wind and rain and frost damage following more frequent frost-freeze episodes. Flooding to lower lying housing is a major problem as it often requires renewal of ground level services and adds to the cost of insurance for householders. There is likely to be faster deterioration of external fabric components, the need to repair, replace and repaint external elements more regularly. All of this has implications in terms of budgeted planned maintenance costs for private and voluntary sector owners and landlords (ClimateJust, 2014). <http://www.climatejust.org.uk/messages/adapting-buildings>
- 1.35 Heating systems, gas and electric fires are also likely to be switched on during mild wet periods to offset the effects of dampness and improve levels of personal comfort. It is also likely that dampness related illness could increase especially if heating systems are not turned on as a result of extreme fuel poverty.
- 1.36 In terms of existing use of renewables, lower than normal hours of sunshine and heat could impact negatively the anticipated output of installed solar photovoltaic (PV) systems. It is also possible that increases in wind speed and frequency of storms and gales may boost output from wind turbine and sea wave energy. However the UK moratorium on applications to develop additional land based wind turbine schemes makes this less likely to have much of a positive impact.
- 1.37 Those most at risk will continue to be fuel poor households, especially elderly owners who have an asset but who will be unable to afford repair and energy efficiency measures. Should a cross tenure maintenance standard be introduced in the medium to longer term, the Scottish Government would have to be mindful of the financial implications of supporting low income households not located in communities classified as being within a Scottish Index of Multiple Deprivation Area (SIMD) or whose properties would be above the current grant threshold for assistance with works. There is possibly some scope for the Scottish Government's Equity Release scheme to be applied where asset rich/cash poor owners are otherwise unable to access funds to carry out energy efficiency related improvements to their homes.

- 1.38 The decision to make energy efficiency a national infrastructure priority is welcomed. The Scottish Government has included within the legislative programme for the current parliamentary term the establishment of a Warm Homes Bill for Scotland.

A Warm Homes Bill for Scotland will ensure energy demand is reduced and investment in energy efficiency, renewables and district heating is encouraged. Legislation is required to create the right policy framework that supports industry, protects consumers and cuts energy bills.

<http://existinghomesalliancescotland.co.uk/2016/06/>



Housing and Climate Change

2.1 The main factors associated with housing which are likely to impact on climate change at a micro level are:

- ◆ the form of housing itself
- ◆ its energy efficiency rating – the amount of heat which individual properties are losing
- ◆ fuel consumption for heating, lighting and cooking and lifestyle choices in respect of energy use

2.2 By identifying specific sub elements, the source of the problem can be assessed in more detail.

Form of housing: Property type, age, number of habitable rooms, size, and construction type

Energy efficiency: Fuel type, boiler efficiency and other forms of heating, level of insulation (for all relevant building elements e.g roof, walls, glazing, and more particularly, the potential to maximise energy efficiency)

Fuel consumption and lifestyle: The type of fuel consumed, actual take up of renewable energy options including ‘passive homes’; extent of provision of district heating systems, consumer behaviour

2.3 The Council makes use of the Energy Saving Trust Home Energy Efficiency Database (HEED) Since 2013, HEED+ has been made available to local authorities in Scotland offering an enhanced dataset that combines:

- ◆ HEED data
- ◆ Energy Performance Certificate data
- ◆ Energy Saving Trust Home Energy Check data

HEED contains data from the major energy efficiency programmes in Scotland, such as Home Energy Efficiency Programme for Scotland (HEEPS) and Warmer Homes.

This provides estimated probability of the presence or otherwise of the various characteristics of fuel poverty and energy efficiency at Census output area level and above.

2.4 Areas and property types which yield the lowest emissions per property are much more likely to be found in those areas with recent new build completed to the very latest building standards and with the most energy efficient heating and insulation systems in place.

- 2.5 In broad terms, the data shows that areas and property types which have the highest average fuel bills produce the highest CO₂ emissions. These tend to be located in the more affluent parts of the city in low density large suburban private sector properties built in the late Victorian/early Edwardian era. This broadly reflects the findings of the Scottish House Conditions Survey.
SHCS Key Findings 2014 <http://www.gov.scot/Resource/0049/00490947.pdf>
- 2.6 In terms of existing stock, at the other end of the spectrum are properties which have already received grant funding towards securing insulation, efficient heating and external works, and which, as a result have lower levels of emissions and better energy efficiency ratings. The recent focus and priority has been to make use of The Home Energy Efficiency Programme for Scotland: Area Based Schemes (HEEPS:ABS) funding to tackle energy inefficiency on a more systematic estate by estate basis. In practice this has been difficult to deliver as a number of criteria must be met often involving multiple agencies and individual owners within an annualised programme with very narrow completion time targets.
- 2.7 There appears to be a link between personal consumption, relative affluence and house type, but it is also clear that those areas targeted for intervention are more likely to benefit lower income households. Nevertheless, emission levels remain high in some parts of the city. Whilst the effect of targeting the poorest can make a difference in these areas, it is also likely that there will be areas of the city, particularly in the private sector where the amount of energy lost is not being tackled because there are insufficient levers and incentives to persuade owners, especially those on low incomes to invest in energy efficiency measures such as insulation and the provision of energy efficient heating systems.

Energy efficiency of properties

2.8 Investing in energy efficiency to tackle fuel poverty has contributed to reducing emissions from the sector by 19.2% since 1990 (Scottish Government Progress Report on Fuel Poverty statement, December 2014b). <http://www.gov.scot/Resource/0046/00466608.pdf>

2.9 Although there has been significant investment in energy efficiency measures and subsequent improvements in housing stock, much more investment is still needed. A number of factors determine the extent to which stock is suitable for the application of 'retrofit' energy efficiency measures. However there is the added complication of ensuring that housing is brought up to an acceptable standard of repair to allow these measures to be applied. The main determining factors in assessing the best approach to applying energy efficiency ratings, and therefore identifying investment priorities are:

- ◆ property type
- ◆ age of property
- ◆ condition of property
- ◆ tenure
- ◆ fuel type
- ◆ boiler efficiency
- ◆ insulation
- ◆ distribution of fuel poor households.

Each is explored in turn below.

Property Type

2.10 Glasgow's housing stock is overwhelmingly tenemental in nature. Some 73% of stock is either traditional walk up flat tenement, 4 in a block, multi storey or deck access.

TABLE 2.1 DISTRIBUTION OF HOUSING STOCK BY TYPE FOR PURPOSES OF MEASURING ENERGY EFFICIENCY

Property type	Total estimated in each category	Estimated proportion of total stock %
Detached	10,913	3.65
Semi-detached	42,585	14.24
Mid Terrace	18,656	6.24
End Terrace	9,071	3.03
Small block of flats/converted into flats	48,446	16.20
Block of flats	112,679	37.69
Large block of flats (mainly multi storey)	39,468	13.20
Flats contained in a mixed use building	17,127	5.73
	298,945	

(Source: HEED Scottish Government/ Energy Saving Trust)

Age of property

- 2.11 The Home Analytics classification is adopted for this strategy to ensure consistency in terms of the data set and to compare Glasgow with the rest of Scotland.
- 2.12 Just under half of existing stock (44%) was built using traditional methods up to the outbreak of World War 2. The majority of this stock is located in the private sector. However there is a subdivision of stock into pre 1919 and interwar (1920-1945)
- 2.13 Nearly one third of the stock (31%) was constructed between 1946 and 1983. This included the bulk of the the housing stock making up the four peripheral estates of Pollok, Castlemilk, Drumchapel and Easterhouse. Most of this housing constructed during this period was built by Glasgow Corporation and the Scottish Special Housing Association.

House condition and energy efficiency in Glasgow

A significant number of these properties were sold on to sitting tenants under Right to Buy after 1981. Between 1989 and 2003, a large proportion of post war stock moved into the registered social landlord sector along with the remainder of Corporation houses built in the inter war period and the pre-1919 stock built by the City Improvement Trust. The post war stock contains a wide variety of house types. A number of construction systems were used during the building of multi storey and deck access blocks. In addition there is a range of non-traditional construction types where concrete, steel or timber were used to form the main structure of the property during a time of traditional building material shortage.

- 2.14 A much higher proportion of post 1983 stock is found in the private and RSL sectors and is more likely to be constructed using traditional methods. It is also more likely to be thermally efficient. Nevertheless, its relatively small share of total provision means that there will be a higher proportion of pre-1983 stock requiring some upgrading in terms of thermal efficiency, with proportionately higher numbers of residents in fuel poverty.

TABLE 2.2 DISTRIBUTION OF HOUSING STOCK BY AGE FOR PURPOSES OF MEASURING ENERGY EFFICIENCY

Age band of property	Total estimated in each category	Estimated proportion of total stock %
Pre-1919	76,053	25.45
1919 - 1949	56,718	18.97
1950 - 1983	94,336	31.56
1984 - 1991	16,730	5.60
1992 - 2002	28,135	9.41
Post 2002	26,793	8.96
	298,945	

(Source: HEED Scottish Government/ Energy Saving Trust)

Property Condition

According to the Scottish House Condition Survey in 2014, 3% (8,900) out of a total stock of 296,273 was estimated to be below the Tolerable Standard.

- 2.16 Some 5% of pre-1945 stock (which includes Pre-1919 stock) is estimated to be BTS compared to 2% of Post 1945 stock. (Source SHCS). SHCS is unable to separate out the sub categories between these two very broad age bands which makes it more difficult to definitively estimate actual BTS in the older sandstone properties. In addition there is a distinction to be made between pre-1919 tenements, terraces, townhouses and villas, many of which are subdivided and in multiple ownership.
- 2.17 There is a link between BTS housing, health and fuel poverty. BTS failures are much more likely to be found in lower value properties in high density areas where there is overcrowding and other health related problems associated with that overcrowding. Occupants are much more likely to be living in properties without central heating and insulation. Heads of households are more likely to be on low wages or income support. There is more likely to be use of temporary and unfixed heating appliances and the use of prepayment meters may also be more commonplace. The implication is that where possible, fuel poverty initiatives should be targeted at these areas as a matter of priority through HEEPS and in the future, potentially, its proposed successor, SEEP. However it must also be recognised that these will be among the hardest to heat properties and be in areas where owners need to organise to repair the property and that there are a number of barriers to qualification for funding.



House condition and energy efficiency in Glasgow

Pre-1919 stock

- 2.18 Notwithstanding the extent of BTS, which is essentially about disrepair and lack of maintenance to the fabric, over 76,000 properties (25% of the total housing stock) in the City are in the pre-1919 category, which presents the greatest challenge for improving energy efficiency. In Glasgow, nearly all of these properties are constructed with solid, sandstone-faced walls. They are also traditionally around 25% larger than properties built in the interwar period (source: SHCS 2013), meaning there is more space required to be heated. The Energy Saving Trust estimates that an un-insulated dwelling loses a third of all its heat through the walls and a further quarter through the roof. Unlike their post 1919 counterparts, these properties do not lend themselves to external insulation solutions for technical, conservation and aesthetic reasons.
- 2.19 The largest proportions of these pre-1919 properties in Glasgow are in the private rented sector, with 44% of the total PRS stock. In the owner-occupier sector, there are around 40,000 properties classed as pre-1919, which represents 26% of that tenure's housing stock. As the majority of the City's residents also live in flats, issues arise with common ownership, including reaching agreement to carry out insulation measures. In addition, internal wall insulation is disruptive for residents, and can be expensive to deliver. Internal insulation measures also by necessity reduce overall room dimensions. Those living in the private rented sector also report that poor heating systems, draughts and insulation are the main reasons why they find it difficult to heat their homes (source: SCHS).
- 2.20 Pre 1919 tenements and other stone constructed houses represent one of the biggest challenges in addressing the operational difficulties associated with improving energy efficiency, but also in terms of developing and implementing appropriate and cost effective solutions. In addition, there are significant obstacles associated with ownership titles, common property, turnover and the financial contributions which would be required by owners and shopkeepers.

