UK Government

The Home Energy Model: Energy Performance Certificates

HEM methodology for assessing existing dwellings and producing new EPC Metrics

Closing date: 18 March 2026

Department for Energy Security and Net Zero (2026)

Any enquiries regarding this publication should be sent to us at:
homeenergymodel@energysecurity.gov.uk

Contents

Executive Summary

The government is reforming the way the Energy Performance of Buildings (EPB) Regime works in England and Wales. We have previously consulted on these regulations and announced some changes to how they will work.[1]

A key change, announced in the partial response to the EPB consultation will see the introduction of new metrics on Energy Performance Certificates (EPCs), helping homeowners, landlords, and renters understand the fabric performance, heating system, and smart technology characteristics of homes, alongside recommending practical improvements which can improve homes.

These reforms aim to create a system which gives better information to consumers and the retrofit industry to deliver warmer, cheaper to run homes while also supporting the UK's commitment of reaching net-zero emissions by 2050, alleviating fuel poverty, and enhancing building standards.

The government will provide its final response to the EPB consultation in early 2026 to set out further detail on the implementation of new EPCs.

The government previously consulted on the Home Energy Model (HEM) in 2023 and our response was published in October 2025.[2] HEM is a general-purpose simulation of energy use in a dwelling, which is then applied to a specific assessment context (such as producing EPCs) via a wrapper (see section 3.5 of the HEM consultation).

The government is now seeking views on some EPC-specific functionality which will be introduced as part of the EPC wrapper for HEM:

- The proposed expansion of HEM to permit calculations based on on-site inspection of existing dwellings (the HEM equivalent of RdSAP).
- Our proposals for how Home Energy Model: Energy Performance Certificate (HEM: EPC) metrics should be calculated and translated into new EPC bands for each of the new headline metrics (fabric performance, heating system, smart readiness and energy cost).

This consultation is led by the Department of Energy Security and Net Zero (DESNZ) and supported by the Ministry of Housing, Communities and Local Government (MHCLG).

This consultation will be of interest across the built environment sector, and we look forward to engaging with stakeholders to facilitate feedback on the model and its development. Please see Chapter 1 for details about stakeholder engagement events.

[1] Reforms to the Energy Performance of Buildings regime - GOV.UK
[2] Home Energy Model: replacement for the Standard Assessment Procedure (SAP) - GOV.UK

General information

Why we are consulting

This consultation sets out proposals for the operation of new Energy Performance Certificate (EPC) metrics in England and Wales and the development of the HEM:EPC wrapper, which will be used by assessors to generate EPCs for new and existing homes.

Government is seeking any evidence and views from technical experts – including energy assessors, product manufacturers and retrofit professionals on:

- How the proposed metrics should be converted into EPC scores and bands
- How the advice on improving energy performance should be presented to households and property owners.

Your feedback will help shape the final design of the HEM:EPC wrapper and ensure the new EPCs are accurate, practical and useful for consumers.

Consultation details

Issued: 21st January 2026

Respond by: 18th March 2026

Enquiries to:

HEM Team
Department for Energy Security and Net Zero
3rd floor
3-8 Whitehall Place
London
SW1A 2EG

Email: homeenergymodel@energysecurity.gov.uk

Consultation reference: Home Energy Model (HEM): Energy Performance Certificates (EPC) Consultation

Audiences:

This consultation will be of particular interest across the built environment sector including retrofit professionals, energy assessors and product manufacturers. It may also be of interest to consumer groups, potential third-party providers (including app and software designers wishing to use HEM to inform consumer choices), trade bodies and industry groups.

The consultation is not limited to these stakeholders - any organisation or individual is welcome to respond.

Territorial extent:

The territorial scope of this publication is across England and Wales. This consultation will inform future policy development by government in areas where it is responsible for energy policy and related matters, and engagement with devolved governments in relation to devolved policy.

How to respond

We encourage respondents to use Citizen Space wherever possible.

When responding, please state whether you are responding as an individual or representing the views of an organisation. Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome. If you wish to submit your main response on Citizen Space, but provide supporting information by email or post, please be clear that this is part of the same response.

Respond online at: https://energygovuk.citizenspace.com/heat/home-energy-model-energy-performance-certificate

or

Email to: homeenergymodel@energysecurity.gov.uk

Write to:

HEM Team
Department for Energy Security and Net Zero
3rd floor
3-8 Whitehall Place
London
SW1A 2EG

Confidentiality and data protection

Information you provide in response to this consultation, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Data Protection Act 2018 and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential, please tell us, but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. See our privacy policy.

We will summarise all responses and publish this summary on GOV.UK. The summary will include a list of names or organisations that responded, but not people's personal names, addresses or other contact details.

Your personal data may be shared with our processor only for the purposes of analysing the consultation responses on our behalf and will not be shared further by our processor. Artificial Intelligence (AI) may be used in the analysis of consultation responses. These tools are used under the supervision of policy officials, and all outputs are subject to human review to ensure accuracy and relevance.

Quality assurance

This consultation has been carried out in accordance with the government's consultation principles.

If you have any complaints about the way this consultation has been conducted, please email: bru@energysecurity.gov.uk.

