Citizens Advice Response to the BEIS call for evidence: a Future Framework for Heat in Buildings

June 2018

citizens advice

Introduction

The Citizens Advice service provides free, independent, confidential and impartial advice to everyone on their rights and responsibilities. It values diversity, promotes equality and challenges discrimination. On 1 April 2014, the Citizens Advice service took on the powers of Consumer Futures to become the statutory representative for energy consumers across Great Britain.

The service aims:

- To provide the advice people need for the problems they face
- To improve the policies and practices that affect people's lives.

The Citizens Advice service is a network of nearly 300 independent advice centres that provide free, impartial advice from more than 2,900 locations in England and Wales, including GPs' surgeries, hospitals, community centres, county courts and magistrates courts, and mobile services both in rural areas and to serve particular dispersed groups.

In 2017, Citizens Advice Service helped fix 163,000 energy problems through our local network and 61,000 through our Consumer Service Helpline. Our Extra Help Unit specialist case handling unit resolved 8,367 cases on behalf of consumers in vulnerable circumstances, and their Ask the Adviser telephone service handled 2,593 calls from other advice providers in need of specialist energy advice.

Since April 2012 we have also operated the Citizens Advice Consumer Service, formerly run as Consumer Direct by the Office for Fair Trading (OFT). This telephone helpline covers Great Britain and provides free, confidential and impartial advice on all consumer issues.

Response

1. Do you agree that the policy framework should focus initially on enabling the market to transition away from high carbon fossil fuels, and in the longer term on helping consumers and industry to comply with regulations?

Citizens Advice agrees that the policy framework should seek to enable the market to transition away from high carbon fossil fuels but note that this will probably require continued subsidy from the RHI or its successor. In the Foreword to the Consultation, BEIS Minister Claire Perry states that she wants *"to reduce the reliance on subsidy"*, however, it might be some time until some renewable heat sources are genuinely market ready. In renewable electricity, the prices for solar photovoltaics, onshore wind and offshore wind have come down extremely rapidly, but this has been driven by a prolonged regime of national and international subsidies (e.g. FiTs, CfDs, etc.) and sustained subsidies might likewise be necessary for renewable heat.

Some regulation might be needed sooner rather than later. The BEIS consultation states, *"When industry has played a smaller role in driving change, major transitions have required a strong legislative basis to drive progress…If the market is able to drive progress then regulation may be light touch"*.[1] Once again, whilst Citizens Advice commends the good progress in decarbonising the electricity sector, it has not been achieved without considerable market intervention, e.g. carbon pricing to make high carbon fossil fuels more costly (e.g. the EU ETS and the UK Carbon Price Support), subsidies for low-carbon generation under the Levy Control Framework, and closure of coal-fired power stations under the Large Combustion Plant Directive. Significant market and regulatory intervention from government might therefore be needed in heat, especially in relation to the design of new properties being built today.

The Committee on Climate Change outlines five principles which would increase the implementation of low-carbon heat, which we would broadly endorse:

[1] Para 2.6 BEIS *A Future Framework for Heat in Buildings* (March 2018)

- *"A stable framework and direction of travel, backed up by standards for the emissions performance of buildings that would tighten over time.*
- *A joined-up approach to energy efficiency and low-carbon heat that works across the building stock, and focuses on real-world performance where possible.*
- *Simple, highly-visible information and certification alongside installer training to ensure that low-carbon options are understood by consumers and that installers are effective and trusted.*
- *A well-timed offer to households and SMEs that is aligned to 'trigger points', such as house moves, when refurbishment is least disruptive.*
- *Consistent price signals that clearly encourage affordable, low-carbon choices."*[2]

In order to achieve carbon savings, low-carbon heating technologies need to be operated very differently to conventional heating systems. Consumers will need to receive cohesive and adequate messaging on new systems in plenty of time if they are to become familiar with them and trust them, and this means that consumers need to be considered throughout the transition: not simply treated as an add-on. Consumer buy-in is going to be critical to the success of achieving the UK's carbon targets and avoiding undue financial detriment. This will be an especially important consideration for more vulnerable consumers.

Finally, there is a need for a long-term, cohesive message/narrative to consumers about the importance of a low-carbon future for energy. This should encompass not only low-carbon technologies but energy efficiency, smart energy technologies and transport.

