

Minutes of the ECO4 Innovation Technical Advisory Panel 9

From: Reuben Privett

Date: 03 July 2024

Time: 09:00 – 13:00

Location: Conference call

A technical advisory panel (TAP) has been set up to review innovation measure applications and make recommendations to Ofgem to approve or reject applications. It is formed by a number of independent panel members, with its Chair and Secretariat function provided by Ofgem. The TAP makes recommendations to Ofgem to approve or reject IM applications. It does not, in and of itself, make any decisions to approve or reject such applications. Accordingly, these minutes provide a summary of each discrete review undertaken by the TAP as discussed by TAP members during group meetings. The TAP review is limited to the material submitted by applicants at application stage, or in subsequent correspondence, and these minutes provide a summary of the opinions offered by TAP members on the material submitted insofar as they inform the eventual recommendation made by the TAP. These minutes are reviewed by the TAP members prior to publication. These minutes do not represent a formal statement of opinion by Ofgem in regard to any product, measure, or application received by Ofgem in relation to ECO. Applicants who wish to challenge the opinions contained within these minutes may contact Ofgem directly.

1. Present

Adrian Hull, (Panel Member) THS Inspection Services

Cliff Elwell, (Panel Member) University College London

David Glew, (Panel Member) Leeds Beckett University

Jason Palmer, (Panel Member) Cambridge Energy

Roger Littlewood, DESNZ

Eric Baster, Ofgem

Andy Morrall, Ofgem

Reuben Privett (Chair), Ofgem

Ajay Patel (Secretariat), Ofgem

2. Introductory remarks by the Chair

2.1. The Chair welcomed all panel members and attendees to the meeting.

3. Innovation Measure Application: Soltherm BIPV Solar PV

3.1. The application is for a wall-mounted solar PV system which can be installed in conjunction with a separate external wall insulation system. The application is for a substantial uplift.

3.2. No previous history related to the application was raised by the chair.

3.3. The TAP noted that the MCS standard to which the measure would be installed only relates to roof-mounted solar PV and would require clarification to ensure that the measure can achieve MCS certification.

3.4. No issues were raised in relation to the comparable measure.

3.5. The TAP discussed the claims in relation to the increase in annual cost savings of the measure. They found that the evidence provided demonstrated that the annual generation would be around 60% of what would be expected from a roof-mounted system. The TAP accepted that the self-consumption in winter would be fractionally higher but that any benefit would be offset by the reduction in yield. Additionally, the evidence provided

related to a single day and it was not possible to determine the conditions of the test, including whether there was any shading.

3.6. The TAP was of the view that in reality a roof-mounted solar PV system would likely be a larger array and therefore the end-user would benefit from higher income.

3.7. The TAP was of the view that shading had not been adequately addressed, given that a wall-mounted system would be affected by shading from facing buildings and trees to a greater extent than the comparable measure because of low sun angle in winter.

3.8. The TAP discussed the reduced cost of installation and agreed that any cost savings associated with not requiring scaffolding were a negligible proportion of the entire installation which would be offset quickly by the additional generation achieved by the comparable measure. Additionally, the TAP was of the view that strengthening of the roof for the comparable measure was rarely necessary.

3.9. The TAP discussed the increased durability of the measure and commented on the potential impacts on wind load performance for the underlying EWI measure. They were of the view that calculations would be necessary to ensure that the system would not be detrimentally impacted by the additional strain caused by the wall-mounted solar PV system.

3.10. The TAP discussed the impact on the durability of the underlying EWI system given additional penetrations will be made. They noted that this would likely hinder any maintenance to this system. Additionally, the claimed improvement in relation to cleaning the solar PV system was not significant.

- 3.11. The chair highlighted a condition in the warranty which required an excess payment when a claim is made. The TAP agreed that no guarantee can have an excess on the ECO scheme.
- 3.12. The TAP was of the view that the claim made under the improvement in the environmental impact of the measure had already been addressed in the increased annual cost savings criterion.
- 3.13. The TAP discussed claims made in relation to reduced disruption to the householder. They were of the view that wiring will have to be taken into the house regardless of whether the inverter sits outside, and this was down to the wiring infrastructure of the home the system is being installed in.
- 3.14. The TAP discussed the claims in the other criterion. They were of the view that there was no improvement related to health and safety from a working from height perspective. Additionally, training installers in EWI and solar PV installation was not deemed to be significant. Finally, the TAP was of the view that under Construction (Design and Management) Regulations there would be a principal designer with overall responsibility. A single point of responsibility would be important in this case given the measure directly affects the underlying EWI. However, this risk mitigation is only necessary due to the installation methodology and therefore this is not an improvement over the comparable measure.
- 3.15. No Q&A was held for this application.
- 3.16. The TAP recommended that the measure be rejected because the application had not demonstrated an improvement over the comparable measure.

