

## Energy Efficient Scotland

### The Future of Low Carbon Heat in Off-gas Buildings: Call for Evidence

18 June 2019

#### Introduction:

The Existing Homes Alliance<sup>1</sup> (ExHA) is a broad coalition of housing, environmental, anti-poverty, consumer, energy advice and industry organisations arguing for urgent action to transform Scotland's existing housing stock to make it fit for the 21<sup>st</sup> century. We were established in 2010 and became a Scottish Charity in 2018.

We agree our policy positions by consensus and this consultation response reflects the collective and overarching views of our coalition. Some members are submitting their own consultation response on behalf of their respective organisations. In some instances, there might be minor variances in opinion on the finer details between members and the Alliance but broadly-speaking, the membership's view is represented here.

We are calling for an ambitious programme of low-carbon refurbishment of Scotland's homes, along with incentives, support and regulations aimed at cutting greenhouse gas emissions and tackling fuel poverty. Such a programme makes environmental, social and economic sense.

The Alliance focuses on energy efficiency and heat policy and does not have direct experience with the supply or installation of measures. Our policy positions are informed by our steering group and supporter organisations, which do have experience in this area.

In addition, we have recently undertaken a survey of the supply chain for energy efficiency and low carbon heat in the domestic sector (attached to this submission and on the Existing Homes Alliance [website](http://www.existinghomesalliancescotland.co.uk))<sup>2</sup>. Respondents felt that the supply chain is confident of meeting an accelerated target of EPC band C by 2030 and has capacity to meet the growth in demand. However, this depends on 1) the government setting out a firm, long-term route map of standards alongside support, incentives and engagement campaign with multi-year funding commitments; and 2) the government provides appropriate support in training and skills development where there are gaps in certain trades and geographic areas.

We acknowledge the survey is a small sample size but nevertheless the results are compelling and suggest further work, including market research, is urgently needed to comprehensively understand and respond to potential supply chain gaps. This should include partnerships with businesses and trade bodies to deploy the most appropriate interventions, as we do not believe that given the urgency for action, supply chain issues should be allowed to be a limiting factor.

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<sup>1</sup> Founding members: ALACHO, Changeworks, Chartered Institute of Housing Scotland, Citizens Advice Scotland, Energy Action Scotland, Energy Agency, Energy Saving Trust, SFHA, Shelter Scotland, and WWF Scotland [www.existinghomesalliancescotland.co.uk](http://www.existinghomesalliancescotland.co.uk)

<sup>2</sup> Survey of Supply Chain, Existing Homes Alliance Scotland, 2019

### 1 What evidence can you provide of low carbon heat technologies being taken up without government support?

No response.

### 2 What other barriers may impede the uptake of low carbon heat in buildings not currently using mains gas?

The consultation lists the following barriers to uptake of low carbon heat. We have provided our comments in italics.

- Lack of consumer and supply-chain knowledge of low carbon heat technologies;  
*Our survey of the supply chain revealed a good knowledge of tried and tested low carbon heat technologies as well as more recent innovations. Respondents thought that an energy performance rating of EPC band C could be achieved for most homes with existing technologies.*
- The relatively high upfront costs of installing low carbon heating systems, relative to like-for-like replacement of incumbent systems;  
*This is a considerable impediment (both in terms of upfront capital costs and running costs) to uptake which must be addressed through a replacement for the Renewable Heat Incentive (RHI) well in advance of 2021 when the RHI comes to an end.*
- The disruption of upgrading and/or replacing the internal heat distribution systems so that they are compatible with low carbon technologies e.g. re-sizing radiators, installation of a wet central heating system;
- The need to dispose of heating systems components, in some cases prematurely, when switching to low carbon heat e.g. disposal of heating oil storage tanks.
- Potentially higher operational and / or maintenance costs;  
*We question the assertion that there would be higher operational or maintenance costs. For example, as heat pumps are modular, components can be repaired without replacing the entire unit.*
- Limited capacity in some locations on the electricity grid to supply substantial increases in electrical heating;
- Lack of any regulatory requirement to install low carbon heating systems;  
*We should learn from the experience of using regulation to mandate a shift to efficient gas boilers and essentially eliminate high carbon heating from the marketplace through emissions standards.*
- Public finance limits to the level of support that can be provided by government to incentivise uptake  
*Given the climate emergency and new climate change targets, this will necessitate additional government spend. This is not debatable. The question is how to spend it wisely for best effect.*
- Low carbon heat technologies are not suitable for some energy intensive industrial processes.

