



DEPARTMENT OF LEVELLING UP, HOUSING & COMMUNITIES

FUTURE HOMES AND FUTURE BUILDINGS STANDARDS

PUBLIC CONSULTATION: 13 DECEMBER 2023 TO 27 MARCH 2024

The Builders Merchants' Federation is the trade association for businesses in the building materials' supply chain in the UK & Ireland. Since 1908, it has represented builders, plumbing & heating and other merchants and manufacturers who make and deliver building materials, home improvement products and renewable energy systems. Our 950 members have combined annual sales over £44 billion and employ more than 208,000 workers in all 4 home nations.

OVERVIEW

The BMF welcomes the chance to contribute given our unique position. Our USP is that buildings (especially housing) are not erected - nor are properties (especially homes) repaired maintained or improved - without the materials & products our members have distributed for hundreds of years. We contributed to the previous consultation that ran from 2 October 2019 to 7 February 2020.

Investing in energy-efficient measures is central to our members' businesses. They deliver, on a daily basis, the materials & products that ministers have sought advice about over the last 20 years in relation to thermal performance, energy efficiency and micro-generation. Merchants earn a living from selling (among others) insulation of all types, heating & hot water systems, thermostatic controls & sensors, underfloor heating, heat pumps, double/triple glazing and draught proofing.

The BMF is an economic trade association that does not stray far into social policy. Apart from general remarks, the BMF confines itself to what it knows best. Not all questions answered. We are not a technical organisation but can support contributions & conclusions our members will make.

3. INTRODUCTION

The DLUHC accepts there will be an increase in new build costs. We applaud the assumption or intention that (if done properly at the outset) these Standards mean no further work will be needed to produce zero carbon emissions as the electricity grid decarbonises.

Due to our wide membership (as described above), this response strives to balance both insulation companies and heating businesses to offer a 'whole house' approach - not a measures-based one - to build cleaner, greener, smarter and better quality new homes fit for the 21st century.

The Future Homes Standard should use all cost-effective methods so that occupiers get a new home that is (a) genuinely thermally efficient and (b) capable of generating heat efficiently. This consultation makes welcome, though small steps on in-situ fabric measurement, but the ambition is not sufficient. Consequently, the FHS will place all heat pump efficiency performance risk on the occupiers with no means to manage that risk via performance analysis.

It is imperative that the post-completion and post-occupancy monitoring of homes is brought into the modern age. This will ensure that theoretically high standards (as designed) translate into real-world actual performance - and such performance is captured in EPCs. For example: validating

heating system efficiency by insisting on fitting heat meters or sensors so occupiers can see what energy they use and the comfort it provides.

4. PERFORMANCE REQUIREMENTS FOR NEW BUILDINGS

4.1 Background

The BMF notes the commitment given that new homes and non-residential buildings built under these Standards will (a) deliver significant carbon savings and be 'zero-carbon ready' and (b) will not need retrofitting to produce zero carbon emissions as the electricity grid decarbonises. We also note the reference to preventing damp & mould, excess cold & heat, and improving air quality.

In our supply chain, there is scepticism these proposals are not the 'world class' ones often touted by Whitehall. Several BMF members view them as unambitious. The DLUHC is falling into the trap of loading the hoped-for CO₂ reductions onto building services - instead of following the 'fabric first, services second' practice. The BMF has strongly supported this for many years. Work should be done in a logical, sequenced way to optimise the carbon & cash savings and benefits to protect the investment outlay. We can no longer erect new homes that may later cause fuel poverty. Our adherence to 'fabric first' means less energy ought to be required if insulation of all types is properly fitted. The cheapest energy for hard-pressed families is that which is not used at all.

It looks as if the Devolved Administrations are further ahead than England is. BMF members have (for too long) endured stop-start policy - often starting out with the best of intentions - only to be weakened or scrapped that causes exasperation over wasted time, effort and money.

4.1.1 How does the Government set the new whole-building standard?

The BMF notes the intention to use the new Home Energy Model: Future Homes Standard Assessment from 2025 onwards that replaces the current version of SAP. We doubt we shall be alone in raising genuine concern at the HEM as it does not appear to enjoy wide support.

4.1.2 Objectives in setting the Future Homes and Buildings Standards

The BMF notes the exclusion of hydrogen-ready boilers from these Standards yet the DESNZ will not take a decision on their use until 2026. The DLUHC has pre-empted that DESNZ decision.

4.2 Performance requirements for homes

4.2.1 Heat source

The BMF understands why fossil fuel boilers and biofuel systems are excluded. But direct electric heating has a place, notably for:

- buildings in rural, mountainous & coastal districts where renewable electricity can be generated from solar pv or wind & water turbines;
- small homes and community buildings (like village & church halls and scout huts) where high levels of insulation mean heating needs can be low;

where it is best suited to this for reasons of cost, comfort and easy care & maintenance.

4.2.2 Solar PV panels

Even if solar photovoltaic makes a relatively small contribution, there is a case to encourage them anyway. For example: disruption to power supply and the inconvenience suffered by households (no heating or lighting) during recent storms whilst energy suppliers took days/weeks to restore connections. It is also desirable to help alleviate demand on a decarbonised grid.

4.2.3 Fabric

The BMF notes the decision to keep fabric standards largely the same as now. But we believe it is foolish to say that increasing fabric beyond the proposed level does not deliver significant gains. Higher levels of insulation, installed properly, ought to mean smaller heat pumps are fitted that draw less electricity from the national grid and thus ease collective strain on the network.

Moreover, saying that reducing total energy use is relatively less important than switching to electric heating is also foolish. We do not agree as any reduction in energy use is 'a good thing'.

4.2.4 Domestic notional building options

The BMF agrees that action now will benefit buyers of new homes as it removes a future need to retrofit to net-zero. It is logical to want to shift the burden to house-builders & property developers at the point of construction for the reasons described - notably affordability in the future.

