
Energy Efficient Scotland: Consultation on further development of the programme

Analysis of responses to the public consultation exercise



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Executive Summary

Background

This summary sets out key findings from the analysis of responses to 'Energy Efficient Scotland: consultation on further development of the programme'. The consultation opened on 26 March 2019 and closed on 17 June 2019.

The consultation paper (available at: <https://consult.gov.scot/better-homes-division/energy-efficient/>) explains that the Energy Efficient Scotland Route Map published in May 2018 set out the Scottish Government's overall objective that all homes should achieve a standard of Energy Performance Certificate (EPC) Band C by 2040. The present consultation seeks to gather evidence which could support an acceleration of that schedule, bringing the target for all homes to achieve EPC Band C forward to 2030. It also explores issues associated with standards in the Private Rented Sector beyond 2025, considers recommendations made by a Short Life Working Group for quality assurance and consumer protection in relation to Energy Efficient Scotland, and seeks views on how the growth of heat networks in Scotland can be accelerated.

In total 115 consultation responses were received, of which 75 were from groups or organisations and 40 from individual members of the public. In addition to the main consultation, the Scottish Government held two consultation events, one in Stirling, the other in Inverness.

Pace of delivery

The first set of questions in the consultation sought to gather evidence which could support a change to the Route Map's proposed timeframe, accelerating delivery of standards in an achievable and realistic way.

Mandatory action for owner occupiers

A majority of respondents - 72% of those who answered the question - thought that, with regards to achieving an accelerated delivery of the standards proposed, mandatory action for owner occupiers would be required, while 28% thought it would not. Some respondents who did think that mandatory action would be required in order to achieve accelerated delivery suggested that owner occupiers are otherwise unlikely to prioritise spending on energy efficiency measures, especially if costs are high and payback is not clear. It was argued that a clear policy signal for future mandatory action will be required, both to encourage owners to act and to stimulate the supply chain. Respondents from a wide range of respondent types referred to the need to provide home owners with incentives in order to encourage compliance.

Common arguments put forward by respondents who did not think mandatory reaction would be required to achieve accelerated delivery was that there should be no mandatory action in the owner occupied sector, that owner occupiers may not be able to afford the necessary measures, and that they have the right to choose what is done with their property.

Trigger points

A majority of respondents who commented considered point of sale to be an appropriate trigger point at which to require energy efficiency improvements to be made. Some of these respondents made a distinction between sale and purchase, suggesting that any necessary work could be carried by either vendor or buyer.

However, several respondents noted that the expected rate of turnover means that many properties will not change hands before 2040. As a result, it was suggested that a trigger only at point of sale would not produce sufficient energy efficiency improvements to allow targets to be met and would leave a large number of properties to be improved at a backstop date, meaning other triggers would also be required.

After point of sale, renovations or major renovations were the trigger point suggested most frequently by respondents across a broad range of respondent types, with the planning and building warrant processes put forward as providing opportunities for a minimum energy efficiency standard to be required.

A number of additional trigger points were also proposed – the most frequent suggestion being when a boiler or heating system is replaced.

When mandatory action should be introduced in the owner occupied sector

Opinion was evenly divided between those who thought that mandatory standards in the owner occupied sector should be introduced before 2030 and those who thought they should be introduced after 2030 - at 39% in each case - while 21% considered 2030 to be the right date.

Mandatory energy efficiency targets should be introduced in the owner-occupied sector before 2030: Some respondents taking this view pointed to the urgency of addressing climate change or simply stated an opinion that mandatory action should be introduced as soon as possible. It was argued that a strong signal of an intent to mandate was necessary as a driver for action, giving owners confidence that energy efficiency measures are a positive investment.

Mandatory energy efficiency targets should be introduced in the owner-occupied sector after 2030: Respondents argued that it is an owner's right to choose how to maintain their property free from government interference, that the target is unachievable for many properties, or raised issues concerning affordability.

Mandatory energy efficiency targets should be introduced in the owner-occupied sector in 2030: Some respondents who considered 2030 to be the right time to introduce mandatory targets suggested this to be sensible, or to allow owners 10 years to achieve the required standard. Waiting until 2030 before taking mandatory action was suggested to allow sufficient opportunity for the supply chain to develop, while an earlier date might lead to an overheated market or increased costs.

Quality and supply chain implications

A majority who answered the question (55%) thought that from a supply chain perspective, bringing forward the timescales for the Programme would have a

negative effect on quality, skills and capacity, and consumer protection, while 45% expected a positive effect. Respondents took differing views of the capacity to deliver the Programme at an accelerated rate: while some argued that there will be skills shortages or that suppliers will struggle to meet demand, others felt that with resources and support, the industry has the necessary capacity or that supply will respond to demand.

The importance of providing clarity for the supply chain, including certainty that funding will be in place over a period of years, was highlighted.

The limited time available for staff recruitment and training were seen as likely to lead to shortages of skilled labour, and an urgent need to address skill shortages and training issues was identified. Leading on from the reports of shortages of qualified contractors or assessors, there was a concern that market forces are likely to lead to increased costs or poor quality. Maintaining high standards, protecting customers and creating trust in the supply chain were all highlighted as key issues.

Impact on Fuel Poverty & Climate Change

In terms of how accelerating Energy Efficient Scotland would help or hinder plans to address fuel poverty, around 2 in 5 of those who commented suggested that accelerating the Programme would (or could) help plans to address fuel poverty. Around 1 in 4 thought either that it would not help or that it would hinder plans to address fuel poverty.

A number of respondents noted that lack of energy efficiency is only one driver of fuel poverty, which needs to be tackled in an integrated fashion. Potential installation costs and financial pressure on households was identified as a negative factor by some respondents while others argued the need for increased investment and funding, and for subsidies to the less well off.

With regards to reducing the emissions associated with the supply of heat, a majority of those commenting thought it would be desirable to consider energy efficient improvements alongside changes to heating systems. Some respondents argued this to be essential, or noted their approval for a fabric first approach.

Reducing heat demand was reported as providing greater scope for low carbon technologies (such as air source heat pumps) which are more efficient and with lower operating costs in well-insulated buildings. Further, since low carbon systems are often reliant on electricity, fitting insulation and so reducing demand was seen as offering the potential to reduce pressure on the national grid.

The importance of educating households was also highlighted, both with respect to general behavioural changes that can save energy and to ensure that new heating systems are used correctly.

Private rented sector

Using change of tenancy as a trigger point

A majority of respondents expressed broad agreement with use of change of tenancy as an appropriate trigger with comments including that it is sensible or logical, reasonable, obvious or useful. It was noted, as outlined in the consultation paper, that high turnover rates in the private sector mean that change will be driven relatively quickly.

Respondents who opposed use of change of tenancy as a trigger generally expressed objection to other aspects of Energy Efficient Scotland policy, arguing that proposed EPC levels are not realistic in some cases, costs to landlords are too high, property may be left empty, and that the size of the PRS will be reduced.

When to start applying a minimum of EPC Band C

In terms of the date to start applying the minimum standard of C when there is a change in tenancy, a majority of respondents who expressed a clear view did not think 1 April 2025 to be the right time. Reasons given most frequently were that: the date is, or may be, too early; the minimum standard is too high; the proposals are not achievable, practical or possible; and that owners will sell and property will be lost from the PRS, or rents will increase to cover costs.

Among respondents who suggested alternative start dates or minimum standards the most frequent suggestion was Band C in 2030.

Respondents who agreed that 1 April 2025 is the right date suggested to it to be reasonable or sensible, to provide certainty and to allow landlords time to plan. The need for effective awareness-raising both for landlords and tenants and for financial support to landlords were both highlighted.

Basing any cap of required works on a definition of cost-effectiveness and technical feasibility

Respondents who expressed broad support suggested the proposed approach to be sensible, practical or reasonable. Others noted that it is difficult to comment until definitions of cost-effective and technically feasible are available or argued that clear definitions must be provided. As an alternative to a flat rate cap regardless of property size or value it was suggested there could be: a variable spending cap, to take account of building styles and local costs; a relationship between the level of spend and rent level, property value or property size.

The importance of the method chosen to define what is cost effective was highlighted, with an argument that there is no single correct solution. A definition of cost-effectiveness was also seen as potentially excluding works in the most rural areas where installation costs are likely to be highest. Points raised with respect to what is considered technically feasible included that a definition will need to take account of the wide variety of building types within the PRS, in both urban and rural areas.

Impact on Supply chain: skills and capacity

An industry-led Short Life Working Group (SLWG) established to develop a set of actions to achieve and fully implement a robust quality assurance framework for Energy Efficient Scotland made 19 recommendations in their report published in March 2019.

SLWG recommendations

Among those respondents who answered the question, a majority - 63% - agreed with the SLWG's recommendations, while 37% did not.

Some respondents noted their broad agreement, or agreement in principle, with the recommendations which were described as welcome, relevant and comprehensive.

Some respondents who did not agree with the SLWG's recommendations made comments relating to wider aspects of Energy Efficient Scotland or remarked on previous bad practice, lack of enforcement, or lack of redress.

Recommendation 2 attracted the most comments, with many of those who commented directly on this recommendation noting support for a Quality Mark. However, a few respondents commented on the need to avoid duplication of UK-wide standards where possible.

Ensuring maximum participation from suppliers across Scotland regardless of their size and geographical location

Several respondents pointed to the importance of long-term policy, predictable demand and sustained funding in order to create interest within the supply chain and ensure small companies see the benefits of being accredited. Respondents suggested that any scheme should be easy to join to encourage engagement with small local suppliers, that assistance could include funding for training or certification, and that consumer protection schemes should be 'seen to support legitimate honest business to get things right'.

The role of Scottish Government in ensuring the quality criteria are consistently met

In terms of the role of Scottish Government should play be in ensuring the quality criteria are consistently met, key high-level roles were suggested to be providing policy, creating an appropriate legal framework, and having strategic oversight of standards to ensure quality criteria remain fit for purpose.

It was also argued that while standards could be agreed at a national level to ensure consistency, responsibility for compliance should be devolved to local authorities who would require additional resources.

Suggestions on quality assurance included that the Scottish Government should ensure the requirements of the Quality Mark accreditation are met, support existing quality assurance frameworks where possible and avoid duplication that adds to costs. 'Individual' respondents in particular were amongst those who suggested

inspections, or independent inspections and sanctions for substandard work to be priorities.

Heat Networks

The consultation paper notes that the Scottish Government wants to see the growth of heat networks in Scotland continue and accelerate, and asks whether there may be further ways it can assist with this.

In terms of what further incentives could drive further heat demand onto networks, a number of respondents commented on the importance of funding and incentives continuing to be in place going forward.

Specific incentives suggestions included tax incentives, loans or interest free-loans, and grants. One proposal was that public funding could be structured as a form of bond issue (such as a low carbon heat bond). Another was that the Scottish Government could develop and deliver new heat networks through the Scottish National Energy Company and a Scottish Energy Development Agency, supported by financing from the Scottish National Investment Bank.

In terms of further assistance that could support the growth of appropriately sited, low carbon heat networks, a number of respondents commented on the importance of the Scottish Government giving a clear message about the future of heat networks.

A number of respondents commented on the role of Local Heat and Energy Efficiency Strategies, including that their strengthening will be important, and that they will need to have teeth in order to address a central issue for heat policy - demand risk. Other respondents made the connection between risk, regulation and consumer protection; and it was recommended that a statutory framework should be established that underpins regulation of all heat networks. It was suggested that the regulations should cover price, quality of service, transparency and minimum technical standards¹.

¹ It should be noted that some of these currently fall outwith devolved competence.

Introduction

Background

This report presents analysis of responses to ‘Energy Efficient Scotland: consultation on further development of the programme’.

The consultation paper explains that the Energy Efficient Scotland Route Map published in May 2018, set out the Scottish Government’s proposed steps to ensure that all homes and non-domestic buildings are improved so that they achieve a good level of energy efficiency, where technically feasible and cost-effective. The proposals set out differing timeframes and targets according to tenure, but with an overall objective that all homes should achieve a standard of Energy Performance Certificate (EPC) Band C by 2040.

Respondents to the 2018 consultation ‘Energy Efficient Scotland: making our homes and buildings warmer, greener and more efficient’ expressed mixed views on both the proposed minimum standard of Band C and the target date of 2040, with the most common response on timescales being that 2030 would be a more appropriate date. (The full consultation report is available at <https://www.gov.scot/publications/consultation-analysis-energy-efficient-scotland-making-homes-buildings-warmer-greener-more-efficient/>.) The Scottish Parliament has also considered the timescales for Energy Efficient Scotland, with a majority supporting an amendment in May 2018 calling on the Scottish Government to bring forward the date for all homes to achieve EPC Band C from 2040 to 2030.

This consultation seeks to gather evidence which could support a change to the Route Map’s proposed timeframe to deliver standards for all properties across Scotland in an achievable and realistic way. It also explores issues associated with standards in the Private Rented Sector beyond 2025, considers recommendations made by a Short Life Working Group for quality assurance and consumer protection in relation to Energy Efficient Scotland, and seeks views on how the growth of heat networks in Scotland can be accelerated.

The consultation opened on 26 March 2019 and closed on 17 July 2019. The consultation paper is available at: <https://consult.gov.scot/better-homes-division/energy-efficient/>.

Profile of respondents

In total 115 responses were received to the Energy Efficient Scotland consultation, of which 75 were from groups or organisations and 40 from individual members of the public. The majority of responses were received through the Scottish Government’s Citizen Space consultation hub. Where consent has been given to publish the response, it may be found at: <https://consult.gov.scot/better-homes-division/energy-efficient/>

Respondents were asked to identify whether they were responding as an individual or on behalf of a group or organisation. Organisational respondents were then

allocated to one of ten categories by the analysis team. A breakdown of the number of responses received by respondent type is set out in Table 1 below and a full list of organisational respondents can be found in Annex 1.

Table 1: Respondents by type

Type of respondent	Number
Organisations:	
Academic	3
Building component manufacturers or services	10
Energy related private sector	13
Local authority or interagency partnership	16
Other	1
Private landlord or property management	6
Professional or representative body	16
Public sector or body - other	2
SG delivery partner	3
Third sector	5
Organisations	75
Individuals	40
All respondents	115

Consultation events

In addition to the main consultation, the Scottish Government held two consultation events, one in Stirling, the other in Inverness.

The Stirling event was attended by 42 people, made up of representatives from manufacturing, local authorities, installers, energy assessors, academia, trade bodies, government managing agents, procurement bodies, energy companies, and skills bodies. The Inverness event was attended by 11 people, made up of representatives from manufacturing, local authorities, installers, energy assessors, academia, trade bodies and government managing agents.

The consultation events discussed seven questions (Questions 1,3,4, 6,10,11 and 12). Summary analysis of the themes raised is presented at the end of each question.

Analysis and reporting

In total the consultation posed 14 questions, of which four had a multiple-choice element that has been analysed quantitatively. The remainder were open questions.

This report presents a question-by-question analysis of the comments made. A small number of respondents did not make their submission on the consultation

questionnaire but submitted their comments in a statement-style format. This content was analysed qualitatively under the most directly relevant consultation question.

A small number of respondents provided extensive and detailed answers which can only be summarised very briefly in a report of this kind. It should be noted, however, that all responses are available to the Energy Efficient Scotland policy team at the Scottish Government.

As with any public consultation exercise, it should be noted that those responding or attending a consultation event generally have a particular interest in the subject area. However, the views they express cannot necessarily be seen as representative of wider public opinion.

The following terms have been used in the qualitative analysis. Please note that the number of responses represented by some of these terms will vary based on the number of respondents commenting at a question.

- Most: used when a majority of those commenting made a point.
- Many: used when a large minority, 1 in 3 or more, made a point.
- Some: used when fewer than 1 in 3 but more than a small number made a comment .
- A small number: used when two or more, but a maximum of five respondents made a comment.

A list of acronyms used in the report is provided at Annex 2.

Timeframe for delivery

The first set of questions in the present consultation seek to gather evidence which could support a change to the proposed timeframe to accelerate delivery of standards in an achievable and realistic way. Questions 1 - 3 concern the owner occupied sector, for which the Route Map proposed that homes should reach EPC Band C by 2040 and that this should be achieved in two phases: an encouraging phase up to 2030, and then a compliance or mandating phase commencing thereafter.

Pace of delivery

Question 1 - With regards to achieving an accelerated delivery of the standards proposed, do you think mandatory action for owner occupiers would be required? Please provide a rationale for your answer.

Responses to Question 1 by respondent type are set out in Table 2 below.

Table 2: Question 1 - Responses by type of respondent.

	Yes	No	Not answered	Total
Organisations:				
Academic	2		1	3
Building component manufacturers/services	7		3	10
Energy related private sector	7		6	13
Local authority or interagency partnership	14	1	1	16
Other			1	1
Private landlord or property management	1	3	2	6
Professional or representative body	7	3	6	16
Public sector or body – other	1		1	2
SG delivery partner	3			3
Third sector	2		3	5
Total organisations	44	7	24	75
% of organisations answering	86%	14%		
Individuals	19	17	4	40
% of individuals answering	53%	47%		
All respondents	63	24	28	115
% of all respondents	55%	21%	24%	
% of all those answering	72%	28%		

A majority of respondents who answered Question 1 (72%) thought that, with regards to achieving an accelerated delivery of the standards proposed, mandatory action for owner occupiers would be required, while 28% thought it would not.

‘Individual’ respondents were more evenly balanced.

Among 'organisational' respondents who answered the question a substantial majority (86%) thought mandatory action would be required, with 'private landlord or property management' respondents the only group in which a majority of those answering gave a negative answer. However, nearly a third of 'organisational' respondents (24 of 75) did not answer the closed element.

Question 1 also asked respondents to explain the rationale behind their answer, and 95 took the opportunity to do so. The analysis of these comments, set out below, is divided broadly according to the respondent's answer at the closed element of the question: points made by respondents who did not answer the closed element are included where most appropriate.

Issues relating primarily to triggers for mandatory action, the time at which such action might be introduced and possible effects on the supply chain are discussed in detail at Questions 2, 3 and 4 and so are not covered here. A small number of comments at Questions 1 – 3 referred to the Private Rented Sector (PRS), which is covered at Questions 7 - 9.

