

# Decision

## ECO3 Technical and Score Monitoring Question Set Consultation Decision

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The previous Energy Company Obligation (ECO) scheme (ECO2, including the ECO2t extension period) ended on 30 September 2018. The Department for Business, Energy and Industrial Strategy (BEIS) consulted on a new ECO scheme (ECO3) which commenced on 3 December 2018 and will run until 31 March 2022. Measures installed from 1 October 2018 can count towards a supplier's ECO3 obligation.

On 22 November 2018 we published a consultation seeking stakeholder views on our proposed question set that should be used by monitoring agents to conduct monitoring inspections for the purpose of ECO3 Monitoring.

This document summarises the responses to our consultation and details our final technical and score monitoring question set. Where relevant, we also explain where we were unable to incorporate suggestions made.

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## 1. Introduction

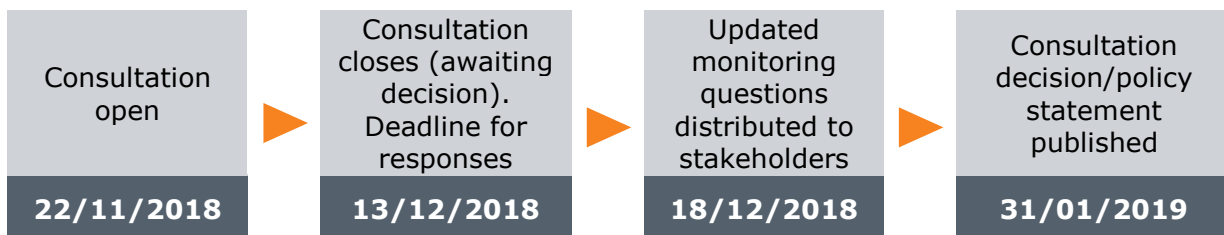
### Context and related publications

- 1.1. This document sets out the decisions Ofgem ('we', 'us' and 'our' in this document) have made on the ECO Technical and Score Monitoring Question Set for ECO3<sup>1</sup> following feedback from stakeholders. These amendments are intended to capture the changes to the scheme resulting from the ECO3 Order<sup>2</sup>, as well as improvements from ECO2.
- 1.2. The consultation was open for three weeks and we received feedback from 13 stakeholders ("respondents"). Once the consultation closed on 13 December, all responses were collated and reviewed by Ofgem.
- 1.3. The updated monitoring questions are to be used from the start of Quarter 2 of ECO3 onwards.<sup>3</sup>

### Our decision making process

- 1.4. We received 13 responses to our consultation from suppliers, manufacturers and other stakeholders. For each amended or new question proposed in the consultation we have considered and summarised stakeholder feedback. We have then given our final decision on whether each question will be included in the ECO3 Technical and Score Monitoring Question Set. A full list of respondents can be found in Appendix 1 and all responses, except those that requested to remain confidential, can be viewed on our website.
- 1.5. In developing the ECO3 technical and score monitoring questions, we carefully considered all of the points raised by respondents, even if they are not specifically mentioned in this document.

**Figure 1: Decision-making stages**



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<sup>1</sup> The legal basis and rationale for the technical monitoring undertaken during ECO3, is explained in the letter of direction from the Secretary of State to the Gas and Electricity Markets Authority dated 11 January 2019.

<sup>2</sup> The Electricity and Gas (Energy Company Obligation) Order 2018:  
[http://www.legislation.gov.uk/uksi/2018/1183/pdfs/uksi\\_20181183\\_en.pdf](http://www.legislation.gov.uk/uksi/2018/1183/pdfs/uksi_20181183_en.pdf)

<sup>3</sup> Quarter 2 commences at the start of January 2019.

## Your feedback

### General feedback

1.6. We believe that consultation is at the heart of good policy development. We are keen to receive your comments about this report. We'd also like to get your answers to these questions:

1. Do you have any comments about the overall quality of this document?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Are its conclusions balanced?
5. Did it make reasoned recommendations?
6. Any further comments?

Please send any general feedback comments to [eco@ofgem.gov.uk](mailto:eco@ofgem.gov.uk).

## 2. Changes to existing technical monitoring questions

### Section summary

This section summarises the feedback on the three technical monitoring (TM) questions we proposed to amend for ECO3. The proposed changes were suggested to make the questions clearer and more targeted, based on experience from ECO2.

### Questions

**Question 1.1:** Do you agree that the proposed amendments to the heating control questions [HC.1 and HC.2] will allow those questions to also be applied to smart thermostats? If not, please tell us why.

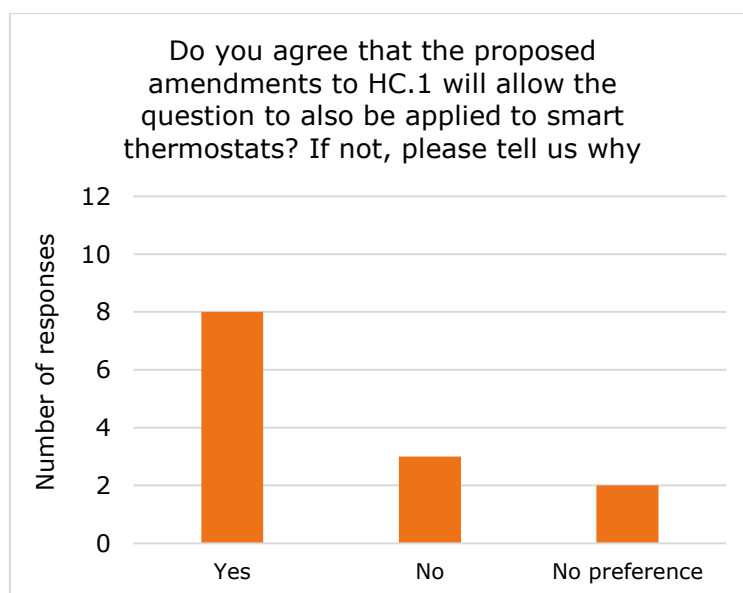
**Question 1.2:** Do you agree that the proposed wording of IWI.4 removes the potential for conflict with IWI.6 but still achieves the same intention as the previous wording? If not, please tell us why.

## Heating Controls

### HC.1 Summary of responses

*HC.1: Are the heating controls, smart thermostat or TRV (whichever is applicable) linked to a functioning heating system?*

Figure 2: Responses to amendments of HC.1



- 2.1. 73%<sup>4</sup> of respondents agreed with our proposed changes to HC.1. Several specified that their agreement to the changes was dependent on 'TRV' being amended to the plural 'TRVs' since there are likely to be multiple valves in the property.
- 2.2. Three respondents requested that smart thermostats should be addressed in a separate question to other heating controls.
- 2.3. One stakeholder who requested this outlined that monitoring agents may not be able to validate smart thermostats since the person hosting the visit may not have access to the controls as they are often on a mobile app. Therefore, the respondent suggested that the smart thermostats should have a separate question which includes an 'Unable to Validate' option.
- 2.4. Two of those that disagreed with the proposal suggested that remote re-inspection could be utilised as long as appropriate photographs were provided. Whilst one respondent agreed with the proposal, they specified that remote re-inspections should not be allowed.

### **HC.1 Ofgem response**

- 2.5. We will continue with the proposed wording of HC.1 to include a reference to smart thermostats. We do not believe it is necessary to separate smart thermostats into their own question.
- 2.6. We will not enable the 'Unable to Validate' option for this question because the homeowner should be given instructions on how to use the new controls as part of handover of the measure and this should include explaining how to use the app if applicable. It is very important to ensure that the homeowner has the ability to control the heating system and so if the system is controlled using an app it should always be possible to verify the homeowner can use this app. Where it is not possible to validate this, suppliers should contact Ofgem to explain the situation.
- 2.7. We have further amended the question so that 'TRV' is now written as 'TRVs'.
- 2.8. This question will be able to be re-inspected remotely. It will be necessary to use photos to verify compliance where a remote re-inspection is being conducted.

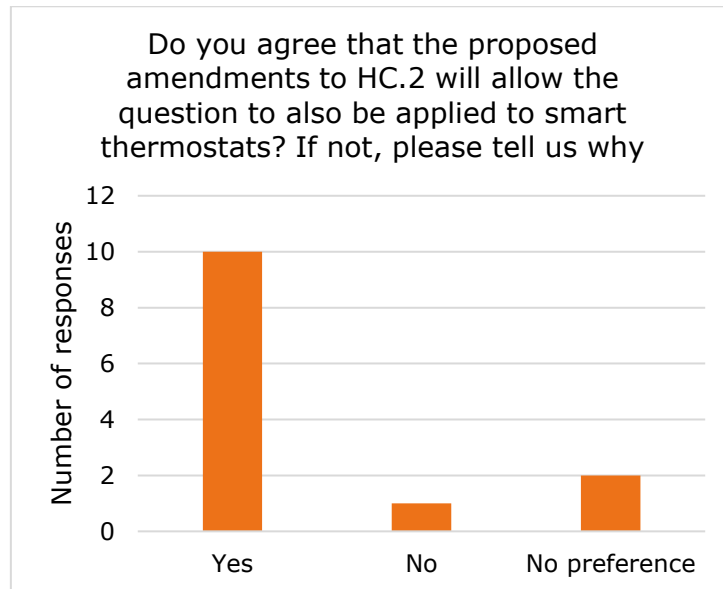
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<sup>4</sup> Percentages in this document relating to 'respondents' do not include where stakeholders did not provide a response for a given question. For a comprehensive breakdown of responses for each question, see Appendix 2.

## HC.2 Summary of responses

HC.2: Do the heating controls or smart thermostat turn on the domestic heating system?

Figure 3: Responses to amendments of HC.2



- 2.9. The majority of respondents (91%) agreed that the amendments to HC.2 would allow the question to also be applied to smart thermostats.
- 2.10. One respondent suggested that smart thermostats should also be separated out of this question. They outlined that if the questions are not separated the 'Unable to Validate' option should be included in HC.2.

## HC.2 Ofgem response

- 2.11. The wording of HC.2 will include references to smart thermostats. We do not believe it is necessary to separate smart thermostats into their own question.
- 2.12. We have also removed the 'Unable to Validate' option because if it is not possible to verify that the heating controls can turn on the heating system then we cannot be assured the controls are working and therefore that the heating system is functioning.

