

Energy UK response to DLUHC Future Homes Standard Consultation

27.03.2024

Executive Summary

Energy UK is the trade association for the energy industry with over 100 members - from established FTSE 100 companies right through to new, growing suppliers, generators and service providers across energy, transport, heat and technology.

Our members deliver nearly 80% of the UK's power generation and over 95% of the energy supply for 28 million UK homes as well as businesses.

The sector invests £13bn annually and delivers nearly £30bn in gross value - on top of the nearly £100bn in economic activity through its supply chain and interaction with other sectors. The energy industry is key to delivering growth and plans to invest £100bn over the course of this decade in new energy sources.

The energy sector supports 700,000 jobs in every corner of the country. Energy UK plays a key role in ensuring we attract and retain a diverse workforce. In addition to our Young Energy Professionals Forum, which has over 2,000 members representing over 350 organisations, we are a founding member of TIDE, an industry-wide taskforce to tackle Inclusion and Diversity across energy.

The Future Homes Standard Assessment: A Wrapper for the Home Energy Model

- Energy UK is supportive of DESNZ's choice to standardise certain inputs while allowing greater flexibility in others.
- This model will allow for standardisation of the model by various stakeholders in both Government and industry, while allowing updates in policy & regulation that affect the Future Homes Standard to be applied with comparative ease.
- Energy UK would appreciate if DESNZ could release a technical demonstration of the Home Energy Model for review by industry.

Occupancy & Energy Demand

- Energy UK does not object to the proposed standard occupancy assumption.
- However, industry would suggest to DESNZ that the model be sufficiently open and flexible to allow for living circumstances that may not be captured within the occupancy assumption.

Weather Assumptions

- Energy UK approves of DESNZ's proposal to use climate projections instead of historical averages.
- Energy UK supports this on the basis that the climate in England is subject to significant change due to the effects of anthropogenic climate change.
- It therefore follows that historical averages constitute a less reliable estimate of future weather than future climate projections.

FHS Compliance Metrics

- Energy UK does not object to the proposed emission and primary energy factors for electricity.
- Energy UK does not object to penalisation of energy shortfall and the energy shortfall factors. This is a welcome proposal as it incentivises housing developers to construct properties that are more energy efficient.

If you have any questions about this response or wish to engage with Energy UK and its members, we would welcome further engagement.

Kind regards,

Oisín Joyce

oisin.joyce@energy-uk.org.uk

Consultation Questions

The Future Homes Standard Assessment: A Wrapper for the Home Energy Model:

Q1. What are your views on the choice of inputs that have been standardised vs left open as user inputs (as in the consultation tool)? Please explain your reasoning and provide any supporting evidence.

- Energy UK is supportive of DESNZ's choice to standardise certain inputs while allowing greater flexibility in others.
- This model will allow for standardisation of the model by various stakeholders in both Government and industry, while allowing updates in policy & regulation that affect the Future Homes Standard to be applied with comparative ease.
- With that being said, we would like to stress that Energy UK is more concerned about the policy & regulatory developments that necessitate the use of certain inputs rather than the technical mechanism used to do so (provided the technical mechanism does not add additional time or cost to construction of new homes).

Q2. What are your views on the ease of populating or sourcing data for those user inputs? Please explain your reasoning and provide any supporting evidence.

- In our view, the consultation document does not provide adequate information on the process for populating the Future Homes Standard into the Home Energy Model.
- Industry would appreciate if DESNZ could release a technical demonstration of the Home Energy Model for review by industry. This will allow Energy UK to review the User Interface and other components to determine if the application is sufficiently straightforward.
- As regards the sourcing of data, our view is:
 - **Calculation period and time resolution:** EUK is supportive of the 1 year calculation period and half hourly time resolution as this will enable more granular data to be developed and thus more accurate interventions to be made.
 - **Occupancy and assumptions for energy demand:** It stands to reason that occupancy should be taken into account as part of the Future Homes Standard, but Energy UK would like to query how many variables will be factored into this input. For example, a household with three occupants has a different set of requirements to a household with three occupants where one of the occupants uses a ventilator. There are also potential data protection challenges in sourcing the appropriate information. Industry would also encourage DESNZ to consider how they might overcome consumer reticence to supply information regarding the number of occupants in their households.
 - **Weather Data:** England (and the United Kingdom as a whole) is a geographically and climatically diverse country. For example, the solar generation potential in Cornwall would differ considerably to that of Newcastle. It therefore follows that weather data should be included as part the Future Homes Standard. Energy UK would however like to point out that given that the climate of these islands is subject to substantial change, that the weather data for the Future Home Standard should be reviewed every two years based on the CIBSE Test Reference Year.

