Heat and the City response to Energy Efficient Scotland – March 2019 Consultation

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PART 1: Suite of Legislation

Consultation context
Sets out proposed legislative measures, including:

- **Heat Networks Bill**
- **Local Heat and Energy Efficiency Strategies** (secondary legislation, Section 44 Climate Change (Scotland) Act 2009)
- **Minimum Energy Efficiency Standards for the Private Rented Sector** (secondary legislation, Section 55 Energy Act 2011; Section 64 Climate Change (Scotland) Act 2009)
- **Minimum Energy Efficiency Standards for Owner Occupied Homes** (secondary legislation, Section 64 Climate Change (Scotland) Act 2009)
- **Assessment of Energy Performance of Non-domestic buildings** (secondary legislation, Section 63 Climate Change (Scotland) Act 2009)

No questions posed for this section

PART 2: Timeframe for delivery

Consultation context
Sets out a proposed more ambitious timeframe for delivery.

The initial Route Map proposed that all homes reach EPC Band C by 2040. In response to consultation, Scottish Parliament are calling on Scottish Government to bring forward the date for all homes to achieve **EPC Band C to 2030**. This specifically relates to *owner occupied housing* since proposals for other sectors are already more ambitious.

The latest Scottish House Condition Survey shows approx. 930,000 owner occupied dwellings with an EPC rating below Band C.

The consultation suggests that currently, the number of owner occupied dwellings with an EPC below C is decreasing by around 40,000 per year. If this rate is maintained over the next 20 years then there would be an even delivery path to 2040 – but this is unlikely as the possibility for 'easy wins' reduces. If the deadline is moved forward to 2030, the consultation suggests that there would need to be *an immediate and sustained doubling of the current rate of annual improvement, up to 80,000 homes per annum*. The consultation identifies concerns that this would require additional funding – which would either have to come from Scottish Government, or private householders. It also notes that slow turnover rates in the owner occupied sector (36% and 93% households experience at least 1 change of ownership/ tenancy after 10 years in the owner occupied and PRS, respectively), would mean that implementing mandatory standards at the point of sale would only capture 1/3

of the stock falling below EPC C in a ten-year period. If turnover has a minimal impact, what other trigger points could be used?

Questions

1. **With regards to achieving an accelerated delivery of the standards proposed, do you think mandatory action for owner occupiers would be required?**
   Yes, mandatory action will be required. The potential for energy and financial savings should not be relied upon to encourage homeowners to retrofit, especially where fuel costs and external temperatures fluctuate. Mandatory action, with a sufficient lead in time, will provide a clear direction of travel and momentum, acting as stimulant for market development. This will be important for homeowners, but also for businesses and supply chains, who will be motivated to engage because of the certainty associated with forthcoming mandatory action. Supply chain actors (for example, salespeople and those involved in the installation and maintenance of technologies) are trusted by homeowners[1], and with certainty about future mandatory action, they would be well positioned to promote retrofitting activity amongst their homeowner customer base.

   In Scotland, a particularly challenging area for energy efficient retrofitting is multi-occupancy buildings, for example, tenements. Mandatory action could include revisions to the Tenement Act[2] in order to support collaborative action for energy efficiency retrofitting. At present, the Tenement Act requires a majority owner participation for repairs to proceed, but lacks clarity around how energy efficient retrofitting fits into this. A revision to the Tenement Act for energy efficiency works to be considered as 'repairs' would facilitate retrofitting action in these buildings.

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

- During renovation, there is a role for supply chain actors. These are trusted individuals and organisations that can encourage action (see response to question 1).
- Any home improvements and/or renovation works required to comply with *Building Standards* could be used as a trigger point for additional energy efficiency improvements[3]. Government and its agencies could work with mortgage and loan providers, estate agents and lawyers, as well as the building trades, to make opportunities, requirements and financial terms unavoidably present

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[1] See: DECC. (2014). Advice on how to use heating controls: Evaluation of a trial in Newcastle.
Wade, F., Shipworth, M. & Hitchings, R. 2017. How installers select and explain domestic heating controls. Building Research & Information, 45(4), pp.371-383.
Killip, G. (2011). *Implications of an 80% CO2 emissions reduction target for small and medium sized enterprises (SMEs) in the UK housing refurbishment industry*. (B. Boardman, N. C. Eyre, & C. Jardine, Eds.). Environmental Change Institute, University of Oxford, Oxford.
Bowden, F., Brass, C., Watson, B., Mitrovic, D., Tompkins, J., Zygmunt, J., & Jordan, D. (2012). *Plug-It: Final Report to the Department for Environment Food and Rural Affairs* (pp. 1–104). London: SEED Foundation, Policy Studies Institute and Waterwise, Defra.

[2] See: https://www.legislation.gov.uk/asp/2004/11/contents

[3] See: BEIS, 2018. Grant for support to coordinate the supply chain for retrofit at local level. Page 11 paragraph 2.

during these key transactions.

