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ECO2 consultation on Technical and Score Monitoring

Consultation

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Response deadline: 11 October 2016

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Overview:

This consultation proposes changes to the monitoring process. This process is one of the ways we are reassured that the measures installed are of sufficient quality and that the scores are accurate.

The proposed changes would apply for measures installed after 31 March 2017, although those related to deemed scores depend on the outcome of the Department for Business, Energy and Industrial Strategy (BEIS) consultation on the future of ECO. Note that some of the changes proposed in this consultation are contingent on whether or not BEIS decides to introduce deemed scores.

This consultation will be open for four weeks from 13 September 2016 to 11 October 2016. We have chosen this four week period to give suppliers time to implement any changes before April 2017.

The chosen four-week period is in accordance with Ofgem guidance for consultations that propose relatively minor changes.

We welcome your views on these proposals. Please respond to eco.consultation@ofgem.gov.uk by 11 October 2016.

Background

The Energy Company Obligation (ECO) is a Government scheme which requires larger energy companies to deliver energy efficiency measures to domestic premises in Great Britain. The current scheme runs from 1 April 2015 to 31 March 2017 and is referred to as ECO2. It is administered by Ofgem E-Serve ('we', 'us' and 'our').

The Department for Business, Energy and Industrial Strategy (BEIS) recently consulted on a proposed one-year extension to the current obligation period alongside changes to transition to a future, fuel poverty focused scheme, planned for 2018-2022.

We require suppliers to conduct on-site inspections of at least 5% of the measures they notify to us. This requirement will continue during the extension year proposed by BEIS. These inspections must be carried out by independent third party inspectors. We refer to this process as 'monitoring' and it has two elements:

- **Technical monitoring**: verifies that measures have been installed to the appropriate standards of installation. It is carried out by technical monitoring agents.

- **Score monitoring:** checks that the savings for a measure have been calculated using the correct inputs. It is carried out by score monitoring agents.

Suppliers report monitoring results to us every quarter. To ensure the results are representative, they must also make sure that they monitor at least 3% of the measures installed by any installer they work with. There are some exceptions in place for installers who install fewer than 100 measures in a quarter.

If a measure fails a technical monitoring inspection, the supplier must rectify the failure and have the measure brought up to the right standards. If a measure fails a score monitoring inspection, the supplier must correct the savings score notified for that measure. Suppliers report the results of this activity to us. We may ultimately reject measures that failed an inspection but are not remediated or rescored. A measure can fail both technical and score monitoring.

If the percentage of measures that fail for a certain installer exceeds a set threshold, the measures installed by this installer for the relevant quarter are considered to be 'at risk' and are placed on a pathway to compliance. Pathways to compliance are sets of actions that suppliers must undertake to allay our concerns over the measures delivered by an 'at risk' installer. Depending on the failure rate for an installer, its measures are placed on either a 'medium concern' or 'high concern' pathway.

The pathway an installer is on determines what actions a supplier must take. In the first instance, we will ask suppliers to conduct *additional monitoring*. Additional monitoring is either used to compensate for a monitoring deficiency, or to verify a

high failure rate. If a high failure rate is confirmed, suppliers must provide us with *additional assurances*. The form of additional assurances depends on the specific issue with an installer, but generally they consist of improvement plans, root cause analyses and targeted visits of potentially affected measures.

There is more information on the monitoring process in Chapter 9 of our ECO Delivery Guidance[1] and on our website[2].

About this consultation

This consultation considers changes we would like to make to our existing monitoring process to:

- simplify some aspects of the pathways to compliance process
- Update a number of technical monitoring questions based on our experience in ECO2, and
- Indicate how we would alter score monitoring to accommodate deemed scores in the event that BEIS decide to implement them.

A summary of our proposals can be found in Chapter 1 of this document.

We are consulting on these changes because we want to give stakeholders the opportunity to comment on our proposals. We want to draw from a wide range of experiences and views based on ECO2 to ensure that both the process and the monitoring questions remain fit for purpose.

Next steps

The consultation is open from 13 September 2016 to 11 October 2016. Complete your response using our template and send it to eco.consultation@ofgem.gov.uk or:

Frank Hemmes
Energy Efficiency and Social Programmes
Ofgem, 107 West Regent Street, Glasgow, G2 2BA

We aim to publish our decision, including a summary of responses in late October 2016. Unless marked confidential, all responses will be published on our website.