Chapter 1: Introduction

This chapter introduces the EPC and its implementation via the Home Energy Model, and provides an overview of relevant documents, to assist readers in finding information to support their responses to the consultation.

What has been published?

This consultation document is part of a series of consultations and documents published by the government relating to Energy Performance Certificates (EPC) and the Home Energy Model (HEM). You may wish to refer to the other published documents as context for your response to this consultation. The full list of publications is as follows:

The Home Energy Model: EPC assessment consultation (this document)

What: This document seeks views on the parts of the new Home Energy Model methodology which are specific to Energy Performance Certificates. To aid understanding, this document is best read in conjunction with the other documents in this list.

Audience: This document will be of interest to those who want to understand the proposed approach for assessing existing dwellings using HEM, as well as the methodology for the calculation of the proposed EPC headline metrics.

The Home Energy Model consultation (2023) and government response (2025)

What: The Home Energy Model consultation explains the overhaul to the SAP methodology and sought views on the approach taken by its replacement, the Home Energy Model. The government response details key decisions made on HEM core methodology following review of consultee feedback.

Audience: The Home Energy Model consultation will be of interest to those who want to understand the proposed changes to the SAP methodology and wider SAP landscape.

The Reforms to the Energy Performance of Buildings regime consultation (2024) [and partial response (2025)]

What: This consultation sought views on reforms to EPCs, including principles for new metrics to be used in generating EPC ratings. In particular, the Technical Annex to Chapter 2 of the consultation sets out the issues arising within metric design, which the present proposals aim to address.

Audience: The EPB consultation will be of interest to those who want to understand the proposed changes to EPCs, which drive the metric design proposals for HEM:EPC.

Home Energy Model: Future Homes Standard assessment consultation (2023) and accompanying technical documentation

What: The government previously consulted on a wrapper for HEM to support assessments determining compliance with Building Regulations Part L (the Future Homes Standard). This consultation is accompanied by several technical documents which go into further detail on the assumptions and validation exercises that have been carried out. Although the EPC wrapper may differ in some respects and contain updates to some assumptions, these documents remain the best way to understand how the EPC assessment will approach input standardisation, where this is common to both new and existing dwellings.

Audience: These technical documents will be of interest to those who want to understand the justifications and evidence base behind the standardisation assumptions used in the model (relating to energy demand, weather, fuels etc).

The Home Energy Model reference code

What: The full Python source code for the Home Energy Model and the Home Energy Model: EPC assessment has been published in a series of Git repositories. The government has not published a user interface for HEM:EPC to accompany this consultation.

Audience: The reference code will be of interest to those who want to understand how the model has been implemented in code, and those wishing to fully clarify their understanding of the new methodology. It will also be of interest to any potential contributors to the Home Energy Model.

Context for this consultation

Energy Performance Certificates

The Energy Performance of Buildings (England and Wales) Regulations 2012 (“EPB Regulations”) underpin the Energy Performance of Buildings regime (EPB) introduced in 2007.

The EPB regulations require that:

- Energy Performance Certificates (EPCs) are produced for certain domestic dwellings and non-domestic premises
- Display Energy Certificates (DECs) are produced for public buildings

- Air conditioning inspection reports (ACIRs) are carried out for systems above a certain size

The EPC acts as an enabling tool supporting actions across a range of areas working to improve the energy performance of buildings. This includes empowering consumers to make informed choices when buying and renting property; supporting lenders with information to assist with finance for energy efficiency improvement; allowing businesses to provide innovative products and services based on accurate building data and allowing government grants to be targeted to where it is most needed.

Improving the energy performance of buildings can contribute significantly to lowering energy bills for households, whilst decreasing the carbon output of the UK's buildings and reducing overall energy demand. The EPC is an important tool for delivering the Warm Homes Plan, which aims to cut household bills by creating energy efficient homes and contributing to the UK meeting its climate targets.

The government has announced [alongside this consultation] that new EPCs will show four headline metrics; 'fabric performance', 'heating system', 'smart readiness' and 'energy cost', with other metrics provided as secondary information. Together, these metrics provide a comprehensive and complementary view of the home's energy performance, enabling users to identify areas where the home excels or underperforms.

The Energy Performance Certificate wrapper for the Home Energy Model

When new EPCs are launched, domestic EPC assessments will be carried out using the HEM for EPCs. This will replace the current approved methodology for assessing homes, SAP and RdSAP.

The Home Energy Model aims to improve on the current methodology by delineating between the multiple functions the methodology is used for. This is achieved using "wrappers" which tailor the general-purpose HEM engine to a specific use case.

Home Energy Model core engine + EPC assessment wrapper = HEM:EPC assessment

The HEM core engine and EPC assessment wrapper together make up the HEM:EPC assessment. This consultation focuses on EPC-specific aspects of HEM functionality.

For further information about the use of wrappers, please see section 3.5 in the Home Energy Model consultation*.*

Interactions with policies that use EPCs

This consultation is being published alongside the Warm Homes Plan since reformed EPCs support many of the policies that will help to deliver 5 million home upgrades in this Parliament. This includes policies such as minimum energy efficiency standards and government funding schemes, which rely on EPCs to set out the measures that should be undertaken to improve homes.

