



Department for
Business, Energy
& Industrial Strategy

BUILDING A MARKET FOR ENERGY EFFICIENCY

Call for Evidence Summary of Responses

July 2019



OGL

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Executive Summary

Introduction

1. In 2017 the government published the Clean Growth Strategy (CGS), which outlined how the UK will continue to capitalise on the opportunities of clean growth and set out domestic policies that will keep us on track to meet our future carbon budgets.

2. Homes are responsible for 15% of UK emissions (or 22% including electricity consumption) and improving their energy efficiency brings a range of benefits beyond emissions savings including lower bills and a warmer, more comfortable living environment. This is why several of the fifty key policies in the Clean Growth Strategy were commitments on energy efficiency in homes, including:

- Supporting around £3.6 billion of investment to upgrade around a million homes through the Energy Company Obligation (ECO), and extending support for home energy efficiency improvements until 2028 at the current level of ECO funding;
- Upgrading all fuel poor homes to Energy Performance Certificate (EPC) Band C by 2030 with an aspiration for as many homes as possible to be EPC Band C by 2035 where practical, cost-effective and affordable;
- Developing a long-term trajectory to improve the energy performance standards of privately rented homes, with the aim of upgrading as many as possible to EPC Band C by 2030 where practical, cost-effective and affordable;
- Consulting on how social housing can meet similar standards over this period;
- Consulting on strengthening energy performance standards for new and existing homes under Building Regulations, including futureproofing new homes for low carbon heating systems;
- Offering all households, the opportunity to have a smart meter to help them save energy by the end of 2020.

3. Alongside the CGS, the government also published a Call for Evidence on Building a Market for Energy efficiency in recognition of the particular challenges of driving demand and addressing supply side barriers to market growth in the owner occupier sector. The Call for Evidence set out what the Government believes to be the current state of the market for domestic energy efficiency, and what the barriers are to growth in the market and potential policies for addressing those barriers.

4. The Call for Evidence asked 42 questions on a range of areas including:

- The **current state of the market**, including rates of delivery of energy efficiency measures outside of government schemes and the remaining potential for measures;
- An analysis of the current **barriers to market growth**, and lessons learned from previous attempts to stimulate the market;

- A **new proposed approach** and **set of principles** for guiding that approach;
- **Demand side** measures for stimulating the market including fiscal incentives, price signals, and improving awareness and advice to consumers;
- **Supply side** measures for stimulating the market including creating the conditions for beneficiaries of energy to participate more in the market, encouraging innovation in products, improving performance data and supporting supply chain growth and coordination.

5. The consultation closed on 9th January 2018. The Call for Evidence received significant interest from stakeholders with 92 responses in total. An explanation of the methodology used for analysing responses is included below, followed by a profile of the respondents on the next page. A summary of the main points raised by stakeholders is then presented, for each question. Please note the views expressed by stakeholders are not government policy.

6. The government will use the information provided in these responses as it considers the development of future policy to encourage home energy efficiency. We are setting out some of the actions we will undertake in the Green Finance Strategy, and further detail in the Energy White Paper.

Methodology

7. In total, 92 responses were received, however, respondents did not answer all the questions. Therefore, numeric categories are used to explain the number of respondents that gave views or agreed/disagreed with assessments such as;

- **Most** is used when referring to more than 50 per cent of respondents to a particular question.
- **Several or some** is used when referring to 20-50 per cent of respondents to a particular question.
- **A few** or a **small number** is used when referring to 0-20 per cent of respondents to a particular question.

Respondents Profile

Respondent Groups	Number
Assessors/ Surveyors	10
Distribution Network Operators (DNOs)/ Gas Distribution Networks (GDNs)	8
Individuals	3
Installers/ managing agents	4
Local Authorities & Government agencies	6
Manufacturers	6
Mortgage Lenders/ Finance groups	7
NGOs/ co-operatives	6
Researchers	5
Suppliers	10
Think Tanks	8
Trade Bodies	19
Total number of respondents	92

State of the Market

8. This section considered the remaining potential for installations and the market in general for energy efficiency measures, alongside the broader market for home improvements and the consumer groups within this as well their trigger points for action.

Question 1- What information do you have on current rates of delivery of measures outside of Government programmes, including through DIY etc.?

Question 2 - What information do you have on the remaining potential for energy efficiency improvements and what savings could be expected from these measures?

Summary

9. Most respondents highlighted their detailed information for company specific programmes or local area-based schemes, with these figures not appropriate to extrapolate to a national level.

10. Several others generally agreed with the assessment within the Call for Evidence that installation rates for insulation measures outside of Government schemes were low.

11. Most respondents recognised the potential for energy efficiency improvements and savings, largely based on either programme, sector specific, or local area-based research examples.

Question 3 - Do you agree with our assessment of the current market for energy efficiency amongst owner occupiers, including the trigger points and supply chain relationships?

Summary

12. Most respondents agreed with the assessment of the current market and the trigger points, either in terms of the market for energy efficiency as a whole, or their particular knowledge of it.

13. Most respondents also offered details from their knowledge of supply chain relationships or additional trigger points. These included:

- Additional home energy improvements versus energy efficiency measures e.g. solar photovoltaics, air and ground-source heat pumps, and battery storage;
- The growth of interest in energy storage, electric vehicles and smart technology;
- Purchases of property in need of wider renovation works;
- Maintenance, modernising and upgrading of buildings;
- Starting a new family with a desire to make the home warmer and more comfortable;
- Those approaching retirement or retiring, whether staying in an existing home or downsizing and seeking to reduce outgoings while focussing on comfort and wellbeing;

- New awareness of a property's EPC and the associated advice from this, and
- Area-based schemes where demand may be clustered and aggregated.

14. Some respondents disagreed with the assessment however. They referenced:

- Focussing on the underlying infrastructure of systems, data and mechanisms underpinning the market;
- A need for direct measurement of energy consumption to create a long-term, stable and performance-based market;
- Further research into whether funding would be used by wealthier, able to pay households already engaged in energy efficiency who may make improvements regardless;
- The cost of measures being a significant barrier to overcome even in the presence of the trigger points referenced;
- A renewed emphasis on implementing the recommendations of the Each Home Counts review, and
- A limited natural demand for energy efficiency.