Post War Stock (1950 – 1983)

- 2.21 As noted above, this is the largest group of properties requiring assessment and with the broadest range of construction methods. The approaches to insulation, rain-proofing and condensation are varied and often have to be customised to address design issues and the economic characteristics of residents. It is worth noting that large numbers of these properties have already received or are programmed to receive external cladding and insulation, new heating systems (including District Heating Systems) and other fabric repairs and improvements. This programme was greatly accelerated by the additional investment obtained as a result of the elimination of loan debt, the provision of new grants and the procurement of private borrowing on ex-Glasgow Corporation/Glasgow District

the decision to transfer former Scottish Special Housing Association stock from its replacement organisation (Scottish Homes) to a range of community based Registered Social Landlords released capacity to retrofit a proportion of that stock, whilst at the same time providing new replacement housing built to higher thermal efficiency standards where retrofitting was not economically viable. However there are also a significant numbers of properties located in these estates which were sold under Right to Buy, many of whose owners have not participated in common repair and improvement schemes.



Tenure

- 2.22 The probability of properties being energy efficient is strongly related to tenure. Broadly speaking, social rented properties are more likely to be thermally efficient or be on a programme for inclusion of thermal efficiency measures as a result of regulatory requirements placed on Registered Social Landlords to raise living standards for their tenants.
- 2.23 Within the owner occupied tenure, individuals may benefit from the existence of schemes to install discounted central heating systems, targeting by agencies offering subsidised insulation projects, particularly to elderly owner occupiers. There are also incentives for owners to upgrade to higher efficiency standards to reduce long term fuel bills (e.g through installation of solar panels).
- 2.24 The tenure least likely to have at least a range of thermal efficiency measures in place is the private rented sector, and in particular older pre 1919 properties where turnover is high and where there is less likelihood of shared agreements between owners to invest in thermal efficiency measures.

Fuel type

- 2.25 In terms of main fuel type, mains gas is available to an estimated 238,726 households in Glasgow (almost 80%). However it does not follow that all properties heat their homes exclusively by means of gas fired central heating.
- 2.26 Heating by electricity is the second most common form of home heating (51,229 dwellings or 17%)
- 2.27 Alternative fuels used including oil, liquid petroleum gas and biomass/solid fuels only account for 1.54% of total stock between them and communal heating systems add just another 0.78% (2341), with an estimated 2035 households with no heat source registered. Some of these properties are likely to have been constructed using 'passive' technology, however numbers are likely to be tiny.
- 2.28 The heavy reliance on gas and electricity is unlikely to assist the cause of reducing greenhouse emissions, however in the wider context, the availability of alternative renewable energy conduits and the cost of transporting alternative energy directly to the consumer is extremely limited and is dependent on national policy and incentives to suppliers. Focus, understandably, has been on obtaining the best tariffs for consumers, although this may inadvertently result in an increase in fuel use in some cases, depending on variable weather conditions.

2.29 At least 158,000 (53%) of households have some form of secondary heating.

Boiler efficiency

2.30 One fifth of all households in Glasgow do not have a gas centrally heated boiler. Whilst 38% of all households (which includes those without any apparent source of heating) have a boiler rated at A or B (highest level of efficiency) around 18% of households have a boiler which is rated at C or D and the balance (23%) have a boiler rated at E or F. The shift in the availability of more efficient boilers is likely to continue as older equipment is gradually replaced with higher rated boilers.

2.31 In some areas of the city it is not possible to install gas.

Insulation

2.32 Levels of insulation, particularly in the social rented sector are already good or very good. However there remain large numbers of solid wall properties where insulation has not been installed. Table 2.3 summarises estimated progress.



House condition and energy efficiency in Glasgow

TABLE 2.3 ESTIMATED INSULATED AND UNINSULATED DWELLINGS IN GLASGOW

Dwelling type	Estimated no of properties treated	Proportion of total stock treated in category %	Proportion of stock type remaining untreated in category%	Estimated remaining stock untreated
Traditional : Suitable for Cavity Fill	102,187	75.99	24.01	32,270
Traditional Solid Brick or Stone (unsuitable for cavity fill) requiring external or internal insulation	32,270	30.42	69.58	73,802
Non-Traditional (incl Timber Frame)	5,780	63.31	36.69	3,350
Systems built	23,795	80.46	19.54	5,780
TOTALS	183,753			115,202

(Source: HEED Scottish Government/ Energy Saving Trust)

- 2.33 These are estimates based samples, however they appear to be in line with the narrative set out above concerning the major investment made over the last 20 years in the social rented sector, and the known problem of treating older traditionally built properties.
- 2.34 As suggested earlier, the most challenging property types are found in the stone and brick (solid wall) traditional property group, which will include most of the pre-1919 tenements. According to these estimates, nearly 70% of this stock remains untreated in terms of insulation where cavity wall fill is unsuitable. This does not include addressing the issue of disrepair and maintenance.

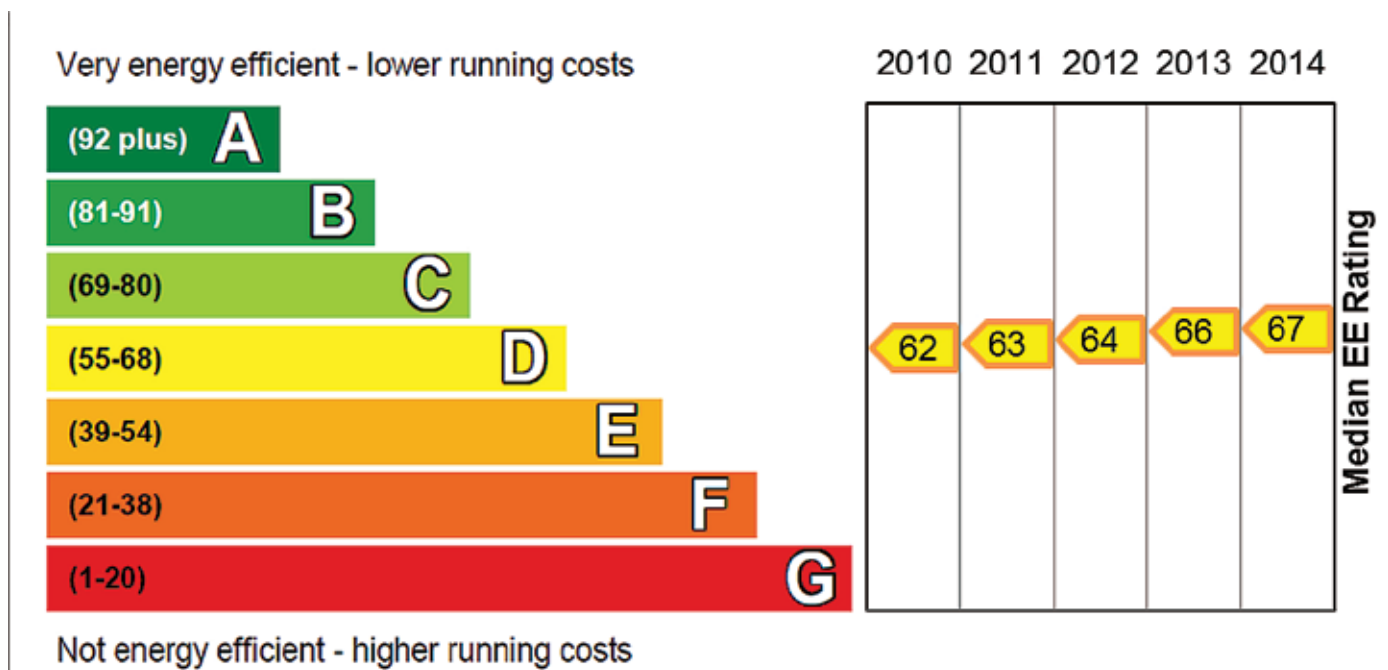
- 2.35 In total, it is estimated that around 38% of housing stock in Glasgow has no insulation to walls. In addition, an estimated 32,000 dwellings have a 'Hard to Treat' cavity with a severe or very severe exposure zone. Nearly 12,000 properties are assumed to have a narrow cavity.
- 2.36 The two other main types of insulation are loft and water cylinder insulation. The depth of roof space insulation varies from zero to the older standard (50mm) to the maximum (270 mm).
- 2.37 An estimated 118,000 dwellings have no loft. A further 15,600 have a room within a loft which may or may not have some insulation within the eaves. Of the total 165,200 properties with lofts which have some form of insulation, around 76,000, just under half (46%) have the highest thickness of insulation (i.e. at least 270 mm). By its very nature, uptake of upgrading of all loft insulation to the 270 mm standard is an individual choice for consumers, given that there is no statutory requirement on private householders to install the latest standard.
- 2.38 There has been a marked increase in the uptake of loft insulation in the private sector. This is in all probability due to Scottish Government schemes offering free loft insulation and other programmes of work over the last 10 years. In the social sector, the implementation of the Scottish Housing Quality Standard, which requires all social landlords to install at least 100mm of loft insulation, appears to have been met, with some landlords exceeding the required standard. Energy efficiency schemes such as the Community Energy Saving Programme (CESP) , Carbon Emissions Reduction Target (CERT) Universal Home Insulation Scheme (UHIS) and Energy Company Obligation (ECO), promoting loft insulation has also attributed to the rise of lofts being insulated, and in total over 420,000 loft insulation measures have been installed under government schemes since 2008.
- 2.39 Only around 15,000 dwellings (5%) have hot water cylinder insulation which meets the desired insulation standard of 80mm thickness. The vast majority (70%) are estimated to have only minimum (up to 49mm) insulation. It is currently a matter of personal choice for private householders to upgrade to the higher standard.
- 2.40 The provision of double glazing can contribute to the reduction in heat loss from a property. Home analytics data suggests that more than four-fifths of properties in Glasgow now have double or triple glazing, leaving around 51,000 with single or partial single and double glazing. It is worth noting, however that window replacement is not an included element in current energy improvement programmes, and in conservation areas can be problematic and expensive to address.

House condition and energy efficiency in Glasgow

Energy Efficiency Ratings

2.41 For Scotland as a whole to 2013, there had been around a one point increase in the average Energy Efficiency Rating (EER) each year since 2010. Overall the median EER for Scottish housing is 67, an increase of 4 points since 2010.

TABLE 2.4 MEDIAN EERs RELATIVE TO ENERGY PERFORMANCE CERTIFICATE BANDS, SCOTLAND 2010-2014



Source: Reproduced from <http://www.gov.scot/Resource/0049/00490947.pdf>

2.42 If this trend is extrapolated, then average EER in Scotland will have reached 69 by 2016. The HEED analysis extrapolates Energy Ratings to every property in the city

2.43 Table 2.5 provides summary information on relative energy efficiency ratings across the city. The majority of domestic properties in Glasgow appear to fall within Band C or D. The average SAP rating in Glasgow based on all 744 Census Output areas was 65.74 in 2016, compared to a UK average of just under 60, albeit based on 2013 reported figures. (DECC, 2015b)

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/395007/stats_summary_2015.pdf

2.44 Current estimates for Glasgow are set out below in Table 2.5:

TABLE 2.5 ESTIMATED ENERGY PERFORMANCE CERTIFICATE (EPC) RATINGS FOR GLASGOW 2014

	No. of Properties	% age of stock	Average of Standard Assessment Procedure (SAP) rating estimate (requested directly from Energy Saving Trust)
EPC Rating Band: A-B	14,898	4.98%	82
EPC Rating Band: C	140,131	46.88%	75
EPC Rating Band: D	104,678	35.02%	65
EPC Rating Band: E	30,757	10.29%	49
EPC Rating Band: F-G	8,481	2.84%	26
TOTAL	298,945	100.00%	

Average Energy Efficiency (SAP) Rating	66	EPC Band D
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2.45 More than 50% of stock is above Band C. Just under 3% are in the lowest band which is a significant improvement. However it is important to note that these are averages, and that focus should be on those areas of the city where Energy Performance Certificate (EPC) ratings are low for particular areas and property types. Average EPC ratings in Glasgow vary enormously between output areas.