What this consultation covers

This consultation comprises two substantive chapters which cover the methodology to facilitate the assessment of existing dwellings (Chapter 2) and EPC metric band boundaries (Chapter 3).

New methodology to facilitate assessment of existing dwellings via on-site inspection (Chapter 2). In SAP this step is handled by the RdSAP methodology, which converts a reduced set of parameters into the full SAP input, the latter containing some data an on-site assessor cannot collect without invasive testing or specialist equipment. This consultation seeks views on the proposed approach for a HEM equivalent to RdSAP. While the approach differs in some respects, such as using updated data for the default assumptions, it is designed to achieve the same objectives.

Generation of EPC content –EPC metrics and band boundaries (Chapter 3). The EPC metrics and other content are currently produced by SAP and specified in the published SAP 10.2 specification. This chapter builds on the metrics proposals in the 2024 Energy Performance of Buildings consultation[3] to seek views on more detailed aspects of their implementation in HEM. Some proposals for supplementary information are also described in this chapter.

Areas out of scope for this consultation

There is no interactive tool or demonstration user interface accompanying this consultation, as the model is not yet sufficiently advanced. This means it is not currently possible for the reader to estimate a given dwelling's EPC ratings under the proposed system.

Input standardisations relating to occupant behaviour, energy demand, fuels and weather are not presented in this document, as they closely align with those used in the Future Homes Standard (HEM:FHS). For further insight readers are encouraged to review sections 3, 4, and 5.2 of the previously published Home Energy Model: Future Homes Standard assessment consultation and accompanying technical documentation.

Please note that this previously published material reflects an earlier version of HEM:FHS. The final version has evolved in response to consultation feedback. The government response to the HEM:FHS consultation, and updated technical documentation for the FHS wrapper, will be published in the near future. While the EPC wrapper shares much of the same methodology, it will also differ in some particulars (such as the addition of standardised fuel prices). These specific differences are still under development and will be published in due course.

[3] Reforms to the Energy Performance of Buildings regime - GOV.UK

What are the next steps?

We plan to set out our conclusions on these matters later in 2026, alongside the full government response to the 2024 Energy Performance of Buildings consultation. Government is working hard to deliver new EPCs from October 2026. We recognise the timeline is ambitious and want to work with industry to build a shared implementation plan and test our assumptions.

This consultation will be of interest across the built environment sector, and we look forward to engaging with stakeholders to facilitate feedback on the model and its development. Throughout the engagement period, we will host a series of stakeholder engagement events to gather technical feedback from experts in energy assessment, home retrofit and product manufacture. We particularly welcome input from those with technical EPC assessment experience and methodology literacy. Please email homeenergymodel@energysecurity.gov.uk for further details on the stakeholder engagement events.

Chapter 2: Proposal for a modular approach to inputting data for existing buildings in HEM (replacement for RdSAP)

How RdSAP is currently used

The Reduced Data Standard Assessment Procedure (RdSAP)[4] is the most common method used to generate a domestic EPC. Full SAP can also be used to carry out EPC assessments and is used when the full dataset is available. For example, SAP can be used when generating the EPC accompanying the sale of a newly built home.

RdSAP must be applied as a complete methodology for any given assessment; it cannot be mixed with SAP inputs. Its assumptions and simplifications are interrelated, which maintains internal consistency but can prevent the use of some on-site data that RdSAP does not accept. This means that, even where an energy assessor has access to more data about a property (whether through documentary evidence or the use of specialist tools as part of their assessment) they are unable to use this data to make the EPC assessment more accurate.

This also has another effect: since RdSAP replaces some SAP inputs with standard assumptions, an EPC rating can change when switching between the two methods. For example, a new build home which was originally assessed using SAP may receive a different rating when its EPC is later renewed using RdSAP, as RdSAP assumptions overwrite some of the original SAP data.

How the introduction of HEM could change how existing buildings are assessed

The introduction of HEM gives us an opportunity to introduce some helpful flexibility around the inputs assessors make within EPC assessments, depending on the data and tools available to them. This flexibility must be balanced against the need to have a consistent and efficient assessment process in the interests of clarity for consumers, and time and cost effectiveness for assessors.

We propose that HEM should have a ‘modular’ approach, where the assessor enters as much data as they have access to in each dwelling. The modular structure of the HEM core engine permits this approach, where data for a given module can be provided in multiple ways without interfering with the rest of the calculation. In this new approach, the “all-or-nothing” of RdSAP would be replaced by a flexible series of input simplifications, that the assessor can activate individually as they are needed (starting from a “full”, new-build style level of detail).

In the future, this would enable multiple distinct approaches to populate a given section of the model, of varying levels of sophistication or dependence on hardware or measurements. There

[4] Standard Assessment Procedure - GOV.UK

are several examples of the kinds of alternative inputs HEM for existing buildings could enable – for example (but not exclusively):

- When assessing a new build, no simplifications will be required and the HEM:EPC assessment will allow assessors to recycle data collected from a previous Part L compliance assessment for that dwelling, with minimal modification.
- When this "full" level of detail is not possible to collect, assessors would confirm areas where they cannot provide this information and switch to simplified inputs as needed. This could narrow the gap between the EPC assessment of new builds and existing buildings. It may also be particularly important for dwellings not well represented by RdSAP default assumptions, such as heritage properties.
- In the future, we could add new options for inputting data, to allow adoption of technologies and methods that improve measurement of dwelling characteristics, such as smartphone-based LiDAR[5] scanning, low-cost air pressure testing, smart-meter data and other emerging technologies. As new selectable options, these would become admissible without being mandatory in EPC assessments.