Yes, mandatory action would be required

Some respondents who did think that mandatory action would be required in order to achieve accelerated delivery suggested that owner occupiers are otherwise unlikely to prioritise spending on energy efficiency measures, especially if costs are high and payback is not clear. 'Building component manufacturers or services' respondents and 'local authority or interagency partnership' respondents in particular made this point. One 'individual' respondent observed:

There will be some owner occupiers who neither want nor can afford to make energy efficiency improvements to their properties. They will have to be incentivised to make these improvements and if this doesn't work then it will have to be mandated.

Individual respondent

Several 'local authority or interagency partnership' respondents noted their own experience that owners have been unwilling to act even when Home Energy Efficiency Programmes Scotland (HEEPS) funding has been on offer. It was argued that even when energy efficiency measures are cost-effective and affordable, homeowners are unlikely to implement them. One respondent suggested this to be:

... linked to three natural consumer tendencies; discounting future benefits, using defaults (i.e. inertia in decision making, using habitual behaviours or pre-set options) and being influenced by social norms.

Professional or representative body respondent

With respect to meeting targets, respondents also noted that, as set out in the consultation paper, current rates of progress are likely to slow as easier properties are improved leaving those remaining in need of more expensive measures. It was argued that a clear policy signal for future mandatory action will be required, both to encourage owners to act and to stimulate the supply chain.

Respondents from a wide range of respondent types referred to the need to provide home owners with incentives in order to encourage compliance, with some arguing that there must be support for fuel poor and low income households, or that owners already struggling with household costs must not be adversely affected by the policy. Forms of incentive suggested were: zero interest or low-cost loans; grants; variable rates of Land and Building Transaction Tax (LBTT); Council Tax rebates; and low interest mortgages. It was also argued both that there should be measures to offset any first mover disadvantage, and that there may be increased demand for existing support programmes such as Warmer Homes Scotland or via Area Based Schemes.

The need for consistency between policies was also noted by one respondent who observed that the threshold for eligibility under Warmer Homes Scotland (SAP 64) is lower than the proposed EPC threshold under Energy Efficient Scotland for households in fuel poverty (SAP 69).

With respect to the cost of energy efficiency improvements it was observed that measures required for older properties may be particularly expensive and hence take a long time to pay back. Other pressures or spending priorities for households were also noted and that, in some areas, there may be an increasing number of elderly owners with limited assets. Some owners were suggested to be 'asset rich but cash poor' and so to risk missing out on obtaining financial assistance.

While agreeing the need for mandatory standards in due course, several respondents highlighted the need to encourage voluntary action first. In particular, it was argued that there should be 'a huge escalation in support' in advance of regulation coming into force in order to support voluntary action.

Effective communication, awareness-raising and marketing were all suggested to be necessary to promote Energy Efficient Scotland. Providing advice and assistance were also identified as of importance, with suggestions that homeowners require independent advice, or 'tailored, bespoke and technical advice'. Expansion of the role of Home Energy Scotland to create a one-stop-shop providing advice, quotes, project management, and a central point of contact for complaints and redress was proposed.

Effective enforcement was identified as important if standards are to be made mandatory, with suggestions that resources must be made available for enforcement or that, without strong enforcement and penalties, the policy will not work.

Respondents also raised issues relating to public support - or lack of support - for mandatory action. On the one hand it was suggested that mandatory action will be 'deeply unpopular and expensive' and that it '...could give rise to hardship, resentment, a strain on the public purse.' However, it was also argued that:

Currently, there is an increasing level of consciousness surrounding environmental issues and impacts. Should public opinion continue to gather

momentum, it may be that at some time in the future the public will accept and even demand that standards are mandated in order to prompt action.

Energy related private sector respondent

Another respondent referred to a scoping study to explore consumer attitudes towards investing in energy efficiency produced by The Existing Homes Alliance Scotland² and reported that it argued:

... current communication tends to focus on 'do-able behaviour change' which may result in people thinking they have done their bit for the environment and therefore don't need to carry out larger scale energy efficiency measures. It suggests that a greater focus on moral arguments alongside messages about saving money and increasing comfort could be effective.

Professional or representative body respondent

An opinion poll conducted for Citizen's Advice Scotland was also reported to have indicated support for action for environmental reasons. Having presented details of the poll and analysis of the results, the respondent recommended that the Scottish Government should undertake its own research on attitudes of owner occupiers to regulation before introducing regulation.

Issues associated with other tenures and with mixed tenure blocks were also highlighted. It was observed that uptake of measures is typically low in mixed blocks and one respondent operating in the social sector welcomed mandatory standards in the owner occupied sector as giving leverage to instigate common works. They noted that at present:

Owner occupiers will have a significant influence, and in many cases control, over what our members can achieve.

Professional or representative body respondent

A possible need for amendment to the Tenement (Scotland) Act 2004 was also suggested, since this requires majority owner participation for repairs to proceed, but lacks clarity around energy efficient retrofitting measures.

Concerns were raised with respect to aspects of the EPC process including the methodology employed, particularly in the context of older buildings, the use of modelled data, assessor training and monitoring and the accuracy of projected costs and benefits.

Other issues, each raised by a small number of respondents, were that:

- The Scottish Government should be looking to move directly to net zero carbon rather than following a phased approach to improving energy efficiency.

² The full report is available at <http://existinghomesalliancescotland.co.uk/policy/the-right-frame-of-mind-engagement-for-domestic-energy-efficiency-in-scotland/>.

- There should be a third exemption category where it is ‘inappropriate to enforce regulation for compassionate social reasons’ to allow flexibility for vulnerable owner occupiers.
- To date, there does not appear to have been a full financial assessment of the cost implications for the housing sector as a whole of delivering the proposed standards, through either Energy Efficient Scotland or the draft Fuel Poverty strategy.

The Scottish Government’s proposal for a further consultation on how a mandating phase might work was welcomed.

No, mandatory action would not be required

Common arguments put forward by respondents who did not think mandatory reaction would be required to achieve accelerated delivery was that there should be no mandatory action in the owner occupied sector, that owner occupiers may not be able to afford the necessary measures, that they have the right to choose what is done with their property, or that the Scottish Government should instead encourage owners to take action by providing support and incentives. These views, usually raised by ‘individual’ respondents, are summed up in the comment that:

Homeowners will require encouragement and access to grants, not the threat of legal action... Owners should be allowed to make their own decisions about upgrading their homes, not mandated to by the government.

Individual respondent

A small number of respondents acknowledged the potential need for mandatory action in due course, but argued that the encouragement phase should be maximised as far as possible.

It was suggested that bringing the timeframe forward reduces the time for homeowners to plan, risks creating financial pressures that could leave owners in debt, unable to pay their mortgage, or in negative equity, and could also put pressure on the supply chain. Additional concerns were raised that mandatory action would require monitoring and enforcement, creating an additional burden for local authorities in the absence of additional funding.

Issues were also raised with respect to the EPC process, particularly with traditionally constructed buildings. It was argued that the current methodology does not take adequate account of actual energy efficiency performance, and that many assessors are not suitably trained in evaluation of traditional buildings. One concern that was highlighted was that traditionally built homes, often in rural areas, could be put out of use.

Workshops' perspectives

Workshop participants thought that some form of mandatory action would be required.

Participants generally did not think that homeowners would act voluntarily, but that legislation would be needed. They suggested a range of possible incentives that could be used to encourage action, including the type of 'carrot rather than stick' fiscal measures that drove the uptake of solar photovoltaics. Other ideas were: equity loans; a decrease in LBTT to help buyers making energy efficiency improvements; and support for community-based approaches, particularly in tenements.

Workshop participants also raised concerns about the impact of the current EPC approach. A suggestion was that Passivhaus offers a more accurate metric and a better indicator of performance.

Question 2 - What trigger points, e.g. sale, renovation, etc. could be used to require owner occupiers to undertaken energy efficiency improvements?

In total, 92 respondents made a comment at Question 2, including some who expressed a view that there should be no mandatory action or no trigger points, or who argued that the Scottish Government should instead encourage owners to act.

Point of sale

A majority of respondents who answered Question 2, across a broad range of respondent types, considered sale to be an appropriate trigger point at which to require energy efficiency improvements to be made. Some of these respondents made a distinction between sale and purchase, suggesting that any necessary work could be carried by either vendor or buyer. For example:

We believe the simplest way of meeting prescribed standards would be at point of sale, with either the current owner or buyer being obliged to carry out the required work within the specified timeframe.

Local authority or interagency partnership respondent

Reasons given for using the point of sale as a trigger point, in each case by one or a small number of respondents, were that:

- It is a clear point and the point of value assessment.
- It is the time when a seller is required to have an EPC assessment and the Home Report would make clear if the property meets the required standard. There could be a break-down of the measures to improve the building, in the priority that best optimises impact.
- It would encourage owner occupiers to undertake energy efficiency improvements if there is a possibility that the costs incurred might be reflected in a higher sale price. It was reported that there is emerging evidence that

energy efficiency is increasingly being considered by buyers and reflected in market prices.

- It would be the easiest option to enforce, with the conveyancing process used to facilitate compliance.
- Incentives could be provided through a variable LBTT rate.

From the viewpoint that an owner has the right to live as they wish in their own home, point of sale was also suggested to be the appropriate trigger.

Purchase

While some respondents proposed a general option for the seller to pass the obligation for energy efficiency improvements to the buyer, others suggested specific circumstances where this might be appropriate, these being:

- An owner moving into residential care.
- The ill health or death of the owner.

It was also noted that a purchaser could undertake work as part of other home improvements and might therefore choose to install best value measures, rather than opting for those that can be achieved at lowest cost.

If responsibility for achieving the minimum standard were to be transferred to the buyer, it was proposed that:

- Funds could be set aside as part of the sale process for future improvements to be carried out by the buyer.
- The sale price should reflect the cost of the work required.
- The buyer could have a fixed timeframe to make necessary improvements before incurring a penalty.
- Monitoring would be required to ensure that the works had been completed, unless this was delegated to mortgage lenders under a hold-back arrangement.

There was a call for research into better understanding of the best trigger points for carrying out energy efficiency improvements and whether it is the seller or buyer who is more motivated to carry out energy efficiency improvements.

Potential limitations of using point of sale as a trigger

Several respondents, including 'SG delivery partners' and 'third sector' respondents noted that, as detailed in the consultation paper, the expected rate of turnover means that many properties will not change hands before 2040. As a result, it was suggested that a trigger only at point of sale would not produce sufficient energy efficiency improvements to allow targets to be met, and would leave a large number of properties to be improved at a backstop date, meaning other triggers would also be required. It was also thought that homes not coming onto the market over the relevant timescales might include disproportionately more difficult or poorly performing properties.

Other potential issues caused by using the point of sale as a trigger were that:

- Owners could be put off spending money on energy efficiency improvements as the benefits will fall to the buyer.
- Owners might be discouraged from downsizing.
- The cost of works could lead to a slowdown of house sales, reducing turnover and the rate of upgrade.
- Mobility in the labour market might be adversely impacted.
- Homes may be left empty if there is a barrier to selling or changing use.
- A deceased person's estate might include a sub-standard property but no money to pay for upgrades.
- Owners might have to delay selling and could incur financial penalties as a result or could experience difficulties in the case of ill health or a relationship breakdown.
- There may be little impact in mixed tenure blocks where a common external measure is required.

Overall, there was a concern that there could be an adverse impact on the housing market and that property prices may be skewed, with further research proposed to ensure that unintended consequences for the property market are avoided.

Renovation

After point of sale, renovations or major renovations were the trigger point suggested most frequently by respondents across a broad range of respondent types, with the planning and building warrant processes put forward as providing opportunities for a minimum energy efficiency standard to be required.

Involving members of the supply chain in promoting energy efficiency improvements during renovation was suggested. On a related point it was reported that since homeowners typically do not see energy retrofit as being distinct from other home improvement, retrofit might also be promoted by focusing on businesses involved with general repair, maintenance and home improvement.

Potential changes required if using renovation as a trigger

A small number of respondents pointed to potential changes required if renovation work were to be used as a trigger for energy efficiency improvements. It was noted that a change in Building Regulations would be needed since current legislation only allows energy efficiency improvements to be encouraged rather than to be required. Further, it was argued that new legislative powers would have to be accompanied by additional resources to allow enforcement to be carried out, and also that enforcement could prove challenging. It was noted that owner occupiers may not have an EPC at all or, as an EPC is valid for 10 years, it may be out of date.

The need for a definition of the level of renovation that would trigger a requirement was also identified. It was suggested that:

- The definitions in the EU's Energy Performance of Buildings Directive are not clear in practice.
- Small external changes to a property, such as to a porch, should not be subject to regulation that could impede the owner's right to make basic home improvements, or could become seen as a tax on home improvements, thus adversely impacting the home renovation market.

The need to prioritise the sequence in which improvements are made at renovation was also raised, with a concern that elements might otherwise not be upgraded in the most beneficial order – for example replacing a boiler before improving building fabric. A 'building MOT' with scheduled improvements, or a 'property passport' advising owners in what order to make changes were both seen as possible options.

Additional triggers proposed

Respondents also suggested some alternative trigger points that might be used, most frequently:

- When a boiler or heating system is replaced.
- When there is a change of use of a property.
- At an application for finance, particularly for Green mortgages.³
- Receipt of public grant funding.
- Improvement by a certain date determined by the Scottish Government.

With respect to heating system upgrades or repairs it was argued that installers, if trusted by their customers, may be well-placed to communicate the benefits of energy efficiency as well as heating system upgrades. Consideration of energy efficient improvements alongside changes to heating systems is discussed in more detail at Question 6.

Other ideas for trigger points, each given by one or a small number of respondents were:

- Minor renovations such as rewiring, roofing or window replacement. For renovations not requiring planning permission it was suggested that installers could be required to notify building owners of their obligations.
- When switching fuel tariffs.
- Situations such as inheritance, where there has been change of ownership without a sale taking place.
- Length of ownership, to ensure owners cannot avoid upgrades by not selling or renovating.

³ Green mortgages give customers discounted mortgage rates once they have upgraded the energy rating of their home.

- Life-cycle changes such as the birth of children and retirement, when retrofitting supply chains could coordinate with health services to identify those involved.
- Council tax valuation or re-evaluation.
- An opportunity to participate in an Area Based Scheme.

With particular reference to common areas in flatted properties, the following were put forward as potential trigger points:

- As above, when Area Based Schemes offer support.
- When co-owners are undertaking whole-building actions, such as structural work or roof repairs.
- Where more than half the EPCs in a building are below Band D.

Whole house retrofit

The option to participate in Area Based Schemes was also seen as presenting an opportunity to promote whole house retrofit of buildings, as a more cost effective and less disruptive alternative to a series of individual measures. Among other respondents who argued that it would be better to encourage installation of multiple measures at the same time, one proposed pilot projects to explore how deeper renovations at trigger points could be encouraged.

Characteristics of a trigger

A small number of respondents commented on what they saw as essential characteristics of any trigger point chosen, namely that it must:

- Be recordable and verifiable.
- Have notification and compliance points so information on requirements is advised to the homeowner.
- Be enforceable and enforced. It was argued both that it must be made clear if there are to be consequences for inaction and that there is no point in putting regulations in place if there will not be enforcement and penalties for those who do not comply.

It was also suggested that rather than seeking to identify points of intervention for regulation, triggers could offer an opportunity to deliver tailored communication including marketing, special offers or support services to prompt energy efficiency upgrades. Offering the opportunity to extend a Local Heat and Energy Efficiency Strategy (LHEES) or HEEPS Area Based Scheme to neighbouring private properties was given as an example.

A phased approach for mandatory action was also proposed, starting with action to ensure homeowners have a valid EPC and then to engage with a trusted organisation such as Home Energy Scotland on how to improve the EPC of their property. It was argued that this phased approach would allow for an exploration of whether awareness-raising is enough to encourage improvements.

Question 3 - If you think mandatory action would be required to achieve an accelerated delivery of standards, when should mandatory energy efficiency targets be introduced in the owner occupied sector?

Responses to Question 3 by respondent type are set out in Table 3 below.

Table 3: Question 3 - Responses by type of respondent.

	Before 2030	In 2030	After 2030	Not answered	Total
Organisations:					
Academic	1	1		1	3
Building component manufacturers/services	6	1		3	10
Energy related private sector	3	2		8	13
Local authority or interagency partnership	3	6	3	4	16
Other				1	1
Private landlord or property management		1	2	3	6
Professional or representative body		2	3	11	16
Public sector or body - other				2	2
SG delivery partner	3				3
Third sector	4			1	5
Total organisations	20	13	8	34	75
% of organisations answering	49%	32%	20%		
Individuals	10	3	22	5	40
% of individuals answering	29%	9%	63%		
All respondents	30	16	30	39	115
% of all respondents	26%	14%	26%	34%	
% of all those answering	39%	21%	39%		

Figures do not sum to 100% due to rounding.

Among those respondents who answered the question, opinion was evenly divided between those who thought that mandatory standards in the owner occupied sector should be introduced before 2030 and those who thought they should be introduced after 2030 - at 39% in each case - while 21% considered 2030 to be the right date.

A majority of 'individual' respondents who answered the question (63%) preferred mandatory action after 2030, while most 'organisational' respondents chose action before 2030. 'Building component manufacturer or services' respondents, 'SG delivery partners' and 'third sector' respondents tended to favour action before 2030, while 'local authority or interagency partnership' respondents typically thought 2030 to be the right date. However, it should be noted that more than a third of respondents (39/115) did not answer the closed question.

In total, 90 respondents provided a further comment at Question 3. The analysis below broadly follows the respondent's answer at the closed element, points made by those who did not answer the question being included where most appropriate.

Mandatory energy efficiency targets should be introduced in the owner-occupied sector *before 2030*

Some respondents taking this view pointed to the urgency of addressing climate change or simply stated an opinion that mandatory action should be introduced as soon as possible. It was argued that a strong signal of an intent to mandate was necessary as a driver for action, giving owners confidence that energy efficiency measures are a positive investment. In contrast, it was suggested that delaying mandatory action until 2030 would mean inactivity for the next 5 years and that substantial results would not be achieved until closer to 2040.

