



Introducing a performance-based policy framework in large commercial and industrial buildings in England and Wales: consultation

8 June 2021

CREDS responds to consultations and calls for evidence from government, agencies and businesses, providing insight and expertise to decision-makers.

This response was created for a consultation on government proposals to introduce a national performance-based policy framework for rating the energy and carbon performance of commercial and industrial buildings above 1,000m² in England and Wales. The consultation ran from 17 March-9 June 2021. <https://www.gov.uk/government/consultations/introducing-a-performance-based-policy-framework-in-large-commercial-and-industrial-buildings>

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The full consultation response, as submitted, is below.

CREDS Consultation 23 | June 2021

Summary

This document is a response to the above consultation by the Building Stock Laboratory of the UCL Energy Institute (<https://www.ucl.ac.uk/bartlett/energy/research/energy-and-buildings/building-stock-laboratory>). We broadly welcome the initiative, by the Department for Business, Energy and Industrial Strategy (BEIS), to bring about a new operational energy benchmarking scheme for the commercial and industrial building sectors. We do, however, offer a number of observations pertinent to the topic.

Most of these observations concern definitions. For example, what precisely is meant by 'building' or 'site' in the proposed framework? The non-domestic sector (the combination of commercial, industrial and public buildings) operates within 'premises', or in legal terms 'hereditaments'. These are not necessarily whole buildings and sometimes not even buildings at all. We also question the validity of the application of an arbitrary 1000 m² threshold for the application of any energy benchmark. This is due to the varied nature of the non-domestic building stock: both in its activities and the buildings/premises it occupies.

Having read the framework document closely, it is clear that the consultation largely pertains to offices. Beyond the office sector, activities and their energy use become ever more diverse, as can the buildings they occupy. BEIS suggests that metered energy for the premises/building/site will be the judgement criteria. However, this does not take into consideration the role of 'process' energy – the energy used for the core activity. For example, in a factory making plastic mouldings, the energy used in the moulding machines is likely to be the largest portion of energy being metered. Separating this energy use from the energy used for the actual building is problematic if there is inadequate sub-metering in place. Note also that the process energy contributes to incidental heat gains within the building, so high process loads contribute to heating the building. The proposed benchmarking scheme needs to address the issue of process energy to avoid penalising those operating high-energy processes, as this is largely separate from building operational energy use.

Of particular concern is the potential lack of equity in the methods described. Where a single company occupies a single premises/building/site with an area greater than 1000 m², it would be subject to the proposed scheme. However, an organisation operating in many locations, for which the sum of floor area is greater than 1000 m² would be exempt. This means that, for example, a large chain of coffee shops or a company occupying many small convenience store premises, would be left untouched by the benchmarks. This seems somewhat unfair on the single-site organisation, especially as larger multi-site operations are likely to have greater capability and agency to drive down their energy use.

This response document has been segmented according to the questions asked by BEIS. We did not respond to questions 14 and 19. Text in *italics* are quotes from the consultation document. Our responses are in standard text.

Question 1

Do you have any evidence which supports, disputes, or could add to, the evidence presented by the Government in this chapter? In terms of the evidence presented in this chapter, do you support the Government's analysis?

Page 17 - "Figure 1: All Non-Domestic Buildings: England and Wales"

Regarding Figure 1: presumably this chart refers to Valuation Office Agency (VOA) hereditaments (premises), which are not necessarily buildings? How has the number and total area of 'buildings' >1000m² been calculated?

"Only 7% of non-domestic buildings are above 1,000m² in England and Wales. These buildings account for approximately 50% of the total floorspace, and we estimate these buildings use over 53% of the total energy used in non-domestic buildings. In other words, the graph demonstrates that there are a relatively small number of large buildings in England and Wales which use a lot of energy and emit a lot of carbon."

Is it the 'buildings' that are using this energy, or the activities of the occupiers? Energy used for the activity is not energy used by the building directly. Also, the building itself does not use any energy: only the equipment associated with the building uses energy. The two are linked, but the equipment associated with the building is not necessarily linked directly to the activity. The equipment linked to the building is only there to moderate the internal environment to meet the environmental comfort requirements of the activity and the occupants. Sometimes the activity takes precedence over the occupants, for example in a data centre, abattoir, or chilled storage.

Figure 1, below, shows the VOA premises in 2019 >1,000m², expressed as a percentage of each activity sector, both for counts of premises and total floor area. Given that not all metered energy will be for the operation of the building, the role of factories plays a significant part in the allocation of *"over 53% of the total energy used in non-domestic buildings"* to 'buildings' >1,000m², as described on page 17 of the consultation document. Dependent upon the method for calculating the above '53%', much of this energy may be assumed to be for process energy, not the operation of the buildings themselves. As process energy is only loosely linked to building physics, it seems likely that calculations of 'building' energy efficiency potential in factories will be overestimates.