- Life-cycle changes such as the birth of children and retirement could be used as effective trigger points for people taking action. Retrofitting supply chains could coordinate with health services in order to identify people approaching these changes, and offer information and support at the relevant time.
- In terms of developing a programme for engaging owner occupiers in retrofit, this must incorporate a variety of strategies to achieve maximum impact[4]. These include: 'selling' something that people want; understanding different target groups; partnering with trusted messengers and contractors; using recognisable language and terms; having multiple points of contact with owner occupiers; offering streamlined customer journeys and clear and accessible finance opportunities; being persistent (with a long-term, clear message) and consistent.
- Ad hoc retrofitting works can be more expensive than retrofitting at scale[5]. Area-based planning and implementation could act as a significant trigger point in enabling property owners to anticipate opportunities, benefiting from potential economies of a street by street approach, and gaining mutual support from neighbours, community organisations, other intermediaries/advice services, and suppliers about options, processes and project management, including financing. This needs to be backed by a strong marketing strategy to reset norms and expectations.

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?**

   The UK's Clean Growth Strategy sets targets for as many households as possible to meet EPC Band C by 2035 (where 'practical, cost-effective and affordable') and 2030 for fuel poor and privately rented homes[6]. An Energy Efficient Scotland target of EPC C by 2040 would therefore not be in line with proposed action for the rest of the UK. It would be advantageous to work towards an EPC of C by 2030.

   The consultation document highlights an 'immediate doubling' of current rates of improvement would be required to reach the 2030 goal. This raises a concern 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. Whilst open tendering means that competition should be open to a variety of contractors, it is important to make investments in skills and quality standards of Scottish retrofitting services such that they can be competitive and offer good value in this process. This could be managed and supported through cross-sector planning and partnerships with small and medium enterprises (SMEs) to increase supply chain investment and raise quality standards in the industry (also see our response to Question 4 for more detail on this).

[4] Fuller, M. et al. 2010. Driving demand for home energy improvements. A report by Lawrence Berkley National Laboratory.

[5] Bush, R., McCrone, D., Webb, J., Wakelin, J., Usmani, L., Sagar, D. 2018. Energy Efficient Scotland – Phase 1 pilots evaluation final report.

[6] https://www.gov.uk/government/publications/clean-growth-strategy

Some improvements will cost a large amount of money and many households may need time to raise capital in order to invest. Scottish Government will need to ensure that money is made available upfront through an increased number, and broader eligibility criteria for interest free loans; the loan proposition will need to be streamlined and terms and conditions made as clear as possible. This could be incorporated into the priorities of the National Infrastructure Investment programme, with lending governed by National Investment Bank, and operational devolution as necessary to a body such as Home Energy Scotland.
In addition, more ambition in defining 'cost-effective' will be needed, taking the health, welfare and economic costs of climate disruption and poor quality housing stock into account. There are possible exceptions for older stone built solid wall where cost relative to quality and performance guarantees is a problem at present. Solutions are needed but may take longer to develop.

The consultation notes that an estimated £12 billion investment in supply chains will be needed in order to develop the skills and capacity required to deliver Energy Efficient Scotland. Supply chains need build awareness of the programme and develop in line with quality assurance expectations. There is a need to build confidence in the market, starting now.

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?**

Supply chains will act in response to accelerated timeframes, if these are sufficiently discussed with industry representatives, skills and training bodies, and advertised amongst members. To support the acceleration, there would need to be expanded, and potentially subsidised, training for the extension of skills in the sector. Quality Assurance guidelines and procedures, including enforcement, would need to be agreed and put in place immediately. However, there is a concern over whether there is capacity in the supply chain to undertake this – this relates to an aging workforce, the limited number of new entrants, and the potential implications of Brexit[7]. An accelerated timescale would likely require a major recruitment drive for new entrants into the construction sector, which is likely to require support from Scottish Government in the form of funding for subsidised training and the accreditation of different skills and professionalisation of the sector. This additional recruitment, upskilling and professionalisation of the sector will help to replace low pay, casualised jobs with better quality work and employment, contributing meaningfully to the Scottish Government's goal of inclusive growth. A professional and highly respected sector is likely to attract high quality workers from different locations, helping to plug the projected capacity issues.

Ensuring improvements in supply chains over any timescale will require either the development of a robust, independent enforcement agency, with necessary powers and penalties, or extending the roles of existing agencies such as GasSafe and the

[7] Farmer, M. 2016. The Farmer review of the UK construction labour model: modernise or die. Published by the Construction Leadership Council.

National Inspection Council for Electrical Installation Contracting (NICEIC). Any enforcement powers need to be separate from supply chain actors, including clients, designers and contractors.