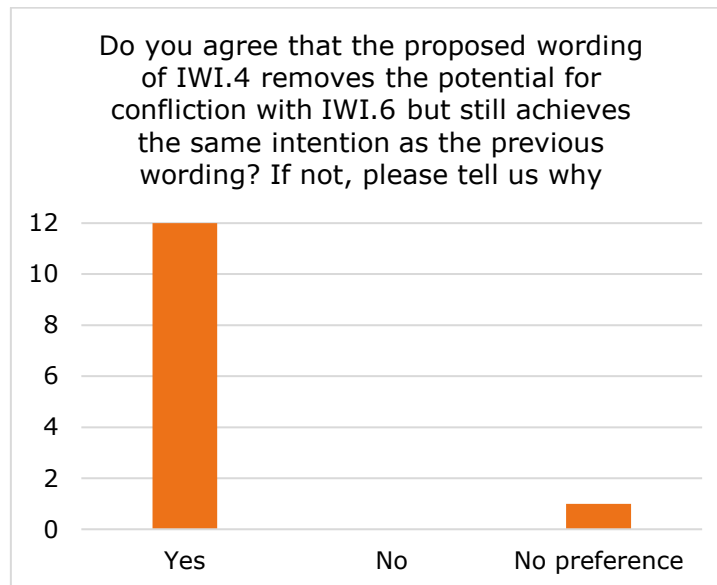


## Internal Wall Insulation:

### IWI.4 Summary of responses

*IWI.4: Has insulation been applied to the inter floor void?*

**Figure 4: Response to the amendments of IWI.4**



- 2.13. All of those that responded to this question agreed with the proposed rewording of IWI.4.
- 2.14. Many responses stated that 'Unable to Validate' should be an option for this question since it may not be possible for monitoring agents to access the insulation in some circumstances.
- 2.15. Two responses asked for further clarification; one respondent requested guidance in the explanatory notes specifying that answering this question would only be a requirement if the system manufacturer requires it. Another respondent asked for a definition of 'inter-floor void'.

### IWI.4 Ofgem response

- 2.16. The wording of IWI.4 will be amended as outlined in the consultation. We have also enabled the 'Unable to Validate' option for this question for instances where it is not possible to access the inter-floor void.
- 2.17. The 'N/A' option is available for situations where the system manufacturer of the product being installed does not require the inter-floor void to be insulated. It is also for situations where there may not be an inter-floor void present.

2.18. We have provided an explanation of what we mean by 'inter floor void' in the ECO3 Explanatory notes for monitoring<sup>5</sup>.

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<sup>5</sup> See <https://www.ofgem.gov.uk/publications-and-updates/eco3-monitoring>

### 3. New technical monitoring questions

#### Section summary

This section focuses on the new technical monitoring (TM) questions proposed in the consultation. We proposed three new questions that will apply to all measure types as well as a number of measure specific questions. We have summarised the feedback from stakeholders and provided our decision on whether the proposed questions will be included in the ECO3 Technical Monitoring Question Set.

#### Questions

**Question 2.1: Do you agree with the introduction of the above questions [TMQ.1, TMQ.2, TMQ.3, CWI.9, DHS.5, DHS.6, DHS.7, PHV.1, PHV.2, PHV.3, PHV.4, FCH.1]? If not, please tell us why.**

**Question 2.2: Do you agree with our proposals relating to when the questions should be asked (mid-installation and post-installation)? If not, please tell us why.**

**Question 2.3: Do you agree that questions TMQ.1, DHS.6 and DHS.7 should be allowed to be remotely re-inspected? If not, please tell us why.**

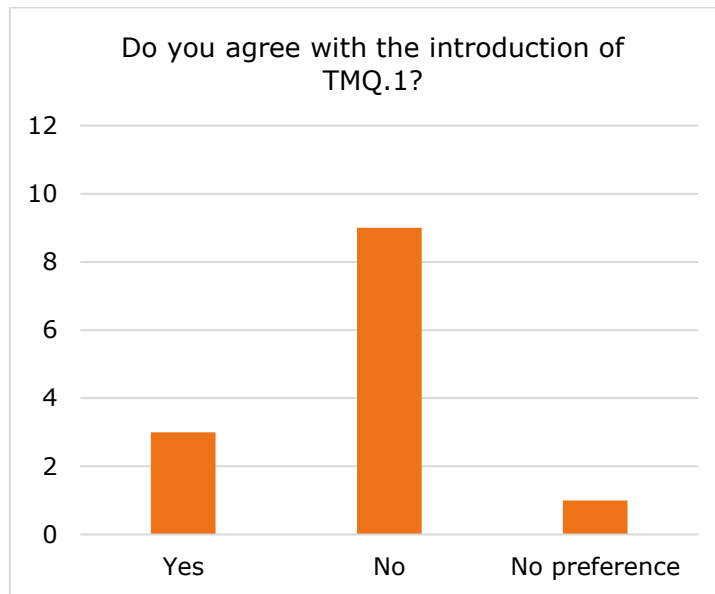
### For all measure types

#### TMQ.1 Summary of responses

*TMQ.1: Are any of the following true:*

- *This measure is referred to in the relevant version of PAS 2030 and evidence has been provided to demonstrate that the measure has been installed in accordance with PAS 2030 by, or under the responsibility of, a certified installer.*
- *This measure is not referred to in the relevant version of PAS 2030, however evidence has been provided to demonstrate that the measure has been installed by a person of appropriate skill and experience.*

**Figure 5: Responses to the introduction of TMQ.1**



- 3.1. Three quarters of respondents disagreed with the introduction of TMQ.1 to the technical monitoring question set. The key argument by respondents against this question was based on the issue of monitoring agents carrying out the work of PAS certification bodies. Many outlined that monitoring agents are not suitably placed to assess the requirements of PAS 2030 and that the responsibility for PAS compliance should remain with Trustmark and certification bodies.
- 3.2. Other respondents also stated that the question is too broad and is unclear on what information it requires. Respondents further questioned whether thermal bridging would be covered in this question as it is also addressed in TMQ.2.

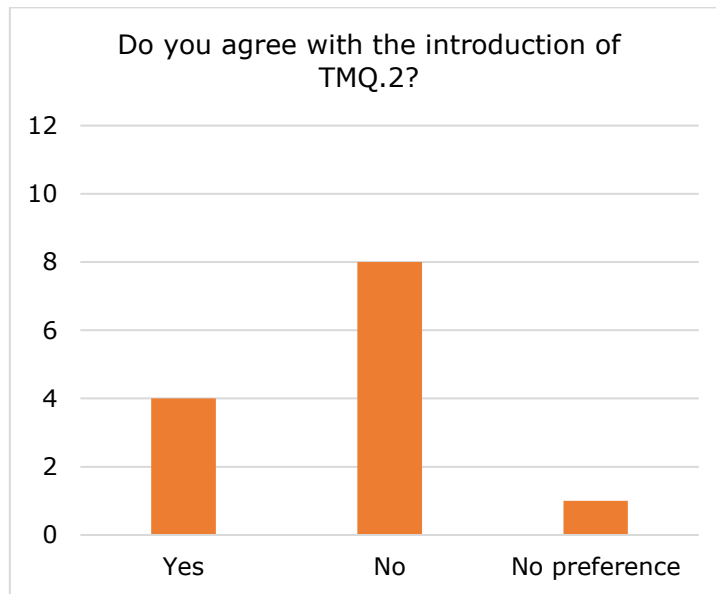
**TMQ.1 Ofgem response**

- 3.3. We agree that this question is duplicating work already carried out by PAS certification bodies and it will be difficult and unreasonably time consuming to implement. This question will not be introduced for ECO3.

**TMQ.2 Summary of responses**

*TMQ.2: Is there any evidence of avoidable thermal bridges, ie heat loss areas which are not insulated but could have been in line with the requirements of PAS 2030 and Building Regulations?*

**Figure 6: Responses to the introduction of TMQ.2**



- 3.4. The majority of respondents disagreed (67%) with the introduction of this question.
- 3.5. An issue discussed in many of the responses outlined the potential crossover of questions, particularly with TMQ.1 where thermal bridging may already be addressed. Concerns were raised that this would lead to duplication of failures. In order to reduce this risk, respondents suggested that TMQ.2 may not apply to all measure types and carbon stages, and may only need to be answered for insulation measures.
- 3.6. Responses also highlighted that an increase in false TM fails could also be caused by the question not accounting for the fact that elements of the insulation may have been omitted for technical reasons. They outlined that there are circumstances where the cost of removing any thermal bridging can outweigh the benefit. Further guidance from Ofgem on examples of avoidable thermal bridging was requested to reduce this risk.

**TMQ.2 Ofgem response**

- 3.7. We haven't introduced TMQ.1 so there is now no cross-over. Though there may be other questions failing for the same reason as is identified through this question, we do not see this as a concern; a measure can fail on multiple questions and, similarly, a single remedial action can address multiple failures.
- 3.8. We have provided more detail in the ECO3 Explanatory Notes for Monitoring<sup>6</sup> on which measure types this question should be applied to and why.

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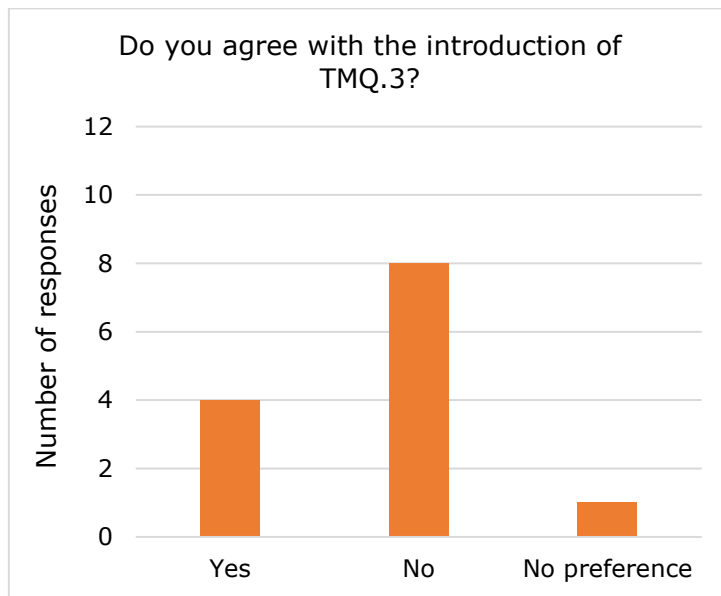
<sup>6</sup> See <https://www.ofgem.gov.uk/publications-and-updates/eco3-monitoring>

- 3.9. We've also provided more detail in the ECO3 Explanatory Notes for Monitoring<sup>7</sup> on what we would consider as appropriate reasons for not installing certain elements of a measure. This includes our stance on customer refusal.
- 3.10. We will reword this question so that a 'Yes' response equates to a Pass. This will be reflected in the ECO3 Technical and Score Monitoring Question Set v1.2.