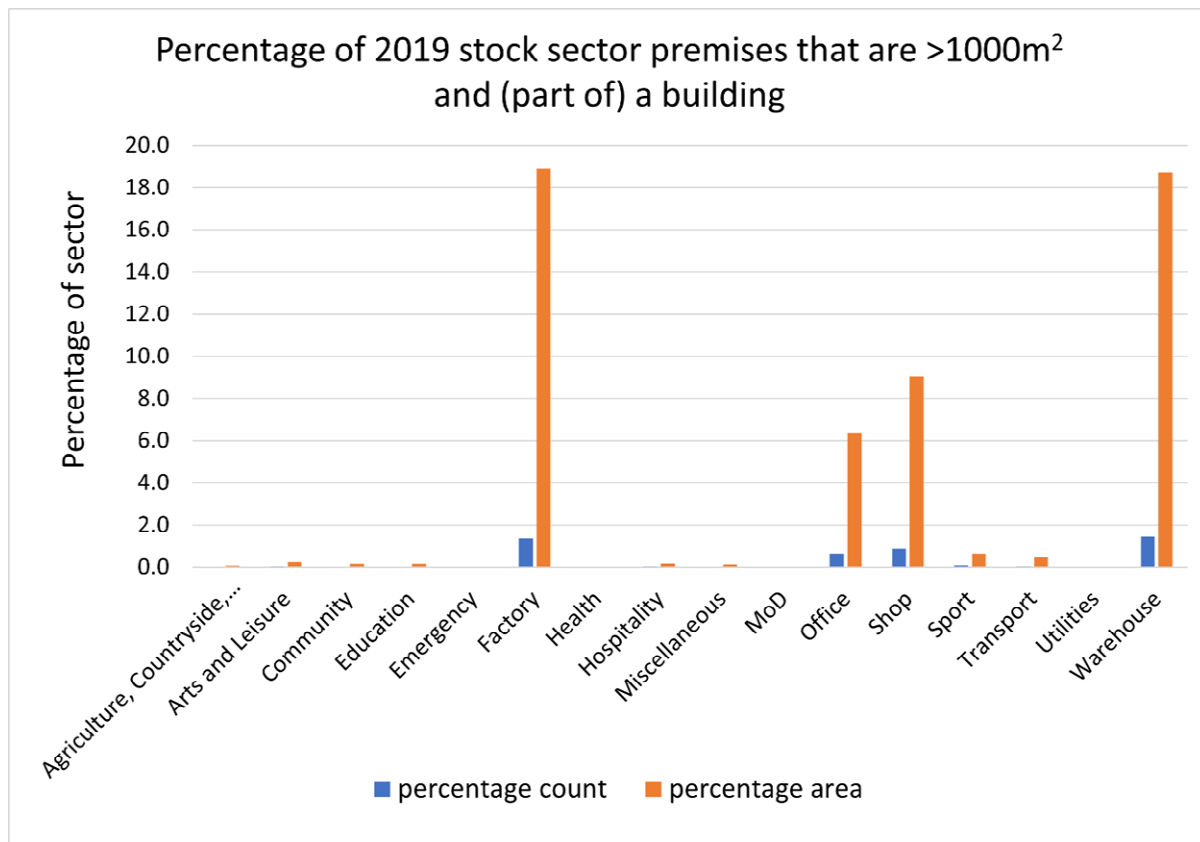


Figure 1: Percentages of all VOA premises >1,000m² per activity group, in England and Wales, in 2019.

Page 18. Last para - "However, for the reasons outlined above, the evidence is showing that, in buildings above 1,000m² (which tend to be more complex), the EPC rating does not translate to the energy performance of the building in practice, as defined by its energy and carbon intensity. This is shown in Figure 2 below, courtesy of analysis undertaken by the Better Buildings Partnership."

For the most part, we do not know whether this is the case with 'buildings' that are not offices such as warehouses, factories, the hospitality sector etc., which remain largely ignored. This is a serious omission, especially in the case of factories and warehouses, which combined constitute more than 60% of all measured non-domestic floor area in England and Wales, according to Valuation Office Agency data for 2019.