Under lowest cost procurement routes, non-compulsory measures are unlikely to be seen as a priority for firms in upskilling or upselling. While the costs of compulsory measures like fire safety and maintenance access can be legitimately justified in a bid, value-added measures are more difficult for firms to justify investment. Making energy efficiency measures statutory through regulation would provide firms with justification to negotiate higher costs with clients through procurement and would also justify the investment in upskilling the firms. Providing the appropriate stimulus for upskilling and capacity building through grant schemes, while providing regulation and a firm deadline will likely provide the supply chain with incentive to upskill. Without these, it is unlikely that such development will be prioritized. Ongoing interviews with supply chain actors suggest that the market will adjust if necessary and will likely rise to any regulatory requirement, but that lowest-bid procurement will prevent timely adjustment and investment if measures are voluntary.

Overall a shorter timescale can be used to create momentum for higher capacity, higher quality work, with better consumer protection and outcomes. Achieving this will require concerted leadership by government and national delivery authorities to ensure that businesses and property owners are confident in the value of the Programme, its ambition, routes to implementation and the integrated benefits of, and responsibility for, prompt action.

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

Accelerating Energy Efficient Scotland should, in principle, help to ameliorate fuel poverty by bringing work forward, in line with the Scottish Government aim of ensuring that the fabric efficiency of buildings is no longer a driver of fuel poverty. It is however important to recognise that Energy Efficient Scotland is not necessarily a sufficient means to end fuel poverty; using a Minimum Income Standard, as advocated by 2017 Scottish Fuel Poverty Definition Review Panel[8], people living in very energy efficient homes can remain fuel poor, given that even a low energy bill (based on standing charges) constitutes a significant financial burden.

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?**

It is absolutely critical that energy efficiency improvements are considered alongside changes to heating systems. Without energy efficiency improvements, new heating

[8] Scottish Fuel Poverty Definition Review Panel. A new definition of fuel poverty in Scotland: a review of recent evidence. 2017. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/independent-report/2017/11/new-definition-fuel-poverty-scotland-review-recent-evidence/documents/00527017-pdf/00527017-pdf/govscot%3Adocument/00527017.pdf

systems are not guaranteed to make energy or financial savings. The identification and sizing of suitable alternative low carbon heating systems is reliant on having accurate knowledge of the energy efficiency of dwellings. Making changes to the thermal properties of a dwelling *after* the implementation of a new heating system will change its ability to achieve energy savings (this is not guaranteed to be a positive change). Further, the implementation of some lower carbon heating systems will put additional pressures on the electricity grid (notably the use of heat pumps). It is therefore critical that the potential energy demand is minimised before, or in coordination with, implementation of clean heat technologies. With a 75% attainment rate being achievable at a median cost of approximately £3,500 for energy efficiency improvements alongside changes to heating systems (as stated in the consultation document), it seems illogical that Scottish Government would not aim to tackle both together. Further, this action could be achieved at a higher rate by bringing mandatory deadlines forward for most properties, while defining exceptions which could have a longer lead time (for example those that would significantly surpass the median cost). This could be combined with demonstrator areas, where early action is incentivised by a proportion of grant funding to owner occupiers, with learning for replication in similar areas.

PART 3: Private Rented Sector

Consultation context

The consultation sets out a proposal that all privately rented homes should meet EPC Band C by 2030, where technically feasible and cost-effective. This is an extension on the target for PRS properties to reach EPC Band D from 2022 (to be brought forward in regulations this Autumn). It is proposed that the EPC Band C standard will initially apply to properties where there is a change in tenancy after 1 April 2025. A property will meet the standard if it has a valid EPC showing an energy efficiency band C or above. Properties failing to meet the minimum requirements would be subject to civil fines. Work is underway to further define 'technically feasible and cost-effective'.

Questions

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

   Using a change in tenancy to trigger the increased standard is a feasible suggestion. The higher turnover rates in the private rented sector should ensure that a majority of properties are tackled within the ten-year timeframe (according to the consultation, 90% of PRS properties should experience at least one change in tenancy in a ten-year period). However, this will need to be supported by adequate checks and measures. If EPC certificates are to be the route to monitoring, then a more accurate EPC database will need to be obtained. Evidence from the Evaluation of the Energy Efficient Scotland Phase 1 pilots showed that EPC databases were not up to date, and were lacking data[9]. The most accurate information is available for council-owned or ex-council-owned stock, and the PRS is often outwith this.

[9] Bush, R., McCrone, D., Webb, J., Wakelin, J., Usmani, L., Sagar, D. 2018. Energy Efficient Scotland – Phase 1 pilots evaluation final report.

Resource will need to be allocated to ensuring compliance with the standard, and the identification of cases that are subject to civil fines. More fully utilising Building Control within Local Authorities is an available option, but this will need to be adequately resourced. Some Local Authorities are operating with no, or a single, building control officer; this is inadequate for properly monitoring the entire private rented sector (let alone other building types that are likely to be subject to increased standards). New training for skills in whole building assessment, valid and reliable use of EPCs, and performance standards and guarantees will also be critical.