The above approach would give energy assessors an increased choice in how they work, removing technical barriers to improved service offers to customers. A modular approach would allow assessors to input dwelling-specific information (as defined in the wider EPC wrapper) where it is available and to use default values if the data were unobtainable for other elements of the dwelling.

We propose that the initial release of HEM for existing dwellings will include a single set of simplified inputs, with assessors choosing between these and the "full" input for each part of the assessment. This will smooth the transition from RdSAP – activating all simplifications will give the equivalent experience to RdSAP.

We would welcome views on leaving the door open to adding alternative inputs such as those set out above (or others) and on the implications of this. Any developments which allow inputs to be more flexible and/or detailed than the initial simplified inputs we intend to require would be built on an assessment of the benefits and on stakeholder feedback.

Stakeholder Engagement

We plan to run engagement sessions with industry professionals to help shape the development of the EPC Wrapper and the approach for inputting and defaulting data. These sessions will provide an opportunity to share expertise and discuss practical challenges.

Please note: Participation in these sessions is separate from the formal consultation process and will not form part of the published consultation response. However, the insights gathered will inform our thinking and guide future policy and technical design.

Please email **Homeenergymodel@energysecurity.gov.uk**, with "**Consultation Engagement"** in the subject line, and include:

[5] Light Detection and Ranging scanning is a means of generating 3D building geometry data using a camera and specialised image processing software.

- Your **area(s) of interest** (e.g., EPC methodology, data collection).
- The **expertise or experience** you can bring to the discussion.

For those who would prefer to **stay informed and learn more as the project progresses**, you can join our **Show and Tell sessions**. To register, please email **Homeenergymodel@energysecurity.gov.uk** with **"Show and Tell"** in the subject line.

Consultation Questions:

Question 1: Do you agree with the introduction of a modular approach to data input for existing builds, where assessors can enter complete data where available and rely on defaults for other elements?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any comments or evidence to support your answer.

Question 2: Please share your views on the following potential impacts of a modular approach.

a. Quality of assessments and EPCs:
    - assessment accuracy
    - trust, usability, or consistency in EPCs
    - how inputs are communicated to consumers/householders
b. Impact on assessors workloads, costs, training, and skills.
c. Implementation risks, for example: QA/audit and fraud risk, supply-chain readiness and training needs.
d. Anything else you feel is relevant.

Question 3: Please share your views or provide any evidence on any alternative approaches you think we could consider for assessing existing dwellings.

Question 4: If a modular approach is adopted, the term "Reduced data HEM" (RdHEM) may not accurately reflect the model's structure or purpose. We want to ensure the terminology clearly conveys this flexibility and avoids confusion with previous approaches. A clear, intuitive name will help stakeholders understand the purpose of the methodology and distinguish it from both full HEM and legacy RdSAP. Potential options for the new name are:

- HEM for Existing Dwellings (HEMEX)
- HEM Input Expansion (HEMIE)
- Mixed Data for HEM (MdHEM), or
- Reduced data HEM (RdHEM).

Do you have any views on the proposed alternative name(s) that would better capture the intent and flexibility of a modular version of HEM? Do you have any other suggested options that are not listed above?

Chapter 3: Proposals for EPC metrics and band boundaries

Introduction to metrics and banding

As confirmed in the interim response to the EPB consultation published alongside this consultation, new EPCs in England and Wales will show four headline metrics addressing different aspects of a dwelling's energy performance: 'fabric performance', 'heating system', 'smart readiness' and 'energy cost'.

As is the case for current EPCs, these metrics will be banded, with numerical metrics grouped into bands identified by the letters A-G, to simplify the comparisons between different buildings, provide clear information for users. The exception is the cost metric, where we intend to report annual estimated bills in £ to improve the usefulness of this metric to consumers seeking to understand likely energy costs. This is covered in the relevant section of the consultation.

This Chapter sets out our current proposals for the design of each of these metrics and their implementation in HEM. Where applicable, it also sets out principles we intend to adopt when setting Bands A-G; with particular focus on the C boundary, as this is expected to be the compliance threshold set for future Minimum Energy Efficiency Standards, and has previously been used to set the eligibility threshold for government retrofit support schemes.

These design proposals build on those in the 2024 Energy Performance of Buildings consultation. See the Technical Annex to that consultation for a full discussion of the design considerations which these proposals aim to address.

Fabric Performance Metric

This metric measures a building's thermal performance - its ability to maintain a different temperature to its surroundings. It is influenced by factors such as the level of insulation in the building, window quality, and airtightness.

We propose evaluating fabric performance using the Fabric Energy Efficiency (FEE) methodology, adapted from the metric already used for assessing new build homes under Part L of the Building Regulations. The FEE is evaluated using a bespoke calculation to estimate the demand for space heating and cooling.[6] This demand estimate is standardised to be independent of the heating (and cooling) system, by replacing it with a single standard system. This eliminates any indirect relationship between system type and estimated demand (usually arising because of differences in typical running hours), to ensure fair comparisons.