4.2.5 Heat network concurrent notional building options

The BMF notes the merits of wastewater heat recovery for multi-storey dwellings, mechanical ventilation, and high efficiency solar panels for buildings of a certain height as described.

Question 7. Which option for the dwelling notional buildings (for dwellings not connected to heat networks) set out in The Future Homes Standard 2025: dwelling notional buildings for consultation do you prefer ?

- a. Option 1 (higher carbon and bill savings, higher capital cost)
- b. Option 2 (lower carbon savings, increase in bill costs, lower capital cost).

On balance, we prefer Option 2 (lower carbon savings, increase in bill costs, lower capital cost) but this is neither a straightforward decision nor a ringing endorsement of these proposals. The BMF urges the DLUHC to come up with another option - that takes Option 2 but includes higher fabric standards from Option 1 into a combined new Option 3. Several forward-thinking BMF members have similar reservations about the proposals for the following reasons.

One of our members believes that:

- Option 1 is so strict that it removes design flexibility. This Standard is supposed to be a minimum but it sets the bar high that very few house-builders will meet (or surpass) for wholly obvious & understandable reasons. The upshot will affect (among others) selling prices; build costs & completions; and the availability of trained & competent installers.
- Option 2 is essentially the same as the 2021 specification with a heat pump instead of a gas boiler. This is only a small step towards net zero homes and not enough of an improvement - not least because it does not reduce the embodied or embedded carbon in new buildings.

Another member believes that Option 2 makes more sense technically. Option 1 is challenging to gain clearance with anything other than a heat pump. If so, where does this leave innovation for direct electric heating in smaller homes especially with storage and offset capabilities ?

A **third** believes the DLUHC preference for Option 1 overlooks cases where 40% solar pv is not feasible due to the orientation of the home in relation to the sun. Certain homes do not have enough roof space to accommodate 40% solar pv. This may lead to the withdrawal of certain types of new homes from the market which cannot be a good for either builders or home-buyers.

A **fourth** reminds the DLUHC that heat pump performance is affected by (among others) how well they are installed; how efficient the fabric is; and whether that fabric meets its real-world actual performance. Wrongly-sized heat pumps do not offer the same results as correctly-sized ones.

If decarbonising homes is to be via electrification of heat, households will have to have their heating on at times of the year when demand and/or prices are highest. Although outside the scope of this consultation, this has implications for energy generation and network capacity. As the output performance of heat pumps improves over time, efficiency gains ought to help ease the collective strain on the grid with increased future demand for electric heating and transport.

Whitehall must act (as only government can) to ensure homes use as little electricity as possible to provide sufficient heat to maintain thermal comfort and efficient & effective heating. One way is to support households to 'time-shift' heating through 'pre-heating' properly-insulated homes that can retain the heat while making use of increasingly efficient & affordable storage solutions.

Walls represent the largest exposed area of homes but it is tempting for house-builders & property developers to do the bare minimum - or to offset - by reducing thermal efficiency in walls and make up the difference in floors or roofs. Doing so relies heavily on the SAP or HEM being correct.

Heat loss is very common in external walls where it is lost through (a) gaps in the insulation and/or (b) wind tightness failure that is also called 'wind-washing' or 'thermal bypass'. That is to say, wind-driven air movement over, through or behind thermal insulation that causes heat loss, higher energy use, risk of condensation, and increased strain on indoor space heating.

Thermal bypass can be mitigated by wind-breaks or shelter-belts. The BMF recommends house-builders & property developers learn from agriculture & land management to adopt existing natural methods. Shelter-belts are barriers (usually trees & hedges) aimed at lessening wind speeds and provide shelter on the leeward & windward sides. Some wind goes round the end, some goes through, but most goes over the top of the shelter-belt. It is the difference in pressure on either side that determines how much wind speed drops. If done properly, wind-breaks or shelter-belts around a home or estate can reduce the cost of heating & cooling and save energy. This also ought to help house-builders & property developers with their new bio-diversity net gain obligations.

Question 8. What are your priorities for the new specification ? (select all that apply)

- low capital cost
- lower bills
- carbon savings
- other (please provide further information)

Please provide any additional comments to support your view on the notional building for dwellings not connected to heat networks.

The priorities of BMF members are lower bills and carbon savings. This question points to a trade-off between (a) up-front capital costs versus (b) higher energy bills & lower emissions. Acton to reduce heat demand in homes - and how efficiently we generate such heat - will reduce the capital new build costs and help to lessen household bills for occupiers.

As the UK population gets older and lives longer - as well as leading more sedentary lives - indoor climate (notably daylight, overheating & air quality) becomes more important. The Building Regs will doubtless be gradually tightened to squeeze CO₂ emissions out of new homes & buildings.

Question 9. Which option for the dwelling notional buildings for dwellings connected to heat networks set out for consultation do you prefer ?

- a. Option 1 (higher carbon and bill savings, higher capital cost)
- b. Option 2 (lower carbon savings, increase in bill costs, lower capital cost).

On balance, we prefer answer B = Option 2.

4.3 Performance requirements for non-domestic buildings

The BMF notes a distinction is drawn between non-residential buildings that are lit from above and those lit from the side. Encouraging and persuading companies and other corporate bodies to act in the way described ought to be easier if a sound business case is made. The question is if it ought to be set at (1) solar pv of 40% and 75% or (2) 20% and 40% coverage.

It is worth reminding companies of the business rate exemption for those that make 'green' improvements on commercial buildings. The Chancellor of the Exchequer's announcement on 23 March 2022 applies. From April 2022 until March 2035, firms that install eligible plant & machinery for onsite renewable energy generation and storage will be exempt from business rates. There will also be a 100% rates relief for eligible low-carbon heat networks.