Page 20 - "Figure 3: Commercial Services Energy Consumption"

According to analyses of VOA data for England & Wales (2019), most of the premises that are (part of) buildings and >1000m² are factories (1.4% of all premises and 18.9% of all recorded floor area) and warehouses (1.4% of all premises and 18.7% of all recorded floor area). Note that, as a percentage of floor area, these may be slight over-estimates due to some activities, such as schools and hospitals, not having floor area records in the VOA data. However, some very large premises do not have any VOA floor area records. Of premises with a rateable value

> £1m, but without floor area records, >50% are in the Hospitality, Education and Health sectors (Table 1). It is highly likely that these premises will be >1000m².

Table 1: Breakdown of premises activity types (in England and Wales in 2019), where VOA rateable value >£1m and premises (part of) a building, or buildings. These premises have no floor area record.

CaRB2 Class	Count premises	Percentage
Hospitality	332	21.91
Education	265	17.49
Health	231	15.25
Factory	135	8.91
Utilities	98	6.47
Transport	96	6.34
MoD	76	5.02
Arts and Leisure	74	4.88
Community	60	3.96
Sport	55	3.63
Warehouse	30	1.98
Emergency	24	1.58
Office	21	1.39
Miscellaneous	15	0.99
Shop	2	0.13
Agriculture, Countryside, Animals	1	0.07
SUM	1,515	100

The EEP (BEIS Energy and Emissions Projections) relies on DUKES, which is segmented by SIC (standard industrial classification), which is not a reliable indicator of the actual activity in a building. For example, in DUKES the energy used by the head office of a plastic pipe manufacturer would be classified as being used by “plastic pipe manufacturing (industry)”, not commercial office activity. Therefore, an unknown amount of energy attributed to “industry”, in DUKES, is actually being used in offices (as defined by the VOA). This will apply to other activities, too. This uncertainty in the accurate alignment of SIC and premises activity may be

assumed to affect the quantification of energy used in building/premises types, both of the status quo and any evaluations of policy scenarios.

The above evidence is meant to add to the consultation a greater sense of complexity in moving from the implicit 'office' orientation to a true and accurate understanding of the full 'non-domestic sector'. We understand that a perfect scheme is impossible, but wish to note that some significant imbalances may result from implicit assumptions based on data and experience in one non-domestic sector (offices) being imputed across other domains.

Question 2

Do you support the rationale set out in this chapter? If so, are there any changes you would make or considerations you would add to the rationale the Government has set out? If not, could you please explain why, providing evidence where possible.

A floor area limit of 1000m² may leave some large commercial companies largely exempt from the proposal. For example, large coffee shop, retail or banking chains and suchlike may have scores of premises, but none of them reaches the 1000m² threshold. Should these large organisations' premises be exempt, especially when they are more likely to have the in-house organisational capacity to make changes than smaller businesses that operate a single large site?

How is 1000m² defined? To which of the following does it apply?

1. 'a building'
2. 'premises'
3. 'premises that are one building'
4. 'premises that are part of a building'
5. 'multiple buildings that form premises with an area >1000m²'
6. 'an address'

How is the 1000m² measured?

1. Gross internal area (GIA)
2. Net internal area (NIA)
3. Total usable floor area (TUFA)
4. Sales floor area (SFA)
5. Something else

In support of the issue regarding companies/organisations occupying large numbers of premises smaller than 1000m², Figure 2 below, shows an analysis of Camden, London. The

figure indicates that there is a small number of single-site occupiers in premises >1000m². However, the figure also demonstrates that there is a very small number of occupiers with multiple sites that, when taken as a whole, exceed the proposed 1,000m² threshold. Note that including these occupiers with multiple sites would almost triple the amount of floor space within the scope of the proposed scheme. Also, because the number of organisations in this last category is quite small, the administrative burden should be reduced for both the occupiers and the administration of the scheme. This is only a snapshot of a single local authority, so the effect would likely be seen to varying degrees across the whole of England and Wales, demonstrating the extent of organisations who would be exempt from the scheme in the current proposal.

Other policies, such as the Carbon Reduction Commitment and ESOS, focused on 'organisations' as the unit of analysis. Adding a rationale for this policy focusing on 'buildings', with the appropriate pros and cons, could promote a sense of joined-up policy as well as transparency.

