Llywodraeth Cymru
Welsh Government

Number WG52381

Welsh Government
Consultation Document

Building Regulations Part L 2025 Review Changes to Part L (conservation of fuel and power), Part O (overheating) and Part F (ventilation) of the Building Regulations for dwellings and non-domestic buildings

Date of issue: 26 August 2025
Action required: Responses by 17 November 2025

Mae'r ddogfen hon ar gael yn Gymraeg hefyd / This document is also available in Welsh
Rydym yn croesawu gohebiaeth a galwadau ffôn yn Gymraeg /
We welcome correspondence and telephone calls in Welsh

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Overview

The Building Regulations and the associated guidance set out in Approved Documents seek to ensure buildings meet certain standards for minimum health, safety, welfare, convenience and sustainability.

This document covers proposals for changes relating to Part L (conservation of fuel and power), Part O (overheating) and Part F (ventilation) for dwellings and non-domestic buildings.

This consultation is aimed primarily at firms, individuals and their representative bodies within construction and construction-related industries and the building control bodies that enable the building control system to operate. Specific elements may be of interest to members of the public.

How to respond

Submit your response by 17 November 2025, in any of the following ways:

- Complete our online form
- Download, complete our response form and email:
- enquiries.brconstruction@gov.wales
- Download, complete our response form and post to:
  Building Regulations, Welsh Government, Rhyd-y-car, Merthyr Tydfil CF48 1UZ

Please include the reference WG52381 - Changes to the Building Regulations in Wales for dwellings and non-domestic buildings.

When you reply, it would be useful if you confirm whether you are replying as an individual or submitting an official response on behalf of an organisation and include:

- your name,
- your position (if applicable),
- the name of organisation (if applicable),
- an address (including post code),
- an email address, and
- a contact telephone number

Further information and related documents

Large print, Braille and alternative language versions of this document are available on request.

Contact details

For any enquiries about the consultation please contact the Welsh Government Building Regulations team by emailing:
enquiries.brconstruction@gov.wales
For further information:
Building Regulations, Welsh Government, Rhydycar, Merthyr Tydfil
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This document is also available in Welsh: Adolygiad 2025 o Ran L o'r Rheoliadau Adeiladu

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Welsh Ministers have statutory powers they will rely on to process this personal data which will enable them to make informed decisions about how they exercise their public functions. The lawful basis for processing information in this data collection exercise is our public task; that is, exercising our official authority to undertake the core role and functions of the Welsh Government. (Art 6(1)(e)).

Any response you send us will be seen in full by Welsh Government staff dealing with the issues which this consultation is about or planning future consultations. In the case of joint consultations this may also include other public authorities. Where the Welsh Government undertakes further analysis of consultation responses then this work may be commissioned to be carried out by an accredited third party (e.g. a research organisation or a consultancy company). Any such work will only be undertaken under contract. Welsh Government's standard terms and conditions for such contracts set out strict requirements for the processing and safekeeping of personal data.
In order to show that the consultation was carried out properly, the Welsh Government intends to publish a summary of the responses to this document. We may also publish responses in full. Normally, the name and address (or part of the address) of the person or organisation who sent the response are published with the response. If you do not want your name or address published, please tell us this in writing when you send your response. We will then redact them before publishing.

You should also be aware of our responsibilities under Freedom of Information legislation and that the Welsh Government may be under a legal obligation to disclose some information.
If your details are published as part of the consultation response then these published reports will be retained indefinitely. Any of your data held otherwise by Welsh Government will be kept for no more than three years.

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e-mail:
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The contact details for the Information Commissioner's Office are:

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Tel: 01625 545 745 or
0303 123 1113
Website: https://ico.org.uk

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1. Introduction

Background

1.1 Welsh Government has a legally binding target through the Environment (Wales) Act 2016 of reaching net zero greenhouse gas emissions (net zero) by 2050. The built environment is responsible for around 30% of the UK's greenhouse gas emissions[1], therefore decarbonising buildings is a key part of our plans to meeting our net zero commitment. As set out in the Heat Strategy for Wales[2], our net zero target is a challenge but also an opportunity for achieving better outcomes for our people, our businesses and our environment.

1.2 Most buildings we are constructing now will still exist in 2050 therefore we must ensure that the standards we set for these put us on the right path. The minimum energy efficiency requirements for dwellings and non-domestic buildings are set through Part L (Conservation of fuel and power) of Schedule 1 and Part 6 of the Building Regulations 2010 \("the Building Regulations"). In 2022 we implemented an uplift to energy and ventilation standards (Part L and Part F) for new and existing dwellings and for new and existing non-domestic buildings, which are now expected to produce significantly lower carbon emissions compared to those built to the 2014 standards. The uplift represented an important stepping stone towards a cleaner, greener and safer built environment.

1.3 When we consulted on the 2022 uplift, we also set out our intention for further improvements and more ambitious energy standards in 2025[3],which has resulted in this consultation. The 2022 amendments also aimed not to disadvantage developers who wished to adopt low carbon heating from a capital expenditure viewpoint when meeting the 2022 energy targets. We set out a timeline to give industry time to prepare, for example to allow time to upskill in relation to low carbon heating systems, as the proposed 2025 standard is likely to result in these low carbon heating systems becoming an integral part of the specification in new buildings.

1.4 The proposed 2025 standard aims to build on the 2022 uplift, keeping us in line with meeting our net zero target. Our intention is to implement a standard to ensure new buildings are fit for the future and will require no further work to produce zero carbon emissions as the electricity grid decarbonises. By continuing to improve energy efficiency and moving to cleaner ways to heat our buildings, we can reduce carbon emissions with a view to better managing energy costs now and in the future. A key

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[1] The Future Homes and Buildings Standards: 2023 consultation - GOV.UK
The Future Homes and Buildings Standards: 2023 consultation

[2] https://www.gov.wales/sites/default/files/publications/2024-07/heat-strategy-wales.pdf
Heat Strategy for Wales

[3] https://www.gov.wales/building-regulations-part-l-review-0
https://www.gov.wales/building-regulations-part-l-and-f-review-stage-2a
https://www.gov.wales/building-regulations-part-l-and-f-review-stage-2b
Consultation documents for the Part L 2022 uplift review

priority for Welsh Government to prevent the negative impacts of the most recent energy crisis happening again.

The Consultation Package

1.5 Energy efficiency requirements for new and existing homes and non-domestic buildings are set by Part L (Conservation of Fuel and Power) of Schedule 1 to, and Part 6 of, the Building Regulations. The key purpose of this consultation is to seek views on improving energy efficiency standards for new and existing dwellings and non-domestic buildings. The consultation also seeks views on proposed changes to the statutory guidance associated with Part L (Conservation of Fuel and Power) and Part F (Ventilation) of the Building Regulations and we also propose to extend Part O (Overheating) of the Building Regulations and the associated statutory guidance to capture works on existing dwellings. This consultation sets out technical proposals for changes to the Building Regulations, the associated Approved Document guidance and calculation methods. The Building Regulations are supported by the National Calculation Methodology (NCM), which is used to calculate building energy performance for compliance checking purposes. Changes are periodically made to these tools to ensure that they remain fit for purpose to support the Building Regulations and other government policies.

1.6 In particular the consultation seeks views on proposals to implement a shift to low carbon heat sources for heating and hot water for new dwellings and non-domestic buildings. This is a commitment we made when we consulted on our 2022 uplift which was an important step on our pathway towards creating buildings that are fit for the future, and a built environment with lower carbon emissions where homes are adapted to the overheating risks caused by a warming climate.

Summary of proposals

<u>New dwellings</u>

1.7 For new dwellings, we have set out below the key proposals for improving energy efficiency and ventilation standards. The proposed changes include:

- An uplift in energy efficiency standard. In particular, we propose that low carbon heating systems become integral to the building specification. New dwellings built to the standard should require no further work to reach zero carbon emissions in the future as the electricity grid decarbonises.
- A change to the current performance metrics. The previous metric of Dwelling Energy Efficiency Rate (DEER) within the NCM is proposed to be withdrawn and replaced with Energy Use Intensity (EUI) to protect dwelling occupants from high annual regulated fuel bills.
- Amendments to Approved Document L and Approved Document F to improve the commissioning and checking process for fixed building services in new dwellings.

<u>Existing dwellings</u>

1.8 For existing dwellings, we are seeking views on changes to the standards associated with Part L, Part F and Part O of Schedule 1 to the Building Regulations. We are seeking views on the following proposals:

- An uplift in building services energy efficiency standards.
- Amendments to Approved Document L and Approved Document F to improve the commissioning and checking process for fixed building services in existing dwellings.
- A requirement to install renewable energy when a significant extension is constructed.
- Extension of Part O of Schedule 1 to the Building Regulations to capture certain high risk works on existing dwellings.

New non-domestic buildings

1.9 For new non-domestic buildings, we are seeking views on improving the energy efficiency standards. We are seeking views on the following proposals:

- An uplift in energy efficiency standards. In particular, we propose that low carbon heating systems are integral to the building specification. New buildings built to the standard should require no further work to reach zero carbon emissions in the future as the electricity grid decarbonises.
- Introducing photographic evidence to demonstrate compliance, focussing on high-risk areas where construction quality, changes, or substitutions during the construction process could impact the predicted performance outcomes. Photographic evidence will also be required for fixed services installations and commissioning.

Existing non-domestic buildings

1.10 For existing non-domestic buildings, we are seeking views on improving the energy efficiency standards. We are seeking views on an uplift in building services energy efficiency standards.

National Calculation Methodology

1.11 The Building Regulations are supported by the National Calculation Methodology, which is used to calculate building energy performance for compliance checking purposes. For dwellings this is currently the Standard Assessment Procedure (SAP). For non-domestic buildings this is the Simplified Building Energy Model (SBEM) or Dynamic Simulation Modelling (DSM). Changes are periodically made to these tools to ensure that they remain fit for purpose to support the Building Regulations and other government policies. To ensure that calculation methods are well suited to the technologies required of new, 'zero-ready dwellings', the UK Government has been undertaking the first complete overhaul of the SAP methodology to ensure it is fit for Net Zero.

1.12 For dwellings we propose to adopt the new 'Home Energy Model' (HEM) which will replace the Standard Assessment Procedure (SAP) for the energy rating of new dwellings. To enable stakeholders to understand whether different designs are likely to comply with the proposed 2025 standard, we have published the Home Energy Model: Part L Wales consultation tool. A browser-based application, this consultation tool gives the opportunity to interact with the model by providing a basic user interface. Web link: https://walespartl.consultationtool.org/

1.13 For non-domestic buildings, a number of improvements and updates are proposed by the UK Government to the National Calculation Methodology used to assess building performance. The National Calculation Methodology is implemented through both commercially produced Dynamic Simulation Models (DSMs) and the Simplified Building Energy Model (SBEM). We have published on the NCM website a consultation version of the National Calculation Methodology (in the form of a draft National Calculation Methodology Modelling guide) and a version of SBEM (called cSBEM) which implements this methodology. Web link: www.uk-ncm.org.uk

Development of these proposals

1.14 Using the five ways of working set out in the Well-being of Future Generations (Wales) Act 2015 the proposals have been developed with our stakeholders. Welsh Government is grateful for the input and support from industry and other stakeholders in attending technical working groups and providing other advice throughout the development phase to inform our final proposals. In addition, we are grateful to the advice provided by the Building Regulations Advisory Committee for Wales (BRACW) in shaping these proposals.

1.15 The proposals set out in this consultation will actively deliver four of the well-being goals, a prosperous Wales, a healthier Wales, a more equal Wales and a globally responsible Wales.

1.16 The proposals will deliver a prosperous Wales as they seek to make buildings more energy efficient, they will introduce a shift to low carbon heating systems, and they will ensure new buildings require no further work to produce zero carbon emissions as the electricity grid decarbonises in the future. This directly delivers an innovative and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change). The introduction of these changes will build on our 2022 Part L (Conservation of fuel and power) uplift, reducing carbon emissions across the built environment and keeping energy costs associated with the building down. As buildings are cheaper to run, this will ensure a more equal Wales as they will help people no matter what their background or circumstances (including their socio-economic background and circumstances).

1.17 The proposals also make amendments to Part F (Ventilation) and Part O (Overheating) by extending the requirements to capture certain works on existing dwellings. The Part F proposals help to ensure good indoor air quality through the supply and removal of air to and from a space or spaces in a dwelling. The proposals to mitigate overheating help ensure that certain existing dwellings at a higher risk of overheating are provided with measures to mitigate the risk of overheating in hot weather where relevant building work is undertaken. These amendments will help ensure people's physical well-being is maximised.

1.18 All of these actions will improve the well-being of people in Wales, whilst also taking account of whether such actions are making a positive contribution to global well-being. A consultation stage Integrated Impact Assessment has been developed and can be found on the following web: Publications | GOV.WALES

Additional documentation

1.19 We have published a number of documents alongside this consultation, which can be found on the Welsh Government consultation webpage. These documents provide consultees with the necessary detail to respond to many questions in the consultation document. These documents are:

- Four draft Approved Documents:

- Draft Approved Document L, Volume 1: Dwellings
- Draft Approved Document L, Volume 2: Buildings other than dwellings
- Draft Approved Document F, Volume 1: Dwellings
- Draft Approved Document O

- The Part L 2025 Wales dwelling notional buildings for consultation. This guide sets out summary specifications for notional dwellings and can be found on the Part L Wales consultation tool.

- Part L 2025 NCM modelling guide for non-domestic buildings. A consultation version of the National Calculation Methodology (in the form of a draft National Calculation Methodology Modelling guide). The notional building specification for non-domestic buildings is found in the NCM modelling guide. Web link: www.uk-ncm.org.uk

Impact assessment

1.20 A consultation stage impact assessment which provides an appraisal of the potential impacts of the proposed changes, including carbon emissions, energy bills, and construction costs, can be found on the Welsh Government consultation webpage.

Timetable for implementation

1.21 The estimated dates for the introduction of changes are set out below. These timelines are subject to change following the consultation process. Chapter 8 sets out two options for either a 6 or 12 month timescale between the making date of the Part L 2025 standard regulations and publication of full technical specification and the regulation coming into force. The below table is based on the 6 month option.

New dwellings	
Estimated Date	**Stage**
Early 2026	Making of Amendment Regulations and publication of associated Part L and Part F guidance
Summer/Autumn 2026	Amendment Regulations and revised guidance come into force
Existing dwellings	
Early 2026	Making of Amendment Regulations and publication of associated Part L, Part F and Part O guidance
Summer/Autumn 2026	Amendment Regulations and revised guidance come into force

New non – domestic buildings	
Estimated Date	**Stage**
Early 2026	Making of Amendment Regulations and publication of associated Part L guidance
Summer/Autumn 2026	Amendment Regulations and/ or revised guidance comes into force
Existing non- domestic buildings	
Early 2026	Publication of revised Approved Document L Volume 2
Summer/Autumn 2026	Revised guidance comes into force

The transition to low carbon heating

1.22 Our Part L 2025 proposals implement the shift to low carbon heat sources for heating and hot water in new dwellings and non-domestic buildings. Since the start of 2021, the Welsh Government has been engaging extensively with a wide range of stakeholders to understand green skills requirements so that we can support and drive the green recovery to deliver against our net-zero targets. In 2023 we launched our Net Zero Skills Action plan (Link: Net zero skills action plan | GOV.WALES), setting out our commitment to help equip both our current and future workforce with the right skills to meet the changing needs of our economy as part of a 'just transition' to Net Zero.