Distribution of Fuel Poor Households

- 2.46 The home analytics data usefully provides estimates of the numbers and proportion of likely 'fuel poor' households. According to the Home Analytics estimates, nearly 102,000 households in Glasgow are in fuel poverty (34%).
- 2.47 The Home analytics data also takes down to census output level a number of indicators, not least of which is the probability that a certain proportion of households will be in fuel poverty.
- 2.48 In theory, every census output area can be analysed, but it should be noted that there can be significant variation in specific output areas, as the named communities are often divided into between 4 and 6 defined output areas often with significant variations in numbers between each output area within the same community. Energy efficiency ratings for given output areas are strung out right across the spectrum.
- 2.49 This however raises a problem in identifying and prioritising private sector stock which is most in need of action to improve property condition standards, retrofit to higher energy efficiency standards and reduce emissions. It is assumed that a high proportion of private rented housing dwellers will be in fuel poverty or extreme fuel poverty. It is strong recommendation of this report that if fuel poverty is to be tackled effectively and domestic emissions further reduced, then there must be workable incentives for private landlords to upgrade property to higher standards of energy efficiency. Local authorities need to be able to accurately identify specific private sector properties to be targeted for inclusion in energy efficiency schemes aimed at private sector stock.

Scale of resource requirements

- 2.50 It is acknowledged that the costs of comprehensively bringing all existing housing up to EPC Energy Rating A-D are likely to far exceed available planned expenditure and projected resources of all parties including individual property owners, housing associations, the Scottish Government and other contributors including the major energy companies.
- 2.51 At present it is not possible to estimate the total outstanding costs of bringing all properties in Glasgow up to a minimum energy efficiency standard. There are several reasons for this, which include but are not confined to
- ◆ The patchy nature of improvement over the last 20 years which makes it difficult to accurately estimate the levels of investment to date, particularly in the private sector
 - ◆ Changing standards. For example in the recommended thickness of water tank and loft insulation
 - ◆ Exclusions such as double glazing

- ◆ Specific issues with building types, such as non traditional properties and properties with narrow cavities
- ◆ The fluctuating price of fuel and the related uncertainty over the costs and benefits of District Heating schemes and the use of renewables which are still in their infancy. In the longer term costs could come down if these technologies can be more effectively harnessed, however development costs are currently high.



Glasgow City Council's approach to the sustainability agenda

Corporate Strategic Framework

- 3.1 Glasgow has an overarching aim to become one of the most sustainable cities in Europe. Sustainable Glasgow is the city's partnership for driving this ambition. It brings together a range of partners from the principal sectors in Glasgow with the aim of achieving progress across environmental, social and economic aspects of the sustainability agenda. Sustainable Glasgow is chaired by the Leader of the Council.
- 3.2 It is a hallmark of the Sustainable Glasgow approach that sustainability and the city's social justice priorities go together. This ensures that the sustainability agenda is focused on the city's most vulnerable residents, particularly in terms of delivering affordable warmth.
- 3.3 Sustainable Glasgow was established in 2010 and it has set a target of reducing the city's carbon emissions by 30% by 2020 from a 2006 baseline. Latest data from DECC (the UK Department of Energy & Climate Change) shows that Glasgow has made almost 15% reductions in its emissions. This means that the city is half way towards its overall target and the trends are heading in the right direction.
- 3.4 The city recently adopted an Energy and Carbon Masterplan Glasgow City Council (2014) (ECM) <https://www.glasgow.gov.uk/CHttpHandler.ashx?id=32441&p=0> sets out a vision of a transformed energy economy for Glasgow that is based on low carbon and increasingly de-centralised energy sources that are better able to meet Glasgow's energy needs and help Glasgow tackle climate change. It is the framework for leading Glasgow through the transition to a low carbon economy. Its focus includes
- ◆ the development of low carbon heating systems,
 - ◆ more energy efficient buildings and
 - ◆ further renewable energy projects.

The Carbon Management Plan Phase 2 (Glasgow City Council, 2015a) sets out carbon reduction targets to 2021.

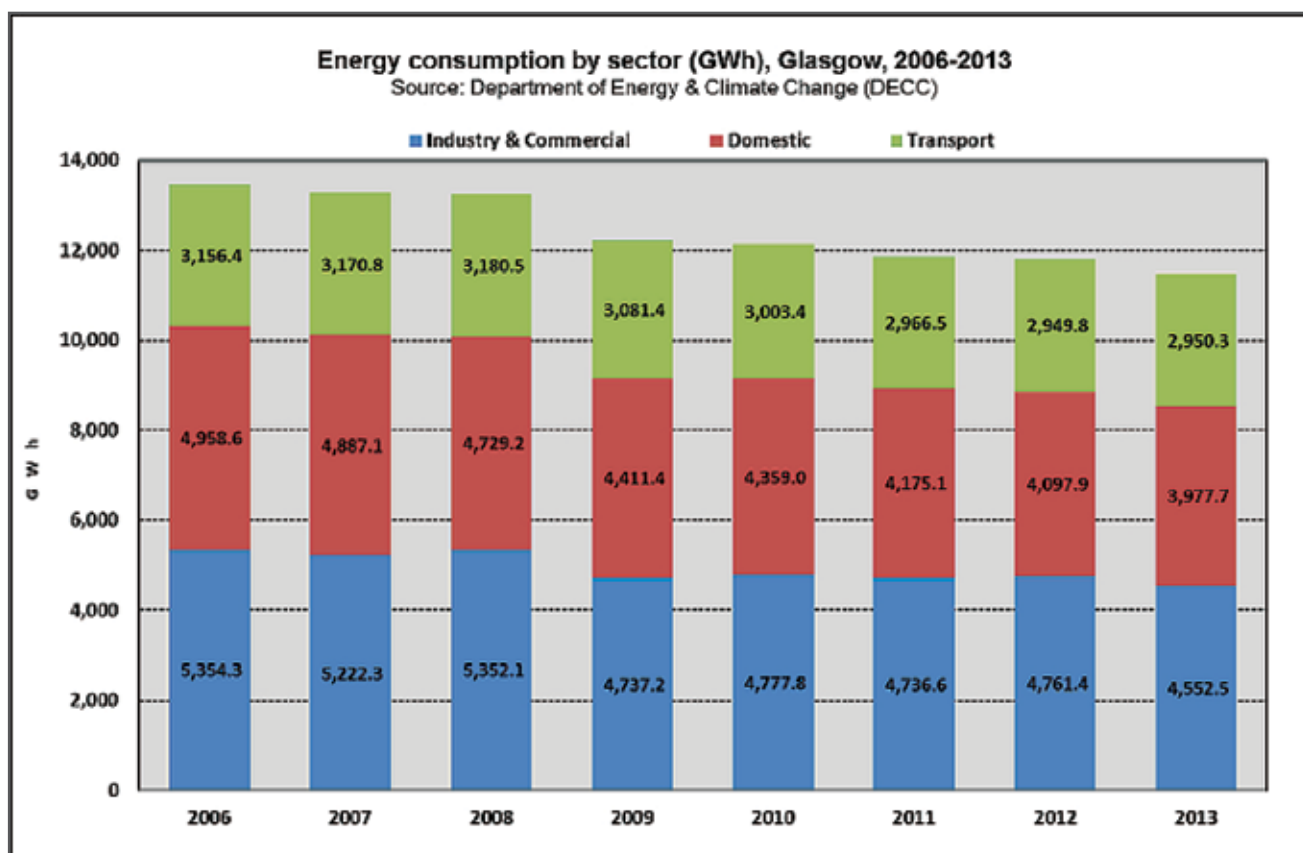
<https://www.glasgow.gov.uk/CHttpHandler.ashx?id=28416&p=0>

- 3.5 Glasgow's total energy consumption in 2013 was 11,480 Giga-Watt hours (GWh). (1 Giga-Watt hour (GWh) is equal to 1,000 Mega Watt hours or 1,000,000 Watt hours) This is the latest year for which comprehensive data is available. The city's total energy use has declined by 14.8% (1,989 GWh) from the baseline year of 2006 to 2013. By analysing the difference in energy consumption from 2006 to 2013, it is apparent that the sectors that experienced the biggest reductions were the domestic sector (981GWh) and the industrial and commercial sector (802 GWh). However, despite the reductions, these two sectors are still the highest energy consumers of energy in Glasgow and efforts to reduce their energy

consumption - which should be directed mainly at electricity consumption due to its carbon intensity - and lower their carbon emissions are critical if the city is to achieve its carbon targets.

- 3.6. The city's ambitions for a lower carbon future connect closely with the aim to deliver affordable warmth for all its residents. The likelihood of continual rises in energy prices presents a very real challenge in both these respects. It will require the continual deployment of energy efficiency strategies and technologies, as well as the development of more decentralised energy generation in order to protect Glasgow and Glaswegians. Table 3.1 shows the very real progress in reducing emissions in all three key sectors between 2006 and 2013. It is anticipated that this trend will have continued over the last three years.

TABLE 3.1 ENERGY CONSUMPTION BY SECTOR IN GLASGOW 2006 - 2013



Glasgow City Council's approach to the sustainability agenda

- 3.7 The very significant work already being undertaken on the domestic energy efficiency ([Affordable Warmth](#)) programme is a principal part of the city's approach to this challenge. The city also aims to achieve these through the delivery of further renewable projects, particularly in solar, wind, and hydro technologies, together with a major focus on district heating. In this light, an energy services company is being established as a key means for the city to progress such developments. It represents an approach to municipal energy generation and distribution that can play a part in protecting Glasgow's residents in the future from fluctuations in global energy prices.

Glasgow's approach

- 3.8 The journey towards the goal of 'affordable warmth for all' in Glasgow began in the mid 1980s. Reducing fuel poverty and contributing to the reduction of carbon emissions in Glasgow needs to be viewed in the context of local and national policy interventions over time.
- 3.8 [Appendix C](#) provides a context for reviewing how far down the road the city has travelled.
- 3.9 Glasgow City Council has taken a pragmatic approach to a rapidly changing energy efficiency funding regime over the last ten years, focussing much of its efforts on ensuring that the relevant criteria for each of the schemes introduced by the UK and Scottish Governments is met in order to guarantee delivery of projects on time and to budget.
- 3.10 Since the introduction of the Home Energy Efficiency Programme for Scotland: Area Based Scheme (HEEPS: ABS) in 2013, over 4,700 owner occupiers in Glasgow had received significant thermal efficiency improvements at the end 2015/16. Over 3,500 dwellings in the social rented sector had received improvements linked to the work being carried out in owner occupied stock in specific areas where the funding criteria has been met. Nearly £20m of Scottish Government HEEPS funding has levered in approximately £33m in Social Landlord, ECO funding, Council Private Sector Grant and individual owner contributions in order to effect comprehensive lasting solutions (Glasgow City Council, 2015b) <https://www.glasgow.gov.uk/CHttpHandler.ashx?id=31320&p=0>
- 3.11 Glasgow City Council as lead co-ordinator of this programme in the city will work with the Scottish Government to deliver the new Scotland Energy Efficiency Programme (SEEP) which "aims to improve the energy efficiency of all buildings (domestic and non-domestic) in Scotland over the next 15 – 20 years". The experience to date is that it is proving difficult to justify the thermal improvement of some commercial and public buildings which are not in close proximity to schemes which would previously have qualified for HEEPS:ABS. Glasgow is already taking part in the SEEP Pathfinder Pilot. This programme has identified community facility, 2 nursery facilities and a block of flats with shops below as part of the pathfinder.