[1] https://www.ofgem.gov.uk/publications-and-updates/energy-company-obligation-2015-17-eco2-guidance-delivery
[2] https://www.ofgem.gov.uk/publications-and-updates/energy-company-obligation-monitoring-questions

Contents

1. Introduction

1.1. This consultation sets out a number of proposed changes to our monitoring process for ECO measures. Based on our experience from ECO2, we intend to improve the technical monitoring questions and simplify the pathway to compliance process. We also want to indicate how we would change the score monitoring process in the event that the Department for Business, Energy and Industrial Strategy (BEIS) decides to introduce deemed scores for the extension to ECO2.

1.2. Our proposed changes affect various parts of the monitoring process and are not all interrelated. We have grouped them together in individual chapters to make it easier for readers to understand and respond. The proposals covered by each of the chapters are:

Changes to the monitoring process: Chapter 2 deals with overall changes to the monitoring process. The changes aim to simplify the monitoring and pathways to compliance processes by reducing the number of different trigger points, more clearly linking the actions suppliers take to the pathway that measures are on and removing best practice monitoring.

Score monitoring: If BEIS decides to introduce deemed scores for measures installed from 1 April 2017, the current score monitoring questions will become obsolete. Chapter 3 outlines the score monitoring questions we propose as replacements for the current questions if deemed scores are introduced.

Technical monitoring: Based on our experiences in ECO2, we are proposing a number of revisions to the technical monitoring questions. We aim to reduce ambiguity in the questions, set them at the right level of technical expertise and address a number of compliance concerns that emerged during ECO2. We propose substantial revisions to the questions for District Heating System (DHS) and Room-in-roof insulation (RIRI) measures. We also have a number of smaller revisions for some of the other measure types.

2. Changes to the monitoring process

2.1. Based on our experience during ECO2, we are proposing changes to the monitoring process and the way in which we apply the pathways to compliance. We want the changes we are proposing to streamline and simplify the process, and make it easier for suppliers to anticipate our actions and move measures off pathways.

2.2. We are proposing these changes:

- reducing the trigger failure rate for score monitoring from 20% to 10%, so that it is the same as technical monitoring
- linking our requirements for additional assurances directly to the pathway to compliance an installer is on
- introducing target ranges for mid-installation inspections
- removing best practice monitoring.

Changing the failure trigger point for score monitoring from 20% to 10%

2.3. In the ECO: Help to Heat consultation,[3] BEIS proposed to introduce deemed scores for measures installed from 1 April 2017. The deemed scores we have developed in anticipation of this change are based on a smaller number of inputs, compared to the current scoring approach, where savings for measures are calculated using the Standard Assessment Procedure (SAP) or the Reduced Standard Assessment Procedure (RdSAP). An incorrect input for a deemed score is more likely to significantly impact the score selected for a measure. This means that if a score monitoring agent identifies that a score has not been correctly determined, the difference in score is likely to be significant.

2.4. On the other hand, we expect that fewer measures will fail score monitoring because the inputs used to determine the deemed score for a measure are easier to assess than those used for SAP/RdSAP.

2.5. Due to this combination of expected lower score monitoring failure rates for measures given deemed scores, but a larger error where a deemed score is incorrectly selected, we think it is reasonable to adjust the trigger failure rate for score monitoring to 10%. This will make it consistent with the failure trigger point for technical monitoring.

[3] https://www.gov.uk/government/consultations/energy-company-obligation-eco-help-to-heat

2.6. Similarly, we propose to set the score monitoring failure trigger point above which a subset of measures is deemed to be of 'high concern' at 25%. This will make the 'high concern' trigger point consistent with the same point for technical monitoring.

2.7. The results of score monitoring and technical monitoring will continue to be considered independently of each other. Whether or not an installer has breached the threshold will be determined for score and technical monitoring separately.

2.8. We expect that adopting the same approach to score and technical monitoring results will simplify the pathway to compliance process and make it easier for both suppliers and other parties to comply with our monitoring requirements.

1. Changing the failure trigger point for score monitoring from 20% to 10%

Question 1.1
Do you agree that the failure trigger point for score monitoring should be set at 10%? If not, what should the threshold be and why?

Question 1.2
Do you agree that the score monitoring fail rate above which a subset of measures is considered to be of 'high concern' should be set at 25%? If not, what do you believe the threshold should be and why?

Linking our requirements for additional assurances directly to the pathway to compliance an installer is on

2.9. There are currently two pathways to compliance for subsets of measures that exceed the failure threshold for technical monitoring. Pathway B is triggered for subsets with a failure rate between 10% and 25%. Pathway A is triggered for subsets of measures with a failure rate of 25% or higher.

2.10. However, our requirements for the additional assurances that we seek from suppliers are currently not directly aligned to the pathway that a subset of measures are on. Instead, we have three different levels for additional assurances: 10 – 15%, 15 – 30% and >30%.