1.23 During 2024 we undertook a Net Zero Sector Skills consultation to strengthen our understanding of the current skills position and skills challenges for each emission sector in Wales. This consultation informed Emission Sector Skills Summaries and draft Emission Sector Skills Roadmaps (including one for Residential Buildings) which were published in October 2024. (Link for consultation and roadmaps - https://www.gov.wales/net-zero-sector-skills-feedback-and-roadmaps)

2. Part L and Part F Standards for New Dwellings in 2025

Chapter Summary

2.1 The section explains our proposed changes to the energy efficiency and ventilation standards for new dwellings. We propose the following changes:

- An uplift in energy efficiency standards. In particular, we propose that a low carbon heating system is integral to the building specification.
- A change to the current performance metrics. The previous metric of Dwelling Energy Efficiency Rate (DEER) is proposed to be withdrawn and replaced with the Energy Use Intensity to protect dwelling occupants from high annual regulated fuel bills.
- Amendments to Approved Documents L and F to improve the commissioning and checking process for fixed building services in new dwellings.

Uplift to the Part L performance standard

2.2 Regulations 26 and 26A provide that new buildings must not exceed the target primary energy and CO_2 emission rates (we are also proposing a new performance metric- please see paragraph 2.42). These are calculated using the national calculation methodologies. The proposed primary energy and CO_2 targets within the NCM set the performance level that a new dwelling must achieve; detail on these performance metrics are provided below. We carried out detailed modelling to determine what a reasonable level of primary energy and CO_2 performance might be for a new dwelling, taking account of primary energy and carbon savings, running costs, capital costs, and impact on housebuilding.

2.3 Our modelling considered changes to the energy efficiency standards in the following areas:

- improving fabric and services
- introducing low-carbon heat
- heat recovery technologies
- on-site generation

2.4 The modelling was principally undertaken on a core set of four dwelling types: detached home, semi-detached home, mid-terrace home and a 4-storey block of flats (made up of 16 1-bed single aspect and 16 2-bed corner flats). The dwelling energy modelling was undertaken using the Home Energy Model[4]. AECOM (Welsh Government lead technical consultants for the Part L 2025 review) provided current capital and lifecycle cost data for Wales. The resultant cost benefit analysis is presented in the accompanying Impact Assessment.

4 The latest version of HEM at the time of modelling (HEMv0.33 FHSv0.23)

2.5 Following discussion with our technical working group, and an assessment of the modelling analysis, two options for the 2025 CO_2 and primary energy rate targets are proposed for consultation. Table 1 provides the specifications assessed for each dwelling type - current Part L 2022 and the two consultation options. These are based on the notional (reference) dwelling which is used to set the standard. Both options introduce low carbon heating into the notional dwelling.

2.6 Table 2 identifies the impact on carbon performance and capital costs on average across the build mix. It includes both absolute and percentage changes.

2.7 We propose that the targets will be performance-based. The specifications on which both options are based represent one way of meeting the primary energy and CO_2 targets for each of the options. We expect developers will apply a number of approaches to meet these targets, albeit as we raise the standards to decarbonise our dwellings, there will be more limitation in which technologies are suitable.

Table 1: Specifications for Part L 2025 notional dwelling

Dwelling Element	**Part L 2022**	**Part L 2025**	
		Option 1	**Option 2**
Roof U-value (W/m^{2}K)	0.11	0.11	
External wall U-value (W/m^{2}K)	0.13	0.15[1]	
Floor U-value (W/m^{2}K)	0.11	0.11	
Window and glazed door U-value (W/m^{2}K)	1.3[2]	1.2[3]	
Glazing g-value	0.63	Same as the actual dwelling[4]	
Opaque / Semi-glazed Door U-value (W/m^{2}K)	1.0	1.0	
Airtightness (m^3/m^2.h @ 50Pa)	5	4	1.5
Wastewater heat recovery	Yes	Yes	No
Heat source	Main Gas If combi boiler in actual dwelling, instantaneous combi boiler in notional dwelling; otherwise regular boiler in notional dwelling	A notional air source heat pump equivalent to Energy related Performance (ErP) class A++	
Hot water system	If cylinder, declared loss factor = 0.85 x (0.2 + 0.051 $V^{2/3}$) kWh/day	ErP class A hot water cylinder	ErP class B hot water cylinder
Ventilation	Natural	Decentralised	Balanced Whole

Dwelling Element	Part L 2022	Part L 2025	
		Option 1	Option 2
	ventilation with intermittent extract fans	Mechanical Extract Ventilation (dMEV) [Specific Fan Power (SFP) of 0.15W/l/s]	House Mechanical Ventilation with Heat Recovery (MVHR) [85% heat recovery efficiency and SFP of 0.50W/l/s]
Lighting	80 light source lumens/ circuit Watt	105 light source lumens/ circuit Watt	
Cooling	None	Where the actual dwelling requires cooling to comply with Part O, the whole dwelling is to be cooled with a cooling system SEER of 5.1.	
Renewable energy	For houses kWp = 40% of ground floor area, including unheated spaces / 6.5 For flats kWp = 40% of dwelling floor area / (6.5 x number of storeys in block) Orientated SE/SW and pitched at 45 degrees	For houses kWp = 40% of ground floor area, including unheated spaces / 4.5 For flats kWp = 40% of dwelling floor area / (4.5 x number of storeys in block) Orientated SE/SW and pitched at 45 degrees	

[1] Analysis using the Home Energy Model indicated that relaxing the external wall U-value but improving other fabric elements offered a more optimised specification
[2] Representative of a double-glazed unit
[3] Representative of a triple-glazed unit
[4] The selection of glazing g-values is now driven by Part O compliance requirements. Part L will no longer promote specific g-values for compliance.

Table 2: Performance and cost of consultation options compared to Part L 2022

	Capital Cost Uplift (£)	Reduction in carbon emissions ($kgCO_2e/yr$)	Reduction in household fuel costs(£/yr)[1]
Option 1	5,123 (3.3%)	1,351 (93%)	66 (13%)
Option 2	8,916 (5.7%)	1,371 (95%)	135 (27%)

[1] Inclusive of standing charge savings

2.8 Option 1 is our preferred option. There are several reasons for this:

- Option 1 delivers a significant reduction in carbon emissions compared to the current standard. It offers a more balanced approach to energy demand reduction considering the large impact of introducing air source heat pumps to serve both heating and hot water demands. Fabric has been partially relaxed as it is a relatively expensive measure to achieve carbon and primary energy performance. A more constant dwelling ventilation system, in the form of dMEV paired with improved air tightness, is proposed to complement the heating system. Solar PV has been retained from the Part L 2022 notional dwelling, albeit with panel efficiency increased to reflect current technology. The combination of PV and ASHP offers a decrease in annual fuel costs relative to Part L 2022.
- Option 2 delivers a similar reduction in carbon emissions for a 74% increase in the capital cost. It does result in lower fuel bills compared to Option 1. There is concern that Option 2 will require a significant take-up of low air tightness and MVHR systems at this time. Although improvements in the standards of design, installation and commissioning of centralised mechanical ventilation have been noted, there is still a risk that installations will not achieve the required performance. This is expected to have greater impact in airtight properties with less infiltration as these are more reliant on their ventilation system performing as designed. Furthermore, there is significantly limited design flexibility to meet the Option 2 target uplift if the developer wishes not to use MVHR e.g. adopts natural ventilation. It may not be feasible or viable to design an alternative option as both an air source heat pump and roof top solar PV array are included in the notional specification.

Question 1
What level of uplift to the energy efficiency standards (i.e. improvements to the targets for performance metrics (see paragraph 2.42 for proposed metrics) in the Building Regulations should be introduced for the Part L 2025 standard?

a. Option 1 (the government's preferred option)
b. Option 2
c. Other

Please explain your reasoning.

Question 2
Do you agree with the concerns raised in paragraph 2.7 regarding MVHR systems at this time?

a. Yes
b. No
c. Unsure

Please explain your reasoning or how these concerns could be overcome in the future.

Heat networks (new dwellings and non-domestic buildings)

2.9 Heat networks (sometimes referred to as district heating) are a distribution system that takes heat from a centralised source and delivers it to a number of different buildings. Heat networks form an important part of the plan to migrate to low carbon heat, in particular in cities and high-density areas. Heat networks can help to decarbonise heat demand more easily compared to most other heat sources because new technologies can be added to the system with little disruption to individual householders or building owners. They provide a unique opportunity to exploit larger scale, renewable and recovered heat sources that cannot be accessed at an individual building level. Heat networks also provide system benefits such as thermal storage and reducing the energy demand of the grid at peak times. It is estimated by the Committee on Climate Change that around 18% of UK heat will need to come from heat networks by 2050 if the UK is to meet its carbon targets cost-effectively[5]. We expect that in parts of Wales heat networks will have a strong role to play in delivering low carbon heat to new buildings in the future.

2.10 Significant investment has been made into heat networks in the UK, and where there is potential for decarbonising, we consider that new connections to existing heat networks can be appropriate, and part of our transition to low carbon heating. We need to maximise the benefits of continuing use of existing heat networks, while also incentivising new networks to be lower carbon.

2.11 To encourage heat networks, it is proposed that new dwellings and non-domestic buildings that are connected to heat networks will be assessed (in the NCM (via Primary energy and Carbon Emission rates) and Approved Document L (Volume 1 and 2) in a new way, taking an outcomes-based approach that seeks to ensure that they are supplied by sufficiently low-carbon heat.

2.12 There are two routes for demonstrating compliance for a building (new dwelling or new non-domestic building) connected to a heat network. The assessment of heat sources could either be demonstrated by developers on the basis of:

- Compliance Route 1: Accounting for the performance of the entire heat network
- Compliance Route 2: Accounting only for new or currently unused elements of heat generators, an approach known as sleeving.

Compliance Route 1 – Accounting for the performance of the entire heat network.

2.13 It is anticipated that this route may be used where very low carbon heat networks can offer heat that outperforms the notional standard, which could therefore be of benefit to the building's overall emissions and primary energy. The methodology for this calculation would follow previous iterations of the NCM and Approved Document L (Volume 1 and 2). The performance of the actual building will be compared to that of the notional building. The performance of the actual building will reflect the entire heat network's specific heat generating plant type(s), efficiencies and distribution losses.

[5] Independent Assessment: The UK's Heat and Buildings Strategy March 2022

Compliance Route 2 – Sleeving low carbon heat from a heat network

2.14 It must be demonstrated that over the course of a year, at least 90% of the thermal energy delivered to the new building by a heat network (in kWh) is provided by low-carbon heat sources, allowing for distribution losses. These sources must be new or currently unused elements of heat generators on the network. Up to 10% of thermal energy delivered to the building by a heat network (in kWh) can be provided by 'other' sources. A defined list of these heat source categories is provided in Table 3. Heat delivered (in kWh) must account for the distribution losses between the point of generation and the building. A declaration of the availability of these low carbon sources, made by a third party, needs to be made as part of the application to Building Control Authority.

2.15 Where this condition is met and evidenced, the building's actual heat carbon intensity rate (gCO_2/kWh) and heat primary energy rate (kWh/kWh) shall use the carbon intensity and primary energy of the notional building. The effect of this is to remove any effect of the performance of the heat network supplying heat and hot water to the dwelling from the compliance calculation i.e. the performance of the heat network (other than the sleeved capacity) will not affect whether the compliance targets are hit or not, it will only be the other aspects of the building (e.g. insulation, lighting) that make a difference.

Communal heating systems

2.16 Compliance Route 2 applies to heat delivered to the boundary of a building. Therefore, communal heating systems, where multiple dwellings within one building are served from a central heat source in that building, should not use compliance route 2 above. They should use Compliance Route 1 only. It would be helpful to receive feedback on whether it is significantly challenging to achieve compliance in Route 1 as the heating system (including distribution heat losses) may not perform as well as an individual heat pump in the notional building - see Question 7.

Table 3: List of low-carbon and other heat sources for heat networks

Low-carbon heat sources
Electrically powered heat pumps (inclusive of the 'source' thermal energy and electrical energy input)
Waste heat (including from power stations)
Geothermal heat
Electric boiler
Solar thermal
Biofuels

Question 3

Do you agree that new dwellings 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 CO_2 levels for the Part L 2025 Standard?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Question 4

Do you agree that newly constructed district heating networks (i.e. those built after the Part L 2025 Standard comes into force) should also be able to connect to new buildings using the sleeving methodology?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Question 5

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?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Question 6

Are there alternative arrangements for heat networks under the Part L 2025 Standard that you believe would better support the expansion and decarbonisation of heat networks?

Question 7

Do you agree that new residential buildings served by communal heating systems should be compared to the proposed Part L 2025 notional standard with an individual ASHP?

a. **Yes**
b. **No**
c. **Unsure**

Please provide further details.

The notional dwelling approach for homes

2.17 The performance requirements for new dwellings shown above (see Table 1) are set using a notional dwelling approach. A notional dwelling is a theoretical dwelling the same size, shape and orientation as the actual dwelling being designed, but with reference values used for many characteristics of the dwelling as shown in Table 1.

2.18 We propose amendments to the notional dwelling approach in the context of increasingly low carbon, low energy consumption dwellings.

Notional dwelling system design

2.19 We propose adopting the new Home Energy Model (HEM) as the approved calculation methodology to demonstrate compliance of new dwellings with the Part L 2025 Standard, replacing SAP. The HEM is a more detailed calculation methodology than SAP. As a result, the HEM requires many new input values to be provided. For example, more details are required on system characteristics. Hence, for heat pumps, additional input data is needed for heat pump capacity, emitter circuits and hot water cylinders.

2.20 A key impact of this is that by providing reasonable values for such system characteristics[6] in the notional dwelling, it will promote good practice design. If the actual dwelling has less efficient system characteristics, it will perform less well relative to the performance targets and require enhanced specifications elsewhere. For example, it should help discourage the use of over-sized and therefore less efficient heat pumps.

Weather

2.21 This section explores using local weather data in HEM to demonstrate compliance with Part L. The current notional dwelling, used for Building Regulations compliance under the 2022 requirements, uses climate data from a single location (the East Pennines) to set performance standards for England, Wales and Scotland. This method has been used historically because it supports standardised construction practices. For instance, designers can create a single house design that can be built across Wales without having to take local weather conditions into account.

2.22 For Part L 2025, we are proposing that the notional dwelling sizes the heat pump according to the calculated heat demand of the dwelling. There are two outcomes that the new notional dwelling could create if a single weather location continues to be used to calculate whole-dwelling performance requirements:

- Sizing a heating system on a standardised weather location could mean that the heat pump is over- or under-sized for the heating demand of the dwelling. It will then not perform optimally, resulting in higher energy bills for consumers.
- Alternatively, sizing a heating system on the actual location could result in challenges in meeting the Part L performance targets if compliance is assessed using standardised weather data. The correctly sized heating system may perform less well against the Part L targets than if sized using the standardised weather

[6] For certain systems, characteristics should reflect the requirements of wider Building Regulations.

location. This could mean that designers would have to compensate in other aspects of their dwelling design to meet the Part L targets. This is disincentivising correct sizing of heating systems.

2.23 Modelling was carried out using the HEM to assess the sensitivity to the weather location. The modelling compared results for Cardiff, Capel Curig, Aberdaron and Milford Haven. The space heating peak demand for the 2025 Option 1 scenario did vary depending on the weather data applied. The largest peak space heating demand was 4.9kW whereas the lowest peak demand observed was 3.9kW. Heat pump sizes, typically range incrementally in capacity size by more than 1kW (i.e. 4kW, 6kW, 8kW models are typically offered by manufacturers). As such, it is not expected that weather should trigger a need to revise the technical and cost information of the heat pump.

