REA response to BEIS Call for Evidence on Energy Performance Certificates

The Renewable Energy Association (REA) is pleased to submit this response to the above consultation. The REA represents renewable electricity, heat and transport, as well as Electric Vehicle companies and Energy Storage. Members encompass a wide variety of organisations, including generators, project developers, fuel and power suppliers, investors, equipment producers and service providers. Members range in size from major multinationals to sole traders. There are around 550 corporate members of the REA, making it the largest renewable energy trade association in the UK.

Introduction

The use of EPCs is a key tool for consumer understanding of energy efficiency in buildings offering clear direction for the uptake of energy efficiency measures including installation of renewable energy technologies. The REA is the leading trade body for renewable energy and clean tech and our members are involved in the manufacturer, distribution, sale and installation of energy efficiency measures for homes and workplaces, across many renewable technologies.

This consultation response addresses four key issues for the improvement of reliability, and effectiveness of EPCs:

- addressing the Standard Assessment Procedure (SAP) and Reduced Data SAP (RdSAP) calculation issues with deemed export and efficiency assumptions about renewables technologies – especially with reference to the electrification of heat
- update EPCs and SAP to reflect the rapidly falling technology costs reflected in the renewables and clean tech markets
- inclusion of a 'smart readiness' measurement either in EPCs or Green Building Passports, to encourage the uptake of technologies such as smart meters
- more prominence on the carbon emissions rating, as a measure to improve public knowledge of the reason behind EPCs and Clean Growth Strategy targets

It is felt overall that Energy Performance Certificates do not currently positively and fairly reflect, or encourage the uptake of, renewables technologies, and especially discourage the electrification of heat even where the energy source is 100% clean renewable energy. The key areas for contention on the calculation methods of EPCs through the SAP and RdSAP methods are around energy cost per square meter calculations, assumptions on consumption vs export rates of on-site generation, and a lack of emphasis on the carbon emissions rating in comparison to energy performance/cost based rating.

The REA feels that EPCs are a clear and powerful method of communication to homeowners, and therefore should be up-to-date on cost-benefit calculations of

renewable technologies (of which costs are rapidly decreasing) to effectively support reaching the EU EPBD and Clean Growth Strategy targets.

Furthermore, there is room for data on the 'smart-readiness' of buildings to be collected either in the EPC or through other methods such as the 'Green Building Passports' highlighted in the consultation. This would allow for both an improvement of consumer awareness of smart technology measures in addition to the collection of key statistics in preparation for the transition to a smart, decentralised energy system.

Answers to Specific Consultation Questions

1. **Have we captured all of the current uses of EPCs? Are there any existing or emerging uses we should be aware of?**

Yes.

2. **Do you agree that we have identified the key attributes for EPCs? Are there other important attributes we have not listed? Please indicate how important you consider each attribute and provide details to explain your answer.**

Yes.

	Very important	*Important*	*Somewhat important*	*Not important*	*Unsure/no opinion*
Reliability		X			
Accuracy		X			
Up to date		X			
Improves energy performance	X				
Influences property decisions			X		
Access to data		X			
Coverage			X		
Simple and low cost			X		

The key attributes have been identified and the REA considers that the most important attribute is encouraging action to improve energy performance. It is well understood that the uptake of clean energy generation and the transition away from carbon intensive energy sources will be the most efficient way to meet the Clean Growth Strategy and EU Directive on Energy Performance in Buildings targets. Smart technologies in the home are also crucial to engaging consumers in their energy consumption habits – which plays a larger role in energy consumption than building materials. Another crucial aspect of EPCs therefore should be to encourage installation of smart technologies in addition to using energy from renewable sources.

Other important attributes are the availability and ease of access of data for policymakers, researchers and businesses in addition to the quality of the data. Therefore measures must be taken to update the SAP and RdSAP methods to account for rapidly decreasing costs in renewables and smart tech, and market

changes with regards to export/generation measurements – some of these may have been addressed in the SAP 2012 – SAP 10 changes and it is encouraged that these are implemented with urgency.