2.11. We propose to simplify the additional assurance requirements by integrating them with the pathways, so that either pathway has a specific set of additional assurance requirements. We expect this will make it easier for stakeholders to anticipate what assurances will be required, and will make the pathways more consistent.

2.12. The proposed additional assurances for each pathway are:

- **Pathway B**: Improvement plan and assurance letter from senior management.

- **Pathway A**: Improvement plan, assurance letter from senior management, root cause analysis and revisiting affected measures.

2. Linking our requirements for Additional Assurances directly to the Pathway to Compliance an installer is on

Question 2.1
Do you agree the required additional assurances should be based on which pathway an installer is placed on? If not, please explain why not.

Introducing target ranges for mid-installation inspections for certain measures

2.13. Most measures are inspected after the installation of the measure is complete. However, for some measure types we also ask suppliers to commission inspections while the installation is ongoing ('mid-installation inspections'). For measure types where we have both mid-installation and post-installation inspections, the 5% monitoring requirement is split between these two types of inspections. The expected split for each measure type is in our Explanatory Notes for Monitoring.

2.14. We do not currently require strict adherence to the expected split between mid-installation and post-installation inspections, but may seek clarification from a supplier when the reported split deviates strongly from our expectations.

2.15. Our experience from ECO2 suggests that these guidelines do not provide enough clarity to suppliers and stakeholders on our expectations around the proportion of mid-installation inspections.

2.16. We propose to introduce a target range for mid-installation inspections for the relevant measure types. We would require that a suppliers' share of mid-installation inspections fall somewhere within this range.

2.17. In line with the proposed changes to the monitoring questions, we propose to introduce mid-installation questions for the measures in the table below, with the corresponding mid-installation inspection targets.

Measure type	Minimum proportion of mid-installation inspections	Maximum proportion of mid-installation inspections
SWI	40%	60%
FRI	40%	60%
UFI	40%	60%

3. Introducing target ranges for mid-installation inspections for certain measures

Question 3.1
Do you agree with the introduction of target ranges for mid-installation inspections for measure types with both mid-installation and post-installation questions? If not, please explain why.

Question 3.2
Do you consider the ranges proposed above to be reasonable? If not, please indicate for each measure type where you disagree what you would consider a reasonable range and why.

Removing best practice monitoring

2.18. Best practice monitoring questions[4] were introduced in ECO2 to retain some of the monitoring questions that were removed from the technical monitoring questions. These are questions that verified elements that we did not consider essential for the measure to deliver savings, but that could have a bearing on the occupant's experience. Best practice monitoring is voluntary, and we do not take any actions against suppliers or installers based on the results. We include the results of best practice monitoring in our quarterly monitoring reports.

2.19. Our experience during ECO2 has been that most suppliers do not conduct Best Practice Monitoring. We are of the view that the results from only a limited number of suppliers have limited value. We therefore propose to remove the best practice monitoring questions.

4. Removing best practice questions

Question 4.1
Do you agree that we should remove the best practice monitoring questions? If not, please explain why.

[4] https://www.ofgem.gov.uk/sites/default/files/docs/2015/03/eco2_best_practice_monitoring_questions.xlsx

3. Score monitoring

3.1. In their Help to Heat consultation, the Department for Business, Energy and Industrial Strategy (BEIS) proposed to introduce deemed scores for the extension to ECO2 from 1 April 2017 to 1 April 2018.

3.2. The introduction of deemed scores as proposed would make the current score monitoring questions less useful for administering ECO. This is because these questions are used to verify some of the inputs that are used for SAP/RdSAP calculations currently necessary. In line with our consultation on deemed scores, we expect that deemed scores would be attributed to a measure based on a limited number of inputs.

3.3. If deemed scores were introduced for ECO2, the purpose of score monitoring would need to move to verify that the correct inputs have been selected to determine the deemed score for a measure.

3.4. **Therefore, if BEIS decide to introduce deemed scores as consulted on we propose to replace the current score monitoring question set with a basic set of six questions that capture all common inputs for the determination of a deemed score**.

3.5. In addition, we propose to add a number of additional questions for particular measure types, to verify elements of the deemed score that are specific to a measure type.[5]

Score monitoring questions for all measures

3.6. We propose these six score monitoring questions be applied to all measure types scored using deemed scores:

1) Does the measure installed match the notified measure type?
2) Does the primary fuel type match the notified primary fuel type?
3) Does the property type match the notified property type?
4) Does the number of bedrooms match the notified number of bedrooms?
5) Is the claimed percentage of measure installed a reasonable reflection of the actual percentage of measure installed?
6) Is the claimed percentage of property treated a reasonable reflection of the actual percentage of property treated?