[6] The Future Homes Standard 2025: dwelling notional buildings for consultation

A fabric performance metric using FEE accounts for heat loss in cold periods and overheating risk in warm periods. By simulating the flow of heat in and out of the dwelling over a year, all influences on the overall heating and cooling demand experienced by the occupant can be accounted for, including solar gains. High estimated cooling demand could be used as a proxy for the risk of overheating and can help identify measures to address this (such as shading or passive cooling). It is also important to consider potential future cooling needs, whether met through passive or active measures, given the impacts of a warmer climate in future. Ongoing research by DESNZ is investigating feasibility and sensitivity of different measures of overheating risk in homes.

Scoring and banding considerations

We recognise the benefits of ensuring that there is a clear transition to new EPCs, and a level of consistency between old and new metrics: this will support understanding of the transition and help ensure that people who have previously installed measures (such as loft and cavity wall installation) continue to see the benefits on their EPCs. It will also support a smoother transition for policies and regulations which use EPC ratings for purposes of compliance or eligibility.

We are therefore proposing an approach to achieve close equivalence between the C/D boundary in the existing cost-based EER rating and the C/D boundary on the new Fabric Performance Metric. This also mirrors the approach the Scottish Government are taking to their ‘Heat Retention Rating’ (the equivalent to our Fabric Performance metric).

Consultation Questions:

Question 5: Do you agree with the proposal to evaluate fabric performance using FEE?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any additional comments or evidence to support your answer.

Question 6: Do you agree with the approach to maintain close equivalence between the C/D boundary in the current EER rating and the C/D boundary in the Fabric Performance Metric?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any additional comments or evidence to support your answer, including evidence on the sorts of measures that should be prioritised under this metric.

Supplementary fabric performance information: SMETERs and HTCs

Smart Meter Enabled Thermal Efficiency Ratings (SMETERs) offer a new approach to measuring fabric performance in dwellings. They typically estimate heat losses by analysing the relationship between metered gas and electricity consumption in the home and indoor/outdoor temperature differences. This is an alternative approach to the simulated estimate of heat losses produced by the HEM and SAP models. Both methods can produce a metric known as the Heat Transfer Coefficient (HTC). Research has shown that SMETER measurements can sometimes be more accurate than the current SAP approach for

representing the in-situ performance of a home.[7] The accuracy of different SMETER technologies can however vary, entailing a need for robust validation and quality assurance processes.

The government proposes to introduce an option to voluntarily record appropriately validated and quality assured SMETER HTC estimates, alongside an HTC calculated by the Home Energy Model. This information would be supplementary to the headline fabric metric, with exact presentation and accessibility to be determined subject to the outcomes of detailed EPC design work.

This would serve a range of purposes:

- Since HEM necessarily assumes that buildings are well built and maintained, and that retrofits are correctly installed, comparison of HEM and SMETER heat loss estimates can provide information on whether the home is performing as expected.
- It can help reveal hidden defects, assess retrofit quality and help validate EPC assessments, and HTC values can also be used for other processes, like designing heat pump installations.
- The development of a SMETER HTC dataset over time could also help strengthen the EPB system by providing a clearer understanding of the distribution of differences between predicted and in-situ fabric performance.

The government would work with interested parties to develop detailed processes whereby a SMETER HTC estimate could be included within the EPC system. This includes work to assure the accuracy of measurements, building on arrangements DESNZ is already developing to support the use of SMETER-derived HTCs.

Privacy and data protection will be essential to consider. SMETER providers must comply with the Data Protection Act 2018 and smart meter-specific Data Access and Privacy Framework (DAPF) requirements when accessing and handling smart meter data. While an HTC in isolation is not personal data once calculated, consideration would need to be given to the regulations if it were to become personal data once stored in the EPC system.

Consultation Questions:

Question 7: Do you agree with the Government's proposal to introduce an option for recording Heat Transfer Coefficients based on SMETER measurements in the EPC system, as supplementary information about fabric performance?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any comments or evidence to support your answer.

Question 8: Do you have any views on how the provision of additional information, such as that derived from SMETERs, should be enabled within the energy assessment process in practice? Please provide any evidence to support your answer.

[7] https://www.gov.uk/government/publications/smart-meter-enabled-thermal-efficiency-ratings-smeter-technologies-project-technical-evaluation

Heating System Metric

The proposed Heating System Metric is an assessment of the technologies in a dwelling which generate heat – for space heating (and cooling), hot water, and cooking.

We propose calculating the heating metric using modelled efficiency of heating (and cooling) and modelled emissions intensity. Both efficiency and emissions will be calculated dynamically by the HEM simulation. As the proportion of renewable electricity generation varies between peak and off-peak times, a variable carbon factor will be used to reflect how grid emissions vary with time, based on the electricity generation mix.

HEM will provide an objective measure against which all heating systems will be assessed, allowing scope for innovation and new products to be scored on a consistent basis.

Scoring and Banding Considerations

Heating in buildings contributes almost a quarter of all UK emissions. Addressing the carbon emissions produced in heating and powering our homes, workplaces and public buildings can save money on energy bills and improve lives.

