

# Heat in Buildings Strategy

Summary of Analysis of responses to the consultation

September 2021

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## The Journey to Net Zero

**Support for the overall pathway:** Many respondents, from across the respondent types, noted their broad support for the overall pathway set out within the draft Strategy. It was described as ambitious, comprehensive and as seeming to achieve a balance between reaching net zero, protecting consumers and reducing fuel poverty. There was support for the emphasis being placed on ensuring a fair and equitable transition for all, and on supporting those in or at risk of fuel poverty.

A number of respondents highlighted challenges, including the scale of the change required and that further research will be required to determine the capacity of new technologies to meet targets. There was a concern that delivering against the pathway, especially within the proposed timescales, will require access to funding and knowledge that do not exist at a scale that matches the ambition.

**Interim 2030 target:** Respondents from across a range of respondent types supported the use of an interim target, including because it will allow progress to be monitored and will help increase accountability. The target was described as ambitious and as reflecting the scale and urgency of the challenge. However, some were concerned that the 2030 emissions reduction target is not realistic or achievable. There was a concern that the speed at which the programme for delivery would need to be agreed will require rapid technical policy decisions that may have long-term consequences if they are overtaken by future technological developments in heating.

**Unintended risks:** A number of comments identified possible risks. The risk of affordability issues for consumers, and in particular the risk of households continuing in or falling into fuel poverty, was the most frequently-identified possible risk. This was generally associated with concerns that energy supply costs would increase, including through the loss of access to currently cheaper fuel options. In terms of the households that may be most vulnerable to price rises, there was reference to being off-gas grid, living in rural or island communities and to older and/or lower income households.

There was support for a fabric first approach, but a concern that, without a sufficient focus on repairing and retrofitting existing housing stock, the pathway will fail to drive improvements to the energy efficiency of Scotland's housing stock and, in turn, to reduced demand for heat.

It was suggested that, unless mitigations are in place, there could be risks for early adopters, not only in terms of the reliability of technologies but also their cost - both in terms of capital and running costs. Current levels of consumer awareness were also seen as a significant barrier to delivering the Scottish Government's decarbonisation ambitions. It was suggested that Government, industry, and wider stakeholders need to do more to improve consumer awareness.

Supply chain shortages, and particularly the possibility that there will be a significant shortage of those with the necessary retrofitting and heat installation skills was identified as a significant risk by a number of respondents from across a broad range of respondent types.

## Strategic Technologies to 2030

A number of respondents, from across a broad range of respondent types, commented that they were broadly supportive of the assessment of strategic technologies to 2030 and agreed that the immediate focus should be on low and no regrets interventions. The tension between the need to make short term progress and longer-term technological development was highlighted, and one perspective was that a heating technology agnostic approach should be followed as far as practicable while options develop.

**Fabric first:** A number of respondents, from across a broad range of respondent types, noted their agreement with continuing to prioritise action on energy efficiency, with further general comments including that energy efficiency work is typically no regrets and is a key enabler for the deployment of low emissions heating technologies. However, there was a concern that the £1.6 billion across all buildings that has currently been committed seems insufficient for the task.

**Heat pumps:** A number of respondents offered support for the consultation paper's suggestion that one of the no or low regrets strategic technologies should be the deployment of individual building heat pumps in buildings that are off the gas network and which currently use high carbon fuels. More generally, heat pumps were described as a known quantity and as likely to be suitable for many domestic and non-domestic buildings. However, it was also suggested that questions remain about their performance in some contexts.

**Hydrogen:** A number of respondents commented on the possible future role of hydrogen, with calls for an early indication of the role and scale of hydrogen deployment, including in the domestic heating market. There was also a call for strategic decisions regarding hydrogen networks to target low regrets areas and for the Strategy to act as a driver for further investment in hydrogen demonstration projects and to encourage the adoption and use of key technologies.

**Hybrid systems:** For a number of respondents there was a connection between hydrogen and hybrid approaches, including agreeing with the consultation paper that it is too early to prioritise deployment of hybrids. However, potential benefits to the hybrid approach were also noted, including that it could help avoid the need for electricity grid reinforcement.

**Heat networks:** There was support for the inclusion of heat networks as one of the strategic technologies, with reasons given including that it would support the delivery of the statutory targets for reducing fuel poverty. Other comments focused on viability, and it was seen as crucial that development of heat networks dovetails with other aspects of the draft Strategy in order to create sufficient consumer demand.

**Other technologies:** Other technologies that respondents wanted to see covered in the Strategy included electric storage heating, bioenergy including bioLPG renewable liquid fuels and biomethane. There was also support for the recognition that secondary technologies may have a role to play in supporting the transition to net zero.