Question 4 – Do you agree that it makes sense to prioritise those groups most likely to be open to investing in energy efficiency? And do you agree with our assessment of who those groups are most likely to be?

Summary

15. Most respondents agreed (at least in part) with prioritising those most likely to be open to investing in energy efficiency.

16. Most respondents also agreed with the assessment of the groups identified as being most likely to be open to investing in energy efficiency.

17. Some respondents disagreed, however, highlighting a need to consider a holistic approach to the entire market to meet the level of ambition required and/or suggesting a need to prioritise the fuel poor.

18. Some respondents also offered differing approaches to categorising homeowners and/or their motivations. These included:

- Focussing on landlords and their properties within the Private Rented Sector (PRS) as a key group to prioritise;
- Targeting all audiences in the context of broader advice versus energy efficiency alone;
- A need to build a mass market to encourage the supply chain to invest, innovate and scale-up, as well as avoid complexity in targeting and search costs;

- Identifying the properties that would benefit most from retrofitting energy efficiency measures, and
- Considering early adopters of smart technologies, and generational age groups of young and old millennials, generation x-ers and baby boomers.

Barriers to Market Growth

19. This section considered the barriers to market growth, detailing views on both demand and supply / investment side barriers. Further to this, lessons learned from both the Government's previous policies domestically and those from the experiences of other countries were also explored.

Question 5 - Do you agree with our assessment of the current barriers to market growth?

Summary

20. Most respondents agreed (at least in part) that the Call for Evidence had correctly assessed the main current barriers to market growth.

21. Some respondents disagreed however or suggested there were further considerations needed. They referenced:

- The need for greater trust and quality in installations of energy efficiency measures, as evidenced within recommendations of the Each Home Counts review; whilst others felt existing accreditation schemes such as the Gas Safe Register, PAS 2030 and the Competent Persons Scheme already served as quality markers;
- The provision of trusted advice and potential greater involvement of local community organisations including local authorities and community groups;
- Legal constraints on listed buildings and other heritage assets, including the need for planning permission and/or listed building consent;
- The importance of building maintenance and refurbishment alongside retrofit of new energy efficiency measures;
- High hassle and disruption factors with a market need for products to consider both monetary and non-monetary barriers;
- The lack of reduced VAT for whole-house retrofit versus the reduction of 5% being applied to single energy efficiency measures, and
- The current perception of property as an investment versus a home to live in and maintain, and the grant funded history of the energy efficiency market.

Question 6 - Are there other barriers that you think we should be addressing?

Summary

22. Most respondents agreed (at least in part) that the Call for Evidence had correctly assessed the main current barriers. However, most also suggested further barriers not explicitly referenced in the publication.

23. Other potential barriers highlighted for the Government to address included:

- A general lack of knowledge of building construction, potential measures and Energy Performance Certificates (EPCs) to inform investment decisions;
- The inability to test for air tightness in a property to improve an EPC rating;
- The complexity and number of interacting agents within the Energy Company Obligation (ECO) framework;
- A lack of sufficient financial differentiation between energy efficient and inefficient properties;
- The need for a clear, consistent and sustained marketing push for green financial products, incentives and schemes;
- Split incentives for future versus current home-owners where home-owners believe the value of their investment will accrue to a future owner;
- The opportunity cost of funding energy efficiency improvements versus kitchen or bathroom renovations, car purchases or other medium-sized investments;
- A need to establish social norms and conformity in terms of energy efficiency investments and/ or retrofit;
- Addressing individual measures in isolation leading to sub-optimal outcomes versus considering a heating system in its entirety;
- An absence of regulatory drivers to steer the market, and
- Home ownership levels decreasing, reducing the incentive to improve properties.

Question 7 - Do you think there are any other important lessons to learn from past attempts to stimulate the market?

Summary

24. Most respondents referred to lessons to be learnt from the Green Deal. These included:

- A perception of excessive bureaucracy and complexity believed to stifle consumer interest and innovation, though recognising a need for consistency and standards;
- The change of focus shifting between policies over time, requiring changes to business models and reducing the likelihood of scalability for smaller firms;
- Avoiding trying to create a brand at great expense, and instead utilising existing brands and working with industry to provide consumer solutions, and
- Avoiding single measure schemes, with installations based on funding, not the specifics of the buildings to receive the measures.

25. Several respondents referred to lessons from ECO. These included:

- The interaction between the Green Deal and the Energy Company Obligation (ECO);

- That supplier obligations have not created demand, but rather artificially maintained a market and supply chain through subsidy, and
- That a quality and standards framework should be in place to avoid negative consumer experiences that could undermine the uptake of energy efficiency.

Question 8 - Are there other international examples we could learn from?

Summary

26. Most respondents referenced at least one international example provided within the Call for Evidence which could be useful to learn from.

27. Several respondents showed support for example policies in Germany, France and Scotland being potentially relevant for the Government to consider. Other examples not included in the Call for Evidence referenced:

- The USA, including 'property-assessed clean energy' (PACE) schemes, the growth of the solar industry, and an energy-saving app linked to smart home devices;
- Further examples from Scandinavia including one-stop-shop residential retrofit, domestic thermal efficiency and low rates of fuel poverty in Sweden, and
- Australia's Home Insulation Programme and the importance of ensuring appropriate controls and standards.

Question 9 - Are there any barriers preventing business models for energy efficiency that have developed in other countries from also developing in the UK?

Summary

28. Most respondents referenced barriers preventing business models for energy efficiency that developed in other countries from also developing in the UK. These included:

- A historic focus in the UK on funding energy efficiency through supplier obligations creating the expectation that this should be provided free of charge and stifling demand;
- Differences in house buying practices among other societal norms, housing age and mortgage availability between the UK and other countries;
- The need for a range of business models and measures to account for the high level of variation in the UK housing stock;
- Differences in the supply chain in the UK inhibiting a whole house retrofit model with SMEs finding transaction costs and the associated risk challenging, and
- The perception of more stringent regulations in other countries;

Proposed Approach

29. This section considered a proposed approach given the barriers detailed and lessons learned with a set of guiding principles and policy areas.