[5] It is possible that new measure types are introduced during the extension to ECO2. Were this to occur, we would seek views from stakeholders on the most appropriate monitoring questions for these measures.

5. Score monitoring questions for all measures

Question 5.1
Do you agree with the proposed list of common score monitoring questions? If not, please indicate which questions you do not agree with and why.

Question 5.2
Do you think any further common questions should be added? If yes, please indicate what further questions you want to see included.

Measure-specific score monitoring questions

3.7. In addition to score monitoring questions for all measures listed above, we propose to introduce the following measure-specific score monitoring questions:

Measure Type	Questions
Cavity Wall Insulation	Does the product installed at the premises match the product used to determine the notified score?
Loft Insulation	Is there a pre-existing insulation level declaration present?[6]
	Has the loft hatch been insulated to the appropriate standards?
High performing external doors	Has the correct measure type been selected for the part of the door that is glazed?
Park homes	Does the park home size match the notified park home size?
Solar PV	Does the number of panels installed match the number of panels claimed for?
Electric storage heater	Does the type of electric storage heater installed match the type of electric storage heater notified?
Boiler	Does the type of boiler installed match the type of boiler notified?
	Do the heating controls installed encompass a programmer, thermostat and TRVs to at least 50% of all radiators?
Heating controls	Do the heating controls installed encompass a programmer, thermostat and TRVs to at least 50% of all radiators?
Room-in-Roof measure	If the Room-in-Roof measure has been notified as having insulated the residual loft space, has the residual loft space been insulated?
All heating measures	Does the wall construction type notified match at least 50% of the total external wall area of the property?

3.8. All of the above questions would be asked as part of post-installation inspections.

[6] This question is based on the assumption that we will introduce two scores for loft insulation measures

6. Measure specific score monitoring questions

Question 6.1
Do you agree that the proposed measure specific score monitoring questions will allow us to verify the deemed scores as currently laid out in BEIS's and our consultations? If not, please propose alternatives and indicate with which questions you disagree, and why.

Question 6.2
Do you believe any further score monitoring questions are needed for specific measure types? If yes, please indicate what questions you would like to be added and why.

Suitable qualifications

3.9. At present, it is a requirement that the Score Monitoring Agent (SMA) is suitably qualified. In England and Wales, we require the SMA to be either a Domestic Energy Assessor or Green Deal Advisor. In Scotland, the SMA needs to be a member of an Approved Organisation.[7]

3.10. We believe that, with the proposed changes to the score monitoring questions, these requirements would no longer be necessary, and there would be no drop in consumer protection from removing this requirement. We therefore propose to remove the requirement for specific qualifications for SMAs

7. Suitable qualifications

Question 7.1
Do you agree it is no longer necessary for a score monitoring agent to have DEA accreditation or similar qualifications? If not, please explain why you believe DEA accreditation or similar qualifications should be necessary.

[7] Approved Organisations are those that have entered into protocols with Scottish Government to deliver Energy Performance Certificates. See http://www.gov.scot/Topics/Built-Environment/Building/Building-standards/enerperfor/epcorgprg for a list of approved organisations

4. Technical Monitoring

4.1. To ensure continuity of the monitoring process, we are not proposing to entirely revise the technical monitoring questions. However, there are some questions for specific measure types that our experience during ECO2 has prompted us to consider changing, to make them clearer and more targeted.

4.2. We intend to change the Technical Monitoring questions for the following measure types:

- District Heating System (DHS)
- Room-in-roof insulation (RIRI)

District Heating System measures

4.3. The current technical monitoring questions for DHS measures are different from standard technical monitoring questions because they do not check the quality of installation of the DHS measure. Instead the questions verify, where applicable, that either of two pre-conditions for DHS measures is met.

4.4. The pre-conditions for DHS measures are listed in paragraphs 3.24 to 3.51 of our ECO2 Guidance: Delivery. The purpose of the pre-conditions is to make sure that DHS measures are only installed in properties that are adequately insulated.

4.5. During ECO2, we became aware that people were confused about whether DHS technical monitoring applied to all DHS measures, in particular DHS measures where the supplier did not have to undertake any works to meet the pre-conditions.

4.6. The existing technical monitoring questions for DHS measures are also not structured in the same way as standard technical monitoring questions. Several questions are not simple 'Pass/Fail' questions but instead ask the technical monitoring agent to record more detailed information.

