

New Build Heat Standard: Scoping Consultation

FINAL RESPONSE

3 March 2021

1. Do you agree with the above key outcomes? Please explain your view.

We have some comments on a number of the key outcomes outlined in the consultation document. These are as follows:

Outcome 1: Our new buildings no longer contribute to climate change.

While we recognise that the outcomes listed are those that “will be supported by transitioning to zero net direct emissions heating systems” and the use of zero direct emissions heating systems will clearly contribute to new buildings no longer contributing to climate change, **we think that the wording of this outcome would benefit from being more precise. We would welcome the inclusion of the words “in use” i.e. “Our new buildings when in use no longer contribution to climate change”**. This is because embodied energy in materials and emissions from construction make up a considerable proportion of emissions associated with new buildings but are out of the scope of the Standard. Research¹ suggests that *‘the embodied emissions from construction can account for up to half of the carbon impacts associated with the building over its lifecycle’* and this is an area that will need significant attention over the coming years.

Outcome 3: The cost of heating our homes and non-residential buildings is affordable.

We would welcome the recognition of water use efficiency in the first explanatory bullet under this objective. Heating water contributes to 12% of the average UK home’s heating bill and as such water efficiency can play a key role in helping to alleviate fuel poverty. This could be achieved with the following amendment (additional text highlighted in red):

“High energy costs are a challenge for many households and, for many of our businesses and public services, energy and water inefficiency and high energy bills add unnecessary financial burdens”.

Outcome 6: Informed, educated consumers

We think there is a need to include an additional bullet point in the list of explanatory bullet points under this objective. This should highlight that consumers need to know how to use their heating systems effectively. This issue is highlighted later in the consultation (page 24) but it is important it is considered here. Evidence suggests that many people do not use their heating controls effectively or at all². This coupled with the fact that zero direct

¹ The UKGBC’s framework definition for net zero carbon buildings highlights that *‘the embodied emissions from construction can account for up to half of the carbon impacts associated with the building over its lifecycle’*

² See for example: [Consumers-and-domestic-heating-controls-a-literature-review.pdf](https://www.nationalarchives.gov.uk/consumers-and-domestic-heating-controls-a-literature-review/pdf) ([nationalarchives.gov.uk](https://www.nationalarchives.gov.uk)), and:

emissions systems like heat pumps will, in the majority of cases, need to be used differently than those that most consumers already have means that it is important that consumers have access to the advice and information necessary to keep their homes warm whilst keeping their bills as low as possible.

Outcome 9: There is a continued supply of high quality homes and non-residential buildings in line with identified requirements.

We would welcome the recognition of water efficiency in the second explanatory bullet under this objective. This could be achieved with the following amendment (additional text highlighted in red):

“Measures to reduce the demand for heat and hot water in new homes are essential for meeting this objective, helping to ensure that new homes are more affordable to heat.”

2. Are there any additional outcomes which should be embedded here?

Yes, we think there should be an additional outcome around consumers actually using their heating systems effectively. As noted above it is important that consumers not only know how best to use their heating systems but also that they turn this knowledge into action. Otherwise, there is a significant risk that the full potential savings (in terms of comfort, energy, and money) from better standards will not be realised in practice.

3. Do you agree with limiting this Standard to 'new buildings' as defined within section 2.2?

Yes, Energy Saving Trust agrees with limiting this Standard to 'new buildings' as defined within section 2.2.

4. Do you agree with: (a) our approach taken to require future installed heating systems to be zero direct emissions only, and (b) our approach taken to focus on direct/ point of use emissions that a building owner has responsibility over only?

Yes, Energy Saving Trust agrees with the Scottish Government's overall approach taken to require future installed heating systems to be zero direct emissions only and their approach to focus on direct/point of use emissions that a building owner has responsibility over only. The Scottish Government's rationale for this approach (ensuring that those with the ability to act are allocated responsibility for eliminating emissions and to maximise alignment with internationally agreed emissions reporting schemes) is sensible.

