New Build Heat Standard – Community Energy Scotland's Response

Consultation questions and responses

Chapter 1

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

Broadly, yes. However, in relation to Outcome 6, we would like to see end-users of heat being more than just consumers; ideally they would be active participants in more elements of the energy system (perhaps 'prosumers'). If they are able to generate heat and/or electricity and sell this on to neighbours or the wider market, it opens up additional opportunities for them to increase the economic and social value of their renewable heating system. The same can apply at a community level, through use of district heating schemes, community bulk-buying of heating systems, and provision of 'heat as a service'. It is correct to note that being informed and educated is a key step for heat users to become more active participants in the energy system.

In relation to outcome 8, a key point in terms of perception of smart heating should be to emphasise the potential benefits this can offer to heat users/prosumers, for example savings enabled through Time of Use tariffs. If it is framed solely as enabling the networks to function efficiently, there may be cynicism about the intentions of smart technology (as we've seen to an extent with the smart meter rollout). Support is likely to be greater if people see this as something being done for them, rather than to them.

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

N/A

Chapter 2

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

Yes, but the cut-off date should apply from the point the building is granted a completion certificate from Building Standards, not from consent (see response to Question 10).

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?

Future installed heating systems should be zero direct emissions only. However, we do not feel it is credible to limit this to emissions at the point of heat consumption; this could easily be used by unscrupulous developers to develop fossil fuel-based district heating schemes, which would offer little carbon benefits compared to each home having a boiler using the same fuel. Any district heating scheme built or connected to a new property after the chosen cut-off date must be powered

by a zero-carbon source (electric, heat pump, biomass), or possibly from waste industrial process heat.

In terms of gas networks, there would be no effective way of ensuring that a new home connected to the mains gas network is sourcing gas solely from zero-carbon sources (by purchasing from a supplier that injects biogas or hydrogen into the network). Therefore, no new connections should be permitted to the natural gas network from the cut-off date; other arrangements will be taken as loopholes by developers, who have shown no interest in voluntarily moving away from gas boilers. The only exception should be connections to standalone gas networks fuelled solely by biogas and/or hydrogen.

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

The simplest and most robust system would be to require that any new home either requires no space heating (through passive design), or that is must use one of an approved means of heating types before it is granted an acceptance of completion certificate by the relevant Building Standards authority.

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

Option B seems more realistic and straightforward; there should be a clear list of acceptable heating sources. This should comprise heat pumps, solar thermal, heat networks with zero-carbon/waste heat sources, and biomass.

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?

We should not go too easy on industry in delivering the standard; time is critical. The Scottish Government has not moved quickly enough on heat in the past (the proposed zero-carbon heating deadline could have been set many years earlier, many years ago), but neither has the construction sector, and in particular the home-building sector, recognised its responsibilities. The technology existed a decade ago to enable this change, but low-quality, low-cost, high-profit housing has been the priority for home builders. If a clear deadline is now set, with a variety of off-the-shelf, mass-produced technologies to enable compliance, they will all be on a level playing field and have no excuse for complaining about the deadline or standard. The key area the Scottish Government can assist is in training of new and existing installers.

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

Very simply, this can be achieved (as set out in section 2.9) by ensuring that any new builds achieve ultra-high levels of efficiency, to minimise the heat and DWH load of the building. The only situations where this would lead to increased bills for consumers would be where they have moved from an already ultra-high efficiency building with a gas boiler, to a new ultra-efficient home with a renewable source of heating, or from an efficient home to a significantly larger ultra-efficient home. The artificially low cost of gas cannot be used cannot be used any longer as an excuse for prolonging the use and expansion of fossil fuel-based heating. Energy efficiency is the most important step in reducing levels of fuel poverty and total energy costs.

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?

Forcing new properties onto a (monopoly-operated) heat network instead of giving the building owners the opportunity to install and operate their own zero-carbon heating system, seems dubious in competition terms. It could also lead to several negative unintended consequences. For instance, a building designed to passivhaus standards, requiring no heating input but some water heating, might end up facing greater capital costs for the substantial civil works to connect to a heat network, compared to installing a solar thermal panel and a backup immersion heater that could be charged flexibly from the grid on renewable energy. Similarly, the carbon emissions overall could be greater if a building was forced to connect to a heat network powered by gas or waste, compared to a heat pump.

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?

There are no questions around cooking, but we are very disappointed to see in section 2.10.1 that cooking would not be covered under this proposed standard. Cooking requires heat; if not in this standard, where and when will decarbonisation of cooking be tackled? It seems a strange omission; the technology required is established (electric ovens, induction hobs), and it would therefore be easy to mandate that no gas appliances can be installed after the deadline.

On the implementation date, we feel this should be accelerated; it is already long overdue. The end of September 2022 would seem more prudent. Ultimately, every gas and oil boiler being fitted between now and the deadline is going to have to be scrapped and replaced (at homeowner and/or taxpayer cost) well before 2045, so it seems nonsensical to prolong this window.

We would also like the cut-off criteria to be both stricter and clearer; applying it to buildings consented after 2024 again gives loopholes to developers, who will often sit on consents for years, and even then will phase housing developments over a long period. That could enable them to still be installing gas systems towards the end of this decade. The deadline should instead be based on the date a building is granted an acceptance of completion certificate by the relevant Building Standards authority – if it doesn't reach this point before the deadline, it will need a zero-carbon heating system before such a certificate is issued.

Chapter 3

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?

The initiatives proposed at 3.2 seem sensible and effective.

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?

The challenges are largely of their own making, and result from a huge conservatism in building culture and evolution, and an apparent prioritising of profit over the quality, longevity and running costs of their products. The technologies required to meet these standards exist off-the-shelf; the main issues will be around training, which the proposals outlined in section 3.2 will assist on.

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?

As indicated in the proposals, the electrification of heat and transport will present obvious challenges to the network operators. These challenges have been apparent for much of the past decade, and again the network industry has not (until the past few years) been acting as quickly to address these issues as it could have. The answers are much as outlined in the proposals – it will be key to improve energy efficiency in both new and old buildings as far as possible, for numerous reasons (carbon, cost, grid impacts). Transport demand similarly needs to be made more efficient through reducing total annual car mileage, and shifting modes to public transport and active travel. The networks and industry also need to collaborate much more closely on the adoption of common standards for demand-side management of EV chargers, heat pumps and direct electric heating.

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

The opportunities are clear and well-documented elsewhere; storage and flexibility in heating provide significant opportunities at national, local and domestic levels to better match renewable electricity generation and use.

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

We would like to see more programmes such as Community Energy Futures to help build a greater grassroots understanding of the benefits and opportunities around the energy transition.