4.7. To improve technical monitoring of DHS measures, we propose to remove the existing set of questions and replace it with a new set. These new DHS technical monitoring questions would apply to all DHS measures[8] and follow the same logic as technical monitoring questions for other measure types.

[8] Although not every question would apply in every circumstance. A 'N/A' option will be provided where relevant.

DHS measure type	Question Number	Question
Precondition 1: for all non multi storey properties and all top floor premises in multi-storey buildings	DHS.1	Is 50% or more of all roof areas or exterior facing walls insulated?
Precondition 2: All premises in multi-storey properties excluding premises on the top floor	DHS. 2	Are any of the following true: - One or more parts of the exterior facing walls of the multi-storey building in which the premises is located are of solid wall construction; - All cavity walls have been insulated with cavity wall insulation; or - Any cavity walls which have not been insulated have visible signs to indicate they cannot be insulated with cavity wall insulation.
All DHS measures	DHS.3	Does the DHS measure provide working space heating in the domestic premises?
All DHS measures	DHS.4	Does the DHS measure provide working hot water in the domestic premises?

4.8. All questions would be asked post-installation.

8. District Heating System questions

Question 8.1
Do you think questions DHS.1 and DHS.2 are sufficient to check if the pre-conditions have been met for a DHS measure, where applicable? If not, please indicate if you believe questions should be added, removed, or changed.

Room-in-roof insulation measures

4.9. Over the course of ECO2, we became aware that the supply chain wasn't clear about which elements of a room-in-roof need to be insulated to meet the requirement that 100% of a measure is installed. We clarified our expectations during ECO2. We propose to add the following questions for RIRI measures to bring technical monitoring in line with the guidance we issued in ECO2:

- Has insulation been installed to all dormer windows cheek walls and ceilings within the room-in-roof?
- Has insulation been installed to all gable walls within the room-in-roof?

- Has insulation been installed to all party walls within the room-in-roof that are either cavity walls or solid walls bordering an unheated space?
- Have all hatches installed as part of the room-in-roof insulation been insulated as specified in PAS 2030:2014?
- Have any tanks or pipework present in the residual area been insulated?

4.10. All questions would be asked post-installation.

4.11. We also propose to change the existing RIRI technical monitoring questions from mid-installation questions to post-installation questions. This is to ensure that the installation has been completed by the time the technical monitoring inspection takes place, and avoid a situation where the technical monitoring agent cannot properly inspect a measure because the installation is still in progress.

4.12. The existing RIRI technical monitoring questions are listed below[9]:

Question Number	Question
RIRI.1	Has insulation been installed to all stud walls within the room in the roof?
RIRI.2	Has insulation been installed to all sloping ceilings within the room in the roof?
RIRI.3	Has insulation been installed to the ceiling within the room in the roof?
RIRI.5	Where down lighters or services have been fitted through the existing ceiling, have any measures been taken to prevent air leakage around down lights into the roof void?

9. Room-in-roof insulation questions

Question 9.1
Do you agree that the proposed questions will improve standards of installation for RIRI measures? If not, please indicate with which questions you disagree and why.

Question 9.2
Do you believe that changing the existing RIRI questions from mid-installation to post-installation stage will enable the monitoring agent to better verify whether the RIRI has been correctly insulated? If not, please indicate why not.

Further question changes

[9] Question RIRI.4 was removed in the course of ECO2.

4.13. In addition to the changes listed above for DHS and RIRI measures specifically, we also propose to introduce a number of other questions for other measure types.

4.14. We propose to add the following questions:

Measure Type	Proposed Question
FRI	Has the area between the wall and flat roof slab been insulated to prevent cold bridging?
PWI	Does the drilling pattern conform to the appropriate materials compliance certificate?
	Have all injection holes been filled?
Air source heat pump	Does the heat pump provide working space heating in the domestic premises?
	Does the heat pump provide working hot water in the domestic premises?
Ground source heat pump	Does the heat pump provide working space heating in the domestic premises?
	Does the heat pump provide working hot water in the domestic premises?
Biomass boilers	Does the boiler provide working space heating in the domestic premises?
	Does the boiler provide working hot water in the domestic premises?

10. Further questions

Question 10.1
Do you agree with the introduction of the above questions? If not, please tell us why

The following questions concern the entire set of technical monitoring questions. All current technical monitoring questions are listed in Appendix 2 to this consultation document.

Question 10.2
Do you think we should change any of the existing technical monitoring questions? If so, please indicate which one(s) and explain why it should be changed.

Question 10.3
Do you think we should remove any of the existing technical monitoring questions? If so, please indicate which one(s) and explain why they should be removed.

Question 10.4
Do you think we should add any further technical monitoring questions? If so, please indicate what questions you believe should be added, and for what measure type.