In order to support this transition to low carbon heating, we are proposing the following principles for the approach to defining bands within the metric:

- **The band boundary for a C rating should be set such that it does not incentivise fossil fuel heating systems.** We are therefore proposing that no home that relies on a primary fossil-fuel space or water heating system (such as a gas boiler) should be able to achieve a C on the new Heating System Metric. Property owners will still be able to retain their existing fossil fuel based heating system: the purpose of setting the boundary in this way is to provide clearer information to consumers about the options they have for lower carbon heating systems.
- **Hybrid heating systems** that include fossil fuels, such as hybrid heat pump gas boilers, should score a D or below.
- **Among bands below C, the most efficient, relatively low-carbon fossil fuel systems should still be recognised over less efficient alternatives.** More efficient fossil fuel systems should score better than higher-carbon inefficient fossil fuel systems. This means that a hybrid heat pump system incorporating a modern gas condensing boiler would score more highly than the same gas boiler on its own, which in turn would score more highly than a lower-efficiency gas boiler, or one using heating oil.
- **Systems with high efficiency and low carbon emissions, such as electric heat pumps and low-carbon heat networks, would always score a C and above**.
- **Direct electric heating with no (or insufficient) thermal energy storage** will always score a D or below. However, electric heating with thermal storage, where the efficiency and use of off-peak electricity results in lower annual emissions than an equivalent direct electric system will typically score a C or above.

Cooking will also be factored into the metric. By integrating cooking into EPCs, there is an opportunity to realise the health benefits (from improved indoor air quality) and likely cost

benefits (e.g. by removing the gas standing charge) of full rather than partial electrification. Our analysis suggests that in the best-performing dwellings for fabric (those with the lowest space heating demand), the maximum likely contribution from cooking is less than 10% of the combined energy required for cooking, space heating and hot water. In most of the stock, we expect this proportion to be much smaller. Therefore, the contribution of cooking to the heating system metric is important but significantly smaller than the contribution of space heating and hot water.

We are considering how to encourage electric cooking systems within EPC ratings. One option would be to retain the highest scores of A or B for electric cooking options, encouraging their uptake at the point that consumers upgrade a fossil-fuel heating system to an electric alternative. This approach could also be applied to other fossil fuel appliances.

Interactions with other policies

There are clear interactions between this banding decision and other policy areas, in particular minimum energy efficiency standards (MEES). It is important to note that the band boundary approach set out above, in combination with the MEES proposals, would not compel landlords or social housing providers to replace fossil fuel heating systems. This is because the proposals for both the private rented sector and the social rented sector recommended landlord discretion between smart readiness and heat for the secondary metrics, so landlords could choose to meet the smart readiness standard instead of replacing their fossil fuel heating system.

Consultation Questions:

Question 9: Do you agree with our proposal on the design and methodology for the Heating System metric?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any additional comments or evidence to support your answer.

Question 10: Do you agree with the proposal to set the C/D boundary such that direct electric will always score a D or below, and that storage-based technologies would score above or below the C/D boundary based on their emissions relative to direct electric?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any additional comments or evidence to support your answer.

Question 11: What is your view on the option of reserving the highest scores of A/B for electric cooking appliances?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Do you have any views on how these could be reflected in EPCs (whether in terms of banding or advice to consumers?)

Smart Readiness Metric

The smart readiness metric aims to assess the building's potential to self-generate energy (usually from solar panels), and to integrate smart technologies that can optimise energy consumption and allow consumer-led flexibility in demand, to enable electricity bill savings.

As with the other metrics we intend the smart metric to be based on a numerical calculation which balances a number of factors. This will need to be weighted carefully to incentivise the installation of the right technologies. This will be enabled by HEM which can model a dynamic price signal and emissions intensity for the electricity grid, as well as variable weather, at a half-hourly resolution. This makes it possible to simulate a dwelling's capability to generate electricity (with solar PV etc.), store energy (electric batteries and thermal energy storage technologies) and determine when it is used (smart load-shifting control) in response to time-of-use (TOU) tariffs and other varying signals. This was not possible within the SAP model.

It is therefore possible to quantitatively assess the flexibility potential and reliance on the grid as the basis for a new metric. This assessment will still require a standardised pattern of occupant behaviour and will not accurately forecast real cost savings as seen by a given occupant. However, it makes possible a rating of the inherent capabilities of a dwelling's hardware – in terms of generation, storage and capability to respond to energy signals – and hence a comparative assessment between dwellings which is useful for the EPC.

Some aspects of a dwelling which are relevant to this metric (such as the presence of a smart electricity meter) will not affect the quantitative simulation. Others would do so in an uncertain fashion (e.g. an EPC cannot know whether an electric vehicle is regularly charged at the property, but this is highly relevant to the real outcome). The overall smart readiness metric will therefore combine some quantitative and qualitative measures into a single rating.

We are planning for the smart readiness metric to take account of at least the following technologies:

- **Smart meters:** which are a key enabler of many other smart technologies, for example by enabling use of time-of-use tariffs and export tariffs.
- **Solar PV and other microgeneration**: their capacity or estimated output, and the degree to which microgeneration is consumed within the building rather than exported
- **Electric batteries:** shifting demand away from peak times, maximising the use of solar panels if installed, and potentially selling electricity from the battery when the system requires.
- **Thermal energy storage systems** which have smart functionality: including heat batteries, storage heaters, and hot water cylinders.
- **Smart heating controls** and other demand management systems.