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?**
This is reasonable. Past experience has shown that landlords act in anticipation of forthcoming increased standards.

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?**
Understanding the implications of this is reliant on *'cost effectiveness and technical feasibility'* being defined. Cost effectiveness can be measured using different formulae – there is no single correct measure, but the choice of measure needs to be decided in the context of policy purpose and goals. Under the EU Performance of Buildings Directive, for example, European countries have used different formulae to calculate 'cost effective' energy efficiency investment, with the UK attributing less value to energy efficiency than comparator countries[10]. 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. Ways to ensure that cost effectiveness measures are fit for purpose include calculation of effectiveness over the longer term (i.e. not the next 3 years). If discounted cash flow calculations are applied, then a social discount rate should be used. Energy Efficient Scotland LHEES proposals include a commitment to use of socio-economic evaluation in planning; this recognises the integrated social, economic and environmental benefits of thermal efficiency. Indicators of cost effectiveness need to use a similar holistic assessment measure. How these definitions will apply to different types of landlord and property portfolio will also need to be considered. For example, a landlord with a large portfolio is likely to have a far greater level of disposable income than one with a single rental property. To account for this, a uniform standard should be developed, with differential loan funding to support it. 'Accidental' landlords (single property let) could be offered the same terms as owner-occupiers. Professional landlords already have expertise in financing maintenance and renovation of portfolios, and would be less likely to require such support.

PART 4: Supply Chains

[10] Hawkey, D., 2018. Working paper: The problem of heat and its solution – dynamics of sustainable heat policy visions in the UK, Denmark and Germany. Available at: https://heatandthecity.org.uk/resources/page/2/#resources

Consultation context

The consultation notes the 'significant economic opportunity' presented by Energy Efficient Scotland and the subsequent need for local suppliers, SMEs and micro-sized businesses to be able to participate in the programme.

The Short Life Working Group (Skills & the Supply Chain) recommendations are:

1. There should be Quality Assurance criteria developed which detail the key mandatory requirements for suppliers wishing to participate in Energy Efficient Scotland.
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.
3. The verification process must not place an undue administrative or financial burden on SMEs, particularly micro-businesses.
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.
5. A new designer role should be considered to ensure that a whole building approach is taken and that only the most appropriate improvements are applied in practice.
6. Independent inspections of installations must be carried out as part of Energy Efficient Scotland to ensure quality standards are being consistently met.
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.
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.
9. A mobilisation plan for developing skills for the supply chain should be published to help provide pipeline security and build capacity.
10. Energy Efficient Scotland should be well advertised to the supply chain via roadshows, events, webinars and trade publications.
11. Investment in Energy Efficient Scotland must support inclusive growth.
12. There should be a clear, simple and well-defined complaints process with support available for the consumer to navigate the process.
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.
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.
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.
16. There should be support and advice for consumers on guarantees and warranties.

17. Work to identify improvement targets for non-domestic buildings should be fed into ongoing supply chain activity.
18. Examine whether there is a need for a qualification for individuals completing installation work on non-domestic buildings under Energy Efficient Scotland.
19. Procurement relating to Energy Efficient Scotland should comply with existing supplier-friendly public procurement policies and legislation, with a particular focus on micro-sized businesses. Scottish Government should continue work with partner organisations to bolster existing guidance to SMEs and where necessary produce programme specific guidance for Local Authorities and COSLA on procurement under Energy Efficient Scotland.

Questions

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?

We are broadly in agreement with the recommendations made by the Short Life Working Group.

Recommendation 3 is particularly important. Research participants from supply chains state that they find additional ways to stimulate certain types of supply chain behaviour, like new specific accreditation schemes and contract types designed to spur partnering practices, quite onerous, overwrought, unnecessary, and outside of most firms' capacity. They would rather use existing processes that they are familiar with than adopt novel frameworks or processes which appear to complicate and obstruct work. With this considered, special emphasis on existing schemes, and streamlining and simplifying verification processes will help to stimulate successful engagement.

With regard to Recommendation 5 it is important to consider that designers and project leads tasked with coordinating specialised subcontractors in the delivery of integrated whole-house approaches are at risk for incurring higher-than-normal hidden transaction costs. If the risks assumed by network coordination are considered early in the design phase of a project, it may help manage the risk more efficiently. Would-be coordinators, especially specialised small and medium enterprises trying to enter the energy efficient retrofitting sector might need additional information and training about the hidden costs associated with their role and how to manage it (i.e. through appropriate contractual arrangements).

