

The Future Homes Standard: 2019 Consultation on changes to Part L (conservation of fuel and power) and Part F (ventilation) of the Building Regulations for new dwellings

Response from Regen and the Electricity Storage Network

Thank you for the opportunity to respond to this consultation. We have set out our four key recommendations below, followed by responses to the specific questions in the consultation.

Regen

Regen is an independent, not-for-profit centre of expertise in sustainable energy with over 15 years' experience in transforming the energy system.

Regen has extensive expertise in the areas of heat and buildings. We are currently a delivery partner for the European Regional Development funded [Zero Energy Buildings Catalyst \(ZEBcat\) programme](#) which is engaging the supply chain in new markets for retrofit, as well as delivering the retrofit of 16 homes using the Energiesprong approach. Regen will shortly publish [an insight paper covering the decarbonisation of heat](#), proposing a range of actions that can be taken in the next ten years to shift heat onto the right route to meet our 2050 net zero obligation.

Regen is a membership organisation and also manages the Electricity Storage Network (ESN) - the UK industry group formed in 2008 dedicated to electricity storage. Regen and the ESN have 180 members from business, local authority, community energy, consultants, academic institutions, and research organisations across the energy sector.

Our response is based on our practical experience and input from our members.

The importance of this consultation

Climate change is globally acknowledged as the most significant challenge that humanity is facing. In recognition of this, the UK has led the world by putting in place a legal obligation to achieve net zero by 2050. In addition, over 265 districts, county, unitary and metropolitan councils in the UK that have declared climate emergencies.

A major challenge to overcome is the decarbonisation of heat in buildings, which currently accounts for around [20% of the UK's carbon emissions](#). The 29 million homes in the UK are responsible for a significant portion of this contribution and, according to the Committee on Climate Change, must be fully decarbonised to allow the UK to meet net zero.

Future Homes Standard Ambition Level

The sustainable energy sector welcomed the announcement that, from 2025, there will be a Future Homes Standard (FHS) to drive down emissions in homes, including the ban of fossil fuel heating in new build properties. We look forward to helping shape the Future Homes Standard to be as ambitious as possible in tackling emissions from the built environment.

The current consultation proposes that the 2025 FHS will achieve emissions reductions of 75-80%.

Regen does not consider this is ambitious enough to put the UK on track to meet our statutory target of net zero greenhouse gas emissions. If new homes continue to cause carbon emissions, they will need to be retrofitted at further expense and disruption to be compatible with our targets.

Recommendation: We urge MHCLG to set a zero emissions target for the FHS.

Homes built between 2020 and 2025

The most pressing issue at hand is the million plus homes that will be built before 2025; over [50% of dwellings in England were built before 1964](#), if we carry on at that replacement rate the majority of houses built in the next 5 years could still be in use in 2080.

Building high carbon homes that will require retrofitting in the coming decade is clearly inefficient and only serves to increase the already significant retrofit challenge if the UK is to meet our carbon reduction targets. The [National Grid net zero sensitivity](#) states "to achieve net zero emissions by 2050 natural gas is no longer burnt without the use of Carbon Capture, Utilization and Storage (CCUS), and so natural gas can no longer be used for residential heating."

Recommendation: we urge MHCLG to ensure that homes built before 2025 have the highest fabric standards and, if served by gas boilers in the interim, are low carbon technology ready. This will minimise the cost and disruption borne by future consumers.

Performance metrics

The two most challenging aspects of creating a home that meets a net zero target are the high fabric standard and low carbon heating system. The consultation has a strong focus on both aspects but treats them broadly as separate concepts and systems. An efficient home enables the efficient use of low carbon heating; this dependency must be recognised in the metrics.

We consider that high standards of fabric (including thermal bridging) and air tightness should be the highest priority consideration. Higher fabric standards would not only encourage a low carbon heating sources such as heat pumps by creating an efficient and effective environment, but would also create homes with greater thermal comfort and lower running costs that would remain fit for purpose for a longer period.

The proposals currently prioritise the use of low carbon heating and renewable generation to reduce CO₂ emissions. Whilst we appreciate that there are cost implications to a higher level of fabric standards, retrofitting low carbon heating and renewable generation to a property bears a lower cost than a retrofit to improve the fabric or make the heating system suitable for low carbon heating.