In our 2014 report 'Taking Control' Citizens Advice reviewed the policies that (at the time) affected consumers' ability to reduce bills by switching supplier or tariff, or by taking action to reduce demand.[3] Despite the changes to the policy landscape since this research, a number of the recommendations remain pertinent today. Demand-reduction policies should be more affordable, accessible, safer and fairer. These would, in themselves, be an improvement but should not be considered in isolation. Citizens Advice has consistently called for a systems approach that recognises the links between policies, encouraging synergies rather than competition between policies.

[2] Page 8 Committee on Climate Change *Next Steps for UK Heat Policy* (October 2016)
[3] Citizens Advice *Taking Control* (October 2014)

The core of this approach is formed by the steps a consumer will need to take to save money on their bills. Support will be needed where consumers are not taking these steps. For example, what intervention could bring forward demand for energy efficient housing? How could the Government make it easier for consumers to navigate the complexities of advice provision in the energy market? How does the consumer know who to trust to install measures, and why charge them an interest rate on energy efficiency measures that have such a benefit for society? Some interventions may support a single step; others, such as joined up protections, could support consumers through multiple steps, for the uptake of multiple products and services.

2. How should government best engage with existing and emerging heating markets, consumers and other stakeholders, to ensure regulations are designed in a way that works for everyone?

It is essential that government does not work on these issues in isolation and considers the work that is done across the spectrum of energy policy and regulation. This would naturally include working with consumer groups to ensure that consumers are at the heart of future plans for heat. Given the rapidly changing nature of the energy market, it will be crucial to ensure learning from consumer protection is applied to future heating markets to ensure consumers are not left stranded without support to resolve problems.

Significant work has been undertaken by behavioural experts with regards to the importance of communicating not only the issues around the need for low-carbon technologies but also the long-term framework that would support it.[4] It is also important to ensure that behavioural research into other aspects of the way that consumers use energy in homes is considered – for example in our 2016 research we found that there are significant challenges in motivating householders to invest in energy efficiency measures.[5] Regardless of the how heat is generated, investment in improving the energy efficiency of UK housing stock is crucial.[6]

[4] E.g. Committee on Climate Change *Next Steps for UK Heat Policy* (October 2016)
[5] Citizens Advice *Energising Homeowners* (August 2016)
[6] The emissions created by heating homes and businesses account for almost a third of UK emissions. See the government's *Clean Growth Strategy* (April 2018)

3. How could a firm end date for high carbon fossil fuel installations be delivered through regulations? How much time do manufacturers, suppliers and installers trading in high carbon fossil fuels need to prepare for a firm end to new installations?

No answer

4. What is the potential for non-domestic buildings to transition away from the use of high carbon of fossil fuel heating? Is the use of high carbon forms of fossil fuel driven by process heating requirements, with space and water heating requirements secondary to this? Are different solutions required for different heat uses and are there cleaner alternatives?

No answer

5. What do you think are the main technology choices for reducing heating emissions from off gas grid households, businesses and public sector organisations (e.g. transitional technologies)?

It is in consumers' interests that the UK's long term decarbonisation targets are met at least cost. On the question of which technologies should be prioritised when reducing emissions from off-gas grid buildings, Citizens Advice takes guidance from the government's independent statutory advisor, the Committee on Climate Change, who have developed detailed sectoral scenarios on how to realistically achieve the 2050 climate target at lowest cost.

In their 2016 report *Next Steps for Heat Policy*, the CCC makes clear that "*Heat pumps… remain the leading low-carbon option for buildings not connected to the gas grid."*[7] Heat pumps not only represent the main technology choice for achieving near zero emissions in 2050 for off-gas-grid heating (see Question 6 below) but, as the CCC notes, rolling out heat pumps to off-gas-grid homes is also an important transitional step in preparing to rollout heat pumps more widely to buildings which are currently connected to the gas grid: "*heat pump installation in*

[7] Page 9, Committee on Climate Change *Next Steps for Heat Policy* (October 2016)

buildings off the gas grid can help to create the scale needed for supply chains to develop, including developing skills and experience, potentially in advance of accelerated roll-out after 2030."[8] The CCC's proposes that 1.1 million heat pumps should be retrofitted to off-gas-grid homes by 2030 under a cost-effective pathway to the UK's 2050 climate target, covering 1 in 4 of all off-gas-grid properties.[9] Including new homes (on and off the gas grid) the CCC proposes that a total of 2.3 million homes should be on heat networks by 2030.[10]

Rolling out heat pumps to off-gas-grid buildings is a low-regret option until we better understand the feasibility and comparative costs of using hydrogen to heat homes that are connected to the grid (e.g. through pilot projects, etc).