We support Recommendation 6, and agree that independent inspections should be carried out to ensure that quality standards are consistently met. This Recommendation needs clarification in terms of who will be providing such inspection, for example whether this will be a government-funded body, or opened up to delivery from private subcontractors. The inspection workforce will, in turn, need to have some degree of accreditation and monitoring of standards to ensure that this does not slip as Energy Efficient Scotland progresses.

With reference to recommendation 8, we suggest that existing Supply Chain Management (SCM) guidance may be useful for developing frameworks for competencies and responsibilities between different supply chain actors involved in Energy Efficient Scotland. SCM was originally suggested for the construction sector in the Latham Report[11] as a means to promote supply chain integration and efficiency. It seeks to shift from a project-based supply chain approach which is limited by the short-term nature of projects which negatively impact efficiency, innovation, and accountability to a more holistic, process-oriented approach that develops long-term relationships (both formally and informally) not only amongst first-tier suppliers but throughout the entire supply chain that span multiple projects. According to the Office of Government Commerce (OGC, 2007)[12], principles of "partnering" include: early involvement of key members of the project team; common processes, such as shared IT; a commitment to measurement of performance as the basis for continuous improvement; and critically, long-term relationships in the supply chain. Other critical factors of partnering involve:

1. A shared risk register
2. Clear, measurable targets
3. Clear identification of roles and responsibilities
4. Performance measurement and benchmarking
5. Target cost arrangements
6. Arrangements for sharing efficiency gains
7. Clear design quality targets set to promote innovation (OGC, 2007: 8)

Recommendations 10 and 15 are critical. It is important to recognise the role of supply chains as ambassadors for energy efficient retrofit – as highlighted in our responses to Consultation Questions 1 and 2.

For Recommendations 14 and 15 concerning consumer awareness and support, a particularly difficult area will be multi-occupancy buildings such as blocks of flats and tenements (which may also have mixed tenure i.e. a mix of privately rented and owner-occupiers). In multi-occupancy buildings where there is a factoring service, the organisation providing factoring services will likely be a key coordinating actor needing inclusion to coordinate between owners and interact with suppliers. This may increase costs for owners in multi-occupancy buildings (i.e. factoring charges to cover management of upgrades) or conversely lower costs through sharing costs among more owners. In the absence of factoring services, owners need established means of coordinating to ensure a programme of upgrades to the building meets the required standards. Support offered to owners from the Energy Efficient Scotland programme will need to take this into account. Equally where flats are located above shops and other non-domestic units there needs to be a suitable whole building approach.

[11] Latham, M. (1994) Constructing the team: final report of the Government/ Industry review of procurement and contractual arrangements in the UK construction industry.

[12] Office of Government Commerce (2007) Achieving Excellence in Construction Procurement Guide for the Integrated Project Team: Teamworking and Partnering.

With regard to Recommendation 16, there should be minimum standards with guarantees and warranties applying to both installation and materials for their lifetime with appropriate cover for defects and liabilities. This needs to be clearly communicated with consumers on purchase.

8. 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?

Tradespeople, particularly Small and Medium Enterprises (SMEs), have strong affiliations to their professional communities and trade bodies[13]. These affiliations can be used as a route to advertise and promote engagement with the Energy Efficient Scotland programme, and any necessary upskilling and accreditation that will be required. Raising awareness amongst industry professionals will be critical to supporting their involvement. In addition, the pipeline for works needs to be as secure and predictable as possible. Legislating building standards to 2030/ 2040 will help provide certainty to suppliers that there will be market growth in this area and thus encourage their participation.

The procurement frameworks and timeframes for completion of Energy Efficient Scotland projects need to be designed to support engagement from a wider mix of contractors.

The evaluation of the Energy Efficient Scotland Phase 1 pilots[14] found that:

- Short project (funding) timescales lend themselves to larger contractors, who are able to mobilise a larger workforce at short notice. This has the potential to exclude local contractors.
- Work at the end of the financial year (in accordance with funding timescales) impacts on job security for contractors, and the ability to retain and build institutional knowledge and professional standards (because individuals are recruited on a short term basis and released at the end of the financial year).
- Participants noted that contracts are often won by the same contractor. This indicates a lack of competitive market for contractors. New procurement frameworks need to present an opportunity for more contractors to participate.
- Procurement routes for non-domestic works were ad hoc in many cases; this needs to be resolved for future larger scale non-domestic programmes.

Thus longer-term, predictable funding and project timescales would be beneficial for a wider variety of contractors. Existing procurement frameworks and the requirement to demonstrate particular accreditation in order to participate (e.g. PAS 2030) can exclude smaller contractors who do not have the time, capacity or financial resource to undertake additional accreditation. Thus, any new accreditation

[13] Wade, F., Hitchings, R., Shipworth, M. 2016. Understanding the missing middlemen of domestic heating: Installers as a community of professional practice in the United Kingdom. *Energy Research & Social Science*, 19: 39-47.