Question 10 - Do you agree with the set of proposed principles for guiding our approach?

Summary

30. Most respondents agreed with the proposed principles guiding our approach. For those who disagreed, or suggested additional principles, references to the original principles are provided below.

31. Policies must be coherent:

- Avoiding looking at measures in isolation;
- Ensuring cost-effectiveness does not become interpreted as “least cost”, and quality of installations is incorporated;
- The potential need for a coherent set of policies relevant to all building types, tenures and household circumstances, and a mass market for owner occupiers - supporting all households to improve their energy efficiency regardless of income and circumstance;
- The relevance of the relationship between the retrofit and new-build markets, for example with price signals in the mortgage sector or building regulations requirements avoiding future needs for retrofit, and
- Coherency across government responsibility in the areas of climate change, innovation and industrial policy.

32. Policies must be cost effective:

- The inclusion of carbon benefits as well as financial savings when considering how cost-effective policies are;
- Encouraging thinking towards the economic opportunities associated, e.g. significant job creation, upskilling of the workforce, investment in manufacturing, export opportunities, and increased equity value among others;
- A need for measurement of results, potentially encouraging relationships with local authorities, neighbourhood planners and third-party organisations to collaborate in quantifying benefits, or utilising technology to ensure transparent, open and reproducible methods to calculate savings, and
- Considering the potential for legislation, for example minimum energy standards at the point of sale.

33. Policies must align with consumer needs and motivation:

- The challenges faced by rural homeowners given the complexity and additional costs associated with retrofit, as well as the nuances of the off-grid sector;

- Consideration of those most in need, for example prioritisation of the fuel poor, as well as not overtly supporting those that are able to pay;
- A need to change attitudes towards energy efficiency in light of previous short-term policy incentives, appealing to consumer nature, either in terms of being warmer or saving money, and cross-overs with health and well-being and education;
- Alongside this, a need to future proof policy, recognising how consumers and the energy sector are evolving in addition to the housing market.

34. Policies should unlock the full value of energy efficiency:

- A robust mechanism to track each measure installed to ensure compliance;
- Aesthetic considerations, and all elements of industry needing to understand the interrelationship between fabric, services and occupants, and to value heritage, comfort and health alongside energy, and
- A need to enable the co-benefits of smart energy related home technologies, laying the foundation for investments in homes that support the transition to a smart energy system.

35. Policies should exploit “what works” in the current home improvement market:

- Consideration for whether industry is able to deliver any schemes, i.e. capacity for companies and markets to change the way they operate without significant disruption;
- The importance of local intelligence and engagement to communicate benefits most effectively, and
- Robust assessments and piloting where necessary to make sure they work in practice.

36. Policies should support innovation:

- The importance of ensuring the quality and safety of measures;
- Improving the process for and supporting innovation in the design and installation of retrofit given the demand to improve existing housing and
- Support for the development of new business models.

Question 11 - Do you agree that the policy areas we have set out are the correct ones?

Summary

37. Most respondents agreed with the policy areas proposed including a range of fiscal incentives and price signals to drive action from owner occupiers.

38. Most also supported our view that we should help organisations that have an interest in improving the energy efficiency of homes, such as mortgage lenders or network companies to invest in the sector.

39. Other respondents who disagreed or added further considerations highlighted:

- The potential need for additional regulation and/ or fiscal incentives to change consumer behaviour;
- An emphasis on new build homes as an opportunity to set a new norm for expectations;
- Support for innovation that brings down capital and installation costs of existing energy efficiency products and services;
- A need to future-proof policy and support innovation in delivering homes fit for 2050;
- Considerations for health, well-being and warmth alongside energy efficiency, and
- The potential for a partnership approach between private firms and local authorities, combining expertise in delivery of energy efficiency interventions and local area knowledge.

Demand Side

40. This section considered a number of different areas addressing identified demand side barriers, including developing new methods for financing energy efficiency, price signals to encourage homeowners to prioritise energy efficiency and improving awareness of energy efficiency products and technologies.

Developing new ways for financing energy efficiency

Question 12 - Which of the fiscal levers described here would drive the greatest consumer demand?

Question 13 - Is there evidence to suggest that any other fiscal levers not described here could drive consumer demand?

Summary

41. When asked to consider which lever would drive the greatest demand, most respondents suggested that there would need to be a combination of fiscal levers, rather than any single method described in the Call for Evidence.

42. Most respondents suggested other fiscal levers to those described within the Call for Evidence. Several respondents described potential policies relating to fiscal measures based on EPC ratings which could be designed to be cost neutral, alongside provisions to protect the fuel poor.

Question 14 - What would be the profile of homeowners likely to take up these different incentives?

Summary

43. Most respondents suggested the appeal of each incentive would differ across a range of different demographics including age and income. These included:

- Direct subsidies being appealing to specifically the fuel poor, low income and or elderly, though appealing to the able to pay household for more expensive measures;
- Zero/ low interest loans being relevant to a wide cross-section of homeowners able to afford repayments, and
- Home equity loans appealing to asset rich but cash poor households.

44. Some respondents' views suggested that knowing the profile of those likely to take up these incentives would require more research of homeowner profiles.

45. Some respondents also believed several of the proposed incentives in general would have a broad appeal, either to all homeowners or a mix of them – especially those already interested in investing in energy efficiency.

Question 15 - How could these incentives be designed to deliver the best value for money for Government and best savings for consumers?