**TMQ.3 Summary of responses**

*TMQ.3: Has appropriate monitoring equipment been installed into the property?*

**Figure 7: Responses to the introduction of TMQ.3**



- 3.11. The majority of respondents (67%) disagreed with the introduction of this question as proposed in the consultation. Some stakeholders disagreed due to uncertainty about whether this question would only apply to innovation measures.
- 3.12. Others observed that if TMQ.3 does only apply to innovation measures then the question is redundant due to the fact that suppliers should be unable to submit innovative measures without monitoring equipment. These respondents suggested removing the question since it is already evidenced through the innovation process.
- 3.13. Many respondents suggested that monitoring agents would not be in a position to determine what 'appropriate monitoring equipment' would be. Some suggested that more detail regarding what would be regarded as 'appropriate' was needed and another response suggested rewording the question to ask whether the monitoring equipment was present.

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<sup>7</sup> See <https://www.ofgem.gov.uk/publications-and-updates/eco3-monitoring>

- 3.14. Finally, some respondents specified that if the question was included it should only apply to innovation measures and the 'N/A' option should be available for other measure types.

### **TMQ.3 Ofgem response**

- 3.15. We will include this question for ECO3. We need to ensure measures installed as innovation measures that require monitoring equipment to record the energy efficiency performance of the property have it in place. We believe this is especially important because these are new measures introduced for ECO3.
- 3.16. We understand that new questions may be introduced as innovation measures are accepted. These questions are likely to be more specific whereas TMQ.3 is likely to apply to most innovation measures. This is why we have included this question at this point in time.
- 3.17. This question will only apply to innovation measures and only those innovation measures where monitoring equipment is in place. The 'N/A' option will be available for instances where monitoring equipment is not required.
- 3.18. If there are any other questions relevant to the innovation measure these should also be applied. For example, if the innovation measure is a form of internal wall insulation the IWI questions should be applied. We have included more details about this in the ECO3 Explanatory Notes for Monitoring<sup>8</sup>.

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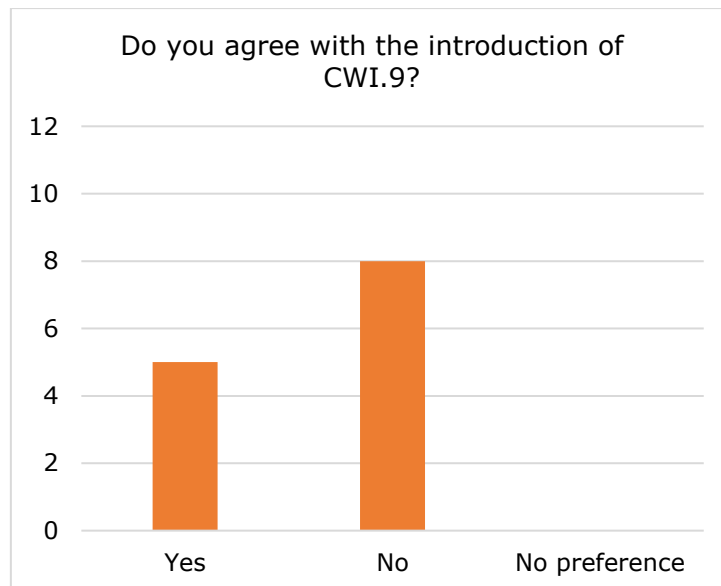
<sup>8</sup> See <https://www.ofgem.gov.uk/publications-and-updates/eco3-monitoring>

## Cavity Wall Insulation

### CWI.9 Summary of responses

*CWI.9: If the cavity wall contains pre-existing insulation, is the additional insulation to be added compatible with the pre-existing insulation as demonstrated by the product certificate?*

**Figure 8: Responses to the introduction of CWI.9**



- 3.19. There was an overall majority consensus (62%) that this question should be excluded from the technical monitoring question set.
- 3.20. Six respondents suggested that this question was not needed in the technical monitoring question set because it is already addressed by PAS 2030 requirements. Under PAS 2030 there is a requirement for all cavities to go through pre-approval checks by a suitably qualified operative and that 10% of these checks are done onsite. Therefore, further checks may not be needed and would increase monitoring costs unnecessarily.
- 3.21. Some of those that agreed with the introduction of CWI.9 asked for further clarification on what percentage should be checked, as well as the number of drill holes that the monitoring agent would need to make for an inspection. Responses pointed out that this may be a time consuming task for the monitoring agents to do, particularly when there is no pre-existing insulation.
- 3.22. Other responses stated that if CWI.9 is included in the question set it should only apply to mid-installation monitoring on partial fill, and not all types of cavity wall insulation installation. One respondent suggested that if the question is applied to all CWI then most responses would be 'N/A'. Two respondents then recommended that if the question is included, CWI partial fill will need its own measure type.

### CWI.9 Ofgem response

- 3.23. Insulation of partially filled cavities may become a measure type under ECO3 (Partial fill CWI). This question is essential to ensure partial fill CWI measures receive the



correct product which is compatible with the pre-existing insulation in line with the manufacturer’s instructions.

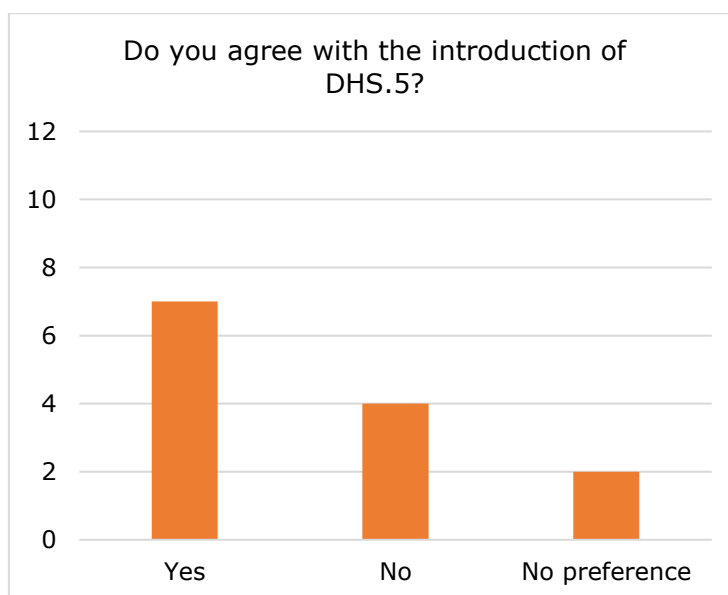
- 3.24. This question should be implemented at mid-installation stage where it should always be possible to verify the correct product is being installed. The inspection should be carried out between the new product being selected and the cavity being filled with that new product. It should not be necessary to conduct borescope inspections to answer this question.
- 3.25. Should a partial fill CWI measure type be introduced, CWI.9 is the only specific question that will be provided. However, the standard CWI measure type questions should also be applied to partial fill CWI. We have provided more detail about the mid-installation requirements in the ECO3 Explanatory Notes for Monitoring<sup>9</sup>.
- 3.26. The ‘N/A’ option will be available for this question.

## District Heating Systems

### DHS.5 Summary of responses

*DHS.5: Does the DHS measure generate heat completely through fuels other than coal or oil?*

**Figure 9: Responses to the introduction of DHS.5**



- 3.27. The majority of respondents (64%) agreed with the addition of DHS.5. Some of the respondents who agreed requested further guidance on the definition of ‘oil’ for this question. Specifically, whether this question excludes bio-oil and recycled oil.
- 3.28. Of those who disagreed, the main concern was that the inspector would likely need access to the boiler house to validate this question. They stated that it is often difficult

<sup>9</sup> <https://www.ofgem.gov.uk/publications-and-updates/eco3-monitoring>

to gain access to the boiler house as they are often locked areas with limited key holders.

### DHS.5 Ofgem response

3.29. We will implement this question as outlined in the consultation and will provide further detail in the ECO3 Explanatory Notes for Monitoring<sup>10</sup> as to which fuels are acceptable.

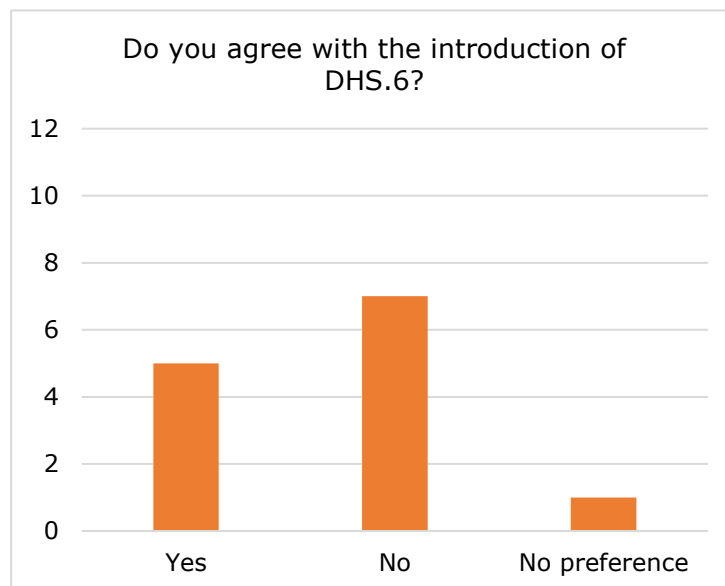
3.30. The 'Unable to Validate' option is available for instances where it is not possible to access the boiler house.

