# LETI TOOLKIT

How to respond to the consultation

The Future Homes and Building Standard consultation







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# LETI key messages





## LETI key messages

#### An end to fossil fuels

The notional building specification uses a fossil fuel free system. This pushes new buildings away from gas.

- MVHR
- Smart meters
- Energy flexibility
- Sleeving
- Thermal bridging

www.leti.uk

- Part O
- WMS

- Not compatible with achieving Net Zero in operation
- 2 Fabric performance should be better than Part L 2021
- On-site renewable energy generation (PVs) should be encouraged
- Embodied and
  Whole Life Carbon
  should be addressed

- Developers should not be allowed to 'opt-out' of regulation
- Net zero under these proposals will cost the country more
- 7 The consultation is not transparent and lacks an evidence base







1

The proposals are not compatible with achieving Net Zero in operation: they do not use EUI as a key metric and do not address the performance gap



## Relative

%

# Reduction in CO<sub>2</sub> emissions over notional building

Comparison with fixed building specification

Permits inefficiency in building form Adversely influenced by fuel supply

## **Absolute**

# kWh/m<sup>2</sup>/yr

Energy use intensity (EUI)

Measures energy 'at the meter'
Influenced by efficient design
Energy supply agnostic



# Regulatory calculation



SAP/SBEM modelled building



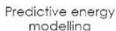
Performance in-use

Not comparable to performance of building in-use

Performance gap between design and as-built

# Predictive performance







Performance and verification in-use

Predictive energy modelling
Reduced performance gap
Allows for monitoring and
comparison in-use





# Fabric performance should be better than Part L 2021 to reduce energy use and residents' bills



#### **Best practice**

## **Part L 2021**



Doors - **1.0** W/m<sup>2</sup>.K



Windows - **1.2** W/m<sup>2</sup>.K (double glazed)



## **FHS**



Doors - **1.0** W/m<sup>2</sup>.K



Windows - **1.2** W/m².K (double glazed)



# Net Zero fabric



Doors - 1.0 W/m<sup>2</sup>.K



Windows - **0.8** W/m<sup>2</sup>.K (triple glazed)



# Fabric compatible with Net Zero Carbon

Results in a low space heating demand Reduces energy consumption

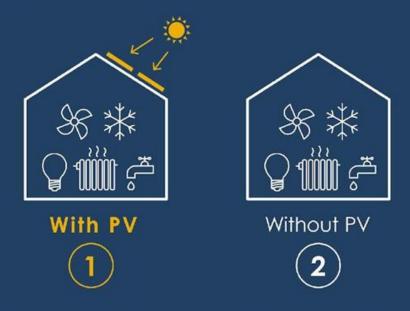




# On-site renewable energy generation (PVs) should be encouraged



# Two notional specification options

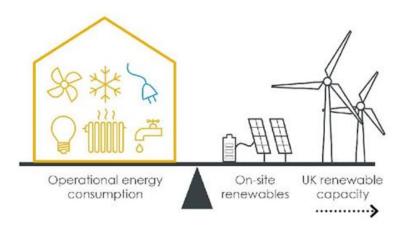


New homes have a key role to play towards our national renewable energy objectives

Option 1 reduces residents' energy bills

Option 2 risks placing the burden on off-site PV

# A net zero carbon UK



# Balances energy consumption of homes with on and off site renewables

Reduces residents' energy bills

Reduces pressure on off-site renewable
generation





# Embodied and Whole Life Carbon should be addressed

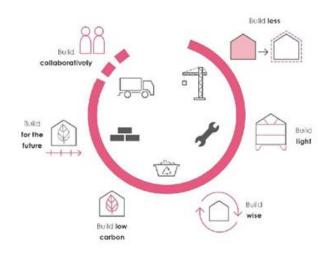


# No mention of embodied carbon



Currently not included or proposed in regulation

# Embodied carbon limits



## Building should meet embodied carbon limits

Scope of the assessment should cover substructure, superstructure, MEP, facade and internal finishes