2.24 It is recommended that a single weather file is selected for use for Part L Wales 2025 assessments. This should represent the average climatic conditions for the area of Wales where the majority of development occurs (i.e. Cardiff). This also reflects the current availability of Test Reference Year (TRY) Weather data for Wales (i.e. the only CIBSE published Welsh weather file is for the Cardiff weather station). Should further Welsh TRYs be published in future, their inclusion in Part L compliance calculations would be considered in any future Part L review. The HEM will allow variables such as local surface roughness (caused by local terrain and built environment) as well as the dwelling height above ground to be inputted for assessment. Both inputs are considered to be suitable variables to account for variations in environmental conditions at the dwelling location.

Question 8
Should the notional dwelling heat loss calculation be based on a single weather location (Cardiff)?

a. Yes
b. No
c. Unsure

Please explain your reasoning.

Buildings that contain multiple dwellings

2.25 Currently *Approved Document L, Volume 1: Dwellings* allows an average target emission rate and primary energy rate to be used for demonstrating compliance (with regulation 26 and 26A) in buildings that contain multiple dwellings.

2.26 This offers flexibility in delivering efficient fabric and energy generation across a whole building, trading individual dwellings off against one another. This is useful for flats, where there is challenging thermal bridging, limited surface area and a shared roof for generation. However, this approach is also used for terraced houses, where there is less justification. With an increased use of solar generation and a focus on energy bills, it is necessary for each home to perform well and that the generation of renewable energy is provided to each home so households can benefit from reduced energy bills.

We therefore propose to remove this average compliance approach for terraced houses.

Question 9
Do you agree with the revised guidance in *Approved Document L, Volume 1: Dwellings* for consultation no longer including the average compliance approach for terraced houses*?*

a. **Yes**
b. **No**
c. **Unsure**

Please provide any evidence you have on the unintended consequences that could arise as a result of these changes.

Secondary heating

2.27 Currently, *Approved Document L, Volume 1: Dwellings* allows a chimney or flue to be provided when no secondary heating appliance is installed. The guidance sets out efficiencies to be assumed when determining the dwelling primary energy rate and dwelling CO_2 emission rate.

2.28 We propose that where no secondary heating appliance is installed, there should be no chimney or flue provided. Draft text is provided in section 2 of *draft Approved Document L, Volume 1: Dwellings*. To note, this guidance does not preclude the installation of 'decorative' elements, e.g., a faux chimney stack

Question 10
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?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Window and door U-value calculations

2.29 Currently, *Approved Document L, Volume 1: Dwellings* allows the U-value of a window or door to be determined using standard sizes and configurations. This may be used in both energy models and when demonstrating compliance against minimum standards.

2.30 A new national calculation methodology for dwellings is proposed called the Home Energy Model. The new Home Energy Model is based on the latest evidence and is more sophisticated than SAP, with the aim of improving accuracy of energy modelling. It is logical to improve the accuracy of inputs to the Home Energy Model to make the most

of the improved model. One potential improvement area is the current use of U-value calculations that use standard sizes and configurations or default values.

2.31 We propose, therefore, that for new dwellings, the U-value of windows and doors should be calculated using either the actual size and configuration of the window or door or measured using the appropriate hot box method set out in the BS EN ISO 12567 series. This means it would no longer be possible to use standard sizes or configurations, or to use the U-value of a window or door taken from the default values in the SAP version 10, Table 6e. This change would mean that the U-values of windows and doors used in the Home Energy Model are more accurate and therefore improve the accuracy of the energy modelling. For the sector, the change would mean an increase in heat transfer modelling or testing for different window sizes and configurations.

2.32 We are keen to identify a pragmatic approach to determining the U-values of windows and doors that recognises any practical issues associated with these proposed changes. We welcome views from stakeholders on the practicalities of the proposed approach, and any alternative solutions.

Question 11
Do you agree with the proposed approach to determine U-values of windows and doors in new dwellings?

a. Yes
b. No
c. Unsure

Please explain your reasoning.

Renewable energy and the notional dwelling

2.33 Both proposed options for the improved Part L 2025 notional dwelling performance target include solar PV as the renewable energy technology. However, when combined with other improvements to the notional dwelling specification, such as those proposed for fabric and services, design flexibility to meet the target uplift may be limited if the developer has technical difficulties in using renewables e.g. roof space is limited by wider design requirements.

2.34 Therefore, an alternative approach, could be making the provision of on-site renewable electricity generation become a functional requirement in the Building Regulations.

2.35 This requirement would be supported by Approved Document guidance for installing solar panels equivalent to 40% of the ground floor area. There would, however, be circumstances specified in the guidance under which lower solar coverage would be acceptable.

2.36 Under this proposal, the amount of solar provision in the notional building would match the actual solar provision to be installed for solar panels up to 40% of the ground floor area. Installing panels at greater than 40% of the ground floor area would count towards

the actual building's improvement on notional building targets.

2.37 This proposal may have the benefits of ensuring that the majority of new dwellings will be built with solar panels but that there is flexibility for legitimate cases when reduced or no solar panel coverage is appropriate. Further details on the new requirement and guidance are provided below.

Part L requirement

2.38 A Part L requirement would require that when a dwelling or a building containing a dwelling is erected, a system for renewable electricity generation must be installed on-site. Dispensation against this requirement would be permitted for dwellings on which it is not possible to install a reasonable capacity system for renewable electricity generation on account of its design or surroundings (i.e. due to local shading or building form). Should the possible renewable electricity generation not exceed 720kWh per year, as predicted the Approved Methodology, dispensation against this requirement would also be permitted, due to the lower cost effectiveness. Therefore, this approach would provide greater flexibility for the developer and the building control body to agree where renewable energy generation on a development is not viable.

Approved Document L Volume 1 guidance

2.39 Approved Document L Volume 1 would allow on-site renewable electricity to be generated by photovoltaic panels, or another renewable technology. If by PV, the guidance would indicate that, where possible, either of the following should be achieved:

A. An annual output (in kWh) as calculated using the Approved Methodology of at least equal to that of a PV array with all of the following characteristics:

i) Installed peak power (kWp) equal to 0.4 x Ground Floor Area / 4.5.
ii) Orientated SE-SW
iii) 45 degree pitch
iv) Not overshaded
v) Equal or exceed the rated output of the system inverter
vi) Not generate less than 720kWh annual output; or

B. If a single premises, have a system rated output of at least 16 Amps per supply phase[7].

If another renewable technology is used to generate electricity, the amount produced should be equivalent to that required for PV as above.

2.40 If on-site renewable electricity cannot be generated to the amount required (or at all), then additional guidance would be provided in relation to viability/evidence and the considerations for the developer and building control body. If design or other restrictions

[7] At least 16 Amps per supply phase, which is the maximum permissible supply current for Single or Multiple premises under the Distributed Generation Connection G98 Application, should be achieved by the renewable electricity generation installation after DC to AC conversion.

result in an annual output from the renewable technologies of less than 720kWh per year, it may be reasonable not to install any PV.

2.41 Evidence supporting the need for lower output on-site renewable electricity generation than the proposed standards in the approved documents should be provided to the building control authority by the developer. This should include the following as appropriate:

(a) Roof diagrams with and without proposed photovoltaic panels clearly demonstrating any design restriction on panels.
(b) A statement outlining why lower provision is being installed and why any modification to designs cannot be made.
(c) Any calculations made to support a lower provision by a suitably qualified person. A suitably qualified person includes a qualified On Construction Domestic Energy Assessor.

Question 12
Do you consider that a Part L requirement for renewable energy (with guidance given in Approved Document L) should be implemented rather than being included in the notional dwelling specification for new dwellings?

a. Yes
b. No
c. Unsure

Please explain your reasoning.

Curtain walling in dwellings

2.42 A curtain wall is a weather-proofing façade, which is typically highly glazed, and does not carry the weight of floors above it. The proposed notional dwellings for the Part L 2025 do not currently contain any dispensation for the potential challenges of curtain wall construction, unlike the 2022 energy efficiency standards. We would like to seek information on the importance of curtain wall construction as the proposed standards may significantly reduce the viability of this construction type. We would also like to seek information on whether any elements of the fabric specification for the notional dwelling are a challenge for curtain wall construction, for example, with regard to thermal bridging or interstitial condensation risk.

Question 13
Do you have any information you would like to provide on the dwellings built to the Part L 2025 Standard using curtain walling?

Part L performance metrics

2.43 We propose four performance metrics for dwellings to be measured against. These are:

- Primary energy target
- CO_2 emission target
- Energy use intensity (EUI)
- Minimum standards for fabric and fixed building services

2.44 This is a change from the current metrics. In the Part L 2022 changes, we introduced the DEER metric as a safeguard against higher running costs, and set this as a minimum energy efficiency rating of band B (rating 81), and the previous review stated this metric will be reviewed again in the Part L 2025 review.

2.45 The previous metric of Dwelling Energy Efficiency Rate (DEER) is proposed to be withdrawn and replaced with EUI (in units of kWh/m^2/yr), to protect dwelling occupants from high annual regulated fuel bills.

2.46 The EUI is the total of the consumption (both regulated and unregulated) of each fuel type and the total of all renewable system energy that is consumed by the dwelling. Any exported energy is not counted towards the EUI metric. All renewable energy consumed by the dwelling is accounted for as it is not known in practice how the energy will be split into regulated and unregulated energy uses.

2.47 We expect the electrification of new dwellings as the performance targets increase, and we also expect that in many cases the installation of renewables (particularly solar panels) will be the most cost effective way to achieve the required efficiency targets. In addition to the electrification of heat and uptake in solar panels, demand reduction must also be promoted. The EUI metric considers all energy uses within the dwelling, and we expect this new EUI metric to help ensure improved efficiency in all areas of dwelling energy use.

2.48 To ensure robust compliance modelling, the unregulated energy use for both the actual and notional dwellings will be aligned, this will ensure that no benefit can be obtained by altering the unregulated energy usage assumptions.

Question 14
Do you agree with the replacement of the Dwelling Energy Efficiency Rate with the Energy Use Intensity?

a. Yes
b. No – the Dwelling Energy Efficiency Rate should be retained
c. No – an alternative metric should be used (please provide details)
d. No – the Dwelling Energy Efficiency Rate should be removed with no additional metric added

National Calculation Methodology for Dwellings

2.49 The Standard Assessment Procedure (SAP) is the methodology used by the Welsh Government to assess and compare the energy and environmental performance of dwellings, and is currently used to determine compliance with the energy efficiency requirements of Part L.

2.50 The UK Government is developing a new national calculation methodology for dwellings called the Home Energy Model. The new Home Energy Model is based on the latest evidence of UK dwelling energy use and is more sophisticated than SAP, with the aim of improving accuracy of energy modelling. It is logical to improve the accuracy of inputs to the Home Energy Model in order to make the most of the improved model. The UK government has published a package of materials relating to the Home Energy Model, and further details can be found on the following web links:

The Home Energy Model consultation can be found at:
https://www.gov.uk/government/consultations/home-energy-model-replacement-for-the-standard-assessment-procedure-sap

The Home Energy Model: Future Homes Standard assessment consultation can be found at:
https://www.gov.uk/government/consultations/home-energy-model-future-homes-standard-assessment

The Home Energy Model reference code can be found at (please note: the Python reference code has been updated since the 2024 HEM consultation):
https://dev.azure.com/BreGroup/Home%20Energy%20Model

Part L 2025 Wales and the Home Energy Model

2.51 We propose to adopt the Home Energy Model as the approved calculation methodology to demonstrate compliance of new dwellings with the energy efficiency requirements of Part L 2025, replacing SAP.

2.52 As in previous SAP calculations, the Home Energy Model will estimate the energy use and carbon emissions of a dwelling under certain conditions and compare these to a notional dwelling. HEM will be used to calculate all compliance metrics for Part L 2025.

HEM Implementation and transitional provisions from SAP

2.53 At the time of writing, the UK Government response to their consultations on HEM has not been published and the HEM may be subject to change following consideration of the responses. In addition, the timescale for the final version of HEM is not known. Therefore, if the final version of HEM is not available by the proposed coming into force date for the Part L 2025 Wales standard, then a revised version of SAP is proposed as a interim measure until the final version of HEM is completed and a subsequent final Wales assessment tool is available.

Part L 2025 Wales Dwellings assessment consultation tool

2.54 Alongside this consultation we have published a Part L 2025 Wales Dwellings assessment demonstration software, called the 'Part L Wales Consultation Tool', as a web browser-based application. The consultation tool allows interaction with the Home Energy Model and Part L 2025 Dwellings Wales assessment model, by providing a demonstration user interface.

2.55 The assessment consultation tool will be of interest to those who want to test an early version of Home Energy Model and Part L 2025 Wales assessment and understand whether different dwelling designs are likely to comply with the proposed Part L 2025 standard. ***Please note*** *that the Future Homes Standard wrapper (FHSv0.18), published as part of The Future Homes and Buildings Standards: 2023 consultation, applied annual fuel factors (CO2e and PE). The wrapper currently applied for Part L Wales 2025 (FHSv0.25) has a Variable Grid file to calculate the FHS dwelling emission rate and primary Energy rate. This presents an opportunity to recognise flexible systems that can improve performance in response to variations in UK electricity grid efficiency and energy mix. As described in paragraph 2.52, the UK Government response to their consultation has not been published and the HEM and FHS assessment wrapper may be subject to change. Therefore, our Part L Wales consultation tool contains an option of choosing either annual or variable grid profiles (as used in our energy modelling). This allows developers to test their designs against an annual or variable fuel factor, as we propose adopting the final Home Energy Model version and aligning with the UK Governments chosen fuel factors.*

Thermal bridging in HEM

2.56 Currently, *Approved Document L, Volume 1: Dwellings* allows thermal bridges in new dwellings to be assessed using one of four methods: using construction joint details assessed by a suitably competent person; using independently assessed thermal junction details from a reputable non-government database; using values from the Standard Assessment Procedure version 10.2, Table K1; or using a default y-value of 0.20W/(m^2.K).

2.57 However, the current HEM does not accept y-values. Therefore, adopting HEM means that for new dwellings using the default value of 0.20W/(m^2.K) is no longer applicable. Instead, thermal bridges should be assessed using one of the remaining three methods.

Question 15
Do you agree that the Home Energy Model should be adopted as the approved calculation methodology to demonstrate compliance of new dwellings with the Part L 2025 Standard in Wales?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Question 16
Do you agree that SAP should continue to be used to demonstrate compliance with Part L 2025 as an interim measure if the final version of HEM is not completed by the proposed coming into force date?

a. Yes
b. **No**
c. **Unsure**

Please explain your reasoning.

Minimum standards for thermal elements, windows and doors in new dwellings

2.58 We do not propose to amend these minimum standards. We propose to continue with the minimum standards to provide flexibility in design.

Minimum standards for building services in new dwellings

2.59 Under the Part L 2025 standard, all space heating and hot water demand should be met through low-carbon sources. Guidance in *draft Approved Document L, Volume 1: Dwellings* has been updated to include more details for common low-carbon technologies.

2.60 The proposed changes are as below.

- heat pump efficiencies and controls
- comfort cooling efficiencies
- ventilation system efficiencies
- lighting efficacies and fixed external lighting controls
- guidance on pipework insulation

<u>Minimum efficiencies for new dwellings</u>

2.61 Table 4 outlines the proposed changes to the minimum standards for new dwellings, as set out in *draft Approved Document L, Volume 1: Dwellings*.