Other points raised included that:

- Phased action over a longer period will be more effective so should start as soon as possible.
- Mandatory action prior 2030 will be necessary if a 2040 target is to be met without requiring a trigger involving home improvements in addition to that at change of ownership.

The potential benefits of alignment between sectors were also noted, with suggestions that the owner occupied sector could be brought into line with social sector requirements under the Energy Efficiency Standard for Social Housing or with standards in the PRS. As well as facilitating delivery in mixed tenure blocks, alignment with the PRS was suggested important to avoid property moving from the private rental market into the owner occupied sector in order to avoid meeting a higher standard. (The current PRS target is that properties should meet Band D by the end of March 2025: a proposal that Band C should be required at change of tenancy from 1 April 2025 is discussed at Questions 7 and 8.)

Other proposals, each suggested by a single respondent, were:

- Mandate immediately, allowing the obligation to be transferred to a new owner for implementation within a limited timescale.
- Mandate in 2025, allowing the obligation to be transferred to a new owner for implementation within 12 months.
- Mandate in 2025 if an awareness-raising campaign does not generate sufficient action beforehand.
- Mandate in 2030 if there is not sufficient action by 2025.
- Mandate Band D by 2025 and Band C by 2030.
- Mandate Band E from 2025, Band D from 2030, Band C from 2035.

The importance of encouraging as much voluntary action as possible before introducing a mandatory standard was also emphasised and that independent advice and assistance, a quality assurance framework and financial assistance for homeowners must first be in place.

It was also suggested that households at risk of fuel poverty could be exempted from a mandatory target before 2030, but that such a provision should be applied cautiously.

Mandatory energy efficiency targets should be introduced in the owner-occupied sector *after* 2030

Among respondents who thought mandatory targets should be introduced after 2030, a majority indicated at Question 1 that they disagreed with such targets being introduced at all, and comments tended to reflect this position. Respondents argued that it is an owner's right to choose how to maintain their property free from government interference, that the target is unachievable for many properties, or raised issues concerning affordability. Several respondents who did not answer the closed element of Question 3 expressed a similar view.

With specific reference to the date of 2030 it was suggested that owner occupiers should be given time to plan for any mandatory action:

We prefer not to see mandatory targets, but if they are brought forward, this should not be before a sufficient period of encouragement that lasts at least until 2030, allowing households time to plan and budget for the cost of improvements.

Professional or representative body respondent

Some respondents who agreed that mandatory action *would* be necessary but thought it should be implemented only *after* 2030 also made points regarding the size of financial burden being placed on homeowners and the need to allow time to plan. It was also suggested that enough time needs to be allowed to:

- Raise awareness.
- Allow sufficient opportunity for work to be carried out.
- Allow financial markets to plan for possibility that owners will look for improvement loans linked to their mortgage.
- Avoid pressure on supply chains and raised costs to consumers.

Mandatory energy efficiency targets should be introduced in the owner-occupied sector in 2030

Some respondents who considered 2030 to be the right time to introduce mandatory targets suggested this to be sensible, or to allow owners 10 years to achieve the required standard. It was acknowledged that some improvements will be costly, and homeowners might require time to raise capital. It was also argued that a clear signal to owners is required to encourage compliance ahead of 2030, and that early adoption should be incentivised. If there is insufficient action during an encouragement phase prior to 2030 it was suggested both that an earlier date for a mandatory standard could be considered and that there should be mandatory action from 2030. Setting interim targets over the next decade was also proposed.

Waiting until 2030 before taking mandatory action was suggested to allow sufficient opportunity for the supply chain to develop, while an earlier date might lead to an overheated market or increased costs. A concern was noted that:

...if the supply chain is not immediately ready to respond, then the work and associated economic benefits would go to companies outside of Scotland.

Academic respondent

With respect to the cost of measures, 2030 was argued to allow time for prices to fall, particularly in relation to renewable technologies which, it was suggested, are not currently affordable.

Other issues identified as needing to be addressed before mandatory action is introduced were:

- Capacity of distribution networks.
- Providing resources for enforcement.
- Putting effective support schemes and financial assistance in place.

Other criteria for deciding when to introduce mandatory action

Some respondents who did not answer the closed element argued that timing of mandatory standards should depend on progress during an engagement phase, with a review of uptake in 2025 suggested. Setting interim targets between 2020 and 2030 was also proposed.

Other points raised included that:

- Mandatory standards should not be introduced until the necessary supply chain is in place.
- Mandatory standards should not be introduced until EPC assessment methodology has been improved to better reflect actual performance. A risk of legal challenges from householders was suggested.
- There is a disincentive for early action since the life span of energy efficiency measures means an owner who starts introducing measures more than 10 years beforehand may find they may need to upgrade again closer to the target date.

Benefits of aligning an Energy Efficient Scotland target for owner occupiers with interim targets in the Fuel Poverty Bill were identified, such as creating economies of scale. It was also argued that:

...combining the fuel poverty target of EPC Band C by 2030 with the “all homes” target encapsulates owner occupiers who are fuel poor in the same target. This prevents confusing messaging for homeowners, who might otherwise be left asking “am I or am I not considered fuel poor- and therefore which target applies to me?”

Third sector respondent

Workshops' perspectives

Workshop participants tended not to focus on a specific date for mandatory action, although some did feel that regulation should be introduced straightaway.

Other comments were that the Scottish Government should work in 5-year increments, outlining clearly what industry needs to do.

Quality and supply chain implications

The consultation paper notes it to be widely acknowledged that the capacity of the supply chain will need to increase in line with the scale of Energy Efficient Scotland, and that it is estimated that around £12 billion in investment will be needed to fully deliver its objectives. Whilst this presents both a challenge and an opportunity for suppliers in Scotland, it is acknowledged that there are a number of considerations relating to supplier capacities and capabilities.

Question 4 - From a supply chain perspective, do you think bringing forward the timescales for the Programme would have a positive or negative effect on quality, skills & capacity and consumer protection? Please provide a rationale, and evidence where possible.

Responses to Question 4 by respondent type are set out in Table 4 below.

Table 4: Question 4 - Responses by type of respondent.

	Positive	Negative	Not answered	Total
Organisations:				
Academic	1		2	3
Building component manufacturers/services	6	1	3	10
Energy related private sector	3		10	13
Local authority or interagency partnership	6	6	4	16
Other			1	1
Private landlord or property management		3	3	6
Professional or representative body	3	7	6	16
Public sector or body - other		1	1	2
SG delivery partner	1		2	3
Third sector	1		4	5
Total organisations	21	18	36	75
% of organisations answering	54%	46%		
Individuals	12	22	6	40
% of individuals answering	35%	65%		
All respondents	33	40	42	115
% of all respondents	29%	35%	37%	
% of all those answering	45%	55%		

A majority of those who answered the question (55%) thought that from a supply chain perspective, bringing forward the timescales for the Programme would have a negative effect on quality, skills and capacity, and consumer protection, while 45% expected a positive effect. As at earlier questions, a substantial number of respondents (42/115) did not answer the closed element.

While 54% of 'organisational' respondents who answered the question expected positive outcomes, only within the 'building component manufacturers or services' group did a majority of all respondents suggest positive effects. In contrast, 65% of 'individual' respondents who answered the question foresaw negative effects.

In total, 92 respondents provided a further comment at Question 4 and, while arriving at different conclusions in terms of an overall positive or negative perspective, respondents raised very similar issues. For example, some respondents predicting negative consequences, suggested there is not enough time to train sufficient staff to deliver the programme, and some of those taking a positive view argued that training must be addressed as a matter of urgency. To avoid repetition the analysis below is arranged thematically.

Capacity and certainty for the supply chain

Respondents took differing views of the capacity to deliver the Programme at an accelerated rate. While some, including 'local authority or interagency partnership' and 'professional or representative body' respondents, argued that there will be skills shortages or that suppliers will struggle to meet demand, others felt that with resources and support, the industry has the necessary capacity or that supply will respond to demand. Substantial reduction in insulation installation levels under the Energy Company Obligation (ECO) were cited as evidence that spare capacity could be available.

It was also noted, however, that having carried out their own surveys, the Energy Saving Trust and the Existing Homes Alliance have reported differing findings with respect to supply chain capacity, and further research to look at the ability of the supply chain to deliver to an accelerated timescale was proposed. It was also suggested that consideration of capacity issues should include local authority planning departments.

The importance of providing clarity for the supply chain, including certainty that funding will be in place over a period of years, was highlighted. Previous changes in funding policy, for example in relation to the Feed-in Tariff scheme, was cited, particularly by 'energy related private sector' respondents, as having led some companies to pull out of the market or to cut jobs and capacity. For example:

The energy efficiency installer market has often suffered due to the stop-start nature of previous obligations; a clearly laid out long-term, large scale plan is likely to encourage investment by the supply chain...

Energy related private sector respondent

Provided that there is confidence in demand, it was argued the industry will invest and there will be opportunities for job creation in a range of trades and for Small

and Medium-sized Enterprises (SMEs). However, there was also a view that SMEs may not be able to gear up in time to compete with larger firms.

The effects of energy efficiency targets in other sectors on building supply chain capacity were also referenced with a suggestion that the implementation of LHEES could give local authorities and public sector bodies a role in developing the market and identifying gaps. While earlier targets in other sectors were seen as helpful, it was noted that avoidance of a 'cliff-edge' fall in demand after a target date would be beneficial.

Skilled labour and training

The limited time available for staff recruitment and training were seen as likely to lead to shortages of skilled labour, particularly by 'local authority or interagency partnership' respondents and by 'professional or representative body' respondents. Potential shortages of specialists with experience in traditional building types were also predicted, as were uncertainties in the labour market as a result of Brexit.

A risk of skill shortages outside the Central Belt, particularly in rural and island locations was also highlighted. It was reported that customers already struggle to find qualified contractors, or that the additional premiums charged by mainland contractors can lead to increased costs.

An urgent need to address skill shortages and training issues was of importance to a number of respondents across a range of respondent types, and there were associated calls for increases in the provision of college places for relevant trades. It was observed that that, since apprenticeship programmes can last up to 4 years, a supply of trained workers may still lag behind demand, and an argument was made that investment in apprenticeship programmes needs to be provided now, whether accelerated delivery is implemented or not.

A forthcoming requirement under PAS 2030 and PAS 2035 for installers to hold, or be working towards, an appropriate Scottish/ National Vocational Qualifications was also noted and a case made for providing Scottish Government funding to help industry support further training of the existing work force.

Quality control and accountability

Leading on from the reports of shortages of qualified contractors or assessors, there was a concern that market forces are likely to lead to increased costs or poor quality, with a risk of 'cowboys' seeking to exploit demand. Experience of previous energy efficiency schemes were cited in this respect, including of installation companies going out of business, meaning any guarantees become worthless.

Maintaining high standards, protecting customers and creating trust in the supply chain were all highlighted as key issues:

For the programme to develop as suggested, property owners have to have and maintain confidence in the assessments, advice, work and effectiveness

of those involved. There is the perpetual risk of this sector acquiring a less than satisfactory reputation which could then prove difficult to tackle.

Professional or representative body representative

Specific suggestions made regarding oversight, enforcement and monitoring were that:

- A national delivery body should oversee the Programme.
- A robust, independent enforcement agency is required.
- The roles of existing agencies such as Gas Safe and the National Inspection Council for Electrical Installation Contracting could be expanded.
- Recommendations of the Each Home Counts Review should be implemented, requiring all work to be delivered through a quality mark framework.
- Any quality framework in Scotland should have equivalent quality & competency requirements to the existing UK TrustMark scheme⁴. Having different requirements in Scotland was argued to have the potential to be a barrier to delivery or to result in poorer products being available in the country with the lower standard.
- There should be post installation monitoring.

Specific suggestions made regarding qualifications and accreditation were that:

- Specific qualifications are required for both EPC assessors and those working on traditionally constructed historic buildings.
- The Scottish Government should mandate qualifications for all those operating in the sector.
- There should be an accredited supply chain or a trusted trader scheme with continuous review of membership.

The 'local authority or interagency partnership' respondent suggesting a trusted trader scheme also argued against any further bureaucracy for traders:

Any scheme does not need another badging system. The industry has been badged to death and with little improvement in tackling the cowboy hit and run approach. Cowboys are very efficient at obtaining badges. They are not efficient at fulfilling promises. Thus the government should consider a 100% post install monitoring scheme rather than adding further levels of bureaucracy for the quality practitioner to negotiate.

Local authority or interagency partnership respondent

It was noted that in a typical rural supply chain, with many small and one-person trades, businesses may be deterred by the administrative burden or accreditation costs of operating in the energy efficiency market. It was considered important to

⁴ <https://trustmark.org.uk/>

find a way to develop local supply chains to allow small companies to participate, but without compromising standards.

Engaging with consumers

The importance of awareness-raising and public engagement was highlighted by a small number of respondents, some of whom felt that acceleration of the Programme will leave limited time to engage with and educate consumers.

Aftercare and engagement with households once tradespeople have worked on the property was seen as a means of ensuring that households are able to operate any new heating systems correctly. Post-occupancy evaluations were proposed - not only to provide information on actual performance of technologies and properties, but also to look the degree to which user awareness has improved.

Workshops' perspectives

In terms of skilled labour supply, some participants felt there is a skills and, by extension, capacity shortage across the country.

Others thought that while there may even be over-supply of some trades in the Central Belt area, the position can be very different in the Highlands. There was particular reference to those trained to fit wall insulation. A shortage of skilled labour in the north east of Scotland was also reported.

Other points raised were that:

- Brexit will have an impact on the supply of skilled workers.
- The age of the workforce is a problem and getting younger people interested in the work can be challenging.
- It takes five years (a year to recruit and four years to train), to have a newly qualified worker.

With regards to quality, comments were:

- There need to be clear standards, including around the quality mark and the qualifications required.
- A quality mark for designers could also be considered.

While some participants supported bringing forward the timescales for the Programme, certainty was seen as key to allowing the industry to respond and adapt in terms of capacity. It was also noted that it is difficult to assess whether there is, or can be, enough capacity until the nature of, and timescales for, the challenge are understood.

Some respondents did feel that meeting the 2030 target is unrealistic and that the supply chain will need until 2040 to grow, and that this growth will be in line with and stimulated by the Programme. However, HEEPS: Area Based Schemes were cited as an example of a programme which has not increased capacity despite being in place for

a number of years and offering guaranteed work. The annual funding structure was seen as contributing to this outcome.

Other points raised were that:

- Clarity about the nature of the target, and in particular whether it is for net zero carbon, is required.
- A 2030 net zero carbon target would be particularly challenging for the retrofitting industry.

Impact on Fuel Poverty & Climate Change

As the consultation paper notes, the Energy Efficient Scotland Route Map already sets out additional targets for households in fuel poverty, which would see them prioritised so that they achieve EPC Band C by 2030, and then EPC Band B by 2040, where technically feasible, cost-effective and affordable. It is acknowledged that accelerating the target for all homes may risk increasing levels of fuel poverty by forcing households to install low carbon or renewable technologies that may be more expensive to run, therefore increasing fuel costs before the cost of the technologies have been further driven down by innovation in the sector.

With respect to climate change, meeting the targets for the various sectors set out in the Energy Efficient Scotland Route Map, including making steady progress in the owner occupier sector towards achieving at least an EPC Band C by 2040, is in line with the trajectory for the reduction in heat demand set out in the Climate Change Plan. Bringing the target forward to 2030 would support efforts to reduce emissions more quickly, but risks forcing some households to take decisions about their heating systems prematurely.

Question 5 - In your view, how would accelerating Energy Efficient Scotland help, and/or how would it hinder, plans to address fuel poverty?

In total, 89 respondents answered Question 5. Some took a relatively clear position:

- Around 2 in 5 of those who commented suggested that accelerating the Programme would (or could) help plans to address fuel poverty.
- Around 1 in 4 thought either that it would not help or that it would hinder plans to address fuel poverty.

However, many added caveats to their remarks, and others were of a more nuanced view, identifying potential positive and negative effects.

Irrespective of their position, respondents raised similar themes and the analysis below is structured accordingly. A series of potential positive or negative outcomes are presented first, followed by a number of issues respondents highlighted as needing to be addressed.

Potential positive outcomes

In addition to addressing fuel poverty at an earlier date, the following possible benefits were identified:

- Avoiding the wider cost burden to society created by fuel poverty.
- Positive impacts in other areas of public spending, for example, savings in the NHS:

It is important that the cost of accelerated targets takes into consideration the positive impact on health and wellbeing, savings in the NHS, reduced need for charitable intervention and improved quality of life...

Building component manufacturers or services respondent

- Job creation. It was argued increased employment and earnings in Scotland's energy sector could more than offset the cost of supporting those in need of help.

Other points tended to apply to the supply chain as a whole – such as developing the supply chain and/or encouraging development of new products.

Potential negative outcomes

Possible negative outcomes identified were that:

- Existing targets are already challenging or unrealistic.
- In the PRS there is a risk of increased rent levels, property being lost from the sector, or that landlords will not accept potentially fuel poor households as tenants.
- Since an EPC score is not a measure of fuel poverty, improving an EPC will not necessarily improve fuel poverty.

Potentially negative consequences for the supply chain as a whole were also noted, such as acceleration of the Programme leading to shortages and elevated costs.

The focus on the householder in fuel poverty rather than the property *per se*, was also highlighted, with an observation that householders may move. However, it was noted that, as a result of accelerated delivery, more energy efficient properties will be available to fuel poor households.

Other drivers of fuel poverty

A number of respondents noted that lack of energy efficiency is only one driver of fuel poverty, which needs to be tackled in an integrated fashion. In particular, the damaging effect of high energy prices was raised by several respondents, noting that this is especially the case in remote or rural areas. When tackling fuel poverty, a focus on reducing fuel bills was seen as more important than reducing carbon emissions.