3. Which attributes are important for which uses and why?

	Reliability	*Accuracy*	*Up to date*	*Improves energy performance*	*Influences property decisions*	*Access to data*	*Coverage*	*Simple and low cost*
Providing information to consumers	X	X	X	X	X			
Minimum standards for rental properties	X	X	X	X	X	X		X
Eligibility criteria for FiTs/RHI	X	X	X				X	X
Eligibility criteria for ECO funding	X	X	X			X	X	X
Use by 3rd parties for research etc	X	X	X			X	X	
Green mortgages and green finance	X	X	X		X	X		
Target setting for government policies	X	X	X	X		X		

Information on carbon emissions is crucial for both goal setting in the clean growth strategy, and 'green tagging' assets for green finance. It is felt that the carbon emissions rating is not as valued or prominent as the energy efficiency rating – therefore encouraging investment in upgrades and technologies which will cut costs rather than reduce CO2 emissions which causes inaccuracy and misdirected focus when using EPCs for goal setting in the clean growth strategy.

For measuring performance towards meeting Clean Growth Strategy goals and meeting the EU directive on Energy Performance in Buildings, data quality is the most crucial attribute. There are concerns that the main rating of EPCs is based on fuel cost per square meter, although it would be more beneficial to use the Carbon emissions rating as the key measure. This is due to the fact that certain innovative technologies may not be price competitive yet, in addition to SAP/RDSAP modelling being out of date with regards to falling costs and general cost-benefit calculations of new/emerging technologies.

4. What evidence do you have relating to the reliability of EPC assessments? Do you have any information on how reliability varies across different properties, and/or the likely sources of variation in assessments? It would be helpful to indicate how recent this is.

It is felt that the unreliability of EPCs lies within the calculation methods. Numerous reports show that estimated energy costs are inaccurate as building use is not taken into account.[1]

Furthermore, calculations in the RDSAP and SAP make estimations/assumptions about new technologies which are outdated. For example, the assumed export for solar PV is currently at 50% - with the removal of the export FiT and the rise in uptake of battery storage it is likely that a larger percentage of on-site generation will be consumed. It is understood that changes from SAP 2010 to SAP 10 will allow for this[2] which is welcomed by the industry.

Another example may be seen in biomass wood-pellet boilers, which are acknowledged as the same efficiency as a wood-burning stove in the SAP (around 60% efficiency despite in reality having over 90% efficiency – closer to conventional gas boilers[3]).

The main concern around EPC reliability is that the SAP/RdSAP statistics and formulae are not up to date, in an especially fast-evolving energy market.

5. Which of the suggestions provided above do you think would be effective in improving the reliability of EPC ratings? Do you have any other suggestions for improving EPC reliability? Please provide reasoning and any evidence you have to support your response.

	Very effective	*Effective*	*Somewhat effective*	*Not effective*	*Counterproductive*	*Unsure/no opinion*
Apps and smart defaults						X
Better measurement technologies		X				
Ability to use survey data from previous EPC						X
Access to additional sources of data about the building		X				
Strengthened quality assurance	X					
Other suggestion (please give details below)	X					

More provisions need to be made for updating cost-benefit calculations of renewables technologies which are falling rapidly to ensure that EPC measurements are up-to-date. This is especially important in heat. Some electric heating systems may be more efficient and cost effective than gas central heating when powered by renewable energy sources.

[1] Jones Lang LaSalle, A Tale of Two Buildings, 2012 http://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBP%20JLL%20-%20A%20Tale%20of%20Two%20Buildings%202012.pdf

[2] Proposed Changes to Governments Standard Assessment Procedure, BEIS, 2016 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/571939/SAP_consultation_document__with_links_.pdf

[3] Biomass Vs Conventional Gas Boilers, The Green Age https://www.thegreenage.co.uk/tech/biomass-boilers-versus-conventional-gas-boilers/

Anecdotally we have understood that there have been numerous cases of EPC running cost estimations increasing once homes' heating systems have been changed to electric despite installing renewables technologies as the energy source. The current calculation method disincentivises electrified heat when powered by on-site renewables.

The use of apps and smart defaults would be highly beneficial if these defaults were frequently updated to be in line with market developments, although otherwise would still provide inaccurate/unreliable data.

6. **What evidence do you have on the accuracy of the models used to produce EPCs (SAP, RdSAP, SBEM, DSM) in comparison to other methods such as the co-heating test?**

It is felt that the RdSAP and SAP do not give a fair cost measurement of electric heating and renewable energy technologies. It may be of interest to link the cost estimations in the SAP and RdSAP modelling to official BEIS data on cost per kW for specific technologies, provided this can be updated frequently.

Furthermore, the SAP and RdSAP takes into account renewable energy generation (unlike the co-heating test), although energy cost per square meter calculations should more accurate and therefore support/encourage clean energy sources.