Occupancy and Energy Demand:

Occupancy Assumptions:

3. What are your views on the proposed standard occupancy assumption? Please explain your reasoning and provide any supporting evidence.

- Energy UK does not object to the proposed standard occupancy assumption.
- However, industry would suggest to DESNZ that the model be sufficiently open and flexible to allow for living circumstances that may not be captured within the occupancy assumption.
- Examples of this can include (but are not limited to)
 - A widow/widower living alone in a house with several bedrooms due to a change in life circumstances.
 - A house with three occupants where one occupant causes disproportionately high energy consumption such as being on a ventilator.

4. What are your views on the assumptions for metabolic gains? Please explain your reasoning and provide any supporting evidence.

- Energy UK does not object to the proposed standard occupancy assumption.
- However, industry would suggest to DESNZ that the calculation formula be sufficiently open and flexible to allow for living circumstances that may not be captured within the metabolic gains assumption.

Space heating and cooling assumptions:

5. Do you think the FHS assessment wrapper should keep two thermal zones for all dwellings Y/N. Please provide your reasoning supporting evidence.

- No comment.

6. If the FHS assessment wrapper keeps two thermal zones, do you think we should introduce inter-zone heat transfer? Y/N. Please provide your reasoning and any supporting evidence.

- No comment.

7. What are your views on heating setpoints for (a) one zone; (b) two zones without inter-zone heat transfer (i.e. the current assumptions given above); and (c) two zones with inter-zone heat transfer? Please provide reasoning and supporting evidence.

- No comment.

8. What are your views on the assumptions for space heating hours? Please provide your reasoning and any supportive evidence.

- No comment.

9. What are your views on the ability to specify a control scheme (e.g. setback temperatures) and "advanced start" periods) that works for the system being installed? Please provide your reasoning and any supporting evidence.

- No comment.

10. What are your views on the treatment of the heating session vs. non-heating season (months where the heating is assumed to be off regardless of the temperature? Please provide your reasoning and any supporting evidence.

- Energy UK does not object to the proposed assumption.
- However, industry would suggest to DESNZ that the calculation formula be sufficiently open and flexible to allow for living circumstances that may not be captured within the assumption.

11. What are your views on the proposed assumptions for the use of space cooling systems? Please provide your reasoning and any supporting evidence.

- No comment.

Domestic hot water assumptions:

12. What are your views on the assumptions for the volume of hot water demand? Please provide your reasoning and any supporting evidence?

- No comment.

13. What are your views on the pseudo-randomly generated hot water use schedule, including the algorithm generating it? Please provide your reasoning and any supporting evidence.

- No comment.

14. What are your views on the proposed hot water/mixed water temperature assumptions? Please provide your reasoning and any supporting evidence.

- Energy UK does not object to the proposed assumption.
- However, industry would suggest to DESNZ that the calculation formula be sufficiently open and flexible to allow for living circumstances that may not be captured within the assumption.

15. What are your views on the assumptions for water heating hours? Please provide your reasoning any supporting evidence.

- Energy UK does not object to the proposed assumption.
- However, industry would suggest to DESNZ that the calculation formula be sufficiently open and flexible to allow for living circumstances that may not be captured within the assumption.

16. What are your views on the cold water feed temperature assumptions? Please provide your reasoning and any supporting evidence.