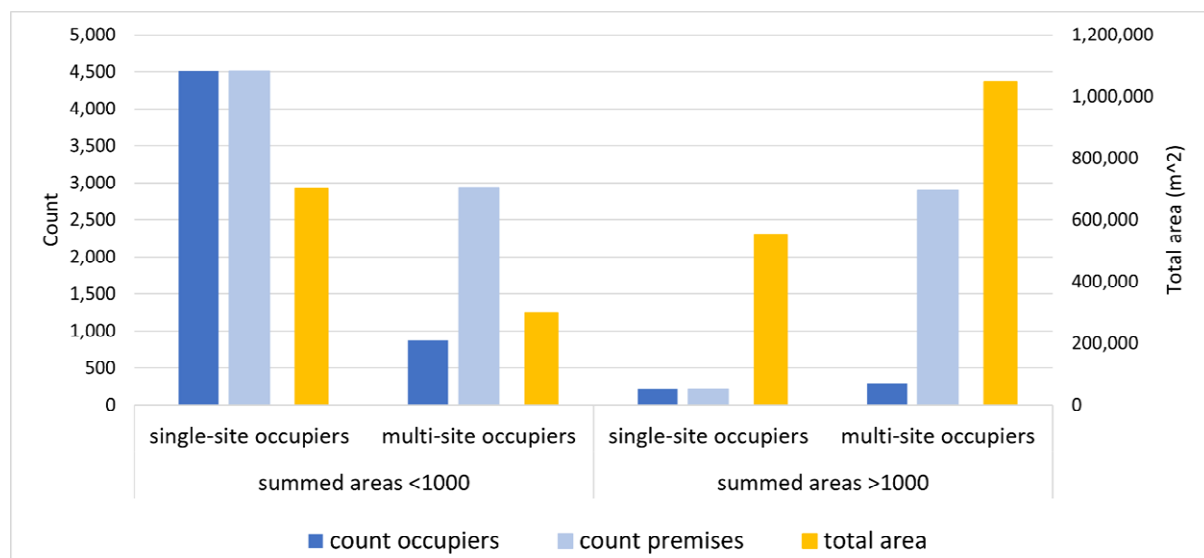


Figure 2: Breakdown of Camden VOA premises and their occupiers (where known, approximately 95%). Comparison of single-site and multi-site occupiers¹ and the total floor area they occupy (2019).

How will floor area be established if the target building/premises/whatever does not have an EPC? If the intention is to use Valuation Office Agency (VOA) data, is this permitted? Also, not all premises (hereditaments in VOA-speak) have a recorded floor area and some 'areas' in the

¹ Occupant data courtesy of: Chait, Gavin. Whythawk, *Sqwyre longitudinal commercial location data for England and Wales. 2016-2021 [CSV files]*. Sqwyre.com, May 2021.

VOA data are not actually areas (e.g. bed spaces, car sales spaces). How will these be addressed?

Note, also, that not all premises are (part of) a building and that some 'areas' of those premises that are, overall a building, are not internal. Examples would be forecourt areas outside restaurants, or factory yards, which are subject to business rates but are not internal to a building. Examination of 2017 VOA data indicates that approximately 10% of the summed areas of all premises are not part of a building and/or not internal. For 2019 data, this rises to approximately 12%. It would not be reasonable to include these areas within any benchmark, especially as they cannot be compared to Energy Performance Certificate criteria, which only cover treated spaces. At the other extreme, some premises may be largely open-air, with a small 'building' floor area but a large amount of energy used in processes – for example, chemical plants.

Page 30 - "Figure 6: Ways to improve a performance-based rating in a large commercial and industrial building."

This figure does not recognise the role of 'process' energy use, in any way. This means that the role of process energy in overall metered energy use and its incidental effect in heating the building is not addressed. In some instances, occupiers will be desperately trying to shed process heat from the building, which requires improvements to processes and not necessarily the building itself, or the operation of the building.

Overall, the government appears to assume that because NABERS has demonstrated an effect in reducing energy demand in offices in Australia, that this effect will also be seen across many activities that are very much more diverse than office work, in England and Wales. Similarly, the nature of buildings in these countries has a more diverse history, in terms of construction techniques, changes of use, refurbishment styles etc. It might be more effective to make these assumptions explicit and provide a rationale for moving ahead despite the complexity.

Question 3

Do you support the Government's proposal to underpin a performance-based policy framework with a rating that looks to modernise the DEC, in the ways set out above? If so, are there any changes you would make or considerations you would add to the proposal? If not, could you please explain why, providing evidence where possible.

Page 32 - "It should be introduced on a sector by sector basis, with ratings tailored to the needs of each sector or specific building type."