## New Heat Target

A number of respondents, from across a range of respondent types, noted their agreement with the plan to set a new Heat Target. However, a small number of respondents did not agree, with further comments including that the approach could lead to higher system costs and potentially preclude consumer choice.

**Function or focus of any Heat Target:** In terms of outcomes, it was suggested that a Heat Target should aim to: significantly reduce or eradicate carbon emissions from heating; encourage the roll out of low/zero emissions technologies; reduce heat demand; and support a reduction in, or the elimination of, fuel poverty. Some respondents suggested that to be effective, any new Heat Target will need to integrate energy affordability and carbon savings, and also emphasise the role of energy efficiency in reducing heat demand. Others suggested targets for emissions reduction and fuel poverty elimination should be distinct, but that both targets should be “considerate” of each other. A Heat Target should take a whole-system view of the net zero transition and incorporate both demand and supply measures.

**Scope of any Heat Target:** Suggestions included that a Heat Target should serve as a driver for change for a range of stakeholders across Scotland. It should incentivise the provision of appropriate support for individuals, organisations and communities to make the changes necessary and should specify strategic outcomes, allowing industry to identify the most efficient and cost-effective way of delivering those outcomes. Providing industry, including the wider supply chain, with increased confidence and certainty regarding how the market will develop was also seen as important.

**Monitoring and reporting:** It was argued that progress towards meeting the Heat Target should be measured against fuel poverty numbers looking, for example, at whether the number of households in fuel poverty is increasing or decreasing as a result of new technologies.

**Heat in buildings:** A clear majority – 90% – agreed that a new Heat Target should apply to heat in buildings, distinct from industrial heat. Reasons given included that industrial heat can cloud the statistics, hiding important trends in the wider building stock, and that the drivers of demand are very different so different incentives will be required in order to achieve the desired outcomes.

**Form of a Heat Target:** Respondents generally favoured a target based on low and zero greenhouse gas emissions technologies. It was suggested that technology-specific targets would have the additional benefit of giving the supply chain sufficient certainty and thus confidence to invest in the expansion required. Simplicity was described as key and it was suggested that there should be an overarching target which is easy to understand, with sub-targets set to address specific challenges.

**Level of Heat Target:** In relation to how, or by whom, a target and dates should be set, comments included that until deliverability of the technical solutions is known, it is difficult to set target levels and dates. However, there was also a call for the initial target and subsequent interim targets to be announced as early as possible to encourage early adoption of low/zero emissions heating systems and also enable industry to prepare for the increased demand, including upskilling the installer base.

## Public Engagement

A broad range of respondents offered support for the planned approach to a public engagement strategy and the recognition that achieving public buy-in will be key to the successful transition to low/zero emissions heat.

The importance of tailored communication was highlighted. It was noted that individual motivations for making changes will differ, as will the factors influencing communities in different parts of the country. Public concerns regarding cost of new technologies were also highlighted and the need to provide incentives was often referenced.

**When and how to engage:** A number of respondents from across a broad range of respondent types highlighted the importance of both early engagement and engagement activity sustained over a long period.

General comments on communication included that it should be clear, easy to understand and consistent, and should consider how to target hard-to-reach groups. It should be high profile and should be carried out at both national and local levels. It was argued there must be a multi-channel approach with specific suggestions including through TV and radio, social media and education in schools.

Respondents from across a broad range of respondent types emphasised the importance of communities and of local engagement, including via community organisations, social landlords and local advice services.

**Opportunities for different organisations:** In the public sector it was suggested organisations can support public engagement by identifying projects that demonstrate their own commitment to low/zero emissions heating. Specific actions suggested for local authorities included ensuring effective engagement as part of their Local Heat and Energy Efficiency Strategy (LHEES) and ensuring that contributions to national targets are set out in relevant strategies and plans including Local Housing Strategies (LHSs) and LDPs.

As trusted community anchors, it was argued that social landlords, including both housing associations and local authorities, should be viewed as key stakeholders in communicating with tenants and engaging them in the transition.

The range of opportunities suggested for businesses to support engagement included energy suppliers working with government to educate and inform customers of the benefits of adopting low/zero emissions heating. Some respondents also highlighted the economic opportunities arising from the transition to net zero, including in terms of job creation.

A number of respondents emphasised the importance of third sector and local community groups. It was argued these groups may be more trusted by individuals, can influence sections of society that are not easily reached by government and can tailor messages to their communities. There were calls for funding for community bodies to support such activities, including for a national community capacity building programme to upskill community organisations to provide the capacity and confidence to help deliver more co-ordinated community action.

