

Minutes of the ECO4 Innovation Technical Advisory Panel 17

From: Olivia Watts

Date: 02 March 2026

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

Kay Popoola, DESNZ

Eric Baster, Ofgem

Andy Morrall, Ofgem

Reuben Privett (Chair), Ofgem

Olivia Watts (Chair), Ofgem

2. Introductory remarks by the Chair

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

3. Innovation Measure Application: Baxi Air Source Heat Pump (ASHP)

3.1. The application is for ranges of monoblock ASHPs. The system comes with a 12-year warranty and free service plan. The application is for a substantial innovation measure.

3.2. The chair mentioned that a comparable 12 year service and warranty plan from Vaillant had previously been approved for a substantial uplift.

3.3. No issues were raised with the standards or comparable measure.

3.4. The TAP agreed that the warranty and service plan offered by Baxi was in line with those previously awarded IM uplifts.

3.5. The TAP questioned the use of R32 refrigerant in some models, as this has a much higher GWP than R290. The TAP noted that previously approved ASHP IMs use R32 refrigerant, but questioned whether increasing adoption of R290 in the last couple of years now rendered R32 use a disbenefit.

3.6. The TAP discussed the service check, and wanted to see the inclusion of maintenance to the heat pump's external unit and advice to customers on using the system.

- 3.7. The TAP also questioned the weather-compensation thermostat. They were of the view that, given the better temperature compensation offered by the thermostat, this should be offered as standard with the installation. They also wanted assurances that service checks and the app would be provided as standard, rather than at the request of the customer.
- 3.8. The TAP pointed out that MIS installation standard was not listed with the MCS certification. They also sought clarification on whether the measure would be installed under the new 2025 MCS standard or the old standard.
- 3.9. The TAP was of the view that more evidence was required for the planned web portal for installers to document commissioning.
- 3.10. The TAP also discussed user interaction, and suggested areas where responsibility ought to be shifted from end-users to installers. These areas included Baxi's warranty registration, record-keeping and sign-up processes, and draining the outdoor unit pipes during cold weather and power cuts.
- 3.11. The TAP was of the view installations should have a prominent sticker which clearly informs end-users of their free warranty and servicing entitlement.
- 3.12. The TAP noted that the extended service document was in draft form, and wanted to see a final version of the service agreement with amendments to reflect the service package being free-of-charge to the end-user.
- 3.13. The TAP noted that R32 models would be unacceptably noisy, and exceed permitted development sound thresholds. They discussed with the chair whether this disbenefit precluded approving these models at 45%.

- 3.14. The Chair and TAP agreed that further clarity was needed on the leniency in the warranty for customers missing annual services. The TAP requested that reminder letters be added to Baxi's annual service reminder to account for occupant changes.
- 3.15. The TAP wanted clarification on why there were separate warranty guides for HP50 and HP55 models. They also questioned why the 5 year warranty offered for HP50 models was shorter than the 7 year warranty offered for HP55 models, and whether this reflected a greater vulnerability to failure for HP50 models.
- 3.16. The TAP wanted clarification on why the SCOP data showed poorer performance for 8 to 12 kW models compared to other manufacturers.
- 3.17. The TAP wanted further detail on the availability of Baxi service engineers. In particular they questioned how well Baxi's claimed number of engineers reflected the year-round availability of engineers exclusively working for Baxi, and whether all these engineers are trained in servicing heat pumps rather than boilers.
- 3.18. The TAP noted that complete installation, warranty, servicing, SCOP and complete evidence was not provided for all three ASHP ranges under consideration. They requested clarity on the models being forwarded for consideration, and complete information for these models.
- 3.19. No Q&A was held for this application.
- 3.20. The panel recommended that the product be approved at 45%, subject to adequate responses being provided to clarifications.