Question 10. Which option do you prefer for the proposed non-domestic notional buildings set out in the NCM modelling guide ?

- a. Option 1
- b. Option 2

No strong preference - question not answered.

Question 11. What are your priorities for the new specification ?

- low capital cost
- lower bills
- carbon savings
- other (please provide further information)

The priorities of BMF members are lower bills and carbon savings.

5. METRICS

5.1 Background

It is logical to use the TER, TPER and FEE to set performance requirements for these Standards. But the Home Energy Model (HEM) must accurately and correctly capture such metrics. Any teething problems identified during testing that lead to (among others) inaccuracies must be overcome straightaway to instil confidence in the HEM.

Other respondents will doubtless remind the DLUHC of difficulties & delays they encountered in previous versions of the SAP. The software must be made available (to those who have to use it) at the same time as draft legislation is laid before Parliament - not when regulations come into force. Users must be given sufficient time to test, update & adopt the HEM in order for any necessary tweaks or alterations to be completed in time.

5.2 Desired outcomes from the Future Homes and Buildings Standards metrics

These 5 government policy outcomes are logical to set the direction-of-travel from the outset. But ministers ought not to become fixated on the hierarchy shown if (after 18-24 months) it appears one or other is not being achieved. A second look with necessary tweaks may be needed.

5.3 Our assessment against these outcomes

We are not qualified to comment but it likely that individual BMF manufacturers will. The DLUHC is applauded for saying that any change in currently-available metrics will create extra burdens for house-builders & property developers - namely more (a) specification costs; (b) familiarisation costs and (c) conformity costs - from them and throughout our supply chain.

Question 12. Do you agree that the metrics suggested above (TER, TPER and FEE) be used to set performance requirements for the Future Homes and Buildings Standards ?

Answer B, yes, for two reasons:

- one of our members believes the critical metric of embodied or embedded carbon in full Life-Cycle Assessment and the associated Global Warming Potential indicator is missing.
- another member believes that to ensure post-occupancy measurement has a sharp focus, in-use performance measurements should link to the key fabric efficiency metric in Part L. Those efficiency metrics for space heating & cooling ought to be supported with an Actual Fabric Energy Efficiency Measurement when the new home is ready to be measured.

6. UPDATED GUIDANCE AND MINIMUM STANDARDS

6.1 Background

Approved Documents only set a minimum level and lay out one route to meet (or surpass) the Building Regs. It is hoped that those obligated under these Standards will rise above that.

6.2 Updated guidance and minimum standards for homes

The BMF notes the exclusion of hydrogen-ready boilers from these Standards yet the DESNZ will not take a decision on their use until 2026. The DLUHC has pre-empted that DESNZ decision.

6.2.1 Minimum efficiencies for new homes

Question 13. Do you agree with the proposed changes to minimum building services efficiencies and controls set out in Section 6 of draft Approved Document L, Volume 1: Dwellings ?

Question not answered.

6.2.2 Heat pump controls in new and existing homes

As stated on page 1, the BMF represents manufacturers of thermostats and heating controls & sensors. We agree the importance of adhering to the original manufacturer's instructions - especially where a control is coupled with others - so its functionality is not impaired.

Question 14. Do you agree with the proposal to include additional guidance around heat pump controls for homes, as set out in Section 6 of draft Approved Document L, Volume 1: Dwellings ?

Yes.

6.2.3 Providing additional information about heat pump systems in new homes

The BMF regards it as vital that heat pump installations are designed, fitted & used correctly. It is sensible to insist that operating & maintenance information is provided as described.

Question 15. Do you agree that operating and maintenance information should be fixed to heat pump units in new homes ?

Yes.

Question 16. Do you think that the operating and maintenance information set out in Section 10 of draft Approved Document L, Volume 1: Dwellings is sufficient to ensure that heat pumps are operated and maintained correctly ?

Question not answered.

6.2.4 Changes to guidance to limit heat loss in new homes

In the notional building specifications, hot water storage vessels have an insulation value of 120mm that is compounded by the backstop heat loss values in the draft Approved Document L1. BMF members view these values as unachievable in the time available - and reckon very few vessels on sale in today's market will meet these values. The upshot is BMF manufacturers will have to reconfigure their operations to serve a comparatively small slice of the market. Our remarks at section 14.2 Transitional Arrangements and in our Conclusion apply.

A separate but parallel point here is the ongoing saga of conformity assessment and certification of goods - and insufficient testing capability, capacity & competency in Great Britain. The DLUHC will recognise CE Marking on materials & products that BMF members make until 30 June 2025. Manufacturers tell us (at present) there is nobody in Great Britain able to test pipe insulation.

Question 17. Do you agree with the proposed changes to Section 4 of draft Approved Document L, Volume 1: Dwellings, designed to limit heat loss from low carbon heating systems ?

No.

Question 18. Do you agree with the proposed sizing methodology for hot water storage vessels for new homes ?

No.

6.2.5 Lifts, escalators and moving walkways

It is likely that the Lift & Escalator Industry Association will comment.

6.3 Updated guidance and minimum standards for non-domestic buildings

6.3.1 Minimum efficiencies and controls

It is likely that individual BMF manufacturers will comment.

Question 19. Do you agree with the proposed changes to minimum building services efficiencies and controls set out in Section 6 of draft Approved Document L, Volume 2: Buildings other than dwellings ?

Question not answered.

6.3.2 Limiting heat losses from building services in new communal areas of flats and non-domestic buildings

Ditto para. 6.2.4 above. To meet the new UKCA Mark, there may not be an approved GB or UK establishment that can test pipe insulation for conformity assessment & certification purposes.

Question 20. Do you agree with the proposed guidance on the insulation standard for building heat distribution systems in Approved Document L, Volume 2: Buildings other than dwellings ?

Question not answered.

6.3.3 Non-domestic buildings of low energy demand (not exempt)

The BMF is not qualified to comment.

