

1) Which of the following best expresses your view of the proposed Bill?

- Fully supportive
- Partially supportive
- Neutral
- Partially opposed
- Fully opposed
- No view

Please explain your reasons.

*We welcome the MSP's ambitions to improve Scotland's domestic buildings net zero performance. Passivhaus is a well-tested and robust methodology utilised across the world to deliver low operational carbon performing homes. They have low running costs, and the active ventilation ensures good quality air quality leading to economic and health benefits for the householder.*

*However, we feel there is one omission from the proposal - Net Zero or Net Zero Carbon as used in this proposal refers wholly to Net Zero operational carbon and makes no reference to embodied carbon of the materials. As embodied carbon is ~50% of the whole life carbon of a typical building, often more for a Passivhaus building due to the increased use of materials for airtightness and insulation, it is important to recognise and set targets for both operational and embodied carbon to meet Scottish Government Net Zero targets.*

2) Do you think legislation is required, or are there other ways in which the proposed Bill's aims could be achieved more effectively? Please explain your response

*Building Standards Sections 6 and 7 have the ability to set challenging energy efficiency (operational carbon) and upfront carbon (embodied carbon) targets. We already see how challenging energy efficiency targets are driving the new schools programme towards the Passivhaus standard, with examples from Edinburgh (Currie High School) and East Ayrshire (St Sophia's Primary Schools).*

*Setting challenging targets rather than requiring Passivhaus standard would give the industry flexibility in how it would deliver the quality of build required, but a mechanism of post occupancy evaluation would need to be written into the Building Standards to ensure full compliance with the target.*

3) Which of the following best expresses your view on setting Passivhaus standard or a Scottish equivalent as the most appropriate new build housing standards to contribute to eradicating fuel poverty?

- Fully supportive
- Partially supportive
- Neutral
- Partially opposed
- Fully opposed
- Unsure

Please explain your reasons.

*We acknowledge and support the aims of this consultation to eradicate fuel poverty. To do this we need better homes, both new and retrofit, and to deliver these to the highest quality, not to the minimum standard. As such, we feel action is required to mandate better standards of build and retrofit.*

*Passivhaus is a recognised standard that delivers highly efficient builds with low fuel costs and would support this need. It is however one mechanism, and as technology advances and knowledge of different approaches are developed, it may become restrictive if it is a requirement.*

*We would suggest a different approach, setting challenging targets for both operational and embodied carbon into section 6 and 7 of Building Standards. Supported by a robust verification process, this would deliver the same goals with greater flexibility for the industry to deliver.*

4) Which of the following best expresses your view on setting Passivhaus standard or a Scottish equivalent as the most appropriate new build housing standards to contribute to a reduction in emissions?

- Fully supportive
- Partially supportive
- Neutral
- Partially opposed
- Fully opposed
- Unsure

*Net Zero or Net Zero Carbon as used in this proposal refers wholly to Net Zero Operational carbon. This refers to the carbon generated from the heating, lighting etc of the building over its operational lifetime, and make up only ~50% of the lifetime carbon (whole life carbon) of a building with the other ~50% in the embodied carbon of the materials used in the extraction, processing, manufacturing, transportation and installation in a building before it is occupied.*

*These upfront carbon emissions are generated in the 'now' when our greatest need to reduce carbon is so important. This is in contrast to the operational carbon that will be spread over the 60 to 80 year lifetime of the home. For passivhaus, the percentages of operational carbon verses embodied carbon are even more in favour of the embodied carbon due to the very low energy needs of a passivhaus building, and the need for greater levels of material use in the creation of the passivhaus building envelope.*

*It is therefore critical that this policy should recognise the need for whole life net zero carbon reductions and set realistic embodied carbon targets in parallel with the requirement of achieving the passivhaus standard in all new builds. Section 7 of Building Standards is a possible alternative mechanism for setting these targets, supporting this consultation proposal and the overall Scottish Government Net Zero policy.*

*The setting of embodied carbon targets would help to further drive circular economy and zero waste initiatives, support whole net zero homes delivery and create further opportunities for local economic growth and jobs. The Scottish Government's Energy Efficient Scotland programme key priorities include - A commitment to a 'fabric first' approach to reduce emissions, cut fuel bills and keep homes warm.*

5) Which of the following best expresses your view of the process set out to ensure that the new standards are met in all new build housing? (see pages 14- 16 in the condoc)

- Fully supportive
- Partially supportive
- Neutral
- Partially opposed

- Fully opposed
- Unsure

*Please explain your reasons for your response, including your views on how effective the 'performance' gap and on how the proposed verifications process might work in practice.*

*It will be critical to verify in line with the passivhaus standard and that any variation on this would result in inconsistencies and potential poor delivery. A system whereby fees generated by the verification process were returned to the potential verification service/administrator would be needed to ensure it is rigorously delivered, consistent and accurate. If not, the process could lead to poor verification or delays in certification and new house delivery.*

*A Scottish equivalent process will require strong verification equivalent to the Passivhaus standard or inconsistencies and poor delivery may occur.*

6) What could be the market effects of this proposal?

N/A

7) Financial implications. Any new law can have a financial impact which affect individuals, businesses, the public sector or others. What financial implications do you think this proposal could have if it became law?

- Significant increase in costs
- Some increase
- No overall change in costs
- Some reduction
- Significant reduction
- Don't know

Please explain the reasons for your answer including whom you would expect to feel the financial impact of the proposal, and if there are any ways I you think the proposal could be delivered more cost-effectively.

N/A

8) Equalities. Any new law can have an impact on different individuals in society for example the 8 characteristics in an EQIA.

What impact could this proposal have on these particular groups of people if it became law?

N/A

Please explain the reasons for your answer and if there are any ways you think the proposal could avoid negative impacts on particular people.

9) Sustainability. Any new law can have an impact on work to protect the environment, achieve a sustainable economy and create a strong, healthy and just society for future generations.

Do you think the proposal could impact in any of these areas?

Please explain the reasons for your answer including what you think the impact of the proposal could be, and if there are any ways you think the proposal could avoid negative impacts.

N/A

10) Do you have any other additional comments or suggestion on the proposed Bill?

*There would be a requirement to ensure the current workforce is given the time and training needed to deliver these builds, as the Passivhaus approach is recognised as being significantly different to traditional building.*

*The material and product requirements are also likely to be challenging as large volumes of insulation and active ventilation equipment will be required. As it stands the majority of those materials would need to be imported, unless in parallel Scotland actively looks to increase its domestic market capabilities to deliver them.*

*The verification will also be challenging and would require an increase of certified verification agents to support the build programme.*

*These challenges do however create an opportunity for new jobs, and to create a demand for materials and products that could stimulate manufacturing growth in Scotland.*