### 3 What could we do to remove these barriers and support the uptake of low carbon heat? Can you give examples of successful low carbon heat implementation?

To remove the barriers, we recommend the following:

**Well-supported householder engagement programme** to raise awareness of the shift to highly efficient homes with low carbon heating. The engagement campaign should be based on a re-

framing of energy efficiency in terms of addressing the climate challenge, as well as personal benefits of comfort, clean air and savings.

We produced a scoping study<sup>3</sup> which recommends a 're-framing' of energy efficiency communications. The report found that existing communications tend to "concentrate on more 'do-able' behaviour change" which can send people into a 'cul-de-sac', because people believe they have 'done their bit'. These communications may be inhibiting the uptake of the more intensive home energy efficiency measures now needed.

The report goes on to recommend re-framing engagement using a moral case for action to strengthen motivations for change, alongside messages that appeal to comfort or 'saving money'.

The report also recommends re-framing Energy Performance Certificates in order to more clearly highlight where homes are 'sub-standard' in terms of energy-efficiency. This is one example of how policy measures can be used to support the re-framing.

**Regulation combined with support, advice and financial incentives.** Regulations should be designed to 1) reduce the heat demand by making all homes highly energy efficient – we support the introduction of standards in the Private Rented Sector and recommend standards should be introduced in the owner/occupied sector of EPC band C by 2030; and 2) phase out high carbon heating (coal, oil and LPG) in off-gas areas and replace it with low carbon heating through building regulations from 2025.

This can be achieved through a combination of standards for the replacement of heating systems, alongside energy performance standards at the change of lease, point of sale, and major refurbishment. These regulations should be introduced alongside appropriate financial support and advice. The aim should be for all high carbon heating to be replaced with low carbon heating by 2035.

**Incentives:** The Scottish Government should be designing and consulting on a replacement for the RHI as soon as possible to avoid a 'stop-go' market which is damaging for the supply chain.

**Just transition** - Government programmes should not fund high carbon heating: from now, government grants (e.g. through the Warmer Homes Scotland) should be used to support the phasing out of high carbon heating and replacing it with low carbon heating. Area-based schemes should support both energy efficiency and low carbon heat.

It is also very important to continue to provide incentives (such as the home equity loans or zero interest loans) for those who do not qualify for the fuel poverty programme but would find it impossible to find the upfront capital to pay for a heat pump (or other low carbon heating system) combined with the necessary energy efficiency measures.

While this will increase the costs of the programme, we believe these are outweighed by the wider public benefits and reducing the risks of leaving homes with 'stranded assets' which will rapidly become outdated and non-compliant in a decarbonized Scotland.

**Supply chain support** – the Scottish Government's work with the supply chain on quality, consumer protection and skills is very welcome and needs greater profile and resource. Efforts to work closely

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<sup>3</sup> The right frame of mind: Engagement for domestic energy efficiency in Scotland, Existing Homes Alliance, January 2019 <http://existinghomesalliancescotland.co.uk/policy/the-right-frame-of-mind-engagement-for-domestic-energy-efficiency-in-scotland/>

with the industry are commended, and it is recognized that more support for training and apprenticeships is required.

#### 4 How can complementary systems, such as solar PV and heat pump systems be deployed to overcome such barriers?

No response.

#### 5 What do you consider to be the principal building-specific constraints on low carbon heat?

It is vital to maintain a fabric first approach – reducing heat demand – as part of Scotland’s decarbonization plans. This focuses on cost-effective measures such as insulation and draught-proofing which will make the low carbon heat technology more efficient. It will also mean the capacity of the heating technology can be smaller and more affordable.

There will be some exceptions, but nearly all buildings can be insulated and draughtproofed with appropriate materials and ventilation. Quality of workmanship is key, with professional, independent inspections to make sure the job is done right.<sup>4</sup>

#### 6 What can be done to overcome these constraints?

- Development and use of whole building level EPC’s which would encourage all-building approaches to heating.
- Review of planning constraints associated with conservation designations to ensure these designations do not unreasonably prevent appropriate low carbon solutions.
- Improvement of presentation of EPC recommendations.
- Continued support, advice and incentives from Home Energy Scotland on energy efficiency, low carbon heat and ventilation measures.
- Take forward the Scottish Parliament Working Group on Maintenance of Tenement Scheme Property recommendations.<sup>5</sup>
- The Energy Efficient Scotland assessment to take account of the benefits of low carbon heat (perhaps by using the Environmental Impact Rating).