Question 21. Do you agree that the current guidance for buildings with low energy demand which are not exempt from the Building Regulations, as described in Approved Document L, Volume 2: Buildings other than dwellings should be retained without amendment ?

Question not answered.

6.3.4 Other guidance changes

It is likely that the Lift & Escalator Industry Association will comment.

Question 22. Do you agree that lifts, escalators and moving walkways in new buildings (but not when installed withing a dwelling) should be included in the definition of fixed building services ?

Question not answered.

Question 23. Do you agree with the proposed guidance for passenger lifts, escalators and moving walkways in draft Approved Document L, Volume 2: Buildings other than dwellings ?

Question not answered.

Question 24. Do you have any further comments on any other changes to the proposed guidance in draft Approved Document L, Volume 2: Buildings other than dwellings ?

Question not answered.

7. MATERIAL CHANGE OF USE

7.1 Background

The BMF notes that standards for homes created via a material change of use are lower than those for new homes and are regulated separately. We also note that using permitted development rights means that Building Regs may be the only regulatory lever affecting energy efficiency.

We urge caution as approx. 28,000 extra homes came from material change of use in 2021/2022. Conversions, adaptations and bring empty buildings back into habitation ought not to be demonised. Such projects involve more cost, risk and degree of difficulty - not least because older existing buildings have design quirks that cannot easily be overcome. A sensible balance has to be arrived at between decarbonisation and having somewhere to live.

7.2 Setting new standards for MCU

7.2.1 Using a whole-building approach

The BMF notes that the Approved Document is described as at an elemental level. It is logical to want to have a 'whole-house' performance target rather than a 'measures-based' approach.

Question 25. Should we set whole-building standards for dwellings created through a material change of use ?

Question not answered.

7.2.2 Scope of MCU standard

The BMF is not qualified to comment - except to note differences between current arrangements as they apply to different types of conversion - office-to-residential and houses-into-flats.

Question 26. Should the proposed new MCU standard apply to the same types of conversion as are already listed in Approved Document L, Volume 1: Dwellings ?

Question not answered.

7.2.3 Categorising buildings undergoing an MCU

The BMF is not qualified to comment.

Question 27. Should different categories of MCU buildings be subject to different requirements ?

Question not answered.

Question 28. Which factors should be taken into account when defining building categories ?

Question not answered.

7.2.4 Performance requirements for MCU - Notional specifications

The BMF is not qualified to comment.

Question 29. Do you agree with the illustrative energy efficiency requirements and proposed notional building specifications for MCU buildings ?

Question not answered.

Question 30. If you answered no to the previous question, please provide additional information to support your view.

Question not answered.

Question 31. Do you agree with using the metrics of primary energy rate, emission rate and fabric energy efficiency rate, if we move to whole dwelling standards for MCU buildings ?

Question not answered.

7.2.5 Relaxation of the notional building standards for MCU

The BMF is not qualified to comment.

Question 32. Under what circumstances should building control bodies be allowed to relax an MCU standard ?

Question not answered.

Question 33. Do you have views on how we can ensure any relaxation is applied appropriately and consistently ?

Question not answered.

7.2.6 Minimum limiting standards for residential MCU conversions

The BMF is not qualified to comment - except to say that steps to limit or prevent condensation, damp or mould are sensible.

Question 34. Should a limiting standard be retained for MCU dwellings ?

Question not answered.

Question 35. If a limiting standard is retained, what should the limiting standard safeguard against?

Question not answered.

7.2.7 Unintended consequences including supply impacts

Ditto para. 7.1 above. A sensible balance has to be arrived at between decarbonisation and having somewhere to live. Extra costs and regulatory requirements will inevitably lead to higher build costs to meet these Standards. Other respondents will doubtless comment on viability & deliverability.

Question 36. Do you wish to provide any evidence on the impacts of these proposals including on viability ?

Question not answered.

7.2.8 Applying other new build standards to MCU: BREL, photographic evidence, Home User Guides and airtightness testing

The BMF is not qualified to comment.

Question 37. Do you agree that a BREL report should be provided to building control bodies if we move to energy modelling to demonstrate compliance with MCU standards ?

Question not answered.

Question 38. Do you agree that consumers buying homes created through a material change of use should be provided with a Home User Guide when they move in ?

Question not answered.

Question 39. Do you agree homes that have undergone an MCU should be airtightness tested ?

Question not answered.

7.2.9 Overheating in conversions

It is likely that individual BMF members will comment upon over-heating.

8. REAL-WORLD PERFORMANCE OF HOMES

8.1 Background

The BMF acknowledges that energy performance calculated at the design stage is often more optimistic from real-world measured energy performance after occupation: the so-called 'performance gap'. This is a long-standing issue that has to be confronted. Too many newly-built homes are simply not performing to the level they were designed for. Raising the quality of the as-built performance of new homes is vital in relation to household bills, thermal comfort and reducing emissions in today's 'cost of living crisis'.

Whatever ministers decide from this consultation, the worry is that despite good design and best intentions, corners will be cut and CO₂ emissions will continue. Either the industry has to change, or inspection & enforcement has to be beefed up, so what was originally specified is actually built. The first step must be for the DLUHC to urgently reveal the performance test it intends to introduce so house-builders & property developers can familiarise themselves and prepare accordingly.

8.2 Performance testing new homes

The BMF applauds the idea of post-occupancy performance testing as a way to close the performance gap. But it is lamentable that the DLUHC is proposing this remains voluntary. Our members notice the cost of in-situ measurement for existing homes is a few £ hundred. If such testing is made compulsory - perhaps for a minimum of 10% of housing completions - the price ought to fall and they become commonplace. Another idea could be for testing (at the start) to be compulsory for the 20 largest volume house-builders - but remaining voluntary for SMEs.