Reuse and disassembly to be encouraged

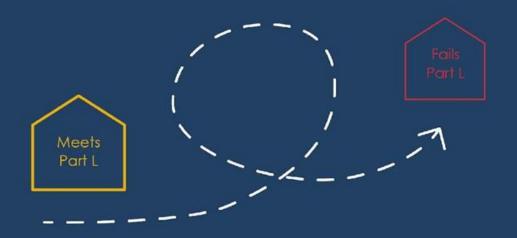




# Developers should not be allowed to 'opt-out' of meeting Part L Regulations



# Opening loopholes to suit a notional metric



# When and what are 'exceptional' circumstances

Developers can 'opt-out' of regulation Burden is placed on local authorities

# Multiple limits using an energy metric



#### Absolute metric

All homes can be compared

Limits/targets can be set appropriately for building type





# Achieving net zero under these proposals will cost the country more



# 'Zero carbon ready'



# Means new homes will consume more energy

Proportionally more existing homes will need to be retrofitted, as new homes will take up more of the share of renewable energy

# 'Net zero carbon'



# Balances energy consumption with UK grid capacity

Reduces the burden on retrofit





# The consultation is not transparent on decision making and lacks an evidence base



## Consulted on



Little clear, evidenced justification for proposals or transparency in decision making

Previous consultation responses overlooked

## **Evidence** based













# Industry research, modeling and definitions

Made by built environment professionals

Backed by industry



## In addition we believe:



Mechanical ventilation with heat recovery should be incentivised



Smart meters should be compulsory

An energy flexibility metric should be brought in



Connection to heat networks that burn fossil fuels should not be encouraged and sleeving should not be supported



More accurate thermal bridging for non-domestic buildings



The new version of CIBSE TM59 should be adopted in Part O



The Written Ministerial Statement is not helpful to industry



# 2

# How to respond to the consultation



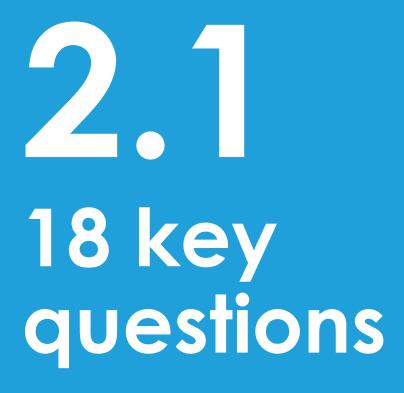


## 1. Key Actions you can take to support the consultation response

- 1. Engage in the consultation If you are time poor- LETI have identified 18 key questions you can respond to, to have maximum impact
- 2. Sign up to the collective letter
- 3. If you are a local authority reach out to your Members
- 4. Submit additional evidence to DLUHC
- 5. Share the LETI key messages and encourage others to response!











LETI firmly believes that by 2030 all new buildings need to be Net Zero Carbon in operation, which means that by 2025 all new buildings must be designed to meet **Net Zero**.

If you share this view we encourage you to respond to the Future Buildings Standard consultation.



Department for Levelling Up, Housing & Communities

#### The Future Buildings Standard

2023 consultation on the energy efficiency requirements of the Building Regulations affecting New Non-Domestic Buildings

Signed by the responsible minister:



Date: 6 December 2023



## Please respond to the consultation!

Influencing the building regulations may be the **greatest impact** that you have in your career, **please respond to the consultation**.

Go to <u>Future Homes & Building Standards 2023 consultation</u> for all of the consultation documents & fill out this <u>this online survey</u> to respond to the consultation by **27th of March**, you can do this as an individual or on behalf of an organization.

#### If you have 10-15 mins

LETI have identified 18 key questions, and we encourage you to respond to these questions, as a priority. This document shares with you what LETI's choice will be. If you disagree, feel free to respond differently though.

#### If you have more time

Complete a full consultation response and submit evidence to back up your views. See <a href="www.leti.uk/FHS">www.leti.uk/FHS</a> for more information, which you might find helpful to reference when putting together your response.