7. **Are you developing any kind of tool for measuring the energy performance of buildings (controlling for the effects of occupant behaviour) using smart meter data or other data, which could be relevant for EPCs?**

No.

8. **What evidence do you have on how the accuracy of EPCs could be improved using the tools and data sources outlined above, or through any other means? Do you have any views as to how these approaches could best be incorporated into the current EPC framework?**

The information provided with the home improvement suggestions should detail why specific costs are high/low and link to environmental impact, for a more contextualised understanding. For example, cavity wall insulation may be cheaper and save more money than installation of solar PV in the short term, but solar PV may reduce carbon emissions much more.

Furthermore, the utilities supplier which the household uses could be taken into account, as some consumers are with 100% renewable energy utilities suppliers reducing their carbon footprint massively, although it is understood that the utilities supplier is not considered permanent.

It should be noted that for more complicated buildings, the EPC compliance approach shouldn't be confused with full energy modelling (using dynamic modelling software packages).

9. **What evidence do you have on how frequently people are likely to make updates to their properties which would change the EPC score?**

Only on installation of renewable technologies applying for the higher feed-in-tariff rate.

10. Which of the suggestions provided above do you think would be effective in ensuring that the information on EPCs is up to date? Do you have any other suggestions for ensuring EPCs remain up to date? Please provide reasoning and any evidence you have to support your response.

	Very effective	*Effective*	*Somewhat effective*	*Not effective*	*Counterproductive*	*Unsure/no opinion*
Reduce validity period (3 or 5 years)	X					
New EPC required for extensions and major renovations	X					
New EPC required for other changes affecting EPC		X				
Trigger point specific to HMOs						X
New EPC required for Green Mortgage		X				

The SAP and RdSAP models require constant updates due to the fast-changing nature of renewables and clean tech. EPC accuracy and information becomes outdated when assumptions such as deemed export and appliance efficiency are not updated. For example, as previously discussed, the 50% export, 50% consumption assumption for solar PV generation is already out of date and will become more inaccurate with the falling costs of battery storage, and removal of the export FiT. Additionally, the efficiency of renewables and smart tech is rapidly improving, especially in heat which has a large impact on the overall EPC rating. The cost assumptions for most renewable technologies are also out of date, creating a major barrier to encouraging the uptake of these technologies.

11. Would you support introducing new EPC trigger points at any of the stages listed above (or any other stages)? What evidence do you have relating to the advantages and disadvantages of any of these trigger points?

	Yes	No	Unsure/no opinion
Extensions and major renovations	X		
Other works to the building affecting the EPC rating	X		
Where an HMO doesn't already have an EPC and a room is rented out			X
For applying for a 'green mortgage' or green finance	X		

It is important that more buildings undertake EPCs to encourage investment in energy efficiency measures, including those buildings which are not part of the private rental sector, or which have not been sold / are not likely to be sold in the

near future. All of the suggested trigger points would be useful to increase the number of buildings undertaking EPC assessments. Extensions and major renovations, or building retrofits are especially useful situations in which to conduct an EPC assessment, to encourage uptake of energy efficiency measures being carried out alongside other works which reduces overall installation costs.

A final point is that it may be beneficial to introduce trigger points for EPCs at every council tax or business rates revaluation, or mortgage refinances – this would drastically increase the number of building owners engaged with the EPC system and therefore improve knowledge and actions towards energy efficiency.

12. What evidence do you have on how useful the EPC recommendations are to consumers when they are considering making changes to a property? How effective are they at encouraging consumers to take action?

The most often highlighted benefits of EPCs in real estate are information about energy costs[4] – cost reduction benefits of installing renewable technologies are not up to date and therefore do not encourage action to install as they can assume long durations before investment sees any financial return.

13. Which of the suggestions provided above do you think would be effective in encouraging building owners to make appropriate energy performance improvements to their property? Do you have any other suggestions? Please provide reasoning and any evidence you have to support your response.

