

# Future Homes and Buildings Standards

Consultation Release

December 2023



# Future Homes and Buildings Standards

The Government released the Future Homes Standard and Future Buildings Standard consultations on the 13th December 2023, which run until the 6<sup>th</sup> March 2024. A summary of the key points is shown in this document – AES will undertake an in-depth review to provide a response to Government and communicate with our clients further information relating to compliance strategies.

## FHS - Key points

- Aims to deliver at least a 75% reduction in CO<sub>2</sub> emissions compared with Part L 2013 standards, higher under Option 1.
- Electrification of heat via heat pumps is the default for compliance
- Minimum and notional fabric standards remain unchanged
- The consultation presents two options for the Notional building:
  - Option 1: includes a heat pump, WWHR and PV. High carbon reductions and low energy bills, higher capital costs.
  - Option 2: heat pump system, no additional technology. Lower carbon reductions, lower capital costs, higher running cost
- No minimum EPC target

## Compliance Metrics (no change)

- CO<sub>2</sub> emissions
- Primary energy
- Fabric energy efficiency

## Home Energy Model (HEM)

A consultation on the new **Home Energy Model** which will replace SAP is running in parallel. A beta version of the HEM compliance software is now available for modelling. The HEM methodology is significantly more complex than SAP. Additional inputs are required and half hourly calculations are undertaken to better reflect time of energy use and the interactions with energy systems and environmental conditions.

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## FBS - Key points

- Maximum fabric standards remain largely unchanged
- Notional fabric standards remain unchanged, other than a reduction to air tightness for top-lit activities
- Enhanced efficacy of lighting
- The consultation presents two options for the Notional building:
  - Option 1 (recommended): Solar PV panel coverage equivalent of 40% of the building's foundation area for side-lit spaces and 75% for top-lit spaces.
  - Option 2 (not recommended): Solar PV panel coverage equivalent of 20% of foundation area for side-lit spaces and 40% for top-lit spaces.

## Compliance Metrics (no change)

- CO<sub>2</sub> emissions
- Primary energy

## Simplified Building Energy Model (SBEM)

SBEM will continue to be used as the methodology of calculation along with approved Dynamic Simulation Models (DSM) software for complex buildings.

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## Fabric Standards

	Minimum Standard	Proposed FHS Notional - Option 1	Proposed FHS Notional - Option 2
External wall	U= 0.26 W/m <sup>2</sup> K	U= 0.18 W/m <sup>2</sup> K	U= 0.18 W/m <sup>2</sup> K
Floor	U= 0.18 W/m <sup>2</sup> K	U= 0.13 W/m <sup>2</sup> K	U= 0.13 W/m <sup>2</sup> K
Roof	U= 0.16 W/m <sup>2</sup> K	U= 0.11 W/m <sup>2</sup> K	U= 0.11 W/m <sup>2</sup> K
Windows	U= 1.6 W/m <sup>2</sup> K	U= 1.2 W/m <sup>2</sup> K	U= 1.2 W/m <sup>2</sup> K
Doors	U= 1.6 W/m <sup>2</sup> K	U= 1.0 W/m <sup>2</sup> K	U= 1.0 W/m <sup>2</sup> K
Air pressure test	8.0	4.0	5.0

Minimum fabric standards are unchanged, and the notional specifications against which fabric compliance is measured are also equivalent to Part L 2021, for Options 1 and 2. The exception is a lower air permeability rate proposed for the Option 1 notional.

- Overall fabric standard not meaningfully improved vs Part L 2021, however reduction in notional air pressure test value may require uplift in other fabric elements
- Natural ventilation approaches are still possible under both proposed options
- Notional window g-values to be set as actual to remove conflict with Part O

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## Heating, Building Services and Renewables

	Proposed FHS Notional - Option 1	Proposed FHS Notional - Option 2
Heat source	Air source heat pump, equivalent to ErP A++	Air source heat pump, equivalent to ErP A++
Hot water system	Hot water storage vessel, 120mm insulation	Hot water storage vessel, 120mm insulation
Ventilation	dMEV	Natural ventilation with extract fans
Wastewater heat recovery	Yes (for dwellings with >1 storey)	No
Lighting	120 lm/W	120 lm/W
Renewable energy	PV panels area related to 40% of floor area*	No

Both Option 1 and Option 2 incorporate air-source heat pump technology as the heat source for space heating and domestic hot water. The Option 1 notional also includes solar PV, mechanical extract ventilation and WWHR with a quoted capital uplift of 4%.

\*for flats PV capacity is divided by the number of storeys in the block. Flats over 15 storeys in height do not include PV.

- Air source heat pumps as the go-to heating solution
- Focus on hot water storage and limiting storage losses
- A different notional is proposed to enable connection to district heating networks