[14] Bush, R., McCrone, D., Webb, J., Wakelin, J., Usmani, L., Sagar, D. 2018. Energy Efficient Scotland – Phase 1 pilots evaluation final report.

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.

Although procurement itself is not new to local authorities, they lack expertise and experience for procuring energy initiatives and it can be unfamiliar territory[15]. As a result, procurement is commonly presented as a 'problem', being highly technical, costly and time consuming. In multi-agency projects a lack of coherence and clear decisions from public sector partners can delay the procurement process. In cases where procurement expertise is not held in-house by local authorities, outsourcing procurement roles may introduce additional, due complexity into the supply chain which may have unforeseen costs. Because local energy is new to local government, senior managers and councillors also need confidence in expert procurement to reduce (perceptions) of financial and political risk, and improve risk management.

There is a rationale for shared procurement within Energy Efficient Scotland to keep costs down, streamline processes, and avoid counter-productive competition between local authorities where prices may increase as a result. To support delivery of strategic plans and achieve economies of scale across local authorities, Scottish Government in partnership with local authorities and public sector agencies should therefore consider the need for a hub of procurement expertise for local energy. This could be delivered via the National Delivery Mechanism, and/or specialist procurement organisations to support and assist in coordination of Energy Efficient Scotland, and identify opportunities for shared project delivery. Seeking feedback from procurement 'users' within the public sector to identify key strengths and weaknesses of existing procurement services and frameworks and their applicability to delivering the goals of Energy Efficient Scotland programme would aid the process.

Local authorities need cost effective and high quality procurement routes for district energy infrastructure and area-based retrofit of buildings. Specialist procurement would enable public sector actors to be intelligent buyers and competent negotiating partners and should help reduce costs and delays, and ensure best value to the local economy. Suppliers would also have approved routes, assisting in quality assurance, high standards and performance guarantees. Local authorities need to be both an 'intelligent buyer' — knowing how to design and complete a procurement exercise to deliver the envisaged project, and a 'competent negotiating partner' — with the knowledge and expertise to participate in the contractual arrangements with the supplier(s)/contractor(s) delivering works and services (including design consultancies). Significantly local authorities need to hold contractors to account if, and when, issues arise. This goes beyond procurement itself to include legal, finance and professional services. In general, local authorities may not have sufficient in-

[15] Webb, J., Tingey, M., & Hawkey, D. (2017). *What We Know about Local Authority Engagement in UK Energy Systems: Ambitions, Activities, Business Structures & Ways Forward*. London and Loughborough: UKERC and ETI. Retrieved from http://www.ukerc.ac.uk/publications/what-we-know-about-local-authority-engagement-in-uk-energy-systems.html

house legal and procurement experts for contracting hence the need for an expert hub resource. Equally they may lack skills and expertise for in-house supervision of technical design aspects and for ensuring high quality delivery of the project verification, monitoring and enforcement.
Existing support structures and procurement models include the Danish Energy Agency which has coordinated central and local government development of extensive district heating; the Norwegian agency Enova which supports transition to a low emission society and provides development support and funding for local authorities; and Sinfra, formerly Värmek, a Swedish non-profit procurement organisation for district heating, water and electricity. UK Proposals for district energy procurement specialist services previously under discussion include a non-profit local authority mutual enterprise District Energy Procurement Agency and the Crown Commercial Service proposal at UK Government level.

In addition, there is need for a coordination role to ensure that the area-based approach can include smaller, bespoke/specialist suppliers sub-contracting to deliver specific elements of retrofit upgrades.

There is also a potential tension between securing economies of scale across the Energy Efficient Scotland programme and awarding small contracts to suppliers. To mitigate this high quality procurement routes are needed to manage and coordinate. For example, there is evidence of cost saving when district heating procurement is broken down into smaller lots.[16] In the UK project costs are considerably higher than elsewhere in mainland Europe where district heating is more established (Pöyry and DECC, 2009).[17]

9. What do you think the role of Scottish Government should be in ensuring the quality criteria are consistently met?

Scottish Government needs to provide a framework or mechanism to support data sharing amongst agencies across Scotland for the identification of poor quality work and the management of complaints. Enforcement needs to go beyond 'box ticking' exercises to ensure compliance with Energy Efficient Scotland and the realisation of programme goals. Effective enforcement also provides a route to learning about recurring issues and making appropriate adjustments to the programme. Additional resource will need to be identified to support the testing and accreditation of work according to a defined Quality Mark. For example, increasing the resource made available to Building Control within Local Authorities for checking, monitoring and enforcing standards in the Energy Efficient Scotland work within their local area.