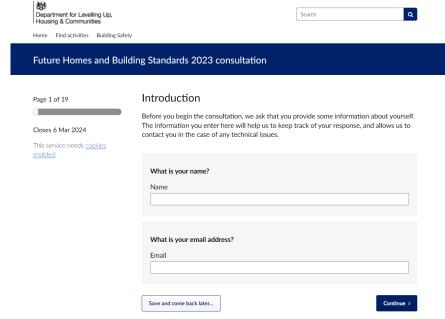
## 18 key questions... and LETI responses

- The consultation documents are long, and there are 95 questions.
- If you have limited time, LETI have identified 18 key questions, which we think are important to respond to. You can just select one of the multiple choice answers to each of these 18 key questions. It should not take you more than 10-15 minutes.
- We encourage you to add your own justification and any evidence you are aware of.
- Please do not copy/paste LETI's justification behind our response, this is for information only. DLUHC are keen to hear your views (but duplicate 'text' responses are not helpful and just slow down the consultation review process)



## 18 key questions... and LETI responses

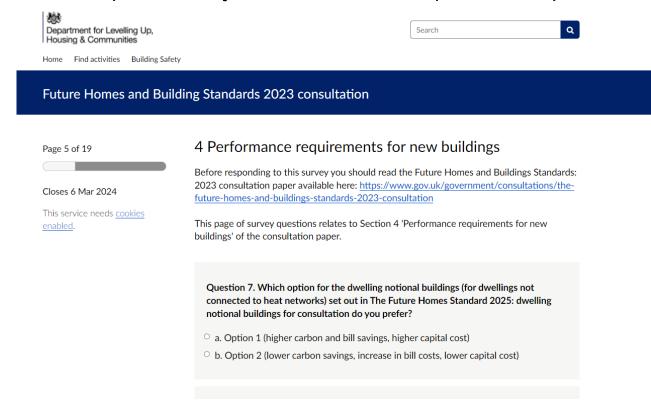
- Click here to access the <u>online survey</u>
- Before you begin answering the questions, you need to complete 4 short pages of information about you.





## 18 key questions... and LETI responses

Then you can just answer the questions you want to and skip the rest







# The Future Homes and Building Standard consultation

18 Key Questions... and LETI responses

Please do not copy/paste LETI's justification behind the LETI response, this is for information only. hear your views (but duplicate 'text' responses are not helpful and just slow down the consultat



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## Performance requirements for new dwellings

Which option for the dwelling notional buildings (for dwellings not connected to heat networks) set out in The Future Homes Standard 2025: dwelling notional buildings for consultation do you prefer?

What will LETI respond?	a. Option 1 (higher carbon and bill savings, higher capital cost)
Why?	<ul> <li>Option 1 is more energy efficient than Option 2.</li> <li>It will lead to lower energy use, lower peak demand and lower energy bills for the residents.</li> <li>It also includes PVs, which is positive.</li> </ul>



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## Performance requirements for new dwellings

What are your priorities for the new specification?

What will LETI respond?	✓ lower bills ✓ carbon savings
Why?	Delivering homes which are 'Net Zero ready' is one of the key aims of the FHS and the FBS. Therefore, carbon savings ought to be a priority.
	Reducing residents' energy bills must also be a priority as the Future Homes     Standard represents a significant opportunity.



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## Performance requirements for new dwellings

Which option for the dwelling notional buildings for dwellings connected to heat networks set out in The Future Homes Standard 2025: dwelling notional buildings for consultation do you prefer?

What will LETI respond?	Option 1
Why?	Option 1 is more energy efficient than Option 2.
	It will lead to lower energy use and lower energy bills for the residents.
	It also includes PVs, which is positive.



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## Performance requirements for non-domestic buildings

Which option do you prefer for the proposed non-domestic notional buildings set out in the NCM modelling guide?