### DHS.6 Summary of responses

*DHS.6: Are any of the following true:*

- *The DHS measure is registered with the Heat Trust Scheme*
- *The DHS measure is subject to arrangements for consumer protection which are equivalent to the requirements under the Heat Trust Scheme*
- *The DHS measure includes the installation of a ground source heat pump at the domestic premises*

**Figure 10: Responses to the introduction of DHS.6**



3.31. 58% of respondents disagreed with the proposal to include DHS.6 in the question set. One of the key reasons respondents provided for excluding the question was that they

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<sup>10</sup> See <https://www.ofgem.gov.uk/publications-and-updates/eco3-monitoring>

believed monitoring agents would not be able to access the relevant information to answer it at a site visit.

- 3.32. Additionally, respondents suggested that this question would be covered by the audit process required by Ofgem. It is outlined in the ECO3 Guidance: Delivery document<sup>11</sup> that DHS measures must be accompanied by appropriate consumer protection standards and as such respondents suggested that further checks within Technical Monitoring may be redundant.
- 3.33. One respondent stated that if the question was included they think it should be a mid- or post- inspection question and that remote inspection would be appropriate.

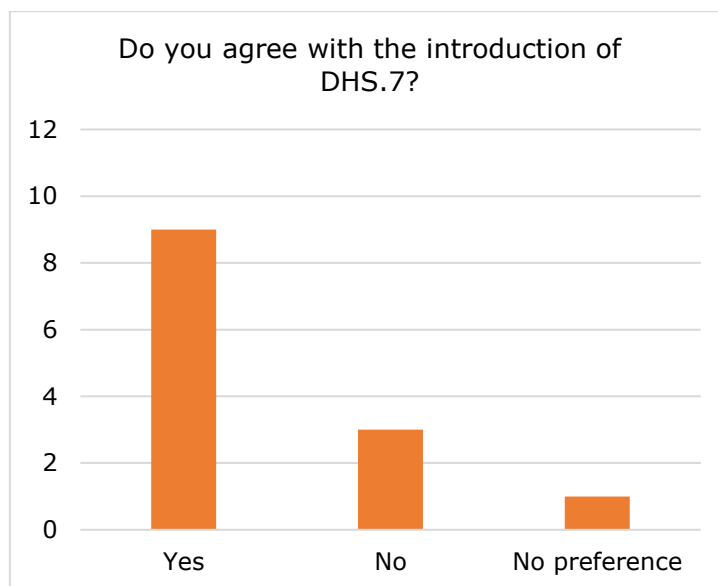
### DHS.6 Ofgem responses

- 3.34. We will not include this question for ECO3, however as part of our audit programme we may request suppliers provide us with evidence demonstrating DHS measures are registered with a suitable scheme.

### DHS.7 Summary of responses

*DHS.7: Where the DHS is delivering heat to a house of multiple occupancy, is it delivering heat to additional domestic premises?*

**Figure 11: Responses to the introduction of DHS.7**



- 3.35. Three quarters of respondents agreed with our proposal to include DHS.7 in the technical monitoring set. Many of those who agreed specified that this question would be better addressed through a desktop inspection rather than a site visit. They

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<sup>11</sup> See <https://www.ofgem.gov.uk/publications-and-updates/energy-company-obligation-2018-22-eco3-guidance-supplier-administration>

suggested that the monitoring agent would be able to answer this question before visiting the site by using the notification data and addresses listed.

- 3.36. One respondent asked for further guidance on whether the 'domestic premises' referenced in the question would have the same definition as stated in the ECO3 Guidance: Delivery document<sup>12</sup>.

**DHS.7 Ofgem response**

- 3.37. We want to monitor this requirement but have decided it would perhaps be more appropriate and less burdensome for industry if we performed this check within our ECO3 compliance processes.

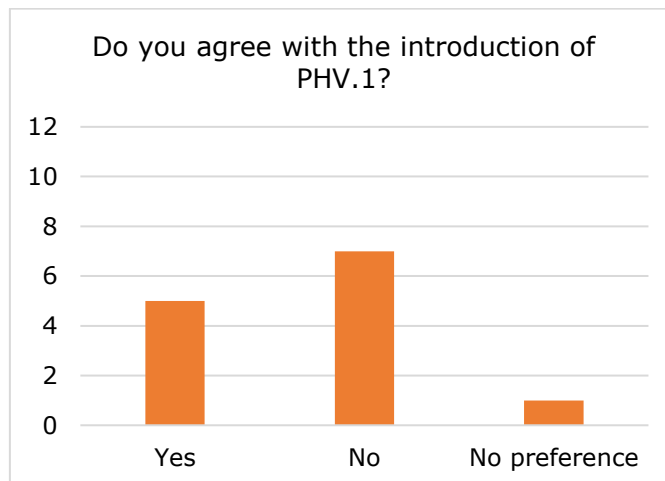
- 3.38. We will therefore not be introducing this question however we will be performing equivalent validation checks ourselves.

**Solar PV**

- PHV.1: Is the inverter correctly positioned?*
- PHV.2: Has all wiring been fixed and secure?*
- PHV.3: Are all solar panels securely fixed?*

**PHV.1, PHV.2 and PHV.3 Summary of responses**

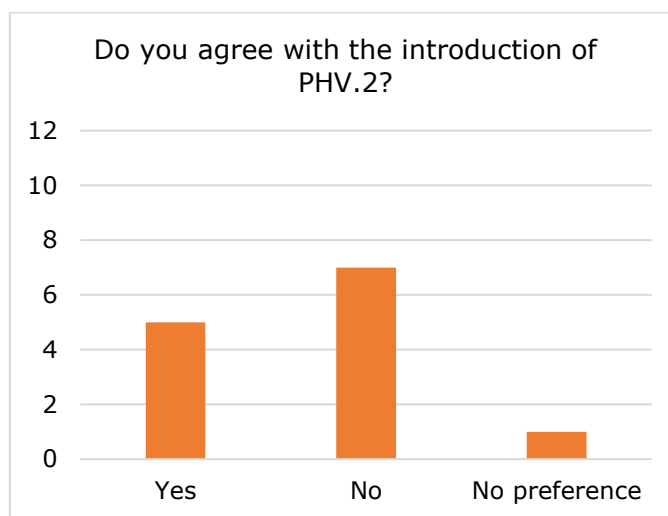
**Figure 12: Responses to the introduction of PHV.1**



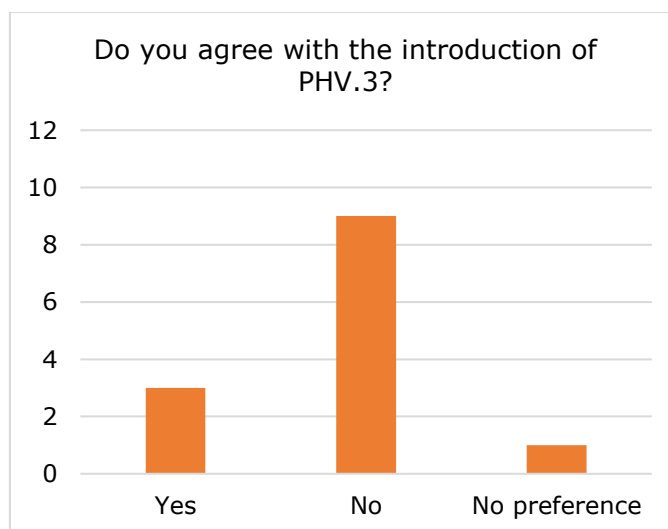
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<sup>12</sup> See <https://www.ofgem.gov.uk/publications-and-updates/energy-company-obligation-2018-22-eco3-guidance-supplier-administration>

**Figure 13: Responses to the introduction of PHV.2**



**Figure 14: Responses to the introduction of PHV.3**



- 3.39. These questions have been grouped because the responses contained the same themes. There was a majority disagreement with the introduction of all three questions.
- 3.40. Most respondents who disagreed with the Solar PV questions asked why they needed to be covered in technical monitoring. They suggested that these aspects were already covered under the Microgeneration Certification Scheme (MCS).
- 3.41. One concern expressed by respondents was the potential health and safety risks for monitoring agents. They anticipated that in order to assess whether the inverter was correctly positioned the monitoring agent would need to work at a height, using long reach ladders or scaffolding, which is a risk when working alone. Additionally, they queried whether monitoring agents should be required to have the knowledge to assess this question, when Solar PV is a relatively low frequency measure.
- 3.42. One respondent suggested that if the questions are included for ECO3 then 'Unable to Verify' would need to be included as an option in the responses.

**PHV.1, PHV.2 and PHV.3 Ofgem response**

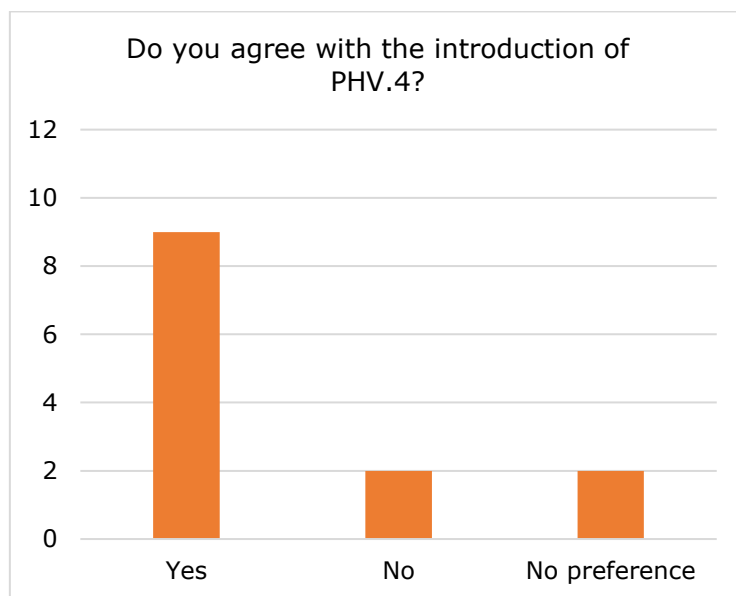
3.43. None of these questions will be implemented for ECO3. We agree with the health and safety concerns with conducting these inspections and the additional cost that would be required for an additional monitoring agent to be present.

3.44. Additionally, we agree that, these criteria will be covered by MCS requirements.

**PHV.4 Summary of responses**

*PHV.4: Is the primary heating source electric?*

**Figure 15: Responses to the introduction of PHV.4**



3.45. The majority of respondents (82%) agreed with our proposal to introduce PHV.4 into the question set.

3.46. One respondent that disagreed with the proposal suggested that this question was not needed in technical monitoring. They stated that it does not matter what fuel the primary heat source is because the saving on the customer’s electricity bill from the Solar PV can be offset against the heating cost of the property.