- 3.12 In the social rented sector, individual housing associations have been striving to meet Scottish Housing Quality Standard targets and have begun the process of developing programmes to meet the new Energy Efficiency Standard for Social Housing (ESSH). As part of the Local Housing Strategy, the Council recently asked RSLs in Glasgow to identify recent and current planned expenditure on energy efficiency measures out-with the Housing Association Grant regime, using a mix of revenue and capital expenditure raised through private borrowing. [Appendix B](#)
- 3.13 Results of this survey were encouraging. In spite of the low response rate (21%) significant levels of expenditure in energy efficiency are evident. Between them the 14 out of 66 associations which responded had spent over £4.7m on energy efficiency measures in the two years 2013/14 – 2014/15, providing over 5,000 individual improvement measures. Most of this expenditure was on the provision of new heating systems and cavity wall insulation. The highest unit costs related to external wall insulation solutions.
- 3.14 More than half of the associations which responded to the survey stated that they intend to introduce innovative renewable related projects in the future. Most housing associations were aware of the HEEPS area based schemes, but are limited by eligibility criteria. A small number of current schemes such the Resource Efficient Scotland Small and Medium Enterprise Loan and the Home Energy Scotland Renewables Loan were not as widely known about.
- 3.15 Most of the housing associations who made a return were actively advising tenants about ways of reducing fuel poverty and most had some sort of referral arrangement to advice providers such as G-Heat, Glasgow's home energy advice agency. 86% of associations surveyed stated that they assist clients on ways of achieving the best tariffs from energy suppliers and also provide advice on how to efficiently use their heating systems. 79% said that they refer clients to G-Heat.
- 3.16 Most significantly, anticipated planned expenditure on key element replacement and upgrading related to energy efficiency will treble over the two financial years 2015/16 – 2016/17.
- 3.17 RSLs are aware of the importance of incorporating energy efficiency measures into their planned maintenance and replacement programmes and are actively aiming to meet the new ESSH standard by 2020. However, there is also scope for joint working between associations locally, owners and the Council to bring forward innovative projects which bring together community based schemes incorporating traditional energy efficiency measures, district heating and other renewable technologies which could involve commercial premises below tenements, scheme shops, community facilities and other stand alone buildings.

4 GLASGOW'S AFFORDABLE WARMTH STRATEGY

Policy Opportunities and Constraints

Affordable Warmth Strategy: Principles and Desired Outcomes

- 4.1 The challenge for the Council as the strategic housing authority and for partner housing providers in Glasgow is that fuel poverty continues to grow despite all our individual and collective efforts to reduce it.
- 4.2 The four policy themes of the Affordable Warmth Strategy are aimed at addressing the factors contributing to fuel poverty which are:
 - ◆ Energy efficiency: Improving Glasgow's housing stock and new build standards
 - ◆ Low household income: Maximising the benefits of HEEPS/SEEP for the residents of Glasgow
 - ◆ Fuel costs: Affordable warmth advice and assistance
 - ◆ Lifestyle choices of domestic energy consumers: Sustainability and Resilience
- 4.3 A key aim will be to accelerate the rate of improvement in the owner-occupied and private-rented sectors, whilst maintaining rates of improvement in the social rented sector.

New Build Housing

There is a Council wide commitment to ensure that new build homes are future proof and have high sustainability considerations that will protect residents from rising energy costs and help to contribute to the Council's carbon emissions reduction targets. Housing and Regeneration Services encourages housing associations to be ambitious in trying to exceed current energy efficiency and sustainability targets and to develop housing which will be exemplars across the country making Glasgow one of the most sustainable cities in Europe. Associations that achieve a higher "greener" standard will be able to access an increased subsidy rate for their new build development.

Glasgow City Council has therefore made a commitment to the principle that all new housing developments submitted for approval and funded through its Affordable Housing Supply Programme will comply with Building Standards Technical Handbook Domestic 2016, Section 7, Silver Standard (Aspects 1-8 inclusive) relating to sustainability. This will apply to all new build projects from January 2017. At the same time, new developments are encouraged to embrace contemporary designs, promote innovation and new technologies. Passivhaus, triple glazing, district heating, zero carbon, zero waste and a fabric first approach are encouraged.

- 4.4 Depending on government policy, the ambitions of housing and energy providers and incentive schemes which emerge during the plan period, we will monitor and assess the impact of any major energy infrastructure, such as district heating.

- 4.5 Our long term approach is therefore to work towards the eradication of fuel poverty and to maintain the momentum of the current approach which is to offset the extent of that fuel poverty, using a range of tools available nationally and locally. At the same time, we aim to reduce the carbon footprint as part of investment packages tailored to the broad range of house types and challenges associated with non-traditional and solid wall construction.
- 4.6 During the term of the Glasgow's Housing Strategy 2017 – 22, we aim to increase the energy efficiency of as many residential properties as possible in the city, within the UK and Scottish funding support frameworks. In particular, we will work to maximise HEEPS/SEEP opportunities within the established guidance and criteria.
- 4.7 As was demonstrated in **Chapter 2**, the biggest challenge remains the private owner occupied and private rented sectors, and in particular pre-1919 and non traditional properties and other “hard to insulate” house types. At present, HEEPS/SEEP criteria restricts the amount of funding which can be allocated per unit and the viability of any given scheme can be impacted by lack of support funding from other sources. Non deprived areas are excluded. Year to year funding is also a challenge in planning and delivery of programmes. In order to tackle hard to treat properties there needs to be more flexibility and at least 3-year rolling programmes to provide confidence, stability and certainty in delivery timescales. It is hoped that the new “Scottish ECO” under the devolution settlement will bring greater clarity on the energy provider contribution to these schemes.
- 4.8 We aim to mitigate as far as possible, the impact of increasing energy costs on the level of fuel poverty in the city. Priority for available resources will go to areas of multiple deprivation, which may also include areas with concentrations of private sector housing.

Improving energy efficiency

- 4.9 The Council will aim to enable and encourage
- ◆ Value for money for Home Energy Efficiency Programme for Scotland: Area Based Schemes (HEEPS: ABS) and the Energy Company Obligation (ECO) funding stream, and preparation for ECO's replacement, the Fuel Poverty Obligation (FPO)
 - ◆ Alongside the objective of meeting the Scottish Housing Quality Standard 2015 (SHQS) and the Energy Efficiency Standard for Social Housing 2020 (ESSH) requirements, Registered Social Landlords (RSLs) will be encouraged to work with owner occupiers and owner landlords to deliver area based schemes prioritising
 - a) Owner occupied properties missed out of RSL investment programmes
 - b) Non-traditional properties
 - c) Areas in the lowest 15% of Scottish Index of Multiple Deprivation (SIMD income domain) areas. If outwith this criteria, the area must demonstrate the presence of extreme fuel poverty

4 GLASGOW'S AFFORDABLE WARMTH STRATEGY

Policy Opportunities and Constraints

- ◆ Identification of appropriate, fundable solutions for pre 1919 tenements
 - ◆ Delivery of more district heating schemes
 - ◆ Actively contributing to the discussion on the Scottish Government proposal to implement the Regulation of Energy Efficiency in the Private Rented Sector (REEPS)
- 4.10 The Council will support the funding streams in the main, through the Scottish Government's Home Energy Efficiency Programme for Scotland: Area Based Schemes and Energy Company Obligation funding from the Utility Companies. The Council will act as enabler, ensuring value for money from HEEPS, ECO or successor funding (Fuel Poverty Obligation) and the pilot pathfinder Scotland's Energy Efficiency Programme (SEEP).

Assisting households on low incomes

- 4.11 The Council and partner organisations will continue to provide advice to householders through Home Energy Scotland or G. Heat for:
- ◆ Energy Efficiency Advice,
 - ◆ Billing Issues/advocacy service
 - ◆ Benefits Maximisation
 - ◆ HEEPS/SEEP National Scheme Eligibility
 - ◆ Welfare reform signposting service
- 4.12 Glasgow City Council's Affordable Warmth Dividend is a payment of £100 made by the Council to Glasgow residents who are 80 years of age and older on or before 31 March 2016 to keep warm during winter. The Dividend is considered by the Council for renewal every new financial year.
- 4.13 In trying to maximise the disposable income of householders, the Council raises awareness of the opportunity for residents to engage with either Home Energy Scotland or G-Heat.
- 4.14 Glasgow's Home Energy Advice Team (G-Heat), part funded by Glasgow City Council, has saved Glasgow householders an estimated £3.4 million in their energy bills since their inception in 2010. This has been achieved through writing off fuel debt, reducing fuel arrears, referrals for discount schemes, hardship payments and rebates, amongst other ways. G-Heat has assisted some of the most deprived households in Glasgow. However there is still much to be done to ensure those on low incomes receive the best value for money in their energy bills.

Switching

- 4.15 Changing supplier to a deal or tariff that best suits a consumer's own energy usage can significantly reduce fuel bills. Consumers have been able to save up to £400 from domestic switching, however domestic switching is still relatively low in the UK, with only 3.1% of all customers switching electricity supplier, and 3.2% switching gas between Quarter 1 of 2014 (January-March 2014) and Quarter 1 of 2015. This is an increase of 122,000 electricity consumers and 157,000 gas consumers but overall, only a 0.4% increase and 0.7% increase of all domestic energy consumers (source: DECC). Consumers cite having an outstanding debt and the perceived bureaucracy, time and effort associated with switching as the main barriers to switching suppliers.
- 4.16 The option of collective switching is highly dependent upon co-operation between owners in a given area. According to the Scottish Energy Association, in the interest of finding the cheapest prices for consumers. Ofgem will now require all energy suppliers to provide details of collective switching deals on their bills. Information on collective switching deals will be bundled in as part of an existing requirement of Ofgem – their “cheapest tariff message” which requires energy suppliers to inform their customers of their cheapest available deals and how they compare to the customer's current tariff. However switching is not always the best option.
- 4.17 Collective switching schemes work when like-minded individuals collectively select a deal, best suited to their wants and needs, in terms of saving energy, in a cost-effective manner.
- 4.18 At a local level, Glasgow People's Energy was launched at the Glasgow Chamber of Commerce in November 2015 and its first stage will focus on providing an independent and impartial energy switching service for the city's businesses and third sector organisations.

'I would like to thank you most sincerely for the wonderful service you provided for the GESH charity. The high volume of utility bills for electricity & gas has been a nightmare for our charity, as well as providing us with the best supplier in which would save our charity £2,087.01 but also highlighted that we had in fact been paying 20% on vat instead of 5% this resulted in us receiving almost £900 in refunds. So again I thank you and Glasgow Peoples Energy for the outstanding service you provided and the curious and helpful way in which you delivered'

(Letter to Head of Housing and Regeneration from Greater Easterhouse Supporting Hands, 22nd March 2016)

4 GLASGOW'S AFFORDABLE WARMTH STRATEGY

Policy Opportunities and Constraints

Managing variable fuel costs

- 4.19 The price of domestic fuel is the biggest single determinant of fuel poverty, and is largely out- with the control of local authorities and housing providers.
- 4.20 The Council and its partners will continue to work on a variety of schemes to try to reduce fuel costs for Glasgow residents. The Council supports the principle of not for profit suppliers such as Our Power which is a new energy supply company established by Scottish social housing providers who want to make the energy industry work better for the residents and communities they serve.

Influencing lifestyle choices of domestic energy consumers

- 4.21 A fourth issue which straddles fuel poverty and climate change is that of lifestyle and energy consumption habits of householders. The Council supports organisations and businesses which encourage householders to think and act in ways which minimise energy consumption. The installation of “smart meters” is beginning to gain some momentum with consumers. The Scottish Federation of Housing Associations has already set up training events for RSL staff to provide advice on the use of smart meters for their customers.
<http://www.sfha.co.uk/smart-energy-GB>
- 4.22 This behavioural advice can range across a spectrum of options affecting both affluent and poorer households. This can include advice on cost-free lifestyle changes such as not boiling a full kettle of water to make a cup of tea, turning down heating, putting washing outside to dry, switching providers and buying in more efficient heating systems or finding alternative more cost effective fuel sources which produce lower or zero emissions.

Proposals for 2017 - 22

- 4.23 Based on the analysis set out in the previous chapters, the Strategy aims to bring together existing policy initiatives which are designed to reduce fuel poverty
- 4.24 These policy initiatives and proposals are designed to build on the established and proposed UK and Scottish Government funding streams, and are set out in [Table 4.1](#). Each objective is cross referenced to the policy strands outline above. Suggested lead organisations and likely constraints are also identified.