Summary

46. Most respondents offered suggestions, either for targeting of demographics they believed would take up particular incentives or in the design for administering them. For example, these included:

- Adopting a pilot-based approach or demonstration programmes, robustly testing and refining different combinations of levers;
- Area based schemes, utilising local community organisations as trusted partners, and effectively targeting homeowners through local data collection and contacts;
- Needing a coherent set of funding options with an appropriate offer for every household, integrating funding options alongside other home renovations, and introducing these alongside support for the supply chain;
- Channelling the grid re-enforcement costs avoided by network companies through demand reduction into a subsidy and grant programme;
- Targeting subsidies at the fuel poor, while offering other policies including low interest loans to all groups – or conducting further research to inform an understanding of what products and services appeal to different profiles;
- Rewarding engagement whether through the provision of information or installation of measures;
- Obtain research and evidence on the energy use of buildings before and after retrofit, considering other important metrics of comfort, moisture levels, health and wellbeing, and appropriately weighting these;
- Designing policies around people, with consideration for community value, provision of local jobs and affordable warmth;
- Linking any incentives contractually to long-term performance and product guarantees; and
- Adopting a pay-for-performance model where possible, creating downward price pressure and a more efficient, competitive market. Alongside this, the issue of quality and standards was raised to ensure incentives deliver the best value for money.

Question 16 - What barriers, regulatory or otherwise, exist to financial institutions developing any of these products or incentives themselves?

Summary

47. Respondents offered a range of different barriers to financial institutions developing products or incentives for energy efficiency. These included:

- Several respondents noting a lack of widespread and sustained demand needed to attract investors, associated with a lack of awareness of measures;
- Some others commented on trust in installations, with risk aversion requiring robust and consistently high standards for both manufacture and installation of measures – potentially addressed in part by ensuring recommendations of the Each Home Counts Review are implemented;
- Market uncertainty was highlighted in several responses, whether due to a lack of long-term policy signals, experience and/ or presence in the energy supply market, and access to data and verified savings information to enable development of products or incentives, and
- A few also suggested regulatory constraints were key, potentially leaving little room for the market to develop new and innovative products if policies are overly prescriptive.

48. Mortgage lenders / finance groups referred to:

- The value of micro-level and SME installers for engagement;
- The need for collaboration between the financial and energy efficiency industries alongside regulators to consider different operating models, and
- Regulatory constraints which limit exposure to lending for environmental improvements, including prudential capital requirements which do not account for the energy efficiency performance of properties.

Question 17 - How could Government assist financial institutions with a retail presence, local authorities and other actors to run trials of these ideas?

Summary

49. Most respondents suggested a role for the Government to play in administering, funding or standardising trials of these ideas. These included:

- Ensuring standards across any trials and enabling a future scaling up within the wider framework of a long-term infrastructure programme;
- Support in connecting the construction industry with local authorities, energy suppliers and others;
- Inviting bids from industry to run controlled pilots, funding set-up costs and/ or providing support for pilots of green loan products, including marketing support;
- Analysing results of any pilots and promoting successful results, and
- Setting a commitment that ideas proven to work would be rolled out.

50. Mortgage lenders / finance groups referred to:

- Local Authority promotion of finance, installers and products;

- Reduced capital costs for mortgage lenders to ensure viability;
- Working with the Government and regulators to develop ideas further and potentially support trials, for example via the FCA regulatory sandbox, and
- Accounting for the resource implications of product development and trials against competing business and system development priorities.

Question 18 - How could we ensure that any trials would lead to the development of a self-sustaining market for support?

Summary

51. Most respondents referred to a need for policy commitments from government to build the wider market for energy efficiency, so that any trials became self-sustaining. Ideas for this included:

- Learning from the design, planning, governance and evaluation of Scotland's Energy Efficiency Programme (SEEP) pilots.
- Early-stage buy-in and involvement from delivery and consumer stakeholders, motivating participation by enabling learning from the pilots and encouraging early adopters;
- Longer-term market development, with clear objectives and principles, accompanying policies on both the supply and demand side, and the promise of political support to extend beyond a trial, and
- Ensure trials are co-ordinated to a standard and conducted robustly, relying on objectively measured and observed outcomes with actual energy data.

Price Signals to encourage homeowners to prioritise energy efficiency

Question 19 - What price signals would best drive uptake of energy efficiency measures?

Summary

52. Most respondents suggested a range of long-term price signals to best drive uptake of energy efficiency measures. Examples included:

- Fiscal measures based on EPC ratings, potentially linking to the cost of improvements and designed to be cost-neutral;
- Subsidies, but avoiding penalising those living in fuel poverty by analysis of the distributional impacts of these methods, and
- VAT adjustments, for example with 0% levied on optional energy efficiency works delivered in tandem with other works versus 5% when measures are delivered on their own.

53. Most mortgage lenders / finance groups supported a fiscal incentive, recognising these as powerful price signals but cautioning the potential impact where homes are unsuitable for improvement or customers are unable to access funds.

Question 20 - What would be the impact on the housing market of such price signals?

Question 21 - What protections would need to be in place to ensure that vulnerable or fuel poor customers are not unduly affected by these price signals?

Summary

54. Most respondents felt the impact of price signals would increase the value and/ or appeal of more efficient homes and decrease these for less efficient homes.

55. Mortgage lenders / finance groups specifically added a need for further research and piloting for fiscal incentives to understand long-term impacts on the housing market;

56. Some respondents agreed with the assessment in the Call for Evidence that creating nudges through price signals would specifically provide the incentive for consumers to take up energy efficiency measures.

57. Most respondents felt that the fuel poor would not necessarily be affected by the price signals suggested. This was due to:

- Current regulatory instruments;
- The increased focus on the fuel poor in the Energy Company Obligation, and
- Examples for protections within the design of any new price signals.

Question 22 - Could these ideas be rolled out in a smaller scale, to a particular subset of homes or in a particular geographic area, to test feasibility before a national rollout?

Summary

58. Most respondents agreed that these ideas could and/ or should be rolled out on a smaller scale, or to a particular subset of homes, to test feasibility before a wider national roll out.