8.2.1 Future Homes Standard brand

Unscrupulous house-builders cannot be allowed to 'game' the system. The aim must be to have a quality mark that signifies quality. The proposed brand cannot be awarded to house-builders & property developers for just carrying out measurements. It can only go to those that have measured and can show they consistently build with no discernible performance gap.

Question 40. Do you think that we should introduce voluntary post occupancy performance testing for new homes ?

On balance, answer B = yes. The BMF suspects that post-occupancy in-situ measurement has hitherto been viewed as a cost without spelling out its benefit to new home buyers.

Question 41. Do you think that the government should introduce a government-endorsed Future Homes Standard brand ? And do you agree permission to use a government-endorsed Future Homes Standard brand should only be granted if a developer's homes perform well when performance tested ? Please include any potential risks you foresee in your answer.

Answer B = yes. Any brand can only go to those consistently achieving high performance levels.

8.3 Commissioning fixed building services

8.3.1 Installation and commissioning of mechanical ventilation systems

The BMF is not qualified to comment.

Question 42. Do you agree with proposed changes to Approved Document F, Volume 1: Dwellings to improve installation and commissioning of ventilation systems in new & existing homes ?

Question not answered.

Question 43. Do you agree with the proposal to extend Regulation 42 to the installation of mechanical ventilation in existing homes as well as new homes ?

Question not answered.

8.3.2 Commissioning hot water storage vessels

It is logical to want to improve current guidance on hot water storage. It is likely that individual BMF manufacturers will comment.

Question 44. Do you think the guidance on commissioning hot water storage vessels in Section 8 of draft Approved Document L, Volume 1: Dwellings is sufficient to ensure they are commissioned correctly ?

Question not answered.

Question 45. Are you aware of any gaps in our guidance around commissioning heat pumps, or any third-party guidance we could usefully reference ?

Question not answered.

8.3.3 Commissioning on-site electricity storage systems

It is logical to make the link to the requirements of the Microgeneration Certification Scheme.

Question 46. Do you think the guidance for commissioning on-site electrical storage systems in Section 8 of draft Approved Document L, Volume 1: Dwellings is sufficient to ensure they are commissioned correctly ?

Question not answered.

8.3.4 Routes to certification and enforcement mechanisms

The BMF is not qualified to comment.

Question 47. Do you agree with proposed changes to Approved Document L, Volume 1: Dwellings and Approved Document F, Volume 1: Dwellings to (a) clarify the options for certifying fixed building services installations and (b) set out available enforcement options where work does not meet the required standard ?

Question not answered.

8.4 Home User Guides

The BMF notes that the DLUHC has not yet evaluated the impact of introducing a Home User Guide template stemming from the 2021 uplift to Part L. The DLUHC now wants to include

information for occupiers on how to use heat pumps. We agree that giving an accurate and comprehensive guide to homebuyers about their property is 'a good thing'. They must be clear, unambiguous and easy-to-read so residents can understand it - notably if a breakdown occurs, or when repairs & maintenance are necessary.

Question 48. Do you think the additional information we intend to add to the Home User Guide template, outlined above, is sufficient to ensure home occupants can use heat pumps efficiently ?

No strong preference - question not answered.

Question 49. If you are a domestic developer, do you use, or are you planning to use, the Home User Guide template when building homes to the 2021 uplift ? Please give reasons.

Question not answered.

Question 50. Do you have a view on how Home User Guides could be made more useful and accessible for homeowners and occupants, including on the merits of requiring developers to make guides available digitally ? Please provide evidence where possible.

Question not answered.

Question 51. Do you think that there are issues with compliance with Regulations 39, 40, 40A and 40B of the Building Regulations 2010 ? Please provide evidence with your answer.

Question not answered.

Question 52. Do you think that local authorities should be required to ensure that information required under Regulations 39, 40, 40A and 40B of the Building Regulations 2010 has been given to the homeowner before issuing a completion certificate ?

Question not answered.

9. HEAT NETWORKS

9.1 Background

The BMF understands why the DLUHC wants to require new homes & buildings within a heat network to stop using fossil fuel heating. But networks must be able to demonstrate that they have sufficient low carbon generation to supply homes & buildings with plentiful space heating & hot water at the target CO₂ levels set under these Standards.

9.2 Connecting new homes and non-domestic buildings to heat networks

It is unreasonable to expect house-builders & property developers to erect new buildings in the belief that a heat network may be established at an as-yet-undefined date. Caution is required when planning to establish more of them because there may only be one chance to get it right. We remind Whitehall of its ability to convene and catalyse private finance to invest in heat networks without necessarily having to legislate.

The BMF notes the move to rebuild the Product Characteristics Database to allow more technical data on products. What does this mean for existing entries: will they have to be updated ? If so, timing is paramount and this extra cost ought not to be borne by manufacturers. Several members say that hitherto, even basic applications to the PCDB take months to process - raising concerns of capability & capacity at the Building Research Establishment to carry out this function effectively.

Question 53. Do you agree that new homes and new non-domestic buildings should be permitted to connect to heat networks, if those networks can demonstrate they have sufficient low-carbon generation to supply the buildings' heat and hot water demand at the target CO2 levels for the Future Homes or Buildings Standard ?

Yes.

Question 54. Do you agree that newly constructed district heating networks (i.e., those built after the Future Homes and Buildings Standard comes into force) should also be able to connect to new buildings using the sleeving methodology ?

Question not answered.

Question 55. Do you agree with the proposed guidance on sleeving outlined for Heat Networks included in Approved Document L, Volume 1: Dwellings and Approved Document L, Volume 2: Buildings other than dwellings ?

Question not answered.

Question 56. Do you agree that heat networks' available capacity that does not meet a low carbon standard should not be able to supply heat to new buildings ?

Question not answered.

Question 57. What are your views on how to ensure low-carbon heat is used in practice ?