TABLE 4.1 GLASGOW'S AFFORDABLE WARMTH STRATEGY 2017 - 2021

1	Improving Glasgow's housing stock and new build standards
1a	Ensure new build housing meets current standards and beyond including renewable technologies whilst achieving value for money.
1b	Work with industry and research partners to access all opportunities to deliver innovative and cost effective energy efficiency solutions for existing properties within the city.
1c	Work with registered social landlords, owner occupiers and private landlords to improve housing stock and reduce fuel poverty.
2	Maximising the Benefits of HEEPS/SEEP for the residents of Glasgow
2a	Maximise opportunities to identify and develop HEEPS: ABS projects in partnership with owners, private sector landlords, and RSL's within mixed tenure blocks.
2b	Identify and take forward projects eligible for SEEP funding and work with commercial and housing provider partners to maximise funding and leverage brought into the city
2c	Maximise Scottish Government and other funding opportunities to deliver energy efficiency measures and reduce fuel poverty.
3	Affordable Warmth Advice and Assistance
3a	Support the provision of free and impartial energy advice and advocacy services to all households in the city to mitigate against the effects of increasing fuel costs
3b	Ensure signposting is in place to support maximum uptake of financial assistance to alleviate fuel poverty for all Glasgow residents.
4	Sustainability & Resilience

The Action Plan is set out in more detail at [Appendix A](#)

APPENDIX A

Glasgow's Affordable Warmth Action Plan 2017-2022

No.		Action	Baseline
Theme 1: Improving Glasgow's Housing			
1	Ensure new build meets current standards and beyond including renewable technologies whilst achieving value for money, including 'passivhaus', 'zero carbon homes' and 'gold standard' pilots		100% of projects currently meet 'very good' (ECO) standard
		Housing Associations to be encouraged to develop to Building Standards 2016 (Section 7, Silver Level) or better	Completions monitored on an annual basis since 2015
		Monitor the extent of delivering renewable features as part of Affordable Housing Supply Programme (AHSP) and its impact on fuel poverty	Completions monitored on an annual basis since 2015
2	Work with industry and research partners to access all opportunities to deliver innovative and cost effective design solutions for existing properties within the city	Work with the industry to identify replicable cost effective insulation design solutions with a focus on Pre 1919 tenemental properties	Develop recording mechanism to establish overall figure
3	Work with Registered Social Landlords, Owner Occupiers and Private Landlords to improve housing stock and reduce fuel poverty	Collate RSL data to identify EESSH failures to ascertain the outstanding requirements to address fuel poverty	Develop recording mechanism to establish overall figure
		Energy Efficiency is a priority for the Scheme of Assistance for private sector housing. Maximise additional leverage through other funding programmes to increase thermal performance at every opportunity	Develop recording mechanism to establish overall figure
		Identify vulnerable, elderly and low income households and direct energy efficiency measures to help heat their homes more affordably	Develop recording mechanism to establish overall figure

Target Date	Lead Partner/ Service Responsible for delivery	Other Key Partners/ Services	Link to related Strategic Plan
Existing Stock and New Build Standards			
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Housing Associations in Glasgow 	<ul style="list-style-type: none"> ◆ DRS Service Plan ◆ Development Funding Annual Performance Review ◆ Post Completion Reviews
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Housing Associations in Glasgow 	<ul style="list-style-type: none"> ◆ Building Standards 2011 - 2013 ◆ Affordable Housing Supply Programme 2017/2020
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Housing Associations in Glasgow ◆ Sustainable Glasgow 	<ul style="list-style-type: none"> ◆ Affordable Housing Supply Programme 2017/20 ◆ Climate Change Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ GCC Housing Services ◆ Housing Associations in Glasgow ◆ Manufacturers ◆ Installers 	<ul style="list-style-type: none"> ◆ Private Sector Action Plan ◆ Older Housing Strategy
December 2020	GCC Housing Services	<ul style="list-style-type: none"> ◆ Housing Associations in Glasgow 	<ul style="list-style-type: none"> ◆ Scottish Government's Sustainable Housing Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Owners of Properties ◆ GCC's Affordable Warmth Contractors 	<ul style="list-style-type: none"> ◆ DRS Service Plan ◆ Private Sector Action Plan
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ GCC Housing Services ◆ Scottish Government ◆ Housing Associations in Glasgow 	<ul style="list-style-type: none"> ◆ Scottish Government's Sustainable Housing Strategy ◆ Age Friendly Glasgow Strategy

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Glasgow's Affordable Warmth Action Plan 2017-2022

No.		Action	Baseline
Theme 2: Maximising the Benefits of HEEPS			
4	Maximise opportunities to identify and develop HEEPS projects in partnership with owners, private sector landlord, and RSL's within mixed tenure blocks	Identify and take forward projects which would be eligible for HEEPS:ABS funding and work with partners to maximise the funding and leverage brought into the City by 2018	Completions monitored on an annual basis since 2013
5	Identify and take forward projects eligible for SEEP funding and work with partners to maximise funding and leverage brought to the city	Development of an Affordable Warmth Corporate Delivery Team to oversee and monitor the Scotland's Energy Efficiency Programme (SEEP) and forward plan future programmes	Delivery Team to be established
		Agree the: <ul style="list-style-type: none"> ◆ Remit and membership of the group ◆ Reporting mechanisms ◆ The approach to taking forward SEEP bids 	
		Encourage RSL's to work together to identify local solutions and shared services to eradicate fuel poverty	Projects to be identified in line with SEEP criteria
		Work with partners to identify and take forward suitable cost effective design solutions to deliver affordable warmth and contribute to reducing the carbon footprint of the city including : <ul style="list-style-type: none"> ◆ District Heating ◆ Renewable Technologies ◆ Improve access for all tenures to the gas network 	New Projects to be identified and monitoring mechanism established
6	Maximise Scottish Government and other funding opportunities to deliver energy efficiency measures & reduce fuel poverty	Work with partners to maximise funding and leverage brought to the city including : <ul style="list-style-type: none"> ◆ SEEP Loans ◆ District Heating Loan Fund ◆ Scottish Government's Gas Infill Loan Fund 	New Projects to be identified yet and monitoring mechanism established
		Monitor and Evaluate energy efficiency programmes to inform future projects and policy development	SEEP Evaluation Framework to be established

Target Date	Lead Partner/ Service Responsible for delivery	Other Key Partners/ Services	Link to related Strategic Plan
HEEPS/SEEP for the residents of Glasgow			
HEEPS Annual Allocation 2017/18	GCC Housing Services	<ul style="list-style-type: none"> ◆ Scottish Government ◆ Housing Associations in Glasgow ◆ GCC's Affordable Warmth Contractors Framework 	<ul style="list-style-type: none"> ◆ Scottish Government's Sustainable Housing Strateg ◆ Climate Change Strategy ◆ Scottish Government's Fuel Poverty Strategy
January 2017	GCC Housing Services	<ul style="list-style-type: none"> ◆ DRS Affordable Warmth Team ◆ Education Department ◆ City Property ◆ Economic Development Community 	<ul style="list-style-type: none"> ◆ Scottish Government's Sustainable Housing Strateg ◆ Climate Change Strategy
		<ul style="list-style-type: none"> ◆ Planning ◆ Land and Environmental Services ◆ SFHA ◆ GWSF ◆ Wheatley Group ◆ GCVS 	<ul style="list-style-type: none"> ◆ Scottish Government's Fuel Poverty Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Housing Associations in Glasgow ◆ Public & Private Building Owners 	<ul style="list-style-type: none"> ◆ Scottish Government's Sustainable Housing Strateg ◆ Climate Change Strategy ◆ Scottish Government's Fuel Poverty Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Scotia GAS Networks ◆ Energy Industry ◆ Housing Associations in Glasgow 	<ul style="list-style-type: none"> ◆ Scottish Government's Sustainable Housing Strateg ◆ Climate Change Strategy ◆ Scottish Government's Fuel Poverty Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Energy Saving Trust ◆ Scottish Government ◆ Other Funding Providers 	<ul style="list-style-type: none"> ◆ Scottish Government's Sustainable Housing Strateg ◆ Climate Change Strategy ◆ Scottish Government's Fuel Poverty Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Energy Saving Trust ◆ Edinburgh University ◆ Scottish Government 	<ul style="list-style-type: none"> ◆ Scottish Government's Sustainable Housing Strateg ◆ Climate Change Strategy ◆ Scottish Government's Fuel Poverty Strategy

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Glasgow's Affordable Warmth Action Plan 2017-2022

No.		Action	Baseline
Theme 3: Affordable Warmth			
7	Ensure signposting is in place to support maximum uptake of physical measures and financial assistance to alleviate fuel poverty for all Glasgow residents	Home Energy Scotland to identify fuel poor or vulnerable households eligible for the Scottish Government's Warmer Homes Scotland scheme	Figures to be collated and reported
		Home Energy Scotland to provide advice and assistance to residents in Glasgow on energy efficiency measures and behaviour changes to help reduce fuel bills	HES service established by the Scottish Government managed by the Wise Group. Monitoring figures to be obtained and reported
		Ensure maximum uptake of the Council's Warm Homes Dividend to elderly Glasgow residents	Annual Uptake circa 13,000
8	Support the provision of free and impartial energy advice and advocacy services to all households in the city to mitigate against the effects of increasing fuel prices and assess the need for fuel banks	Owner Occupiers participating in the HEEPS:ABS/SEEP programmes will be referred to GHEAT for free and impartial advice	Monitoring reports produced for quarterly meetings
		The GHEAT Service provides free and impartial advice and advocacy service to households in the city on energy related matters	Monitoring reports produced for quarterly meetings
		GHEAT provides advice and advocacy services at local surgeries and Foodbanks across the city	Monitoring reports produced for quarterly meetings
		GHEAT Steering Group to meet on a quarterly basis and an annual report to be produced	Quarterly meetings held and annual report produced
		Promote Glasgow People's Energy an independent and impartial energy switching service for the city's businesses and third sector organisations	Launched November 2015

Target Date	Lead Partner/ Service Responsible for delivery	Other Key Partners/ Services	Link to related Strategic Plan
Advice and Assistance			
Scheme launched September 2015. Duration 7 years	Home Energy Scotland	<ul style="list-style-type: none"> ◆ Wise Group ◆ Home Energy Scotland ◆ GCC Housing Services ◆ Scottish Government ◆ Warmworks Scotland 	<ul style="list-style-type: none"> ◆ Scottish Government's Sustainable Housing Strateg ◆ Climate Change Strategy ◆ Scottish Government's Fuel Poverty Strategy
2017 - 2022	Home Energy Scotland	<ul style="list-style-type: none"> ◆ Wise Group ◆ Scottish Government ◆ Energy Saving Trust 	<ul style="list-style-type: none"> ◆ Climate Change Strategy ◆ Financial Inclusion Strategy ◆ Scottish Government's Sustainable Housing Strateg
Annual Budget Commitment	GCC Financial Services	<ul style="list-style-type: none"> ◆ G HEAT ◆ HES ◆ GCC Housing Services ◆ Elderly Residents of Glasgow ◆ Citizens Advice Scotland 	<ul style="list-style-type: none"> ◆ GCC Strategic Plan ◆ Financial Inclusion Strategy ◆ Age Friendly Glasgow Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Wise Group ◆ Housing Associations in Glasgow ◆ GCC Financial Services ◆ Citizens Advice Scotland 	<ul style="list-style-type: none"> ◆ Financial Inclusion Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Wise Group ◆ Housing Associations in Glasgow ◆ GCC Financial Services ◆ Citizens Advice Scotland ◆ Fuel Utilities 	<ul style="list-style-type: none"> ◆ Financial Inclusion Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Wise Group ◆ Housing Associations in Glasgow ◆ GCC Financial Services ◆ Citizens Advice Scotland 	<ul style="list-style-type: none"> ◆ Financial Inclusion Strategy ◆ Poverty Leadership Panel
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Wise Group ◆ Housing Associations in Glasgow ◆ GCC Financial Services ◆ Citizens Advice Scotland ◆ Scottish Power 	<ul style="list-style-type: none"> ◆ Financial Inclusion Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Wise Group ◆ Citrus Energy 	<ul style="list-style-type: none"> ◆ GCC Strategic Plan ◆ Financial Inclusion Strategy

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Glasgow's Affordable Warmth Action Plan 2017-2022