Absolutely. Without this, the role of 'process' energy cannot be quantified in an equitable manner. However, government needs to be aware that a 'building type' is not necessarily directly related to an 'activity type'. For example, the same 'building type', such as a light industrial unit, could contain a mix of activities: wholesale distribution; engineering works; builders' merchant; foundry. These activities will have very different levels of energy use (and perhaps energy fuel), whilst the buildings themselves will be largely similar. Essentially, it is the activity that results in energy use, not the building *per se*. See also the earlier response regarding the allocation of energy use to activities. Sectors also cross activities and building types. So, for example, a large retailer will have a portfolio of properties that incorporate shops, offices (to run the shops), warehouses, and sometimes also cafes or restaurants.

Page 33 - "buildings will also not just be benchmarked against their peers but also assessed in relation to a net-zero trajectory"

This is a good idea. It will help quantify just how much there is still left to do.

It is important to note the difference between NABERS-AUS and the proposed operational rating scheme. NABERS rating in Australia is based on carbon intensity ($\text{kg.CO}_2/\text{m}^2$) not on energy intensity (kWh_e/m^2). It is not clear how the government intends to assess rated buildings in (kWh_e/m^2) against a net-zero trajectory.

- Clarity is necessary on what net-zero means for the non-domestic building stock, and some questions need to be answered, such as: Are there specific Energy Use Intensity (EUI) and Carbon Intensity targets to be achieved?
- For example, The UK Green Building Council (UKGBC) and the Carbon Risk Real Estate Monitor (CRREM) provide pathway targets for energy and carbon intensities. Further work is required to ensure that targets are developed across all non-domestic building stock not only offices.
- Is the net zero carbon trajectory based on 1.5 or 3.0 degrees scenario?
- How does the assessment deals with renewable energy procurement? And is there an acceptable threshold for that?

- How does the assessment deal with Carbon offsetting? And is there an acceptable threshold for that?
- Does the assessment use the “Base Building” or the “Whole building” rating against the net zero carbon target?

"It can also encourage lenders to provide innovative mortgage and lending offers which encourage and reward buildings for performing better."

What is the business incentive for lenders to do this?

One policy cannot fit all circumstances and do all things. Adding some reasonable boundaries to expectations might be fitting, and again, promote a sense of joined-up policy.

Question 4

The Government proposes that, as a first step, building owners and single tenants should be required to obtain an annual performance-based rating, and disclose that rating online. Do you support this proposition? If so, are there any changes or amendments you would make to the proposal? If not, could you please explain why, providing evidence where possible.

Page 34 - "As the rating framework is outcome based, the Government can track progress against those transparent targets, and introduce targeted regulation if the level of energy reductions and carbon savings needs to accelerate."

Most likely it will be a case of 'when' not 'if' the rate needs to accelerate.

"receive a rating based on the building's annual energy and carbon performance."

Will this rating be modified as standards (the benchmarks) become more stringent? Both metrics are needed, as a reduction of carbon intensity in energy vectors will automatically reduce carbon intensity for the same energy use intensity, without any other improvements being undertaken.

Page 35 - "used to satisfy some of the current 'trigger points' that exist under EPC regulations. For example, prospective tenants and buyers must be made aware of the rating before the building is let or sold."

Yes, but the specificity of the benchmark needs to be recognised, as it will change if the use of the building changes. However, the activity classifications in EPCs are quite broad, so the requirement for a new EPC, based on a new activity, might not be precise enough to trigger the re-evaluation for the proposed benchmark scheme.

Page 36 - "A performance-based rating will show perspective [sic] buyers and tenants how the building is performing, in terms of climate impact, against similar building types. It will also provide a clear indication of the running costs they can expect if they use the building for the same purpose."

This only applies if the prospective buyer/tenant uses the premises in precisely the same manner as the occupier for whom the data are/were relevant, and that the prospective occupier can have access to the operational characteristics of the previous occupier. This last part seems less likely to be acceptable, as it could divulge operational characteristics of a commercially sensitive nature.

Also, it is not clear whether BEIS is referring to the "Base Building" or the "Whole Building" energy rating. Buyers, investors, occupiers, and tenants are likely to have different priorities and different assessment criteria for buildings.

In Australia, the NABERS "Base Building" rating is used by landlords to market the performance of office buildings (common areas and building services under landlord control) to attract tenants based on that rating, the energy used by current/prospective tenants is irrelevant. The evidence that this approach works in Australia is only valid in the Prime office sector.

"For that reason, the Government could allow building owners to use their annual performance-based rating to satisfy some of the current 'trigger points' that exist under EPC regulations, specifically where the building is sold or let. That would mean building owners will not have a regulatory obligation to get a different building rating, on top of the annual performance-based rating they will be required to provide annually."

