

Minutes of the ECO4 Innovation Technical Advisory Panel '4b'

From: Reuben Privett

Date: 12 July 2023

Time: 09:00 – 12:15

Location: Teams meeting

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.

Present

David Glew (Panel Member), Leeds Beckett University

Jason Palmer (Panel Member), Cambridge Energy

Adrian Hull (Panel Member), THS Consulting

Cliff Elwell (Panel Member), UCL

Paul Philips, TrustMark

Hunter Danskin, DESNZ

Kay Popoola, DESNZ

Reuben Privett (Chair and Secretariat), Ofgem

Andy Morrall, Ofgem

Eric Baster, Ofgem

Owain Rees-Jones, Ofgem

1. Introductory remarks by the chair

1.1. The chair welcomed all the panel members and attendees to the meeting.

2. Innovation Measure Application: SWIP IWI

2.1. The application is for an internal wall insulation (IWI) system designed to be installed in solid wall, timber framed, and non-traditionally constructed buildings. It includes a variable vapour control layer to enable installation in a wider range of areas. The application is for a standard uplift only.

2.2. The chair highlighted the application history, including the reasons for rejection under TAP 1 and how the application addressed these.

2.3. The TrustMark representative did not raise any concerns about PAS compliance and lodgement through TrustMark.

2.4. The chair highlighted that the comparable measure used was appropriate in order to address the reasons for rejection of the previous application.

2.5. The TAP was of the view that the inclusion of the variable vapour control layer had a limited benefit even where installation of a vapour permeable membrane is required. They

suggested that the map functionality is limited and in reality, it is necessary to assess installations on a case by case basis in order to know whether the variable vapour control membrane should be installed.

2.6. The TAP discussed the use of a breathable membrane and queried whether the subsequent application of plasterboard and tiling would compromise the breathability of the system.

2.7. The TAP noted that aftercare and maintenance guides must be provided to householders under PAS 2035.

2.8. The TAP discussed the internal compliance checks and was of the view that compliance checks are often undertaken in order for products to be granted a warranty by the system designer. They noted that any additional checks to improve standards of installation can be beneficial but additional evidence would be required to demonstrate this is occurring. Furthermore, the TAP was of the view that a technical support service could be beneficial, but there was no clear mechanism demonstrated which would improve installation.

2.9. The TAP noted that the product used the same proportion of recycled content as the previous iteration of the product, as demonstrated by publicly available information showing when manufacturing using the recycled material began.

2.10. A Q&A was not held with representatives for this application.

2.11. The TAP was of the view that the evidence provided did not demonstrate a reasonable explanation of an improvement. As such, the TAP recommended that the product should be rejected as a standard innovation measure.

3. Innovation Measure Application: Q-Bot

- 3.1. The application is for an Underfloor Insulation (UFI) system where a remotely controlled robot is used to apply spray foam insulation to the underside of suspended wooden floors, suspended concrete floors, or block and beam. The system is approved as a standard innovation measure, and this application is for a substantial uplift.
- 3.2. The TAP and TrustMark representative discussed extensively how compliance with PAS could be achieved. A number of issues were raised.
- 3.3. The TAP expressed concerns around the installation of the product on wiring in the underfloor void. They noted that the installation guide claims it can be installed up to 100mm thick on electrical wires and queried whether this was recommended by the system designer. The TAP noted that the BBA states that spray foam must not be sprayed directly on to electric cables, which contradicts the installation guide. The TAP wanted to clarify whether electric cables could de-plasticise when in contact with spray foam. They also noted that there was not strong evidence to show that a robust process was in place to ensure wiring and pipework were accurately surveyed and were did not come in to contact with spray foam.
- 3.4. The TAP was of the view that there is a risk of thermal bridging occurring where the spray foam is not applied to avoid wiring and pipework. Where spray foam is not applied, an FRSI calculation should be provided to ensure that there is no moisture risk. Additionally, the TAP discussed the fire resistance of the spray foam, noting that the BEIS best practice guide recommends that spray foam insulation is not applied over junctions with external walls. The TAP was of the view that adequate evidence was not provided to satisfy that these considerations had been made.

- 3.5. The TAP acknowledged that the installation guide reflects the BBA and BEIS best practice guide in recommending rerouting wiring where possible. However, the mechanism for ensuring this is done was not detailed. Where rerouting is required, additional time and expense must be considered to account for the electrician required to undertake the work. The TAP noted that if this were done, the floor would likely need to be lifted which would negate the reduced disruption benefits the application claims.
- 3.6. The TAP queried the mechanism in place to conduct a survey with adequate detail on the wiring and pipework in order to ensure that they are not covered by spray foam where that is inappropriate.
- 3.7. The TAP queried how adequate ventilation is ensured in the subfloor void. The TAP had concerns over the calculations used to arrive at the required ventilation for the product.
- 3.8. The TAP noted that pipework would commonly be insulated when underfloor insulation is completed to prevent them from freezing where they were previously benefitting from heat from above, through the floor. The TAP queried whether this was recommended in this case, and how it would be done where the subfloor void is not being accessed during insulation installation.
- 3.9. The TAP acknowledged that some of the concerns raised were addressed in the documentation provided by the applicant. However, they noted that in practice there needs to be a more stringent process to ensure that misapplication of the product does not happen.
- 3.10. The TAP noted that the volume of data produced by the installer during installation would be considerable and questioned whether this was reviewed in every case to ensure that the correct quality assurance processes were undertaken. The TAP was of the view that additional evidence could be provided detailing how frequently quality assurance

check found errors in installation, how many of these resulted in warranty claims, and the process for rectification.