5. Appendices

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Appendix 1 - Consultation response and questions

5.1. We want to hear from anyone with an interest in monitoring and the proposed changes outlined in this document. We have chosen a four-week consultation period so that we will be able to give suppliers and the supply chain sufficient time to implement any changes ahead of the extension to ECO2.

5.2. We ask for your feedback to each of the questions that have been asked throughout this consultation document; you will also find these listed below. We would appreciate it if you could record your answers to each of the questions in the template published on our website.

5.3. Unless marked confidential, we will publish all responses by placing them in our library and on our website www.ofgem.gov.uk. You can ask for us to keep your response confidential and we will respect this unless we are required to disclose this information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

5.4. If you want your response to remain confidential, clearly mark the document/s to that effect and include the reasons for confidentiality. You should put any confidential material in the appendices to your response.

5.5. Next steps: After we've considered the responses to this consultation, we will publish a response document on our website. If you have any questions on this document in the first instance direct them to Eco.consultation@ofgem.gov.uk or

Frank Hemmes
Energy Efficiency and Social Programmes,
Ofgem, 107 West Regent Street, Glasgow, G2 2BA

Appendix 2 - Consultation Questions

1. Changing the failure trigger point for score monitoring from 20% to 10%

Question 1.1
Do you agree that the failure trigger point for score monitoring should be set at 10%? If not, what should the threshold be and why?

Question 1.2
Do you agree that the score monitoring fail rate above which a subset of measures is considered to be of 'high concern' should be set at 25%? If not, what do you believe the threshold should be and why?

2. Linking our requirements for Additional Assurances directly to the Pathway to Compliance an installer is on

Question 2.1
Do you agree the required additional assurances should be based on which pathway an installer is placed on? If not, please explain why not.

3. Introducing target ranges for mid-installation inspections for certain measures

Question 3.1
Do you agree with the introduction of target ranges for mid-installation inspections for measure types with both mid-installation and post-installation questions? If not, please explain why.

Question 3.2
Do you consider the ranges proposed above to be reasonable? If not, please indicate for each measure type where you disagree what you would consider a reasonable range and why.

4. Removing best practice questions

Question 4.1
Do you agree that we should remove the best practice monitoring questions? If not, please explain why.

5. Score monitoring questions for all measures

Question 5.1
Do you agree with the proposed list of common score monitoring questions? If not, please indicate which questions you do not agree with and why.

Question 5.2
Do you think any further common questions should be added? If yes, please indicate what further questions you want to see included.

6. Measure specific score monitoring questions

Question 6.1
Do you agree that the proposed measure specific score monitoring questions will allow us to verify the deemed scores as currently laid out in BEIS's and our consultations? If not, please propose alternatives and indicate with which questions you disagree, and why.

Question 6.2
Do you believe any further score monitoring questions are needed for specific measure types? If yes, please indicate what questions you would like to be added and why.

7. Suitable qualifications

Question 7.1
Do you agree it should no longer be a requirement for a score monitoring agent to be an accredited DEA or equivalent? If not, please tell us why you disagree.

8. District Heating System questions

Question 8.1
Do you think questions DHS.1 and DHS.2 are sufficient to check if the pre-conditions have been met for a DHS measure, where applicable? If not, please indicate if you believe questions should be added, removed, or changed.

9. Room-in-roof insulation questions

Question 9.1
Do you agree that the proposed questions will improve standards of installation for RIRI measures? If not, please indicate with which questions you disagree and why.

Question 9.2
Do you believe that changing the existing RIRI questions from mid-installation to post-installation stage will enable the monitoring agent to better verify whether the RIRI has been correctly insulated? If not, please indicate why not.

10. Further questions

Question 10.1
Do you agree with the introduction of the above questions? If not, please tell us why?

The following questions concern the entire set of technical monitoring questions. All current technical monitoring questions are listed in Appendix 2 to this consultation document.

Question 10.2
Do you think we should change any of the existing technical monitoring questions? If so, please indicate which one(s) and explain why it should be changed.

Question 10.3
Do you think we should remove any of the existing technical monitoring questions? If so, please indicate which one(s) and explain why they should be removed.

Question 10.4
Do you think we should add any further technical monitoring questions? If so, please indicate what questions you believe should be added, and for what measure type.