But an EPC is valid for ten years. Only if the building/premises owner wants to update the EPC will it be replaced, except where a change of occupier coincides with the ten-year limit. Also, the cost of a non-domestic EPC is somewhat more than a domestic EPC.

"However, the Government could also continue to require buildings above 1,000m² to present a valid EPC where the building is sold or let, as the two metrics could work together."

This is a better and more logical path towards improvements, allowing a comparison of the potential of the building fabric and systems (the essence of the EPC), versus the manner in which they are operated by the occupier.

"Where a building has a high EPC score [sic, ND EPCs are better with a LOW score] and low performance-based rating, it would appear that a theoretically efficient building is being operated and run poorly. Where a building has a low EPC score and a low performance-based rating, it

could be the case that the building is being run as efficiently as possible, but fabric and service upgrades are required.”

For that specific occupier, with that combination of building and activity, only.

If the new occupier has a different activity, the EPC is the only part that is relevant. And even that is linked to the activity in SBEM! Even the same activity with a different operating structure – such as reduced/increased occupancy – will affect the relevance of the new performance metric.

Page 37 - “The Government anticipates that prospective buyers or tenants would request the building owner commission an EPC, or building survey, if they were to use the building very differently to the previous occupant.”

Perhaps a change of planning use class could be used to force the generation of a new EPC. However, in some cases, the planning use classes are so broad this might not generate enough new EPCs. Alternatively, some Sui Generis planning use classes are so specific as to be more closely tied to the operational rating, anyway.

An additional potential advantage of this planning use class trigger might be the flagging of potential change at the local authority level. This, in turn, might enable better engagement with occupiers, by local government officers responsible for energy use (think in terms of local energy efficiency schemes, upcoming district heating systems and suchlike).

“To demonstrate compliance with ND PRS MEES they then need to:

- get a performance-based framework rating, annually, and have it disclosed online*
- provide proof of installation of the set of measures, agreed when the building is onboarded, by 2030”*

This is the bit that will really matter. Enforcement of the installations will be absolutely critical, otherwise the system could be massively abused.

Regulation, without effective enforcement, is not regulation. However, even voluntary operational ratings are better than nothing (e.g. the US ENERGY STAR scheme has promoted some market transformation across a number of different sectors).

Question 5

What is the best way to support Small and Medium Enterprises in obtaining annual performance-based ratings, where the owner of the building or the single tenant is an SME?

Here is a key problem in the adoption of a scheme based solely on a floor area threshold.

Where businesses are actually quite small, in terms of their turnover and/or profits etc., but still operate from premises >1000m², they will be disadvantaged compared to larger businesses that also operate large premises or indeed many smaller premises, which *in sum* constitute significantly more floor area (and energy use) than single-site businesses.

Page 37 - "The proposals in this consultation are different to those schemes because the rating will be performance-based at an individual building level, and the rating will be benchmarked to similar building types."

This is important. Large organisations, operating on many small sites need to be scooped up into the framework, otherwise it means that SMEs could suffer proportionally higher operational burdens than businesses that are magnitudes larger and more able to make significant contributions to energy use reductions.

"Some suggestions for synergies with ESOS are outlined in Chapter 4 of this consultation."

ESOS is a separate regime, but it could be used to trigger a requirement for operational energy ratings for all premises operated by an organisation required to report under the terms of ESOS. It is a simple flag from one scheme to the other, subject to information on which premises are being operated by any given organisation. This latter information would have to come from HMRC, via the Inter-departmental Business Register, I think.

The added benefit of a tie-in to ESOS, is that the EA has legal powers to impose fines for non-compliance with ESOS, which means it has the experience of how to impose sanctions. Including the requirement to report all premises into the ESOS submission would not be a significant burden for these large organisations. Provision of the relevant UPRN and VOA UARN/assessment reference would be sufficient to identify premises.

Question 6

Should the Government:

- Allow owners of buildings above 1,000m² to use their annual performance-based rating to satisfy their existing regulatory obligation to present a valid EPC before a building is sold or let. As set out above, under this option the Government would continue to collect data about fabric and service improvements. Where prospective buyers or tenants want information about the building fabric and services, EPCs can be obtained on a voluntary basis.
- Continue to require owners of buildings above 1,000m² to present a valid EPC where the building is sold or let, recognising that the EPC and a performance-based rating assess different things, and can collectively provide a better level of information about the building than either rating would in isolation.

This is a better and more logical path towards improvements, allowing a comparison of the potential of a premises/building's fabric and systems (the essence of the EPC), versus the manner in which they are operated by the occupier (the proposed scheme).