59. Several respondents referred to the role for Local or Combined Authorities to deliver local feasibility tests.

Improving awareness of energy efficiency products and technologies, their benefits and advice to consumers

Question 23 - What evidence do stakeholders have on the link between installing an energy efficiency measure and the value of property? What research could bolster this evidence base?

Summary

60. Most respondents cited evidence supporting the link between EPCs and property prices. These included:

- International examples in academia from Brounen and Kok (2014), Hyland et al (2013), Fuerst et al (2015);
- The European Commission's "Energy performance certificates in buildings and their impact on transaction prices and rents in selected EU countries" (2013), and
- Anecdotal evidence from a variety of experiences and surveys across industries.

61. In addition to the above, most respondents also suggested further research was needed to supplement the evidence base in this area.

Question 24 - How could Government effectively deliver messages to promote energy efficiency through intermediaries and which are the most important intermediaries to target?

Summary

62. Most respondents supported government working through intermediaries to promote energy efficiency.

63. In terms of the intermediaries to target, respondents referenced:

- Local authorities and community groups including charities, Citizen's Advice and community energy groups with influence in local areas;
- Those closely involved in the sales process i.e. estate agents, online real-estate and property management websites, mortgage lenders, building societies and solicitors;
- Intermediaries within the building sector including retailers, architects, planners, surveyors, building control officers and small builders themselves;
- Regional networks of 'one stop shops';
- Healthcare providers, and
- Energy assessors.

Question 25 - At which additional points could homeowners be required to have an EPC, and how could this improve their value and the awareness of potential energy efficiency improvements?

Summary

64. Most respondents suggested reforms to EPCs including via additional trigger points, including most assessors / surveyors.

65. Additional suggestions of trigger points referenced included:

- The installation of any new measures or indeed fundamental changes to the homes in terms of extensions, conversions or refurbishments;
- All properties to have up-to-date EPCs as a standard and not just when let or sold; or
- Offering free EPC assessments for those at the point of retirement or in receipt of winter fuel payment to encourage homeowners to utilise funding to pay for improvements, and
- Any fiscal measures that are dependent on an up-to-date EPC.

66. These were perceived to improve their value and the awareness of potential energy efficiency improvements by:

- Effectively reducing the lifetime of an EPC, meaning these would be updated more regularly than current requirements;
- Ensuring works were suitable in the first instance, and
- Identifying further works appropriate once current works are completed.

Question 26 - How could EPCs be displayed more prominently to prospective homebuyers at different stages of the home buying process?

Summary

67. Most respondents suggested either displaying the full EPC as part of estate agents' property descriptions versus the rating alone, or different options for displaying the rating at key stages of the buying decision. All assessor / surveyor respondents detailed similar suggestions.

68. Suggestions from respondents included:

- Providing the EPC in various types of advertising;
- Linking the EPC to affordability criteria for mortgages;
- Featuring within information on property comparison websites and
- Improved enforcement of when EPCs are currently required under existing regulation.

69. In addition, some respondents expressed reservations that simply improving the visibility of EPCs would have any desired effect.

Supply Side

70. This section considered a number of different areas addressing identified supply side barriers, including creating conditions so that those who derive value from energy efficiency can be key players in the market, enabling innovative energy efficiency products and services, improving data to open up the market for investment, and improving supply chain capability.

Creating the conditions so that those who derive value from energy efficiency can be key players in the market

Question 27 - Have we captured all the main sources of additional value of energy efficiency?

Summary

71. Most respondents suggested additional sources of value from energy efficiency to those listed in the Call for Evidence consultation document. These included:

- Improvements to the appearance of whole communities of housing with area-based retrofit;
- Wider environmental benefits from avoiding resource depletion, improving water efficiency and reducing waste;
- Fewer maintenance interventions resulting in lower costs;
- Further emphasis on health, wellbeing and comfort as homeowner and resident benefits;
- Multiplier effects from employment in local supply chains, and
- Potentially higher educational attainment associated with households not in fuel poverty.

Question 28 - What other ways could we seek to monetise the benefits of energy efficiency?

Summary

72. Most respondents suggested needing different reference values for the benefits of energy efficiency. Examples included:

- Equivalent savings including via rebates;
- Health benefits associated with living in energy efficient homes, and
- Improved comfort to homeowners and residents.

Question 29 - How could both Distribution Network Operators (DNOs) and Gas Distribution Networks (GDNs) be incentivised or required to deliver energy efficiency savings?

Summary

73. Most respondents suggested a need for some form of government intervention to help DNOs/GDNs invest in energy efficiency or proposed a form of obligation or target. These included:

- An energy efficiency obligation, shared savings model or dedicated funding for energy efficiency innovation;
- Working with local authorities, energy advice charities and community groups with experience of dealing with householders and energy use;
- Working with energy service providers as part of a whole systems approach;
- Any reductions in energy usage being linked to carbon emissions and carbon credit requirements or an alternative KPI;
- A low carbon incentive or target aligned to the transition to Distribution Service Operator models (DSOs);
- Network companies inviting tenders from energy service providers for demand side response and storage solutions;
- Ofgem encouraging networks to deliver energy efficiency savings, re-designing the current RIIO framework of regulatory incentives or building specific performance incentives into network price controls that are beneficial from a whole system perspective, and
- Use of blockchain technology to manage proven domestic energy efficiency savings.

74. The views of DNOs themselves included noting a potentially limited impact with fewer houses on electric heating, and that energy efficiency would not be expected to entirely offset other demand reduction and network reinforcement needs. They also suggested:

- The current RIIO framework of regulatory incentives is not designed to require DNOs to deliver large scale energy efficiency savings, and would need to be redesigned to facilitate this;
- The potential for competitive auctioning for storage/DSR/energy efficiency to deal with constraint issues;
- Considering extending the funding of Network Innovation Allowance and/or Network Innovation Competition for community projects/social obligations to deliver targeted advice and installations;
- Incentives in the form of additional network allowances provided to distributors, earmarked for energy efficiency measures, and rewarding actual energy reductions;
- Distributors could be given the obligation for the delivery of the ECO scheme after its next review with the cost of delivery reflected in their allowances, and

- Gathering robust evidence on the energy savings technologies can deliver and the resulting network benefits is key, with support for government policies and funding mechanics that facilitate the required data gathering through innovation projects.