Homes must be built now that address the most difficult construction challenges, rather than burdening the future owner with cost and disruption associated with net zero compatibility.

Regen's work on the **Zero Energy Buildings Catalyst Programme** (whole house retrofit of 16 homes in Devon, to have net zero energy demand at no extra cost to the tenant) has demonstrated that cost-effective fabric improvement can be delivered if features like offsite construction, modular design and innovative funding models are embraced. These features apply just as much to the new build market, where even greater economies of scale can be achieved in the near term. Offsite construction and modular approaches have had a bad press in recent decades, being too restrictive in design and unattractive to house buyers. With new techniques and better technology that are being pioneered by Passivhaus and Energiesprong approaches, this is patently not now the case.

We believe that all homes built from now should have the highest fabric efficiency and a heating system ready for low carbon technologies i.e. low flow temperature compatible.

We advocate an ambitious fabric first approach, that is low carbon technology ready.

Recommendation: We disagree with the proposal to remove Fabric Energy Efficiency Standards. They should not be lowered or dropped from the performance metrics. These should be considered with equal importance to the other metrics proposed in the consultation.

Restriction on local authority planning standards

To date, 265 local authorities and councils have declared climate emergencies and are putting in place ambitious targets to achieve net zero - many ahead of the national target of 2050. Our engagement with our local authority members on their climate emergency plans and our work with Distribution Network Operators to model future demand on the network, has shown that there is a desire to develop local approaches that are more ambitious than the proposals in the FHS. Whilst we recognise that there is a desire for consistency in requirements, there can be no justification for central government to restrict democratic local authorities from responding to their local constituents and considering the needs of residents and geographical variations.

For example, Reading Borough Council's [local plan](#) was adopted in November 2019 and includes the requirement that "all major new-build residential development should be designed to achieve zero carbon homes."

If MHCLG brings forward a genuinely ambitious national standard in line with the zero carbon homes approach of leading local authorities, this would achieve consistency without the need for restricting local authorities.

Recommendation: The building regulations stipulate the legal minimum standard to which a building must be constructed. We do not agree that a ceiling should be placed on a local authority's ability to set standards that go beyond those set out in the Future Homes Standard.

Consultation questions

Note: not all questions answered

Q1 *Do you agree with our expectation that a home built to the Future Homes Standard should produce 75-80% less CO2 emissions than one built to current requirements?*

a. Yes

b. No – 75-80% is too high a reduction in CO2

c. No – 75-80% is too low a reduction in CO2

If no, please explain your reasoning and provide evidence to support this.

It has repeatedly been shown that building to higher standards over existing building regulations adds [less than 10% to build cost](#), as the volumes we build in the UK (up to around 250,000 homes a year), this marginal cost would fall rapidly. There is a lack of ambition by aiming for a 75-80% reduction rather than 100% reductions. In the UK we have the technology, experience, competence and motivation to deliver for net zero; there are examples of standards that can lead to zero emission buildings such as passivhaus. The key action required would be to invest in the supply chain over the next 5 years to support such a standard.

Q2 *We think heat pumps and heat networks should typically be used to deliver the low carbon heating requirement of the Future Homes Standard. What are your views on this and in what circumstances should other low carbon technologies, such as direct electric heating, be used?*

As noted within the consultation document, direct electric heating could be seen as a cheap and easy option for some developers to achieve their emissions targets by relying on the decarbonising electricity grid; however, there are significant concerns with using such technology.

Direct electric heating bears little cost for the developer but is expensive to run. Whilst bearing a similar carbon burden to natural gas, electricity is a relatively expensive source of energy, with [a unit price](#) of around 16.55 p/kWh compared to mains gas at 3.94 p/kWh. An [Ofgem insight paper](#) acknowledged that those with direct electric heating were not only paying more but also likely to be less thermally comfortable, due to the nature of the technology.

[Heat pumps](#) are an alternative to direct electric heating, these would not only be cheaper to run but will also achieve greater reductions in emissions.

Recommendation: We believe it is good that MHCLG are investigating this however given the current pricing structure for electricity – with some exceptions – there are currently better and more cost-effective solutions than direct electric heating.