Question 7

Recognising that the Government has committed to review the threshold for each sector, do you consider 1,000m² to be a sensible starting position for determining which buildings should be required to obtain annual performance-based ratings?

The definition of what the 1000m² applies to needs to be more precise. Is this 1000m² buildings, or premises, or both/either? The application of a flat 1000m² area threshold is arbitrary and will not represent the true distribution of floor areas associated with different types of non-domestic activity. A 1000m² shop is relatively large, whilst a 1000m² warehouse is comparatively small and is likely to have a relatively low level of total energy use, too (assuming it is not chilled etc.).

Question 8

Should the Government consider expanding the performance-based rating to cover factors such as water, waste and indoor air quality? What do you consider would be the benefits of this approach? Would there be any drawbacks?

As with energy (see Question 3), separation of 'process' water will be required. Also, the consumption of water is not necessarily linked to floor area, but to the activity *and* to the hours of occupation and occupation density of premises.

Definitions of 'waste' will be required, plus consultation with bodies which deal with this issue as their primary activity, e.g. WRAP.

Air quality also needs very careful consideration, as different activities will have different processes that will result in different levels of air contamination and different (existing) strategies for dealing with it. Each of these has an effect on energy use, too.

Question 9

Has the Government identified what you consider to be the right objectives for a successful delivery model?

The objectives are more complicated than the consultation seems to recognise. Setting appropriate boundaries for what can and cannot be achieved through this policy, based on available evidence, would help set a stronger frame for 'success.' Additionally, pairing this 'building-based' policy with other 'organisational-based' policies (at least in the consultation) could help provide a more joined up picture to the market actors it hopes to influence.

Question 10

Do you support the Government's proposal that the annual rating should not be accompanied by recommendations for improving the rating? If so, are there any changes you would make or considerations you would add to the proposal? If not, could you please explain why, providing evidence where possible.

Non-domestic premises/buildings are more complex than domestic. For recommendations to accompany the energy rating, the assessor would require sector-specific knowledge of fabric, plant, process equipment etc. However, it may be possible for assessors to act in a surveyor capacity to accurately and precisely describe the premises/building and its operation without having to understand the intricacies of the activity contained therein. If this is done

effectively, a 'recommendations expert' could then work with these data to provide relevant recommendations to the occupier or owner. However, the question arises of whether the recommendations expert will be able to trust the information he is given. Will these professionals be willing to stake their reputations on data, collected by someone else? Government should test this through industry surveys, before initiating such a scheme.

Question 11

Do you support the Government's proposal that exemptions should be limited to a relatively few buildings? Are there any grounds for an exemption that you feel are appropriate, which the Government has not considered? Ahead of the findings from the Government's research project we also welcome views on how the requirement to obtain and disclose an annual rating could be enforced most effectively.

If the Government really wants to ensure enforcement of standards, it should include funding for an enforcement body in the legislation setting up that body. Consider here, the difference in the effectiveness of the enforcement of Health and Safety law via the centrally-funded Health and Safety Executive, or environmental law enforcement by the centrally-funded Environment Agency, versus the questionable level of enforcement of Building Regulations, which are self-funding.

If the Government is seeking equity in the application of this proposed scheme and its enforcement, it should fund it from Central Government coffers, with the funding mechanism written into legislation. In this way, companies and individuals who are operating at a profit, will contribute through corporation or income tax, whilst those currently operating at a loss will not be pushed further into loss and away from a tax-paying position of profitable operation.

Regarding enforcement: why not tie the submission of energy performance as a condition of submitting a corporation tax return, or as part of the requirements for audited accounts? Without the required energy performance submission, the accounts cannot be signed-off. This may have a dual benefit: 1. the enforcement of the regulation; and 2. highlighting to company accountants, auditors, company owners and company secretaries the importance of energy use, which in turn could/should drive down expenditure on energy and the consequent emissions.

Question 12

Are there any considerations you would like to add to the Government's analysis of the factors that are likely to drive improvements in ratings? Do you support the Government's proposals to improve ratings from day one?

It is essential to initiate improvements immediately. The clock is ticking and there will almost inevitably be some failures along the way. However, the overall structure of the proposal needs to better reflect the heterogeneity of non-domestic buildings and the activities they contain. As it stands, some aspects of the proposed scheme are likely to be fairly straightforward for offices, but *only* for offices. Other activity types are likely to be far more complex, which is why they have been largely ignored. This ignorance needs to end because not all non-domestic buildings are offices.

Question 13

Do you consider that linking a clear financial incentive, or disincentive, to annual performance-based ratings would be an effective way to drive improvements in those ratings?