Need for funding

Potential installation costs and the resulting financial pressures on households were identified as a negative factor by some respondents while others argued there to be a need for increased investment and funding, for subsidies to the less well off, or that energy efficiency programmes should be targeted at fuel poor households. One respondent observed:

...we must ensure any regulations are rolled out in a way which does not adversely affect owner occupiers who are already struggling with household costs. Energy efficiency improvements must not be pursued at the cost of making housing unaffordable for people.

Third sector respondent

Concern for households just above any threshold for assistance was also highlighted:

Our main concern is for owner occupiers that sit above the fuel poverty threshold, but are labelled as 'self-funded'. These are the type of homeowners that could really be impacted under Energy Efficient Scotland in general, and could become fuel poor – or experience wider poverty – if some of the observations raised in the consultation document are realised.

Local authority or interagency partnership respondent

Identifying fuel poor households

A small number of respondents commented specifically on issues associated with identification of fuel poor households, suggesting that:

- Better identification of fuel poverty is needed or that working jointly with services such as Care and Repair can pick up potential cases.
- Fuel poverty figures in the owner occupied sector are not well understood.
- There should be further assessment of fuel poverty in rural or island areas, since measures installed under ECO have typically been focused on urban areas.

It was also proposed that, if ECO continues, powers under the Digital Economy Act 2017 should be used to allow government and suppliers to share information for the purposes of identifying eligible households and targeting delivery to ensure that those in most need receive support.

Further guidance and support from the Scottish Government to facilitate consistent, accurate targeting of fuel poverty areas at a neighbourhood/ area-based scale was also requested.

Risks associated with installations

As set out in the consultation paper, a risk that low carbon technologies may result in increased energy prices was noted by several respondents. Others suggested

that this is not necessarily the case, provided properties are well insulated, and that this demonstrates the importance of a fabric first or whole house approach, although it was also noted that current funding is unlikely to cover both insulation and heat generation technologies being fitted at the same time. Specific proposals were:

- Providing help to avoid householders being significantly financially disadvantaged as a result of installing a low carbon heating system.
- Careful modelling of the outcomes of costly interventions, which may/may not provide appropriately scaled benefits.

One risk highlighted was that households will be required to spend money on other installations that prove to be poor or inappropriate solutions, with possible negative outcomes such as poor air quality predicted. Further concerns were raised that energy savings may not be as high as predicted or that installation costs may outweigh the benefits in savings. However, it was also noted that even in such circumstances, households may experience greater comfort from warmer homes.

Relationships with other schemes/policies

Clarity was sought as to how support for fuel poor household will be achieved in practice – whether by using the fuel poverty definition as a criterion for eligibility for different schemes, or by focusing resources and programmes, such as Area Based Schemes, in areas where there is a high rate of fuel poverty. It was also argued that the final Fuel Poverty Strategy, expected in late 2020, must outline its relationship with Energy Efficient Scotland, along with setting out what new support mechanisms will be available and how fuel poor households will be identified.

The potential effect of accelerated delivery requirements on fuel poverty on other elements of Energy Efficient Scotland or related programmes was noted with suggestions that:

- Partner organisations' ability to participate could be affected due to the additional resources required to enable programme delivery.
- Accelerated delivery might impact ECO funding and could require increased customer contributions to facilitate fuel utilities obligation.
- Energy efficiency requirements relating to fuel poverty should be aligned with related programmes such as ECO, or that the current focus of ECO on support for fuel poor households should be continued.
- To ensure the accelerated targets do not negatively impact plans to address fuel poverty, there should be a substantial increase in the size of the ECO budget to allow its use in conjunction with the Energy Efficient Scotland programme.

It was also argued that without a clear focus on fuel poverty, there is a risk that accelerated delivery for the owner occupied sector could divert the attention of stakeholders and the supply chain towards self-funded households and, potentially, that finance might be diverted away from alleviating fuel poverty to support such

self-funding households. An alternative perspective was that if funding is diverted towards alleviating fuel poverty at an earlier date, fewer non-fuel poor homes, and fewer homes overall, may be treated.

Finally, it was suggested that energy efficiency and fuel poverty programmes such as Area Based Schemes and Warmer Homes Scotland should aim to achieve EPC Band C or above by 2030, thus avoiding the need to return to the same area for further work, and minimising costs and disruption. It was argued that programmes should be front-loaded to identify and incentivise treatment of the worst performing properties first.

Need to advise and educate households

Provision of better energy efficiency advice or education to households was also seen as necessary, including a need for face-to-face support. Education was argued to be particularly important after upgrades involving new technologies, to ensure costs of installation are offset as effectively as possible.

Question 6 - With regards to reducing the emissions associated with the supply of heat, what are your views on consideration of energy efficient improvements alongside changes to heating systems?

A total of 84 respondents provided a comment at Question 6.

A majority of those commenting, across a broad range of respondent types, thought it would be desirable to consider energy efficient improvements alongside changes to heating systems. Some of these respondents argued that this would be essential, or noted their approval for a fabric first approach. There was support for a whole house approach, with installation of multiple measures at the same time, to minimise disruption relative to installation as single measures. Insulating a building before fitting a new heating system was seen as a way to avoid wasting heat and maximise the benefit of the new system, while also allowing the heat requirement to be assessed properly. This, in turn, was seen as important in ensuring the capacity of the new system to be appropriately specified so as to be as economical as possible. It was suggested that the Scottish Government should consider extra quality controls - for example under a Quality Mark accreditation scheme - to ensure that sizing has been calculated correctly.

A holistic approach was advocated by several respondents who argued that a cost-effective combination of energy efficiency measures and low carbon heat supply installations will be needed. It was suggested such an approach would influence the choice of the most suitable technology in each area.

Reducing heat demand was reported as providing greater scope for low carbon technologies (such as air source heat pumps) which are more efficient and have lower operating costs in well-insulated buildings. Without insulation it was acknowledged that low carbon heating systems could be more expensive for the consumer and it was argued that while low carbon heating is desirable, energy reduction must remain the primary goal of Energy Efficient Scotland.

A further benefit was identified with respect to demand for electricity. Since low carbon systems are often reliant on electricity, fitting insulation and so reducing demand was seen as offering the potential to reduce pressure on the national grid and to reduce the need for further infrastructure spending on electricity generation. However, it was also suggested that District Network Operators should be asked for permission before a heat pump is installed, to ensure that the local grid connection can cope with the additional demand.

Several additional factors were identified as important, including by respondents who took no clear view, or a more negative view of installing energy efficient improvements alongside changes to heating systems. These are discussed below.

Timing

There were mixed views on whether the point at which a heating system is changed would be a good time to consider other measures. These were that:

- In practice, heating systems are often replaced when the existing system has broken down and hence considering installation of other measures at the same time might not be practical.
- Replacing a heating system may be a time at which a household is receptive to energy efficiency advice and it may be a good time to consider other measures.

Advice on selection and education on use

Good quality, independent advice to consumers was seen as essential, including to help ensure the most appropriate combination of products are selected. It was also suggested that pressure to make energy efficiency improvements might lead to uneducated decisions. Two respondents argued that:

A joined up approach is required alongside delivery partners to ensure alternative heating choices are available and realistic and practical information on these heating choices are available to the householder.

Local authority or interagency partnership respondent
Professional or representative body respondent

The importance of educating households was highlighted, both with respect to general behavioural changes that can save energy and to ensure that new heating systems are used correctly:

... public education around behaviour change will be essential to make all the interventions worthwhile. There's no point in installing excellent low-carbon technology and other interventions if it is not used/implemented effectively and efficiently.

Professional or representative body respondent

It was also suggested that householders with new heat pumps should be advised of the most appropriate, cost-effective tariff.

One 'local authority or interagency partnership' respondent argued that Energy Efficient Scotland does not place sufficient emphasis on behavioural change, and that putting standards in place for technical measures alone will not be sufficient to address climate change and fuel poverty.

Cost and funding

High cost was identified as a barrier to installation. There were contrasting views, however, on the degree to which multiple measures are currently supported, with one respondent suggesting that ECO offers uplifts for the installation of multiple measures, while another argued ECO scoring rules do not incentivise this and that grant funding on Scottish Government schemes is largely limited to one measure per household.

Financial support was seen as critical to delivery, with a specific proposal that there could be 'demonstrator areas' where early action is incentivised by a proportion of grant funding to owner occupiers. It was also noted, however, that if access to grants and funding is only available to those in receipt of welfare benefits, a section of the population that does not receive these benefits may be unable to afford upgrades, irrespective of any potential penalties. Incentivised pricing for heating systems with reduced emissions was also proposed.

It was argued that requiring multiple measures could be a disincentive to changing an inefficient heating system at all:

... a change to Air to Air heating is popular in Orkney. To require internal wall installation in addition may cause some to keep with an old inefficient system based on a number of factors including costs.

Local authority or interagency group partnership respondent

Quality of installation

Correct installation of energy efficiency measures was considered essential if their benefits are to be maximised, with a suggestion that suppliers should be encouraged to verify actual performance. Advice emphasising the quality of installation given in the Sustainable Renovation Guide⁵ was recommended.

Low carbon heating and emissions

A small number of respondents commented specifically on emissions that may be associated with low carbon heating systems. Points raised were that existing assessment systems may not take account of emissions associated with higher service and maintenance requirements, or reduced lifespan and replacement costs. It was suggested that in remote locations, the distance travelled for servicing may offset carbon saved.

⁵ 'Sustainable Renovation: improving homes for energy, health and environment' a SEDA guide to best practice, funded by the Pebble Trust.

It was also argued that for much of Scotland's older housing stock, retrofitting energy efficiency measures will have relatively little impact on emissions and that a national programme of demolition and replacement with EPC Band A properties would be the best approach.

Finally, two 'individual' respondents referenced the recent recommendation by the Committee on Climate Change that no gas boilers should be installed in new homes after 2025⁶. It was argued that greater clarity is required before mandating improvements.

Workshops' perspectives

There was support for a 'fabric 'first' approach and for considering energy efficient improvements alongside changes to heating systems.

However, it was also noted that a change in heating system may not be sufficient to bring a property up to standard.

The possible phasing out of older models and replacement with more efficient alternatives was noted, with the step up to High Heat Retention Storage Heaters cited as an example.

Participants raised the possibility that earlier targets could mean that functioning heating systems would have to be replaced. The financial impact on householders of having to replace a boiler earlier than they might otherwise do so was also highlighted.

The importance of adequate funding to support successful delivery was raised.

⁶ The report is available at <https://www.theccc.org.uk/publication/uk-housing-fit-for-the-future/>.

Private Rented Sector

Extending PRS Standards to EPC Band C

The consultation paper explains the Scottish Government's intention to bring forward regulations later this year to require landlords in the PRS to ensure, at change of tenancy, their properties meet EPC Band E from 1 April 2020 with all properties meeting this standard by 31 March 2022. The standard then increases for changes of tenancy to EPC Band D from April 2022, with all properties meeting this standard by 31 March 2025. Looking further ahead, it is proposed that a minimum standard of EPC Band C should initially apply to properties where there is a change in tenancy after 1 April 2025. Where the EPC shows a Band D or lower, the owner will need to undertake works and lodge an updated EPC showing an energy efficiency rating of Band C or above, unless exceptions have been registered with the relevant authority. Properties failing to meet the minimum requirements would be subject to civil fines.

Question 7 - What are your views on using change of tenancy as a trigger to require the increased standard?

In total, there were 98 comments at Question 7.

Change of tenancy is an appropriate trigger

A majority of respondents expressed broad agreement with using change of tenancy as an appropriate trigger with comments including that it is sensible or logical, reasonable, obvious or useful. It was noted, as outlined in the consultation paper, that high turnover rates in the private sector mean that change will be driven relatively quickly. Other positive reasons given for use of change of tenancy as a trigger were that:

- It limits disruption for tenants.
- More extensive works are possible when a property is empty.
- Change of tenancy is also the time when many statutory checks and other refurbishments are carried out.

While agreeing that change of tenancy is an appropriate trigger point, respondents also identified potential difficulties, or highlighted issues they thought would need to be addressed. Those raised most frequently were that:

- Tenants with long leases could miss out on energy efficiency improvements without an alternative trigger or a backstop date being in place. The possibility that the policy might encourage longer tenancies was also raised.
- Enforcement will present problems as local authorities do not have access to tenancy information, or that details on how enforcement could work are needed.

- Local authorities will require additional resources if they are to be responsible for enforcement.
- Landlords will require advice and assistance, including access to funding at favourable rates. Tax incentives via the reintroduction of the Landlords Energy Saving Allowance were suggested.
- Care will be needed to ensure improvements are cost effective for the tenant and that any increases in rent levels are offset by reduced fuel bills.

Respondents also raised a number of issues relating to the lengths of tenancies, including that changes of tenancy can be unpredictable making it difficult for landlords to act quickly, or that landlords should be encouraged to make improvements on a planned basis - for the same reason. It was also argued that thought needs to be given to properties or areas where lets are typically short term, for example for short term workers or students, or that the policy should only apply to tenancies that exceed a minimum length.

Other points, each made by a single respondent, related to: the need to improve the EPC database required for enforcement; the need for an awareness-raising campaign; and the need to clarify that the energy efficiency rating at the date of landlord registration renewal is not grounds for non-compliance where there has been no change of tenancy.

Some respondents who agreed that change of tenancy would be an appropriate trigger point also expressed wider concerns relating to the Energy Efficient Scotland proposals, either with use of EPCs, proposed EPC levels and timescales or probable costs, or with the principle of any mandatory action. One 'private landlord or property management' respondent noted that their tenancies last an average of 19 months and argued that setting additional targets for landlords to meet at short intervals will cause some to exit the sector.

While agreeing that change of tenancy could be used as a trigger point, a small number of respondents noted potential alternatives, most commonly a trigger point at landlord registration or renewal. 'Local authority or interagency partnership' respondents were among those making this point. Other ideas, each put forward by a single respondent were: inclusion of a minimum energy efficiency requirement in the Repairing Standard, allowing enforcement via the Housing and Property Chamber First-tier Tribunal; or adaptation of the Short Assured Tenancy⁷ - which is renewed at 6 month intervals - to incorporate a declaration by the landlord that a property meets the energy efficiency standard in place at the time.

Change of tenancy should not be used as a trigger

Respondents who opposed use of change of tenancy as a trigger, predominantly 'individual' respondents, generally expressed objection to other aspects of Energy Efficient Scotland policy, arguing that proposed EPC levels are not realistic in some

⁷ Private tenancies which began on or after 1 December 2017 have the protections of the new [Private Residential Tenancy](#). Any short assured or assured tenancy which existed before 1 December 2017 can continue until either the tenant or landlord brings it to an end.

cases, costs to landlords are too high, property may be left empty, and that the size of the PRS will be reduced.

In addition, a small number of respondents argued:

- Change of tenancy would be difficult to enforce as a trigger and that landlord registration or re-registration would be a preferable trigger point. Two 'third sector' respondents were among those making this point. It was argued that using change of tenancy is not likely to be effective in meeting policy objectives since local authorities neither know when there is a change of tenancy nor have the resources for enforcement and, as a result, improvements will not be enforced until a backstop date.
- Energy efficiency standards should be the same across the board or that varying standards for different tenures will create issues that need to be resolved in buildings with mixed ownership.
- Many leases are relatively short and PRS tenants are now only required to give 28 days' notice to end a tenancy - too short a time in which to arrange improvements.

Respondents who suggested landlord registration or reregistration should be used as a trigger argued advantages to be that: this happens on a regular 3-year cycle; an EPC is required as evidence of compliance; and that local authorities already manage the process.

Question 8 - What are your views on using 1 April 2025 as the date to start applying the minimum standard of C when there is a change in tenancy?

In total, 101 respondents answered Question 8.

1 April 2025 is not the right date

A majority of respondents who expressed a clear view did not think 1 April 2025 to be the right time to start applying a minimum standard of EPC Band C when there is a change in tenancy. 'Individual', 'local authority or interagency partnership', 'private landlord or property management' and 'professional or representative body' respondents in particular took this view. Reasons given most frequently were that

- The date is, or may be, too early.
- The minimum standard is too high.
- The proposals are not achievable, not practical or not possible, particularly for older properties or in rural areas.
- Owners will sell and property will be lost from the PRS, or rents will increase – either to cover costs or as a result of reduced availability in the sector.

In contrast, a very small number of respondents argued that the standard should be higher (Band B) or that implementation should not be delayed until 2025.

Among respondents who suggested alternative start dates or minimum standards the most frequent suggestion – from seven respondents - was Band C in 2030. Alternative proposals, each made by only a very small number of respondents were:

- Band C in 2028.
- Band C in 2032.
- Band D in 2025.
- Band B in 2025.

Other suggestions were that requirements in the PRS should be: the same as for the social rented sector; the same as for the owner occupied sector; or should be equivalent across all sectors. It was also argued that there should be greater focus on introduction of mandatory measures in the owner occupied sector rather than implementing further requirements for the PRS.

Additional points raised included that requiring Band C by 2025 means there is less time available for technical innovation, and also that there may be insufficient time for implementation of the Short Life Working Group's recommendations for improving the supply chain. (These recommendations are discussed at Question 10.) There were also comments on the EPC process - that improved accuracy or changes to methodology are needed, or that the Scottish Government is failing to understand the EPCs limitations.

1 April 2025 is the right date

Respondents who agreed that 1 April 2025 is the right date to start applying the minimum standard of C when there is a change in tenancy included 'building and component manufacturer and services', 'energy related private sector' and 'local authority or interagency partnership' respondents. In some responses, the date was suggested to be reasonable or sensible, to provide certainty and to allow landlords time to plan. Narrowing the gap in standards between social housing and the PRS was also highlighted as beneficial.

A small number of other respondents agreed with the date and the minimum standard proposed, but not to introduction at change of tenancy.

The need for effective awareness-raising both for landlords and tenants and for financial support to landlords were both highlighted. It was noted that Band C can be hard to achieve, potentially requiring solid wall insulation (SWI) or renewable generation such as solar or heat pumps which may be difficult in buildings in multiple ownership. It was also noted that, as stated in the consultation paper, exemptions will be needed in some cases, but it was argued that care should be taken to ensure exemptions are not exploited.