Appendix 3 – Technical monitoring questions

Measure Type	Stage	Question Number	Question
Boiler Repair	**Post**	BR.1	Where a boiler and hot water storage vessel have been repaired or replaced, have any associated replacement pipes or pipes that have been exposed as part of the works or are now otherwise accessible been insulated where possible?
	Post	BR.2	Does the boiler produce hot water for the central heating system?
	Post	BR.3	If the boiler is designed to produce domestic hot water, is the boiler producing domestic hot water?
New Boiler	**Post**	NB.1	Where a boiler and hot water storage vessel have been repaired or replaced, have any associated replacement pipes or pipes that have been exposed as part of the works or are now otherwise accessible been insulated where possible?
	Post	NB.2	If holes or openings have been made through the fabric of the premises due to the installation of a new boiler, have they been made good? (including condensate pipe, pressure relief valve, gas flue terminals)
	Post	NB.3	Does the boiler produce hot water for the central heating system?
	Post	NB.4	If the boiler is designed to produce domestic hot water, is the boiler producing domestic hot water?
Cavity wall insulation	**Post**	CWI.1	Is the insulation material suitable for use with the property's exposure level to wind driven rain?
	Post	CWI.2	Does the form of the construction of the property suggest that it was suitable for the material that has been installed?
	Post	CWI.3	Does the current condition of the property suggest that it was suitable for the material that has been installed?
	Post	CWI.4	Does the drilling pattern conform to the appropriate materials compliance certificate?
	Post	CWI.5	Have all injection holes been filled?
Draught Proofing	**Post**	DP.1	Has the draught proofing been securely fixed to all doors and windows?
	Post	DP.2	Are all newly treated windows and doors fully operational?
Electric Storage Heater Repair	**Post**	ESHR.1	Is the repair to an Electric Storage Heater as opposed to a panel heater or other kind of heater?

	Post	ESHR.2	Does the Electric Storage Heater activate and produce heat?
	Post	ESHR.3	Is the property on an Economy 7 or differential off-peak tariff?
	Post	ESHR.4	Where the property is on a differential off-peak tariff, are the Elecitric Storage Heaters connected to a separate consumer unit?
New Electric Storage Heater	**Post**	NESH.1	Is the installation an Electric Storage Heater as opposed to a panel heater or other kind of heater?
	Post	NESH.2	Does the Electric Storage Heater activate and produce heat?
	Post	NESH.3	Are all storage heaters fitted with an automatic charge control?
	Post	NESH.4	Is the fan on fan-assisted storage heater(s) controlled by a thermostat?
	Post	NESH.5	Is the property on an Economy 7 or differential off-peak tariff?
	Post	NESH.6	Where the property is on a differential off-peak tariff, are the Electric Storage Heaters connected to a separate consumer unit?
External wall insulation	**Mid**	EWI.1	Is there at least one carded operative that meets the competence requirements for the relevant tasks as specified in B4-l4 of Table B4 of PAS:2030:2014
	Mid	EWI.2	Has the pre-installation survey been completed fully in accordance to PAS2030:2014?
	Mid	EWI.3	Is the measure/system being installed as specified in the appropriate product certificate and/or system designer's instructions?
	Mid	EWI.4	Where telecommunications are affected by the EWI installation, has the relevant telecoms provider been contacted?
	Mid	EWI.5	Are insulation boards tightly butted together in a break bond pattern?
	Mid	EWI.6	Are insulation boards cut at right angles to allow tight butting?
	Mid	EWI.7	Are only full or half insulation boards fitted in an interlocking pattern?
	Mid	EWI.8	Are all insulation boards undamaged?
	Mid	EWI.9	Have cavities within cavity walls been filled or closed off to prevent an air path behind the insulation board?
	Mid	EWI.10	Have gaps been sealed to prevent an air path between the insulation board and wall?
	Mid	EWI.11	Are the insulation boards appropriately bonded and/or anchored as specified in the system designers instructions?
	Mid	EWI.12	Is the EWI installation being carried out appropriately without compromising the accessibility, functionality and/or safety of the existing services? (for example gas, electric, water, telephone, etc.)