PART 5: Heat Networks

[16] Sinfra (formerly Värmek) is one example where district heating costs are lowered through specialist procurement agency. See presentations from this event: https://heatandthecity.org.uk/event/district-energy-vanguards-network-heat-networks-investment-programme-district-energy-procurement-agency/

[17] Pöyry Energy and DECC. 2009. *The potential and costs of district heating networks: A report to the Department of Energy and Climate Change.* Oxford and London: Pöyry Energy and DECC. Retrieved from http://www.nationalarchives.gov.uk/webarchive/

Questions

10. Taking the above into account, what further incentives could drive further heat demand onto networks?

District heating (DH) is recognised in UK Government Clean Growth Strategy and Scottish Government Energy Strategy as a 'low-regrets' contribution to low carbon heat for homes, businesses and public facilities. The Scottish Government is supporting expansion of heat networks through the Heat Networks Partnership and Loan Funds, as well as LCITP for use of renewable heat sources. LHEES proposals also include potential for zoning areas of high heat demand and diversity for district heating networks (DHNs), and issuing of concessions for developers. These areas are however usually served by the gas grid, and the cost competitiveness, and extensiveness, of single building gas-fired heating means there is little or no incentive for building owners to connect to district heating, and therefore no business case for DHN investment.

In the absence of high carbon pricing of methane gas, and longer term UK decisions on the future of the gas grid, other forms of incentive need to be brought into play.

One form of (little used) incentive is to build the societal case for DHNs in specific places, simultaneously contributing to a new heat policy narrative, which is essential for Scotland's new 2045 net zero carbon targets. 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. This is apparent for example in the current terminology of 'consents' and 'concessions', rather than a terminology of societal necessity and obligation. A first step towards developing such societal incentives for DH is to use the LHEES process for systematic heat planning and cross sector consensus building about best available area-based solutions for decarbonising heat. Participatory mechanisms that give local people a say over choices made (such as citizens juries) should be included to ensure responsiveness of planning to local conditions, and to improve acceptability of decisions and local commitment to change. This approach means taking the long term context into account, including potential for local scale economies from future-proofed DHNs, anchored first by supplying large heat loads, and then building out to smaller heat users nearby. It can also take into account continuing improvements to thermal efficiency of buildings; the potential role of other low carbon heat technologies (e.g. hydrogen or electrification), and plans for decarbonisation of other sectors including transport. Our research[18] shows the socio-economic benefits of this approach, which creates potential for connecting **50% more heat demand** than the current business case model, with considerable cost efficiencies and carbon savings, including resource economies derived from using fewer energy centres. The incentive here is however based on societal need and obligation to act.

A second incentive is to ensure that high standards of consumer protections, including transparency over price and tariff structures, as well as service standards, are introduced

[18] Bush, R., Hawkey, D., Tingey, M. and Webb, J. 2019. Meeting Strategic Challenges of UK District Heating; www.heatandthecity.org.uk

and enforced. At present, the main weakness of the Heat Trust scheme is the absence of transparency in heat tariffs; stronger price protection should be provided, based for example on Danish practice of publishing heat tariffs online so that customers can compare prices. Minimally, the structure of tariffs, and the rationale for price setting and price increases should be set out in heat supply contracts. Standard transparent accounting practices for DH operators (as in the Netherlands Heat Act), separating out heat supply from other activities, would support inspection of financial surpluses arising from heat sales, and be a route to securing user confidence that a monopoly heat supplier is not extracting monopoly rents. Further protection, included for example in the Norwegian regulatory framework, is an option for collective switching and provider of last resort, if the service is deemed unsatisfactory.

Scottish proposals for licensing are a valuable step, but Scottish Government lacks the necessary powers to regulate on specific standards of protection. UK consideration of heat regulation (BEIS, 2018[19]) should however support progress. Such regulation could include potential for socialising the costs of heat transition through taxation and/or energy bills, and hence sharing the cost of new heat networks (as well as other new heat infrastructure) across a large population of heat users. This would reduce the typically high fixed charge element of DH tariffs, when pay back is based on a small population of customers.

A third incentive is to keep heat tariff prices down by avoiding sole reliance on commercial finance. Public funding could be direct investment, or structured as a form of bond issue (such as a low carbon heat bond). For example, a survey of heat network users commissioned by the UK Department for Business, Energy and Industrial Strategy[20] in 2017 found that more negative attitudes to district heating were concentrated in commercially-operated systems: 30% of this group of heat network customers wanted to switch supplier; this fell to 11% and 8% for local authority and social landlord schemes respectively. (Note within the control group, households with gas boilers, 22% said they wanted to switch supplier.)

11. Taking the above into account, what further assistance could support the growth of appropriately-sited, low carbon heat networks?

For DH to play a significant part in the decarbonisation of heat a number of additional measures are needed: development of the supply chain; reduction of perceived risk and thus financing costs; linking to the availability of low carbon heat sources, and development of models for effective integration of local heat, electricity and gas networks. The key starting point is use of the LHEES process for systematic heat planning and cross sector consensus building, as outlined in the previous answer.