What will LETI respond?	Option 1
Why?	<ul> <li>It also includes PVs, which is positive.</li> <li>The impact assessment shows the overall benefit to society for Option 1 is significantly more than for Option 2, which would result in a net cost to society</li> </ul>



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## Performance requirements for non-domestic buildings

What are your priorities for the new specification? select all that apply)

What will LETI respond?	✓ lower bills ✓ carbon savings
Why?	<ul> <li>Delivering buildings which are 'Net Zero ready' is one of the key aims of the FHS and the FBS. Therefore, carbon savings ought to be a priority.</li> <li>The reduction of energy expenditure on non-domestic buildings should be a co-benefit.</li> </ul>



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#### **Metrics**

Do you agree that the metrics suggested above (TER, TPER and FEE) be used to set performance requirements for the Future Homes and Buildings Standards?

What will LETI respond?	c. No, I think delivered energy should be used
Why? For this question we encourage you to state in the comment box the text in red.  (As we feel like the answer that LETI would support is not available)	<ul> <li>We support the delivered energy metric, as it can be measured post-occupancy, creating a feedback loop with the design predictions.</li> <li>It should also include an estimate for unregulated energy.</li> <li>Primary energy is a confusing and unnecessary metric which cannot be measured by residents and occupants.</li> <li>We are strongly in favour of having a Fabric energy efficiency metric, but it should be an absolute metrics based on space heating demand (kWh/m²/yr).</li> </ul>



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#### Material change of use - Metrics

Do you agree with using the metrics of primary energy rate, emission rate and fabric energy efficiency rate, if we move to whole dwelling standards for MCU buildings?

What will LETI respond?	c. No
Why?	We support the delivered energy metric, as it can be measured post- occupancy, creating a feedback loop with the design predictions.
	Primary energy is a confusing and unnecessary metric which cannot be measured by residents and occupants.
	We are strongly in favour of having a Fabric energy efficiency metric, but it should be n absolute metrics based on space heating demand (kWh/m²/yr).



## Real-world performance of homes

Do you think that we should introduce voluntary post occupancy performance testing for new homes?

What will LETI respond?	a. Yes
Why?	<ul> <li>It is essential that we reduce the performance gap and close the feedback loop between how much energy future homes use versus the design prediction, Post-occupancy performance testing has therefore a key role to play.</li> <li>It should be mandatory, not voluntary.</li> </ul>



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#### **Heat networks**

Do you agree that new homes and new non-domestic buildings should be permitted to connect to heat networks, if those networks can demonstrate they have sufficient low-carbon generation to supply the buildings' heat and hot water demand at the target  $CO_2$  levels for the Future Homes or Buildings Standard?

Wha respo	t will LETI ond?	b. Yes, and I'd like to provide further information
Why	?	<ul> <li>This is subject to connection not being mandated and to heat networks not being given an unfair advantage compared to on-site communal and individual low carbon heating systems:</li> <li>Condition 1: the methodology used to calculate the CO<sub>2</sub> levels of the heat network must not be based on sleeving.</li> <li>Condition 2: the methodology must be peer reviewed by a carbon expert independent from heat network interests.</li> </ul>

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#### **Heat networks**

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

What will LETI respond?	c. No
Why?	The sleeving methodology is not scientifically robust.
	<ul> <li>It is biased towards the on-going use of heat networks even when most of their heat is generated by fossil fuels.</li> </ul>
	<ul> <li>It does not provide a clear pathway for buildings already connected to the network to decarbonise.</li> </ul>
	It has not be peer reviewed by a carbon expert independent from heat network interests.

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#### **Heat networks**

Do you agree with the proposed guidance on sleeving outlined for Heat Networks included in Approved Document L, Volume 1: Dwellings and Approved Document L, Volume 2: Buildings other than dwellings?

What will LETI respond?	c. No
Why?	<ul> <li>The sleeving methodology is not scientifically robust.</li> <li>It is biased towards the on-going use of heat networks even when most of their heat is generated by fossil fuels.</li> </ul>
	It does not provide a clear pathway for buildings already connected to the network to decarbonise.
	It has not be peer reviewed by a carbon expert independent from heat network interests.