## Impact Assessments

**Protected characteristics:** The most frequently stated position was that the proposals will not unfairly discriminate on the basis of protected characteristics, with many respondents from across a broad range of respondent types taking this view. However, there were also calls for a full Equality Impact Assessment (EQIA) to be carried out and a suggestion that there should be an ongoing process of review to ensure there is no discrimination.

Those who thought that there could be unfair discrimination tended to focus on age, with observations including that older people may require more heating or be on a lower income and have limited ability to pay for improvements. Other groups highlighted were people with disabilities, who are pregnant, and the gypsy traveller community.

There were calls for protections for vulnerable groups to be in put place and for targeting of support to people with protected characteristics. The need to take differences in the way people with protected characteristics experience fuel poverty into account during policy development was also highlighted.

Respondents also commented on the general risk that all those on lower incomes may be disadvantaged by the proposals or welcomed acknowledgement in the consultation paper of the tension between reducing carbon emissions from heating and ending fuel poverty.

**Children:** Many respondents from across a broad range of respondent types thought that the proposals will not have an adverse impact on children's rights and well-being. Some respondents highlighted the positive impacts from warmer homes or argued that children have most to lose in the longer term if no action is taken on climate change.

Respondents who identified potential adverse impacts also came from a broad range of respondent types. They tended to comment on the implications of increased energy costs for those on lower incomes and the risk of increasing the number of families experiencing fuel poverty.

## Support and delivery schemes

**Provide information, advice and funding:** Many respondents, from across a broad range of respondent types, commented on the characteristics of the information and advice that people will need to make their choices, including that it should be readily available from trusted sources and in different formats – online, by telephone, by post to all households, and in person. Existing services provided by Home Energy Scotland, Local Energy Scotland, Scarf and Zero Waste Scotland were all referenced.

The importance of providing realistic information – for example on performance, and on running and maintenance costs was also highlighted as was the need for advice to be tailored according to different audiences or property types.

With respect to where help would be obtained, there were arguments for a one-stop-shop approach and a ‘no wrong door’ approach – the latter ensuring all services are available, irrespective of the organisation first contacted. A frequently made suggestion from a broad range of respondents was that it will be important to work with trusted local advice services and community groups or networks.

**Views of existing services:** There was support for the provision of national services to households and businesses and a view that it is essential that key messaging and advice is created and delivered centrally. However, it was also noted that centrally based organisations lack local knowledge and connections.

Views on the quality of the advice currently provided were mixed, with some reporting positive experiences or finding services well briefed on the help available, while others suggested that information providers may not have the skills to carry out proper assessment of homes and properties, resulting in poor quality advice.

The majority of respondents who referenced a specific service talked about Home Energy Scotland. Many respondents, from across a broad range of respondent types, made a statement of support for the service provided by Home Energy Scotland, with descriptions including helpful or providing a great resource. Others were less satisfied, considering the service to be poor, and the advice generic.

**Improving the customer journey:** The most frequently raised theme was the importance of local approaches, especially in remote or island areas. Some respondents highlighted the importance of zoning or area-based approaches with co-ordinated action at local level.

The importance of post-installation support to educate homeowners on use of their new heating system was raised and seen as particularly important for vulnerable customers. Robust consumer protection was also highlighted, including to ensure consumers are aware of their legal rights and have access to redress when necessary.

The need for financial support for costly conversions was noted, and it was suggested that funding schemes must be simple to understand for both homeowners and the supply chain, and that support programmes must be designed to complement rather than compete with each other.

## Consumer Protection

In terms of steps to ensure sufficient consumer protection for low/zero emissions heating installations, the Scottish Government's work to date - through services such as Home Energy Scotland - was welcomed, as was their commitment to work with consumer organisations and energy companies to ensure that consumers are engaged and protected. It was also suggested that the Energy Consumers Commission, and forthcoming Consumer Scotland, have an important role to play in supporting consumers. A further suggestion was that there is a need for a trusted body to co-ordinate the transition and provide SMEs and home occupiers with helpful advice.

**Accreditation and training:** comments included that more robust qualification criteria within the sector will be key, with specific suggestions including the development of a 'Low Carbon Skills Card', similar to the existing Gas Safe ID Card. Linking any publicly funded financial support options to the use of accredited suppliers was proposed.

**Standards and regulation:** It was suggested that a Trusted Trader type quality assurance standard, monitored and regulated by the Scottish Government or third sector organisations would provide assurance to consumers that heat installations are going to be high quality and at an industry safe standard. Although the Heat Networks (Scotland) Act 2021 was said to have demonstrated that there are ways of setting and ensuring standards which can provide some consumer protection within the remit of Scottish delegated powers, it was also suggested that new UK consumer protection legislation that can offer the protection needed across a range of heat technologies may be needed.