75. GDNs highlighted a need for caution to ensure that the potential energy efficiency savings offsetting the cost of reinforcement is not overstated, and that any potential proposals must consider the differences between gas and electricity networks. Suggestions otherwise included:

- The opportunity to consider a comprehensive package of targeted measures aligning energy efficiency policy and existing with incentives to deliver demand side energy efficiency savings;
- Improving co-ordination and access to funds through aligning existing and future schemes to allow networks to partner with other agencies to deliver a comprehensive package of measures to improve energy efficiency and reduce bills for those fuel poor households and communities who need most help;
- Adapting one of the incentive structures to deliver energy efficiency, to provide a derogation from terms within the gas act that may restrict the service which network companies can provide, or to incorporate an obligation to deliver energy efficiency and
- Reviewing the Fuel Poor Network Extension Scheme (FPNES) and expanding the qualifying criteria with incentives to deliver whole house solutions.

Question 30 - Do current market arrangements allow for DNOs and GDNs to fully realise the potential of energy efficiency savings? If not, what needs to change?

Summary

76. Most respondents suggested current market arrangements were insufficient for DNOs and GDNs to fully realise the potential of energy efficiency savings, suggesting some form of intervention was required. Further to suggestions or requirements detailed in responses to Question 29, suggestions for change included:

- Closer links between DNOs and other industries associated with the market for energy efficiency;
- Changes to legal and regulatory remits to enable joint projects;
- If DNOs and GDNs were to have an enhanced role in the delivery of environmental and social policy, a need for funding and/or incentive arrangements to be as transparent as possible, as well as more robust governance processes;
- Future tenders for system services to be designed to encourage and facilitate the inclusion of energy efficiency measures;
- A stronger role for Local Planning Authorities in the co-ordination of whole system decisions, providing local context within a whole systems approach;
- Competitive auctioning for energy efficiency to deal with constraint issues alongside other means including storage and demand side response;

- Revised guidance and assessment criteria for innovation projects and social obligations through Ofgem, and
- Developing methodologies to estimate nominal energy efficiency savings including measured reductions, and monetising additional benefits that do not accrue to DNOs and GDNs e.g. the avoided costs of generating capacity, carbon emissions and reducing levels of peak demand.

77. Most DNOs agreed existing market arrangements did not drive DNOs to fully realise the potential of energy efficiency savings, but one queried the rationale for doing this versus other identified routes. In terms of potential changes, responses included:

- A clear policy statement to set out ownership and responsibility for any interventions before, during and after deployment to provide clear accountability and escalation routes for consumers;
- Revisions to the Ofgem cost benefit analysis model historically used as an evaluation tool to include energy efficiency and drive innovation, using an alternative method to that used for normal network investment, and
- New commercial arrangements, enhanced customer relationships including wider access to customer data and technical enablers including mobile applications independent from energy suppliers.

78. When GDNs were asked to comment on current market arrangements allowing them to realise potential energy savings, they again expressed caution over their potential influence on energy efficiency savings, but also referenced:

- Limitations imposed by the Gas Transporter Licence and price control;
- A need to carefully calibrate network involvement in realising energy efficiency savings to avoid undesired long-term outcomes for customers, competition and markets;
- Taking forward lessons learnt and stakeholder feedback around the FPNES and consider how this could be widened to a 'whole house' approach, and
- The potential for network companies as regional monopolies to deliver measures under schemes such as ECO more efficiently than suppliers with savings accrued from economics of scale in a geographic area.

Question 31 - What are mortgage lenders' plans for improving the way they factor energy efficiency into lending decisions?

Summary

79. A relatively limited number of responses were received in regard to mortgage lenders' plans for improving the way they factor energy efficiency into lending decisions. This included a small number of mortgage lenders / finance groups themselves.

80. Some respondents referenced findings from the 2017 “Levering Economics for New Drivers to Energy Reduction & Sustainability - LENDERS” Project, while others stated they were not aware of plans.

81. Mortgage lenders / finance groups referenced:

- The Energy Efficient Mortgages Initiative covering the Energy Efficient Mortgages Action Plan (EeMAP) and the Energy Efficiency Data Protocol and Portal (EeDaPP);
- Further work needed to ensure a robust and accurate methodology that considers the likely significant resource and systems implications to mortgage lenders of changing their existing affordability calculators, and
- Developments in open banking and smart metering to allow mortgage lenders to access actual energy costs and factor these into existing mortgage affordability assessments.

Question 32 - What support would lenders need in order to be able to commit to a voluntary target for improving the average energy efficiency of the properties they lend to?

Summary

82. Most respondents suggested some form of support was required from government for mortgage lenders to be able to commit to a voluntary target for improving the average energy efficiency of the properties they lend to. These included:

- A tax incentive or legislation requiring lending a percentage of mortgages to the highest EPC rated homes;
- A rate differential based on the EPC of the property;
- A potential kite mark or assurance label to complement EPCs and indicate the quality of any asset in energy efficiency terms as an ‘investment ready’ stamp of approval provided by certified third parties;
- Actuarial evidence that shows higher performing homes have lower default risk, potentially through transparency within pay-for-performance programmes to enable confidence in investment;
- Annual reporting of average EPC ratings, with year-on-year comparisons and competitive pressure between lenders leading to desired improvements;
- A policy roadmap, highlighting steps to achieve the UK’s 2050 carbon reduction targets, giving mortgage lenders confidence to invest and develop innovative finance solutions to support this, and
- Support from the Energy Assessor schemes to better understand EPCs and potential areas for improving the energy efficiency of properties.

83. Among the mortgage lender / finance organisations that answered this question, views were split. Some responses suggested being open to the idea of a voluntary target while highlighting the risks of distorting a competitive market and unintended consequences. Others

expressed concerns more explicitly, suggesting an adverse impact on property values and the potential for restricted lending.