Table 4: Proposed changes to minimum building services efficiencies and controls for new dwellings

Building service	Current Part L 2022 standard	Proposed Part L 2025 standard
Heat pump efficiency	Air heating products, cooling products, high-temperature process chillers and fan coil units ≤12 kW should follow Ecodesign No. 2016/2281. Minimum Coefficient of Performance (COP) for other types of heat pump: space heating COP 3.0, domestic hot water heating COP 2.0.	To reflect Ecodesign product regulations, the guidance is updated as set out in Table 6.1 of draft Approved Document L, Volume 1: Dwellings. To note, this is not an increase in minimum efficiency.
Continuous mechanical extract ventilation systems: Specific fan power (SFP)	0.7W/(L.s).	To reflect current systems available on the market: • maximum SFP for continuous decentralised mechanical extract ventilation systems changed to 0.2W/(L.s) • maximum SFP for continuous centralised mechanical extract ventilation systems changed to 0.5W/(L.s).
Continuous mechanical supply and extract ventilation systems: Specific fan power (SFP)	1.5W/(L.s).	To reflect current systems available on the market, maximum SFP for continuous mechanical supply and extract ventilation systems changed to 1.4 W/(L.s).
Comfort cooling systems efficiency	Seasonal Energy Efficiency Ratio (SEER): 4.0.	To reflect improvements in domestic comfort cooling products on the market the minimum SEER is changed to 5.1.
Lighting: efficacy	Indoor lighting: 75lm/W.	To reflect improvements in the efficacy of lighting products on the market, minimum efficacies changed to 105 light source lumens/circuit Watt for indoor and external lighting.
Lighting: external lighting controls	Automatic daylight controls for all external lighting and automatic controls for occupancy if efficacy ≤	To better reflect how external lighting systems operate, guidance is now set in luminous flux. Automatic daylight controls for all external lighting. Automatic controls

Building service	Current Part L 2022 standard	Proposed Part L 2025 standard
	75lm/W.	for occupancy if total luminous flux > 1200lm with manual control being acceptable if lower.
Underfloor heating systems: Thermal	None.	To ensure that underfloor heating systems work as efficiently as possible, the thermal resistance of the floor covering used above them should be 0.15(m^2.K)/W or less.

Question 17
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*?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Heat pump controls in new dwellings

2.62 Controls for heat pumps are becoming smarter and more complex. It is important that the original manufacturer's controls interact well with any additional controls and do not reduce the functionality of the original controls. We therefore propose to introduce additional guidance in Section 6 of *Approved Document L, Volume 1: Dwellings* for heat pump controls.

Question 18
Do you agree with the proposal to include additional guidance around heat pump controls for dwellings, as set out in Section 6 of *draft Approved Document L, Volume 1: Dwellings*?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Providing additional information about heat pump systems in new dwellings

2.63 It is important for heat pumps to be designed, installed and used correctly to ensure they deliver sufficient space heating and hot water.

2.64 To ensure that heat pumps continue to work efficiently and are maintained correctly throughout their lifetime and across different occupants, we propose that operating and maintenance information, as set out in Section 10 of draft Approved Document L, Volume 1: Dwellings, should be fixed to the heat pump unit or hot water storage vessel. This information should include the heat loss calculations and design conditions, whether a member of an approved competent person scheme commissioned the heat pump, the size of the emitter circuit and the minimum set back temperatures.

Question 19
Do you agree that operating and maintenance information should be fixed to heat pump units in new dwellings?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Question 20
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?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Changes to guidance to limit heat loss in new dwellings

2.65 Section 4 of *draft Approved Document L, Volume 1: Dwellings* also include other changes to facilitate the installation of low carbon heating systems by limiting heat loss.

2.66 The changes include:

- adding guidance on pipework insulation
- adding guidance for Heat Interface Units (used in Heat Networks)
- adding guidance on the placement of heat pumps to minimise heat loss
- new minimum standards for hot water storage vessel insulation (see Table 4.4 of d*raft Approved Document L, Volume 1: Dwellings*)

2.67 Full details are included in *draft Approved Document L, Volume 1: Dwellings*.

2.68 Increasing insulation standards for hot water storage vessels is necessary to ensure the performance of heat pumps. Our cost-benefit analysis for insulation on hot water storage vessels (50 to 1000L) demonstrated that the increase in minimum standards is cost effective in dwellings, however we recognise the risk of disruption to manufacturers

and consequently housebuilders. We would be interested in evidence of risks associated with this proposal. It should also be noted that the thickness of hot water storage vessel insulation in the notional dwelling is higher than minimum standards.

Question 21
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?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

2.69 We also propose updating guidance on the sizing of domestic hot water storage vessels. This is set out in Section 5 of *draft Approved Document L, Volume 1: Dwellings*.

Question 22
Do you agree with the proposed sizing methodology for hot water storage vessels for new dwellings?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Lifts, escalators and moving walkways

2.70 Proposals for energy efficient lifts, escalators and moving walkways are outlined in Section 4 on non-domestic buildings. These proposals would also apply to these services in communal areas of flats and mixed-use buildings. Comments on these proposals as they may relate to these building types should be provided in the relevant question on non-domestic buildings.

Real-world performance of new dwellings – Part L & Part F

Background

2.71 Several studies of new dwellings suggest that measured energy performance once occupied can be worse than the energy performance expected at the design stage. Those studies vary in their assessment of the size of the difference: some have found a very significant difference, but the general trend does appear to show that the difference is smaller in dwellings built more recently.

2.72 There are four main causes of the gap between expected performance and measured performance in dwellings:

- dwellings not being built as they were designed, for example because of poor build quality or materials being substituted
- fixed building services, such as ventilation and heating systems, not being installed and commissioned correctly
- occupants using dwellings in different ways to those assumed at the design stage
- inaccuracies within the models that are used to calculate the energy performance of dwellings

2.73 A gap between expected performance and measured performance means that more energy is required to heat dwellings than should be required. This means that people are paying higher energy bills than they would if modelled energy use and energy use in practice were the same. It also means that, until the electricity grid is fully decarbonised, more carbon is being emitted than necessary, taking us further away from achieving our net zero by 2050 target. Even once the electricity grid is fully decarbonised, minimising this gap will still be important to avoid putting unnecessary pressure on the electricity grid.

2.74 We implemented several measures through the 2022 uplift to Part L to improve building performance in dwellings. We are, however, exploring what more can be done to close the gap.

2.75 Under the 2022 uplift to Part L, the main changes for dwellings were:

- stating that photographs should be taken for each dwelling on a development at appropriate construction stages and shared with building control
- including Build Quality guidance in Approved Document L that enables developers to avoid common issues that contribute towards creating a performance gap
- introducing a new standardised compliance report (the BRWL report) which gives building control the same clear information about every home
- introducing a Home Energy Guide template that developers can use to meet their obligation under Regulation 40 to provide the dwelling owner with information about how to conserve fuel and power

Commissioning fixed building services

2.76 Fixed building services, including ventilation and heating systems, must be checked and adjusted following installation to ensure they operate safely and efficiently. This process is called ‘commissioning’. It is important for ventilation systems, heating systems and associated appliances to operate efficiently. Where a ventilation system is operating inefficiently this may lead to poor indoor air quality, condensation and mould. Where a heat pump is operating poorly, or an associated appliance such as a hot water storage vessel was commissioned poorly, there may be an inadequate supply of heating and hot water, affecting the health and wellbeing of occupants.

2.77 The performance of fixed building services, particularly mechanical ventilation systems, is highly dependent on the quality of the design and installation, and so these systems must be installed and commissioned by people with the right knowledge and skills. Where installation and commissioning are carried out by a member of a competent person scheme, they can self-certify that the work was done to a sufficient standard. When the installer is not part of a competent person scheme, building control bodies must check and approve all installations.

2.78 We have been made aware that fixed building services are not always installed, commissioned and (where required) checked to a high standard. Below we propose several amendments to Approved Document L, Volume 1: Dwellings and Approved Document F, Volume 1: Dwellings that will improve the installation, commissioning and checking process for fixed building services in new dwellings. In sum, we propose:

- providing additional guidance to help people installing mechanical ventilation systems, hot water storage vessels and on-site electrical storage systems to commission them correctly
- explaining the routes to certification (self-certification through a competent person scheme or having work checked by building control) to help ensure that fixed building services are being appropriately checked
- explaining what enforcement mechanisms are available where work falls short of the required standard

<u>Installation and commissioning of mechanical ventilation systems in new dwellings</u>

2.79 We are aware of ongoing concerns that the design and/or the installation of ducted ventilation systems is often poor and results in the fans operating at near maximum fan speed to achieve the design air flow rates. The impact of this is increased fan noise and thus nuisance for the residents, reduction in fan life due to wear on the motor bearings and an increase in fan running costs.

2.80 Currently, *Approved Document F, Volume 1: Dwellings* says that people commissioning mechanical ventilation systems should conduct a visual inspection and air flow rate testing. We propose the following key changes:

- When installing centralised mechanical extract ventilation (cMEV) or centralised mechanical ventilation with heat recovery (cMVHR), total power consumption should be measured. Section 4 of draft Approved Document F, Volume 1: Dwellings includes a methodology for undertaking the performance measurements, along with specifications for the equipment requirements. People who install centralised ventilation systems will typically need to purchase new equipment to meet the measurement requirement. Using current costs to give an estimate, this would typically be a one-off cost of around £20 for a power meter. We also estimate a small amount of additional time taken to carry out the measurement and to record the results.
- When conducting air flow rate testing for continuous mechanical systems, both centralised (cMEV and cMVHR) and decentralised (dMEV and dMVHR/SRHRV), the systems should be tested and commissioned using

calibrated powered flow hoods instead of rotating vane anemometers with hoods. Using current costs to give an estimate of costs for a commissioning engineer, calibrated powered flow hoods cost around £2,800, while rotating vane anemometers with hoods cost around £650: a capital cost uplift for commissioning engineers of around £2,150, incurred on average every 10 years but heavily dependent on frequency of use and care taken. The annual calibration cost for calibrated powered flow hoods is also £175 for commissioning engineers, an uplift of £40 compared to the calibration cost for rotating vane anemometers. However, industry is already transitioning towards using powered flow hoods: we estimate that around 25% of commissioning engineers have already upgraded.

- Notice of the results of the test would have to be given to the building control body within five days.

2.81 To improve the performance of ventilation systems, we propose the following key changes to ducting requirements:

- Stating that rigid or semi-rigid ductwork should be used in:
  - Decentralised MEV systems or intermittent extract ventilation fans, and that flexible ducting should not be used.
  - Centralised MEV and MVHR systems, with flexible ductwork limited to 200mm in length for final connections to the fan unit, if necessary.
- Stating that duct runs for decentralised MEV systems should be kept short (less than 2 metres) to improve system performance.
- Setting out specific new limits for the designed system static pressure for centralised and decentralised continuous mechanical systems.
- Enhancing the requirements for ducting insulation.

2.82 The proposed changes to the approved document are set out in full in Sections 1 and 4 and Appendix C of *draft Approved Document F, Volume 1: Dwellings*.

Question 23
Do you agree with the proposed changes to *Approved Document F, Volume 1: Dwellings* to improve the installation and commissioning of ventilation systems?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Installation of extract ducting drainage measures to combat build-up of possible condensation water in new dwellings

2.83 In section 3 (please see Paragraph 3.19) we have new proposals for guidance to reduce

the risk of condensation gathering within extract ducting when passing through unheated spaces from heated spaces. We also propose this guidance applies to new dwellings, therefore, please provide comments for new dwellings within that section.

Commissioning hot water storage vessels

2.84 Hot water storage vessels will be fitted in the vast majority of new dwellings with heat pumps, and it is crucial to ensure that they are commissioned properly so that they work effectively alongside the heat pump and provide water which is safe to use. We propose, therefore, to update guidance to specify that hot water storage vessels should be commissioned in accordance with the manufacturer's instructions. This is set out in Section 8 of *draft Approved Document L, Volume 1: Dwellings*.

Question 24
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?

- **a. Yes**
- **b. No**
- **c. Unsure**

If No, please explain your reasoning.

2.85 We have not amended the guidance in Section 8 of *Approved Document L, Volume 1: Dwellings* around how heat pumps should be commissioned. Our view is that the current guidance is sufficient. We would, however, welcome views on potential amendments or additions.

Question 25
Are you aware of any gaps in our guidance around commissioning heat pumps, or any third-party guidance we could usefully reference?

- **a. Yes**
- **b. No**
- **c. Unsure**

If Yes, please provide further details.

Commissioning on-site electricity storage systems

2.86 On-site electricity storage systems, such as batteries that store energy generated by solar PV panels, must be commissioned correctly to ensure that they are safe and operating as designed. We therefore propose that these systems should be commissioned in accordance with the commissioning requirements of MCS' 'MIS 3012: *The Battery Standard (Installation)*'.

2.87 This proposed change is set out in Section 8 of *draft Approved Document L, Volume 1: Dwellings*.

Question 26
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?

a. **Yes**
b. **No**
c. **Unsure**

If No, please explain your reasoning.

Routes to certification and enforcement mechanisms

2.88 We believe that heat pumps and mechanical ventilation systems being installed and commissioned well is important to the success of the new Part L. As set out above, one of two procedures must be used to certify that a fixed building service has been installed and commissioned in accordance with the requirements set out in the Building Regulations. Installers can self-certify their work if they are a member of a competent person scheme. Otherwise, a building control body will need to certify each installation.

2.89 Self-certifying that work was compliant with the Building Regulations through a competent person scheme has several advantages. It will often save installers time and money because it removes the need to notify building control in advance and pay building control fees. It also demonstrates installer competence to carry out the work, which increases consumer confidence. Finally, most competent person schemes offer training opportunities to upskill members and all schemes must keep members up to date on changes to Building Regulations and other relevant changes.

2.90 The other option is for a building control body to check the work. We have heard some evidence that building control bodies do not always have the resources and expertise to carry out appropriate post-installation checks on fixed building services. We are keen to ensure that fixed building services installed and commissioned by people who are not part of a competent person scheme are receiving the right checks. Separate from this consultation, the Welsh Government has commenced registration of Registered Building Inspectors (RBIs) and Registered Building Control Approvers (RBCAs), previously known as Approved Inspectors. The Building Safety Regulator (on behalf of the Welsh Government) is regulating the building control profession and improving competence through oversight, support and encouragement as well as mandatory codes and standards which applied from April 2024.

2.91 We propose adding guidance to *Approved Document L, Volume 1: Dwellings* and *Approved Document F, Volume 1: Dwellings* setting out in detail the two routes to certification for fixed building services, to help installers choose the route most

appropriate for them. We also propose adding guidance setting out the enforcement options available where work is not completed to the required standard.

2.92 Full details of these proposed changes are in Section 9 of draft *Approved Document L, Volume 1: Dwellings* and Section 1 of *Approved Document F, Volume 1: Dwellings.*

Question 27
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?

a. **Yes**
b. **No**
c. **Unsure**

If No, please explain your reasoning.

2.93 The Government intends to consider changes to the minimum technical competencies (MTCs) that members of competent person schemes must demonstrate.

3. Part L, F and O Standards for Existing Dwellings in 2025

Chapter Summary

3.1 The section looks at changes to the application of Building Regulations to existing dwellings. We have proposed the following changes.

- An uplift in building services energy efficiency standards.
- Amendments to Approved Documents L and F to improve the design, installation and commissioning processes for fixed building services in existing dwellings.
- A requirement for renewable energy for significant extensions.
- Extend Part O of the Building Regulations to capture higher risk work on existing dwellings.