- 3.11. The TAP discussed the process of ensuring that the moisture level in the timber floors is low enough for the product to be installed. They noted that multiple readings must be taken across the floorboards and joists which is more difficult to achieve when floorboards are not lifted. The TAP was of the view that doing this at the point of the hatch would not provide sufficient data to make a judgement on whether the product should be applied. The TAP would like to see additional detail to ensure there is a strong process in place to stop installation of the product where moisture readings are above the required level.
- 3.12. The TAP noted that the hygrothermal analysis was flawed because the initial reading was taken in the wet season, whereas the final reading was taken during the dry season, which should be taken into account when assessing the improvement in this area.
- 3.13. The TAP noted that the risks presented above may not be present where wiring and pipework is not present in floor voids. This is likely in houses with suspended concrete floors or block and beam floors. The TAP felt the application may be strengthened by additional data regarding the performance of the product in these other floor types, where the product may be best suited.
- 3.14. The TAP queried the impact of installing spray foam in sub-floor voids on the ability of homeowners to acquire mortgages, given the difficulty some people find when spray foam loft insulation is applied.
- 3.15. The TAP discussed the impact of installing spray foam insulation in floors on the build-up of radon gas.

- 3.16. The TAP discussed the different application methods of the comparable measure and were in consensus that where the comparable measure can be installed without lifting the floorboards, it may be cheaper and no more disruptive. However, they recognised that this application method cannot be used in all circumstances.
- 3.17. The TAP noted that the evidence provided in relation to increased cost savings of the measure was a single case study where the conditions were optimal, and some of the improvement could be attributed to other factors. The TAP was of the opinion that additional evidence would be required to strengthen this claim.
- 3.18. The TAP discussed the decreased cost of installation claim and noted that the comparable measure had not been properly evidenced. The TAP was of the opinion that the installation time of the comparable measure had been overstated. The additional requirements for electricians had also not been accounted for in relation to the product under application. Additional evidence in this area would strengthen the application.
- 3.19. The TAP discussed the durability of the measure, highlighting that there are instances where underfloor voids are too small for human access and as a result are likely to be left uninsulated. This measure may be able to address those circumstances, increasing the number of homes able to have underfloor insulation.
- 3.20. The TAP discussed the improvement in environmental impact criteria and were of the view that there was not a substantial improvement here.
- 3.21. The TAP discussed the reduction in disruption criteria and were in agreement that compared to situations where the comparable measure is installed by lifting the floorboards, the product under application had significant improvements.

- 3.22. The TAP discussed other improvement claims and acknowledged that there may be some scalability improvements although the skill of the operators must also be ensured to guarantee that the system is installed safely and effectively.
- 3.23. A Q&A was not held with representatives for this application.
- 3.24. One TAP member, Adrian Hull, requested not to provide a score for the product on the basis of his safety concerns around the installation of the system in suspended timber floors.
- 3.25. The other panel members were in consensus that, subject to safety concerns being satisfactorily addresses through clarifications, the product may be recommended for approval as a substantial innovation measure.

4. Innovation Measure Application: SPS Ultra

- 4.1. The application is for an EWI system including a Silicone Render which can be applied at temperatures between -5°C and 25°C, in humidity up to 99%, and is rainproof within 6 hours.
- 4.2. No concerns were raised around the appropriateness of the comparable measure.
- 4.3. The TAP was of the view that the product under application would need to have a valid BBA or KIWA certificate for the system including the render in order for it to be approved as an innovation measure.
- 4.4. The TAP and TrustMark representative voiced concerns around installation of the product in temperatures below 4 degrees Celsius, and in particular noting that the KIWA supplied states that the basecoat cannot be frost bound. Given the other components of the system

must be installed at higher temperatures, the TAP queried whether in practice this product could be utilised in the temperature range suggested within the application.

- 4.5. The TAP discussed the long-term implications of installing the render in lower temperatures, suggesting that additional evidence would need to be provided in order to satisfy that there are no unintended consequences in the future. The TAP noted that the product has been installed on 20 properties. Additional evidence on the circumstances of the installations and their quality since installation may increase the strength of the application.
- 4.6. The TAP discussed the lack of robust test data to indicate that the product can be installed in sub-zero temperatures and in highly humid circumstances without long-term negative effects. The TAP suggested that additional evidence from test data at sub-zero temperatures and high humidity, and with direct comparison to the comparable measure may strengthen this application. In this instance, data can be from lab conditions or field tests.
- 4.7. The TAP noted that the product may provide benefits in opening up the window of installation for EWI products when temperatures and weather conditions are borderline. The TAP noted the difference between climate and weather, suggesting that the benefits of this product are related to quick changes in weather conditions rather than opening up additional months for installation.
- 4.8. The TAP discussed the evidence provided in relation to when renders are normally applied in EWI products and suggested that the evidence was not robust.
- 4.9. The TAP noted that the durability of the measure may be increased where the product enables EWI systems to be weather tight more quickly.

- 4.10. Alternative ways of ensuring an EWI system can be completed were considered, including covering scaffolding with sheets to make it weatherproof, enabling the continued application of the product. However, the TAP acknowledged that this cannot be done in practice unless the scaffolding is designed for it.
- 4.11. The TAP noted that the system may afford benefits to the construction industry in allowing installers to meet contractual obligations, and install more EWI.
- 4.12. A Q&A was not held with representatives for this application.
- 4.13. The TAP was of the view that the product should be rejected with feedback.

5. Date of next meeting

- 5.1. The next meeting of the TAP would be on Wednesday 13 September 2023. Further planned upcoming TAP meetings are available on our [website](#).