The importance of providing certainty to the supply chain, and of the supply chain being in place were also noted.

Respondents also highlighted the economic benefits for landlords of long-term planning, going straight to Band C in one go, rather than taking an incremental approach. It was noted that such a course of action would also have benefits for tenants (less disruption and reduced fuel bills) and for local authorities (less enforcement work).

It was observed that the proposals would leave a period of 5 years between start date (2025) and backstop date (2030), as opposed to the 2-year period for achieving Band E and the 3-year period reaching Band C. Since climate change targets are challenging, the Scottish Government was advised to provide additional support to landlords to encourage achieving Band C before the backstop date.

Some respondents, including several 'local authority or interagency partnership' respondents, did not express a clear opinion on the proposed date and standards. Their comments included observation that the proposed requirements are ambitious or challenging.

Points on enforcement included both that this may be challenging and that an agreed and fully resourced enforcement procedure must be put in place. The 'local authority or interagency partnership' respondent making the latter point argued:

Before this change is scheduled to take effect there is a need to fully define how and by whom this will be enforced. It is likely that unless the compliance regime is fully resourced the date will be wholly academic with no subsequent change.

Local authority or interagency partnership respondent

Other points raised, and not already made elsewhere were:

- Bringing Band C forward to 2025 would allow current targets for fuel poor households to be met early in this sector.
- There is a risk that additional costs of earlier improvement might impact buy-to-let mortgage affordability.
- Criteria for exemptions are yet to be confirmed, but may limit the number of properties required to achieve Band C.

The consultation paper notes that, under regulations to be brought forward later this year, the cost of required works to improve a PRS property to Band E will be capped at £5,000 with a further £5,000 cap on work to reach EPC Band D. However, it is proposed that the required level of work to achieve EPC Band C should be determined by what is technically feasible and cost-effective. Work is underway to further define cost-effective and a definition will be published in due course. Technical feasibility will be determined through an assessment of the property and work, via a Short Life Working Group, is underway to develop this new assessment.

Question 9 - With regards to providing a useful tool to landlords planning and executing improvement works, what are your views on basing any cap of required works on a definition of cost-effectiveness and technical feasibility?

In total there were 97 comments at Question 9.

Several respondents noted that it is difficult to comment until definitions of cost-effective and technically feasible are available or argued that clear definitions must be provided. It was also suggested that definitions should take account of wider benefits that are 'socially but not individually cost effective' in terms of reduced carbon emissions, improved health, or reductions in fuel poverty.

'Local authority or interagency partnership' and 'professional or representative body' respondents were among those who expressed broad support for the concept. Suggestions included that the proposed approach is sensible, practical or reasonable. For example, a 'local authority or interagency partnership' respondent observed:

We consider it to be a rational and reasonable approach to base the cap on the individual property rather than a fixed cap; fixed caps tend to encourage pricing to coalesce around the value of the cap and can result in higher costs as a result, and can also rule out higher-priced but cost-effective solutions.

Local authority or interagency partnership respondent

Financial pressures on landlords were also highlighted, with several respondents citing a potential risk of increased rent levels or a reduction in the size of the PRS. Some respondents highlighting cost pressures argued that the current £5,000 caps for Bands D and E are too high or argued that the 'cost-effective and technically feasible' definition should apply at all EPC bands. It was also suggested that phased introduction of standards with separate caps could encourage cheaper measures to be selected at each stage and that, rather than three separate caps, it might be better to have a cap based on a move to Band C. It was argued that any cost cap should not take account of spending before the legislation is introduced and should not be inclusive of funding through no-cost finance, supplier obligation or grant funding.

Several respondents commented on the figure of £3,500 quoted in the consultation paper as the average spend required to achieve Band C. It was argued that this is not representative for many properties and is, in any case, a significant amount in relation to typical rent levels in rural areas.

A variable spending cap, to take account of different building styles and localised costs was suggested and that local authorities could be given authority to develop their own exemption levels dependent on these factors. A relationship between the level of spend required and rent levels, property value and property size were all proposed. It was noted that a flat rate cap, regardless of property size or value, could be advantageous for landlords with bigger properties.

Cost effectiveness

The importance of the method chosen to define what is cost effective was highlighted, with an argument that there is no single correct solution. One respondent suggested that:

If the definition is too broad, then too many properties will fall into this category and it will act as a caveat for landlords to avoid implementing measures.

Academic respondent

Other respondents argued that the definition should be such that the 'vast majority' of PRS properties can be improved, that a broad range of the most vulnerable tenants are helped, or that landlords are encouraged to carry out extensive energy efficiency improvements. Separate tests of what is cost effective for the landlord and for the tenant were also suggested, with the latter guiding government policy on the levels of finance provided to deliver benefits to health or the environment.

The definition of cost effectiveness was noted to have particular implications for installation of SWI which, it was argued, will not be cost effective for certain properties. Financial support for SWI was therefore suggested to be needed. Double glazing and microgeneration were also suggested unlikely to be considered cost effective in terms of payback. With respect to microgeneration the importance of the Renewable Heat Incentive (RHI) was highlighted, and it was argued that microgeneration systems will not become cost-effective without mass market uptake and economies of scale.

A definition of cost-effectiveness was also seen as potentially excluding works in the most rural areas where installation costs are likely to be highest. Grants, loans or assistance with lower installation fees were suggested to be necessary for work to go ahead. Older, rural detached properties, cited as the sector that probably most needs upgrading, were also seen as likely to miss out on major improvements.

With respect to the concept of payback over the lifetime of a measure, the importance of accurate data, independent of manufacturers, was highlighted. Given the potentially high costs of some measures, it was suggested that rather than payback over the lifetime of a measure the criterion should be:

- Energy payback over 3 years
- A reasonable return over 5 years
- Payback over 10 years

It was also observed that what is cost-effective and technically feasible will change over time and that it will be important to keep definitions under review.

Making it straightforward for both landlords and the supply chain to determine whether proposed measures meet the definitions was suggested important, and making simple modelling software accessible to landlords was proposed.

Technical feasibility

Points raised with respect to what is considered technically feasible included that a definition will need to take account of the wide variety of building types within the PRS, in both urban and rural areas. Potential difficulties in buildings with multiple ownership and/or different tenures were also noted. Suggestions included that:

- Technically feasible should mean that a measure can be installed and achieve the desired impact, without any negative knock-on impacts.
- It should be based on a professional technical assessment that is specific to the property.
- There should be provisions with respect to buildings that are listed, in national parks or in conservation areas. Further research to establish realistic targets and solutions for improving energy efficiency standards in listed buildings was proposed.

Exemptions

It was suggested that exemptions will be necessary, particularly for traditional buildings, and that details of exemption criteria are needed, but also that the Scottish Government should be clear about how exempt homes will eventually be raised to the minimum standard before setting an exemptions policy. Addition of a 'compassion exemption' allowing vulnerable tenants to refuse works was also proposed.

Other comments on exemptions tended to focus on the need for a system to be rigorous, with a risk that it could otherwise be open to exploitation. It was argued that:

- EPC assessments should be subject to quality checks to ensure there is no incentive for landlords to bend the rules.
- Decisions on exemptions must be made by appropriately qualified professionals. Independent examination of requests should be done at a local level.
- A minimum number of quotations should be submitted as evidence to ensure prices are not inflated. Alternatively, confidence in the independence of quotes could be provided by using a database or public forum to allow installers to bid for work.
- Exemptions should be reviewed on a regular basis. Suggestions included that a reapplication could be required at 2-year, 3-year or at least 5-year intervals, but not at each change of tenancy.

Prompt processing of exemption requests was argued to be of particular concern if change of tenancy is used as a trigger point, as delays could result in properties being left empty.

It was also argued that both EPC methodology and EPC reports must be improved, including measuring actual performance and being tailored to a particular property

to ensure inappropriate measures are not recommended. It was suggested that, at present, not all EPC assessors are qualified to carry out a detailed technical feasibility assessment. With respect to use of modelled data, a wide-scale monitoring project across Scottish housing was suggested, to inform decisions based on actual performance rather than theoretical assumptions.

Supply chain

Impact on Supply chain: skills and capacity

To develop a set of actions to achieve and fully implement a robust quality assurance framework for Energy Efficient Scotland that reflected the needs and views of the Scottish supply chain, an industry-led Short Life Working Group (SLWG) was set up. This included representatives from across industry, consumer organisations and enterprise and skills agencies. The Group met throughout 2018 and considered quality, skills and capacity, consumer protection, the non-domestic sector and procurement.

Overall, the Group made 19 recommendations for Energy Efficient Scotland and these are summarised in the consultation paper⁸.

The Scottish Government is considering the recommendations in the context of the development of other key elements of the Programme and will revisit all of the recommendations in due course. In order to engage more widely on the Group's findings, the consultation poses three questions: on the recommendations for quality control and consumer protection, on how these objectives can be achieved while allowing maximum participation from suppliers, and on the role of the Scottish Government in ensuring quality criteria are met.

Question 10 - The Short Life Working Group have made recommendations which they believe represent the actions required to ensure that Energy Efficient Scotland will achieve consistently high levels of quality, health and safety and consumer protection. Do you agree? If not, what more or less should be done?

Responses to Question 10 by respondent type are set out in Table 3 below.

Among those respondents who answered the question, a majority - 63% - agreed with the SLWG's recommendations, while 37% did not. 'Organisational' respondents were more likely to consider the recommendations to be correct than were 'individual' respondents, at 72% and 50% respectively. However, 38% of respondents did not answer the closed element.

⁸ The SLWG report is available in full at: <https://www.gov.scot/publications/quality-assurance-short-life-working-group-report/>.

Table 5: Question 10 - Responses by type of respondent.

	Yes	No	Not answered	Total
Organisations:				
Academic	1		2	3
Building component manufacturers/services	4	2	4	10
Energy related private sector	5		8	13
Local authority or interagency partnership	11	2	3	16
Other		1		1
Private landlord or property management		3	3	6
Professional or representative body	5	4	7	16
Public sector or body - other			2	2
SG delivery partner	2		1	3
Third sector	3		2	5
Total organisations	31	12	32	75
% of organisations answering	72%	28%		
Individuals	14	14	12	40
% of individuals answering	50%	50%		
All respondents	45	26	44	115
% of all respondents	39%	23%	38%	
% of all those answering	63%	37%		

There were 74 further comments at Question 10, the majority coming from respondents who had agreed at the closed element, but who went on to add qualifications or further suggestions. Several of the most extensive contributions were from respondents who did not answer the closed element. After a general summary, the analysis below is therefore arranged primarily according to the recommendation or topic referenced rather than by the respondent's answer at the closed question.

Some respondents noted their broad agreement, or agreement in principle, with the recommendations which were described as welcome, relevant and comprehensive. It was also suggested, however, that more detail is needed, that there is no indication of how the recommendations will be implemented, or that further details on targets or guidelines for delivery would be welcome. In terms of scope, it was argued that the SLWG's discussions were largely focused on the self-funding market, and that there needs to be consistency of approach across all residential sectors, or that there is currently too great a focus on installation and that a quality assurance framework should cover the whole process: 'planning, doing and checking'. Another general point was a call for a single national delivery body to oversee works carried out as part of Energy Efficient Scotland.

It was also reported that 47% of reported nuisance calls in Scotland in 2018 related to mis-selling and cold calling about energy efficiency products and that combined with relatively low levels of awareness about consumer rights and protections, this

underlines the need for a quality assurance framework and easily accessible system of redress.

Some respondents who did not agree with the SLWG's recommendations made comments relating to wider aspects of Energy Efficient Scotland or remarked on previous bad practice, lack of enforcement, or lack of redress. Others expressed disagreement with aspects of specific recommendations or identified significant additional content that they felt should be included, such as innovative alternatives to conventional retrofit using an industrialised approach, or proper recognition of the importance of consumer information and contractual issues.

More general comments on the SLWG included the need for the Federation of Petroleum Suppliers and OFTEC to be involved with the SLWG since, in their view, they are well placed to address a number of relevant issues. It was also suggested that the SLWG has placed too much faith in use of modelled data to deliver the objectives of Energy Efficient Scotland and that Scottish Government Delivery Partners who are members of the group may have a conflict of interest in this respect.

SLWG recommendations

Quality

Recommendation 1. There should be Quality Assurance criteria developed which detail the key mandatory requirements for suppliers wishing to participate in Energy Efficient Scotland.

Relatively few respondents commented specifically on Recommendation 1. While there was agreement with the development of Quality Assurance criteria, it was argued that creating consumer confidence requires that these criteria and the proposed Quality Mark (Recommendation 2) are meaningful and offer significant protection. If the Quality Mark does not insist on specific model terms as a condition of membership, it was suggested the quality assurance scheme will need to audit terms submitted.

There was support for Quality Assurance criteria to be presented in a central, comprehensive and accessible format, and for clear messaging to consumers.

Recommendation 2. There should be a Quality Mark for Energy Efficient Scotland and suppliers wishing to take part in the Programme will have to demonstrate that they meet all of the requirements through a robust vetting and verification process to achieve the Quality Mark. All approved suppliers should be listed on a publicly available directory and where possible the use of operative ID cards should be considered.

Recommendation 2 attracted the most comments at Question 10. Many of those who commented directly on this recommendation noted their support for a Quality Mark. Many, a small number of whom were amongst those offering general support, highlighted issues around alignment with, or avoiding duplication of, UK-wide standards. These were that any approach should:

- Be UK wide.
- Align standards to PAS2030, PAS2035 and TrustMark in line with the Each Home Counts Review, and avoid duplication that leads to additional burden for suppliers. 'Energy related private sector' respondents in particular made this point.
- Not lead to increased costs to small businesses.

In particular, it was argued that since any ECO work in Scotland has to be carried out by a business that is registered with TrustMark and has demonstrated compliance with PAS2030 and PA2035, it would make sense for the supply chain in Scotland to be aligned with these requirements. Further, establishing separate standards for Scotland could make it difficult for Scottish contractors to work elsewhere in the UK, and *vice versa*. Rather than establish a separate scheme, it was argued there should be a single assurance process and an agreement which confers approval on one scheme that meets the core standards of another. Additional requirements could be added to address any issues identified by the Scottish Government and the SLWG.

It was also suggested that a Quality Mark should not try to create a one-size-fits-all list of requirements, but rather should take a principles-based approach that sets high-level requirements and then allows companies to demonstrate how these requirements are met.

Clarification was sought as to how quality of work that is sub-contracted by accredited installers would be assessed and whether consumers would be protected, and it was suggested suppliers delivering measures outside Energy Efficient Scotland should also be encouraged to adhere to the same criteria.

Other points on Recommendation 2 were that:

- Communication of the Quality Mark criteria and consistency of the message being delivered will be key to success. It was reported that consumers are not aware of the existence of quality marks or the benefits of using companies who are registered under them.
- Clarification is needed as to the organisation(s) which will be vetting and investigating suppliers, and how the robustness of the system can be ensured. It was argued that the scheme must be prepared to exclude companies from the market and be able to defend those decisions. A publicly available Directory of Suppliers could include results from independent inspections and provide information on those suppliers who are subject to sanctions.
- Information is needed on whether there will be an appeals process for installers and how such a process would operate.
- ID cards could detail skills, training and competencies achieved.

Concerns were raised, however, that Recommendations 2 and 3 appear contradictory and that a 'robust vetting and verification process' will inevitably lead to bureaucracy and cost to SMEs and microbusinesses.

It was also argued that there may be insufficient time to set up the type of scheme envisaged for accreditation if the acceleration of Energy Efficient Scotland is agreed.

Finally, there was a view that more badges do not provide better quality and that it would be far better to have a 100% post install monitoring system.

Recommendation 3. The verification process must not place an undue administrative or financial burden on SMEs, particularly micro-businesses.

As noted with respect to Recommendation 2, it was argued that there is a risk that the type of verification process envisaged will impact on small and microbusinesses, and it was also suggested that, in general, suppliers would rather use existing processes than adopt novel frameworks. It was also argued, however, that the Scottish Government should focus on the primary objective of ensuring work is of a high standard and customers are protected.

Issues associated with small and microbusinesses were seen as having particular significance in rural and island areas, where much of the supply chain is made up of such companies. The lower availability of work in these areas means businesses may be unable to justify the costs involved in accreditation, with a negative impact on delivery of measures and on the local economy. Suggestions were that:

- Some consideration of rural/island proofing is needed to ensure a level playing field.
- While being constructed to ensure consistent standard, the process must be flexible enough to cater for different business models.
- A staged accreditation system could be considered, to allow micro-businesses access to particular markets while focusing on maintaining universally high standards.

It was queried whether the time allowed for suppliers to complete the Quality Assurance criteria is to be different for different sized businesses or locations and how suppliers would be supported through the process.

It was also argued that as the cost of being accredited with the Quality Mark is likely to impact SMEs, a vetting scheme provided by a not-for-profit organisation could help to support a level playing field for suppliers. Otherwise, it was suggested, there may be a tendency for suppliers to become members of those schemes that are cheapest and easiest to join.

Recommendation 4. Define what success looks like in terms of quality for the building, consumer and funder, and set specifications for the final output of work.

Comments on Recommendation 4 included that this is welcome and will both help to build a trusted market, and help consumers and funders to specify work. While it was seen as important that there should be a holistic view of a building's requirements, the Scottish Government was also advised to consider how the information about options can be provided so that consumers can make an informed choice.

Specific aspects referred to were:

- The need for advice to be high quality and property-specific and to include design and specification, as well as best practice installation and aftercare.
- A technical assessment to ensure the measures are suitable for the property concerned and will integrate with other planned or existing measures. It would also check ancillary work that may be needed.

It was also suggested that by considering the household as a whole and not limiting assessment of success to the building, advice and support could be tailored to support behavioural change where necessary. Use of customer satisfaction surveys was also proposed.

Recommendation 5. A new designer role should be considered to ensure that that a whole building approach is taken and that only the most appropriate improvements are applied in practice.

The new designer role was welcomed by respondents who commented specifically on Recommendation 5, although the retrofit co-ordinator role set out in PAS2035 was also highlighted. Good quality consumer advice from an impartial source was suggested to be invaluable, since this may otherwise fall to competing technology specialists.