- No comment.

Lighting, cooking and appliances assumptions:

17. What are your views on the proposed assumptions for lighting demand, time of use, and thermal gains availability? Please provide your reasoning and any supporting evidence.

- Energy UK does not object to the proposed assumption.
- However, industry would suggest to DESNZ that the calculation formula be sufficiently open and flexible to allow for living circumstances that may not be captured within the assumption.

18. What are your views on the proposed assumptions for cooking energy demand, time of use, and thermal gains availability? Please provide your reasoning and any supporting evidence.

- No comment.

19. What are your views on the assumptions for appliance energy demand, time of use, and thermal gains availability? Please provide your reasoning any supporting evidence.

- Energy UK does not object to the proposed assumption.
- However, industry would suggest to DESNZ that the calculation formula be sufficiently open and flexible to allow for living circumstances that may not be captured within the assumption.

20. What are your views on the assumptions for cold water and evaporative losses? Please provide your reasoning and any supporting evidence.

- No comment.

Weather Assumptions:

21. What are your views on the use of climate projections rather than historical averages for the weather assumptions within the model? Please provide your reasoning and any supporting evidence.

- Energy UK approves of DESNZ's proposal to use climate projections instead of historical averages. Industry supports this on the basis that the climate in England is subject to significant change due to the effects of anthropogenic climate change.
- It therefore follows that historical averages constitute a less reliable estimate of future weather than future climate projections as the climate is likely to change considerably in the coming decades regardless of the numerous corrective actions being undertaken by civil society, Government and industry at this time.

FHS Compliance Metrics:

Metrics

22. What are your views on the additional metrics produced by the FHS assessment wrapper (i.e. metrics produced in addition to the FHS compliance metrics)? Please provide your reasoning and any supporting evidence.

- Energy UK does not object to the proposed additional metrics.
- However, industry would suggest to DESNZ that the calculation formula for those metrics be sufficiently open and flexible to allow for living circumstances that may not be captured within the assumption.

23. What are your suggestions for additional metrics (i.e. metrics produced in addition to FHS compliance metrics) not currently produced by the FHS assessment wrapper? Please make suggestions, explaining your reasoning, and providing any supporting evidence.

- No response.

Fuel assumptions (emissions and primary energy)

24. What are your views on the methodological approach to define the emission factors and primary energy factors used within the Home Energy Model: FHS assessment? Please provide your reasoning and any supporting evidence.

- Energy UK does not object to the proposed methodological approach.
- However, industry would suggest to DESNZ that the calculation formula be sufficiently open and flexible to allow for living circumstances that may not be captured within the assumption.

25. What are your views on the proposed emission and primary energy factors for electricity? Please explain your reasoning and provide any supporting evidence.

- Energy UK does not object to the proposed emission and primary energy factors for electricity.

26. What are your views on the penalisation of energy shortfall and the energy shortfall factors? Please explain your reasoning and provide any supporting evidence.

- Energy UK does not object to penalisation of energy shortfall and the energy shortfall factors.

- This is a welcome proposal as it incentivises housing developers to construct properties that are more energy efficient.

Validating the assumptions used in the FHS assessment wrapper

27. What are your view on the inter-model validation work that has been carried out (i.e. against SAP 10.2, PHPP and ESP-r)? Please provide your reasoning any supporting evidence.

- No response.

28. What are your views on the monitoring data case study validation work that has been carried out? Please explain your reasoning and provide any supporting evidence.

- No response.

29. What suggestions do you have for further validation exercises that could be undertaken to refine the Home Energy Model: FHS assessment? Please make suggestions, explaining your reasoning, and providing any supporting evidence.

- No response.

Public Sector Equality Duty:

30. What are your views on the equality assumptions and their evidence base? Please provide your reasoning and any supporting evidence.

- No response.

Environmental Principles Policy Statement:

31. What are your views on the possible environmental impacts of the Home Energy Model: FHS assessment itself? Please provide your reasoning and any supporting evidence.

- No response.