- **Smart EV charge points:** unidirectional and bidirectional charge points would be recognised, with higher scores for bidirectional charge points that enable additional flexibility by allowing vehicles to discharge energy back to the home or grid.

- **Connection to the electricity network:** a property's grid connection sets the baseline for its ability to be smart ready, as unsuitable connections may restrict households from installing smart appliances in the first place. Things to consider include single/three phase connection, whether the property is looped (shared service cable with neighbours) and fuse and cut-out capacity (for further exploration and consideration on practical implementation of assessment).

Scoring and banding considerations

We propose that the metric will be expressed as a single 1-100 score and grouped into bands identified by the letters A-G, as in current EPC ratings. This score may encompass a combination of underlying quantitative metrics (e.g. modelled self-consumption of microgeneration and modelled cost savings on a standardised TOU tariff vs a standard tariff) and qualitative metrics (e.g. presence/absence of a smart electricity meter). The underlying metrics and other supplementary information may also be reported for information purposes, to contextualise the overall rating.

One of the key applications of the Smart Readiness Metric is to support the uptake of microgeneration, in particular solar PV. The Clean Power Action Plan laid out our commitments to clean power by 2030 and made clear that solar power will be crucial to achieving that mission. This was supported by the Solar Roadmap, published by DESNZ in June 2025, which called for a 'rooftop revolution' – rapidly accelerating the roll out of solar, helping drive down bills, supporting tens of thousands of jobs and powering economic growth with clean energy.

Energy storage, such as batteries, and smart energy management technologies as supported by the Clean Flexibility Roadmap also enable consumers to maximise the benefits of solar or other microgeneration: by storing excess energy when it is plentiful and using it later, providing significant benefits in terms of bill savings as well as reducing demands on the grid at peak times.

We are considering different **options** for setting the C band boundary for the Smart Readiness Metric:

1. **Micro-generation such as solar, alongside a smart meter, would be sufficient to achieve a C rating.** We are considering what would be an appropriately-sized solar array (or equivalent) to achieve a C, to ensure that we are setting a realistic standard that takes into account the potential challenges with retrofitting existing properties. A rating of C would need to reflect an installation capable of substantial energy and cost savings compared to the same dwelling with no solar panels, while still leaving headroom for more ambitious installations to score more highly.

2. Alternatively, we could **require some level of energy storage alongside micro-generation in order to achieve a C rating,** to recognise the flexibility and bill savings

benefits of installing these together. Larger capacity solar arrays would score more highly on the metric, but with diminishing returns (especially once the dwelling's electricity demand is met) to encourage other complementary measures. We are also considering whether it would be sufficient for this storage to come from a bidirectional EV charge point, that would enable an EV battery to store the electricity from the solar array for use at times of peak demand. The benefits of this would be dependent on the property having an EV: however we expect an increasing number of households would benefit over time as EV uptake increases.

We appreciate that there will be some buildings where installing solar or other microgeneration is not possible (e.g. some flats). In some cases, it may not be possible for a dwelling to achieve a smart readiness C rating, in which case, relevant exemptions will apply for the purposes of Minimum Energy Efficiency Standards.

We are proposing that the presence of a smart electricity meter will be required to achieve a band C on the smart readiness metric, and to allow scoring of technologies that would rely on a smart meter to deliver benefits (e.g. batteries)**.**

We appreciate there may also be cases where landlords are not able to install smart meters, for example due to tenant consent. Relevant exemptions would apply for the purposes of Minimum Energy Efficiency Standards where this was the case.

Minimum Energy Efficiency Standards regulations for the private rented sector already make provision for a third-party consent exemption to cover instances where a tenant has refused consent for a particular measure. This exemption will continue to be available when the higher standard comes into force. Government will develop guidance and communications for landlords on how to comply with the standard, including how to register for valid exemptions.

Similarly, for new Minimum Energy Efficiency Standards for the social rented sector, which were recently consulted on, Government will consider how to respond to the feedback for requiring smart meters to meet the Smart Readiness standard and will publish a final position as part of the government response.

We would welcome evidence and feedback on these alternative approaches to inform our approach. We are still determining the relative scoring of different technologies and would welcome any evidence about this to help inform our thinking.

Consultation Questions:

Question 12: Do you have any views on the proposed list of technologies that would be recognised under the Smart Readiness Metric and their relative scoring? Please provide any evidence to support your answer.

Question 13: Do you have views on the options we have set out for how to achieve a C on the Smart Readiness Metric?

Question 14: Do you have any evidence to provide on what an appropriately sized solar array should be to reach a C?

Question 15: Do you have any evidence to provide on what an appropriately sized electric battery should be to reach a C?

Questions 16: Do you agree that a bidirectional EV charge point should be recognised as an alternative to other forms of energy storage, such as batteries, in order to achieve a C on the Smart Readiness Metric?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any additional comments or evidence to support your answer.

Question 17: Do you have any other comments regarding the design and methodology for the Smart Readiness metric?