Question 33 - How can lenders develop a more accurate model of fuel bill savings, and would they be willing to lend 'Green Mortgages' on this basis?

Summary

84. Most respondents suggested a need for real data inputs to be used in modelling fuel bill savings to provide the necessary accuracy. Suggestions in responses included:

- Empirical data to include both actual energy savings and risks arising from retrofit including moisture levels and indoor air quality;
- Performance contracting for measures, with householders able to monetise savings and this act as a guarantee for the repayment of Green Mortgages;
- Access for lenders to energy saving calculators with clearly defined building archetypes;
- Building on the methodology developed within the LENDERS project, with a need for further research and analysis, including on household characteristics, and
- The importance of changes recommended from the Each Home Counts review, enabling mortgage lenders to connect to an improved network of trusted installers.

85. Mortgage lenders / finance organisations that answered this question referenced technological developments including open banking and smart meters allowing for tailored assessments of energy costs in mortgage affordability calculations.

Question 34 - What other changes would encourage lenders to offer more 'Green Mortgage' products?

Summary

86. Most respondents suggested some form of change driven by government to encourage lenders to offer more Green Mortgage products. These included:

- Subsidised setup costs;
- Access to Government borrowing rates;
- Recognition of energy efficiency in the housing stock as national infrastructure priority, as per the example in Scotland;
- Fiscal incentives meaning consumers were more inclined to seek Green Mortgage products or backstop regulation and
- Confidence in the long-term direction of government policy.

87. Changes suggested from mortgage lender / finance organisations included:

- Developing EPCs into building energy passports including renovation roadmaps;

- Accurately recording historic and potential improvements, and
- Potential preferential capital treatment for Green Mortgage lending with the EeMAP project proposing a standardised label for these products.

Enabling innovative energy efficiency products and services

Question 35 - How could thinner, less intrusive insulation products be made to be compliant with building regulations?

Summary

88. Most respondents were supportive of efforts to ensure thinner, less intrusive innovation products are made compliant with building regulations. This was proposed either via further testing and research, amendments to building regulations or other technology-specific suggestions. Responses referenced:

- Standardised testing and application methodology to ensure efficacy and safety
- Assurance for SMEs generally to make any necessary investments in product development;
- Regulation amendments for the application of insulation at critical junctures;
- Whole house assessments versus 'elemental' analysis;
- Energy saving results to be translated into u-value equivalents and permitted to be used for compliance, and
- The potential inclusion of a triggered requirement for further improvements alongside any reduced provision.

Question 36 - Are there any ways that current regulations are preventing innovative energy efficiency products and services coming to market?

Summary

89. Most respondents' answers reflected views that current regulations prevented innovative energy efficiency products and services coming to market. All assessors/ surveyors and suppliers who responded were unanimous in agreement. Regulatory barriers identified included:

- Some respondents referring to the time and expense associated with testing and approvals processes, for example eligibility criteria for schemes such as ECO;
- Accountability not falling on installation companies for quality and performance of products installed;
- High penalties for any failure under ECO encouraging conservatism and limiting innovation;
- Limited freedom for suppliers to choose measures that count towards their obligation;

- Duplication and exclusivity with multiple approvals for energy efficiency savings and or performance;
- Limited encouragement for innovation in delivery and service, as measures need to be competitive as soon as they enter the market;
- Technologies missing from the SAP methodology, and a need to change associated calculations in EPCs to recognise their benefits, and
- The absence of a robust feedback loop meaning regulations place no value on real performance of energy efficiency outcomes versus deemed scores.

Question 37 - What changes should be made to the Energy Company Obligation to ensure that it supports the development of innovative energy products and services?

Summary

90. Most respondents agreed there was a need to change the Energy Company Obligation to ensure it supported the development of innovative energy products and services. Ideas from respondents referenced:

- A wider scope of measures more generally beyond thermal efficiency;
- Shortened approval periods for introducing products with economic incentives to help them get installed;
- A ringfenced amount of savings suppliers can use for innovation measures combined with a pay-for-performance approach;
- ECO subsidies supporting holistic outcomes as well as single measures;
- Voluntary commitments to adopt a percentage of new technology as part of their obligation;
- A premium for new products to the market based on accreditation to enable products to become established;
- Decoupling ECO from suppliers and their relationships in terms of subsidiary products and installation companies;
- Rewards for deployment innovation, for example with uplifts to scores, with reduced disruption during installation or reduced costs beyond payback;
- A more quality-focused approach, which includes product tracking and verification of appropriate installations, and
- Introducing a separate scheme designed specifically to stimulate the introduction of innovative energy efficiency measures to the marketplace, available to both the able to pay and those unable to pay for up-front capital investments.

91. All Energy suppliers who responded also suggested potential changes, including:

- The cost and timescales for new products to be added to the SAP/RdSAP methodologies, and using trial or test results to derive an “improvement factor” to apply to existing scores;
- A broader range of technologies to offer off-grid homeowners so they can improve their energy efficiency;
- Revising ECO to act as a testing ground ahead of mass commercial rollouts;
- Aligning grant criteria and scheme eligibility across government schemes where possible;
- Support with the time and cost involved in the process of obtaining scores for new measures, potentially with low or no cost to energy suppliers and manufacturers for products not on the existing deemed score matrix, and
- Reintroducing an innovation uplift or allowance, or guaranteeing claimed scores based on trials, for example with a minimum savings credit, attributed regardless of the result of a trial.

Improving data to open up the market for investment

Question 38 - Are there other ways that Government could help improve access to data on energy efficiency and performance of homes for research purposes?

Summary

92. Most respondents agreed that Government could help improve data access on energy efficiency and the performance of homes for research purposes. Suggestions included:

- Placing data in a single, easy-to-access portal, for example UCL’s Smart Meter Research Portal (SMRP) or the data warehouse proposed in the Each Home Count’s Review delivered through TrustMark;
- Providing access to data from all sources, for example the full RdSAP and National Energy Efficiency Data-Framework data sets, as well as data generated from Smart Meters;
- Combining data from various sources to allow easier comparison, for example NEED, the Health Economic Evaluations Database (HEED), the English Housing Survey, open banking and Smart Meter data, and
- A need for caution with all of the above in terms of access, subsequent usage and storage of the data to ensure protection for consumer rights and privacy.