We note that the characteristics of high-temperature heat pumps could help mitigate barriers to uptake, though the high costs of installing these would also require government subsidy and/or additional supports such as government backed loans. As we discuss in question 12, hybrid heat pumps (served by off-gas-grid LPG boilers) might also be a transitional option.

For off-gas-grid communities that are heat dense or can harness waste heat from nearby facilities, district and communal heat networks could also be a cost-effective option.

6. What do you think are the main technology choices for achieving near zero emissions from off gas grid heating (technologies which are consistent with our 2050 targets)?

As noted above in question 5, heat pumps currently represent the main technology for achieving near zero emissions from off-gas heating, supplemented by low-carbon heat networks in some heat dense off gas grid communities.

7. What evidence is there that bioliquids can provide an affordable and sustainable alternative to fossil fuel heating? What are the technical barriers and what might the impacts on domestic

[8] Page 9, Committee on Climate Change *Next Steps for Heat Policy* (October 2016)
[9] Page 52, Committee on Climate Change *Next Steps for Heat Policy* (October 2016)
[10] Page 37, Committee on Climate Change *Next Steps for Heat Policy* (October 2016)

and business consumers be? How scalable are sustainable supply chains and is there a maximum amount of bioliquids which can be supplied?

No answer

8. What evidence is there that biopropane can provide an affordable and sustainable alternative to fossil fuel heating? What are the technical barriers and what might impacts on domestic and business consumers be? How scalable are sustainable supply chains and is there a maximum amount of biopropane which can be supplied?

No answer

9. Do you have any evidence on the air quality impacts of the use of solid biomass, bioliquids and/or biopropane?

No answer

10. Are there any oil and heat pumps hybrids currently on the market (in the UK or elsewhere), and if so how does the cost compare with conventional systems or with a heat pump? Could they be used with bioliquids? What impacts do they have for domestic and business consumers, for example in terms of ease of use and comfort levels?

No answer

11. We understand there are gas heat pump hybrids on the market that can be used with LPG. How widespread are these (in the UK or elsewhere) and how does the cost compare? Could they be used with

biopropane or other biogases? What impacts do they have for consumers, for example in terms of ease of use and comfort levels?

No answer

12. What role might hybrids have in the short term to facilitate the longer term transition to clean heating off the gas grid?

As mentioned in question 5, hybrid heat pumps (e.g. with an LPG boiler) could be a useful transition technology, reducing emissions while also developing the UK supply chain, driving further innovation and bringing costs down.

In addition to their high up-front installation costs, standard heat pumps face other barriers to take-up which hybrid systems help to overcome, namely, hybrids are able to provide high-temperature space heating more rapidly and can also provide domestic hot water. As the BEIS consultation itself notes, "*Hybrid systems can provide benefits to consumers by allowing them to switch between fuels as prices change to reduce cost, providing a backup source of heat during cold peak periods in winter, and providing flexibility to help balance electricity networks.*"[11]

13. To what extent are space requirements an issue during a heat pump installation? How often are heating distribution systems replaced (hot water tanks, radiators and/or pipework)? How often are additional thermal efficiency measures for the building required?

No answer

14. What potential is there for heat pump costs to come down (both kit and installation)? How can industry show leadership in making this happen?

No answer

[11] Paragraph 3.12 BEIS *A future framework for heat in buildings: call for evidence* (March 2018)

15. Are there any drawbacks of smart/more efficient storage heaters, vs other types of electric heating? And, if so, how are these to be overcome? What are the benefits of smart and more efficient storage heater products compared to traditional storage heaters? In which types and tenure of buildings are storage heaters most likely to be useful? Would storage heaters be a likely solution where electric heating is not currently used? How about where electric heating is currently the secondary heating source?

No answer

16. Is there scope for more use of rural heat networks and communal heating systems? What are the barriers and how might they be overcome?

New homes more readily lend themselves to low carbon heating systems, and Citizens Advice is encouraged by the work government has pursued in this area. Defra has planned to explore the use of the £200 million package of Growth Programme and Countryside Productivity offers to support renewable energy projects in rural areas.[12] Small rural systems carry the risk that they would require a minimum number of connections and therefore be unable to allow households a choice.