**Quality assurance schemes or frameworks:** It was suggested that all works should be covered by recognised quality assurance frameworks and that it is vital to have credible consumer protection in place. Respondents identified a number of features that they saw as vital for any future scheme, including that it should be recognised, promoted, free and trusted. It was also considered as essential that any framework approach does not create further barriers to market entry, particularly for smaller installer companies and local tradespeople and contractors.

**Adoption of TrustMark:** Most of those who expressed a clear view were in favour of adopting the use of TrustMark, with reasons given including that it provides a range of consumer protections, including a Consumer Code and Consumer Charter, and would bring consistency and avoid having varying standards in the different nations of the UK. However, some respondents did raise concerns about going down the TrustMark route, including that it appears to be more bureaucratic and costly than is required.

**Other schemes:** It was reported that MCS already offers a quality assurance and consumer protection regime for renewable heating systems and there was a view that if there is a good existing standard there is no need to, or value in, creating another. Rather, it was suggested that Scotland has an opportunity to develop a better and more efficient system, that prevents duplication and reduces costs for those installing domestic renewables.

## Addressing Fuel Poverty

There was a broad consensus, from across a range of respondent types, around the importance of ensuring that the transition to zero emissions is just and will not have an adverse impact on those in, or at risk of, fuel poverty. The intention that the final version of the Strategy will include a set of guiding principles to underpin Scotland's commitment to no one being left behind was welcomed. However, there was also a concern that the twin focus on tackling both fuel poverty and reducing emissions using the same tools could mean that neither is addressed in the most satisfactory way.

**Protecting those on lower incomes:** It was seen as important to ensure that the costs associated with reducing emissions from homes are not met by those who cannot afford them. There was a call for Scottish Government action, by ensuring sufficient funding is available, including for households that are just getting by.

In terms of specific groups of people or types of household, suggestions included: households just below the radar for interventions that are firmly targeted on those already clearly in fuel poverty; those experiencing in-work poverty; and those living in rural and off-gas grid homes, including because of high upgrade costs.

**Installation and maintenance costs:** A general point was that it will be important to consider the role that support, including additional financial support, could play in avoiding householders being financially disadvantaged as a result of installing a low or zero emissions heating system.

**Tariffs and running costs:** Many of the comments referred to the importance of continuing to work with the UK Government in relation to how policy costs are transferred onto energy prices.

**Phasing out funding for fossil fuel heating systems by 2024:** Respondents often highlighted that their support for this proposal was dependent on certain risks being avoided, including that it should not lead to incorrect or inappropriate installations or increase the risk of fuel poverty. In terms of aspects of the approach that were particularly welcomed, comments included that the 2024 commitment gives industry a clear timeline for the end of funding and will allow a transition to the new strategic technologies.

Others raised concerns about whether the 2024 target is realistic or achievable, with a call for the final Strategy, and the upcoming Fuel Poverty Strategy, to offer clarity on how a detrimental impact on fuel poverty will be avoided in practice.

**Maximising positive impacts:** Ensuring that the evidence base is accurate and up to date was described as critical and it was suggested that further research should be undertaken to understand the barriers faced by fuel poor households, and particularly vulnerable groups, when navigating through the many transition options available.

Other comments addressed possible areas that should be prioritised for action or given an early focus. These included ensuring that any intervention is rural-proofed, and that we do not end up with a two-tier system where rural traditional buildings and their occupants are left behind.

## Place Based Approach & LHEES

**Value of place-based deployment:** There was broad support for a place-based approach with some respondents suggesting this will be key to meeting heat targets. The absence of a single, one-size-fits-all solution, a requirement for flexibility and the need to use of different approaches in different locations were all highlighted.

**The role of Local Heat & Energy Efficiency Strategies (LHEES):** The important contribution of LHEES to a place-based approach to deployment was highlighted, including through identifying areas of priority and opportunity. However, a lack of resources, and a skills and knowledge gap within the public sector, were raised.

A clear majority – 86% – agreed with the approach to LHEES set out in the consultation paper. It was suggested that the approach seems reasonable given the area-based nature of technologies such as heat networks and will provide clarity on the approach to be taken in a local area.

The intention for LHEES to be in place for all local authority areas by the end of 2023 was broadly supported, with the timescale described as ambitious but achievable. It was argued that LHEES guidance should be issued at the earliest opportunity. However, some thought 2023 is not achievable.

**Community involvement:** A community-orientated approach was welcomed, with the importance of early engagement to ensure local communities are involved in the decision-making process noted. In terms of gaining the trust of the community, working with trusted local partners was suggested. It was suggested that communities will require significant ongoing support, funding or technical advice.