In order to provide more detailed comments, we would welcome further clarification on the likely impact of the proposed Standard on the proportion and numbers of each type of heating system that will be installed in new build properties as a result. Without this information it is not possible to comment on the extent to which the Standard, as proposed, will ensure that heating bills will be kept to a minimum, the extent to which each

home's annual electricity demand and the contribution that each house makes to local peak demand will be minimised. Nor is it possible to comment on the extent to which the Standard will build the market and develop supply chains for heat pumps³ which are seen as requiring significant market growth in the coming years. We would not, for example, support the introduction of the Standard if it resulted in the majority of new build homes being heated by standard electric heating and the potential for heat pump installations was not maximised.

5. What evidence can you offer on ways of ensuring zero direct emissions from heating that could be compliant with this Standard?

No response – outside our area(s) of expertise.

6. What are your views on section 2.6, specifically regarding what mechanism the Scottish Government could use to ensure compliance with the Standard?

This issue is largely outside of our area(s) of expertise. However, we note that the CCC in their most recent progress report for Scotland (Reducing emissions in Scotland – 2019 Progress report to Parliament⁴), recommend that the Scottish Government '*Tackle performance and compliance issues to ensure that new buildings... perform as they should. This includes consulting on **strengthened compliance and enforcement measures** which extend beyond fire safety to regulations more widely and funding building control adequately*'. [double check what says in the 2020 report]. This suggests that there is a need to go beyond existing compliance measures and as such we do not think that option a ('Continuing with an existing methodology and – potentially – changing the emissions factors to reflect a 'direct emissions' rating for different technologies') is an appropriate way forward.

We would also like to use our response to this question to highlight the importance of getting compliance and enforcement mechanisms 'right'. Research continues to point to the performance gap between 'as designed' and 'as built' i.e. the gap between how homes are designed and how homes actually perform – from an energy perspective – when built. Closing this gap will be vital if householders are to be protected from unnecessarily large fuel bills. The CCC estimate that closing the performance gap [for homes built to existing building standards] could deliver annual bill savings of between £70 and £260⁵. If this gap is not closed there is a real risk that people will end up paying more to heat their homes than necessary and place more people into fuel poverty.

7. What steps can the Scottish Government take to support industry to deliver this Standard, and how could we make compliance with this Standard easier?

³ CCC analysis emphasises that new build homes will need to be one of the main drivers of the heat pump market in the 2020s in order to ensure that the Scottish Government's targets are delivered – playing a key role in building the market and developing supply chains.

⁴ See: <https://www.theccc.org.uk/publication/reducing-emissions-in-scotland-2019-progress-report-to-parliament/>

⁵ See: <https://www.theccc.org.uk/publication/uk-housing-fit-for-the-future/>

In order to support industry to deliver this Standard one of the key things that the Scottish Government should do is to provide, as soon as reasonably practicable, certainty about what the standard will look like and when it will apply from. In this context we very much welcome the commitment to publish a more detailed technical consultation later this year.

8. How do we ensure that consumers are protected from increased energy bills, while giving developers flexibility to comply with the Standard?

There are a number of ways the Scottish Government could ensure that consumers are protected from increased energy bills, including:

- Incorporating a heating system efficiency requirement within the Standard (with appropriate exemptions, for example, where there is an existing heat network, that is within a Heat Network Zone). This could help to ensure that developers do not install heating systems with lower upfront costs but with higher running costs. Heat pumps, for example, have higher upfront costs than other heating systems that have zero direct emissions. However, they can provide significantly more efficient (and therefore cheaper) space and water heating than other heating systems that have zero direct emissions. Analysis for the CCC suggests that even where the cost is passed through by the developer, the lower running costs of heat pumps will deliver an overall saving for occupants.
- In this context we think that the text on page 12 of the consultation which notes that “The Scottish Government believes developers should retain as much flexibility as possible in meeting this Standard, although we also expect developers to be mindful of the running costs of any heating system and the impact that these will have to ensure they are able to afford to heat the building” should be strengthened. Expecting developers to be “mindful” of running costs will provide no guarantee that running costs will be a significant factor in the developer’s decision making. Developers should be required to install heating systems that will ensure homes have the lowest possible heating bills (unless there is a justifiable technical reason why this is not possible in certain cases), for example, if a heat pump is an appropriate technical solution for a property then that is what should be installed
- Ensuring that the Standard is introduced alongside the most efficient fabric standards. Energy efficiency is the most effective long-term guarantee of a housing stock that uses less energy. Strong fabric first standards ‘lock in’ energy saving and make dwellings much cheaper to heat (because less heat is needed) and more comfortable to live in. They also reduce system costs as there is less demand (than would otherwise be the case) on the grid. We therefore welcome the recognition in the consultation that further action is required in this area and that “buildings will be required to achieve higher levels of building fabric performance from the outset”.