3.47. Another respondent suggested that if the PHV.1, 2 and 3 questions are removed it may not be necessary to carry out inspections of Solar PV for simply this remaining question.

3.48. Those that agreed with the question suggested that it should be classed as a score monitoring question rather than a technical monitoring question and should be addressed at the post-installation phase.

**PVH.4 Ofgem responses**

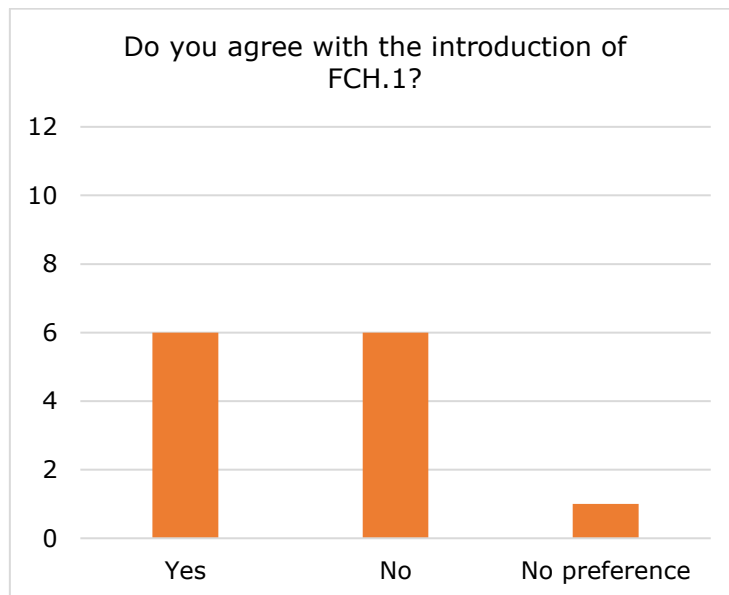
3.49. We will implement this question as outlined in the consultation. We need to be assured that the primary heating source of the property where the measure is being installed is electric.

**First Time Central Heating**

**FCH.1 Summary of responses**

*FCH.1: Does the property currently have a central heating system, DHS connection, or one or more working, efficient ESH? Is there evidence that a central heating system or DHS connection was present in the past?*

**Figure 16: Responses to the introduction of FCH.1**



3.50. There was an even divide between those that agreed with the addition of FCH.1 and those that did not.

3.51. Those that agreed with the question specified that it should be asked at the mid-installation phase. They also requested further information on replacing electric storage heaters (ESH) with first time central heating (FTCH) and how monitoring agents can determine that ESH are inefficient. One observed that the monitoring agent may not be visiting at the right time of day/year for the ESH to be in use which means it would be difficult to tell if it was working efficiently.

3.52. Five of those that disagreed with the question stated that they would agree with a question assessing this area if it was reworded into two separate questions. They also suggested that the second question should be reworded so that a Yes' counted as a Pass to follow the structure of the other technical monitoring questions.

3.53. One respondent stated that they disagreed with the question because it is already covered by FTCH declarations and further audit requirements.

### **FCH.1 Ofgem response**

- 3.54. This question should be implemented at the mid-installation stage and we will reword it so that a 'Yes' response equates to a Pass.
- 3.55. The ECO3: Guidance Delivery<sup>13</sup> provides more information about when we would consider an ESH to be inefficient.

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<sup>13</sup>See <https://www.ofgem.gov.uk/publications-and-updates/energy-company-obligation-2018-22-eco3-guidance-delivery>



## 4. Changes to existing score monitoring questions

### Section summary

In order to ensure continuity of the monitoring process we have decided not to entirely revise the score monitoring (SM) questions. However, in order to increase simplicity in the process there are four questions we have proposed to amend for ECO3. The responses to these changes are summarised below.

### Questions

**Question 4.1:** Do you agree that the proposed revision to SMQ.5 will correctly capture whether the measure has been installed to at least 67% of the property and therefore can receive the full deemed score, and where the measure isn't installed to at least 67% of the property that the correct percentage of property treated has been notified? If not, please tell us why

**Question 4.3:** Do you agree that SMQ.14 should apply to solid wall measures as well as heating measures? If not, please tell us why

**Question 4.4:** Do you agree that the proposed revision to SMQ.8 will make it clear for TMAs that this question relates to determining if the correct high performance external door measure type has been selected? If not, please tell us why

**Question 4.5:** Do you agree that the proposed wording for SMQ.12 makes it clear for TMAs that this question relates to standard heating controls only? If not, please tell us why

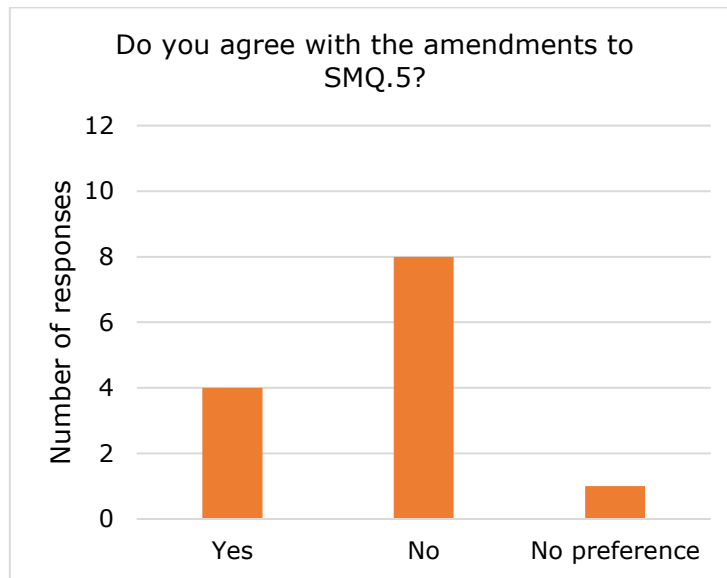
## All measure types

### SMQ.5 Summary of responses

*SMQ.5: Is any of the following true:*

- *Where the full deemed score has been claimed, at least 67% of the property has been treated*
- *Where less than 67% of the property has been treated, the notified deemed score has been calculated using a percentage of property treated figure that reasonably reflects the actual percentage of property treated (to the nearest 1%)?*

**Figure 17: Responses to the amendments of SMQ.5**



- 4.1. Of those that responded two thirds disagreed with the inclusion of SMQ.5 as it was suggested. This was principally due to issues with the 1% margin of error for the Percentage of Property Treated (POPT). Respondents suggested that this margin may be too harsh and would lead to disputes between installers and monitoring agents. They suggested a more realistic tolerance would be between 5-10%.
- 4.2. Two respondents also specified that for simplicity the second part of the question should be reworded.

**SMQ.5 Ofgem response**

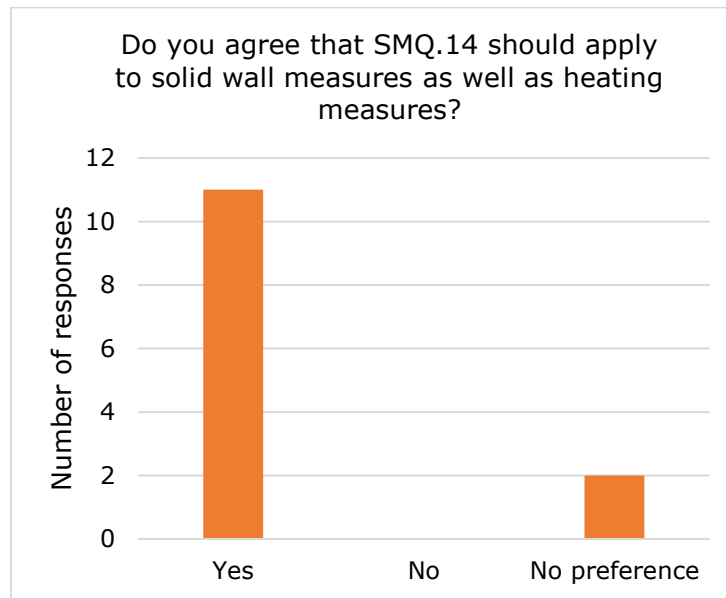
- 4.3. We agree that a 1% margin of error is too narrow and so we will reword this question to allow for a 5% error margin.
- 4.4. We will provide further explanation in the ECO3 Explanatory Notes for Monitoring<sup>14</sup> about how this question should be answered and therefore we will keep the wording as it is.

**SMQ.14 Summary of responses**

*SMQ.14: Does the wall construction type notified match at least 50% of the total external wall area of the property?*

<sup>14</sup>See: <https://www.ofgem.gov.uk/publications-and-updates/eco3-monitoring>

**Figure 18: Responses to amendments of SMQ.14**



- 4.5. All those that responded to this question agreed that SMQ.14 should apply to solid wall measures as well as heating measures.
- 4.6. Some expressed concern that it may be difficult to validate the wall type for External Wall Insulation (EWI) measures at the C3 post-installation stage since the wall would be covered in insulation.

**SMQ.14 Ofgem response**

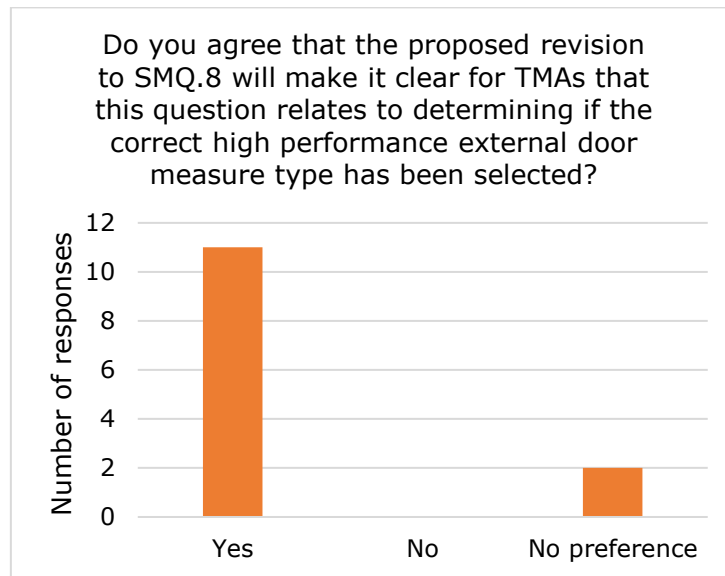
- 4.7. This question will now be applied to both solid wall measures and heating measures. The 'Unable to Validate' option will be available for cases where, for example, it is not possible to determine the wall construction type due to it being covered in insulation.