4. Innovation Measure Application: IndiTherm Under Floor Insulation / Loft Insulation

- 4.1. The application is for an industrial hemp insulation material which has BBA certifications for use in UFI or LI. The application is for a substantial uplift.
- 4.2. No previous history related to the application was raised by the chair.
- 4.3. The TAP raised no concerns around installation standards and raised no issue with the comparable measure selected.
- 4.4. The TAP discussed the environmental improvement and suggested the evidence provided did not demonstrate the extent of the embodied carbon savings claimed. Additionally, the TAP was of the view that the embodied carbon savings being claimed were small relative to the operational carbon emissions, although they conceded that embodied carbon savings occur at installation, so definitely happen, whereas operational savings are contingent on the end-user's domestic energy consumption.
- 4.5. The TAP discussed the suitability of LCAs in demonstrating embodied carbon savings given LCAs are often produced using different criteria and databases. The TAP discussed how the carbon emissions of the material were allocated, noting that mass allocation had been used rather than economic allocation. They suggested that while 28% of the mass was used as insulation, the hemp was being grown for the insulation and therefore the byproducts would likely be wasted. This was not taken into account by the LCA. Mass allocation between by-products may not be appropriate. Additionally, the TAP noted that the product would decompose at some stage in the future and therefore the extent of the saving from embodied carbon is questionable.

- 4.6. Overall, the TAP was of the view that natural materials represent a reasonable mechanism for reducing embodied carbon in an insulation material.
- 4.7. The TAP discussed the reduced fire performance of the measure compared to the comparable measure. They noted that there were knock on effects from this reduced fire performance, including that the product would need to be isolated from flues and electrical cables. The TAP was of the view that detail had not been provided to demonstrate that there are no risks of thermal bridging where the measure cannot be installed in these areas, or demonstration of a PAS compliant approach to the floor-roof junction.
- 4.8. The TAP was also concerned about the potential knock-on effects of installing a measure with a fire classification of E, particularly where hot works may be conducted in the future. They were of the view that clear labelling and instructions would need to be provided on hand-over and left in the loft and floor void to ensure that there is not an increased risk of fire should hot works occur in this space in the future.
- 4.9. The TAP questioned whether an alternative non-combustible material would be used at junctions with flues, light fittings, and cables, and were of the view that an updated certification of this system demonstrating third party testing would need to be provided if this were the case.
- 4.10. No Q&A was held for this application.
- 4.11. The panel recommended that the product be rejected for a substantial innovation measure, with substantial clarifications. The TAP was of the view that there may be merit in a future application for a standard uplift should the applicant address their concerns around thermal bridging risks and fire safety.

5. Innovation Measure Application: K Systems EWI

- 5.1. The application is for an external wall insulation (EWI) system which incorporates a cementitious layer with a claimed reduced embodied carbon achieved through utilising cement replacement technology.
- 5.2. No previous history related to the application was raised by the chair.
- 5.3. The TAP raised no concerns around installation standards and raised no issue with the comparable measure selected.
- 5.4. The TAP again noted that the reduced embodied carbon is relatively minor compared to operational carbon.
- 5.5. The TAP acknowledged that the fire testing provided demonstrated that the new product did not react worse to fire than the existing product, although they noted that the BBA should ideally be updated to reflect the fire performance of the system with the new layer.
- 5.6. The TAP discussed the properties of the new product and whether this had any impact on drying times and how the measure is installed, and agreed that any changes to the product's characteristics are minimal. However, they questioned whether the reduction in compressive strength would have implications on the durability of the product.
- 5.7. The TAP was of the view that the third party testing provided in relation to fire classification and compressive strength provided some assurance that the measure was not negatively impacted by the change in materials used.

- 5.8. In the Q&A, the TAP questioned whether the replacement material would be used as a topcoat render. The representative stated that the normal render would be used and the new product would be used in the basecoat and adhesive layers.
- 5.9. In the Q&A, the TAP questioned whether the product certification would be updated to reflect the fire performance. The representative stated that this would be reflected in the new BBA certificate.
- 5.10. In the Q&A, the TAP questioned the impact of the reduced compressive strength of the new product for the system as a whole. The representative described the testing to the British standard for compressive strength and noted that this would have no impact on the performance and durability of the system, especially given the system would still be in the same class for compressive strength. The representative also stated that, as with all EWI systems, approved fixings should be used where items are retrospectively attached to the system (e.g. satellite dishes), and this would have no further impact on performance.
- 5.11. In the Q&A, the chair questioned which evidence would be collected by a supplier to demonstrate that the lower embodied carbon product was installed with the system. The representative gave an overview of their process, including checks against purchase orders against individual projects as well as site visits at various stages of the installation to ensure the warranty is issued against the correct system.
- 5.12. In the Q&A, the chair questioned what evidence is collected to ensure that the material sent to site is the variant with lower embodied carbon. The representative gave an overview of the manufacturing process, including standard QA processes which label each bag with a batch number and product name which can be cross-referenced against their auditable management system.