No.		Action	Baseline
Theme 3: Affordable Warmth			
9	Take action to ensure the city is resilient to the effects of climate change	Identify areas of joint working with GWSF and SFHA Energy Efficiency Forums	Develop areas of interest
		Explore new and innovative technologies designed to reduce energy use ensuring they are replicable and cost effective (see Action 1)	Projects have not been developed yet
		Encourage partners to develop schemes to ensure the city is resilient to the effects of climate change (See Action 1)	Projects have not been developed yet
10	Contribute to an energy efficient future to help reduce the carbon footprint of the city	GCC to attend the Scottish Housing Energy Efficiency Network (SHEEN) to keep up to date with developments and learn from the experiences of other local authorities	Quarterly meetings are held at various locations across Scotland
		Monitor and Evaluate current energy efficiency programmes to inform future policy development	Future City Glasgow Insulation Monitoring

Target Date	Lead Partner/ Service Responsible for delivery	Other Key Partners/ Services	Link to related Strategic Plan
Advice and Assistance			
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ SFHA ◆ GWSF 	<ul style="list-style-type: none"> ◆ Scottish Government's Sustainable Housing Strateg ◆ Climate Change Strategy ◆ Scottish Government's Fuel Poverty Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Energy Industry Partners ◆ Housing Associations in Glasgow ◆ Public & Private Building Owners 	<ul style="list-style-type: none"> ◆ Climate Change Strategy ◆ Our Resilient Glasgow Strategy ◆ Scottish Government's Sustainable Housing Strategy ◆ Scottish Government's Fuel Poverty Strategy
2017 - 2022	GCC Housing Services	<ul style="list-style-type: none"> ◆ Energy Industry Partners ◆ Housing Associations in Glasgow ◆ Public & Private Building Owners 	<ul style="list-style-type: none"> ◆ Climate Change Strategy ◆ Our Resilient Glasgow Strategy ◆ Scottish Government's Sustainable Housing Strategy ◆ Scottish Government's Fuel Poverty Strategy
2017 - 2022	Engergy Action Scotland	<ul style="list-style-type: none"> ◆ All Local Authorities in Scotland 	<ul style="list-style-type: none"> ◆ Climate Change Strategy ◆ Our Resilient Glasgow Strategy ◆ Scottish Government's Sustainable Housing Strategy ◆ Scottish Government's Fuel Poverty Strategy
2017 - 2022	Scottish Government	<ul style="list-style-type: none"> ◆ GCC Housing Services ◆ Housing Associations ◆ Contractor Framework ◆ Energy Saving Trust ◆ Edinburgh University 	<ul style="list-style-type: none"> ◆ Scottish Government's Sustainable Housing Strateg ◆ Climate Change Strategy

APPENDIX B

Glasgow RSL Energy Efficiency Survey 2015

RSL Survey – Energy Efficiency Theme

RSL Survey (Energy Efficiency Theme) has been emailed to 66 Housing Associations and 14 of them have responded to the survey questions. (Response rate 21%)

TABLE 1 Meeting the Scottish Housing Quality Standard (SHQS) by the 31st March 2015

Properties meet/fail the Scottish Housing Quality Standard (SHQS) by the 31st March 2015	
Number of properties meeting the SHQS	21,553
Number of properties failing to meet the SHQS	2,940
Total	24,493

According to the 14 HA responses, 88% of the properties have met the SHQS by the 31st March 2015 and only 12% fail to meet the SHQS.

TABLE 2 Properties failing to meet SHQS by the 31st March 2015

Properties failing to meet the SHQS are;	
Exempt from complying with SHQS	976
In abeyance from compliance with SHQS	804
Not applicable from compliance with SHQS	

55% of the properties that failed to meet SHQS have been identified as exempt from failing to meet SHQS whereas 45% failed in abeyance from compliance with SHQS.

TABLE 3 Reasons for failing to meet SHQS by the 31st March 2015

Below the tolerable standard	282	12%
In serious disrepair	354	15%
Not energy efficient	694	29%
Lacking modern facilities and services	967	41%
Not healthy safe and secure	65	3%

Majority of properties failed to meet SHQS due to lacking modern facilities (41%) and being not energy efficient (29%). Properties in serious disrepair (15%) and below the tolerable standard (12%) still represent the earnest proportion of properties that fail to meet the SHQS by the 31st March 2015.

TABLE 4 Reasons for failing to meet SHQS by the 31st March 2015

Barriers	No of HA	% of HA
Structural issues		
Lack of design solution (Technical)	4	22%
Legal Issues		
Cost	3	17%
Mixed tenure blocks/owners lack of participation in major investment works	2	11%
Housing Stock awaiting disposal		
Tenants refusing improvement work	6	33%
Others (please specify)	3 (1 Replacement cycle, 2 New Stock Acquisitions)	17%

Within the provided 8 barriers to comply with SHQS – tenants refusing improvement work- has been identified as the major barrier to comply with SHQS. This is followed by Lack of design solution (22%) and Cost (17%).

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Glasgow RSL Energy Efficiency Survey 2015

TABLE 5 Measures required bringing the properties up to standard

	No of properties
Loft Insulation	
Wall Insulation	449
Hot/Cold water tank and pipe insulation	
Heating System	245

Of the properties that are not energy efficient, 65% requires wall insulation and 35% requires heating system to be brought up the SHQS.

TABLE 6 Energy efficiency work carried out in the last two financial years (2013/14 -2014/15)

	No of units completed in 2013/14	No of units completed in 2014/15	Estimated cost of works (if available)
External Wall Insulation	306	110	3,049,052
Internal Wall Insulation	400	-	
Cavity Wall Insulation	49	1600	280,000
Loft Insulation	-	402	10,000
New Heating System	697	639	1,032,000
Boiler Replacement	119	84	387,118
Gas Infill	-	-	
Renewables (please specify) LED Lights in closes	-	656	
Total	1,571	3,491	4,758,170

According to the 14 HAs in 2013/14, 44% of the properties have been installed a new heating system which makes the installing a new heating system one of the most common type of energy efficiency work carried out by the HAs. In 2014/15 cavity wall insulation has been the most common energy efficiency work carried out by 14 HA. Majority of HA provided the number of units completed however they haven't provided estimated cost of works for all the units completed. Therefore £4.76m total estimated cost of works doesn't reflect all the energy efficiency work has been carried out over the past two years.

TABLE 7 Energy Efficiency Improvement Plans over the next 2-3 years

All of the 14 HAs which took part in the survey said that they are intend to carry out some sort of energy efficiency work over the next 2-3 years.

	No of units completed in 2015/16	No of units completed in 2016/17	Estimated cost of works (if available)
External Wall Insulation	298	235	1,300,000
Internal Wall Insulation	100	200	
Cavity Wall Insulation	135	0	185,000
Loft Insulation	24	30	-
New Heating System	474	479	1,663,660
Boiler Replacement	118	216	492,284
Gas Infill	-	-	
Renewables (please specify) LED Lights	513	-	
How much £ per annum is your association planning to spend?	7.5m	5.5m	13m

In 2015/16, majority of the properties are planned to be installed new heating systems and renewables. HAs are planning to spend approximately £7.5m on the energy efficiency work. In 2016/17 installing new heating system is again the most common type of energy efficiency work that planned to be carried out which followed by external wall insulation. During 2016/17 HAs are planning to spend approximately £5.5m on the energy efficiency work.

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Glasgow RSL Energy Efficiency Survey 2015

The energy efficiency elements of SHQS are superseded by the new Energy Efficiency Standard for Social Housing (EESH). The EESH sets a single minimum Energy Efficiency (EE) rating for landlords to achieve by 31 December 2020, for all applicable social housing. HAs have been asked whether they carried out a survey to calculate the percentage of their housing stock that will pass or fail the EESH. 50% of the HAs said that they have carried out a survey whereas other 50% said they haven't carried out a survey to check whether they pass/fail the EESH. Of those HAs that carried out a survey stated that 77% of the properties have met the EESH.

TABLE 8 Number of properties pass/fail the EESH.

Number of properties meeting the EESH standard	8,412
Number of properties failing to meet the EESH standard	2,581

TABLE 9 Level of Loft Insulation (The minimum requirement for SHQS compliance for loft Insulation is 100mm with a recommendation of 270mm being desirable)

Level of Insulation	No of Properties
Less than 100mm	
100mm - 200mm	5,810
201mm - 270mm	1,830
270mm +	6,154
Unknown	2,008

For the majority of properties, level of loft insulation is above the desirable level (270mm+). However, earnest proportion of properties' level of loft insulation is still unknown.

TABLE 10 **Actions taken to alleviate fuel poverty**

Actions	No of HAs
Refer client to an in house energy advice service	5
Provide advice on reducing fuel bills	11
Assist clients to obtain the best tariffs	12
Advise clients on the efficient use of heating systems	12
Carry out insulation measures to improve the thermal efficiency of the property	7
Provide home owners with information on grants/discounts for insulation measures	5
Refer client to the G. Heat Service	11
Others - Home energy checks / apply for debt clearing funds / emergency credit provision / signpost to energy savings trust / negotiate on their behalf / meter changes/Energy Charging	2
If you want more information on the GHEAT Service please tick the box.	5

With an aim to alleviate fuel poverty, 86% of HAs said that they assist clients to obtain the best tariffs and advise clients on the efficient use of heating systems. 79% of HAs said they advise clients on reducing fuel bills and refer them to the G.Heat Service.

APPENDIX B

Glasgow RSL Energy Efficiency Survey 2015

TABLE 11 Awareness of the Energy Efficiency Schemes funded by the Scottish Government or UK Government

	No. of HA Aware of	No. of HA Have Secured funding in the Past	No. of HA Would like more information on Scheme
Home Energy Efficiency Programme Scotland (HEEPS) – National Fuel Poverty Scheme	12	1	3
HEEPS – Area Based Schemes	10	2	3
HEEPS – Cash Back Scheme	11	-	4
HEEPS - Loan	10	-	4
HEEPS - Loan			
HEEPS – Cashback for Social Landlords	11	2	3
Home Energy Scotland Renewables Loan	4	-	5
Resource Efficient Scotland SME Loan	2	-	5
Scottish Government District Heating Loan Scheme	5	-	5
Community and Renewable Energy Scheme	5	-	5
Feed in Tariff	11	-	2
Renewable Heat Incentive	9	-	3

Majority of the HAs are aware of the Energy Efficiency Schemes funded by the Scottish/UK Government. However, Resource Efficient Scotland SME Loan and Home Energy Scotland Renewables Loan are not as widely known as other schemes therefore some of HAs would like more information on the schemes. Only 3 HAs have managed to secure funding in the past and 2 HAs have failed to secure HEEPS – Cash back for Social Landlords.

TABLE 12 **Providing Energy Advice Services**

	No. of HAs
In House Services	4
Refer to external agency	9
Do not provide Energy Advice Services	2

Majority of HAs provide Energy Advice Services through referrals to external agency. In House Services are not widely used as external agency. Only 2 HAs do not provide any Energy Advice Services.

Referrals to the G.Heat services

10 out of 14 HAs said that they have made referrals to the G. Heat Services in the past and 9 of them found G. Heat services very useful. Some of the comments on G. Heat follow as;

“G-heat staff operates out of our Advice Centre, attend all of the Association’s consultation events and follow up on referrals made by the association. Tollcross HA considers G-Heat an effective partner in addressing fuel poverty in the east end of Glasgow.”(Tollcross HA)

“I found them very knowledgeable, with very good customer relationship skills. I will be using them again”. (Queens Cross HA)

It has been asked to HAs - if there was a financial contribution required to provide an Energy Advice Referral Service, would your HA be willing to contribute? 4 HAs said that they would be happy to contribute whereas 4 HAs said they wouldn't make any contributions. Some of the reasons for not making any financial contribution are stated as;

“We need to be mindful of the impact on rent levels and our existing financial commitments”.

“It is a national government priority and any additional costs would have to be passed on via rent increases”.