There are also risks of local air quality issues (biomass systems in particular), again dependent on fuel type. Increasing the use of rural heat networks will be dependent on the fuel type, availability of that fuel type and costs. Citizens Advice suggests that it would also need to be proven that systems are in fact carbon saving and that they are cost effective for households in comparison to the alternative.

The current supplier led Energy Company Obligation (ECO) model encourages energy efficiency support to households in urban areas (outside London) and accessible rural areas, despite remote rural and off-gas households having

[12] Defra *£200 million boost for rural England* (July 2017)

higher rates of fuel poverty. In our response to the recent ECO3 consultation we highlighted the need to ensure ECO provides support to rural households as they are disproportionately likely to face high energy costs and fuel poverty, and have been less likely to benefit from schemes like ECO in the past.[13] We also recommend a more focused safeguard for remote rural areas.

Citizens Advice supports the government's ambition to move away from oil boilers in the long-term but in the short- and medium-term they are often the only feasible heating option for many low income rural households. Low-carbon alternatives are currently often unaffordable or unsuitable for these households without strong and targeted support. Boiler replacement can make a substantial contribution to the comfort, affordability of warmth and health for off-gas households in the medium-term. We have seen little evidence that the need for support for boiler replacement among vulnerable and low-income consumers is significantly declining – we would welcome any intelligence that BEIS may have on this. Currently, many boilers installed for low-income consumers under Warm Front are likely to be nearing the end of their working life. A significant number of these households will be unable to replace broken boilers without support or taking on unsustainable debt.

17. Are there specific ownership and funding models that may be suitable for heat networks and communal heating systems in off gas grid areas?

No answer

18. What evidence is available about further innovations to improve the performance, efficiency and customer proposition of heat pumps? Are there opportunities for innovation in delivery and installation, particularly those innovations that might reduce kit and installation costs or hassle for consumers?

No answer

[13] Citizens Advice *ECO 3: 2018 to 2022* (May 2018)

19. What is the role of the heating industry in delivering cost reduction through innovation? What steps is the industry already taking and what more could be done?

No answer

20. What other innovation opportunities and innovative technologies are available for rural homes off gas grid? At what technology readiness level are they and do they require government support to move them towards the market?

No answer

21. What can government do to ensure that future policy encourages and supports future innovations and cost reductions in technologies?

No answer

22. Please provide views and evidence on how different obligation approaches could be used to drive the transition to clean heating during the early 2020s? Are there any areas worth specifically targeting? Are there situations in which obligations would be counter-productive? Do you have any views on other short term regulatory options that could be pursued, besides those considered above?

No answer

23. What do you think about the options set out above for an obligation? Do you have any evidence as to potential impacts, burdens or unintended consequences?

No answer

24. What further options for short term regulation exist that we have not considered in this call for evidence? Do you have any evidence as to the associated impacts or burdens of any further options suggested?

No answer

25. How can DNOs or GDNs take a leading role in deploying clean heating?

Citizens Advice recommends that Government carefully consider whether DNOs and GDNs are in fact best placed to lead this work. It is important that there is a thorough assessment that can demonstrate the extent to which DNOs and GDNs have a comparative advantage to take a leading role in deploying clean heating, compared to other energy service companies. Independent DNOs and other commercial companies exist which would potentially provide more competition than DNOs and GDNs.

The current incentive framework governing network companies is focusing them to achieve network outcomes. It is not fit for purpose to give them a leading role in decarbonising heat and to tailor solutions to customer and property needs. If they were to be given that role, the current incentive framework would need to evolve to reflect this, for example through a low carbon incentive which is currently being discussed in the industry.[14] What DNOs and GDNs should already be doing is facilitating competition and innovation by making network capacity and connection information available.[15]

Citizens Advice is also concerned that asking GDNs to take a lead role in finding clean heating solutions – when the solution may be that their gas network will become obsolete in some areas – will bring the companies into a conflict of interest.