## High Performance External Doors

**SMQ.8 Summary of responses**

*SMQ. 8: Has the correct measure type been selected based on the area of the door that is glazed?*

**Figure 19: Responses to the amendments to SMQ.8**



- 4.8. All of those that responded to this question agreed with the proposed amendments. One respondent requested further guidance on the expected answers to allow for smooth application of the change.

**SMQ.8 Ofgem response**

- 4.9. We will implement this question as proposed. We do not believe this question will require any further explanation given its simple nature.

## Heating Controls

### SMQ.12 Summary of responses

*SMQ.12: If the heating controls are standard heating controls, ie not smart thermostats, do the controls encompass a programmer, thermostat and TRVs to all radiators except those in the room with the thermostat?*

**Figure 20: Responses to amendments of SMQ.12**



4.10. 67% agreed with the proposed changes to SMQ.12. One of those that agreed specified that an 'N/A' response needs to be permitted. Another suggested that to avoid confusion with the supply chain with regards to this question there needed to be more than one deemed score for heating controls available.

4.11. A key point for those that disagreed surrounded confusion around the requirements for TRVs when there is a smart thermostat present. One respondent stated that whilst a smart thermostat can function without TRVs it would mean that the whole premise is set at a single temperature.

4.12. Another respondent requested that if the question remains as suggested then further explanation would be needed in the supplementary guidance.

### SMQ.12 Ofgem response

4.13. After consideration of the responses we understand that there are some instances in which smart heating controls might also need TRVs. The proposed wording of the question is therefore unsuitable and we will retain the original wording.

4.14. This question will still apply to all heating controls, including smart heating controls, however the 'N/A' option will be available for instances where the smart heating controls do not require TRVs. The monitoring agent should be able to make the assessment as to whether TRVs are required.

## 5. New score monitoring question

### Section summary

In the consultation we proposed a number of new score monitoring questions. We asked for feedback on each proposed new question which is summarised below, alongside our response on whether the question will be included in the new technical monitoring questions

### Questions

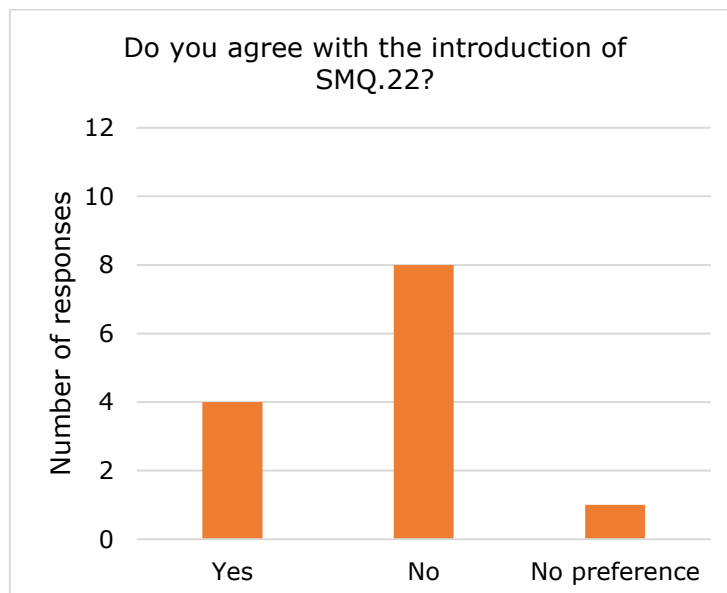
**Question 5.1:** Do you agree with the introduction of the above questions? If not, please tell us why

## For all measure types

### SMQ.22 Summary of responses

*SMQ.22: Have all non-treatable areas been deducted from the POPT and taken into account in the score calculation?*

**Figure 21: Responses to the introduction of SMQ.22**



- 5.1. Two thirds of respondents to this question disagreed with it being added to the score monitoring question set. Many of whom considered that it is already covered in the amended version of SMQ.5.

5.2. In addition, many respondents requested further guidance on what Ofgem defines as 'non-treatable' as well as further information on how it would be assessed at the C3 post-installation phase.

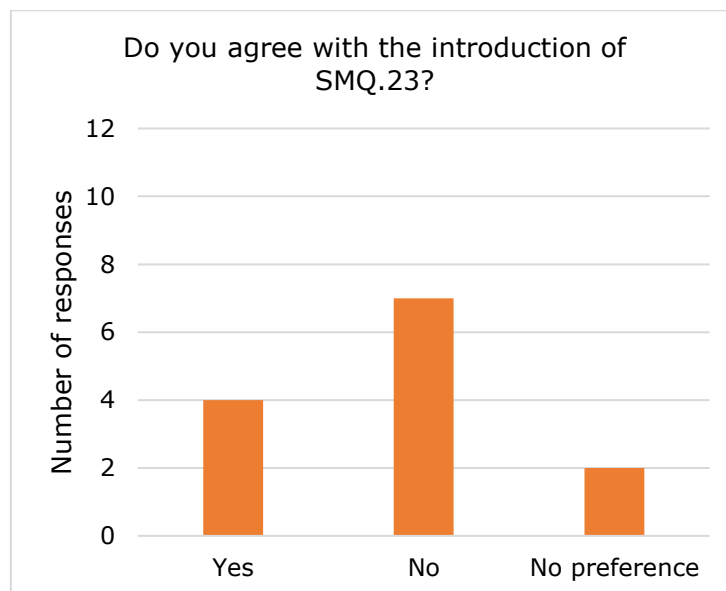
**SMQ.22 Ofgem response**

5.3. We agree that SMQ.5 already covers this question and so will not be introducing SMQ.22.

**SMQ.23 Summary of responses**

*SMQ.23: Has 100% of the measure been installed where possible?*

**Figure 22: Responses to the introduction of SMQ.23**



5.4. 64% of respondents disagreed with the introduction of SMQ.23 to the score monitoring questions. Many considered that a question regarding Percentage of Measure Installed (POMI) was not needed in the score monitoring questions since POMI has no impact on the deemed scores. Some suggested that this question would be more suitable as a technical monitoring question.

5.5. Additionally, it was stated that POMI is a subjective measure which monitoring agents may find difficult to assess, which could lead to disputes between installers and monitoring agents and potentially increased numbers of false fails.

5.6. One respondent suggested that if this question was introduced it should only apply to non-insulation measures because the proposed TMQ.2 could cover POMI for insulation measures.

**SMQ.23 Ofgem response**

5.7. We agree that this question is more appropriate as a technical monitoring question and have reassigned it as such. It should be applied to all measure types because the

requirement to install measures to 100% where possible is not limited to certain measure types.

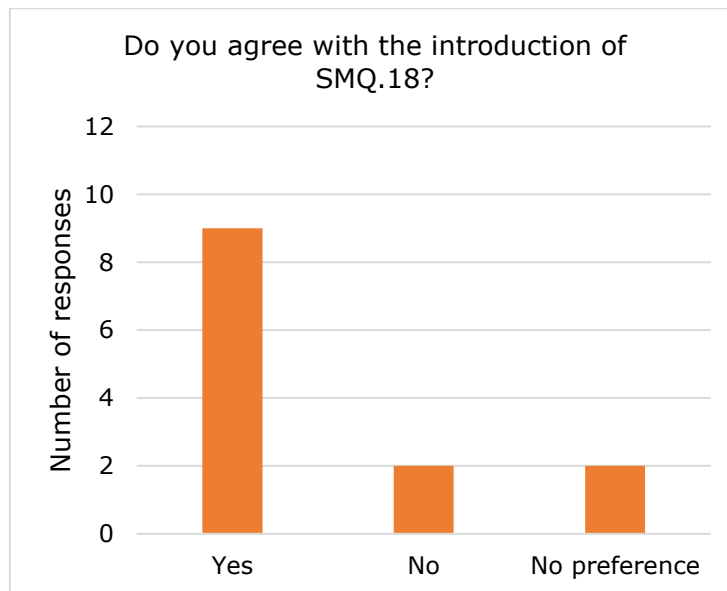
- 5.8. An explanation to assist monitoring agents in determining what we mean by 'where possible' is in the ECO3 Explanatory Notes for Monitoring<sup>15</sup>.

## Heating Controls

### SMQ.18 Summary of responses

*SMQ.18: Does the installed smart thermostat meet the criteria of the Boiler Plus Standard (ie does it feature automation and optimisation) and does it feature connectivity?*

**Figure 23: Responses to the introduction of SMQ.18.**



- 5.9. 82% of respondents agreed with the introduction of SMQ.18 to the score monitoring questions.
- 5.10. One of the respondents who disagreed requested further guidance on the criteria against which this question would be answered.
- 5.11. Another respondent suggested that the last part of the question should be removed as currently under Boiler Plus Standards there is no requirement to include connectivity as a feature of smart thermostats. They also queried how this question would relate to NB.6.

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<sup>15</sup> See <https://www.ofgem.gov.uk/publications-and-updates/eco3-monitoring>



- 5.12. Finally, one respondent stated that monitoring agents may not be able to answer this question without an approved product list. Thus, they think that if this question is implemented it needs to be alongside a product list.

### **SMQ.18 Ofgem response**

- 5.13. We will implement this question as suggested. As per Chapter 4 of the ECO3 Guidance: Delivery<sup>16</sup> smart thermostats must meet the criteria set out in the Boiler Plus Standard. That is, they must incorporate automation and optimisation. More information on this can be found in the ECO3 Explanatory Notes for Monitoring<sup>17</sup>.
- 5.14. To be considered a smart thermostat for the purposes of ECO3, products installed must also offer some form of wider connectivity. Consumers should be able to remotely control their home temperature via an electronic device such as a tablet, smartphone or desktop for greater control over the central heating system. Whilst there is no single definition of smart technology, the deemed score for this measure is based on field trials of smart thermostats which have this feature. We therefore cannot remove the connectivity part of the question.
- 5.15. Question NB.6 relates to the presence of a programmer, a thermostat and TRVs. In the case of smart thermostats, the 'N/A' option is available for instances where TRVs are not required. SMQ.18 is specifically for smart thermostats and looks at automation, optimisation and connectivity. We believe these questions can be asked independently of each other and do not conflict. Monitoring agents should contact us, however, where they find situations in which these questions might conflict.