Additional points raised were:

- A 'system designer' role would be a valuable addition to the building design process, ensuring heating systems are planned holistically and optimised in each case.
- Rather than having a role to 'ensure that that a whole building approach is taken', the designer should instead ensure that a whole house approach is considered, leaving the customer to decide the approach taken.
- Additional information and training on the hidden transaction costs associated with design and project co-ordinator roles might be needed.

Recommendation 6. Independent inspections of installations must be carried out as part of Energy Efficient Scotland to ensure quality standards are being consistently met.

Comments on Recommendation 6 included agreement that independent inspections should be carried out, with substandard installations investigated, and that an open and transparent assessment process will ultimately strengthen customer protection.

Other comments:

- In addition to post-installation inspection to ensure quality standards, a pre-installation inspection and verification service would be desirable, helping to ensure measures are feasible, appropriate and cost-effective.
- An audit should be carried out post-install to ensure that the measures have had the desired effect in reducing energy consumption, and to identify additional requirements for user training to maximise potential benefits.
- Consumer protection must cover both technical and contractual issues, and both require audit. Monitoring that focuses only on technical issues will ignore the problem of mis-selling and performance estimates must be examined from the perspective of the consumer contract.
- Inspections should be paid for by the installer and could form a specific element of a quotation.

While two respondents sought clarification on who will provide inspections, a third suggested suitable candidates to be Local Authority Building Control Services, or an accreditation organisation appointed to oversee the Energy Efficient Scotland supply chain.

Other elements seen as important:

- Some form of accreditation and monitoring of standards for inspectors will be required.
- A central collection point for inspection reports would allow monitoring of suppliers who are working across different regions or who are carrying out large numbers of installations that may be high-risk in terms of consumer protection.
- Effective enforcement is needed. It was suggested that under a certification scheme for microgeneration, installers of renewables were certified but little or no follow-up was undertaken to ensure quality of installation. Details of sanctions were requested, and whether temporary sanctions will be imposed during investigations.

Additional suggestions on Quality

Potential roles for other professionals such as architects, surveyors and planners, in the delivery of Energy Efficient Scotland were thought to have been overlooked.

The importance of robust monitoring and enforcement were also highlighted. It was suggested that if given responsibility for delivering these functions, local authorities would require additional resources.

Ongoing maintenance was also identified as being critical to the success of energy efficiency measures and it was argued this must be communicated to the consumer as part of the final handover.

Skills & capacity

Recommendation 7. Suppliers carrying out installs under Energy Efficient Scotland must meet appropriate skills and competencies. A skills and qualifications matrix should be developed and clearly communicated to the supply chain to reflect this.

Among respondents who commented on Recommendation 7 remarks were often focused on:

- Specific requirements for work on buildings of different types, especially those of traditional construction.
- A need for robust training for EPC assessors, including improvement to assessors' understanding of different building types, particularly traditional buildings.

It was argued that the competencies required to install energy efficiency measures are already specified in the National Occupational Standard which forms the basis of vocational qualifications such as 'Insulation and Building Treatments'. Other qualifications, such as the Award in Energy Efficiency Measures for Older and Traditional Buildings should also be used to augment knowledge.

To give confidence, it was proposed that a separate independent organisation should carry out assessments or that consideration should be given to how the role of assessor and installer are separated to avoid the potential for mis-selling. Recognition of the importance of training in acceptable selling activities and in contractual issues was also seen as important.

With respect to the proposed skills and qualifications matrix, it was suggested that this should be developed in collaboration with industry and may vary depending on the energy efficiency measures being installed.

Recommendation 8. The skills and competency requirements of the designer role should be determined and an analysis of current capacity within the workforce should be undertaken.

There was a view that Supply Chain Management techniques may be useful for developing frameworks for competencies and responsibilities between different elements of the supply chain, with the aim of promoting a holistic, process-oriented approach. The only other point on Recommendation 8 was that future

requirements, such as the need to future-proof housing for low carbon heating, should be taken into account.

Recommendation 9. A mobilisation plan for developing skills for the supply chain should be published to help provide pipeline security and build capacity.

Comments on Recommendation 9 were very limited and included both general agreement, and a view that it will not be possible to develop the supply chain to meet the level of demand projected.

Recommendation 10. Energy Efficient Scotland should be well advertised to the supply chain via roadshows, events, webinars and trade publications.

There were few remarks on Recommendation 10, but those who did comment advised it was very important to advertise Energy Efficient Scotland to the supply chain and to bring potential stakeholders together. Specific events for certain measure types were suggested.

Recommendation 11. Investment in Energy Efficient Scotland must support inclusive economic growth

One respondent noted agreement with Recommendation 11.

Additional suggestions on skills and capacity

A small number of respondents made additional points relating to education and training. It was argued that education and training on the installation and operation of energy efficiency measures, both for college students and existing tradespeople, is an important area missing from the current recommendations. A view was expressed that responsibility for training should be removed from private sector suppliers and placed into the college and further education sector.

Consumer Protection

General comments on Consumer Protection included an observation that this should be at the forefront of all actions, or that mistrust created under previous energy efficiency schemes must not be repeated. It was also noted that:

.. the mandatory nature of the upgrade process will require a high standard of consumer protection since the occupant does not have the option of not upgrading. An ombudsman could be created to allow householders to challenge “poor advice”. This would be beneficial due to the mandatory nature of upgrade actions, which may be expensive and contrary to the householders’ wishes.

Academic respondent

Recommendation 12. There should be a clear, simple and well-defined complaints process with support available for the consumer to navigate the process.

Some respondents who commented on Recommendation 12 agreed that there should be a clear simple and well-defined complaints process, or added that this should include a similar route for redress when things go wrong. Other suggestions were that:

- The complaints process, and the consumer protection offered by the Quality Mark, should be highlighted to consumers.
- There should be clear definition and messaging on when consumers are covered under the EES Programme and its resolution pathway.
- Provisional or temporary sanctions against suppliers should be possible in the event of serious or high-volume complaints. An example was cited of a company being able to continue trading as an authorised Green Deal provider despite numerous complaints.

Clarification was also sought as to which organisation would be responsible for the central complaints register and what the process and timescales for investigation would be. How consistency of decision making across Scotland can be ensured was also raised and suggestions were made for tackling phoenix companies within the sector.

Noting their disappointment with the recommendations on consumer protection, one respondent observed that:

While we agree that the complaints process is important, it is the final stage on a long journey that should have protection at every stage.

Other respondent

It was also suggested that it may be necessary for the Quality Assurance scheme itself to become an Alternative Dispute Resolution (ADR) provider.

Recommendation 13. There should be data sharing between key agencies in Scotland to monitor the frequency and nature of complaints, and identify and deal with non-compliant and rogue companies promptly.

Comments on Recommendation 13 included that a proposal to identify and deal with non-compliant and rogue companies is particularly valuable. Sharing data was thought to be sensible and to bring a number of advantages, with use of a range of data sets seen as essential.

It was argued that data sharing between bodies such as Citizens Advice Scotland and Trading Standards Scotland could help to monitor the frequency and nature of complaints received. The 'public sector or body – other' respondent making this point added that in the light of their own role in enforcement and in leading policy on unfair terms, they would like to be able to see complaints on unfair terms issues.

Recommendation 14. Consumers and suppliers should be encouraged or required to enter into a contractual agreement outlining the responsibility of the supplier completing any of the retrofit stages.

Use of contractual agreements was supported, with the argument that it brought distinct advantages to consumers. It was suggested that such agreements could outline and define the responsibility of suppliers, and could simplify the complaints process by making it clear to consumers who to approach in the event that something goes wrong. Use of a recognised template, designed with input from a range of stakeholders including consumer protection organisations, was proposed.

However, the statement that ‘consumers and suppliers should be encouraged or required to enter into a contractual agreement’ was regarded as a cause for serious concern for one respondent. They argued that it is *essential* that contracts are in place, and that they must be legally sound and fair. The use of Competition & Markets Authority guidance on Unfair Contract Terms Guidance was recommended.

Other points raised:

- Problems when a supplier goes out of business and cannot fulfil its obligations or offer consumer redress must be addressed.
- Multi-occupancy buildings, that may also have mixed tenure, may present particular problems. Where present, providers of factoring services will be involved in interactions between owners and suppliers, but in the absence of a factoring service, owners will need an established means of coordinating to ensure a programme of upgrades to the building meets the required standards.

Recommendation 15. A campaign of awareness raising about Energy Efficient Scotland and energy efficiency retrofit in general should be undertaken during the transition period and beyond.

Raising awareness was seen as essential for both supply chain and homeowners. The potential role of supply chains as ambassadors for energy efficient retrofit was also noted. Proposals included campaigns tailored to address trigger points, barriers and advice requirements for different sectors and communication setting out what Energy Efficient Scotland customers should expect, including information on standards, installation costs, customer service and outcomes. Use of scenario testing to identify consumer detriment was seen as vital, particularly as many sales are likely to be off-premises sales and sales to vulnerable consumers.

Recommendation 16. There should be support and advice for consumers on guarantees and warranties.

Points on Recommendation 16 included a welcome for the advice and protections recommended, and that:

- Minimum standards for guarantees and warranties should apply to both installation and materials, with appropriate cover for defects and liabilities, and these should be clearly communicated to consumers.
- As businesses may cease trading, customers should have access to insurance-backed guarantees (IBGs), signed off by a panel of financial experts and consumer protection advocates. Alternatively, funding could be set aside to provide an ultimate recourse to redress and compensation when all else fails.

A link between guarantee and warranty information and a property's EPC was also proposed, with a 'building passport' of information about the property including maintenance and replacement requirements. It was argued that advice on maintenance and consumer behaviour could also help ensure guarantees and warranties are not invalidated through improper, or lack of, maintenance.

Provision of plain English guides offering accessible and practical advice on how to use the products consumers have had installed were also considered necessary.

There were no specific comments on Recommendations 17 – 19, concerning the Non-domestic sector and Procurement from respondents, although the issues were discussed at the workshops.

Workshops' perspective

General points about the context in which quality assurance will operate were:

- There are issues around performance gap and design, and quality assurance is currently poor in this regard.
- The Passivhaus Planning Package is a better predictor and is more accurate than EPCs.
- There is a perception at least that some programmes focus too much on cost as opposed to quality. The Scottish Government may want to redefine/define Value for Money.
- Thought will be needed as to how a possible two-tier system, with a Scottish quality mark for the Programme, sits alongside a UK government supported Trustmark and links to ECO funding.

There were suggestions as to other quality assurance schemes or approaches that could be drawn on. These were that:

- European accreditations may be worth considering as these fit with the Microgeneration Certification Scheme (MCS) and also relate to various IOS standards.
- The quality assurance requirements for Passivhaus design may offer lessons to be learned.

- Consideration should be given to how Warmworks carry out inspections.

In terms of how quality assurance might be delivered, it was felt that it will be important to consider the quality assurance mechanisms the market currently offers and that carrying out a gap analysis may be of value. There was also a view that independent inspections are critical. There were concerns that quality assurance-related costs, combined with no guarantees of work, could be a barrier for some and could mean the MCS in particular is seen as inaccessible to SMEs. Also in relation to costs, it was suggested that while the proposed designer role is a positive step it will lead to additional costs for suppliers.

Workshop participants raised concerns about there being sufficient skilled people in place should targets be introduced; the importance of upskilling was emphasised. In terms of possible approaches, comments were that:

- Recognising existing learning is as a good way to identify skills as requiring qualifications and accreditations, not least because these could be expensive.
- There is a question around how to incorporate the required learning into the education and vocational supply stream. In particular, how can young people be engaged.

Participants thought it important that lessons are learned from Green Deal, and it was reported that Warmworks have a good record.

The deposit protection scheme via MCS members was given as an example of a good consumer protection approach.

Workshop participants raised concerns about the European Single Procurement Document. There were calls for clarity around some of the questions and that it should be written in plain English.

It was suggested that SMEs are put off by the Public Contracts Scotland website, and the procurement process generally.

There was general support for the SLWG recommendations, with a view that joined-up thinking across agencies will be important. It was also thought that one approach across Scotland is not likely to be effective and that different targets and rules should be in place for remote/rural regions for example.

There were also calls for a focus on increased localisation and using local services and businesses. It was suggested that the Home Energy Scotland network could be used to help this take place.

Another suggestion was that advice should be taken from trade bodies and associations about what is possible and how best to proceed.

Question 11 - Do you have any views on how this can be achieved whilst at the same time ensuring maximum participation from suppliers across Scotland regardless of their size and geographical location?

In total, 69 respondents answered Question 11. Several of the points reflected issues raised at Questions 4 and 10 and are only noted briefly here, where the analysis focuses on the size of suppliers and their geographical location.

Sustained level of demand and funding

Several respondents pointed to the importance of long-term policy, predictable demand and sustained funding in order to create interest within the supply chain and ensure small companies see the benefits of being accredited.

Procurement

A small number of respondents commented on aspects of the procurement process which, it was argued, should be made fairer or more accessible for SMEs and microbusinesses. Specific issues identified were:

- Time frames. Evaluation of Energy Efficient Scotland Phase 1 pilots was reported to have found that short-term funding schemes favour larger contractors who are able to mobilise their workforce at short notice, with the potential to exclude small, local contractors.
- Competition: Pilot evaluation also revealed a view among study participants that work is often won by the same contractor, suggesting greater opportunity for more contractors to participate is needed.
- Achieving lowest cost. The potential tension between economies of scale and awarding small contracts to suppliers was noted, with a suggestion that high quality procurement routes are needed to manage this. It was also suggested that the lowest price tender rarely represents the lowest cost at the end of the job, since variances throughout the contract may be used to make up a shortfall.

It was argued that since local authorities may not have sufficient in-house legal and procurement experts, a hub of procurement expertise should be considered. Delivered via the National Delivery Mechanism and/or specialist procurement organisations, such a hub could support and assist coordination of Energy Efficient Scotland and identify opportunities for shared project delivery.

A mechanism whereby LHEES procurement can favour local businesses was also proposed, with the argument that in the absence of such provision, there will be a drain of installers and assessors to the most populated areas with the risk of increased costs in rural and island areas. It was reported that in some geographical areas, low volumes of work mean incentives or financial support to installers will be needed. Possible additions to the tendering process were also suggested, for example to illustrate how winning work could contribute to the local economy, or that training programmes would provide community benefit outcomes and provide skills in areas which may be suffering a shortage.

Delivery

A national delivery body with responsibility for delivering Energy Efficient Scotland was proposed by two 'SG delivery partner' respondents. Successful delivery of the Warmer Homes Scotland scheme was cited as demonstrating how such an approach can ensure maximum participation from the supply chain, regardless of their size and geographic location.

A focus on local delivery and local area based programmes was also suggested, with local authorities seen as well placed to maximise participation within their own areas. Giving particular consideration to delivery in rural and island locations was also advised.

Other suggestions were that:

- Nationally administered supplier/contractor frameworks could be allocated on a regional basis, and be monitored by the local authority in their area with financial support provided by the Scottish Government.
- Rather than attempting to apply a centralised model, areas could be defined according to their similarities, and stakeholders consulted to determine what the impacts are likely to be.

Understanding and supporting local supply chains

The importance of understanding local supply chains was highlighted by a 'local authority or interagency partnership' respondent, who described their own work in this respect. They reported finding it hard to identify and contact the local trades' community and suggested that the creation of a trades' representative to represent all trades in an area could be a key support mechanism. It was argued this could also contribute to development of a communication campaign targeting local trades. Specific funding to local authorities to help them to gain an accurate picture of the help needed by SMEs was proposed.

Supporting local supply chains was seen as important. A 'third sector' respondent noted their own findings that a Scottish energy efficiency scheme which focused efforts on rural areas did well in countering the urban bias of some UK-wide schemes.

Education/training

Respondents noted the importance of education or training, including that by providing training in the trades supporting Energy Efficient Scotland, colleges will assist in strengthening local economies. It was suggested that training requirements across Scotland should be identified, with managed and certified training packages arranged in locations around the country. Suitable training for Trading Standards and Building Control officers should also be available.

It was also argued that appropriate training in energy efficiency retrofit should be required regardless of the geographical location or size of the business involved, and that other sectors within the construction industry would not accept lower standards of training because of a company's size or location.

Aspects of a Quality Assurance scheme

It was argued that existing procurement frameworks can exclude smaller contractors who do not have resources or time to undertake additional accreditation:

... any new accreditation framework needs to account for the existing skills and qualifications that a range of trades and organisations hold and explore how these can be acknowledged when appropriate and upgraded for entry onto the frameworks.

Academic respondent

Respondents suggested that any scheme should be easy to join to encourage engagement with small local suppliers, that assistance could include funding for training or certification, and that consumer protection schemes should be 'seen to support legitimate honest business to get things right'. It was also argued that an effective complaints process that removes rogue businesses might encourage those with smaller margins but better working practices.

As at Question 10, several respondents pointed to the benefits of harmonisation of accreditation schemes, with adoption of, or alignment with PAS 2030, PAS 2031, PAS 2035 and TrustMark all proposed. It was suggested that costs associated with duplication of accreditation schemes would have a disproportionate effect in remote and rural areas. While it was noted that a new scheme could provide an opportunity for industry engagement in creating something particularly relevant to Scotland, it was still suggested that equivalency with other schemes would be required.

A small number of respondents referenced the MCS and the Renewable Energy Consumer Code as potential models for a quality assurance scheme for Energy Efficient Scotland. Bringing work into the Building Regulation system was also suggested, with a scheme similar to the current Certification of Design and Construction.

Introduce standards

Several 'local authority or interagency partnership' respondents suggested the recommendations should be introduced as standards to be met by suppliers, that there should be a rigorous installer registration scheme, and that a register of assured trades is set up and maintained locally.

Small firms

A small number of respondents suggested measures that might be taken to avoid potential exclusion of SMEs from Energy Efficient Scotland:

- Staged accreditations could be required, with accreditations linked to specific measures or building types.
- Initially, SMEs could work for larger contractors that can meet all accreditation conditions. A requirement to take an SME 'under their wing' could be built into

a first round of contracts, on completion of which, the SMEs that are assessed as competent could go to take on work directly.