Question not answered.

Question 58. Are there alternative arrangements for heat networks under the Future Homes and Building Standards that you believe would better support the expansion and decarbonisation of heat networks ?

Yes: missing from this is the potential for recovering and redirecting surplus or waste heat from commercial & municipal sites. This is discussed in the supply chain and by utilities providers. Computing and telecomms data centres are an obvious source of this underused resource.

10. SMART METERS

10.1 Background

The BMF is not qualified to comment.

10.2 Updated guidance

It is likely that individual BMF members will comment.

Question 59. Do you agree that the draft guidance provides effective advice to support a successful smart meter installation in a new home, appropriate to an audience of developers and site managers ?

Question not answered.

Question 60. Do you agree that voluntary guidance referenced in draft Approved Document L, Volume 1: Dwellings is the best approach to encouraging smart meters to be fitted in all new domestic properties ?

Question not answered.

11. ACCOUNTING FOR EXCEPTIONAL CIRCUMSTANCES

11.1 Background

It is logical for the DLUHC to account for exceptional circumstances.

11.2 Allowing relaxation where reasonable

If it is decided to allow for dispensations or relaxations, it is desirable to set out indicative reasons showing under what circumstances they will be granted. The criteria ought to be kept under review so that local authorities are (a) not flooded with applications and (b) for consistency purposes.

Question 61. Do you agree that it should be possible for Regulation 26 (CO2 emission rates) to be relaxed or dispensed with if, following an application, the local authority or Building Safety Regulator concludes those standards are unreasonable in the circumstances ?

Question not answered.

Question 62. [If yes to previous question], please share any examples of circumstances where you think it may be reasonable for a local authority to grant a relaxation or dispensation ?

Question not answered.

Question 63. Do you think that local authorities should be required to submit the applications they receive, the decisions they make and their reasoning if requested ?

Question not answered.

Question 64. Are there any additional safeguards you think should be put in place to ensure consistent and proportionate use of this power ?

Question not answered.

12. LEGISLATIVE CHANGES TO THE ENERGY EFFICIENCY REQUIREMENTS

12.1 Background

It is logical and desirable to repeal redundant, out-of-date regulations.

12.2 Amending Part L1 of Schedule 1 to reference greenhouse gas emissions reduction

Striking a balance in policy between reducing emissions and reducing energy use is not easy. We understand why the DLUHC wants to concentrate on emissions but suggest this is reviewed 18-24 months after these Standards come into force in case tweaks are necessary.

Question 65. Do you agree Part L1 of Schedule 1 should be amended, as above, to require that reasonable provision be made for the conservation of energy and reducing carbon emissions ?

Yes. The BMF can support all efforts to reduce carbon emissions under Part L. But the proposals ought to include embodied or embedded carbon. Our earlier answer to question 12 applies.

12.3 Regulations 25A and 25B

Question 66. Do you agree that regulations 25A and 25B will be redundant following the introduction of the Future Homes and Buildings Standards and can be repealed ?

Yes.

13. A REVIEW OF OUR APPROACH TO SETTING STANDARDS

13.1 Background

It is logical for the DLUHC to overhaul current arrangements but caution is required. The BMF is unconvinced that the HEM is up-to-the-job and a fresh look at it is necessary. Other respondents will doubtless have uncomplimentary things to say about the HEM methodology & software.

13.2 National Calculation Methodologies for Homes

The BMF notes the DLUHC alerted industry to a glitch in the consultation version of the Home Energy Model software and applauds the extension of the closing deadline to 27 March.

But there is significant disquiet about the HEM in our supply chain. Individual BMF members will express their own views more forcefully but a selection is as follows:

- heat loss isn't adequately captured in the SAP or HEM software ... this could have serious implications ventilation losses in the HEM are modelled in exactly the same way as SAP ... in every half-hour calculation it remains the same ... no matter how windy it is.
- the Home Energy Model tool provided by BRE is not fit-for-purpose and needs months more work to improve it ... even experienced SAP assessors struggle to deal with its complexity ... the fear is that HEM will hold up the implementation of the Standard.
- concern at the decision to replace the SAP with the HEM ... it is proving difficult/impossible for developers to show compliance with the FHS in the current version of HEM software ... the complete and working version of HEM is needed asap ... without it, house types, specifications & construction methods are unknown and unreliable.

As stated earlier, any teething problems identified during testing must be overcome straightaway to instil confidence in the HEM. The software must be made available (to those who have to use it) at the same time as draft legislation is laid before Parliament - not when regulations come into force. Users must be given sufficient time to test, update & adopt the HEM in order for any necessary tweaks or alterations to be completed in time.

The manufacturers, merchants and distributors we represent need the correct HEM software because (under these Standards) more technical information will be required by house-builders & property developers on the materials & products. This will (inevitably) mean more (a) specification costs; (b) familiarisation costs and (c) conformity costs throughout the supply chain.

Question 67. Do you agree that the Home Energy Model should be adopted as the approved calculation methodology to demonstrate compliance of new homes with the FHS ?

No, not as currently envisaged, and urgent improvements to it are required for reasons given.

13.3 Reviewing the notional building approach for homes

The DLUHC is correct in believing that new home buyers do not understand the notional building approach - and are unlikely to check their home's performance against targets in the model. The DLUHC is applauded for recognising the notional building approach can be improved.

13.3.1 Standardised assumptions

It is likely that individual BMF members will comment.

Question 68. Please provide any comments on the parameters in the notional building

Question not answered.

13.3.2 Weather

It is odd that the current notional building approach relies on a single East Midlands location. This can no longer be justified and it is logical to use regional/local weather information under the FHS.

Question 69. Minimum standards already state that heat pumps should have weather compensation and we would like to understand if stakeholders think this is enough to ensure efficiency of heat pumps under the varying weather conditions across England. Should the notional building use local weather ?