**Zoning and heat networks:** A zoning approach was also supported, and it was suggested development of LHEES, and the zoning process set out in the Heat Networks (Scotland) Act 2021 should work in tandem to identify the right heat decarbonisation solution for an area.

**Community anchor organisations:** There was widespread agreement that community anchor organisations (CAOs) can play a key role in supporting heat transition. The potential of CAOs to reach a large audience and to bridge the gap between national organisations, local authorities and individual citizens was highlighted.

**Island and other remote communities:** The importance of avoiding a one-size-fits-all approach was emphasised, and it was noted that island and other remote communities typically have high levels of fuel poverty, and that higher construction costs and limited supply chains increase the cost of energy efficiency measures.

**Benefits of extended Permitted Development Rights (PDR):** A number of respondents noted their support for the review of PDR, including because they expected the proposed extensions to help to support delivery of the Strategy. There were also significant reservations about the proposed changes, particularly with respect to listed buildings and conservation areas.

## Electricity and gas networks

**Electricity network:** A clear majority – 92% – thought that there is further action that can be taken to ensure electricity systems are ready for heat decarbonisation. The potential scale of increase in electricity demand, and the work required to respond to this, was noted. This included reference to decarbonisation of other sectors, such as transport, adding to demand. Managing demand to reduce the burden on the electricity network was seen as important.

Respondents also commented on the need for infrastructure upgrades across the electricity system. The role of the Scottish Government in facilitating investment was raised, including in relation to the level of public sector funding and around encouraging private investment. A need for the regulatory approach to ensure a co-ordinated approach to network investment and growth in capacity was highlighted.

While not disagreeing with the range of actions required, some expressed concerns regarding the ambitious timescale for proposed changes. This included reference to the work still required to improve understanding of key issues such as electricity demand and investment costs.

In terms of consumers, there was support for the focus on those least able to pay, including by supporting people to improve the energy efficiency of their home. It was suggested that the Scottish Government will need to provide substantial funding to support the transition. The need for energy market reforms, especially around the disparity in current levies on gas and electric energy costs, was also raised.

**Gas networks:** There was support for the Scottish Government working with stakeholders to provide evidence on the role of gas decarbonisation, and to set out a timescale to resolve outstanding questions. However, some respondents expressed concern that this may introduce further uncertainty around policy support for gas decarbonisation, delaying investment decisions. There was support for the recognition that decarbonised gas is unlikely to play a significant role in emissions reduction before 2030.

In relation to identifying strategic geographic areas for low carbon or green hydrogen, views were mixed on the contribution that hydrogen can make to decarbonisation of heat.

A number of respondents wanted the Scottish Government to make best use of available evidence, including open data, to inform the transition to decarbonised heat. Information sharing was highlighted as particularly valuable in terms of tracking increases in energy demand as the transition progresses.

A number of respondents saw an opportunity for the Scottish Government to work with stakeholders to secure short-term gains in carbon reduction. This included reference to an initial focus on locations where the greatest impact can be achieved.

## Heat Networks

Some respondents expressed broad support for the role of heat networks in the transition to decarbonised heat and, in particular, for the Heat Networks (Scotland) Act 2021 in setting clear targets for deployment and giving a clear indication of long-term policy support for heat networks. This included support for the volume of thermal energy to be produced by heat networks, and also the commitment to net zero carbon heat networks. There was also support for the proposed approach to investment to maximise the role of heat networks.

**Potential barriers:** Some respondents referred to potential barriers to heat network deployment such as: a need to ensure the financial viability of networks and to reduce investment risk, particularly in the context of relatively high capital costs; and the need to ensure adequate protections for consumers on the reliability of heat network supply. It was argued that the Strategy should consider how the Scottish Government can help to de-risk development of heat networks.

**Examples of existing and planned heat networks:** Some respondents referred to existing and planned heat networks as potential exemplars of the supply that can be generated by heat networks. This included a diverse range of heat networks in terms of scale, specific technologies and energy sources used.

**Energy from waste (EfW):** A number of expressed support for use of EfW to facilitate deployment of heat networks, suggesting there is a significant opportunity for waste-based feedstocks to qualify as low carbon. However, other respondents raised concerns around use of waste to generate energy, including describing it as 'high-carbon activity'.

Some respondents saw a need for additional incentives and regulation, or greater flexibility in existing regulation, to support further development of EfW and facilitate deployment of emerging EfW technologies. There were also calls for a more co-ordinated and comprehensive policy approach to EfW and waste heat. This included support for an area-based approach.