Engagement

Industry bodies and professional organisations were argued to be important, both as a route to engaging with tradespeople, particularly SMEs, but also to ensure that quality standards are achieved. It was suggested that a wide ranging, holistic approach to explain why action is necessary would help to engage with the industry. In terms of stimulating interest in Energy Efficient Scotland, publicity was regarded as important. Regional meetings and roadshows for working groups were described as invaluable, not only making it easier to for companies to participate, but also giving those who travel outside their own region a more rounded picture.

Workshops' perspectives

Participants felt that any tendering process for contractors should be kept simple, and there were concerns that many suppliers, particularly those at the smaller end of the SME scale, do not have specialist skills needed to deal with tendering.

In terms of other features of a tendering process, comments were that it should be clear that quality requirements extend to sub-contractors. Finally, it was noted that the European Single Procurement Document is recognised as a quality check.

There was general support for the introduction of a card scheme.

Participants raised concerns about the knowledge base of the current workforce. It was noted that, for example, a four-year plumbing course includes little training on renewables.

In terms of the future pipeline of skilled people, participants suggested educating children from an early age on the benefits of getting involved with the trades, as well as recognising energy efficiency as an industry.

Other issues raised by those attending the workshops were that, while industry itself should not develop the approach to quality assurance, they should work on the project in partnership with the Scottish Government. Specific suggestions for features of a quality assurance approach were:

- Renewable heat should have something similar to the Gas Safe Register in terms of a registered card scheme. Any registers developed should be trade body led and people would have to sit a test to get on register.
- As well as a standardised product approval standard, there needs to be a standardised design tool for renewable heat, and particularly for heat pumps.

In terms of measuring what success looks like, it was suggested that EPCs are unreliable. There was also concerns about the lack of policing and enforcement of EPCs.

Participants thought it was important for the Scottish Government to look at monitoring, for example because problems were reported as part of the SEEP pilots. Looking at best

practice examples of firms operating in the market to consider lessons learned was also proposed.

Workshop participants also considered quality and consumer protection. They raised concerns that there is a lack of understanding around where householders should turn if they experience difficulties. Trading Standards were seen as a likely option, although there was a query as to whether, if so, additional resources need to be made available to those services.

There was also a proposal that additional consumer protection options will be needed, including around advocacy and advice.

Question 12 - What do you think the role of Scottish Government should be in ensuring the quality criteria are consistently met?

In total, 82 respondents answered Question 12. Although some common points were raised, responses at Question 12 were diverse, often reflecting issues and perspectives that respondents had raised at earlier questions. The list below is not exhaustive but pulls together more frequently raised topics. However, all responses are available in their entirety to the Energy Efficient Scotland policy team at the Scottish Government.

Policy and delivery

Key high-level roles were suggested to be providing policy, creating an appropriate legal framework, and having strategic oversight of standards to ensure quality criteria remain fit for purpose. Regulation and monitoring to ensure that quality criteria are met consistently were also suggested.

Differing views were expressed on the degree to which government might be involved in delivery and administration. For example, one respondent suggested:

There should be involvement on some level at least by providing a mechanism for the setting of universal guidelines. The risk of the perception of government interference must be considered.

Energy related private sector respondent

while another commented:

The Council views the Scottish Government as playing a central role in the delivery of Energy Efficient Scotland. The Scottish Government should lead on administering a national framework for suppliers and installers, product eligibility, compliance with manufacturer installation guidance to ensure a consistent approach across the contracting base in Scotland.

Local authority or interagency partnership respondent

It was also suggested that the Scottish Government should set up a national delivery body and work collaboratively with the appointed body to uphold the quality standards of the Programme. Responsibility for developing standards and engaging with relevant agencies should be within the remit of the body overseeing the wider delivery.

An additional proposal was that the Scottish Government should itself report to an independent statutory body such as the Committee on Climate Change.

Other actions suggested were:

- Intervene where there is market failure.
- Implement a compliance procedure with resources for enforcement.

Support for Local authorities

It was argued that while standards could be agreed at a national level to ensure consistency, responsibility for compliance should be devolved to local authorities who would require additional resources. 'Local authority or interagency partnership' respondents in particular made the latter point.

An alternative suggestion was that to relieve councils of such responsibilities, a third party could be appointed to carry out this role.

Developing quality assurance

Suggestions on quality assurance included that the Scottish Government should:

- Ensure the requirements of the Quality Mark accreditation are met.
- Provide quality assurance accreditation by a not-for-profit organisation.
- Support existing quality assurance frameworks where possible and avoid duplication that adds to costs. Specific suggestions were: establishing a GB-wide standard; outlining a position on PAS2035; working with the British Standards Institute to establish guidance; promoting TrustMark; and providing clarity on the relationship of Quality Mark to other schemes.
- Develop 'an entirely distinct Scottish perspective, in effect at the cost of ignoring the UK operational landscape' but with 'parity across the UK on a fundamental core level'.
- Establish a system of registration for contractors, a publicly available directory and a formal code of practice for contractors to sign.
- Ensure all traders are members of an approved consumer code.
- Ensure certification bodies are effective in policing the industry.
- Create an audit body for energy assessors.
- Set up a national agency to oversee training and certification.
- Apply consistent quality assurance criteria for all housing sectors.
- Allow landlords to source their own contractors.

Enforcement

'Individual' respondents in particular were amongst those who suggested inspections or independent inspections and sanctions for substandard work to be priorities. One 'building component manufacturers or services' respondent suggested the Scottish Government should:

...set up a framework where the supply chain KNOWS their work will be checked.

Building component manufacturers or services respondent

Random audits, third party audits, and support for local authorities to undertake audits were all proposed, as were spot checks on completed works and site inspections for live sites, post-install monitoring, and monitoring in use performance.

Complaints procedures

It was suggested there should be independent arbitration or that ADR should be used deal with disputes between consumers and suppliers. Appointment of a regulator or an ombudsman were also proposed, as was a route to redress via the Housing & Property Chamber First-tier Tribunal.

A government backed guarantee or an IBG was argued necessary to protect consumers.

Sharing information

A framework for data sharing between agencies was suggested to identify poor work and manage complaints. It would also provide a mechanism for learning from recurring issues and adjusting the programme accordingly. Other ideas were that:

- Details of directors as well as suppliers should be held centrally to reduce the risk of phoenix companies within the sector.
- Quarterly publication of statistics on numbers of failures, speed of repair, actions taken for redress, and sanctions imposed could be used as part of a marketing campaign for Energy Efficient Scotland.
- Best practice from existing Energy Efficient Scotland projects should be shared and promoted.

Providing advice and information for consumers

Providing advice and information for consumers was considered important, with a specific proposal for a one-stop-shop for access to advice, assessments and a directory of installers; a way to report complaints and to look for redress.

It was suggested that householders should be provided with user guides reflecting realistic outcomes for the products installed, how to use them and how to protect warranties and guarantees. A further suggestion was to give landlords access to limited EPC software to model their properties and allow better understanding of the most cost-effective measures for improving the performance of a building.

Develop the supply chain

Long term commitment to energy efficiency policy was cited as a condition for market growth and innovation, with policies to drive demand in the self-funded sector noted as drawing suppliers and installers into the quality control programme.

Improve EPC methodology

It was argued EPC methodology must be improved and EPCs validated against actual energy performance data.

Take a different approach

Rather than concentrating on management of traditional approaches to retrofit, it was suggested that the Scottish Government should consider techniques and capacity to deliver net-zero deep retrofit.

Workshops' perspectives

There was broad support for an approved directory of suppliers, which would include consumer feedback and that this approach could support the early identification of, and action against, rogue companies.

In terms of aspects of the process that feed into quality, options given were tidiness, flexibility and causing the minimum of disruption. It was also suggested that a directory could helpfully be set out by region. It was also proposed that any directory could include details on the level of insurance each supplier carries.

There was also support for creating a new designer role.

In relation to suppliers accessing funding, comments were that if suppliers do not meet requirements, they should not be able to continue in any programme, and in particular should not be able access any finance for their clients.

Other comments were that the quality assurance for Government schemes should comply with PAS 2035 and that the Scottish Government should introduce legislation to support quality assurance. It was also reported that some schemes are already well audited and monitored and have robust processes in place.

Participants thought that, while Home Energy Scotland is a one-stop-shop for front end advice, there is no source of advice at the latter stages or after the completion of any installation.

An equivalent offering to answer technical queries during works and checks on the works was proposed. As an example, it was reported that at one point the Scottish Government employed a technical contractor to answer questions connected with having accessed the Warmworks programme.

Further comments were that any back-end advice would need to be independent and operate at the national and regional level.

Heat Networks

The consultation paper notes that the Scottish Government wants to see the growth of heat networks in Scotland continue and accelerate and recognises that there may be further ways it can assist with this. The introduction of a regulatory framework and licensing system are proposed in order to provide certainty to the sector and investors as well as raising consumer acceptance and awareness. Evidence is sought from the sector on whether further incentives or on-the-ground assistance could be made available to support the deployment of heat networks – or whether there are specific mitigations to the risks that may be considered. Pages 24-27 of the consultation paper (as referred to in the question, below), set out a range of issues for respondents to consider, including in relation to current incentives for market growth.

Question 13 - (Taking the above into account), what further incentives could drive further heat demand onto networks?

A total of 65 respondents provided a comment at Question 13, Question 14 or at both questions.

A small number of respondents submitted very detailed and extensive comments in relation to low carbon heat and heat networks.

The analysis presented below gives an overview across all responses submitted. All responses are available in their entirety to the Energy Efficient Scotland policy team at the Scottish Government

With regard to the current situation, views were that:

- The development and set-up of heat networks is costly and time-consuming.
- This can be a particular issue for off grid, low density housing in rural areas. Incentives are of no value if there is no local heat network, and rural Scotland is particularly likely to miss out.
- The cost of supplying renewable heat to individual homes is high compared with that of a communal supply and heat network.
- An unfair business rates regime needs to be addressed to put heat networks on an equal footing with independent gas networks.

In terms of driving further heat demand, there was a view that:

Ultimately it will come down to cost. If domestic and commercial consumers alike can be guaranteed reliable, cost-effective heat over the long term they will be keen.

Energy-related private sector respondent

A number of respondents, including several 'local authority or interagency partnership' respondents, commented on the importance of funding and incentives

continuing to be in place going forward, an example being that the granting of District Heating (DH) concessions remains one of the most effective means of driving demand onto networks. An 'academic respondent commented that heat networks do not currently appear to be economically viable without significant external funding. Viability, risk and regulation are discussed further at Question 14.

A small number of respondents reported that current funding streams are not sufficient to support heat network development in Scotland or that new/additional support will be needed.

Conditions for, or features of, an incentives approach

In terms of the conditions or arrangements that need to be in place to make a programme of incentives effective, it was suggested that:

Local authorities typically will work on short term financial planning of less than ten years, yet a heat network is a long-term investment that may well pay for itself over a period of decades. Local authorities need to be enabled and directed to consider these investment time scales or, preferably, the Scottish Government could consider heat networks as a national infrastructure issue...

Academic respondent

Other views were that:

- Scotland should be moving to a principles-based framework which has customer outcomes at its heart, and which focuses on whole lifecycle carbon reduction.
- Recently developed Socio-Economic Analysis methodologies could support decision makers to base decisions on a variety of social, environmental and economic factors, rather than cost alone.
- There should be a robust cost benefit analysis demonstrating that heat networks are the most cost-effective way of decarbonising the heat supply.
- Funding should be focused on projects that aid in reducing fuel poverty and further delivery of Scotland's decarbonisation targets.
- The approach needs to sufficiently de-risk investment in heat networks and other low carbon generation by helping to bring down the costs of funding.
- Heat tariff prices could be kept down if public funding avoids sole reliance on commercial finance.
- Regulation of heat networks would increase confidence and encourage investment. (This is discussed further at Question 14.)

Suggested features of any future/new funding streams included that they should remain focused on capital costs and avoid direct subsidies that prompt short-term demand and do not sustain the market beyond the life of the support mechanism. A different perspective was that incentives should be made available for 'conventional', well-performing heat networks rather than being contingent on innovation.

In terms of overall funding streams, it was argued there should be continued revenue support, through the RHI (or similar), to make low carbon heat competitive against natural gas where a (District Heating Network) DHN is serving existing buildings.

Other views were that incentives should:

- Be long-term, as energy infrastructure has a long pay-back period, and a long build-out period.
- Have a consideration of lifecycle costs embedded.
- Have the option of some form of balloon funding at the start and be designed as gap funding.
- Enable existing and new buildings to be future-proofed and suitable for low carbon heat options. The focus could be on the carbon intensity of the heat source, be technology-neutral and encourage the most energy efficient solution within an area.
- Be targeted at not-for-profit schemes. This could be instrumental in shifting energy from a commercial to a social/community basis.
- Cover the cost-effective local green production of electricity and then the use of that electricity locally. It was noted that many rural areas have no access to 'heat networks' or cheap rates for gas heating so otherwise rely on costly fossil fuels and electricity for heat demand.
- Provide more of a focus on the opportunities for small heat networks which can provide a low carbon, cost-effective solution in rural off-gas areas.

An alternative perspective was that a little-used incentive is to:

...build the societal case for DHNs in specific places, simultaneously contributing to a new heat policy narrative... At present, DH development is typically framed as economic or business opportunity for users and investors, rather than as a necessary or best value/optimal contribution to a societal project of heat decarbonisation.

Academic respondent

Specific incentives suggestions

General comments were that tax incentives, loans or interest free-loans, and grants should be considered. There was a view that grant-funding packages would allow local authorities to dedicate more time and resources to working with both the private rented and owner-occupied sector.

One proposal was that public funding could be structured as a form of bond issue (such as a low carbon heat bond). Another was that the Scottish Government could develop and deliver new heat networks through the Scottish National Energy Company and a Scottish Energy Development Agency, supported by financing from the Scottish National Investment Bank.

Suggestions included:

For heat network developer or suppliers

- Capital funding for the civil engineering (boreholes, water abstraction, energy centre construction) needed to make low carbon heat inputs competitive against gas where a DH network serves existing buildings.
- Grant assistance for local authorities to implement DH projects.
- An ongoing role for the District Heating Loan Fund run by the Energy Saving Trust; this type of support together with grant support for certain projects with a weaker business case remains important.
- For existing buildings where licenced operators have been granted a wayleave for a district heating connection, provide public funding to subsidise connection costs where these exceed the cost of the counterfactual boiler.
- Support for low density off-grid housing; the cost of pipework massively precludes heat networks in rural areas.
- A reduced or zero rate of VAT applying to DH networks and sale of energy.
- Funding for community schemes.

For property developers

- Grant assistance to implement DH projects.
- Providing incentives for new builds to be made 'DH ready'.
- Reward housing developers that install district heating networks when developing new-build housing sites over a minimum number of units per site.

For the owner occupied sector

- 100% finance packages.
- Council Tax incentives.

For the PRS

- Loans, combined with other incentives.
- Grants for heating, solar panels and redecoration costs if required.
- Improved RHI funding.
- Financial support for capital investment and ongoing operation costs.

Customers/consumers

Respondents also provided possible options focused on the customer/consumer, including potentially as the owner or renter, as above. These were:

- A similar scheme to the RHI or Feed-in Tariff for customers.
- Reducing prices for those using heat networks to below the lowest available prices on the open market and tracking these prices for a fixed period.

- A boiler scrappage scheme if connecting to a DH network. Payments could be scaled depending on whether the customer is moving from gas, electricity, oil or LPG.

Development/set up stage

Some of the proposals focused on the set up or early stages of a heat network:

- Initial grants or kWh incentives to secure a base load to justify a new heat network, with falling costs as uptake increases reducing the need for subsidy.
- Providing connection fee subsidies- particularly for anchor loads. This would help reduce connection fees and encourage more demand onto networks.

Energy rating

Others focused specifically on incentives associated with energy ratings:

- An incentive for energy rating to ensure that the DH option is more beneficial than standard selections. Incentives associated with good EPC scores.
- A financial incentive equivalent to the Feed-in Tariff or RHI; this could be linked to the carbon intensity of the metered heat delivered to end users of a heat network.

In addition, the Scottish Government was encouraged to explore further ways in which funding from supplier obligations such as ECO could be better tailored to incentivise and fund new DH connections.

Although there was widespread support for the use of incentives, it was suggested that incentives need to be replaced by compulsion for new developments adjacent to existing heat sources.

Question 14 - (Taking the above into account,) what further assistance could support the growth of appropriately sited, low carbon heat networks?

A small number of respondents questioned whether the argument has been made in relation to heat networks:

There is no clear view or commitment that heat networks will sufficiently decarbonise to be a useful solution in 2050. We, along with many others, have little or no confidence that heat networks are an affordable solution for the longer-term future, other than in a few specific one-off locations.

Building component manufacturer or services respondent

Further comments were that:

- In particular, the argument has not been made for existing housing stock.
- The decarbonisation benefits of DH may only be realised when the distribution system is combined with low carbon heat sources.

- Smaller community networks can be efficient and can be fully decarbonised today, so are fast becoming a solution that is easier to adopt, especially where fabric measures are limited by archetype and aesthetic restrictions.
- There is no guarantee that Heat Networks are cheaper than stand-alone systems, particularly with gas prices so low and organisations wanting reliance in case heat networks break down, or the price of heat from the network becomes even more expensive.

Strategic and operational context

A number of respondents commented on the importance of the Scottish Government giving a clear message about the future of heat networks, specifically in relation to:

- A more ambitious longer-term goal, based on what is needed, rather than what can be afforded today. This would help industry and clients move towards technologies that can deliver the performance required.
- Electricity or gas/hydrogen. This was seen as important in terms of encouraging both investors and members of the public to make investment decisions for their home and heating system.