### **Heat networks**

Do you agree that heat networks' available capacity that does not meet a low carbon standard should not be able to supply heat to new buildings?

What will LETI respond?	a. Yes
Why?	If the Future Homes Standard and the Future Buildings Standard signal the end of fossil fuels, heat networks should not be the 'Trojan Horse' of on-going fossil fuel heating.



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### Accounting for exceptional circumstances

Do you agree that it should be possible for Regulation 26 (CO2 emission rates) to be relaxed or dispensed with if, following an application, the local authority or Building Safety Regulator concludes those standards are unreasonable in the circumstances?

What will LETI respond?	b. No
Why?	<ul> <li>Building Regulations should be the minimum standards across the Country without exception.</li> <li>If enabled, these exceptions are likely to affect the poorest areas of the country.</li> </ul>



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# Legislative changes to the energy efficiency requirements

Do you agree that regulations 25A and 25B will be redundant following the introduction of the Future Homes and Buildings Standards and can be repealed?

What will LETI respond?	c. No
Why?	<ul> <li>We do not agree that regulations 25A and 25B will become redundant once this version of the Future Homes and Buildings Standards have been introduced as they do not go far enough.</li> <li>We disagree with the consultation statement that with these standards homes and non-domestic buildings will be 'zero-carbon ready', meaning that no further work will be necessary to ensure they have zero carbon emissions as the electricity grid continues to decarbonise.</li> <li>We We consider that the aims of regulation 25A and 25B will therefore</li> </ul>



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## A review of the approach to setting standards

Do you agree that the Home Energy Model should be adopted as the approved calculation methodology to demonstrate compliance of new homes with the Future Homes Standard?

What will LETI respond?	a. Yes
Why?	The Home Energy Model represents a significant step forward compared with SAP.
	<ul> <li>If development efforts continue it should be able to predict space heating demand, energy use, renewable energy generation and demand flexibility more accurately than SAP.</li> </ul>



### **Transitional Arrangements**

Which option describing transitional arrangements for the Future Homes and Buildings Standard do you prefer? Please use the space provided to provide further information and/or alternative arrangements.

What will LETI respond?	a. Option 1
Why?	Extending transitional arrangements beyond 6 months will enabled more gas boilers to be installed and inefficient homes to be built, reducing our carbon budgets and creating a future retrofit legacy.



### **Transitional Arrangements**

Do you agree that the 2010 and 2013 energy efficiency transitional arrangements should be closed down, meaning all new buildings that do not meet the requirements of the 2025 transitional arrangements would need to be built to the Future Homes and Buildings Standards?

What will LETI respond?	a. Yes
Why?	Maintaining these transitional arrangements will enable more gas boilers to be installed and inefficient homes to be built, reducing our carbon budgets and creating a future retrofit legacy.



## **Overheating**

Part O does not apply when there is a material change of use.

Should it apply?

What will LETI respond?	a. Yes
Why?	Material change of use represents a substantial amount of new homes each year. Residents should access the same level of protection against overheating than any other resident.



# 2.2

# Sign the collective letter





# Sign up to collective letter

he Rt Hon Michael Gove MF

Secretary of State for Levelling Up, Housing, and Communities 2 Marsham Street, London SW1P 4DF

Cc: The Rt Hon. Claire Coutinho MP, Secretary of State for Energy Security and Net Zero

February 2024

#### Dear Secretary of State

#### Re: Future Homes and Building Standard (FHS) and Home Energy Model (HEM) consultations

As teading businesses and organisations involved in delivering new homes and buildings to high sustainability standards, we are writing with our view on the FHS and HEM consultations. We would like to meet you to discuss the consultations and are available to provide further information in addition to our organisational responses.

We support the following elements of the proposals which should be implemented without delay. We welcome the end fossil fuel healing and commitment to electric healing. We support integrated on-site renewables for new homes, and the extension of energy efficiency measures for dwellings created under material change of use. We welcome the proposal HEM as a replacement for SAP.