**Supporting the delivery of heat networks:** A clear majority – 90% – thought there are gaps that must be filled to support delivery of heat networks. It was suggested that the commercial viability of heat networks remains the most significant gap, including whether heat can be supplied to consumers without an increase in fuel poverty.

Respondents discussed a number of areas or specific actions as being required to support development of heat networks. They included regulating for offtake surety, with an obligation for anchor load buildings within heat network zones to connect to a network where feasible suggested. Reference was also made to the role of public procurement in supporting heat networks and a requirement for all public buildings close to or within heat network zones to connect where feasible.

More support for existing heat networks to facilitate their decarbonisation was suggested, as was the need to build public awareness of and confidence in heat networks.

## Investment, funding and delivery

Many respondents expressed overall support for the range of proposed actions. This included reference to supporting the most vulnerable households (particularly those in fuel poverty), and the least energy efficient/highest emitting homes. There was also support for the initial focus on low regret actions and the public sector acting as leaders in heat decarbonisation.

**Strategic priorities:** Many respondents expressed general support for the four strategic priorities, and the breadth of issues they address. Many respondents also thought that some sort of prioritisation of funding would be appropriate, and respondents most frequently wished to see the highest weighting given to supporting those least able to pay.

**Challenges:** Respondents cited a broad range of investment and funding related-challenges. This included reference to the Scottish Government's estimates of the total cost of transition at £33 billion, and the most frequently raised concern was that the £1.6 billion committed falls short of what will be required.

The diversity of funding priorities, and the number of associated actions, was also seen as a challenge in terms of the risk that public funds would be 'spread too thinly' to have a significant impact. Ensuring a co-ordinated, balanced approach to investment in housing stock, including in relation to energy efficiency and low/zero emissions heat, was also seen as important.

**Opportunities:** Respondents referred to the importance of ensuring a sufficient pool of skilled engineers, and robust accreditation and quality assurance systems to ensure investment supports effective work. These were seen as vital in terms of supporting deployment of technologies and building consumer confidence.

Opportunities for public funding to leverage private investment as technologies mature and the supply chain develops were also noted.

**Focus of public funding:** Views on the role of government funding were split between those supporting a more targeted approach and those prioritising volume deployment. Irrespective of the preference for a targeted or volume approach, respondents highlighted the importance of a co-ordinated approach.

**Encouraging private investment:** Respondents expressed some concerns about whether government funding will be sufficient to leverage the required investment. Long-term, clear policy support was highlighted as a key element in encouraging private investment; it was seen as essential in building confidence within the private sector and encouraging the investment in skills and infrastructure required to drive down costs and support the transition.

**Potential financing models:** There was also support for a range of potential financing models to take forward decarbonisation of heat, and to facilitate private investment. This included support for the role of the Green Heat Finance Taskforce in providing advice and recommendations on potential financing mechanisms and working collaboratively with the private sector.

## Long Term Market Framework

A number of the respondents expressed support for the overall approach and the associated actions set out in the draft Strategy. This included reference to the value of a long-term policy framework, targets, funding commitment and proposals for a regulatory framework. The significance of capital costs as a barrier to take-up of low/zero emissions heat was also highlighted, with an effective market framework seen as necessary to increasing access to the finance to meet the overall cost of decarbonisation.

**Analysis and modelling of costs:** In terms of specific elements of the proposed approach, there was support for the commitment to analysis and modelling to understand the costs of upgrading different property types. It was suggested that understanding the cost challenge will be critical.

**Green Heat Finance Taskforce:** Respondents also expressed support for the commitment to explore new financial mechanisms and business models, noting the need to develop new ways of financing the investment required to achieve government targets. In this context, the proposed Green Heat Finance Taskforce was welcomed and seen as crucial in re-examining potential mechanisms to facilitate the transition.

**Encouraging investment from householders:** There was broad support for the proposition that a range of financing mechanisms should be considered, with further comments including that a blend of financial support, incentives and funding mechanisms tailored for different households, housing tenures and places across Scotland will be needed.

A number of respondents referred to the importance of grant funding to cover capital costs and it was reported that up front grant payments have proved easy to understand and successful in the past.

There were also frequent references: to low cost or interest free loans or to green mortgage products; Heat as a Service as a model that has worked well in other contexts, and which warrants further exploration or consideration; and tax incentives, including in relation to Council Tax or VAT.

**Businesses and the supply chain:** It was reported that current investment mechanisms to encourage the transition to greener resources involve more loan financing and further impacts on already negative balance sheets. Payback periods are important in relation to business plans, but do not allow carbon savings to be included, and it was suggested that the development of a model or mechanism that allows cost and carbon to be considered would be helpful.

It was also suggested that tax incentives for businesses implementing energy efficiency measures and/or renewable technologies could incentivise investment.