#### 7 What evidence can you provide on the limitations of low carbon heat technologies (e.g. heat pumps) in buildings with poor energy efficiency?

No response.

#### 8 What low carbon heat solutions are appropriate for hard-to-treat properties where there are limited opportunities to improve energy efficiency of the building fabric?

It is unhelpful to use general terms such as ‘hard-to-treat’ properties and suggest that they cannot be insulated (‘limited opportunities’). In many cases, it is a question of the right materials with appropriate ventilation and quality installation. For example, there are several methods of wall insulation that have been trialed by Historic Environment Scotland<sup>6</sup> and are appropriate for traditional buildings.

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<sup>4</sup> Sustainable Renovation Guide, SEDA, 2018

<sup>5</sup> <https://www.befs.org.uk/policy-topics/buildings-maintenance-2/>

<sup>6</sup> Improving Energy Efficiency in Traditional Buildings, Historic Scotland, 2014

<https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=246ff4ae-1483-452a-8fb3-a59500bd05d5>

In terms of approach, we recommend the recently published *Sustainable Renovation Guide*<sup>7</sup> which provides useful information on taking a thorough and holistic approach to retrofit.

We do acknowledge in some traditional properties it may not be possible to insulate to a high enough standard for heat pumps to be fully effective on their own so it might be worth considering hybrid heat pumps. With these systems, the heat pump will provide most of the home's heating needs and an associated gas or oil boiler can provide top up heating when required such as when outdoor temperatures are very low.

Hybrid heat pumps can support the low carbon transition and will likely be less expensive and more acceptable to homeowners. However, they will need to be replaced with renewable heating in the longer term, or use carbon neutral fuels, such as biofuels or hydrogen.

Furthermore, it is worth noting that while heat pumps will not work as efficiently in properties that have limited opportunities to insulate the building fabric as those that are highly insulated, it would still operate more efficiently than either electric storage heating or an oil boiler.

## No response Questions 9 – 30

### 31 What factors might inhibit uptake of the installation of heat networks?

Key barriers are:

- Big upfront development and capital costs.
- Lack of awareness of opportunities for and benefits of heat networks in rural off-gas areas – from business, individual homeowners and the public sector.
- Need for specialist knowledge on design and procurement.
- Process relies on numerous individual decisions, which add uncertainty to the project.

### 32 What could be done to further encourage the development of heat networks?

The Alliance believes there should be more focus on the opportunities for **small heat networks** which can provide a low carbon, cost effective solution in rural off-gas areas, linking non-domestic and domestic buildings to heat a small number of buildings that are relatively close to each other, for example in a rural off-gas grid village.

The Energy Efficient Scotland programme – working closely with local authorities and community groups - could provide an ideal way to further encourage the use of this solution by:

- Giving priority to the identification of and planning for the best opportunities for heat networks in rural off-gas areas.
- Awareness raising amongst the various decision-makers (homeowners, businesses, schools).
- Provide advice and facilitation of design and procurement of communal heating approaches.

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<sup>7</sup> Sustainable Renovation Guide, SEDA and Pebble Trust, 2018

### 33 Where and in which circumstances are heat networks the most appropriate low carbon solution in areas not using mains gas?

There are many examples of heat networks installed in small villages or estates in **rural, off-gas grid** areas. These examples show that heat networks can be economic where buildings are close together and the costs of pipes and groundworks can be spread across more users.

**Off-gas grid homes in urban areas** are usually large blocks of flats on electric heat that are suitable for a heat network. Housing Associations have led the way with heat networks in these areas to reduce operating and maintenance costs.

### 34 What examples can be provided to show how readily heat networks can be moved to renewables – especially in those buildings with a high peak heat load

See comments above. It would be useful for a full report and evaluation of projects supported through the loans scheme to be undertaken to inform future support for heat networks.

### 35 What is your view on the continued extension of gas networks before low carbon alternatives to natural gas (e.g. hydrogen) are proven?

We do not support the continued extension of gas networks when proven low carbon alternatives (e.g. heat pumps, heat networks, etc.) are readily available. It is unwise to invest in a network – particularly when paid for by energy bill payers - that may not have a role, or a limited role, in the relatively near future.