4. Innovation Measure Application: HISA Air Source Heat Pump (ASHP)

- 4.1. The application is for a range of monoblock ASHPs which comes with an air quality monitoring system, which helps to assess property readiness for heat pump installation, and monitors post-installation performance. It uses built-in Wi-Fi connectivity for remote monitoring, diagnostics and optimization. The application is for a substantial uplift.
- 4.2. The chair and TAP discussed the comparable measures listed. The TAP questioned whether the listed range of comparable measures was too wide. The chair had previously asked the applicant for comparisons to MCS installation sizing methods, but this had not been provided.
- 4.3. The chair queried whether this product would be installed according to the old MCS standards or the 2025 MCS standard.
- 4.4. The TAP discussed annual cost savings from the measure. They were of the view that the claims of post-installation performance validation, early fault detection, optimization and improved tenant use and reduce behavioural losses were poorly evidenced, and did not meet the standard required for a 45% uplift.
- 4.5. The TAP and chair noted that some of air quality monitoring system's benefits related to ventilation rather than the heat pump itself. The TAP questioned the usefulness of monitoring data if it was unclear how the installer or heat pump manufacturer would intervene to remediate ventilation issues, and if there was no automatic link to the heat pump's operation.
- 4.6. The TAP acknowledged the value of the air quality improvements outlined in the tenant case study, and the importance of addressing ventilation issues in fuel-poor households. However, they questioned whether evidence from a voluntary study would be applicable

to the average end-user, who would likely be less engaged in improving air quality in their home.

- 4.7. The chair summarised the applicant's claims of decreased installation costs due to pre-installation monitoring. This was claimed to reduce survey, diagnostic, commissioning and remedial labour, however the chair noted that these claims lacked evidence.
- 4.8. The TAP was of the view that the pre-installation monitoring would increase end-user disruption as visits for installing monitoring equipment would be required, and any heat pump sizing would still have to be accompanied by a standard MCS sizing survey.
- 4.9. The TAP discussed the application's durability improvement claims. The application stated that remote monitoring allowed for early detection of degradation and performance drift, and improved maintenance timing and accuracy. This was also said to reduce compressor and pump strain, prevent environmental stressors and increase operating conditions consistency.
- 4.10. The TAP noted that the durability claims had insufficient evidence to justify a 45% uplift. However, they suggested the early fault detection function would merit a 25% uplift.
- 4.11. The chair outlined the application's claims related to an improved environmental impact. They noted that the application's claims of increased system lifespan, reduced call-outs and reduced spare part use were not sufficiently supported by the evidence.
- 4.12. The chair also noted that ASHP remote monitoring systems without extended warranty and service plans had only previously been awarded 25% uplifts.
- 4.13. The chair outlined the application's claims that the remote monitoring system would reduce disruption to end-users during installation. They noted that installation

commissioning would not necessarily be faster if the time required for pre-installation monitoring and analysis was considered.

- 4.14. The chair and TAP agreed that it was reasonable that communicating the remote monitoring findings to the tenant could improve the tenant's understanding and use of their system. However, TAP also noted that this claim was accompanied by insufficient evidence.
- 4.15. The chair outlined the application's other improvement claims. These were strong compliance and audit confidence due to independent third-party verification, healthier indoor environmental conditions, improved whole home insight for retrofit planning, portfolio level data, predictive maintenance, and improved tenant engagement.
- 4.16. The chair and TAP discussed the ASHP warranty and service package. The chair and TAP agreed that discounting any improvements from remote monitoring would require a 12 year rather than a 10 year warranty for approval as a substantial IM, in line with previously approved ASHPs.
- 4.17. In the Q&A, the TAP requested clarification on the length of the post-installation monitoring period. The representative stated that post-installation monitoring lasted for the project's lifetime.
- 4.18. The TAP asked whether end-users could extend their data and service plans after 12 years. The representative said there was a paid option to extend these plans.
- 4.19. The TAP questioned the remediation offered for uneven property heating. The representative said that if this was detected pre-installation, a larger radiator could be considered. For post-installation issues, an engineer visit would be arranged at no cost to the end-user.

- 4.20. The TAP requested clarification on the monitoring system battery life, and what happens in the event of a battery failure. The representative clarified that the battery's lifetime was 10 years at maximum, but this depended on the frequency of monitoring readings. The system would give a low battery alert, and the battery would be replaced by service engineers.
- 4.21. The TAP asked how end-users would be contacted for service reminders. The representative said that if e-mails and telephoning were ineffective, they would consider manual intervention such as contacting the landlord or housing association, and contacting residents by letter.
- 4.22. The TAP asked what checks were included in services. The representative offered to send a list of the checks included. They clarified that anti-freeze valve checks services were excluded, as there was no way to test them outside of cold weather conditions.
- 4.23. The TAP wanted clarification on the remote monitoring system's connection stability. The representative clarified that the systems used both Wi-Fi and 4G connectivity. They stated that 4G connection disruptions were occasional, but reconnection and resyncing were automatic, and the system was not tied to a specific network.
- 4.24. The TAP asked about the product's running temperature and SCOP. The representative said that the usual running temperature was 45 °C, and that they would send the SCOP data to Ofgem later.
- 4.25. The TAP wanted clarification on how post-installation monitoring differed from the standard MCS commissioning process, and how monitoring data influenced heat pump sizing. The representative clarified that for each installation, there would be a pre- and post-installation air quality monitoring report to validate the system's performance and conditions at the property. They stated that heat pump sizing would be influenced by

cooling rates, although this analysis was only feasible in colder months. However, the pre- and post-monitoring periods could also be extended or postponed to cover different times of year.