[14] Sustainability First, *A Low Carbon Incentive in RIIO2: Discussion paper* (May 2018)
[15] Ofgem, *Incentive on Connections Engagement (ICE) Guidance Document* (April 2015)

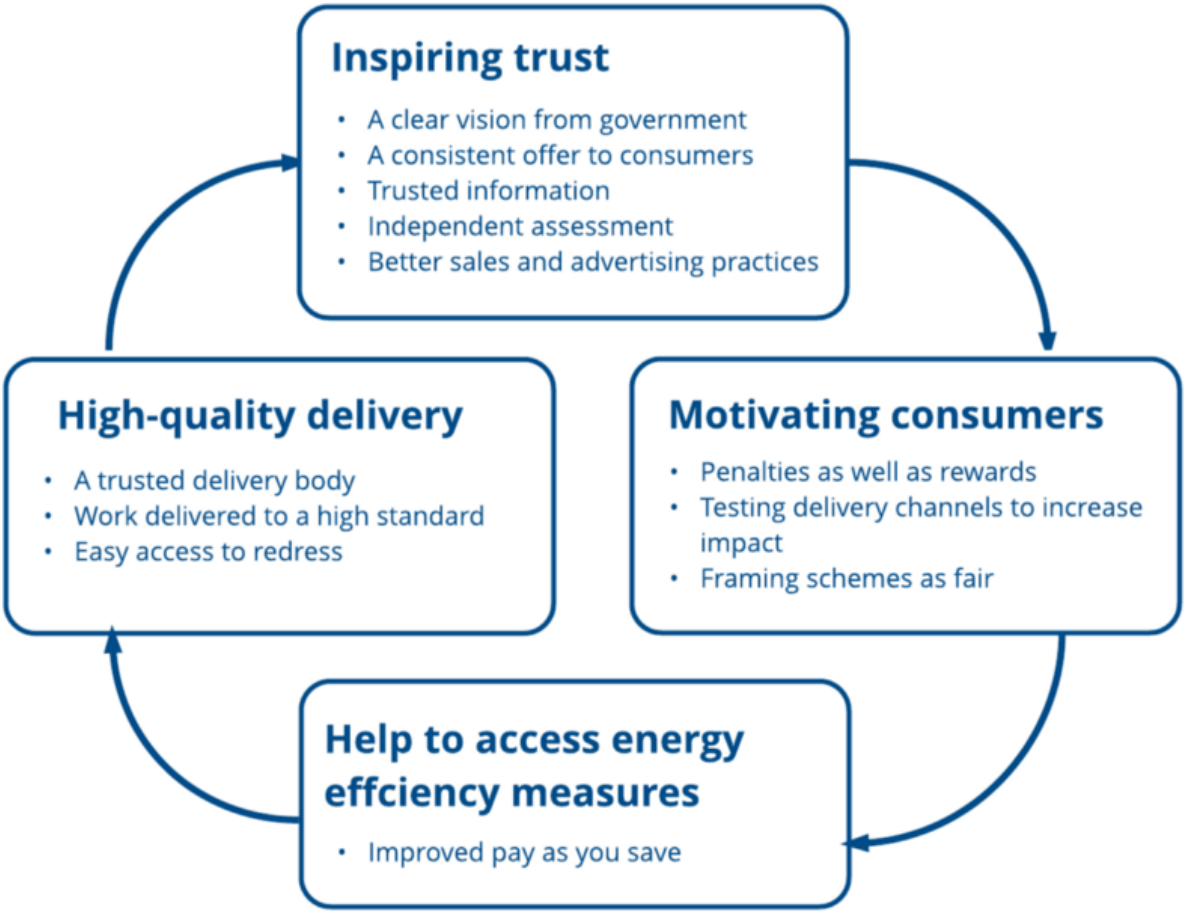
However, ongoing innovation projects show that DNOs and GDNs can contribute to developing innovative solutions to decarbonise heat. For example through the FREEDOM project[16], Western Power Distribution and Wales and West Utilities are trialling domestic heating solutions using a hybrid system of electric heat pumps and standard gas boilers and in North England, Northern Gas Networks are trialling a hydrogen network.[17]

Citizens Advice strongly recommends that the Government does not assume GDNs and DNOs are best placed but ensures instead that there is a robust evidence base for any decisions about the deployment of clean heating. The energy market is rapidly changing, and innovative new technology, as well as new players, could play a huge part in the decarbonisation of heat.