However, this is not a definitive Future Homes Standard, but rather a positive step towards it. Many of us involved in the development of the Future Homes Hub's (FHH) five contender specifications' (CSP) are disappointed that the two weakest options are being consulted upon. We request a further iteration of the Standard be developed to ensure new buildings are of a higher specification by 2028. In this letter we set out immediate concerns to be addressed and outline why further development of the FHS is needed.

#### We have immediate concerns to be addressed in the 2025 regulations:

- 1. We strongly disagree with the Option 2 notionals specifications. Omitting photovoitaics [PV] and lowering building fabric standards will lead to an additional £800-£700 per year on energy bills for residents of new homes compared to the current Part L 2021 and Option 1 respectively<sup>3</sup>. The public sector equality dury ensures Government does not introduce standards which unduly affect those on lower incomes or with protected characteristics. A lower fabric standard would increase the pressure new homes place on the electricity grid at a time when the electrification of heat, transport, and industry means demand for electricity is expected to grow fourfold by 2050. "At new homes should have integrated PV as standard to maximise available renewable energy, aspecially as the cost of installation continues to plummary."
- 2. We strongly disagree with the choice of Primary Energy over Delivered Energy. We see no evidence provided to justify this choice, with 76% of respondents to the previous PHS consultation' opposing Primary Energy as a metric. The Climate Change Committee (CCC) supported Delivered Energy for domestic Energy Performance Certificates (EPCs)\* The HEM consultation discusses the use of Delivered Energy and a different metric for the FHS creates Government inconsistency and confusion. Delivered Energy should become the key metric in this Standard.
- We support voluntary post occupancy performance testing, but enhanced testing of buildings postcompletion, or "As built" should be mandatory. The proposal to ensure transparency on actual

performance – acknowledged by Government as a key outcome for EPC reform following the 2021 consultation – is urgent. We support the introduction of Building Performance Evaluation (BPE), but a wholly voluntary approach will not provide the necessary protection from homes built to a sub-standard. "BPE needs to include simple, low-cost, enhanced mandatory post-completion testing to primarily confirm thermal performance, such as short duration whole-house heat loss tests." In addition, voluntary post occupancy testing needs to be incentivised through regulation.

There is a need to improve on the proposals for a higher standard which delivers on the FHS aims. There are substantial issues not addressed in this consultation and a demand for higher standards. The Written Ministerial Statement of 13 December 2023 calls for Local Authorities to converge on a common definition of higher testing of performance and these should be co-developed during the course of 2024, based on the recommendations set out below, and could be used from 2025 onwards. This higher standard can then be used to inform the next iteration of building regulations by 2028.

- a) Regulate embodied carbon in new buildings. Embodied carbon makes up 20% of UK built environment emissions and declarations of whole life carbon are already required for large building projects. Policies to measure and limit embodied carbon and apply circular economy approaches within the construction sector are urgent and should be included in FMs.
- b) Improve fabric standards for U values and air tightness. Alignment with current good practice can improve comfort and achieve a level of thermal resilience and stability to permit sufficient flexibility for grid peak load management.\* The FHH CSP4 has just 25% of the home heating demand compared to FHS Ordion 1.
- c) Improve new home ventilation systems. Decentralised mechanical ventilation (dMEV) relies on ventilation from holes in the fabric ('trickle vents') which are unreliable, reduce air quality and comfort for residents', and waste heat. FHS should mandate systems such as mechanical ventilation with heat recovery (MMHR) to deliver good air quality, reduce condensation and mould, and recirculate heat (as addressed in the FHH CSP3. 4, and 5).
- d) Reduce electricity generation investment required. Improvements to building fabric and ventilation outlined above have been calculated to save circa £22.6 billion in electricity generation investment over 20 years compared to Option 1, and would result in a £190/year reduction in bills for occupants.

Collaborating for better standards that really work. Lessons from the 2021 FHS pilots, and existing homes built to higher standards, should inform a future homes standard. We collectively bring knowledge and experience of building to higher standards, and offer practical justification for achievable standards which benefit industry and residents in line with not zonz goals. We urga you to collaborate with us to develop the standard further.