Q4 *When, if at all, should the government commence the amendment to the Planning and Energy Act 2008 to restrict local planning authorities from setting higher energy efficiency standards for dwellings?*

- a. In 2020 alongside the introduction of any option to uplift to the energy efficiency standards of Part L*
- b. In 2020 but only in the event of the introduction of a 31% uplift (option 2) to the energy efficiency standards of Part L*
- c. In 2025 alongside the introduction of the Future Homes Standard*
- d. **The government should not commence the amendment to the Planning and Energy Act***

Please explain your reasoning.

There have been a significant number of districts and councils that have declared climate emergencies and of those [265 declarations](#) around 150 have a target date of 2030, only 10 years away. To restrict local authorities from setting higher energy efficiency standards for dwellings would hamper decentralised efforts for decarbonisation and diminish the ambitions of these districts and councils which are paving the way towards our national ambitions of net zero by 2050. Regional authorities have consistently shown important leadership when central government has failed to do so, such as Reading's new local plan and the [London Zero Carbon Standard](#) which maintained the Zero Carbon Homes proposal in that area following its cancellation.

Recommendation: Local authorities are democratic bodies and should have the freedom to set targets above the Future Homes Standard.

If the Future Homes Standard is set at a sufficiently ambitious level local authorities will be very unlikely to set higher levels, resulting in a consistent national approach.

Q5 Do you agree with the proposed timings presented in Figure 2.1 showing the Roadmap to the Future Homes Standard?

- a. Yes
- b. No - the timings are too ambitious
- c. No - the timings are not ambitious enough

In 2006, the government set out plans for zero carbon homes, and in 2013 a commitment to delivering zero carbon homes from 2016 was included in the budget followed with a written statement announcing plans to amend Part L of building regulations. The government made the catastrophic decision to scrap the Zero Carbon Homes standard in 2015. Now in 2020, four years after the UK planned to achieve zero carbon homes, the Future Homes Standard is still only proposing a 70-85% reduction in emissions from 2025.

Over the next 5 years, it is expected that over 1 million homes will be built, with a further 5 million between 2025 and 2050; around a fifth of the current stock. Many of those homes would require retrofit if we are to meet our legislated net zero goals. If we are to reduce the cost implications and disruption for the future occupants of these homes, the standards for the transitional period should be as close to the FHS as practicable and the date for implementation brought forward.

We understand that some elements of the process to create the Future Homes Standard will take time, however extensive research has been done in this area by [consultants](#), [institutes](#) and others, as well as that already completed for the Zero Carbon Homes proposal.

It is disappointing to see the level of ambition for our housing standards decrease since the announcement of plans for net zero homes over 10 years ago.

Recommendation: Given the existing extensive body of knowledge, we do not believe that the timescale is ambitious enough, and recommend that either the timescale be reduced or the level of standards for transition period be raised to a high fabric, low carbon heating ready level, to mitigate the impact of the transitional period.

Q6 What level of uplift to the energy efficiency standards in the Building Regulations should be introduced in 2020?

- a. No change
- b. Option 1 – 20% CO₂ reduction
- c. Option 2 – 31% CO₂ reduction (the government’s preferred option)
- d. Other

The highest level of CO₂ reduction is certainly the preferred option; however, we disagree with the proposal that this should be achieved by increasing renewable generation, rather than improving fabric standards or installing low carbon heating systems.

Consideration must be made of the future implications for homeowners - homes built to any standard that do not meet net zero will need to undergo some level of future works to make them compliant. It is easier and cheaper to retrofit low carbon generation than improve fabric. There is an obvious understanding of this from your [impact assessment](#) stating “constructing energy efficient buildings now reduces the need to retrofit these in future to meet our climate change targets”. Whilst we appreciate that a compromise must be made in terms of affordability and level of build-cost, we must also balance this cost against future retrofit costs which will likely be incurred to make a house net zero compliant.

Consideration should also be made of the non-monetary benefit to residents of increased fabric standards, including increasing the longevity of the home and the overall comfort and standard of living.

Recommendation: There shouldn't be a choice between fabric efficiency and carbon reductions. We believe the option with the highest carbon emissions reduction should be the favoured option but be delivered by high fabric standards. We believe in a fabric first, technology ready approach.

Q9 *Do you agree with the proposal to set a minimum target to ensure that homes are affordable to run?*

a. Yes

b. No

Please explain your reasoning.

We believe there should be a minimum target to prevent the development of new homes that burden the occupier with high costs.

Recommendation: We recommend that affordability targets are developed as a secondary measure to prevent the development of homes with inappropriate technology choices.