	Post	EWI.13	Where services have penetrated the insulation board have these been sealed appropriately?
	Post	EWI.14	Are there any visible signs of water penetration?
	Post	EWI.15	Has the render/cladding been fully applied?
	Post	EWI.16	Have window and door reveals been insulated?
Flat roof insulation	**Mid**	FRI.1	Is the measure/system being installed as specified in the appropriate product certificate and/or system designer's instructions?
	Mid	FRI.2	Are boards butted together with no gaps at abutments?
	Mid	FRI.3	Has a 300mm insulation 'Up stand' been installed from the bottom surface of the horizontal layer around the perimeter of the roof on the internal façade of any parapet or penetrating service riser?
	Mid	FRI.4	Have existing cavity trays been raised and/or new ones provided at abutment of roof and wall?
	Post	FRI.6	Has a waterproof membrane been applied over the whole of the insulated area, including 'Up Stands' after the laying of the insulation board?
	Post	FRI.5	Is there any evidence of water penetration?
Window Glazing	**Post**	WG.1	Have all windows and doors in the premises that haven't been treated before now been treated?
Heating Controls	**Post**	HC.1	Are the heating controls linked to a functioning heating system?
	Post	HC.2	Do the heating controls turn on the domestic heating system?
Internal wall insulation	**Mid**	IWI.1	Is there at least one carded operative that meets the competence requirements as specified in B8.l4 of table B8 of PAS2030:2014
	Mid	IWI.2	Is the measure/system being installed as specified in the appropriate product certificate and/or system designer's instructions?
	Mid	IWI.3	Have all gaps behind the new insulation been sealed to prevent the circulation of cold air if applicable?
	Mid	IWI.4	Has the insulation been continued into the inter floor void?
	Mid	IWI.5	Where services have penetrated the vapour control layer have these been sealed appropriately?
	Mid	IWI.6	If the floor is suspended timber, is the insulated dry lining bedded on a strip of pre-compressed expanding foam nailed to the floor?
	Post	IWI.7	Is the insulation sealed around all adjoining boards, walls, ceilings and floors?
	Post	IWI.8	Is the insulation continued 400mm along all party and solid partition walls?

			*To be completed only where there is documentary evidence suggesting 400mm of insulation is not required (any reasons need to be noted in the comments box)
Loft insulation (top up)	**Post**	LITU.1	Is the thickness of insulation consistent throughout the loft area?
	Post	LITU.2	Has insulation been close butted?
	Post	LITU.3	Has insulation been cross laid to prevent cold bridging?
	Post	LITU.4	Has the loft hatch been insulated as specified in PAS 2030:2014?
	Post	LITU.5	Has the loft hatch been draught proofed as specified in PAS 2030:2014?
	Post	LITU.6	Where down lighters or services have been fitted through the existing ceiling, have any measures been taken to prevent air leakage around down lights into roof void?
Loft insulation (virgin)	**Post**	LIV.1	Is the thickness of insulation consistent throughout the loft area?
	Post	LIV.2	Has insulation been close butted?
	Post	LIV.3	Has insulation been cross laid to prevent cold bridging?
	Post	LIV.4	Has the loft hatch been insulated as specified in PAS 2030:2014?
	Post	LIV.5	Has the loft hatch been draught proofed as specified in PAS 2030:2014?
	Post	LIV.6	Is a signed and completed virgin loft insulation declaration present in the loft?
	Post	LIV.7	Where down lighters or services have been fitted through the existing ceiling, have any measures been taken to prevent air leakage around down lights into roof void?
Loft insulation (rafter)	**Mid**	LIR.2	Has insulation been installed to all sloping ceilings?
	Mid	LIR.4	Has insulation been installed to those areas external to the main loft area, but within the roof space?
	Mid	LIR.5	Where down lighters or services have been fitted through the existing ceiling, have any measures been taken to prevent air leakage around down lights into the roof void?
Party wall insulation	**Mid**	PWI.1	Does the drilling pattern conform to the appropriate materials compliance certificate?
	Mid	PWI.2	Does the lancing pattern conform to the appropriate materials compliance certificate?
	Mid	PWI.3	Have all party cavity walls been insulated?
Room-in-roof insulation	**Mid**	RIRI.1	Has insulation been installed to all stud walls within the room in the roof?
	Mid	RIRI.2	Has insulation been installed to all sloping ceilings within the room in the roof?
	Mid	RIRI.3	Has insulation been installed to the ceiling within the room in the roof?
	Mid	RIRI.5	Where down lighters or services have been fitted through the existing ceiling, have any measures been taken to prevent air leakage around down lights into the roof void?

Under floor insulation	**Mid**	UFI.1	Is there a carded operative at the site that meets the competency requirements for the measure being installed?
	Mid	UFI.2	Is the measure/system being installed as specified in the appropriate product certificate and/or system designer's instructions?
	Mid	UFI.3	Has insulation been close butted and laid in a break bond pattern on solid concrete floors?
	Mid	UFI.4	Has the insulation been tightly fixed between joists to avoid gaps?
	Mid	UFI.5	Has the insulation been tightly fixed to the underside of the floor to avoid gaps?
	Mid	UFI.6	Has insulation been installed in the gap between the last joist and external walls?
	Mid	UFI.7	Has insulation been applied to working pipes below the insulation?
	Post	UFI.8	Have all gaps in the floor around service penetrations been sealed?