A small number of respondents set out an overall approach they saw as best underpinning heat network policy:

- One approach placed networks policy within the context of a broader policy mechanism for decarbonising Scotland's heating, applying heat zoning and energy master planning to the deployment of heat networks.
- It was proposed that the Scottish Government and industry should work together to develop a viable mechanism that can support strategic investment in heat networks such as 'demand assurance', heat zoning and concession schemes.
- It was suggested that local authorities should be empowered to implement Heat Transition Zoning, a whole-system approach which supports the deployment of all technology-types. It was reported that this approach will allow the Scottish Government and local authorities to tailor support to the appropriate solutions, through zoning.

Another respondent commented that there is a stronger requirement for heat networks to emerge through systematic development and implementation of heat strategy, policy, heat mapping and the planning system, leading to the creation of heat network Concession Zones. These Concession Zones would be those areas where heat mapping has proven that a heat network would be a viable solution. The evidence would be adopted in local plans and policy to allow the planning system to require developments to prioritise connection to the network unless there was a strong case not to connect.

There was also a view that the focus should be more specifically on low carbon heat rather than just DH, including because the development of low carbon building-scale technologies is a more realistic prospect in a lot of cases and areas.

Viability, risk and regulation

A number of respondents made comments around viability and risk. For example, a 'local authority or interagency partnership' respondent reported:

There are a number of good case studies of the delivery of heat networks in Scotland (namely the big City authorities) but... many of the Councils in Scotland still struggle with the risks and potential lack of expertise of getting involved with, and/or delivering, heat network schemes, this is compounded by more rural or semi-rural areas with housing density below that which could support a financially viable district heat network.

Local authority or interagency partnership respondent

Other comments focused on the viability of schemes, for example:

- Local authorities, the NHS and other public bodies need to be able to commit anchor loads to help DH schemes to be viable and as an incentive for the critical loads to become available. There was also reference to universities, prisons and Defence Estates.
- Concession arrangements are a useful tool for addressing investment and demand risk. To have a substantial impact on investment they need to include some form of obligation to connect or need to cover a large enough area that network operators can make use of delivery at scale.
- Today's low carbon heat market, including heat networks uptake, is primarily policy-led, therefore a regulatory framework will help to provide legal certainty to investors and reassurance to customers.

Following on from the latter point, other respondents also made the connection between risk, regulation and consumer protection (discussed further below). It was recommended that a statutory framework should be established that underpins regulation of all heat networks and that:

This regulatory framework should be designed to ensure that all heat network customers are adequately protected. At a minimum, they should be given a comparable level of protection to customers of gas and electricity in the regulated energy sector... The sector regulator should be given formal powers to introduce regulation in these areas, and to monitor and enforce compliance with regulations.

Public sector or body - other respondent

It was also noted that there needs to be confidence in the market for households to accept the proposition of one provider having a monopoly on a DH network.

Role of LHEES

A number of respondents commented on the role of LHEES, including that their strengthening will be important:

....as a mechanism for driving investment by introducing a statutory duty on Local Authorities to deliver against the zones identified for heat networks.

Energy-related private sector respondent

Specifically, the need to have teeth in order to address a central issue for heat policy - demand risk - was highlighted, (see below) along with arguments that:

- The LHEES process should be a useful tool that will enable local authorities to take action on enforcing planning and air quality requirements, in turn driving more demand onto networks.
- To be effective LHEES will need to consider impacts of energy price, energy availability, and how actions are enabling the delivery of carbon reduction targets.
- LHEES should be integrated into Local Development Plans (LDPs) and Scottish Planning Policy (SPP) should state clearly that LHEES DHN zones and the new-build developments flagged within them (as well as potential sources of heat) are to be integrated into the LDP at the outset and when allocating land.

That the proposals include the ability for local authorities to discharge jointly their duty to produce a LHEES was welcomed; it was noted that the practical realities of heat networks and other energy efficiency measures and strategies will mean that some degree of cooperation between local authorities will be necessary.

In terms of building the societal cases for DH (as discussed at Question 13), it was suggested that a first step is to use the LHEES process for heat planning and building cross-sector consensus on the best available area-based solutions. It was noted that participatory mechanisms can give local people a voice and can help in building a local commitment to change.

Consumer protection

Although the Scottish Government does not have the power to legislate for consumer protection, stakeholders made several suggestions on how this should be provided.

Some respondents commented on the importance of ensuring consumers are adequately protected, including thereby giving them an incentive to join a heat network. It was suggested that the regulations should cover:

- Price: with 'principles-based' rules or guidance on pricing, requiring heat networks to give due consideration to whole-life costs during the design and build phases, and how this is likely to impact prices for consumers.

- Quality of service: with customers given similar protections to gas and electricity customers, particularly in relation to the quality of service and protections for vulnerable customers.
- Transparency: with rules or guidance as to the level of information that is necessary, and to allow customers to make appropriate decisions when considering whether to live in a property with a heat network.
- Minimum technical standards: with all heat networks complying with a new set of minimum technical standards, focusing on measurable performance outcomes, such as operational efficiency.

It was also proposed that the sector regulator should be given formal powers to introduce regulation in these areas, and to monitor and enforce compliance with regulations. Either OfGEM, or the new Consumer Scotland body where cited as possible regulatory bodies.

Other consumer-related points raised:

- Prior to occupying a property supplied by district heating, prospective purchasers or tenants should always be provided with clear information telling them that the property is connected to DH. This should include illustrative tariffs that might apply. One suggestion was that face-to-face energy advice in the home will be critical.
- Heat suppliers should ensure that their bills are clear and that the charges are transparent and readily understandable. This is in line with the requirements of the Heat Trust scheme and the Heat Network (Metering and Billing) Regulations 2014.
- For domestic consumers, there should be guarantees that the fuel cost price will not exceed the cost of buying fuel on an individual basis. A further comment was that stronger price protection should be provided based, for example, on the Danish practice of publishing heat tariffs online so that customers can compare prices.
- It will be important to ensure that vulnerable customers are not unfairly disadvantaged by predatory seasonal pricing from an unregulated fuel supply market.
- The Norwegian regulatory framework gives an option for collective switching and a provider of last resort, if the service is deemed unsatisfactory.
- There should be Government-backed procurement and warranties.
- Repair costs need to be proportionate for householders; a financial cap on repairs for domestic users may be necessary.

Other ways for SG to support growth

In terms of further measures that the Scottish Government could put in place, or changes it could make, to further accelerate the pace of growth, proposals were:

Nationally driven structures/support

- Creating a forum where public, private and community sectors can discuss potential heat network projects and gain further education on heat networks and their benefits.
- Providing local authorities with in-house support personnel with specialised knowledge in legal/finance, procurement and design, build, manage contracts for specific technology. This could be as a pooled resource for short term project management assistance.
- Considering whether the Scottish Government's Energy Company has a potential coordinating role or as a centralised manager of risk. Otherwise, creating an agency that will take over cost and ownership of the infrastructure during and subsequent to completion of the development.
- Considering a Scotland-wide resource, targeted quickly if a scheme suffered from loss of heat, as is currently practiced with the utility networks such as electricity transmission.
- Requiring potential anchor loads to release relevant data to the regulating or licensing body.
- Procuring a heat network company framework that would allow local authorities to run mini competitions to appoint a heat network company to design, build, finance and operate the DH network. It was reported that some Scandinavian countries use a centralised procurement framework to embed expertise and reduce cost of heat networks in particular.
- Providing central support for local authorities in the vetting and negotiation of planning applications and the setting up of DHN obligations.

Development of networks

- Enhancing the information available about the state of the existing energy networks to help local areas target investment appropriately. Whether this information is only made available to local planning authorities or is made publicly available could be a matter for further discussion.
- Directing local authorities to form joint vehicles or partnerships with private sector firms to develop and deliver projects within all or part of an LHEES identified DHN zone/concession.
- Creating a standardised approach to direct local authorities to work in partnership with private sector partners to jointly deliver heat network opportunities identified within an LHEES zone. These agreements should also include a procurement framework to facilitate other public bodies contracting with the concession-holding organisation.
- Granting concession exclusivity to a holder to operate new heat network projects within a zone. For example, projects coming forward from new-build developments or individual building owners.
- Providing further encouragement to, or assistance with, the setup of local utility providers such as Shetland Heat Energy and Power Ltd.

- Giving heat network developers the same statutory rights as gas, electricity, and water network developers to construct networks in a logical way, avoiding costly and inefficient detours around parcels of land. This could help address construction risk and improve operating costs.
- Removing the requirement to pay rates on infrastructure.
- Stopping industry responsibility for DH at the boundary of each industrial site. Developers and other potential users should bear the full cost of obtaining rejected heat from potential industrial sources.
- Promoting the untransferable share ownership of schemes/systems for private housing development, whereby all owner-occupiers collectively own a share in the scheme to which they are attached.

Existing buildings

- Making it mandatory for public sector buildings to connect to existing or planned district heat networks when replacing the heating system of existing buildings.
- Addressing the key challenges of connecting existing buildings to new DH heating schemes. These challenges include the cost of the retrofit connection and the technical challenges around making such retrofit connections.
- Granting licensed operators a right to install equipment on private land to connect a designated building (within an LHEES DHN zone) to a specified heat network.

New build

- Through the next version of the SPP, directing planning authorities³ to use planning obligations to require connections to DHN networks for suitable new developments located within LHEES DHN zones.
- Requiring justification as to why heat networks are not being installed for a new development should be mandatory, with fully costed, practical and technical reasons.
- Phasing out gas in new builds and requiring all buildings to be heat network ready (e.g. low-temperature heating, plant room space).
- Supporting local authorities in the vetting and negotiation of planning applications and the setting of DHN obligations through the Scottish Government's Energy Efficient Scotland delivery mechanism.
- Requiring new developments to have a sufficiently high level of insulation so that low carbon heat networks will be cost effective.

Building Regulations and Standards

- Better aligning Building Regulations to ensure that alternative heat networks are properly assessed, particularly in relation to the Target Energy Rating. Reviewing Section 6 of the Scottish Building Standards could ensure that the SAP and Simplified Building Energy Model (SBEM) calculation methodologies fully reflect the carbon benefits of connecting to DH schemes.

- Amending Section 6 of the Technical Standards to require any new gas-fuelled heating systems installed in urban areas to be designed to allow the retrofit of a suitably located heat exchanger and meter in the future.
- Providing planning guidance on heat networks for the Development Plan and Development Management systems through either a Circular or Planning Advice Note.

Areas of potential growth

It was noted that either existing utilities will diversify into low carbon heat networks or new utilities will have to be formed, and it was seen as preferable for these to be community owned. Other areas of potential future change or development identified were:

- There is an appetite within industry to make use of waste heat. The Scottish Government could explore the use of mandatory waste or spare heat declarations for industrial and commercial users, to assist with heat mapping.
- Distilleries have the potential to supply surplus low-grade heat to other users. Heat recovery and reuse within processes on-site are standard practices at distilleries. However, finding users of the remaining low-grade heat has proved problematical and the provision of heat during planned maintenance shut-downs, needs to be addressed.

Finally, there was a proposal that the Scottish Government lead the way by establishing a district heating system based on the Parliament building and Holyrood Palace, which could extend to the Canongate. Such a system has already been considered by Historic Environment Scotland and the Edinburgh World Heritage Trust.

Compulsory connection

A small number of respondents commented on the potential need to go down the compulsory connection route, including to help address the connection risk associated with heat networks. Proposals as to how compulsory connection might be approached were that:

- It should depend on local authorities or private developers being able to demonstrate that a heat network is the most appropriate solution, and that customers interests will be appropriately protected.
- An obligation to connect should be implemented on new build, non-domestic and public sector buildings, with support for domestic consumers to retrofit connection if desired.
- A streamlined procurement/regulatory framework for the connection of public buildings would assist in maximising opportunities.

However, it was reported that there are likely to be significant resource implications for local authorities, particularly for privately owned buildings, and that they would need support.

There was a recommendation that the Scottish Government implement an obligation to connect across non-domestic buildings and public sector buildings within Heat Network Zones (as discussed above). In terms of timescales, it was suggested that the obligation:

- Should be placed on new build properties pre-planning with immediate effect.
- Could be placed on public sector buildings and larger non-domestic buildings to connect within 3-5 years, or at the point of heating system replacement or change of tenure.
- Could be extended, with the remaining non-domestic building stock required to connect within 5-7 years, or at the point of heating system replacement or change of tenure.

It was suggested that, in order to create a well-performing, decarbonised energy system, the energy system as a whole should be considered, using zoning to support the transition to a low carbon energy system. The approach would be based around:

- Local authorities being responsible for zoning for a representative sample of their authority; this would form part of broader energy master planning by local authorities. The zoning of an area would then unlock certain policy and funding support for the technology.
- Funding and incentives for industry and consumers would be different for different heating solutions, reflecting varying business models and different cost structures.

In terms of how incentives would play their part (as per Question 13), it was proposed that:

- They could operate within zones and would be designed to support uptake of the particular heating solution to be deployed in that zone.
- Each technology may require slightly different incentives. For example, the kind of incentive that will work best to encourage someone to install a heat pump in a heat pump zone is likely to be different to the kind that will encourage someone to connect to a heat network.
- In Heat Network Transition Zones, heat network developers could gain streamlined access to existing and enhanced funding structures such as the DH Loan Fund and the Low Carbon Infrastructure Transition Programme to help address the capital expenditure costs of heat network delivery.

Other respondents expressed their doubts or concerns in relation to compulsory connection. For example:

- It could remove customer choice, particularly in owner occupied homes, and possible consumer protection challenges were anticipated.
- There could be issues about ownership and maintenance of plant/equipment in the home which could also have mortgage valuation impacts.

Annex 1 - Organisations responding to the consultation

Respondent	Group type
A.C. Whyte	Building component manufacturers or services
Aberdeenshire Council	Local authority or interagency partnership
AES Solar	Energy related private sector
ALLenergy	Third sector
BMF Group	Private landlord or property management
Built Environment Forum Scotland	Professional or representative body
Cavity Insulation Guarantee Agency	Building component manufacturers or services
Cawdor Estate	Private landlord or property management
Changeworks	SG delivery partner
Chartered Institute of Housing Scotland	Professional or representative body
Citizens Advice Scotland	Third sector
Comhairle nan Eilean Siar	Local authority or interagency partnership
Competition and Markets Authority	Public sector or body - other
Construction Industry Training Board (CITB)	Building component manufacturers or services
Davidson & Robertson	Private landlord or property management
E.ON UK PLC	Energy related private sector
East Dunbartonshire Council	Local authority or interagency partnership
EDF Energy	Energy related private sector
Elmhurst Energy	Energy related private sector
Energiesprong UK	Building component manufacturers or services
Energy Action Scotland	Third sector
Energy Saving Trust	SG delivery partner
Energy Technology Partnership	Academic
Energy UK	Energy related private sector
ENGIE UK	Energy related private sector
Existing Homes Alliance Scotland	Third sector
Falkirk Council	Local authority or interagency partnership
Federation of Petroleum Suppliers	Professional or representative body

Respondent	Group type
Fuel Poverty Working Group, Shetland	Local authority or interagency partnership
Glasgow City Council	Local authority or interagency partnership
Heat and the City team, University of Edinburgh	Academic
Highland Council	Local authority or interagency partnership
Historic Environment Scotland	Public sector or body - other
Home Insulation and Energy Systems Contractors Scheme	Energy related private sector
Housing Service, Fife Council	Local authority or interagency partnership
Kingspan Insulation Ltd	Building component manufacturers or services
Mineral Wool Insulation Manufacturers Association (MIMA)	Building component manufacturers or services
National Trust for Scotland	Private landlord or property management
NLA	Professional or representative body
North Lanarkshire Council	Local authority or interagency partnership
npower Ltd	Energy related private sector
Orkney Renewable Energy Forum	Local authority or interagency partnership
Perth & Kinross Council	Local authority or interagency partnership
Propertymark	Private landlord or property management
Quidos Accreditation Scheme	Energy related private sector
Robinson Bloomfield & Meek	Other
ROCKWOOL	Building component manufacturers or services
Royal Incorporation of Architects in Scotland	Professional or representative body
Rural and Islands Housing Association Forum	Professional or representative body
Sciotech Projects	Building component manufacturers or services
Scottish Association of Landlords	Professional or representative body
Scottish Borders Council	Local authority or interagency partnership
Scottish Land & Estates	Professional or representative body
Scottish Power	Energy related private sector
Scottish Property Federation	Professional or representative body

Respondent	Group type
Scottish Renewables	Energy related private sector
SFHA	Professional or representative body
Shelter Scotland	Third sector
South Lanarkshire Council	Local authority or interagency partnership
SSE	Energy related private sector
Stirling Council	Local authority or interagency partnership
Sustainable Energy Association	Professional or representative body
The Association for Decentralised Energy	Professional or representative body
The Central Association of Agricultural Valuers	Professional or representative body
The Dupplin Trust 2000	Private landlord or property management
The Energy Poverty Research initiative (EPRi) and Common Weal	Academic
The Scotch Whisky Association	Professional or representative body
UK Finance	Professional or representative body
UKLPG	Professional or representative body
Vattenfall	Energy related private sector
Warmworks Scotland	SG delivery partner
Warranty Services Limited	Building component manufacturers or services
West Dunbartonshire Council	Local authority or interagency partnership
West Lothian Council	Local authority or interagency partnership
Zero is More Ltd.	Building component manufacturers or services

Annex 2 - List of acronyms used

ADR	Alternative Dispute Resolution
DH	District Heating
DHN	District Heating Network
ECO	Energy Company Obligation
EPC	Energy Performance Certificate
HEEPS	Home Energy Efficiency Programme Scotland
LBTT	Land and Buildings Transaction Tax
LDP	Local Development Plan
LHEES	Local Heat and Energy Efficiency Strategies
MCS	Microgeneration Certification Scheme
OFGEM	Office of Gas and Electricity Markets
PAS	Publicly Available Specification
PRS	Private Rented Sector
QA	Quality Assurance
RHI	Renewable Heat Incentive
SAP	Standard Assessment Procedure
SPP	Scottish Planning Policy
SEEP	Scotland's Energy Efficiency Programme
SLWG	Short Life Working Group
SWI	Solid Wall Insulation



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