Minimum standards for thermal elements, windows and doors in existing dwellings

3.2 We do not propose changes to these minimum standards in this review.

Minimum standards for building services in existing dwellings

3.3 Under the Part L 2025 standard all space heating and hot water demand should be met through low-carbon sources. Guidance in *draft Approved Document L, Volume 1: Dwellings* has been updated to include more details for common low-carbon technologies.

3.4 The proposed changes are as below.

- heat pump efficiencies and controls
- ventilation system efficiencies
- lighting efficacies and fixed external lighting controls

Minimum efficiencies for existing dwellings

3.5 Table 5 outlines the proposed changes to the minimum standards for existing dwellings, as set out in *draft Approved Document L, Volume 1: Dwellings*.

Table 5: Proposed changes to minimum building services efficiencies and controls for new or replacement systems in existing dwellings

Building service	Current Part L 2022 standard	Proposed Part L 2025 standard
Heat Pump heating systems and controls	Heat pumps with output of 12kW or less should follow Ecodesign Commission Regulation No. 2016/2281. For all other types of heat pump the COP should be a minimum of 3.0 for space heating and 2.0 for DHW. Section 6.38 of the Approved Document details the controls which should be included for heat pumps, in addition to meeting the general requirements for heating and hot water systems in Section 5. Additionally, they should include both weather compensation or internal temperature control as well as a timer or programmer for space heating.	All heat pumps should meet Ecodesign product regulations for that heat pump type as detailed in Table 6.1 of the Approved Document. Controls should meet the minimum requirements detailed in Table 6.2 of the Approved Document and should include both weather compensation or internal temperature control as well as a timer or programmer for space heating. The new information in the Approved Document is to reflect Ecodesign product regulations. However, this is not an increase in minimum efficiency levels.
Mechanical ventilation	Section 6.55 of the Approved Document details the following specific fan power limits for domestic mechanical ventilation: - Continuous mechanical extract ventilation systems – 0.7 W/(l.s).	The proposed equivalent section further separates the mechanical ventilation limits for existing dwellings with the following values: - Continuous decentralised mechanical extract ventilation system – 0.2 W/(l.s). - Continuous centralised mechanical extract ventilation system – 0.7 W/(l.s).
Lighting – Internal	Where installed in an existing dwelling each internal light fitting should have minimum luminous efficacy of 75 light source lumens per circuit-watt.	Where installed in an existing dwelling each luminaire should have light sources with a minimum luminous efficacy of 105 light source lumens per circuit-watt.
Lighting – external	No current equivalent.	Where installed in an existing dwelling each external luminaire should have light sources with a minimum luminous efficacy of 105 light source lumens per circuit-watt.
Lighting controls – external	If luminous efficacy is 75 light source lumens per circuit-watt or less automatic controls are required to turn off the luminaries after the area becomes unoccupied. If luminous efficacy is greater than 75 light source lumens per circuit-watt then manual control is acceptable.	To better reflect how external lighting systems operate, guidance is now set in luminous flux. Controls which switch the luminaire off after the area becomes unoccupied are now specified as follows: - For luminaries with total luminous flux of greater than 1200lm, automatic proximity sensors should be used. - For luminaries with total luminous flux of 1200lm or less, manual control is acceptable.

Question 28
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*?

a. **Yes**
b. **No**
c. **Unsure**

If No, please explain your reasoning.

Heat pump controls in existing dwellings

3.6 Controls for heat pumps are becoming smarter and more complex. It is important that the original manufacturer's controls interact well with any additional controls and do not reduce the functionality of the original controls. We therefore propose to introduce additional guidance in Section 6 of *Approved Document L, Volume 1: Dwellings* for heat pump controls.

Question 29
Do you agree with the proposal to include additional guidance around heat pump controls for dwellings, as set out in Section 6 of *draft Approved Document L, Volume 1: Dwellings*?

a. **Yes**
b. **No**
c. **Unsure**

If No, please explain your reasoning.

Providing additional information about heat pump systems in existing dwellings

3.7 It is important for heat pumps to be designed, installed and used correctly to ensure they deliver sufficient space heating and hot water.

3.8 To ensure that heat pumps continue to work efficiently and are maintained correctly throughout their lifetime and across different occupants, we propose that operating and maintenance information, as set out in Section 10 of draft Approved Document L, Volume 1: Dwellings, should be fixed to the heat pump unit or hot water storage vessel. This information should include the heat loss calculations and design conditions, whether a member of an approved competent person scheme commissioned the heat pump, the size of the emitter circuit and the minimum set back temperatures.

Question 30
Do you agree that operating and maintenance information should be fixed to heat pump units in existing dwellings?

a. **Yes**
b. **No**
c. **Unsure**

If No, please explain your reasoning.

Question 31
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?

a. **Yes**
b. **No**
c. **Unsure**

If No, please explain your reasoning.

Changes to guidance to limit heat loss in existing dwellings

3.9 Section 4 of *draft Approved Document L, Volume 1: Dwellings* also include other changes to facilitate the installation of low carbon heating systems by limiting heat loss.

3.10 The changes include:

- adding guidance on pipework insulation
- adding guidance for Heat Interface Units (used in Heat Networks)
- adding guidance on the placement of heat pumps to minimise heat loss
- new minimum standards for hot water storage vessel insulation (see Table 4.4 of d*raft Approved Document L, Volume 1: Dwellings*)

Full details are included in *draft Approved Document L, Volume 1: Dwellings*.

3.11 Increasing insulation standards for hot water storage vessels is necessary to ensure the performance of heat pumps. Our cost-benefit analysis for insulation on hot water storage vessels (50 to 1000L) demonstrated that the increase in minimum standards is cost effective in dwellings, however we recognise the risk of disruption to manufacturers and consequently housebuilders. We would be interested in evidence of risks associated with this proposal. It should also be noted that the thickness of hot water storage vessel insulation in the notional dwelling is higher than minimum standards.

3.12 We also propose updating guidance on the sizing of domestic hot water storage vessels. This is set out in Section 5 of *draft Approved Document L, Volume 1: Dwellings*.

Question 32
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?

a. **Yes**
b. **No**
c. **Unsure**

If No, please explain your reasoning.

Question 33
Do you agree with the proposed sizing methodology for hot water storage vessels for new dwellings?

a. **Yes**
b. **No**
c. **Unsure**

If No, please explain your reasoning.

Lifts, escalators and moving walkways

3.13 Proposals for energy efficient lifts, escalators and moving walkways are outlined in Section 4 below on non-domestic buildings. These proposals would also apply to these services in communal areas of flats and mixed-use buildings. Comments on these proposals as they may relate to these building types should be provided in the relevant question on non-domestic buildings.

Installation and commissioning of fixed building systems for existing dwellings – Part L & Part F

3.14 Section 2 proposes to introduce new requirements for the commissioning of fixed building systems. The intent is for similar requirements for the replacement or provision of new fixed building services in existing dwellings. We propose:

- providing additional guidance to help people installing mechanical ventilation systems, hot water storage vessels and on-site electrical storage systems to commission them correctly
- explaining the routes to certification (self-certification through a competent person scheme or having work checked by building control) to help ensure that fixed building services are being appropriately checked
- explaining what enforcement mechanisms are available where work falls short of the required standard

Design, installation and commissioning of mechanical ventilation systems in existing dwellings

3.15 We propose the following key changes when installing and commissioning continuous mechanical ventilation systems which are detailed further in Section 2.

- When installing centralised mechanical extract ventilation (cMEV) or centralised mechanical ventilation with heat recovery (cMVHR), total power consumption should be measured.
- When conducting air flow rate testing of continuous mechanical systems [both centralised (cMEV and cMVHR) and decentralised (dMEV and dMVHR/SRHRV)], the systems should be tested and commissioned using calibrated powered flow hoods instead of rotating vane anemometers with hoods.

3.16 Notice of the results of the test would have to be given to the building control body within five days.

3.17 To improve the performance of ventilation systems, we propose the following key changes to ducting requirements:

- Stating that rigid or semi-rigid ductwork should be used in:
  - Decentralised MEV systems or intermittent extract ventilation fans, and that flexible ducting should not be used.
  - Centralised MEV and MVHR systems, with flexible ductwork limited to 200mm in length for final connections to the fan unit, if necessary.
- Stating that duct runs for decentralised MEV systems should be kept short (less than 2 metres) to improve system performance.
- Setting out specific new limits for the designed system static pressure for centralised and decentralised continuous mechanical systems.
- Enhancing the requirements for ducting insulation.

3.18 The proposed changes to the approved document are set out in full in Sections 1 and 4 and Appendix C of *draft Approved Document F, Volume 1: Dwellings*.

Question 34
Do you agree with the proposed changes to *Approved Document F, Volume 1: Dwellings* to improve the installation and commissioning of ventilation systems?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Installation of extract ducting drainage measures to combat build-up of possible condensation water in existing dwellings

3.19 There is a risk of condensation gathering within extract ducting when passing through unheated spaces from heated spaces. This can occur where ducting is not fully or continuously insulated, causing the warm air within the extract ducting to condensate upon contact with the colder surface of the ducting itself under certain conditions.

3.20 The building insurance industry recognises this risk and requires horizontal ducting to have the duct installed to fall towards the outside of the building and for vertical ducting to have an integral condensate trap leading to a trapped drainage point in order to allow the condensation water to drain away and avoid gathering or leaking within the ductwork. Note: 'Vertical ducting' includes any duct that is positioned between horizontal and vertical.

3.21 We propose the same written guidance to include appropriate falls or condensate traps in Approved Document F and propose a new diagram 1.3 to illustrate the principles of the guidance on falls or condensate traps.

3.22 The proposed changes are set out in Sections 1.31 and 1.83 of the draft Approved Document F Volume 1 - Dwellings

Question 35

Do you agree with proposed changes to *Approved Document F, Volume 1: Dwellings* to (a) provide guidance for a requirement to provide falls for horizontal extract ducting, and condensate traps with drainage for vertical ducting to discharge condensation water that may accumulate within the ductwork, and (b) include an explanatory diagram to reinforce the principles of the requirement?

a. **Yes**
b. **No**
c. **Unsure**

If No, please explain your reasoning.

Commissioning hot water storage vessels

3.23 We propose to update guidance to specify that hot water storage vessels should be commissioned in accordance with the manufacturer's instructions. This change is detailed further in Section 2. The changes are set out in Section 8 of *draft Approved Document L, Volume 1: Dwellings*.

Question 36
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?

a. **Yes**
b. **No**
c. **Unsure**

If No, please explain your reasoning.

Commissioning on-site electricity storage systems

3.24 On-site electricity storage systems, such as batteries that store energy generated by solar PV panels, must be commissioned correctly to ensure that they are safe and operating as designed. We therefore propose that these systems should be commissioned in accordance with the commissioning requirements of MCS' 'MIS 3012: *The Battery Standard (Installation)*'.

3.25 This proposed change is set out in Section 8 of *draft Approved Document L, Volume 1: Dwellings*.

Question 37
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?

a. **Yes**
b. **No**
c. **Unsure**

If No, please explain your reasoning.

Routes to certification and enforcement mechanisms

3.26 We believe that heat pumps and mechanical ventilation systems being installed and commissioned well is important to the success of the new Part L. As set out above, one of two procedures must be used to certify that a fixed building service has been installed and commissioned in accordance with the requirements set out in the Building Regulations. Installers can self-certify their work if they are a member of a competent person scheme. Otherwise, a building control body will need to certify each installation.

3.27 Self-certifying that work was compliant with the Building Regulations through a competent person scheme has several advantages. It will often save installers time and money because it removes the need to notify building control in advance and pay building control fees. It also demonstrates installer competence to carry out the work, which increases consumer confidence. Finally, most competent person schemes offer

training opportunities to upskill members and all schemes must keep members up to date on changes to Building Regulations and other relevant changes.

3.28 The other option is for a building control body to check the work. We have heard some evidence that building control bodies do not always have the resources and expertise to carry out appropriate post-installation checks on fixed building services. We are keen to ensure that fixed building services installed and commissioned by people who are not part of a competent person scheme are receiving the right checks. Separate from this consultation, the Building Safety Regulator (BSR) has commenced registration of Registered Building Inspectors (RBIs) and Registered Building Control Approvers (RBCAs), previously known as Approved Inspectors. BSR is regulating the building control profession and improving competence through oversight, support and encouragement as well as mandatory codes and standards which have applied from April 2024.

3.29 We propose adding guidance to *Approved Document L, Volume 1: Dwellings* and *Approved Document F, Volume 1: Dwellings* setting out in detail the two routes to certification for fixed building services, to help installers choose the route most appropriate for them. We also propose adding guidance setting out the enforcement options available where work is not completed to the required standard.

3.30 Full details of these proposed changes are in Section 9 of draft *Approved Document L, Volume 1: Dwellings* and Section 1 of *Approved Document F, Volume 1: Dwellings.*

3.31 The Government intends to consider changes to the minimum technical competencies (MTCs) that members of competent person schemes must demonstrate.

Question 38
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?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Renewable energy for significant extensions

3.32 The National Infrastructure Commission for Wales (NICW) has recommended that renewable energy generation and storage technologies be installed in existing dwellings undergoing significant extensions[8]. In addition, the Heat Strategy for Wales[9] advocates heat pumps as a primary measure for reducing carbon emissions from dwellings.

[8] Preparing Wales for a Renewable Energy 2050 – The National Infrastructure Commission for Wales
[9] Heat Strategy for Wales – Welsh Government

3.33 In response to the NICW recommendation we propose to define a significant extension as one that increases the total internal floor area by 30m^2 or more, and has at least the equivalent amount of stories as the existing dwelling. (Having an equivalent number of stories will ensure any complications from shading from the existing dwelling or other buildings is limited).

3.34 Where an extension meets this definition, we propose two methods for determining the type and minimum capacity of renewable technologies that should be installed.

- Simplified approach: where a renewable technology is selected from a defined list with a specified minimum capacity
- Flexible approach: where other renewable technologies or alternative measures may be applied, provided they achieve equivalent reductions in primary energy and carbon emissions.

3.35 Under the simplified approach, one of the following technologies should be installed with at least the specified minimum capacity.

Simplified approach:
- Solar photovoltaics (battery-compatible) with a minimum 2.0 kWp capacity
- Solar thermal sized for domestic hot water for the dwelling and extension.

3.36 The flexible approach allows for one or a combination of the following. (Points B and C are where the capacity or level of improvement to the dwelling and extension is determined using the Home Energy Model).

Flexible approach:

A. Heat pump technology designed to provide space heating and/or domestic hot water to the dwelling and extension.

B. Installation of renewable technologies not listed under the simple approach, provided they serve both the dwelling and extension.

C. Installation of non-renewable measures (e.g. fabric improvements, such as airtightness and insulation, or services upgrades such as ventilation) in the existing dwelling and/or extension. It is encouraged that this option should be considered only if the installation of renewable technology is not viable. Any fabric improvements would need to be in addition to those required under Consequential Improvements.

3.37 As the flexible approach is more complex, it may be most appropriate only where the simple approach measures are not a desirable choice for the homeowner e.g. where solar technology is not installed for aesthetic reasons. However, we do not intend to require those who cannot install one of the measures under the simplified approach due to technical or economic constraints to adopt the flexible approach. Where the simple approach is not viable details will need to be submitted to the building control body (BCB) to demonstrate why it cannot reasonably be achieved. This may include evidence of significant shading, insufficient available roof area, or other technical or economic

limitations. This should be supported by a feasibility assessment from a solar installer or specialist, providing evidence of the site-specific constraints and the likely performance of a potential system.