	Very effective	*Effective*	*Somewhat effective*	*Not effective*	*Counterproductive*	*Unsure/no opinion*
Directing people to the digitally led energy advice service			X			
Changing the way recommendations are presented	X					
Allowing innovation in EPC formats		X				
Enhanced role for assessors in providing information						X
EPC app						X
Including operational rating and/or occupancy data						X
Make recommendations more tailored	X					
Additional	X					

[4] Jones Lang LaSalle, A Tale of Two Buildings, 2012 http://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBP%20JLL%20-%20A%20Tale%20of%20Two%20Buildings%202012.pdf

information relevant to homeowners						
'Nudge points' that prompt people to look at EPC	X					

Highlighting carbon emissions reduction estimations for installation of renewables and clean tech would be more beneficial than standard monetary cost/benefit assumptions (assuming cost calculations are not up-to-date with market prices).
Infographics of carbon emissions in comparison to quantifiable measurement –e.g. installing XXKw solar PV would save CO2 emissions equivalent to XX car miles, would also be useful to emphasise and contextualise impact.
Suggestions to switch the energy sources to renewable or low carbon technologies, even through methods such as changing utilities supplier or tariff would also reduce carbon emissions at little/no cost although would not impact the EPC.

14. What are your views on introducing operational performance ratings for non-domestic buildings, either on the EPC or separately?

It is felt that operational performance ratings should be separate to the EPC as it would inhibit the comparative value of EPCs. It may be useful for consumers to understand implications of their energy use, but it would be better to encourage installation of smart meters instead to enhance understanding of, and engagement with energy use.

15. What evidence do you have on how useful the EPC rating and cost information are to consumers when purchasing or renting a property? Are consumers using information on the EPC to negotiate property prices or rents?

It is evident that location, price and number of rooms are still considered more important than EPC rating.

16. Do you have any evidence on consumers' understanding of the energy efficiency rating used in EPCs? Do you think a different rating such as carbon emissions or primary energy would have a better impact for consumers?

As the cost estimations for energy bills are not based on consumption, they are of little use to consumers. It is estimated that consumption habits have 60% more impact on energy bills than building efficiency[5]. Therefore, a greater focus on carbon emissions, and more contextualised explanation of the measurement of CO2e would be beneficial. It is well acknowledged that some newer carbon emissions savings technologies are not yet price competitive (and cost assumptions in SAP and RdSAP are not up to date for technologies with price competitive costs), so a cost comparison is unlikely to encourage action in the same way that environmental impact would.

Existing rating based on cost	
Rating based on primary energy	
Rating based on carbon emissions	X

[5] Jones Lang LaSalle, A Tale of Two Buildings, 2012 http://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBP%20JLL%20-%20A%20Tale%20of%20Two%20Buildings%202012.pdf

Unsure/no opinion	

17. Which of the suggestions provided above do you think would enable prospective buyers and tenants to make more effective decisions based on the information on the EPC? Do you have any other suggestions? Please provide reasoning and any evidence you have to support your response.

	Very effective	*Effective*	*Somewhat effective*	*Not effective*	*Counterproductive*	*Unsure/no opinion*
Providing more of the information on the EPC in adverts	X					
Requiring a link to the digitally led advice service		X				
Including EPC rating on mortgage statements						X
Better visibility of EPC data on property comparison sites	X					
Providing EPC cost information on adverts			X			
Clearer data on ventilation						X
Present energy costs as annual costs instead of over 3 years		X				
Provide better information on heat networks		X				
Adding information about future direction of government policy	X					

Additional information on policy goals would encourage homeowners to invest long term, rather than just invest to bring their housing stock up to minimum standard. EPCs seem to be good at directional advice and information relating to reaching minimum MEES standards, but not for encouraging long-term investment above that.

Section 5: EPC availability

18. What evidence do you have on how easy it is to access EPC data or Open Data? What additional information would be valuable and why? If you are currently a user of the Open Data Communities website, what do you use the information for and how valuable is this website as a source of data?

The Open Data website is a useful tool for business development of those operating businesses based around home efficiency improvements, although it is not often used by renewable and clean tech installers.

Information on renewable energy technologies are installed already, and the suggested improvements provided in the EPC. The option to filter EPCs by location and suggested improvements would be beneficial to renewable energy companies for business development.

19. Which of the suggestions provided above do you think would improve the ability of building owners and other stakeholders to make effective use of EPC data? Do you have any other suggestions? Please provide reasoning and any evidence you have to support your response.

	Very effective	*Effective*	*Somewhat effective*	*Not effective*	*Counterproductive*	*Unsure/no opinion*
Allowing building owners access to EPC survey data		X				
Facility for building owners to share survey data with 3rd parties		X				
Data warehouse and building log book			X			
Green building passport			X			

It would be useful to be able to filter listings on the open data website by technologies installed or by recommendations included, so that businesses can easily identify potential customers and assist them with implementing recommendations.