A long-running difficulty for district heating business development has been the level of business rates, which the Scottish Government has reduced. This contribution to district heating business cases should be established as a long term benefit.

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[19] BEIS, 2018. Heat Networks: Ensuring Sustained Investment And Protecting Consumers. Department for Business, Energy and Industrial Strategy.

[20] https://www.gov.uk/government/publications/heat-networks-consumer-survey-consumer-experiences-on-heat-networks-and-other-heating-systems

The main problem however remains 'demand risk'. DHN developers require a means of securing the commitment of building owners to connect, hence ensuring that the system will be both economically viable, and effective in reducing greenhouse gas emissions. In the absence of a form of obligation to connect, DH developments will not occur through voluntary routes (Webb and Hawkey, 2017[21]). Minimally the public sector estate needs to be connected to networks in areas/zones where heat planning identifies DH as best value means to decarbonisation. Heat planning processes and socioeconomic assessment methodologies should take into account the potential need to establish objective justification for public tendering whose effect is to restrict the ability of parties other than a DHN concession holder to bid.

As per our response to the Scottish Government's earlier 'Second consultation on local heat & energy efficiency strategies, and regulation of district and communal heating'[22], the Energy Efficient Scotland Programme notes one route to connecting anchor loads to a heat network within a Heat Network Zone would be for the public estate to commit to a system. While we believe there is a case for general powers of compulsory connection, if these are not taken forward, the approach to securing public sector connections should be strengthened. Public procurement rules are interpreted in the consultation as confining the ability of public bodies to make such commitments: energy supply to public bodies has to be procured through a competitive tendering process in which district heating operators have to compete. This means holding an area-based consent would not automatically mean public bodies' buildings would connect to the heat network with the consultation referencing *"public sector buildings as the 'anchor load' for networks and future expansion, within the confines of public procurement regulations"* (p25). Scottish Futures Trust (SFT) guidance expands the issue.[23] Several work-arounds are discussed in the guidance, including arrangements which keep the district heating operator as an in-house or arms-length organisation (e.g. the Teckal exemption). These approaches are likely difficult to adapt to connection of private sector heat demand and would perpetuate the current fragmented approach to district heating.

However, one route is discussed in the guidance which has not been tested: specifying characteristics of the energy supply when issuing a tender. Public authorities are generally able to make specifications in procurement (e.g. for sustainability), but the difficulty highlighted by SFT arises when specifications "have the effect of creating unjustified obstacles to the opening up of public procurement to competition." The issue, then,

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[21] Webb, J. & Hawkey, D. (2017) On (not) assembling a market for sustainable energy: heat network infrastructure and British cities. *Journal of Cultural Economy*. [Online] 10 (1), 8–20. Available from: doi:10.1080/17530350.2016.1226193 [Accessed: 30 March 2017].

[22] Hawkey, D., Bush, r., Tingey, M. & Webb, J., 2018. Response to Scottish Government's "Second consultation on local heat & energy efficiency strategies, and regulation of district and communal heating" Available at: https://heatandthecity.org.uk/wp-content/uploads/2018/02/HatC-response-to-LHEES-2-consultation-submitted-version.pdf

[23] Available at http://www.districtheatingscotland.com/wp-content/uploads/2015/12/DistrictHeatingLegalPowerReportV2Nov2014.pdf.

appears to be whether a procurement process that restricts the number of eligible suppliers is objectively justified. SFT states there is no directly applicable precedent for energy supply. Where the NHS has been permitted to issue a tender that restricted the number of eligible suppliers to one this was justified on objective grounds relating to the needs of the contracting authority (in that case, only one supplier was able to supply equipment compatible with existing systems). The SFT guidance suggests the risk of challenge to a public authority whose tender for energy had the effect of restricting competition to one supplier (the district heating concession holder) would be that "the justification would not relate to the functionality or characteristics of the energy, but rather its means of production." This appears to be based on the assumption that the tender would specify the energy had to be supplied by district heating. However, Scottish Government should explore what might be possible in this area, particularly in the context of socioeconomic assessment and long-run heat planning under LHEES. For example, public authorities requiring energy supply to contribute to the objectives of an LHEES, or to demonstrate optimality in socioeconomic terms. Where strategic district heating zones have been identified, these should already be based on such considerations. This would mean the risk of an energy supplier other than the concession holder winning the tender would be low, but this restriction would be justified by reference to the duty of public bodies to act in "the way best calculated to contribute to delivery of the [Climate Change] Act's emissions reduction targets," (Climate Change (Scotland) Act 2009 §44). The importance of de-risking heat demand by connecting (at least) the public sector estate to networks in concession areas means (a) this possibility should be explored fully and (b) design of heat planning processes and socioeconomic assessment methodologies should take into account their use in establishing objective justification for a tender whose effect is to restrict the ability of parties other than the concession holder to bid.