Yes.

13.3.3 Buildings that contain multiple dwellings

Question 70. Do you agree with the revised guidance in The Future Homes Standard 2025: dwelling notional buildings for consultation no longer includes the average compliance approach for terraced houses ?

Question not answered.

13.3.4 Secondary heating

It is sensible to allow for decorative features such as chimneys or flues.

Question 71. Do you agree with the revised guidance in Approved Document L, Volume 1: Dwellings which states that you should not provide a chimney or flue when no secondary heating appliance is installed ?

Question not answered.

13.3.5 Window and door U-value calculations

Question 72. Do you agree with the proposed approach to determine U-values of windows and doors in new dwellings ?

No: the proposed approach has significant & serious implications for BMF members - namely:

- for new homes, we recommend using the same determination as for existing homes and non-residential buildings. Doing so means the performance of different products can be compared by customers - and compliance applies to a product category, not each unit or batch. It also means that market surveillance authorities can compare products and take informed decisions.
- manufacturers make mass-produced, standard-size goods to meet demand and to offer affordable materials & products. Some of the window sizes in today's market may not be able to meet the new calculation/compliance requirements. They will be rendered uneconomic for manufacturers to make and for trade customers to specify & buy. This will curtail supplies and raise prices - not least for repairs & replacements in existing buildings.

13.3.6 Thermal bridging

Question 73. Do you agree with the proposal to remove the default y-value for assessing thermal bridges in new dwellings ?

Question not answered.

13.3.7 Curtain walling in homes

Question 74. Do you have any information you would like to provide on the homes built to the Future Homes Standard using curtain walling ?

Question not answered.

13.4 National Calculation Methodologies for Non-domestic buildings

13.4.1 Reported underestimates of space heating in the NCM

The BMF is not qualified to comment.

13.4.2 Other updates to SBEM and iSBEM

The BMF is not qualified to comment.

Question 75. Do you agree with the methodology outlined in the NCM modelling guide for the Future Buildings Standard ?

Question not answered.

Question 76. Please provide any further comments on the cSBEM tool which demonstrates an implementation of the NCM methodology.

Question not answered.

Question 77. Please provide any further comments on the research documents provided alongside the cSBEM tool and which support the development of the NCM methodology, SBEM & iSBEM.

Question not answered.

13.5 Other calculation methods

The BMF is not qualified to comment.

14. TRANSITIONAL ARRANGEMENTS

14.1 Background

The house-builders & property developers that BMF members serve tell us that:

- a 75-80% reduction in carbon emissions is extremely challenging for them;
- adjusting to new building methods adds new specification, familiarisation & conformity costs.

Small local house-builders are the everyday bread-and-butter customers of BMF merchants. These Standards will add to SME operating and project costs. They will struggle to comprehend it as the number of (a) builders themselves and (b) housing completions both continue to decline.

BMF members are already aligning their businesses to prepare for life after fossil fuels. Not only by making, stocking & delivering the goods listed on page 1 - but also by opening dedicated local training centres to boost the number and competency of much-needed installers.

Merchants are recognised as trusted, independent sources of advice about materials, products & applications - and are in daily contact with thousands of trade customers (esp. heating engineers) who exert influence over citizens & companies on choices they make in favour of clean heating.

These centres or academies often incorporate demonstration models for trainees to get 'hands on' experience of (for example) heat pumps, solar pv panels and battery storage. Such centres provide

accredited training for trade customers to obtain the theoretical knowledge and practical skills they need to decarbonise buildings & electrify heating.

The Government's target of installing 600,000 heat pumps each year by 2028 - and 1.9 million a year by 2035 - will not be met without more impetus & intervention from Whitehall to enable this. Option 2 that allows up to 12 months between:

- laying the draft regulations and publishing the full technical specification;
 - and the regs coming into force before a subsequent 12-month transitional period;
- is the BMF's preferred option.

14.2 Transitional arrangements for the Future Homes and Buildings Standards

We remind the DLUHC that BMF members require plenty of time to understand what the proposed changes are to adapt their manufacturing output, modify production processes, re-tool assembly lines, obtain raw materials, invest in plant & machinery, improve product ranges, retrain staff, upgrade computer software, conduct testing & certification, design packaging & labelling and produce data sheets. Six months is an incredibly short period of time to do this.

The longer the transition period the better for our supply chain:

- if yes = BMF members can invest confidently in the materials and products needed;
- if no = the risk is shortages and associated problems of disrupted supply, price rises, etc.

Question 78. Which option describing transitional arrangements for the Future Homes and Buildings Standard do you prefer ? Please use the space provided to provide further information and/or alternative arrangements.

Answer B = Option 2.

Question 79. Will the changes to Building Regulations proposed in this consultation lead to the need to amend existing planning permissions? If so, what amendments might be needed and how can the planning regime be most supportive of such amendments ?

Question not answered.

14.3 Sunsetting of previous transitional arrangements for new buildings

In the 21st century, it is indefensible to allow new homes & buildings to be erected to out-of-date standards that may (in future) have to be retrofitted at the owners' cost - because a house-builder or property developer complied with regulations dating back 10+ years at the time of construction.

Question 80. Do you agree that the 2010 and 2013 energy efficiency transitional arrangements should be closed down, meaning all new buildings that do not meet the requirements of the 2025 transitional arrangements would need to be built to the Future Homes and Buildings Standards ?

Yes.

Question 81. What are your views on the proposals above and do you have any additional evidence to help us reach a final view on the closing of historical transitional arrangements ?

Question not answered.

15. PART O - CALL FOR EVIDENCE

15.1 Background

Trade customers of merchants (esp. SMEs) are still learning how to apply the 2021 FLOS Regs.

15.2 Widening the scope of Part O of the Building Regulations 2010

The BMF notes the intention to publish research on applying the Part O requirements to homes created through a material change of use.