4.26. The TAP requested clarification on the sensor system's integration with the heat pump.

The representative clarified that the monitoring system could not autonomously adjust the heat pump's settings, but that issues would be automatically flagged to engineers to be remotely actioned.

4.27. The panel recommended that the product be approved at 45%, subject to adequate responses being provided to clarifications.

5. Innovation Measure Application: Thermabead BMB Diamond Bead CWI

5.1. The application is for Thermabead EPS Cavity Wall Insulation (CWI). It is manufactured according to a biomass balance (BMB) approach, meaning that 100% of the fossil-based raw materials have been replaced by certified sustainable biomass. This is claimed to reduce the product's lifetime carbon emissions by up to 75%. The application is for a 25% uplift.

5.2. The chair discussed previous relevant applications. They noted that BMB Diamond Bead is a similar product to EnergyStore Superbead 33+ CWI System IM019, which was also awarded a 25% IM uplift for being a BMB product. The Superbead 33+ EPS beads from IM019 were also used in another insulation product considered for IM approval, and the LCA submitted with this application suggested that the Thermabead and Superbead BMB products led to similar CO₂ emission reductions relative to their standard versions.

- 5.3. The TAP discussed claims of CO₂ emissions reductions, noting that the 75% reduction claim was unevidenced. They were of the view that it would be inappropriate to rely on evidence from other applications to approve a measure.
- 5.4. The TAP were of the view that the product's LCA did not include enough methodology information to allow direct comparison with previous applications. The TAP would want the LCA to include end of life modules, details on the biomass fuel's land use implications and allocation procedures for different products.
- 5.5. The TAP wanted clarification on the extent of biomass use in manufacturing. Referencing previous applications, they questioned whether the 'fossil-based raw materials' replaced by biomass were mainly fuels or product raw materials.
- 5.6. The TAP was of the view that a BBA was specifically needed for the BMB product. They considered the BBA as necessary for ensuring compliance with building regulations, and defining which properties the product was suitable for. The BBA was also needed to address health and safety concerns over material handling, specifically compliance to styrene and pentane vapour exposure limits.
- 5.7. The TAP wanted clarification on the differences between the BMB and standard versions of the Diamond Bead product, specifically in price, durability and technical specification.
- 5.8. The TAP discussed issues around BMB products. They questioned whether BMB products would be exclusively manufactured by biofuels, or whether the manufacturer would simply make a proportion of biofuel beads on aggregate, in relation to how many were sold. The TAP also disagreed on the benefit of using BMB materials if they were made in the same way and were physically the same as the non-BMB equivalent. Given that the BMB product and Diamond Bead BMB product were claimed to be identical, they questioned

why the applicant did not submit the non-BMB Diamond Bead product for consideration instead, given that this product already has a BBA.

5.9. The TAP wanted to know how much product was required for a typical installation, as this would help determine if the product's CO₂ savings per kilo would translate to reduced carbon emissions against a comparable installation.

5.10. The TAP discussed comparable measures. They were of the view that the best comparable measure was the standard Diamond Bead product, rather than the mineral wool fibre and older EPS bead insulation products cited in the application.

5.11. The chair mentioned that the LCA provided was valid for both Neopor F 5200 and Neopor P 5200, which were the insulation beads used in IM019 and this application respectively. The TAP was of the view that the evidence submitted for IM019 was of much higher quality, and that the Thermabead application needed to meet a similar standard to be approved as a new IM.

5.12. The TAP raised no concerns around installation standards.

5.13. No Q&A was held for this application.

5.14. The panel recommended that the product be rejected as a standard innovation measure. This was due to the product lacking a BBA certificate, and the fact that insufficient evidence had been provided to support the claimed improvement in environmental impact.