5.13. The TAP was of the view that the application did not demonstrate a substantial improvement over the comparable measure and should be rejected for a substantial uplift. However, they recommended that there was a reasonable explanation of an improvement and therefore the measure should be approved with a standard uplift.

6. Innovation Measure Application: Ezy-Fit IWI

6.1. The application is for an IWI system using high density mineral wool slabs and comprising of fewer component parts than the comparable IWI system.

6.2. Previous history related to the application was outlined by the chair. The reasons for rejection in TAP 8 were highlighted, which comprise insufficient detail on thermal performance, insufficient detail to demonstrate that there were no thermal bridging risks associated with the installation technique, and insufficient detail on the installation process.

6.3. The TAP raised no concerns around installation standards and raised no issue with the comparable measure selected.

6.4. The TAP discussed the new evidence provided on the thermal performance of the product and felt that it remained insufficient. The new u-value calculation excluded air gaps and fixings, meaning its accuracy could not be assessed fully. Furthermore, the calculation was based on a brick wall substrate only, but the KIWA certificate covers application to stone walls and concrete construction. The u-values for these substrates should also be provided. U-value corrections for gaps and fixings should be incorporated.

- 6.5. The TAP addressed the trimming of the insulation material, to fit space in the event of uneven walls or other features, and the impact this would have on thermal performance, and felt that a full set of calculations may help to address this.
- 6.6. The TAP discussed the thermal bridging risks and felt that insufficient evidence had been provided to demonstrate that these risks have been considered. The TAP highlighted that there would be two sets of fixings; firstly fixing the mineral wool batts to the substrate and secondly fixing the plasterboard to the substrate. The TAP felt that fRsi calculations / PSI value calculations should be provided to demonstrate that there is no spot thermal bridging risk from both sets of fixings. The TAP emphasised the concern of spot point thermal bridging leading to black mould concentrated around fixing points and the importance of providing the relevant calculations to show this risk has been mitigated.
- 6.7. The TAP noted that site-specific calculations should be undertaken to determine the appropriateness of the measure on a case-by-case basis, and the retrofit designer/coordinator should use these to determine whether to install the measure.
- 6.8. The TAP was of the view that insufficient detail had been provided in relation to the procedure for insulating subfloor voids and felt that the system design guide was written more for householders than installers. The TAP agreed that a more comprehensive separate installation guide would be necessary to address their concerns. This should be a step-by-step guide containing all the relevant details on how to install the product addressing all the issues in the BEIS IWI best practice guide. Specific limitations of the current guide include the process for insulating subfloor voids, insulation around radiators and insulation around electrical switch boxes given that they can be as large as 47mm deep. However, the TAP was clear that the installation guide should not only include these details, but rather provide comprehensive detail on the whole installation process.

- 6.9. The TAP raised the system trial evidence and whether the claimed time savings were significant. The TAP felt that the claimed time savings represented a reasonable explanation of an improvement, although the system requires several extra steps that are not necessary in the comparable measure, which while considered beneficial reduce the estimated time savings. However, the TAP reiterated their previous decision in TAP 8, that the principle of reduced components and greater simplicity of the system was sufficient to justify an improvement claim.
- 6.10. The TAP noted that the applicant had not agreed a warranty cost yet, and sought to clarify at what stage the warranty discussions are at and whether a warranty is in place.
- 6.11. The TAP recommended the application be rejected with substantial clarifications. The TAP highlighted that the clarifications should be addressed collectively, with the impact of each response being considered against the performance of the whole system.

7. AOBs

- 7.1. The TAP discussed the potential security implications for end-users where an innovation measure requires input from a mobile app, which may or may not be updated over time to address new security threats. In particular, the TAP noted that there are potential security concerns for heating systems which rely on apps. In future, the TAP agreed that they would like to see detail from applicants on how they ensure their platforms are secure and remain so over time, and which phone operating systems they envisage supporting.

8. Date of next meeting

8.1. The next meeting of the TAP is scheduled for 11 September 2024. The dates of future TAP meetings are available on our [website](#).