3.38 We propose aligning the flexible approach target with both the carbon emission and primary energy reductions achieved installing solar technology in the simple approach.

3.39 All renewable technologies installed under either approach will need to be designed, installed and certified with evidence provided to the building control body (BCB).

3.40 Significant extensions may be exempt from these requirements if:

- The existing dwelling already has renewable or heat pump technology, provided the capacity is equal to or better than the minimum requirements under the simple approach.
- They are located in a conservation area or designated as a listed building, subject to agreement with the local Conservation Officer and/or Local Authority Development Control, and following the guidance set out in Section 0 of AD L (Vol.1).
- The simple approach technologies are not economically or technically viable (a feasibility assessment by a solar installer/specialist will need to be submitted to the BCB to demonstrate this).

Question 39
Do you agree with the proposal to introduce a requirement to install renewable technology when a dwelling is significantly extended?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Question 40
Do you agree with the proposed definition for a 'significant extension'?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Question 41
Do you agree with the methods proposed for the simple and flexible approaches?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Question 42
Do you agree with the proposed exemptions?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Question 43
Are there any other aspects of the Building Regulations or associated Approved Document guidance, for example on safety or other building standards, which should be reviewed or updated to account for this new proposal?

Changes to Part O

3.41 We propose to extend Part O of the Building Regulations to capture certain high risk building work on existing dwellings. We propose to focus on two scenarios which are considered to be of greatest risk of overheating:

- Scenario 1: Replacement of window(s) in highly glazed flats.

Existing high glazed flats have a relatively high risk of overheating from solar gains. The intention is to reduce the risk of overheating by managing solar gains when any windows are replaced.

- Scenario 2: Loft conversion to habitable rooms with new window(s) / rooflight(s) / dormer window(s)

This was considered to be a relatively high overheating risk where there was significant glazing and significant solar gains.

3.42 Whilst there is a relatively high risk of overheating from Conservatories, they have not been included here for the following reasons:

- If the proposed conservatory is single storey, under 30m^2, not heated and thermally separated, then this may be exempt from the requirements of the Building Regulations and therefore would not be controlled 'building work'. Hence, Part O would not cover these works. This is expected to apply for most new conservatories.
- Where conservatories have thermal separation to the dwelling, whilst the conservatory may overheat, there should be adequate space within the rest of the home to live and sleep. The occupant has the ability to thermally separate the conservatory from the rest of the home. It appears excessive to regulate against overheating in this case.

3.43 For a new extension to an existing dwelling where there is a relatively high percentage of glazing in the extension, there may be some risk of overheating in both the extension

and the existing dwelling. This may be of particular concern where the extension is intended to provide any habitable rooms. Although not considered high risk, additional commentary (not statutory guidance) is proposed to be provided in Approved Document O to help designers and developers be directed to sources of additional information on how to mitigate the possible risks.

Scenario 1: Replacement of window(s) in highly glazed flats

3.44 The simplified approach in Approved Document O for new flats recommends solar control when the glazed area is over 15% of the floor area. This is the case for both single and dual aspect residential flat buildings.

3.45 In the absence of further evidence, we propose to align with this for existing single storey flats, as follows:

- Solar control measures are required when windows are replaced in flats for which the glazed area of the flat as a whole is over 15% of the floor area.
- The windows being replaced should use low g-value glazing with a maximum g-value of 0.4, unless the glazing is facing north-west to north-east, and intermediate orientations. Alternative solutions can be provided to comply with Part O, if their effectiveness or equivalence can be demonstrated to the building control body.

3.46 An exemption for flats is proposed when sufficient measures for attenuation of solar gains are already in place and are to be retained. For example, this includes when external shutters are already installed.

Scenario 2: Loft conversions to habitable rooms with new window(s) / rooflight(s) / dormer window(s)

3.47 The simplified approach in Approved Document O for new flats recommends solar control when the glazed area is over 15% of the floor area. This is the case for both single and dual aspect residential flat buildings. The exception is for houses with two or more parallel aspects to facilitate ventilation.

3.48 In the absence of further evidence, we propose to align with this for loft conversions in existing dwellings, as follows:

- We propose that solar control measures are required for loft conversions for which the glazed area of the loft conversion is over 15% of the floor area of the loft conversion.
- The window(s) / rooflight(s) / dormer window(s) being installed should use low g-value glazing with a maximum g-value of 0.4. Alternative solutions can be provided to comply with Part O, if their effectiveness or equivalence can be demonstrated to building control.
- This guidance is applicable for the habitable room(s) being created by the loft conversion, and not for the whole dwelling.

3.49 The simplified approach in Approved Document O for new dwellings also recommends a minimum level of free area for heat release in all cases. This is typically set as a minimum free area of 12% of floor area. In the absence of further evidence, we propose to align with this for loft conversions in existing dwellings, as follows:

- In addition, in all cases, there should be a minimum free area for heat release of 12% of room floor area for the new habitable room(s) being created by the loft conversion.

3.50 Similarly as for new build, an exemption for loft conversions is proposed when cross flow natural ventilation is provided through parallel aspects for all habitable rooms created by the new loft conversion after its construction. (The minimum requirements of Part F (Ventilation) will still be required).

Question 44
Do you agree with the proposal to extend Part O of the Building Regulations to capture works on existing dwellings?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Question 45
Do you agree with the proposal to introduce additional commentary in Approved Document O: overheating on new extensions to existing dwellings where there is a relatively high percentage of glazing in the extension?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Question 46
Do you agree with the proposal to introduce new guidance in Approved Document O: overheating on replacement of window(s) in highly glazed flats?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Question 47
Do you agree with the proposal to introduce new guidance in Approved Document O: overheating on loft conversions to habitable rooms with new window(s) / rooflight(s) / dormer window(s)?

- **a. Yes**
- **b. No**
- **c. Unsure**

If No, please explain your reasoning.

4. Part L Standards for New Non-Domestic Buildings in 2025

Chapter Summary

4.1 The section looks at changes to the application of Building Regulations to new non-domestic buildings. We have proposed the following changes.

- An uplift in energy efficiency standards in Part L. In particular, we propose that a low carbon heating system is integral to the building specification.
- Photographic evidence being mandated to demonstrate compliance, focussing on high-risk areas where construction quality, changes, or substitutions during the construction process could impact the predicted performance outcomes.

Uplift to the Part L performance standard

4.2 For new non-domestic buildings, we are proposing to set performance targets on the basis of primary energy and CO_2, as outlined in section 4.3. We have carried out modelling and analysis to determine what a reasonable level of energy and CO_2 performance might be for a range of non-domestic building types, taking account of carbon savings, running costs, capital costs, and buildability. The modelling considered improvements to the minimum energy efficiency standards in the following areas:

- improving fabric and services;
- introducing low-carbon heat; and
- on-site generation.

4.3 To identify two consultation options for CO_2 and primary energy targets for 2025, we carried out a modelling exercise using a series of building specifications using representative non-domestic building types. The building types modelled are summarised in Table 6. As shown in the right-hand column, the mix of buildings comprised three types given their potentially different approaches to the transition to low carbon heat.

- Type 1 buildings are characterised as side-lit spaces with a relatively low hot water demand. The hot water demand is most suitable for delivery via direct electric instantaneous hot water. Space heating is generally easily compatible with heat pumps.
- Type 2 buildings are characterised as side-lit spaces with a high hot water demand; these are generally suitable for space heating and hot water delivered via heat pumps.
- Type 3 buildings are top-lit spaces (such as warehouses) with a low and widely dispersed hot water demand. These buildings have typically been heated via direct gas-fired radiant systems and are generally more challenging to heat via heat pumps.

4.4 The building energy modelling was undertaken using the v6.1.e version of SBEM and the same carbon emission and primary energy factors presented in Section 2 for new dwellings. AECOM provided current capital and lifecycle cost data for Wales. The resultant cost benefit analysis is presented in the accompanying Impact Assessment.

Table 6: Building archetypes

	Wall type	Floor area (m^2)	Side-Lit (SL) or Top-Lit (TL)	Predominant Type
Primary School	Masonry	2,353	SL	Type 1
Office	Masonry	1,080	SL	Type 1
Office, air conditioned	Metal	2,160	SL	Type 1
Hotel	Masonry	1,062	SL	Type 2
Secondary School (includes sports facilities)	Masonry	7,864	SL	Type 2
Medium Distribution Warehouse	Metal	1,200	TL	Type 3
Large Distribution Warehouse	Metal	5,261	TL	Type 3
Integrated Health Care Centre	Masonry	1,995	SL	Type 2
Multi-Residential (University Student Accommodation)	Masonry	2,374	SL	Type 2
A1 Retail (small food)	Metal	1,250	SL	Type 1

4.5 Two options for the 2025 CO2 and primary energy targets are proposed for consultation. Table 7 and Table 8 show the specifications assessed for each building type - current Part L 2022 and the two consultation options. These are based on the notional (reference) building which is used to set the standard.

Table 7: Specifications for Type 1 and Type 2 Buildings

Parameter			Part L 2022	Option 1	Option 2
Fabric[10]	**Wall U-Value (W/m^2K)**		0.22 W/m^2K (heated only) 0.26 W/m^2K (heated & cooled)	0.22 W/m^2K (heated only) 0.26 W/m^2K (heated & cooled)	
	Roof U-Value (W/m^2K) (irrespective of pitch)		0.18	0.18	
	Floor U-Value (W/m^2K)		0.22 (unless uninsulated is better)	0.22 (unless uninsulated is better)	
	Window	**U-Value (W/m^2K) *including frame*[11]**	1.6	1.6	
		G-value	40%	40%	
		Light transmittance	71%	71%	
	Air tightness (m^3/m^2/hour) @ 50 Pa		3 or 5 $m^3/m^2/hr$@50Pa as per Table 3 of NCM Modelling Guide for Wales	3 or 5 $m^3/m^2/hr$@50Pa as per Table 3 of NCM Modelling Guide for Wales	

[10] All values are area-weighted.
[11] Rooflight U-values input into the current version of SBEM are based on vertical. SBEM then uses BR 443 conventions to convert to horizontal before simulation. It is proposed that convention is changed so that horizontal U-values are declared by supplies and input into SBEM directly (therefore not needing automatic approximate correction).

Parameter			Part L 2022	Option 1	Option 2
Services	**Lighting luminaire (llm/cW)**[12]		95	125	
	Daylight lighting control[13]		Yes (Single zone daylight dimming)	Yes (Single zone daylight dimming)	
	Occupancy Lighting Control[14]		Yes (Manual on, auto off)	Yes (Manual on, auto off)	
	Parasitic power of automatic lighting controls[15]		0.1W/m²	0.1W/m²	
	Cooling SSEER[16] (where applicable excl. naturally ventilated)		Air conditioning with air cooled chiller (SSEER 4.4)	Air conditioning with air cooled chiller (SSEER 4.4)	
	Ventilation Heat Recovery[17] (where applicable excl. naturally ventilated)		80%	80%	
	Demand Control Ventilation		Gas-sensors (Speed-control)	Gas-sensors (Speed-control)	
	Space Heating Seasonal System Coefficient of Performance (SCoP)	**Actual = Direct Electric**	Natural Gas (86%)	ASHP (SCOP 2.64)	
		Actual = Heat Network	Heat Network (0.23 $kgCO_2$/kWh and 1.05 kWh_{PE}/kWh)	Heat Network 0.06 kgCO2/kWh and 0.93 kWhPE/kWh	
		Actual = Other	Natural Gas (86%)	ASHP (SCOP 2.64)	
	Domestic Hot Water Generator Efficiency (High Demand Spaces)	**Actual = Direct Electric**	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage No circulation	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage No circulation	
		Actual = Heat Network	Heat Network 0.23 $kgCO_2$/kWh and 1.05 kWh_{PE}/kWh Storage and circulation based on Part L 2022 method	Heat Network 0.06 kgCO2/kWh and 0.93 kWhPE/kWh Storage and circulation based on Part L 2022 method	
		Actual = Other	Natural gas 93% efficient Storage and circulation based on Part L 2022 method	High temperature ASHP heat pump Seasonal efficiency 286% Storage and circulation based on Part L 2022 method	
	Domestic Hot Water Generator Efficiency	**Actual = Direct Electric**	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage	

[12] LOR assumed to be 1 in all cases.
[13] Only applied to areas with glazing.
[14] Only applied where functionally suitable.
[15] Where both daylight-sensing and occupancy-sensing controls apply parasitic power will only be applied once.
[16] SSEER includes system delivery losses
[17] Including summer by-pass.

Parameter			Part L 2022	Option 1	Option 2
	(Low Demand Spaces)		No circulation	No circulation	
		Actual = Heat Network	Heat Network (0.23 $kgCO_2/kWh$ and 1.05 kWh_{PE}/kWh) No storage No circulation	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage No circulation	
		Actual = Other	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage No circulation	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage No circulation	
Renewables	PV Area		10% of GIA Limited to 50% of roof area	30% of roof area	50% of roof area
	Panel efficiency		20%	20%	
	Inclination Above Horizontal		30°	15°	
	Orientation		South	East	
	Type		Monocrystalline	Monocrystalline	
	Ventilation		Strongly ventilated or forced ventilated modules	Strongly ventilated or forced ventilated modules	
	Shading		None or very little (<20%)	Matched to shading of PV on Actual	

Table 8: Specifications for Type 3 Buildings

Parameter		Part L 2014	Option 1	Option 2
Fabric[18]	Wall U-Value (W/m^2K)	0.26	0.22 if actual building has direct electric space heating 0.26 if actual building has any other heating type	0.26
	Roof U-Value (W/m^2K) (irrespective of pitch)	0.18	0.15 if actual building has direct electric space heating 0.18 if actual building has	0.18

[18] All values are area weighted.

Parameter			Part L 2014	Option 1	Option 2
				any other heating type	
	Floor U-Value (W/m²K)		0.22 (unless uninsulated is better)	0.15 if actual building has direct electric space heating 0.18 if actual building has any other heating type (unless uninsulated is better)	0.22 (unless uninsulated is better)
	Roof-light	**U-Value (W/m²K) *including frame*[19]**	2.1	2.1	2.1
		G-value	55%	55%	
		Light transmittance	60%	60%	
	Air tightness (m³/m²/hour) @ 50 Pa		3 or 5 m³/m²/hr@50Pa as per Table 3 of NCM Modelling Guide for Wales	3 m³/m²/hr@50 Pa if actual building has direct electric space heating 3 or 5 m³/m²/hr@50 Pa as per Table 3 of NCM Modelling Guide for Wales if actual building has any other heating type	3 or 5 m³/m²/hr@50 Pa as per Table 3 of NCM Modelling Guide for Wales
Serv	**Lighting luminaire (llm/cW)**[20]		95	125	
	Daylight lighting control[21]		Yes	Yes	

[19] Rooflight U-values input into the current version of SBEM are based on vertical. SBEM then uses BR 443 conventions to convert to horizontal before simulation. It is proposed that convention is changed so that horizontal U-values are declared by supplies and input into SBEM directly (therefore not needing automatic approximate correction).

[20] LOR assumed to be 1 in all cases.

[21] Only applied to areas with glazing.