## Regulatory Framework

A number of respondents, from across a broad range of respondent types, made a general statement of support for the regulatory actions set out in the proposed regulatory framework. It was described as proportionate, comprehensive and easy to follow. Regulations were described as one of the greatest policy levers available for achieving significant market changes.

**Framework development:** There was support for the commitment of the Scottish Government to work closely with the UK Government on the regulatory framework and to argue for local delivery methods. A more frequently raised issue was that, given the ambitious 2030 targets, the approach to regulation should be developed and approved as quickly as possible.

**Domestic EPC reform:** EPC reform was the most frequently raised issue in relation to regulation. Some respondents agreed that the domestic EPC system needs to be reformed or welcomed the Scottish Government's commitment to consult on a reformed domestic EPC assessment process. Getting EPCs right was described as fundamental to enabling Scottish consumers to take the right decisions on their energy consumption to deliver on net zero targets. In terms of specific issues to be addressed or included there was reference to the Standard Assessment Procedure, actual in-use performance, and assessment of heating system energy efficiency.

**All tenure zero emissions heat standard:** There was support for the introduction of an all tenure zero emissions heat standard, including because it will provide a definitive date for ending use of fossil fuels. However, others urged caution, with concerns sometimes related to the tenure-specific minimum standard target dates, or the feasibility or desirability of the targets or trigger points.

**Trigger points:** Those who commented tended to agree that the use of trigger points should be considered, particularly given the challenges associated with regulating for owner occupied homes. In terms of the advantages and strengths of this approach, general comments included that focusing on points when change is already occurring should minimise disruption to building occupiers and can also be cost effective.

**Area-based approach:** There was also support for an area-based approach, which it was suggested would align well with the strategic approaches that are being considered through LHEES.

**Timeframes:** The timeframes were described as ambitious but achievable if barriers to participation are addressed and/or other considerations are taken forward, for example the revision of the EPC assessment process.

**Delivery programmes:** A number of respondents commented on the importance of delivery programmes in achieving compliance, including through aligning those programmes with the regulatory regime and by programmes having a strong focus on supporting businesses and households to meet the new regulations. One theme was that accessing public sector funding could or should be contingent on achieving compliance with regulation.

## **Developing Scottish Supply chains – the net zero opportunity**

A number of respondents commented that the heat transition presents significant opportunities for economic benefits and supported the focus on maximising these benefits.

**Supply chain and job creation:** There was support for the role of supply chain development, including through calls for annual targets for deployment of low/zero emissions heating, and heat pumps in particular, to provide a roadmap to enable supply chain development. There were also calls for a strategic approach to provision of education and training, to achieve the ‘step change’ required to deliver against Strategy targets.

Opportunities for job creation were highlighted as a key element in maximising wider economic benefits associated with supply chain development, including reference to the potential for delivery of green jobs. There were calls for more support for skills development to maximise job creation, including a focus on bringing new people into the sector. There was also reference to the potential for re-deployment of expertise and skills from existing supply chains and the need to realise benefits for rural and island communities.

**Low/zero emissions technologies and innovation:** There was reference to the opportunities associated with development of specific low/zero emissions heat. A number of respondents noted their support for technology-specific milestones, including because these could help encourage investment in the supply chain by providing confidence in the long-term workstream.

In terms of key requirements of technology-specific milestones, it was suggested that they must be supported by sufficient government support, policy and regulation. There was a concern that setting overly ambitious targets which are not then met could be highly damaging for the industry.

**Role of the public sector:** The public sector was seen as having a significant role to play across all aspects of the heat transition, including in maximising economic benefits of the transition. Opportunities identified included the use of investment in public buildings to take a leadership role in deployment of low/zero emissions heat. Respondents also referred to a positive role for public bodies, and especially local authorities, in engaging with communities (including community organisations) to raise awareness and understanding of low/zero emissions heat. The opportunity for the public sector to take a leadership role through greener and more sustainable procurement was also highlighted.

**Young people:** Respondents saw a range of opportunities to create pathways to encourage more young people to enter the sector. Investment, including through apprenticeships and further and higher education courses, was seen as key. Promotion of careers in the sector to school age children was also suggested.

## Working with the UK Government

Many respondents expressed general agreement with the need for a joint approach between the Scottish and UK Governments, with some agreeing specifically that the issues identified should be addressed jointly. Joint working was considered particularly important in areas such as energy where there is a mix of reserved and devolved powers. It was suggested that co-ordination between all UK nations will allow more opportunities for sharing ideas, and for enhanced learning and innovation.