- Closing the performance gap. As noted in our response to question 6 another important way of ensuring that consumers are protected from increased energy bills will be ensuring that the performance gap is closed through strengthening compliance and enforcement measures.
- Ensuring that consumers know how to use their heating systems effectively and efficiently and where necessary are supported to do so also has a key role to play here (for further details please see our response to question 15 below).

Where new build homes are connecting to an existing heat network we believe that, in order to help ensure that consumers are protected from increased energy bills, there is a need to ensure:

- Consumers are provided with adequate information and guidance. This should, at a minimum include:
 - Information on tariffs and pricing structures (including standing charges)
 - Billing procedures
 - Quality of service obligations
 - Details of heat supply agreements including potential disconnection procedures/costs
 - Complaints procedures
 - Information about disconnection processes and costs
 - Whether the operator of the heat network is a member of Heat Trust
 - Whether heat network operators are licenced (subject to new regulations being in place)
 - Householder information pack explaining how heat networks operate and any operational differences between heat networks and conventional heating (i.e. boilers being replaced by heat interface units) including details of where consumers can go for impartial advice (i.e. Home Energy Scotland).
- As with other zero direct emissions heating systems it will be important that people whose homes are connected to district/community heating networks have access to the advice, information and support necessary to ensure that they are able to manage the use of their heating system effectively and efficiently.

9. What are your views on new buildings connecting to an existing heat network, where development takes place within a heat network zone? Do you envisage any unintended consequences as a result of this proposal?

We support the Scottish Government's proposal that "new buildings be required to be designed and constructed so as to connect to an existing heat network, where that development takes place within a Heat Network Zone" or otherwise demonstrate that it is not an "effective solution for the building owner or for the wider community" in which case

an alternative zero direct emissions heating system would then be permissible in complying with the Standard.

In terms of unintended consequences:

- There is a risk that developers may avoid developing in heat network zones and instead develop in other areas.
- From a householder perspective an unintended consequence may be that as heat network customers they are unaware that they are not able to change supplier in the same way that they would with individual systems.
- If it is a very large new housing development capacity of heat generation may need to be increased (although this would be far less than connecting same number of existing dwellings).

We also believe that if new buildings are built in a heat network zone but not connected to the existing heat network (because it is not an effective solution of the building owner or the wider community. It will be important that these homes are 'future proofed' for future connection to ensure that, at the end of the lifetime of the heating system installed at the point of build, the home can easily and cheaply be connected to the existing heat network should the homeowner (or housing provider) decide that this was the best option for them. Such 'future proofing' requirements are already in place in other countries where heat networks are more prevalent.

10. Do you agree with the Scottish Government's proposal to introduce this Standard in 2024? What are your views on this Standard being brought into force for new buildings consented earlier than 2024?

No, we do not agree with the Scottish Government's proposal to introduce this Standard in 2024. If the Standard is brought into force as proposed for new buildings consented from 2024 it would result in buildings being built to 2021 standards (assuming new energy standards are introduced in 2021 as proposed) in 2027. This would not be consistent with advice from the CCC who recommend⁶ that by 2025 at the latest "no new homes should connect to the gas grid" and "instead should have low carbon heating systems such as heat pumps and low-carbon heat networks".

11. How can opportunities be maximised for the supply chain involved in the delivery of new homes (ranging from product suppliers to on-site operatives), including skills?

No response.

12. What do you envisage the key challenges would be for developers, and wider-building industry, in meeting this proposed Standard? How could this sector be supported to address those challenges?

No response – outside our area(s) of expertise.