## **Solar PV**

### **SMQ.19 Summary of responses**

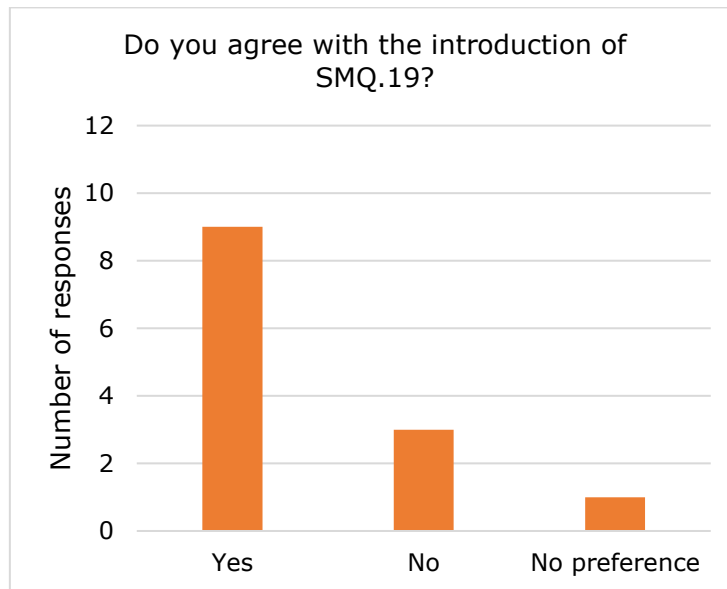
*SMQ.19: Has the POPT been adjusted correctly based on the installed capacity of the solar PV panels?*

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<sup>16</sup> See <https://www.ofgem.gov.uk/publications-and-updates/energy-company-obligation-2018-22-eco3-guidance-delivery>

<sup>17</sup> See <https://www.ofgem.gov.uk/publications-and-updates/eco3-monitoring>

**Figure 24: Responses to the introduction of SMQ.19**



- 5.16. The majority of respondents (75%) agreed with the proposal to include SMQ.19 in the score monitoring question set. Many of those did request further clarification on how to calculate Percentage of Property Treated (POPT) for Solar PV.
- 5.17. One respondent queried whether the Microgeneration Certification Scheme (MCS) requirements already cover POPT for Solar PV and thus whether this question is needed in score monitoring.

**SMQ.19 Ofgem response**

- 5.18. We will implement this question as it is. More information about how the POPT should be calculated for Solar PV can be found in Chapter 6 of the ECO3 Guidance: Delivery<sup>18</sup>.
- 5.19. MCS would not check that the score had been calculated correctly for the purposes of ECO3 so we believe this question is necessary.

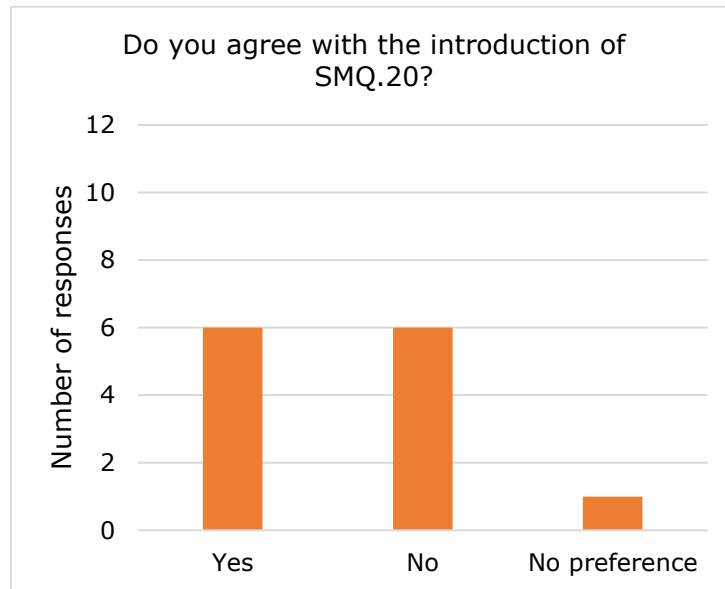
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<sup>18</sup>See <https://www.ofgem.gov.uk/publications-and-updates/energy-company-obligation-2018-22-eco3-guidance-delivery>

**SMQ.20 Summary of responses**

*SMQ.20: Has the correct orientation and inclination factor been selected to provide the correct overall POPT (to the nearest 1%) of the measure?*

**Figure 25: Responses to the introduction of SMQ.20**



- 5.20. There was an even divide between those who agreed with the question and those who did not. For those respondents that disagreed their concerns were similar to those regarding SMQ.5. They suggested it might cause a Health and Safety risk if the monitoring agent is having to work at height, particularly if they are working alone.
- 5.21. Additionally, the respondents suggested a wider margin of error than 1%. They stated that, particularly if the monitoring agent needs to assess the angle from ground level, it would not be possible to do so to the required level of accuracy. Instead it was suggested that a margin of 5% would be more realistic.
- 5.22. One respondent suggested that this assessment would be better achieved through a paperwork check of the MCS documents.

**SMQ.20 Ofgem response**

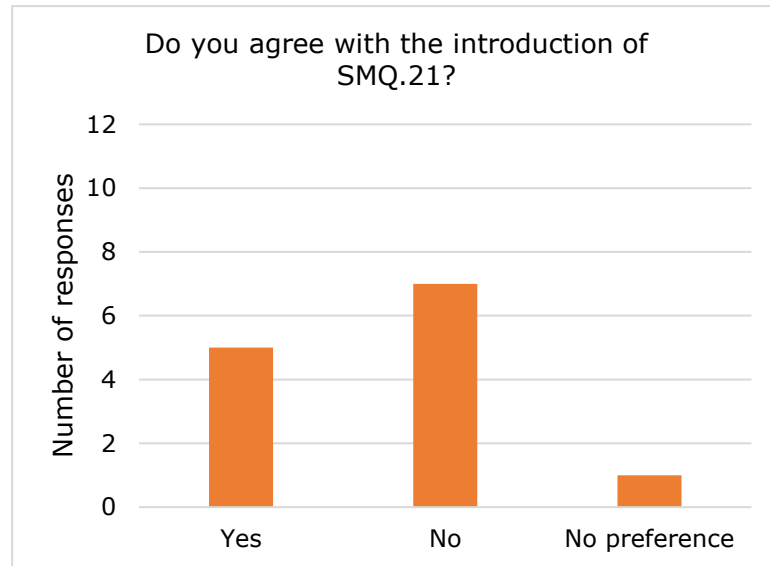
- 5.23. We will implement this question with a greater level of tolerance offered. Similar to SMQ.5, we agree that a 5% tolerance is more appropriate.
- 5.24. Obtaining the information required to answer this question should only be conducted on site where it is safe to do so. Where access to the roof is not possible or puts the monitoring agent at risk, relevant paperwork can be used to verify the POPT has been calculated correctly.

## Room in Roof Insulation

### SMQ.21 Summary of responses

*SMQ.21: Does the room-in-roof meet the definition of a room-in-roof as opposed to being a separate storey?*

**Figure 26: Responses to the introduction of SMQ.21**



5.25. The majority of respondents (58%) disagreed with the introduction of SMQ.21 into the score monitoring question set due to its overlap with SMQ.1.

5.26. The respondents suggested removing SMQ.21 and including SMQ.1 alongside additional guidance.

### SMQ.21 Ofgem response

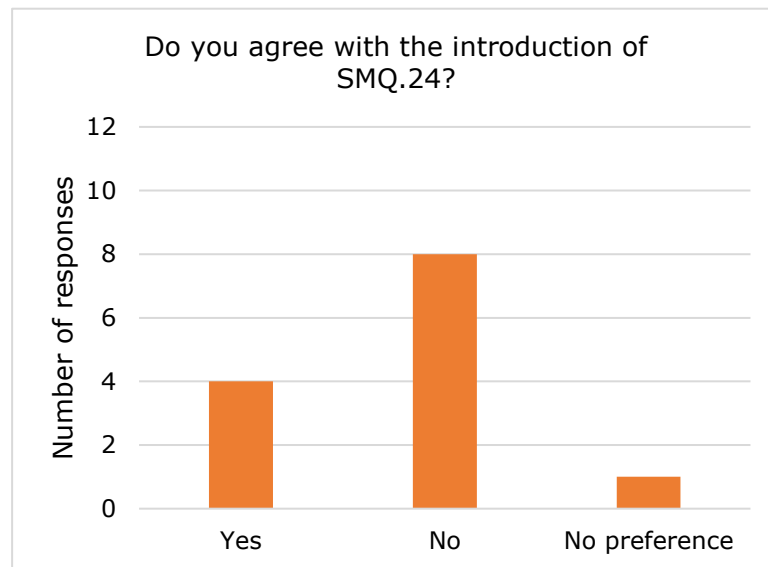
5.27. We agree that this would be covered by SMQ.1 and will therefore not introduce this question.

## Electric Storage Heater and Boiler

### SMQ.24 Summary of responses

SMQ.24: Has the owner been provided with a warranty meeting the criteria under ECO?

Figure 27: Responses to the introduction of SMQ.24



- 5.28. The majority of respondents (67%) considered that ESH and boiler warranties did not need to be covered in technical or score monitoring and thus thought this question should be removed. They stated that this requirement should be covered by the audit process carried out by suppliers.
- 5.29. Three respondents commented on the ambiguity of the question and requested further details on the warranty requirements.
- 5.30. Another respondent pointed out that this question could be overly reliant on the customer’s retention of the documentation.

### SMQ.24 Ofgem response

- 5.31. All boiler and ESH installations must be accompanied by at least a one-year warranty. See Chapters 11 and 12 of the ECO3 Guidance: Delivery<sup>19</sup> for more information about the Boiler and ESH warranty requirements under ECO3.
- 5.32. Although this can be covered through the Ofgem audit programme, we believe that it can also be easily determined upon onsite inspection because warranty documents should be provided to the homeowner upon handover of the measure.