The importance of clear and consistent policies across the UK was suggested, including because this can: reduce confusion and increase compliance; help to standardise technology designs, which can drive costs down; allow supply chains to work across the UK without red tape; and provide certainty for homeowners, lenders and the housing market. It was argued delivery at the pace outlined in the Strategy will be much more difficult to achieve if not aligned to the UK-wide approach.

**Taxes and levies:** A number of respondents commented that the disparity in levies on electricity and gas must be addressed, and that the price of electricity must be reduced if the transition is to succeed without exacerbating fuel poverty.

Changes to the VAT regime, so that all energy efficiency and renewable heat retrofit installations receive reduced or zero VAT rate, was a frequently raised issue. There were also calls for parity in VAT between new-build activity and repair, maintenance and retrofit/energy efficiency measures.

**Schemes that operate across Great Britain:** There was agreement that the Scottish Government should work jointly with the UK Government to ensure that relevant schemes are compatible with Scotland's heat transition trajectory.

With reference to the Energy Company Obligation and Warm Homes Discount, it was argued that legislation and rules should be allowed to vary across the UK as long as they deliver common outcomes. However, it was also suggested that a dual system should not be considered a viable option. Some respondents urged the Scottish Government to work with the UK Government on development of a new ECO4 scheme which should be based on UK wide delivery.

There was support for working with the UK Government in relation to the Clean Heat Grant. It was noted that the cost of installing low/zero emissions heating in remote areas is much higher than other areas of the UK, so the flat funding level currently provided is far below the actual cost of supply and installation. Increasing the grant amount was proposed.

## **Monitoring, Evaluation and Future Decision Making**

A large majority – 86% – agreed with the proposals for a monitoring and evaluation framework. Some respondents simply went on to welcome the proposals. Others suggested that further details are needed or noted their expectation that there will be specific consultation on the monitoring and evaluation framework.

However, there was a concern that the outcomes listed are not ‘SMART’ and will be difficult to measure. It was also suggested that it will be important to monitor heat performance in situ to reflect real world performance.

The intention to measure outcomes as well as outputs, using a range of indicators, was welcomed. It was argued that this should include fuel poverty statistics and integration with the Climate Change Plan Monitoring Framework was also suggested.

General points on the characteristics of monitoring included that monitoring should: be robust, independent, thorough and long-term; have a method for assessing all properties regularly; include cost per tonne of carbon saved, and the ratio between public and private sector funding; and should disaggregate indicators by local authority.

Sharing lessons learned was considered to be important with suggestions that there should be independent audits and regular reporting, and that the results should be freely available. In addition to sharing success stories, it was seen as important to share experience of things that have not gone well. The importance of ensuring that learning is assimilated as quickly as possible was also highlighted.

## **Environmental Report**

Some suggested that the scope of the information set out in the Environmental Report was reasonable and appropriate, and it was said to reflect accurately the scale of the environmental challenges. However, others felt the information set out was incomplete when compared with the draft Strategy. It was suggested that it should be revised, including to take account of the Hydrogen Policy Statement of December 2020.

With reference to reasonable alternatives, there was broad agreement that doing nothing is not a reasonable alternative, and it was also agreed that there is no reasonable alternative to a mixed or blended technology pathway. The need for greater emphasis on the potential role of hydrogen as part of this mix was suggested.

In terms of the predicted environmental effects, as set out in the Environmental Report, there was agreement with the findings, and that the strategy will result in positive outcomes for the factors assessed. Limitations and uncertainties were thought to be reasonable or to have been appropriately identified.

There was support for proposals for mitigation and monitoring as outlined in the report. Mitigation was considered an important element of the Strategy, and was suggested to be particularly relevant for new technologies where the impacts are unknown.

## General questions

A partial Business and Regulatory Impact Assessment (BRIA) was published with the consultation paper. While acknowledging that work on the BRIA is at an early stage, a number of points on its content were made, including that it needs to be more analytical about the potential for job losses arising from the draft Strategy, particularly with reference to fuel distribution companies as well as boiler servicing and maintenance and refinery activities.

A potential impact of the Strategy on town centres was also highlighted where, if the investment to achieve the required levels of energy efficiency in existing buildings cannot be justified, the owner may leave a building vacant.

General points about the roles of different organisations included the need for more detailed engagement with the building retrofit industry, including with heat network developers to understand the challenges around meeting heat decarbonisation and achieving standards such as PAS 2035.

Opportunities for various sectors or types of organisation to contribute to the Strategy or the transition were also suggested including social housing acting as a test-bed for new technologies and the Zero Emissions Social Housing Taskforce as a source of recommendations which will feed into the final strategy.

In terms of constraints for organisations, points raised included that the NHS needs high grade heat that currently precludes many low/zero emissions heat technologies.