Parameter			Part L 2014	Option 1	Option 2
			(Single zone daylight dimming)	(Single zone daylight dimming)	
	Occupancy Lighting Control[22]		Yes (Manual on, auto off)	Yes (Manual on, auto off)	
	Parasitic power of automatic lighting controls[23]		0.1W/m²	0.1W/m²	
	Cooling SSEER[24] (where applicable excl. naturally ventilated)		Air conditioning with air cooled chiller (SSEER 4.4)	Air conditioning with air cooled chiller (SSEER 4.4)	
	Ventilation Heat Recovery[25] (where applicable excl. naturally ventilated)		80%	80%	
	Demand Control Ventilation		Gas-sensors (Speed-control)	Gas-sensors (Speed-control)	
	Space Heating Seasonal System Coefficient of Performance (SCoP)	**Actual = Direct Electric**	Natural Gas (86%)	Direct Electric (100%, radiant fraction 65%)	
		Actual = Heat Network	Heat Network (0.23 $kgCO_2$/kWh and 1.05 kWh_{PE}/kWh)	Heat Network 0.06 kgCO2/kWh and 0.93 kWhPE/kWh	
		Actual = Other	Natural Gas (86%, radiant fraction 65%)	ASHP (SCOP 2.64)	
	Domestic Hot Water Generator Efficiency (High Demand Spaces)	**Actual = Direct Electric**	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage No circulation	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage No circulation	
		Actual = Heat Network	Heat Network 0.23 $kgCO_2$/kWh and 1.05 kWh_{PE}/kWh Storage and circulation based on Part L 2022 method	Heat Network 0.06 kgCO2/kWh and 0.93 kWhPE/kWh Storage and circulation based on Part L 2022 method	
		Actual = Other	Natural gas 93% efficient Storage and circulation based on Part L 2022 method.	High temperature ASHP heat pump Seasonal efficiency 286% Storage and circulation based on Part L 2022 method	
	Domestic Hot Water Generator Efficiency (Low Demand Spaces)	**Actual = Direct Electric**	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage No circulation	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage No circulation	
		Actual = Heat Network	Heat Network (0.23 $kgCO_2$/kWh and 1.05	Electric Point of Use (PoU) 100% efficient	

[22] Only applied where functionally suitable.
[23] Where both daylight-sensing and occupancy-sensing controls apply parasitic power will only be applied once.
[24] SSEER includes system delivery losses.
[25] Including summer by-pass.

Parameter			Part L 2014	Option 1	Option 2
			kWhPE/kWh) No storage No circulation	"Instantaneous Hot Water only" No storage No circulation	
		Actual = Other	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage No circulation	Electric Point of Use (PoU) 100% efficient "Instantaneous Hot Water only" No storage No circulation	
Renewables	**PV Area**		10% of GIA Limited to 50% of roof area	50% of roof area	75% of roof area
	Panel efficiency		20%	20%	
	Inclination Above Horizontal		30°	15°	
	Orientation		South	East	
	Type		Monocrystalline	Monocrystalline	
	Ventilation		Strongly ventilated or forced ventilated modules	Strongly ventilated or forced ventilated modules	
	Shading		None or very little (<20%)	Matched to shading of PV on Actual	

4.6 We plan to use either Option 1 or Option 2 as the basis of the new primary energy and CO_2 targets for new buildings. The two options are expected to deliver an average of 78% and 94% reduction in CO_2 emissions per building, compared to the current Part L standard, across the build-mix of non-domestic buildings

4.7 Both options would be expected to be delivered by the use of low carbon heating and an increase in the efficiency of building services such as lighting. There are two key differences between the Options:

1) Where direct electric is used to heat Type 3 buildings, it is expected that higher performing building fabric will be required for Option 1.
2) Option 2 would be expected to require a greater use of on-site generation such as photovoltaic panels.

4.8 We propose that the targets will continue to be performance-based. The specifications on which both options are based only represent one way of meeting the primary energy and CO_2 targets for each of the options; we expect designers to use a wide variety of ways to meet these targets, using many different technologies. Alongside this consultation, we have provided an interface to a draft Simplified Building Energy Model (cSBEM for Wales) so that consultees can better understand the impact of proposals on sample buildings. cSBEM for Wales can be found on the following website: http://www.uk-ncm.org.uk/

4.9 The Impact Assessment that accompanies this consultation includes indicative modelling of the cost-benefits of each option. This takes into account the average increase in build-costs for each building type. Table 7.2 of the Impact Assessment

shows the changes in build cost and energy use associated with the two consultation options.

Question 48
What level of uplift to the energy efficiency standards in the Building Regulations should be introduced in 2025?

a. **No change**
b. **Option 1 – 78% CO_2 reduction**
c. **Option 2 – 94% CO_2 reduction**
d. **Other**

Please explain your reasoning.

Heat networks

4.10 In section 2 we have new proposals where new buildings (including non-domestic buildings) are being connected to existing and new heat networks. Please provide comments for non-domestic buildings within that section.

Part L performance metrics

4.11 We propose to continue with the following performance metrics for new non-domestic buildings to be measured against:

- Primary energy target;
- CO_2 emission target; and
- Minimum standards for fabric and fixed building services.

National Calculation Methodology for new non-domestic buildings

4.12 To determine the energy performance of a non-domestic building, calculations must be carried out according to a methodology approved by Welsh Ministers; this is the National Calculation Methodology (NCM). Two routes are available for assessing buildings, both of which must be compliant with the NCM:

i) For most simple buildings, using the Simplified Building Energy Model (SBEM);
ii) For more complex buildings, using an approved Dynamic Simulation Method.

4.13 As part of the ongoing development of the NCM, the UK Government has investigated concerns relating to space heating demand in some buildings is being underestimated by the NCM. The future buildings standard consultation in England identified possible reasons for the underestimation and suggested additional design and in-use building data which may help address the disparity. As a result, changes have been made to the underlying ‘activity database’ which attributes occupancy and usage parameters to different spaces in non-domestic buildings where data allows and is of sufficient quality. These changes are outlined in supporting documents available alongside the draft NCM modelling guide for Wales on the website below.

4.14 For activity types where there was insufficient evidence to make changes at this time the work has identified gaps in data coverage and targets for future research. The impact of occupants in school classrooms on internal heat gains, for example, has been re-evaluated. The assumed metabolic rate, which affects heat generation, has been adjusted to better suit the age group present in the space. Similarly, the occupancy density of storerooms, which are often unoccupied, is being reviewed. Equipment gains are also being reduced in areas such as offices, while illumination levels are being increased in settings where higher lighting precision is needed. These changes aim to improve the accuracy of energy assessments in different building scenarios.

4.15 In addition, to support the implementation of the Future Buildings Standard in England, a number of other changes have been introduced for SBEM and its interface, iSBEM. These can be identified in the consultation software tool and accompanying documents published alongside the consultation. Updates include:

- ability to more readily input data where multiple lighting systems are in use in one zone.
- ability to input round windows.
- general improvements to iSBEM, including to usability and functionality allowing better use on tablet and mobile devices.
- carbon factors for all fuels have been updated.

4.16 We propose to adopt these proposals to improve and update the National Calculation Method, SBEM and its associated software interface (iSBEM) for Wales. An interface to a draft Simplified Building Energy Model (cSBEM for Wales) and a draft NCM modelling guide can be found on the following website: http://www.uk-ncm.org.uk/

Question 49

Do you agree with the methodology outlined in the NCM modelling guide for the Part L 2025 Standard?

a. Yes
b. No
c. Unsure

If No, please explain your reasoning.

Question 50

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

Question 51

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

Minimum standards for thermal elements, windows and doors in new non-domestic buildings

4.17 We do not propose to amend these minimum standards. We propose to continue with the minimum standards to provide flexibility in design.

Updated guidance and minimum standards for building services in new non-domestic buildings

4.18 For non-domestic buildings all heating and hot water demand should also be met through low-carbon sources. Guidance in draft *Approved Document L, Volume 2: Buildings other than dwellings*, has been updated to include more details for these technologies.

Minimum efficiencies and controls

4.19 Table 9 outlines the proposed changes to the minimum standards for non-domestic buildings, with further detail in draft *Approved Document L, Volume 2: Buildings other than dwellings*.

Table 9: Proposed changes to minimum building services efficiencies and controls for new buildings

Building service	Current Part L 2021 standard	Proposed Part L 2025 standard
Heat pump efficiency	For air-to-air heat pumps ≤12 kW, a Seasonal Coefficient of Performance (SCOP) rating of at least D in BS EN 14825. Other types for space heating COP 2.5; all types for domestic hot water heating COP 2.0, absorption COP 0.5; gas-engine COP 1.0.	Heat pumps should follow Ecodesign Regulations, set out in Table 6.1 of *draft Approved Document L, Volume 2: Buildings other than dwellings*. Heat pumps not covered by Ecodesign Regulations should have a minimum Coefficient of Performance (COP) of 2.5.
Heat pump controls	Only for outdoor fans and heat pumps installed in buildings with other heat sources available.	Addition of controls to make consistent with *Approved Document L, Volume 1: Dwellings*, set out in Table 6.2 of *draft Approved Document L, Volume 2: Buildings other than dwellings.*
Lighting efficacy	95 lm/W for general internal lighting, 80 lm/W for display lighting.	105 lm/W for general internal lighting, 95 lm/W for display lighting.

Question 52

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*?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Building automation and control systems (BACs)

4.20 A building automation and control system is a term used for a centralised system installed to monitor and control a building's environment and services i.e. its heating, ventilation, air conditioning, lighting and other systems (such as security alarms and lifts).

4.21 In order to align with articles 8(1), 14(4) and 15(4) of the EPBD (EU) 2018/844, within the Part L 2022 review, we introduced new guidance into Approved Document L, Volume 2: Buildings other than dwellings such that:

- If a new building has a space heating or air-conditioning system with an effective rated output of greater than or equal to 290kW, a building automation and control system (BACs) should be installed.
- If an existing building has a space heating or air-conditioning system with an effective rated output greater than or equal to 290kW, a new or replacement building automation and control system (BACs) should be installed.

4.22 After carrying out further analysis, we propose to revise this requirement. This is to now be triggered when such buildings have a heating or air-conditioning system of 180kW or over, rather than 290kW. Our analysis indicates that this change results in an additional net benefit of £0.61m over the lifetime of the policy. Further details are included in the Impact Assessment that accompanies this consultation. This proposed change can be found in the draft consultation version of Approved Document L, Volume 2: Buildings other than dwellings.

Question 53

Do you agree with the proposed change in the requirements for when BACs are required in buildings?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

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

4.23 BS 5422 specifies thermal insulation thicknesses for heating and hot water pipework. Heating distribution pipework installations will typically require greater insulation thicknesses than those in BS 5422 because the pipework is in continuous operation and can contribute to overheating when insulation is inadequate.

4.24 *Approved Document L, Volume 2: Buildings other than dwellings* includes the relevant guidance for communal areas of flats and it is proposed to be updated to reference the CIBSE CP1 Heat Networks: Code of Practice. This provides standards for building heat distribution systems in buildings that contain multiple dwellings to address this risk. It is proposed building heat distribution system installations in new buildings that contain multiple dwellings should be insulated in accordance with the insulation thicknesses provided in CIBSE CP1 Code of Practice for Heat Networks.

4.25 To include other types of non-domestic buildings that are not covered by CIBSE CP1 Heat Networks: Code of Practice, we propose that pipework insulation thicknesses in BS 5422 for secondary systems of district heating systems should be applied. Draft guidance on building heat distribution system insulation is in Section 4 of *draft Approved Document L, Volume 2: Buildings other than dwellings*.

Question 54

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*?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Non–domestic buildings of low energy demand (not exempt)

4.26 Some buildings with low energy demand are exempt from the requirements of the Building Regulations. Others must meet the energy efficiency requirements in the Building Regulations. For these building types, *Approved Document L, Volume 2: Buildings other than dwellings*, provides specific guidance on compliance. We believe the guidance on these building types remains appropriate following the Part L 2025 standard but welcome views on whether this guidance should be amended or removed.

Question 55

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?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Other guidance changes

4.27 Other guidance in *Approved Document L, Volume 2: Buildings other than dwellings* has been amended to reflect current practices and keep the document up to date. Guidance has also been added in areas where currently no guidance is provided, where the energy use is not controlled by the notional building methodology, and where stakeholders have identified gaps or outdated information or references. In particular, additional guidance is provided for external lighting and lifts, escalators and moving walkways.

Lifts, escalators and moving walkways

4.28 Low energy lifts, escalators and moving walkways are essential elements of an energy efficient building, with some estimates indicating as much as 40% of a building's energy demand may be used by these technologies at peak times. These services, however, are not covered by the notional building and National Calculation Methodology. The notional building, therefore, does not act as an incentive to install energy efficient lifts, escalators and moving walkways. To address this, it is proposed that minimum standards are set through approved document guidance, and that these services are included in the Building Regulations definition of 'fixed building services' for new buildings (including communal areas in flats/mixed use buildings though not where they are installed within a dwelling). These services will need to comply with the requirements of Part L, and in support of this new guidance on minimum standards is proposed to be included in *Approved Document L, Volume 2: Buildings other than dwellings*, using calculations and testing/commissioning standards made under the BS EN ISO 25745 standard (parts 1, 2 and 3). Information about these services and their maintenance would also need to be provided to the building owner. Further details are included in *Approved Document L, Volume 2: Buildings other than dwellings.*

Other areas of updated guidance

4.29 Updated guidance has also been proposed in a number of other areas in support of the installation of low carbon heating systems and the design of 'zero-carbon ready' non-domestic buildings. Areas where updated guidance is provided include:

- heating and cooling system circulators and water pumps
- internal lighting in hotels
- external lighting
- BACS systems
- Consolidation of minimum standards for loft insulation in Table 4.

4.30 Further details are included in *Approved Document L, Volume 2: Buildings other than dwellings.* Updated guidance on methods assessing the U-values for windows and doors, as proposed for dwellings, is not currently included for non-domestic buildings. We welcome stakeholder views on whether this guidance is appropriate for any types of non-domestic buildings.

Question 56

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

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Question 57

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*?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Question 58

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?

a. **Yes (please provide comments)**
b. **No**
c. **Unsure**

Real-world performance of new non-domestic buildings – Photographic evidence

4.31 The 2022 uplift to Part L for new dwellings introduced the requirement for time-stamped and geotagged photographic evidence of various building elements to provide assurance that the SAP energy models reflect as-built dwellings. It is proposed that photographic evidence should similarly become a mandated requirement for new non-domestic buildings, with minimum photographic evidence requirements, focussing on high-risk areas where construction quality, changes, or substitutions during the construction process could impact the predicted performance outcomes.

4.32 The areas proposed for photographic evidence when producing an as-built energy assessment include:

- Thermal continuity and insulation quality of insulation for the building fabric
- Airtightness layer continuity for the building fabric
- Pipework insulation: continuity of insulation for the primary and secondary pipework, including associated components (i.e. valves, bends).
- Ventilation ductwork: representative sections showing continuity of insulation.
- Plant/equipment identification: photographs that show the make, model and serial numbers for main building services (e.g. heating/cooling, hot water, ventilation and LZC technologies).

4.33 The proposed photographic requirements for each of these items are detailed in the draft Approved Document L, Volume 2: Buildings other than dwellings. These photographs are intended to document the presence and type of thermal elements or building service, and to verify the quality of insulation that affect building and distribution heat losses. Accordingly, photographs should be taken at appropriate construction stages, where applicable, for each detail once completed but prior to closing-up works.

4.34 The primary purpose of the plant/equipment identification photographs will be to provide evidence of the actual equipment installed. Any substitutions made during the construction process should be reflected in the as-built assessment, supported by photographs. We do not propose to use photographs to broadly evidence the quality of the installation of building services in this review. It is expected that the energy performance gap should be minimised through commissioning carried out to a high standard. If necessary, the scope of photographic requirements could be extended further in subsequent revisions to Part L.