Q13 *In the context of the proposed move to a primary energy metric and improved minimum fabric standards, do you agree with the proposal to remove the fabric energy efficiency target?*

a. Yes

b. No

If no, please explain your reasoning.

We do not agree with the proposal to remove the FEES as a performance metric. High fabric standards should be the highest priority consideration. Higher fabric standards would not only encourage a change to low carbon heating sources such as heat pumps by creating an efficient and effective environment, but would also create homes with greater thermal comfort, lower running costs and that would remain fit for purpose for a longer period of time.

Evidence from our members and local authorities shows the negative consequences of removing fabric energy efficiency standards. Evidence from [West of England Combined Authorities](#) and [London Energy Transformation Initiative](#) show that the new minimum elemental standards proposed are lower than the current standards and could result in a new house being built to lower fabric standards than is currently allowed in the 2013 Part L revision, but still meeting the new performance metrics.

Recommendation: We do not agree with removing the fabric energy efficiency target and we believe that the minimum elemental standards should be improved to ensure that homes are efficient and comfortable.

Q16 Do you agree with the proposal of removing fuel factors to aid the transition from high-carbon fossil fuels?

a. Yes

b. No

If no, please explain your reasoning.

Q18 Do you agree with the proposal that heating systems in new dwellings should be designed to operate with a flow temperature of 55°C?

a. Yes

b. No – the temperature should be below 55°C.

c. No – dwellings should not be designed to operate with a low flow temperature

d. No – I disagree for another reason

If no, please explain your reasoning and provide evidence.

Heat pumps and low temperature heat networks will be most efficient operating at lower temperatures than 55°C. We believe that the homes built within the next few years should be developed ready to be net zero. Having a lower flow temperature such as 45°C enables this by allowing a broader range of low carbon technologies to be connected and work in a more efficient way.

Recommendation: All houses should be built with a low flow temperature system to enable a smooth transition to low carbon heating technologies and allow them to operate as efficiently as possible.

Q19 How should we encourage new dwellings to be designed to operate with a flow temperature of 55°C?

a. By setting a minimum standard

b. Through the target primary energy and target emission rate (i.e. through the notional building)

c. Other

Please explain your reasoning.

A clear minimum standard is most appropriate here, rather than a proxy measure to be interpreted.

Q51 *Currently, only a proportion of dwellings are required to be airtightness tested. Do you agree with the proposal that all new dwellings should be airtightness tested?*

a. Yes

b. No

If no, please explain your reasoning and provide evidence to support this.

There is a well-known performance gap with new build housing, this is in part due to lack of enforcement of standards. A requirement to test all new dwellings delivers a clear message that there are no exceptions to meeting the required standards.

Recommendation: Require that all new homes are tested for air-tightness and must pass the standards set.

Q52 *Currently, small developments are excluded from the requirement to undergo airtightness tests. Do you agree with including small developments in this requirement?*

a. Yes

b. No

If no, please explain your reasoning and provide evidence to support this.

See above.

Q57 *Do you agree with the introduction of guidance for Build Quality in the Approved Document becoming part of the reasonable provision for compliance with the minimum standards of Part L?*

a. Yes

b. No

Please explain your reasoning and provide evidence to support this.

Q61 *Do you agree with the proposal to require the signed standardised compliance report (BREL) and the supporting photographic evidence to be provided to Building Control?*

a. Yes

b. No

Please explain your reasoning.

Q62 *Do you agree with the proposal to provide the homeowner with the signed standardised compliance report (BREL) and photographic evidence?*

a. Yes

b. No

Please explain your reasoning.

We believe this could drive improved compliance as it requires evidence that regulations have been met rather than a tick box method.

Q63 *Do you agree with the proposal to specify the version of Part L that the home is built to on the EPC?*

a. Yes

b. No

Please explain your reasoning.

Q64 *Do you agree Approved Document L should provide a set format for a home user guide in order to inform homeowners how to efficiently operate their dwelling?*

a. Yes

b. No

If yes, please provide your views on what should be included in the guide.

We believe this should go further than simply providing a home user guide to the initial owner. Ownership is likely to change, and houses may become rental properties in which case this information needs to be in a publicly available area.

Recommendation: We believe that the information should be available on housebuilders' websites, well signposted and that property's details should be easy to find so that information is available for any occupant of the property.

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