However, it is essential that fuel poor households, which would benefit from the lower energy prices a gas connection could provide, are supported to install low carbon heating systems and receive support for energy bills if they are higher. We accept there may be exceptions where the low carbon heating alternative may not be appropriate.

We also support a ban on any new connections to the gas network for new build housing from 2021, when the new Part 6 energy building regulations will come into force.

We support a change to the Fuel Poverty Network Extension Scheme to fund low carbon heating rather than extensions to the gas network. Exceptions for individual circumstances could be considered. We note that a report to the UK CCC on the future regulation of the gas grid recommended that “further programmes to connect customers could run counter to scenarios which require customers to come off gas. Ofgem should re-assess the trade-off between these issues...”<sup>8</sup> We understand the UK CCC has raised this with Ofgem, but we are unaware of any review of the scheme addressing this concern.

We think policies which allow, or actively support extensions to the gas network:

- Contradict the government’s decarbonization agenda and puts achievement of early action on emissions at risk.
- Risk stranded assets and retrofit costs in the future if an affordable low carbon alternative to gas is not found. This is a particular concern for rural areas, where hydrogen is unlikely to be appropriate and economical as a solution.<sup>9</sup>

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<sup>8</sup> Future Regulation of the Gas Grid: Impacts and institutional implications of UK gas grid future scenarios –a report for the CCC, 2016

<sup>9</sup> Committee on Climate Change, 2018, Hydrogen in a low carbon economy

- Have a negative impact on the low carbon heat market – in terms of economies of scale and mainstreaming low carbon alternatives.

No response to questions 36-40

41 How should we phase in the policy framework in order to better support the decarbonisation of heat supply to off gas buildings? Please reflect on whether or not a similar approach to that proposed for energy efficiency remains the best option.

We believe the Energy Efficient Scotland Route Map should cover both energy efficiency and heat decarbonisation in a coherent approach to meet higher energy performance standards, reaching net-zero by 2045.

We support the phased approach covering all tenures, based on a package of support, engagement, regulation and incentives. Some properties can and should be improved to higher standards more quickly than others and we have called for a strand of EES to encourage and incentivise ‘deep retrofit’ of properties.

We recommend the following changes/additions to the policy framework:

- **Costs:** Government needs to intervene to address the market failure in heat – as high carbon heating does not pay for its carbon impact. It is critical that government develop a policy to succeed the RHI in advance of 2021 to give confidence to both industry and consumers. This policy will require some element of financial support and phasing out of high carbon heat (oil, LPG, coal).
- **Just Transition:** Government support should ensure that the fuel poor who cannot afford the upfront costs of a low carbon heating system receive grant support to make the transition. They should also receive support if fuel bills rise as a result of changing to a low carbon system.
- **Communications and engagement:** Through Home Energy Scotland and other channels, the government should undertake a significant engagement campaign to make homeowners aware of what decarbonization means in terms of the future of home heating and helping them to plan for the future.
- **Standards:** We believe a standard of EPC C by 2030 for all homes should be set and supported with a substantial programme of advice and support. Mandatory standards at point of sale, major refurbishment and replacement of heating technologies should be deployed to move private sector housing away from fossil-fuel heat in off-gas areas. The foreshadow period before regulation comes into force should be used to maximise voluntary compliance with incentives. (see response to question 3).

42 How could Local Heat & Energy Efficiency Strategies (LHEES) help to prioritise early phasing of uptake of low carbon heat in areas not currently using mains gas?

Given the imperative of early action in the next decade, and the recognition of off-gas decarbonisation as ‘low regrets’ option by the Scottish Government and the UK CCC, a key objective of LHEES should be to prioritise the take up of low carbon heat in off-gas areas. Like the proposed district heating zones, we think the LHEES should identify off-gas areas as **low carbon heat zones** – and state which are appropriate for heat networks.

This ‘zoning’ should be used to give these areas greater priority for support like area-based programmes and raise awareness amongst consumers and businesses that high-carbon heating

systems within them will need replacement with low carbon systems in the near term. The zoning would also mean that gas network extensions would not be appropriate in those areas.

Delivery programmes such as Warmer Homes Scotland and ABS (providing energy efficiency and low carbon heat) should be supplemented with 'Local Heat Partnerships' to engage with communities and facilitate the uptake of low carbon heat and coordination of businesses and homeowners to develop heat networks where appropriate.