4.35 We propose that the requirement for photographic evidence applies to shell and core projects, covering core (landlord) building elements and services, as well as equivalent photographs for the tenant fit-out stage.

4.36 The government considers that photographic evidence offers a simple, effective and robust method to improve the quality of energy modelling and enable more accurate assessments of the as-built energy performance of new buildings.

Question 59

Do you agree with the introduction of photographic evidence as a requirement for producing the as-built energy assessment for new non-domestic buildings?

- **a. Yes**
- **b. No**
- **c. Unsure**

If No, please explain your reasoning.

5. Part L Standards for Existing Non-Domestic Buildings in 2025

Chapter Summary

5.1 The section looks at changes to the application of Building Regulations to existing non-domestic buildings. The main changes are an uplift in building services energy efficiency standards.

Minimum standards for thermal elements, windows and doors in existing non-domestic buildings

5.2 We do not propose to make any updates to these standards.

Updated guidance and minimum standards for building services in existing non-domestic buildings

Minimum efficiencies and controls

5.3 Table 10 outlines the proposed changes to the minimum standards for non-domestic buildings, with further detail in *Approved Document L, Volume 2: Buildings other than dwellings*.

Table 10: Proposed changes to minimum building services efficiencies and controls for new or replacement systems in existing buildings

Building service	Current Part L 2022 standard	Proposed Part L 2025 standard
Heat pump efficiency	For air-to-air heat pumps ≤12 kW, a Seasonal Coefficient of Performance (SCOP) rating of at least D in BS EN 14825. Other types for space heating COP 2.5; all types for domestic hot water heating COP 2.0, absorption COP 0.5; gas-engine COP 1.0.	Heat pumps should follow Ecodesign Regulations, set out in Table 6.1 of draft Approved Document L, Volume 2: Buildings other than dwellings. Heat pumps not covered by Ecodesign Regulations should have a minimum Coefficient of Performance (COP) of 2.5.
Lighting efficacy	95 lm/W for general internal lighting, 80 lm/W for display lighting.	105 lm/W for general internal lighting, 95 lm/W for display lighting.
LPG direct fired boiler efficiency for domestic hot water systems	91% efficiency	92% efficiency

Question 60

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*?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Non–domestic buildings of low energy demand (not exempt)

5.4 Some buildings with low energy demand are exempt from the requirements of the Building Regulations. Others must meet the energy efficiency requirements in the Building Regulations. For these building types, *Approved Document L, Volume 2: Buildings other than dwellings*, provides specific guidance on compliance. We believe the guidance on these building types remains appropriate following the introduction of Part L 2025 but welcome views on whether this guidance should be amended or removed.

Question 61

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?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Other guidance changes

5.5 Updated guidance has been proposed in a number of areas, including:

- heating and cooling system circulators and water pumps
- internal lighting in hotels
- BACS systems

Further details are included in *Approved Document L, Volume 2: Buildings other than dwellings.*

Question 62
Do you have any comments on the changes to the proposed guidance in *draft Approved Document L, Volume 2: Buildings other than dwellings*?

a. **Yes (please provide comments)**
b. **No**
c. **Unsure**

Please explain your reasoning.

6. Legislative changes to the energy efficiency requirements

Background

6.1 Enacting the Part L 2025 Standard will primarily involve changes to the Approved Documents and the notional building specification. We, however, also intend to make some changes to the Building Regulations to ensure they reflect our dual aims under the Part L 2025 Standard of reducing carbon emissions and conserving energy. We are also proposing to repeal regulations that will become redundant with these changes.

Amendments to Part L1 of Schedule 1 to reference greenhouse gas emissions reduction

6.2 Part L1 of Schedule 1 to the Building Regulations makes provision for the conservation of fuel and power in buildings by limiting heat gains and losses and providing fixed building services which are energy efficient, have effective controls and have been commissioned correctly. Government also recognises the important role that energy efficient buildings have in reducing carbon emissions from the built environment. We propose amending Part L1 of Schedule 1 to better reflect the dual goals of conserving energy and reducing carbon emissions.

6.3 Most of the time, measures designed to conserve fuel and power will, by implication, reduce greenhouse gas emissions. This amendment to the regulations, however, will mean that compliance with Schedule 1 of the Building Regulation could mean meeting a standard whose main focus is emissions reduction (rather than reducing energy use).

6.4 Our updated draft of Part L1 of Schedule 1 is below, with proposed amendments in **bold**. The draft Approved Documents contain updated guidance on complying with Part L1 as amended.

6.5 *Draft Part L1 of Schedule 1*

Conservation of fuel and power ***and minimisation of greenhouse gas emissions***

L1. Reasonable provision shall be made for the conservation of fuel and power ***and the minimisation of greenhouse gas emissions*** *in buildings by—*

(a) *limiting heat gains and losses—*

(i) *through thermal elements and other parts of the building fabric; and*

(ii) *from pipes, ducts and vessels used for space heating, space cooling and hot water services;*

(b) *providing fixed building services which—*

(i) *are energy efficient to a reasonable standard;*

(II) ***MINIMISE GREENHOUSE GAS EMISSIONS;***

(iii) *have effective controls; and*

(iii) *are commissioned by testing and adjusting as necessary to ensure they use no more*

fuel and power than is reasonable in the circumstances.

6.6 'Greenhouse gas' would have the same meaning as it does in section 92 of the Climate Change Act 2008.

Question 63

Do you agree that 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?

a. Yes
b. No
c. Unusure

Please explain your reasoning.

Regulations 25A and 25B

6.7 As the proposed Part L 2025 Standard improves energy efficiency requirements for new buildings, some parts of the Building Regulations will become redundant. Some of the energy efficiency provisions in the Regulations were introduced to comply with our obligations under EU law. Now we have left the EU, we have reviewed those provisions carried across from EU law to determine which provisions no longer have any effect and can be repealed.

6.8 Regulation 25A requires people carrying out building work to consider whether it would be feasible to use "high-efficiency alternative systems" during construction. Examples provided in the regulation are decentralised energy supply systems based on energy from renewable sources, co-generation, district or block heating or cooling, and heat pumps.

6.9 Regulation 25B stipulates that new buildings must be "nearly zero-energy" buildings. A nearly zero-energy building is defined in regulation 35 as a building that has "a very high energy performance, as determined in accordance with a methodology approved under regulation 24, where the nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby." Both regulations were inserted into the Building Regulations to comply with EU law, specifically Directive 2010/31/EU which sets requirements around the energy efficiency of buildings.

6.10 We intend to repeal regulations 25A and 25B because we consider them to be redundant once the proposed Part L 2025 Standards have been introduced. Dwellings and non- domestic buildings will be 'zero-carbon ready', meaning that no further work will be necessary to ensure they have zero carbon emissions as the electricity grid continues to decarbonise. Low-carbon heating will be installed in the vast majority of new buildings, and renewable energy generation will be widespread. We consider that

the aims of regulation 25A and 25B will therefore automatically be met.

Question 64

Do you agree that regulations 25A and 25B will be redundant following the introduction of the Part L 2025 Standard and can be repealed?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

7. Impact Assessment

7.1 Building Regulations greatly influence how our buildings are constructed and used. As such, they help to deliver significant benefits to society. Regulation can also impose costs on both businesses and individuals. We have published an Impact Assessment which considers the costs and benefits of the proposed changes to Parts L, F and O of the Building Regulations. The Impact Assessment is an important part of the consultation, as its analysis has shaped the proposals, and we are keen to test the results. As such, consultees are encouraged to read the impact assessment and respond to the questions below.

7.2 To note, the consultation stage impact assessment only covers the proposed changes to the Building Regulations, a final separate Impact Assessment will be produced post consultation on the final proposals following any change in considering the responses.

Question 65
The Impact Assessment makes a number of assumptions on fabric/services/ renewables costs, new build rates, phase-in rates, learning rates, etc for new dwellings. Do you think these assumptions are fair and reasonable?

- **a. Yes**
- **b. No**
- **c. Unsure**

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

Question 66
Overall, do you think the impact assessment is a fair and reasonable assessment of the potential costs and benefits of the proposed options for new dwellings?

- **a. Yes**
- **b. No**
- **c. Unsure**

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

8. Transitional Arrangements

Background

8.1 When changes are made to the Building Regulations, transitional arrangements (also known as transitional provisions) are put in place setting out the limited conditions under which a building can be built to the previous standards. The arrangements give industry time to adapt to the new standards and allow work which is already in progress to be completed without major disruption. The arrangements also give certainty and assurance to developers about the standards to which they must build. Transitional arrangements are developed specifically for each change in the regulations and do not apply more generally to other changes to the Building Regulations.

8.2 As part of the 2022 Part L uplift, we allowed a 6-month period between laying the regulations and the standards coming into force, followed by a 12-month transitional period. This meant that the regulations for new dwellings were laid on 20 May 2022 and came into force on 23 November 2022. Then during the transitional period, if a developer submitted an initial notice, a building notice or full plans application to the local authority prior to the uplift coming into force on 23 November 2022, work on that building was permitted to continue under the previous standards, provided work started on the building by 23 November 2023.

8.3 The transitional arrangements for the 2022 Part L uplift were more stringent than previous Part L transitional arrangements. They applied to individual buildings rather than an entire development. This was to make sure that the occupants of as many new dwellings and non- domestic buildings as possible could benefit from the high levels of energy efficiency and low levels of carbon emissions that are expected from new buildings.

8.4 The 2022 Part L uplift aimed to help pave the way for the Part L 2025 standard, which represents a significant change in the way we will heat new dwellings and non-domestic buildings. It is important that the transitional arrangements that we put in place take account of this and make sure that any disruption to projects that are already underway is minimised.

8.5 Recent amendments to the Building Act 1984 by the Building Safety Act 2022 brought in major changes to the building control process. We have recently consulted on a new definition of “commencement” for all new buildings and horizontal or vertical extensions to existing buildings, with a view to implementation within the next 12 months[26].

8.6 Subject to the outcome of this consultation, we propose to adopt the new definition of ‘commencement’ for these Part L 2025 transitional arrangements. The consultation currently proposes that where the building work consists of any type

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[26] https://www.gov.wales/sites/default/files/consultations/2025-03/building-regulations-consultation-document_0.pdf See proposed definition of commencement of work here (consultation now closed)

of new building or horizontal extension to an existing building to which the Building Regulations apply, work is to be regarded as commenced in relation to that building when the foundations supporting the building and the finished structure of the lowest floor level (which may also be a new basement level where present and including foul and surface water drainage beneath the footprint of the building where present) is completed.

Transitional arrangements and coming into force for the Part L 2025 standard

8.7 For the 2022 Part L uplift, there was a 6-month period between the laying date of the new legislation and the date that the legislation came into force. This was followed by a 12-month transitional period. Transitional arrangements need to be proportionate to the scale of the delivery challenge, providing a reasonable period of time for industry to adapt whilst making sure that the momentum towards our net zero targets is maintained.

8.8 Although fabric requirements and the provision of solar PV panels are similar to what we expect developers to deliver to meet the 2022 Part L uplift, we recognise that both of the proposed domestic and non-domestic options represent a significant shift towards the use of low-carbon technologies. We would welcome feedback from consultees on whether the same arrangements as for the 2022 Part L uplift are proportionate for these new standards, or whether a longer period of up to 12 months between laying the regulations and them coming into force is more suitable. As such we are consulting on two options between laying the regulations and them coming into force:

- Option 1: a 6-month period between the laying date of the Part L 2025 standard regulations and publication of full technical specification and the regulations coming into force.
- Option 2: up to 12-months between the laying date of the Part L 2025 standard regulations and publication of full technical specification and the regulation coming into force.

8.9 Both options would be followed by a 12-month transitional period. As with the 2022 Part L uplift, the transitional arrangements for the Part L 2025 Standard will apply to individual buildings on a site. They will apply where a building notice, initial notice, or an application for building control approval accompanied by the appropriate plans has been submitted to the local authority in respect of that building before the new standards come into force and work on that building commences (as proposed in the recent consultation – see paragraph 8.5 above), within the transitional period. Where work commences on an individual building after this transitional period, that building will have to comply with the new standards (even if a building notice, initial notice or application for building control approval were submitted before the new standards came into force). The Approved Documents, new notional building specifications and National Calculation Methods (NCMs), will also run to this timeline. This means that they will be published when the legislation is laid, come into force 6 or up to 12 months later, and have the same 12-month transitional period.

Question 67
Which option describing the timescale between laying the regulations and them coming into force for the Part L 2025 Standard do you prefer?

a. **Option 1 (6 months)**
b. **Option 2 (12 months)**

Please use the space provided to provide further information and/or alternative arrangements.

Question 68
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?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Sunsetting of previous transitional arrangements for new buildings

8.10 For the 2022 Part L uplift, we permitted buildings captured under the transitional arrangements put in place for earlier updates to energy efficiency requirements (meaning amendments made in 2014 and 2010) to be exempt from the 2022 standards.

8.11 While we appreciate that many developments are built out over a number of years, it cannot be right that new buildings today are continuing to be built to very old standards. It means that occupiers do not benefit from the levels of energy efficiency and the bill savings they might expect from a brand-new building. It also means that these new buildings will have carbon emissions that are incompatible with reaching net zero by 2050.

8.12 We therefore propose that the Part L 2025 standard applies to new buildings, regardless of whether the site has benefited from previous transitional arrangements. Therefore, we propose sunsetting the transitional provisions that accompanied the changes to the energy efficiency requirements in 2010 and 2014.

8.13 We propose to do this by applying the Part L 2025 standards transitional provisions above to all buildings without exception, permitting individual buildings, where work on which has **commenced** (as per the proposed new definition of commencement in paragraph 8.5 above) before the end of the transitional period for the Part L 2025 standards (i.e. 12 months after the Regulations come into force), to continue to be built out to the relevant earlier standard. Buildings that are **commenced** after this date will be subject to the Part L 2025 standard. Any building being built to the new standards should also comply with up-to-date

ventilation standards. This would mean after the end of the transitional period for the Part L 2025 standard, no buildings would benefit from the site-wide transitional arrangements associated with 2010 and 2014 changes to the Building Regulations.

8.14 Moreover, while historic transitional provisions applied to work that had 'started' within a certain period, these proposed transitional provisions will apply to work that has 'commenced', as newly defined in the consultation proposals. Subject to the outcome of the consultation, this will mean that, in general, work will have to be further progressed than before to benefit from transitional arrangements.

Question 69
Do you agree that the 2010 and 2014 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 Part L 2025 standard?

a. **Yes**
b. **No**
c. **Unsure**

Please explain your reasoning.

Question 70
What, in your opinion, would be the likely effects of the proposals on the Welsh language? We are particularly interested in any likely effects on opportunities to use the Welsh language and on not treating the Welsh language less favourably than English.

Do you think that there are opportunities to promote any positive effects?

Do you think that there are opportunities to mitigate any adverse effects?

Question 71
In your opinion, could the proposals be formulated or changed so as to:

- **have positive effects or more positive effects on using the Welsh language and on not treating the Welsh language less favourably than English; or**
- **mitigate any negative effects on using the Welsh language and on not treating the Welsh language less favourably than English?**

Question 72
We have asked a number of specific questions. If you have any related issues which we have not specifically addressed, please use this space to report them:

9. Next steps

9.1 This consultation will close on 17 November 2025. Responses to this consultation will be analysed and a Welsh Government Response will follow.