4 HAs indicated that they would require more information e.g. cost and extend of services to determine their position.

Glasgow RSL Energy Efficiency Survey 2015

TABLE 13 Providing Energy Advice Services

8 out of 14 HAs stated that they are not planning any renewable projects in the future whereas 6 HAs said that they are planning to carried out some of the following projects in the future

	No. of HAs
Photovoltaic/Solar Panels	4
Air or Ground Source Heat Pumps	2
Biomass	3
District Heating System	3
Wind Power	-
Other (Please Specify)	-

The Journey towards affordable warmth for all in Glasgow – Timeline 1986 - 2016

The timeline below brings together the legislative and national policy interventions in respect of eradicating fuel poverty and tackling climate change and Glasgow's response over the last 30 years.

1986	Enquiry into Housing in Glasgow chaired by Professor Sir Robert Grieve (The 'Grieve Enquiry') identifies links between damp housing, fuel poverty and health. In parallel, a Glasgow Energy Enquiry (The Finnieston enquiry) is established.
1988	Concept of setting an 'Affordable fuel cost target' for low income householders established in response to mounting claims for compensation as a result of dampness. Link made to 'absolute' poverty in respect of ability of tenants to heat their homes.
1989	Affordable Fuel Cost Yardstick is used to measure the extent of poverty. Created by the inability to warm the property – Insulation and heating specification requires be 50% better than building regulation standards.
1990	Glasgow City Council approves 'Glasgow Action for Warm Homes' – a policy planning framework for the use of energy in housing and sets an affordable fuel cost target of no more than 10% of net disposable household income
1991	Scottish House Condition Survey finds that nearly 50% of municipally owned housing stock in Glasgow suffers from some form of mould or condensation dampness.
1992 – 1996	Five Energy Demonstration Projects in Easterhouse, Corkerhill and Barmulloch completed.
1995	'Glasgow Energy Initiative' proposed to provide public-private affordable heat and hot water to mainly Council-owned stock through district heating systems – gets to feasibility stage, but is abandoned as stock transfer proposal is considered.
1996	Home Energy Conservation Act (HECA) passed to encourage the reduction of residential energy consumption. Glasgow Energy Fuel Affordability matrix established to calculate net disposable income and fuel cost thresholds for the full range of house size and type against household size and type.
1997	Glasgow's response to HECA: Report by Glasgow City Council further develops 'Glasgow Action for Warm Homes' applying NHER evaluator system to determine running costs and determine capital costs of more efficient heating and insulation systems in domestic properties – (The 'Mass Energy Audit'). Total energy use and CO2 emissions calculated and published.
1999	'Warm Deal' introduced. Linked to the 'New Deal' – energy efficiency measures offered to job seekers.

APPENDIX C

The Journey towards affordable warmth for all in Glasgow – Timeline 1986 - 2016

2001	<p>Housing (Scotland) Act Section 88: Requirement by Scottish Ministers to produce a Fuel Poverty Statement. Section 89 (b) requires that Local Housing Strategies (replacing Housing Plans) set out a policy which ensures that 'persons [in the LHS area] do not live in fuel poverty'</p> <p>Central Heating Programme supported by Scottish Government introduced to provide direct grant for the installation of central heating to over 60s households living in local authority and housing association. Target dates for completion: All housing associations by 2004, GHA by 2007.</p> <p>Council agrees to whole stock transfer proposal following a ballot of all Council tenants.</p>
2002	<p>Scottish Executive Fuel Poverty Statement published UK Energy Efficiency Commitment – Utility companies obliged for the first time in law to set aside a proportion of householder bill receipts to be re-invested in energy efficiency measures.</p>
2003	<p>Stock transfer agreed. Glasgow Housing Association Business Plan includes commitment to provide whole house heating to all (GHA-owned) properties deemed to have a long term future.</p>
2003	<p>UK Government Energy White Paper 'Our Energy Future – Creating a Low Carbon Economy' published. Defined a long term strategy combining environmental, supply security, competitiveness and social goals. Included aspiration to ensure that every home is 'adequately and affordably heated'.</p>
2005	<p>Glasgow's Fuel Poverty Strategy updated, as part of Local Housing Strategy 2003 - 2008.</p>
2007	<p>All 32 local authorities sign up to 'Scotland's Climate Change Declaration'.</p>
2009	<p>Climate Change (Scotland) Act creates a statutory framework for reducing greenhouse gas emissions and includes measures relating to adaptation. Accompanied by Climate Change Duties Guidance.</p>
2013	<p>Carbon Emissions Reduction Target (CERT) introduced and Community Energy Savings Programme (CESP) launched Scottish Housing Quality Standard progress review 2012/13 published. Scottish Housing Regulator finds that the highest non-compliance rates across all landlord types are for the Energy Efficiency criterion Scottish Housing Quality Standard Progress Update 2012/13.</p> <p>https://www.scottishhousingregulator.gov.uk/news/regulator-publishes-scottish-housing-quality-standard-progress-report-201213</p>

2013	<p>Scotland's Sustainable Housing Strategy published http://www.gov.scot/Resource/0042/00425697.pdf</p> <p>Set out a vision for warm, high quality, affordable, low carbon homes and a housing sector that helps to establish a successful low carbon economy across Scotland. Establishes:</p> <ul style="list-style-type: none"> a) Home Energy Efficiency Programme for Scotland (HEEPS) to combine direct grant with levered in energy utility company funding to introduce comprehensive heating and insulation schemes at a local level b) Affordable Warmth Scheme which aims to ensure that every eligible household in Scotland receives support under the ECO Home Heating Cost Reduction Obligation. Extended stage 4 of the Energy Assistance Package for a further two years (renamed the Energy Assistance Scheme) focussing assistance on the most vulnerable and poor households who were previously eligible for heating and insulation measures but who would otherwise miss out under the Affordable Warmth Scheme. c) Trailed the introduction of a new Energy Efficiency Standard for Social Housing by Autumn 2013, with an expectation that landlords will meet the standard by 2020. d) Pledged an extra £4,000 per unit funding through the Affordable Housing Supply Programme (AHSP) for every home meeting the 'silver' sustainability standard for emissions and energy use within section 7(Sustainability) of building regulations. e) Produced a 'route map' to achieve energy efficiency targets by 2030 (pp 7) "Greendeal" launched. Designed to help business and home owners to employ more green technologies in their properties with no up front costs. The owner pays back the costs through energy bills over a period of time. The bill stays with the property where the savings are occurring .
2015	<p>Affordable Warmth Action Plan commissioned as part of support documentation for Local Housing Strategy 2017 – 22</p> <p>Warmworks Scotland launched - A joint venture formed to deliver the Scottish Government's national energy efficiency scheme, Warmer Homes Scotland. Warmer Homes Scotland provides insulation, efficient heating and renewable technologies in the homes of households who are struggling with the cost of high energy bills, making homes warmer, more comfortable and more affordable to heat.</p> <p>The UK government stops funding the Green Deal Finance Company, which was set up to lend money to Green Deal providers.</p>
2016	<p>United Kingdom referendum vote means that support grant from European Union for energy management projects is likely to be cut on or before 2019</p> <p>Scotland's Energy Efficiency Programme (SEEP) Pathfinder introduced.</p>

APPENDIX D

Energy Action Scotland HEED Home Analytics Aggregate Data for Glasgow City (Run Date April 28th 2016)

Location	LA	Glasgow City	(Percentage)
	Dwellings	298,945	
Property Type	Property Type: Detached	10,913	3.65
	Property Type: Semi-Detached	42,585	14.25
	Property Type: Mid-terraced	18,656	6.24
	Property Type: End-terraced	9,071	3.03
	Property Type: Small block of flats dwelling converted into flats	48,446	16.21
	Property Type: Block of flats	112,679	37.69
	Property Type: Large block of flats	39,468	13.20
	Property Type: Flat in mixed use building	17,127	5.73
	Property Type: Unknown	0	0.00
Property Tenure	Property Tenure: Owner Occupied	152,553	51.03
	Property Tenure: Privately Rented	49,306	16.49
	Property Tenure: Housing Association	97,086	32.48
	Property Tenure: Local Authority	0	0.00
Property Age	Property Age: Pre-1919	76,053	25.44
	Property Age: 1919-1949	56,718	18.79
	Property Age: 1950-1983	94,336	31.56
	Property Age: 1984-1991	16,730	5.60
	Property Age: 1992-2002	28,135	9.41
	Property Age: Post-2002	26,973	9.02
Habitable Rooms	Habitable Rooms: 0-2	63,514	21.25
	Habitable Rooms: 3	125,313	41.92
	Habitable Rooms: 4	65,731	21.99
	Habitable Rooms: 5	28,480	9.53
	Habitable Rooms: 6	7,640	2.56
	Habitable Rooms: 7-8	6,211	2.08
	Habitable Rooms: 9+	2,056	0.69

Building Footprint (m2)	Building Footprint	17	
Building Height (m)	Building Height (m)	45.2	
Floor Area	Average Floor Area (m2)	74	
Wall Construction & Insulation	Wall Construction: Cavity Construction (Insulated)	102,187	34.18
	Wall Construction: Cavity Construction (Uninsulated)	32,270	10.79
	Wall Construction: Solid Brick/Stone (Insulated)	32,813	10.98
	Wall Construction: Solid Brick/Stone (Uninsulated)	73,802	24.69
	Wall Construction: System Built (Insulated)	23,795	7.96
	Wall Construction: System Built (Uninsulated)	5,780	1.93
	Wall Construction: Timber Frame (Insulated)	24,948	8.35
	Wall Construction: Timber Frame (Uninsulated)	3,350	1.12
Hard To Treat Cavity Walls	Empty Cavity: Very Severe or Severe Exposure Zone	31,932	10.68
	Empty Cavity: Building Likely Greater Than 3 Storeys	4,323	1.45
	Narrow Uninsulated Cavity Risk	11,873	3.97
Listed Buildings	Listed Building Grade: A	1,881	0.63
	Listed Building Grade: B	8,703	2.91
	Listed Building Grade: C	1,693	0.57
	Listed Building Grade: Not	283,754	94.92
Conservation Area	Conservation Area: Yes	32,468	
	Conservation Area: No	263,563	

APPENDIX D

Energy Action Scotland HEED Home Analytics Aggregate Data for Glasgow City (Run Date April 28th 2016)

Main Fuel Type	Fuel Type: Mains Gas	238,726	79.86
	Fuel Type: Oil	393	0.13
	Fuel Type: Electricity	51,229	17.14
	Fuel Type: LPG	878	0.29
	Fuel Type: Biomass/Solid Fuel	3,343	1.12
	Fuel Type: Communal	2,341	0.78
	Fuel Type: No heating	2,035	0.68
Boiler Efficiency	Boiler Efficiency: A-B	114,920	38.44
	Boiler Efficiency: C-E	55,309	18.50
	Boiler Efficiency: F-G	69,768	23.34
	Boiler Efficiency: No Boiler	58,948	19.72
Secondary Heating	Secondary Heating System Present	79,150	26.48
	Secondary Fuel Type: Electricity	50,813	8.81
	Secondary Fuel Type: Mains Gas	26,338	0.02
	Secondary Fuel Type: Oil	48	17.00
	Secondary Fuel Type: Biomass/Solid Fuel	1,951	0.65
	Secondary Fuel Type: No heating	219,795	73.52
Cylinder Insulation Type	Cylinder Insulation Type: Foam	194,659	65.12
	Cylinder Insulation Type: Jacket	36,169	12.10
	Cylinder Insulation Type: None	68,117	22.79
Cylinder Insulation Thickness	Cylinder Insulation Thickness: 0-49mm	208,740	69.83
	Cylinder Insulation Thickness: 50-79mm	75,238	25.17
	Cylinder Insulation Thickness: >80mm	14,967	5.01
Loft Type & Insulation	Loft Type & Insulation: 0-50mm	30,102	10.07
	Loft Type & Insulation: 51-100mm	22,889	7.66
	Loft Type & Insulation: 101-150mm	17,333	5.80
	Loft Type & Insulation: 151-200mm	18,562	6.21
	Loft Type & Insulation: >200mm	76,360	25.54
	Loft Type & Insulation: Room in roof	15,617	5.22
	Loft Type & Insulation: No Loft	118,082	39.50