Yes, see response to Question 11. The improvement should not just come in the ratings, as these improvements must be a true reflection of actual energy use and the consequent emissions.

Question 15

Do you agree with the Government's assessment and preferred approach? Please provide evidence or case studies, where possible, in your response.

Page 58 - "• Base rating: this rating will apply to building owners in a multi-tenant site and will capture central services and central areas

- Whole building rating: this rating will be relevant to building owner occupiers or to large single tenants, and will capture all energy associated with the site for all services*
- Aspirational/voluntary tenant rating: if large tenants have a significant floor area (>1,000m²), the Government could look to make a tenant rating available on a voluntary basis in the future. This rating will account for all energy used within a tenant's space including light and power and any supplementary hot water or air conditioning systems"*

This seems to assume that there are no premises $>1000\text{m}^2$ that share a building with other premises $>1000\text{m}^2$ or indeed smaller. This is not the case, in reality. There are indeed buildings/sites with multiple $>1000\text{m}^2$ premises. Using results from the UCL 3DStock model², in Greater London in 2017, there were approximately 3,800 such premises sharing a building. This represents 4% of all premises in England & Wales with floor areas $>1000\text{m}^2$. It is likely that more of this type of building will occur in other parts of England & Wales. Note that the 3DStock model does not contain data on premises or building tenure, so the situation may be even more complex.

Where premises $>1000\text{m}^2$ share a building with other such premises, they would – according to the current structure of the proposal – be exempt from the process. In contrast premises that are either single-tenant, or owner-occupied, would be within scope. How would BEIS propose to deal with this apparent bias in making the latter occupiers subject to the scheme, whilst occupiers of other $>1000\text{m}^2$ premises would be exempt?

Question 16

**Do you agree that flexible energy use should be a core component of the rating?
What is the best way, technically, to reflect flexible energy use in the rating structure?**

A very clear definition of 'flexible energy use' will be required if this route is taken.

Some businesses may be disadvantaged by an intrinsic inability to be 'flexible'. Such inflexibility may be beyond the control of a business, for example the local electricity distribution network might be incapable of coping. Alternatively, a business may be forced to operate and use energy at specific times, such as catering premises in and around railway stations.

² <https://www.ucl.ac.uk/bartlett/energy/research-projects/2020/nov/3dstock>

Question 17

Do you agree with the Government's preferred option to use a star rating format? Are there any formats which the Government has not considered that you believe could be more effective?

The use of a small number of stars might be counter-productive if operators consider the jump to the next star to be too onerous/costly. The application of half-stars might help address this.

Question 18

The Government welcomes feedback on the considerations outlined above. What are the key factors that the Government should consider in determining fair and effective rating benchmarks and a fair and effective rating scale? Where possible, please provide evidence, or case studies, to support your feedback.

The definition of 'building' in the context of this consultation is imprecise. Does the government mean 'buildings' (a physical structural entity), or 'premises'/'hereditaments' (a precise legal definition) which are not necessarily (part of) a building?

What precisely is being measured to define premises/buildings as being $>1000\text{m}^2$?

Where will these measurements come from prior to the premises/buildings being subjected to measurement within the scheme?

How would the compliance with this scheme be measured? (e.g., 85% of all non-domestic buildings $>1000\text{m}^2$ are compliant)

Not all businesses operating in premises $>1000\text{m}^2$ are large businesses, or necessarily large energy users.

Some very large businesses, with good existing capacity to address their energy use, operate in many sites that are substantially less than 1000m^2 (See Figure 2, above). Does the government propose to exempt these large businesses from the scheme, thereby disadvantaging potentially smaller organisations who must comply with the scheme and take on its cost burdens, just because they operate in a single premises of $>1000\text{m}^2$?

Separate 'process' energy from the energy used to operate the premises. Without this separation, it will be near impossible to differentiate between metered energy used for the activity/process and the energy used for the operation of the actual building. The two are indirectly connected but are separate in the methods of addressing energy use reductions.

How do the proposed operational rating benchmarks address both energy and carbon intensity? Is it a combined weighted benchmark (e.g. 75% Energy intensity and 25% Carbon Intensity?) or some other method?

What is the definition of meeting the Net-Zero carbon target? Are there specific energy and carbon intensities (Base or Whole building) to be achieved by a specific deadline? What are the consequences for not achieving these targets?

This proposal mandates two rating scopes, measuring two different scopes of buildings:

- Whole building for owner occupied or single-tenanted buildings and
- Base building for multi-let buildings

How does BEIS propose to make these two ratings comparable with each other? And against Net Zero Carbon targets?

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