⁶ See: <https://www.theccc.org.uk/publication/uk-housing-fit-for-the-future/>

13. What are the key challenges for the energy networks regarding the deployment of zero emissions heating in new developments? How could this sector be supported to address those challenges?

This area is largely outside of our area(s) of expertise. However, we note that the energy networks will need advance notice of construction to enable them to plan for addressing constraints or building upgrades to the grid.

14. How do you see this Standard interacting with wider-energy system changes, and what role do you see for flexibility and smart technologies?

Buildings heated with electricity can engage with emerging markets for electricity demand flexibility, by changing heating patterns to avoid peak times when electricity is both more expensive and (generally) more carbon-intensive.

Switching to a Time-of-use tariff (TOU) (and changing heating patterns to avoid peak times) can reduce running costs by 23- 46 percent according to UKERC and the Carbon Trust.

Shifting usage away from peak times reduces both costly network reinforcement and traditional sources of flexibility such as thermal generation (subject to carbon pricing). Current regulation, network incentives and market rules mean that customers are not fully rewarded for the value they provide in avoiding grid-balancing costs. Changing this and enabling aggregators to automate demand-shifting for domestic users could transform the market for heat pumps (with these flexibility payments offsetting higher capital costs of heat pumps).

15. What can be done to encourage greater consumer awareness and understanding?

There are a number of ways that greater consumer awareness and understanding could be encouraged. Firstly, it is important that people understand why the heating systems in the new build homes they view are not necessarily the ones they would expect to see. Available evidence suggests that there is a low awareness amongst the public of the need to shift to low carbon heating. In this context we welcome the commitment in the Scottish Government's recently published Climate Change Plan update to "build public support for the heat transition through extensive and sustained engagement with individuals, communities and businesses across Scotland".

We think it is important that information is provided at each point of the home buying process – from first identifying a property to view all the way through to moving into the property and beyond so there are no 'surprises' at any point and to ensure that when someone moves into a property they are already broadly familiar with their heating system and how to use it. This would include whether the home was connected to a heat network.

How a home is heated (and wider low carbon, environmentally friendly credentials) should be featured prominently on all sales particulars, in new property showrooms and on all advertising materials.

We think there is considerable scope to improve the information provided at the point of entry to a new home about how the home is heated and how best to use the heating system. This could include the provision of user-friendly materials (in written (paper and on-line) and in video form). Those moving into new homes should also be able to access in-home face to face support with an expert who can talk and walk them through the use of their heating system. We also think that further consideration should be given to setting requirements about the minimum levels/types of heating information provided at the point of home entry. The information provided should include reference to where people can go if they require any additional support with the use of their heating system (i.e. Home Energy Scotland).

As noted in our response to question 8 above, those moving into new homes heated via district/community heating should be provided with:

- Information on tariffs and pricing structures (including standing charges)
- Billing procedures
- Quality of service obligations
- Details of heat supply agreements including potential disconnection procedures/costs
- Complaints procedures
- Information about disconnection processes and costs
- Whether the operator of the heat network is a member of Heat Trust
- Whether heat network operators are licenced (subject to new regulations being in place)
- Householder information pack explaining how heat networks operate and any operational differences between heat networks and conventional heating (i.e. boilers being replaced by heat interface units) including details of where consumers can go for impartial advice.

They should also be reminded (note: this is not the first time they should be made aware of this) that they will not be able to change supplier (except where there is a shared loop system in place where residents are able to choose their electricity supplier).

16. What approach should be taken when considering new nondomestic buildings, and what are the specific challenges and opportunities relating to new non-domestic buildings?

Non-domestic buildings are largely outside our area(s) of expertise. However, we note that SMEs have similar needs to domestic customers for advice and support.

17. By introducing this Standard, what challenges or opportunities might result for households on low incomes (for example, around affordability or access), and how can the Scottish Government best take account of these?

As noted in our responses above one of the key challenges that might result for low income households is that their heating bills will not be as low as they would have been had another heating system type been installed. However, the fact that it is possible to install very, very efficient heating systems means that the introduction of this Standard presents a significant opportunity for people to live in homes with very minimal heating costs and to use those systems efficiency – ensuring that homes remain comfortable for the minimum amount of heat use.