26. How can we encourage and unlock private sector finance in the absence of a subsidy?

From a consumer perspective, Citizens Advice has looked at what is needed to encourage homeowners to invest in energy efficiency and low carbon technologies for their homes, including heating. Our findings are set out in our Energising Homeowners project.[18] This used behavioural workshops with householders to understand their priorities, how they make decisions about their home and their likely responses to energy efficiency incentives. This also fed into our response to BEIS's recent call for evidence on Building a Market for Energy Efficiency.[19] This shows a package of measures is needed to inspire trust, motivate householders, help them pay for energy efficiency measures, and ensure that work meets high quality standards. These are outlined in the diagram below.

[16] ENA *Whole-systems thinking in low carbon heat: WWU & WPD's FREEDOM Project* (November 2017)
[17] https://www.northerngasnetworks.co.uk/2017/11/30/ofgem-awards-9-million-innovation-funding-northern-gas-networks-pioneering-clean-energy-project-h21/
[18] Citizens Advice *Energising Homeowners* (August 2016)
[19] Citizens Advice, *Building a Market for Energy Efficiency* (January 2018)



27. If there was some targeted subsidy, such as for low income or vulnerable households or for building local supply chains, what would this need to look like? Do you have any evidence that subsidy is necessary?

No answer

28. Novel business models for selling clean heating have not taken off in the UK market, why is this? What is needed to stimulate the development of this market in the UK?

Citizens Advice's work on consumer engagement with energy efficiency and low carbon home technologies, outlined in our response to question 26, highlights the barriers to uptake of these products from a consumer perspective. It sets

out a range of interventions are needed in the UK to encourage homeowners to invest in these products. Among other things, the research suggests that even if these products do provide bill savings these may not be enough to overcome barriers to uptake. Instead, further incentives are likely be needed.

29. What could be done, apart from subsidies, to encourage new approaches? Are there any approaches that have worked particularly well in other countries and that could be replicated in the UK?

No answer

30. What could be done to support a whole-house approach of combining interventions and technologies?

No answer

31. How can government best tap into and support community and local authority efforts? Are there any successful examples that can be build upon?

While not directly relevant to off-gas-grid properties, local planning rules in London and Scotland appear to have been successful in promoting heat networks as a route to heat decarbonisation. There may be broader lessons that can be derived from these to encourage new off-gas-grid properties to incorporate low-carbon heating technologies or at least be 'futureproofed' so they can readily incorporate these later.

32. What could be done to drive action from local planning? What are the pros and cons of approaches that rely on local planning? What evidence is there that such approaches produce desired outcomes?

See answer to Question 31 immediately above.

33. Do local approaches provide a possible model for delivering a firm end to fossil fuel installations through regulation? For example, by establishing oil free zones starting where it is most deliverable, and joining them up over time.

No answer

34. How can we increase consumer awareness and interest in clean heating technologies?

See answer to question 1 – there needs to be an overarching narrative from Government on how important the move to lower carbon technologies is and the associated framework/plan clearly communicated.

35. What are the best methods of engaging directly affected consumers?

No answer

36. How can we best work with heating engineers to benefit from their knowledge and experience, and their access to customers?

No answer

37. What steps are needed to ensure installers, manufacturers and the entire supply chain have access to new skills frameworks?

It is essential that the decarbonisation of heat is not considered in isolation from other energy policy initiatives. Any provision in this area should build on the work carried out under the Skills and Training workstream of the Each Home Counts review. It should ensure that professional qualifications are built into standards frameworks, as well as providing resourcing to develop these qualifications and roll them out.

38. What should the respective roles be for the fossil fuel market and the low carbon heating market in ensuring installers have the skills they need for the future?

No answer

39. What other options should we be considering to target key barriers to taking up clean heating?

No answer

40. What intervention would make the biggest difference ahead of any regulation?

No answer

41. Why is oil being installed in some new buildings currently? Are there particular factors or characteristics that are leading to oil being chosen over lower carbon alternatives? What are the barriers to installing a clean heating technology in these buildings?

Oil is quite low-cost at the moment and also something consumers are fairly familiar and confident with. In the absence of a strong policy-push, housebuilders will seek to install something that is not only cost-effective for them but also something that consumers have familiarity and confidence with.

42. Do you have any evidence of the cost of retrofitting clean heating in current new build compared to the cost of building to that standard now?

No answer

43. What are the relative costs and benefits of installing clean heating systems in new build compared to installing futureproofing measures?

No answer

44. What would be the most cost-effective and affordable measures to decarbonise new buildings? Please make reference to specific forms of clean heating or futureproofing measures.

No answer