20. How useful do you think a 'data warehouse', 'building log book' and/or 'green building passport' would be in increasing take up of energy efficiency improvements or supporting existing initiatives? What kinds of data might usefully

be included in addition to EPC data and how could these proposals best be implemented? How might more comprehensive assessments be encouraged without making them a requirement for homeowners?

Data warehouse	
Building log book	
Green building passport	
None of the above	
Unsure/no opinion	**X**

Information on the 'smart-readiness' of buildings would be valuable to collect but this could be included in the EPC.

A green building passport may be useful but costly and may be too much information for homeowners/tenants. Energy efficiency is proven not to be as important to homeowners/tenants as aspects such as location or size of property, therefore continuing to update the MEES rating seems the most effective way to reach decarbonisation targets.

21. **What evidence do you have on compliance with the requirement for providing an EPC when purchasing/letting a property, or the requirement to display the EPC rating in property listings. Does this differ by tenure type or by any other subset of the building stock? What evidence do you have on the reasons for lack of compliance with the requirement for an EPC?**

N/A

22. **What evidence do you have on what enforcement work is currently being done to ensure that EPCs are being produced?**

N/A

23. **Which of the suggestions provided above do you think would be effective in improving compliance with the requirement for an EPC, bearing in mind the other changes to EPCs being considered. Do you have any other suggestions? Please provide reasoning and any evidence you have to support your response.**

	Very effective	*Effective*	*Somewhat effective*	*Not effective*	*Counterproductive*	*Unsure/no opinion*
Align enforcement authorities for EPCs and PRS						X
Putting greater obligation on estate/letting agents						X
More formal role for accreditation schemes in identifying non-						X

compliance						
Providing better information to landlords		X				
Providing better information to tenants			X			
Linking EPCs to other requirements on landlords			X			
Increased role for property comparison sites			X			

24. What evidence do you have on costs of EPCs, how easy it is to procure an EPC or on consumer attitudes towards EPC costs?

N/A

25. Which of the suggestions provided above do you think would be effective in making the process of procuring EPCs easier or more affordable, bearing in mind the other changes to EPCs being considered. Do you have any other suggestions? Please provide reasoning and any evidence you have to support your response.

	Very effective	*Effective*	*Somewhat effective*	*Not effective*	*Counterproductive*	*Unsure/no opinion*
Allowing an EPC assessor to use previous survey data						X
Drawing in additional data sets						X
EPC assessor apps with smart defaults						X

EPC assessor apps with smart defaults would be highly useful if defaults are accurate and up-to-date. It may be easier to ensure this through an app rather than updating numerous separate, complexed assessor programs.

26. This Call for Evidence has outlined a number of options for making improvements to EPCs. Of the suggestions discussed in this document or which you have put forward, is there one or more you think is particularly important, or are there any other suggestions you have or comments you want to make about EPCs?

The use of EPCs is a key tool for consumer understanding of energy efficiency in buildings offering clear direction for the uptake of energy efficiency measures including installation of renewable energy technologies.

It is felt overall that Energy Performance Certificates do not currently positively and fairly reflect, or encourage the uptake of, renewables technologies, and especially discourage the electrification of heat even where the energy source is 100% clean renewable energy. The key areas for contention on the calculation methods of EPCs through the SAP and RdSAP methods are around energy cost per square meter calculations, assumptions on consumption vs export rates of on-site generation, and a lack of emphasis on the carbon emissions rating in comparison to energy performance/cost based rating.

The REA feels that EPCs are a clear and powerful method of communication to homeowners, and therefore should be up-to-date on cost-benefit calculations of renewable technologies (of which costs are rapidly decreasing) to effectively support reaching the EU EPBD and Clean Growth Strategy targets.

Furthermore, there is room for data on the 'smart-readiness' of buildings to be collected either in the EPC or through other methods such as the 'Green Building Passports' highlighted in the consultation. This would allow for both an improvement of consumer awareness of smart technology measures in addition to the collection of key statistics in preparation for the transition to a smart, decentralised energy system.

A final point is that it may be beneficial to introduce trigger points for EPCs at every council tax or business rates revaluation – this would drastically increase the number of building owners engaged with the EPC system and therefore improve knowledge and actions towards energy efficiency. The REA encourages involving buildings in the EPC system which are not part of the private rental sector, or not up for sale.

Further References:

English Housing Survey, Energy efficiency of English housing report, 2012 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335148/Chapter_1_Energy_performance.pdf

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