#### 43 How should the deployment of low carbon heat be funded? i.e. what relative contribution should come from central public funding, energy consumer's bills and private recipient funding?

The decarbonisation of heat must be a just transition. In our view, this means the fuel poor will require grants to install low carbon heating, and incentives (loans, cashback), along with advice and handholding through the process, will be required for others. Funding should come from general taxation rather than as a levy on consumers bills, which is a regressive system placing the greatest costs on those who spend a higher proportion of their income on energy.

We suggest the following funding approach:

- Fuel poor: Grant funding of low carbon heating alongside energy efficiency
- Self-funding: In the short-term, for those first caught by regulation in off-gas areas, provision of some grant support with loans to incentivise early action and to acknowledge prices will probably come down as demand increases. Over time, grants would be removed while loans would still be available. It is important to note that low carbon heating systems are more expensive to install, but they are cheaper to run than higher carbon heating (oil, LPG, coal) systems. Therefore, it is fair to expect homeowners and landlords to contribute.

#### 44 What is needed to encourage private investment in low carbon heat?

We believe the Energy Efficient Scotland programme is a good start at providing a coherent package of standards, advice, support and regulation. This must be developed in a way that:

- Statutory targets align with the new climate change targets and send clear signal to the supply chain and homeowners.
- Engagement plan for homeowners, landlords and businesses with the climate change challenge and opportunities of warm, healthy buildings.
- Comprehensive programme of advice, support, grants, incentives and regulation.

#### 45 Of the current sources of finance which are currently available for low carbon heat, which are working well and which are not? Are there successful examples of attracting private sector finance to support low carbon heat deployment that should be explored?

We have called on the Scottish Government to evaluate the success of the various incentive and loan schemes they have supported over the years. It is important to understand what kind of financial / fiscal incentive is attractive to homeowners and landlords, and why. Through EST, which has managed these schemes on behalf of the government, there is wealth of data which could be mined to gain greater understanding which could inform future loan schemes.

#### 46 How should off gas buildings be assessed for their suitability for low carbon heat technologies?

The suitability of buildings for low carbon heat should be assessed through the proposed Energy Efficient Scotland assessments. It should also be signaled through Energy Performance Certificates and their recommendations – while accepting this would not be bespoke to the particular property. In both cases, these recommendations would need to be supplemented by advice from a low carbon heat professional.

Home Energy Scotland advice service, which provides home visits, already provides advice on domestic renewables, and could also highlight opportunities appropriate to the property.

Advice and support should also be provided through Local Heat Partnerships and community energy advice services.

#### 47 To what extent should the assessment of suitability for low carbon heat relate to the proposed Energy Efficient Scotland assessment?

Low carbon heat, alongside energy efficiency measures, must be included as part of the Energy Efficient Scotland assessment. This is consistent with the UK CCC recommendation that “the Standard Assessment Procedure should be reviewed and revised to drive high real-world performance and value properly the benefits of low-carbon technologies. It should formally integrate a forward trajectory for declining grid carbon intensity, in line with Government projections.”<sup>10</sup>

#### 48 What wider information and advice should be supplied to inform consumers seeking to install low carbon heat supply in buildings that are off gas?

Scotland is fortunate to have a good delivery infrastructure with Home Energy Scotland to engage with consumers on energy efficiency and low carbon heat. This is a trusted, independent service that should be further developed to meet the challenge of providing pro-active advice on more complex measures, regulation, and funding support. It can also play an important role in supporting how people manage and use their energy supply, to achieve maximum benefit from the installations.

#### 49 What evidence can you provide on the role that regulation could play in helping to support uptake of low carbon heat in *existing* buildings (domestic and non-domestic)? What form should this regulation take?

We agree that regulation will play an important role in encouraging the transition to low carbon heat. We need the combination of the ‘pull’ of incentives with the ‘push’ of regulation.