Question 82. Part O does not apply when there is a material change of use. Should it apply ?

Question not answered.

Question 83. Apart from material change of use, is there anything missing from the current scope of Part O ?

Question not answered.

Question 84. Can you provide evidence on how the addition of extensions or conservatories to domestic buildings can impact overheating risk on an existing building ?

Question not answered.

15.3 Requirement O: Overheating mitigation

The BMF urges caution in setting these Standards at a level where they cause bad design choices and other undesirable consequences. This means looking at ways to solve overheating without reducing the amount of daylight entering buildings.

Question 85. We are currently reviewing Part O and the statutory guidance in Approved Document O. Do you consider there to be omissions or issues concerning the statutory guidance on the simplified method for demonstrating compliance with requirement O1, for buildings within the scope of requirement O1 ?

Yes. Stack-effect ventilation is omitted that is comparable to cross-ventilation. The simplified method discourages architects and specifiers to adopt other mitigating options - namely solar shading, awnings & glazing specification. It is likely individual BMF manufacturers will comment - notably on external solar shading and allowing more natural daylight & ventilation whilst ensuring protection from overheating.

Question 86. Do you consider there to be omissions or issues concerning the statutory guidance on the dynamic thermal modelling method for demonstrating compliance with requirement O1 for all residential buildings ?

Question not answered.

Question 87. Do you consider there to be omissions or issues concerning the statutory guidance on ensuring the overheating mitigation strategy is usable for buildings within the scope of requirement O1 ?

Question not answered.

Question 88. Do you consider there to be omissions or issues concerning the statutory guidance on protection from falling ?

Question not answered.

Question 89. Are you aware of ways that Approved Document O could be improved, particularly for smaller housebuilders ?

Question not answered.

15.4 Regulation 40B: Information about overheating

The BMF is not qualified to comment.

Question 90. Does Regulation 40B require revision ?

Question not answered.

Question 91. Do you consider there to be omissions or issues concerning the statutory guidance on providing information ?

Question not answered.

Question 92. Are there any improvements that you recommend making to the information provided about overheating in the Home User Guide template ?

Question not answered.

Question 93. Are there any omissions or issues not covered above with the statutory guidance in Approved Document O that we should be aware of ?

Question not answered.

16. EQUALITIES AND IMPACT ASSESSMENTS

16.1 Equality assessment

Question 94. Please provide any feedback you have on the potential impact of the proposals outlined in this consultation document on persons who have a protected characteristic. If possible, please provide evidence to support your comments.

As stated on page 1 under Overview, the BMF is an economic trade association that does not stray far into social policy. We doubt that these Standards (if introduced as seen) will greatly affect those listed at the 9 bullets. One possible exception is age - because many buyers of new homes will be first-time buyers - who typically tend to be aged 20 to 30 years old.

The well-documented societal problem called 'intergenerational unfairness' will not be solved by these Standards. Indeed, they are more likely to make new homes more expensive and thus much harder for younger people to afford to get on the property ladder.

16.2 Impact assessments

Question 95. Please provide any feedback you have on the impact assessments.

To re-cap, the BMF is not a technical organisation. We are not qualified to comment on the accuracy or content of Impact Assessments. It is likely that individual BMF members will do so - especially for their (a) specification costs; (b) familiarisation costs and (c) conformity costs.

We reiterate what is written at section 14.2. Our members require plenty of time to understand what the proposed changes are to adapt their manufacturing output, modify production processes,

retool assembly lines, obtain raw materials, invest in plant & machinery, improve product ranges, retrain staff, upgrade computer software, conduct testing & certification, design packaging & labelling and produce data sheets. Six months is an incredibly short period of time to do this. The longer the transition period the better. If not, the risk is shortages & associated problems.

Heat pumps and other renewable energy devices need routine maintenance and replacement. Home insulation is a proven “fit and forget” measure that consistently delivers cost savings.

Using solar pv panels has cost implications, not just for developers, but for homeowners. These include the costs of cleaning, maintaining and their eventual replacement. Panels currently have an average lifespan of 20-25 years. The costs to occupiers have not been reflected in this consultation or the Impact Assessments.

CONCLUSION

The BMF is grateful for the chance to give views on these proposals as they have direct, far-reaching and serious impacts on our members for the reasons we give throughout this response.

These Standards are a huge step forward despite having been signalled at the time of the so-called FLOS changes to Buildings Regulations in 2021. It is critical to get the basic structure and fabric right first in homes & buildings - rather than be fooled into thinking that fitting new technology will offset any under-performance of an average- or poorly-insulated property. If not, the performance gap could widen because new technology disguises heat loss (and thus CO₂ emissions) due to sub-standard build quality and/or under-insulation.

There is concern at planning applications that have already been granted may need to be resubmitted for re-approval - to include renewable devices being added to projects - notably:

- solar pv on the front elevations of buildings;
- air source heat pumps and where they are positioned on site regarding visibility or noise.

BMF members are resilient, well-established local businesses that have served communities for hundreds of years. The primary problems we see affecting the customers of merchants are:

- housebuilders: the two-step process of complying with these Standards may simply be too big and too costly for many SME firms to cope with;
- trade professionals: the availability and capability of skilled, qualified installers & allied trades.

The BMF points out other current concerns that directly relate to these proposals - namely:

- the long-standing, unresolved saga of conformity assessment and certification of goods - and insufficient testing capability, capacity & competency in Great Britain. The DLUHC will recognise CE Marking on our materials & products until 30 June 2025 - but what then ?
- electricity generation capacity, network capability & grid connections. The future demand for electricity between residential, municipal, charitable, industrial & other customers will be huge. All 4 home nations will need much more renewable electricity than is currently available for everything - including heating in buildings.

We look forward to hearing from DLUHC and/or DESNZ officials responding to this response.

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