Glazing	Glazing: Double/Triple	247,778	82.88
	Glazing: Single/Partial	51,167	17.12
EPC & SAP Ratings	EPC Rating Band: A-B	14,898	4.98
	EPC Rating Band: C	140,131	46.88
	EPC Rating Band: D	104,678	35.02
	EPC Rating Band: E	30,757	10.29
	EPC Rating Band: F-G	8,481	2.84
	Average Energy Efficiency (SAP) Rating	66	
Energy Consumption, Fuel Bills & CO2 Emissions	Total Energy Consumption (kWh/year)	4,628,539,704	15,483 KWH/YR
	Average RdSAP Fuel Bill (£ pa)	£716	
	Meter Type: Single	257,254	86.05
	Meter Type: Dual	41,691	13.95
	Total RdSAP CO2 Emissions (tCO2pa)	995,233	3
Renewable Energy Potential	Potential for solar PV	37,674	12.60
	Potential for solar thermal	36,532	12.22
	Potential for ASHP	983	0.33
	Potential for GSHP	73	0.02
	Potential for biomass heating	152	0.05
	Potential for wind turbine	10	0.00
ECO Eligibility	ECO CSCO Eligible	166,377	55.65
	ECO CSCO Eligible Adjoining Area	95,855	32.06
	ECO CSCO Not Eligible	36,713	12.28
	ECO CSCO Rural Eligible	366	0.12
	ECO HHCRO Eligible	32,883	11.00

Energy Action Scotland HEED Home Analytics Aggregate Data for Glasgow City (Run Date April 28th 2016)

Fuel Poverty Indicators	SIMD Income Domain income deprived households	66,201	22.14
	Households with children, elderly people or other at home (Census 2011)	98,158	32.83
	Households with children (Census 2011)	15,627	5.23
	Households with elderly people (Census 2011)	20,884.99	6.99
	Children, economically inactive or elderly	134,670.65	45.05
	Fuel bill comparison to median (average)	107%	
	Probability of Fuel Poverty (Fuel Bill >10% of Income)	101,902	34.09
EESHS Compliance	EESHS likely to be compliant	63,826	21.35
	EESHS risk of non-compliance	166,890	55.83
	EESHS likely to be non-compliant	68,229	22.82
Excess Cold Category 1 Hazard	Unlikely to be excess cold	275,647	92.21
	Risk of excess cold	16,494	5.52
	Likely to be excess cold	6,804	2.28

Motion approved by Scottish Parliament in debate on Fuel Poverty 27 January 2016

'That the Parliament believes that there is cross-party recognition of the social, economic and environmental damage that is caused by fuel poverty and energy-inefficient homes; recognises the Scottish Government's commitment to eradicate fuel poverty as far as reasonably practicable through support and funding within the powers available to the Scottish Ministers, but notes that the Scottish Government has no control over the above-inflation price increases by energy companies that have pushed up fuel bills; notes the latest fuel poverty statistics published in the Scottish House Condition Survey, which show that the efforts of the Scottish Government have helped to contain fuel poverty levels in Scotland that would have been around 9.5%, instead of 35%, if fuel prices had only risen in line with inflation between 2002 and 2014; calls on energy companies to pass on wholesale cost savings to customers at the earliest opportunity and to the fullest extent possible for both gas and electricity customers; welcomes the Scottish Government's continued investment in energy efficiency and fuel poverty and the contrast with the UK Government's withdrawal of any taxpayer-funded support for fuel poverty in England since 2013; recognises that the Scottish Government has allocated over half a billion pounds since 2009 to fuel poverty and energy efficiency programmes, helping the most vulnerable people in society heat their homes affordably, reducing greenhouse gas emissions and supporting jobs; welcomes that the Scottish Government has maintained current budgets in 2016-17 by allocating more than £103 million to tackle fuel poverty and climate change next year in the face of ongoing spending pressures and UK Government cuts; welcomes that this funding will be used to help install energy efficiency measures in 14,000 homes, building on the more than 900,000 measures delivered since 2008 and that this record investment is reflected in the big improvements in the energy efficiency of Scotland's housing, with the share of homes rated EPC band C and above having increased by 71% since 2010; further welcomes that the Scottish Government has designated energy efficiency as a National Infrastructure Priority, supported by a commitment to multiyear funding and new powers to design and implement Energy Company Obligations in Scotland, and is therefore providing a long-term commitment to tackling fuel poverty head on'.

ClimateJust (2014) Adapting Buildings

<http://www.climatejust.org.uk/messages/adapting-buildings>

Department of Energy and Climate Change (2015a) Quarterly domestic energy prices
December 2015

<https://www.gov.uk/government/organisations/department-of-energy-climate-change>

Energy Action Scotland (2016). Fuel Poverty and Health webpage

http://www.eas.org.uk/en/fuel-poverty-and-health_50442

Existing Homes Alliance (2016) EHS Scotland website

http://existinghomesalliancescotland.co.uk/wp-content/uploads/2016/06/Warm-Homes-Bill-for-Scotland_ExHAS_FINAL_June2016.pdf

Friends of the Earth (2011) The Health Impacts of Cold Homes and Fuel Poverty

https://www.foe.co.uk/sites/default/files/downloads/cold_homes_health.pdf

Glasgow City Council (2014) Energy and Carbon Masterplan

<https://www.glasgow.gov.uk/CHttpHandler.ashx?id=32441&p=0>

Glasgow City Council (2015a) Carbon Management Plan Phase 2

<https://www.glasgow.gov.uk/CHttpHandler.ashx?id=28416&p=0>

Glasgow City Council (2015b) Affordable Warmth Programme Annual Report 2014/15

<https://www.glasgow.gov.uk/CHttpHandler.ashx?id=31320&p=0>

Glasgow Indicators Project http://www.understandingglasgow.com/indicators/environment/fuel_poverty/scottish_cities

McGrath, M “Debate needed on 1.5C temperature target” 29 July 2016
<http://www.bbc.co.uk/news/science-environment-36904990>

National Energy Action / Energy Action Scotland (2015) UK Fuel Poverty Monitor 2014-2015. <http://www.eas.org.uk/en/uk-fuel-poverty-monitor-506081>

National Records of Scotland (2014) Winter mortality in Scotland 2013 -14 <http://www.nrscotland.gov.uk/files/statistics/winter-mortality/2013-2014/winter-mortality-2013-14.pdf>

Ofgem (2015) Prepayment review: understanding supplier charging practices and barriers to switching
http://www.ofgem.gov.uk/sites/default/files/docs/2015/06/prepayment_report_june_2015finalforpublication.pdf

Scottish Government (2001) Housing (Scotland) Act 2001 Section 89 Local housing strategies
<http://www.legislation.gov.uk/asp/2001/10/section/89>

Scottish Government (2002) Scottish Fuel Poverty Statement
<http://www.gov.scot/Resource/Doc/46951/0031675.pdf>

Scottish Government (2009) Climate Change (Scotland) Act 2009
<http://www.gov.scot/Topics/Environment/climatechange/scotlands-action/climatechangeact>

Scottish Government (2014a) Local Housing Strategy Guidance
<http://www.gov.scot/Resource/0045/00458185.pdf>

Scottish Government (2014b) Progress Report on the Fuel Poverty Statement
<http://www.gov.scot/Resource/0046/00466608.pdf>

Scottish Scottish Government (2016) Sustainable Housing Advice Note: Fuel Poverty and Climate Change (February 2016)

<http://www.gov.scot/Topics/Built-Environment/Housing/supply-demand/deliveryframework/lhs/Sustainable-Housing-Advice-Note-Fuel-Poverty-and-C>

Scottish House Condition Survey (c2005) Technical Note : Definition and measurement of fuel poverty in SHCS reports

<http://www.gov.scot/Resource/Doc/1125/0048118.pdf>

Scottish House Condition Survey (2014) Key Findings Report 2014

<http://www.gov.scot/Resource/0049/00490947.pdf>

Scottish House Condition Survey (2016) Key Findings Report 2015

<http://www.gov.scot/Resource/0051/00511081.pdf>

SPICe (2016) for Scottish Parliament : Disposable Household Income in Scotland 2014

<http://www.parliament.scot/parliamentarybusiness/101001.aspx>

World Health Organisation European Region (2007) Housing, EnergyAnd Thermal Comfort A review of 10 countries within the WHO European Region

<http://www.euro.who.int/en/health-topics/environment-and-health/Housing-and-health/publications/pre-2009/housing,-energy-and-thermal-comfort-a-review-of-10-countries-within-the-who-european-region-2007>

ASHP Air Source Heat Pump

BIG SIX Britain's largest energy companies: British Gas, EDF, E.ON, Npower, ScottishPower, SSE

BRE Building Research Establishment

CARES Community and Renewable Energy Scheme

CCS Carbon Capture & Storage

CERO Carbon Emissions Reduction Obligation

CHP Combined Heat & Power

CIH Chartered Institute of Housing

CO Carbon Monoxide

CO₂ Carbon Dioxide

CRC Carbon Reduction Commitment

CSCO Carbon Saving Communities Obligation

CWI Cavity Wall Insulation

CWP Cold Weather Payment

DECC Department of Energy & Climate Change

DWP Department for Work & Pensions

EAS Energy Action Scotland

EBD Energy Best Deal

EBDS Energy Best Deal Scotland

ECO Energy Company Obligation

EEPB Energy Efficiency Partnership for Buildings

EESHS Energy Efficiency Standards for Social Housing

EPC Energy Performance Certificate

EST Energy Saving Trust

EWI External Wall Insulation

EWD Excess Winter Deaths

FIT Feed-in Tariff

FPAG Fuel Poverty Action Group

FPO Fuel Poverty Obligation

GAIN Glasgow Advice & Information Network

GD Green Deal

- GDN** Gas Distribution Network
- GDP** Green Deal Provider
- GIB** Green Investment Bank
- GSHP** Ground Source Heat Pump
- GWSF** Glasgow and West of Scotland Forum of Housing Associations
- HECA** Home Energy Conservation Act
- HEED** Home Energy Efficiency Database
- HEEPS** Home Energy Efficiency Programmes for Scotland
- HEEPS-ABS** Home Energy Efficiency Programmes for Scotland – Area-based Schemes
- HEEPS-EAS** Home Energy Efficiency Programmes for Scotland
– Energy Assistance Scheme
- HES** Home Energy Scotland
- HHCRO** Home Heating Cost Reduction Obligation
- HHH** Home Heat Helpline
- INCA** Insulated Render & Cladding Association
- IWI** Internal Wall Insulation
- kWh** KiloWatt Hour
- kWp** KiloWatt Peak
- LCITP** Low Carbon Infrastructure Transition Programme (LCITP),
- LED** Light-emitting Diode
- LES** Local Energy Scotland
- LHS** Local Housing Strategy
- LPG** Liquefied Petroleum Gas
- NEA** National Energy Action
- NHER** National Home Energy Rating
- NIA** National Insulation Association
- NRP** National Retrofit Programme
- OFGEM** Office of Gas & Electricity Markets
- OFT** Office of Fair Trading
- PPM** Prepayment Meter
- PRS** Private Rented Sector
- PV** Photovoltaic
- REIF** Renewable Energy Investment Fund
- RHI** Renewable Heat Incentive

- ROO-FIT** Renewables Obligation Order Feed-in Tariff
- RPI** Retail Price Index
- RSL** Registered Social Landlord
- SAP** Standard Assessment Procedure
- SEEP** Scotland's Energy Efficiency Programme
- SFHA** Scottish Federation of Housing Associations
- SFPF** Scottish Fuel Poverty Forum
- SGN** Scotland Gas Networks
- SHCS** Scottish House Condition Survey
- SHQS** Scottish Housing Quality Standard
- SIMD** Scottish Index of Multiple Deprivation
- SPEN** Scottish Power Energy Networks
- SSEPD** Scottish & Southern Energy Power Distribution
- SWI** Solid Wall Insulation
- SWIGA** Solid Wall Insulation Guarantee Agency
- TDCV** Typical Domestic Consumption Values
- UHS** Universal Home Insulation Scheme
- WFP** Winter Fuel Payment
- WHD** Warm Home Discount
- WHO** World Health Organisation
- WSHP** Water Source Heat Pump
- WTC** Working Tax Credit