<sup>19</sup> See <https://www.ofgem.gov.uk/publications-and-updates/energy-company-obligation-2018-22-eco3-guidance-delivery>

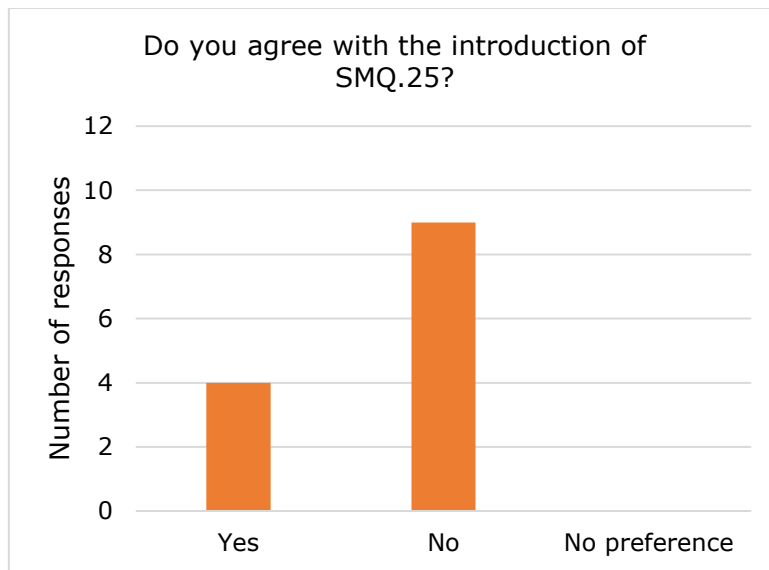
5.33. Where a customer is without their warranty documentation, they should be reissued with them in order to remediate this fail.

## All Wall Insulation

### SMQ.25 Summary of responses

SMQ.25: *Has the owner been provided with an ECO Appropriate Guarantee?*

Figure 28: Responses to the introduction of SMQ.25



5.34. The majority of respondents (69%) did not consider this to be an appropriate question for score monitoring. Some thought it might be better placed in technical monitoring and others thought it should be excluded from both the technical and score monitoring question sets.

5.35. Other respondents questioned whether the guarantee would have been received when the monitoring process is carried out. They pointed out this may slow down the monitoring process.

### SMQ.25 Ofgem response

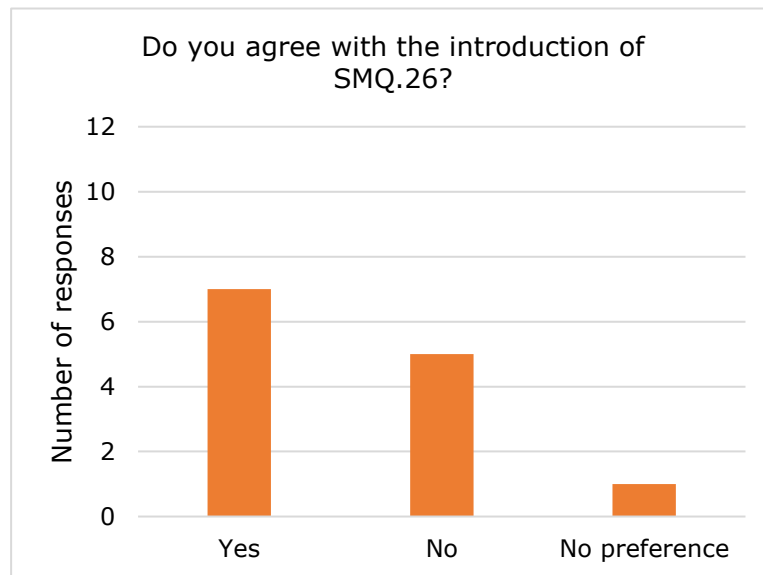
5.36. We agree that in some cases it can take several weeks for the wall insulation guarantee certificate to arrive at the property. We therefore will not include this question in the ECO3 question set.

## All measures notified as solid wall alternative measures

### SMQ.26 Summary of responses

SMQ.26: *Is the percentage indicated by the third part of the SWMR reference number (SWMR RN: format AAA/N.NN/**NNN**/NNNNNN) an accurate reflection of the proportion of the property’s external walls which are of solid wall construction, whether or not insulated?*

Figure 29: Responses to the introduction of SMQ.26



5.37. 58% of respondents agreed with the introduction of SMQ.26 to the score monitoring question set. Some of those that disagreed stated that they would agree with its introduction if it is accompanied by further guidance on what constitutes an ‘accurate reflection’.

5.38. There were further requests to simplify the wording of the question and to allow a 5% margin of error to reduce risk of disputes between monitoring agents and installers.

### SMQ.26 Ofgem response

5.39. We will implement this question and have provided further guidance on answering this question in the ECO3 Explanatory Notes for Monitoring<sup>20</sup>.

5.40. We have also indicated in the wording of the question that a 5% tolerance should be applied when answering this question, in the same way as it is for SMQ.5 and SMQ.20.

<sup>20</sup> See <https://www.ofgem.gov.uk/publications-and-updates/eco3-monitoring>

## 6. Further Changes

### Technical Monitoring

#### **IWI.9, IWI.10 and UFI.9**

- 6.1. In addition to the above, and in response to feedback to this consultation, we will also be introducing the following questions: IWI.9, IWI.10 and UFI.9.
- 6.2. IWI.9: Have all services (eg light switches, sockets, radiators) been removed, insulated behind and re-positioned inside the heat loss area?
- 6.3. IWI.10: Has the system been fully sealed at edges, corners and junctions to prevent the ingress of moisture?
- 6.4. UFI.9: For suspended floors, has insulation been applied to working pipes below the insulation?
- 6.5. We have received a number of concerns relating to these aspects of installation and therefore hope these questions will address such issues.

#### **EWI.1, EWI.2 and IWI.1**

- 6.6. For EWI.1, EWI.2 and IWI.1 we have updated the reference to PAS 2030 to just 'PAS'. This is to account for the fact that there are multiple PAS documents that could be relevant when answering these questions.

#### **IWI.2 and IWI.6**

- 6.7. For IWI.2 and IWI.6 we have specified the annex being referred to is the relevant PAS 2030 annex, rather than just the 'Pas annex'.
- 6.8. For IWI.2 we will also be applying it at post-installation stage as well as mid-installation stage. We have therefore reworded slightly so that it can be applied successfully at both stages. More information about this can be found in the ECO3 Explanatory Notes for Monitoring<sup>21</sup>.

#### **LI.7 and RIRI.7**

- 6.9. For LI.7 and RIRI.7 we have updated the wording to specify that insulation must also be applied to both the tank and overflows.

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<sup>21</sup> <https://www.ofgem.gov.uk/publications-and-updates/eco3-monitoring>



### **RIRI.8**

6.10. For RIRI.8 we have updated the wording to specify that both existing hatches and new hatches must be considered when answering this question, and have specified the annex being referred to is the PAS 2030 annex.

### **IWI.6**

6.11. For IWI.6 we agree that the previous wording was specific to only certain products but might also apply to other products. We have therefore updated the wording so that it doesn't just refer to suspended timber floors and inspects the more general requirement for air gaps to be sealed where the insulation product makes contact with the floor.

6.12. We recognise there may be different methods of achieving this and so have required that this be inspected with the system designer requirements in mind.

### **Remote re-inspection**

6.13. We have enabled the option to re-inspect remotely following the remediation of a failure for the following questions:

6.14. CWI.1, CWI.2, CWI.3, CWI.6, EWI.2, EWI.4, EWI.9, EWI.11, EWI.12, EWI.13, EWI.16, EWI.17, EWI.18, EWI.19, FRI.6, FRI.7, IWI.3, IWI.4, IWI.5, LI.6, NB.6, NESH.1, NESH.5, NESH.6 and RIRI.7.

### **'Unable to Validate' option**

6.15. The 'Unable to Validate' option has been made available for the following questions:

6.16. IWI.1 and PWI.3.

### **'N/A' option**

6.17. The 'N/A' option has been made available for LI.4, LI.5 and UFI.3.

### **Boiler measures**

6.18. For NB.1 to NB.6 we have updated the measure type from 'New Boiler' to 'Boiler Replacement'.

### **Under Floor Insulation**

6.19. For UFI.1 to UFI.8 we have updated the measure type from 'UFI' to 'Under Floor Insulation'.

## All questions

6.20. We have updated the inspection stage for all measures as follows:

- For post-installation inspections, we have updated the inspection stage from 'Post-installation' to 'Post'.
- For mid-installation inspections, we have updated the inspection stage from 'Mid-installation' to 'Mid'.
- For questions that apply at both mid and post-installation stage, we have updated the inspection stage from 'Mid- & Post-Installation' to 'Mid & Post'.

## Score Monitoring

### Park Home Insulation

6.21. For SMQ.9, we have updated the measure type from 'External Wall Insulation (Park Homes only)' to 'Park Home Insulation' to reflect the fact that park home measures may now also be composed of only loft insulation or floor insulation.

## Appendix 1

### List of respondents

1. ATMA
2. Capture Carbon
3. THS
4. EDF
5. Scottish Power
6. SSE
7. Engie
8. Npower
9. Anthesis
10. Energy UK
11. EON
12. Instagroup
13. British Gas

## Appendix 2

### Table of all responses

Question	Yes	No	No response	Total
HC.1	8	3	2	13
HC.2	10	1	2	13
IWI.4	12	0	1	13
TMQ.1	3	9	1	13
TMQ.2	4	8	1	13
TMQ.3	4	8	1	13
CWI.9	5	8	0	13
DHS.5	7	4	2	13
DHS.6	5	7	1	13
DHS.7	9	3	1	13
PHV.1	5	7	1	13
PHV.2	5	7	1	13
PHV.3	3	9	1	13
PHV.4	9	2	2	13
FCH.1	6	6	1	13
SMQ.5	4	8	1	13
SMQ.14	11	0	2	13
SMQ.8	11	0	2	13
SMQ.12	8	4	1	13
SMQ.22	4	8	1	13
SMQ.23	4	7	2	13
SMQ.18	9	2	2	13
SMQ.19	9	3	1	13
SMQ.20	6	6	1	13
SMQ.21	5	7	1	13
SMQ.24	4	8	1	13
SMQ.25	4	9	0	13
SMQ.26	7	5	1	13