6. Innovation Measure Application: K Systems External Wall Insulation (EWI)

- 6.1. The application is for a range of EPS, mineral wool and phenolic EWI ranges. They use gas-fired insulation fixings installed in a single step, rather than the typical more physical, noisy and time-consuming process for drilled fixings. The application is for a 25% uplift.
- 6.2. The chair noted that the application had previously been rejected for approval at 25% at TAP12. This was due to the applicant not providing pull-out performance data for their gas-fired fixings, and for providing insufficient evidence for claims of time savings during installation, reduction and disruption to the homeowner, health and safety improvements.
- 6.3. The TAP discussed the pull-through fixing tests. They questioned why data for 90 mm EPS systems was missing, given that this was the commonly used EPS thickness and was used in the site installation trial.
- 6.4. The TAP questioned the comparable measures. They discussed whether simple hammer fixings were a more appropriate comparable measure than drill and screw fixings, but were uncertain on the how common hammer fixings were. They also questioned the comparison between gas-fired fixings and hammer drilling, as the noise and HAV level from ordinary drills could be reduced by turning off the hammer action.
- 6.5. The TAP discussed the pull-out fixing tests. They noted that the pull-out force for the gas-fired fixings was 0.7–1.0 kN. This suggested gas-fired fixings were not as strong as standard systems, which have a 1.7–2.0 kN pull-out force. The TAP also noted that pull-out tests were only successful for medium density block, concrete and rendered masonry, but not brick. However, they also acknowledged that the proposed inclusion of adhesive would secure the mechanical fixings further.

- 6.6. The TAP discussed claims of health and safety improvements due to reduced exposure to hand arm vibration (HAV). They agreed that HAV was a major issue in the construction industry. Whilst the TAP acknowledged the relatively low number of reported HAV syndrome (HAVS) per year, they suggested that cases were likely underreported, and that economic factors often disincentivised workers from properly managing their HAV exposure.
- 6.7. The TAP discussed the HAV exposure data from site installation tests. They acknowledged that the standard drill used for comparison was reasonable, but questioned whether HAV exposure could be managed through choosing a lower vibration drill. The TAP also suggested that the daily HAV exposure period given in the application was unrealistic, and that in practice, this drilling time would be performed by multiple workers or split over several days. However, they agreed that the evidence adequately demonstrated that the gas-fired fixings reduced HAV exposure. The TAP were also of the view that approval at 25% did not require evidence on how reduced HAV exposure would reduce the risk of developing HAVS.
- 6.8. The TAP considered the potential health and safety risks associated with gas-fixings. The primary risk of harm to installers would mainly come from misuse, but this would likely be covered by HSE guidance and be unlikely to outweigh the benefits of reduced HAV exposure.
- 6.9. The TAP discussed claims of reduced end-user disruption due to lower noise exposure. They requested evidence that end-users would find louder intermittent, unpredictable noise from gas-fired fixings less disruptive than ongoing drilling. They also questioned whether other sources of disruption during installation would render any noise reduction from fixings insignificant to end-users.

- 6.10. In the Q&A section, the TAP requested pull-through test data for 90 mm EPS systems. The representative agreed to send the information after the meeting.
- 6.11. The TAP asked what systems would be in place to ensure that the measure would not be installed on a brick archetype. The representative clarified that pull-out test data was not excluded from the application because of failure, but because the suitability of different brick archetypes for installation varied. Brick installations could therefore be carried out if on-site testing determined that property's bricks were suitable for gas-fired fixings. The representative confirmed that their warranty meant that installations would not occur at sites where pull-out tests failed.
- 6.12. The TAP asked why hammer fixings were not used as a comparable measure instead of drill fixings. The representative clarified that commercially available hammered fixings still require pre-drilling for insertion into masonry substrates, but mentioned that self-tapping screws could be used for steel or timber frames.
- 6.13. The TAP asked whether installers could manage their HAV and noise exposure by turning off the hammer setting on their drills, or by using a rotary drill. The representative stated that turning the hammer action off or using a standard drill would not be done in practice, as it would take longer and require the installer to exert more hand pressure to drive the fixing into the wall. The TAP added that using lower vibration products for longer periods could actually increase HAV exposure overall.
- 6.14. The panel recommended that the product be approved at 25%, subject to adequate responses being provided to clarifications.

7. AOBs

7.1. No AOBs were raised.

8. Date of next meeting

8.1. The next meeting of the TAP is scheduled for 13 May 2026. The dates of future TAP meetings are available on our [website](#).