Question 39 - What would be the impact on the market and investment in energy efficiency of the availability of better data on the actual performance of homes?

Summary

93. Most respondents agreed that availability of better data would have a positive impact on the market. Specific impacts referenced included:

- Demonstrating the efficacy of products to achieve desired results, acting as a source for case studies and justification for investments;
- Potential third-party endorsements to recommend products based on energy efficiency at point of sale;
- The development of new business models including energy performance contracts or guaranteed savings;
- Wider research and monitoring of the impacts of different measures and links to health and wider benefits;
- Encouraging innovation and the development of new products and techniques assessed according to performance versus compliance with SAP modelling;
- Support for third parties such as financial institutions and DNOs by providing evidence of energy savings achieved in practice, and
- Improve the quality of installations in tandem with the implementation of the Each Home Counts recommendations.

Improving supply chain capability

Question 40 - Would the supply chain benefit from having a feature in the new Energy Savings Advice service for installers to share best practice and access a repository of advice?

Summary

94. Most respondents supported having functionality for installers in the new digital advice service for installers to share best practice and access an advice repository.

95. Further ideas for functionality included:

- Providing advice on complex or innovative technologies to support the supply chain;
- Linking this to the Each Home Counts implementation, and
- Featuring case studies as a means to advise installers.

96. Additional suggestions to inform development of the advice service included:

- A need for independently reviewing the advice featured;
- Disseminating advice locally in order for this to be effective and,
- Considering the audience for the service potentially being narrow, and that established networks and contacts would continue to be a primary route for gaining advice.

Question 41 - Would funding for local supply chain growth and coordination lead to additional retrofit measures?

Summary

97. Most respondents supported additional funding for local supply chain growth and coordination in some form. Suggestions included:

- Working with trusted intermediaries, for example Local Authorities being best placed to support this;
- Gathering evidence over a long period of time with a focus on developing skills and providing training for the supply chain;
- Targeting funding at skills and training, for example subsidising registration fees and offering free training, rather than underpinning local growth with funding with the potential to distort the market;
- Reducing barriers to entry for local tradespeople and SMEs to join the supply chain;
- Improving data availability to help contractors in quality assurance programmes, and
- Detailing contractor performance and ranking high performers alongside those who did not consistently deliver the intended results.

Question 42 - Is there anything else that central Government could do to support local retrofit supply chain growth and to support builders to carry out retrofit projects?

Summary

98. Most respondents supported some form of additional intervention to support local retrofit supply chain growth and builders to carry out retrofit projects.

99. Most also highlighted the issue of trust and quality in the installation of measures, suggesting this had not been sufficiently addressed to date through implementation of the recommendations of the Each Home Counts review.

100. Further ideas included:

- Working with community energy groups and Local Authorities to build third party platforms, providing local oversight and project management, and potentially adopting an area-based approach with local tenders;
- Similarly supporting collaboration between Local Authorities, energy suppliers, DNOs/GDNs and builders to identify areas where energy efficiency improvements can be made, giving consumers confidence to invest and
- Improving the training within local supply chains, for example via further education colleges and vocational education, or via funded energy efficiency retrofit apprenticeships, and
- Reducing VAT on energy efficiency retrofit related goods and services.

Annex A: Respondent Organisations

Age UK

Air Tightness Testing & Measurement Association

Aldersgate Group

Association for the Conservation of Energy

BEAMA

BNP Paribas Personal Finance

Bright Blue

Brighton and Hove Energy Services Co-operative

British Blind and Shutter Association

Building Societies Association's

Cadent

Canetis Technologies Limited

Carbon Co-op

Cavity Insulation Guarantee Agency

CBI

Centre for Sustainable Energy

Centrica

Certsure LLP

Chartered Institution of Building Services Engineers

CLA

Committee on Fuel Poverty

Core Cities

Council of Heads of Built Environment

E.ON UK

Ecology Building Society

EDF Energy

Electricity North West Limited

Elmhurst Energy

Energiesprong UK

Energy Alton

Energy Networks Association

Energy Systems Catapult

Energy UK

EnergyPro Ltd

eTech Solutions Limited

EUA

European Mortgage Federation - European Covered Bond Council

GDAM Ltd

Gemserv

Glass and Glazing Federation

Grantham Research Institute on Climate Change and the Environment at London School of Economics and Political Science

Green Heat Ltd

Green Peace

Grid Edge Policy Ltd

InstaGroup

irt Surveys Ltd

Kate de Selincourt

Kingspan Insulation Limited

Knauf Insulation

Melius Homes

Mineral Wool Insulation Manufacturers' Association

Mould Growth Consultants Ltd

Mr R W Elbey

Nationwide Building Society

Nicola Walters

Northern Gas Networks

Northern Powergrid

Npower

Ofgem

Oil Firing Technical Association

Calor

Parity Projects

Plymouth Council

Procure Plus

Property Energy Professional Association

RAP

Research Assistant in Construction Training and Innovation at University of Leeds

Researchers at the Centre on Innovation and Energy Demand / Science Policy Research Unit, University of Sussex

Rockwool UK

Saint Gobain UK and Ireland

Scottish and Southern Electricity Networks

Scottish Power

SGN

SSE

Stroma Certification

Sustainability First

Sustainability Research Institute, University of Leeds

Sustainable Energy Association's

Sustainable Traditional Buildings Alliance

TechUK

The C.H.E.E.S.E Project

The Heritage Alliance

The trade association of the Liquefied Petroleum Gas industry

Third Generation Environmentalism Ltd

UK Finance

UK Green Building Council

UK Power Networks

Wakefield Council

Warmer Worcestershire Network

Western Power Distribution

Will Prince

WWF-UK

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