**Voluntary approach is limited:** Over the last several years, incentives and advice programmes have helped to support more pioneering homeowners to adopt low carbon heat. However, despite attractive subsidy through the RHI since 2011, only 8% of off-gas grid households in Scotland have switched to low carbon heat.<sup>11</sup>

**Regulation works:** The social housing sector has embraced low carbon heat in response to regulated energy performance standards. Another example is the use of regulation to require the switch to more efficient gas boilers - in 2017 67% of gas boilers were the more efficient condensing boilers, up 45% since 2010.<sup>12</sup>

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<sup>10</sup> UK Housing: Fit for the Future? UK CCC 2019

<sup>11</sup> Those heating using coal, oil and LPG whose wet central heating systems will be more suitable for a low-carbon replacement

<sup>12</sup> SHCS 2017 Key Findings

We recommend the following for regulation:

- **Phase out installations of high-carbon (coal, oil and LPG) heating in existing buildings from 2025:** This could be implemented through an emissions standard as part of the Scottish building regulations at the point of replacement. A backstop could be provided through energy performance standards at the point of major refurbishment and the Energy Efficient Scotland building performance standards.
- **Ban installations of fossil-fuel heating systems in new buildings from 2021:** the Scottish Government should follow the UK Government decision (to end the installation of gas heating in new-build homes) and ensure that all new buildings are fitted with low-carbon heating systems from 2021 when the current review of Scottish Buildings standards is due to be implemented.

50 To what extent could any regulation to support uptake of low carbon heat in existing buildings link to the already-proposed Energy Efficient Scotland energy performance standards? How could a link be made?

See answer to question 49.

51 How should the Scottish Government respond to the CCC's advice and the UK Government announcement in the Spring Statement that new buildings constructed now should "accommodate low carbon heating from the start"?

We support the UK CCC's recommendations on new house building standards that 'all new homes should be made low-carbon heat ready. By 2025 at the latest, no new homes should connect to the gas grid and should instead rely on low-carbon heating systems such as heat pumps.'<sup>13</sup> However, we believe Scotland can be more ambitious, with no new connections to the gas grid being implemented from 2021, when the revised building regulations are expected to come into force.

The UK CCC report makes it clear it is more cost-effective to build zero-carbon buildings now, than to retrofit them at a later date – 'designing in these features from the start is around one-fifth of the cost of retrofitting to the same quality and standard.'<sup>14</sup>

We also support the UK CCC's recommendation to 'close loopholes allowing homes to be built which do not meet the current minimum standards for new dwellings. This includes provisions around the expiry of planning permission and permitted development rights relating to change of use.'<sup>15</sup>

No response to questions 52 – 53

54 Can you provide evidence on the comparative cost of installing low carbon heat solutions in new buildings compared to retrofitting to install low carbon heat at a later date?

The UK CCC report, UK Housing: Fit for the Future? (2019) provides a useful analysis of the costs of designing in measures for a new home at the outset, relative to trying to achieve the same outcomes later (see Table 1.1 p 42). The costs of mitigation and adaptation measures are significantly higher, in fact "for a number of these measures, the prohibitively high retrofit costs mean that they would not

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<sup>13</sup> UK Housing: Fit for the future? UK CCC 2019

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

be cost-effective and would be unlikely to be retrofitted in practice. This illustrates the importance of setting the right standards at the outset.”<sup>16</sup> See also answer to question 51.

A similar message applies to retrofit of existing homes. In some cases, it will be cheaper (and easier to finance through energy savings) to retrofit to a higher standard now, rather than through an incremental approach. The Energiesprong approach is an example of taking a longer term view on investment, with the costs covered by “bringing forward planned maintenance spend, a 'comfort plan' fee levied on tenants, and subsidies/income from installed renewables, with innovation funding bridging the funding gap in advance of cost reductions through industrialised delivery.”<sup>17</sup>

55 Are there particular actions that you would identify for consideration as part of any action to ‘future proof’ new buildings for low carbon heat retrofit?

No response.

56 In light of the reservation of consumer protection powers, how else could the Scottish Government ensure consumer protection on a robust basis? For example, through commercial agreements.

A robust consumer protection framework for Energy Efficient Scotland needs to be in place from the start – covering both energy efficiency and low carbon heat. We welcome the ongoing work to develop a ‘Quality Mark’ and we support these efforts to give confidence in the programme, the supply chain and prevent any fraud or poor-quality work. The consumer protection framework needs to be well-resourced – involving professional inspections and timely enforcement by local authority trading standards departments.

57 What actions should we undertake to ensure the Scottish supply chain has the skills and capacity to capitalise on the future increase in demand for the installation of low carbon heat?

No response.

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<sup>16</sup> UK Housing: Fit for the Future? UK CCC, 2019

<sup>17</sup> Ibid.