Energy Cost metric

The energy cost metric will assess the predicted costs of energy use in a building and provides an independent estimate of likely energy bills for buyers and tenants. It is related to all three other metrics, as all aspects of a building's energy performance will have some impact on running costs.

Other EPC metrics will be presented as Bands A-G, but we are currently proposing we show cost information in terms of the overall estimated energy bill (in £) to make it more readily understandable to consumers.

EPCs will show energy costs that will be based on prices at the time they were generated. However energy prices change over time, so we are considering how we can ensure that consumers have access to the most up-to-date and comparable information on expected energy costs, through signposting to further information.

Consultation Questions:

Question 18: Do you agree with our proposed approach to the design and methodology for the Energy Cost metric?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any comments or evidence to support your answer.

Question 19: Do you agree that the cost metric should be presented in £, rather than bands?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any comments or evidence to support your answer.

The Legacy Energy Efficiency Rating

Distinct from the new Energy Cost metric, we are planning for new EPC certificates to continue to show a "legacy" version of the Energy Efficiency Rating (EER) which is the current headline EPC rating, until at least the end of 2029. This facilitates the transition to new EPCs and

provides continuity for government policies which already rely on EPCs for eligibility or compliance purposes. This metric will be calculated using the same methodology as the previous EER[8] but will not give identical results, as HEM and SAP will differ in their estimates of each dwelling's energy consumption.

This legacy metric will be clearly described and separated from other metrics on the EPC certificate, to avoid confusion for consumers, and will eventually be removed from the EPC.

[8] See page 36: SAP 10.2 - 17-12-2021.pdf

Consultation questions

Question 1: Do you agree with the introduction of a modular approach to data input for existing builds, where assessors can enter complete data where available and rely on defaults for other elements?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any comments or evidence to support your answer.

Question 2: Please share your views on the following potential impacts of a modular approach.

a. Quality of assessments and EPCs:
   - assessment accuracy
   - trust, usability, or consistency in EPCs
   - how inputs are communicated to consumers/householders
b. Impact on assessors' workloads, costs, training, and skills?
c. Implementation risks, for example: QA/audit and fraud risk, supply-chain readiness and training needs
d. Anything else you feel is relevant.

Question 3: Please share your views or provide any evidence on any alternative approaches you think we should consider for existing dwellings.

Question 4: If a modular approach is adopted, the term "Reduced data HEM" (RdHEM) may not accurately reflect the model's structure or purpose. We want to ensure the terminology clearly conveys this flexibility and avoids confusion with previous approaches. A clear, intuitive name will help stakeholders understand the purpose of the methodology and distinguish it from both full HEM and legacy RdSAP. Potential options for the new name are:

- HEM for Existing Dwellings (HEMEX)
- HEM Input Expansion (HEMIE)
- Mixed Data for HEM (MdHEM), or
- Reduced data HEM (RdHEM).

Do you have any views on the proposed alternative name(s) that would better capture the intent and flexibility of a modular version of HEM? Do you have any other suggested options that are not listed above?

Question 5: Do you agree with the proposal to evaluate fabric performance using FEE?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any additional comments or evidence to support your answer.

Question 6: Do you agree with the approach to maintain broad equivalence between the C/D boundary in the current EER rating and the C/D boundary in the Fabric Performance Metric?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any additional comments or evidence to support your answer, including evidence on the sorts of measures that should be prioritised under this metric.

Question 7: Do you agree with the Government's proposal to introduce an option for recording Heat Transfer Coefficients based on SMETER measurements, as supplementary information about fabric performance?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any comments or evidence to support your answer.

Question 8: Do you have any views on how the provision of additional information, such as that derived from SMETERs, should be enabled within the energy assessment process in practice? Please provide any evidence to support your answer.

Question 9: Do you agree with our proposal on the design and methodology for the Heating System metric?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any additional comments or evidence to support your answer.

Question 10: Do you agree with the proposal to set the C/D boundary such that direct electric will always score a D or below, and that storage-based technologies would score above or below the C/D boundary based on their emissions relative to direct electric.

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any additional comments or evidence to support your answer.

Question 11: What is your view on the option of reserving the highest scores of A/B for electric cooking appliances?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Do you have any views on how these should be reflected in EPCs (whether in terms of banding or advice to consumers?)

Question 12: Do you have any views on the proposed list of technologies that would be recognised under the Smart Readiness Metric and their relative scoring? Please provide any evidence to support your answer.

Question 13: Do you have views on the options we have set out for how to achieve a C on the Smart Readiness Metric?

Question 14: Do you have any evidence to provide on what an appropriately sized solar array should be to reach a C?

Question 15: Do you have any evidence to provide on what an appropriately sized electric battery should be to reach a C?

Questions 16: Do you agree that a bidirectional EV charge point should be recognised as an alternative to other forms of energy storage, such as batteries, in order to achieve a C on the Smart Readiness Metric?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any additional comments or evidence to support your answer.

Question 17: Do you have any other comments regarding the design and methodology for the Smart Readiness metric?

Question 18: Do you agree with our proposed approach to the design and methodology for the Energy Cost metric?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any comments or evidence to support your answer.

Question 19: Do you agree that the cost metric should be presented in £, rather than bands?

Response options: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Please provide any comments or evidence to support your answer.

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