2

#### Signatories





















- Can only sign as organisations (Not individuals)
- Signatures by the 29th of February

Sign the letter at <a href="https://goodhomes.org.uk/future-homes-standard-consultation-response">https://goodhomes.org.uk/future-homes-standard-consultation-response</a>





# Sign up to collective letter- what is the letter about?

• Welcome the end of fossil fuel heating and commitment to electric heating. We support integrated onsite renewables for new homes, and the extension of energy efficiency measures for dwellings created under material change of use. We welcome the proposed HEM as a replacement for SAP. Proposals are not a definitive Future Homes Standard, but rather a positive step towards it.

#### Immediate concerns

- We strongly disagree with the Option 2 notional specifications.
- We strongly disagree with the choice of Primary Energy over Delivered Energy
- We support voluntary post occupancy performance testing, but enhanced testing of buildings postcompletion, or "As built" should be mandatory.

#### **Areas of improvement**

- Regulate embodied carbon in new buildings
- Improve fabric standards for U values and air tightness.
- Improve new home ventilation systems
- · Reduce electricity generation investment required

Sign the letter at <a href="https://goodhomes.org.uk/future-homes-standard-consultation-response">https://goodhomes.org.uk/future-homes-standard-consultation-response</a>





# 2.3

# For local authorities



# If you are a local authority - reach out to your Members!

Local Authorities have a **pivotal role** in translating LETI Key messages into policies and are key allies in creating the resilient, equitable country that we all deserve.

LETI has prepared a briefing note for Local Councillors explaining the key messages and what concrete actions can be taken by them to support their Local Authorities in responding to the consultation as an organisation.





# 2.4 Submit Evidence



# **Evidence**

Please submit your own evidence direct to DLUHC. If you would like to also share it with us, please contact us on <a href="mailto:consultation@leti.uk">consultation@leti.uk</a>

- 1. Modelling
- 2. Metrics
- 3. Ventilation
- 4. Airtightness
- 5. Cost impact assessment and/or viability



Please share cost data with us!

- 6. Heat networks
- **7.** NCM



## **Evidence - Cost data**

Share your capital cost data with us!

Capital cost is the key driver for the fabric standards in the consultation. At LETI we are keen to understand the capital cost uplift of achieving EUI targets similar to LETI targets, and share this with DLUHC. We think this is an important evidence base, as costs of achieving net zero are often inflated.

Download the LETI FHS and FBS cost evidence uplift spreadsheet at <a href="https://www.leti.uk/FHS">www.leti.uk/FHS</a> and send it to <a href="mailto:Clara@leti.uk">Clara@leti.uk</a> by the 18th March.

			General							Financial Ir	formation					Next steps and consent		
lame	Email Address	Organis	Name of the project/row of the project in tab 'project info'	Is the project information tab filled out?	(sale, build to rent,	Local Authority led housing	oost assessment was	Is this an estimate at design stage or a	What was the baseline (2013 regs, 2021 London Plan, draft FHS notional, other)	When ishras the development planned to finish onsite	Description of the project- please provide images if you can, and information on systems and U-values. Send info to Clara BG from LETI	Please provide overall cost information and detailed elemental cost plan if possible-send to Clara BG- or provide summary information in columns N-P	Basebuild capital cost £/m² ( ideally this is based on a 202fregs compliant scheme)	Additional capital cost due to fabric and	Additional capital cost due to onsite renewables £/m2	happy to have a 30 mins call	Sharing this information (See drop down menu)	
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# 3

# Share our messages



# Support us! Be a LETI HERO!

**Share LETI key messages** to your network and on social media, don't forget to tag LETI in and use the hashtags **#LETIkeymessaging** & **#FHSresponse** to maximise your impact!

**Donate to LETI:** whilst we are run by **volunteers** your financial support is incredibly important to fund our publications, help us have more impact and plan more ambitiously for the future <a href="https://www.leti.uk/donate">www.leti.uk/donate</a>



# www.leti.uk/FHS

