Minutes

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Minutes of the ECO4 Innovation Technical Advisory Panel 16a

From: Reuben Privett	Date: 26 November 2025 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

Hunter Danskin, DESNZ

Eric Baster, Ofgem

Andy Morrall, Ofgem

Reuben Privett (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: Kensa Shared Ground Loop (SGL) Ground Source Heat Pump (GSHP)

3.1. The application is for a GSHP which would be connected to a shared ground loop. The system comes with a 10-year warranty and a predictive remote maintenance plan which acts as an alternative to an annual service visit to maintain the warranty. The application is for a substantial innovation measure.

3.2. The chair mentioned that the same product had been reviewed at a previous TAP meeting, and rejected on the basis that improvements were not evidenced. This application presents different functionality and improvement claims.

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

3.4. The TAP discussed whether evidence had been provided to definitively demonstrate that the remote monitoring platform provided the same benefit as an annual in-person visit. The TAP was of the view that it was not possible to gather all of the same information via a remote digital platform as would be gathered during an in-person visit. This includes signs of damage within the system as a whole and whether the homeowner understands

how to use the system properly. They suggested that a combined approach of having an in-person visit every few years may be more appropriate, although more evidence would be needed to demonstrate the effectiveness of this as well.

3.5. The TAP would like additional detail to demonstrate that the proactive remote monitoring was effective and would safeguard the consumer. The TAP was of the view that evidence would need to be provided which demonstrated that a side-by-side comparison was completed which showed the remote monitoring platform performed as well as in-person service visits. This information should include all of the physical elements that would be checked during an in-person visit and how they were achieved remotely. For example, the TAP noted that during an in-person visit, the engineer would likely also check whether radiators were heating sufficiently and bleed them as necessary. However, this would not be possible remotely. They were concerned that it would not be able to identify a fault downstream of the heat pump itself which impacts the way the property is treated.

3.6. The TAP was of the view that evidence is needed to demonstrate how the system has worked in practice, including what changes have been made remotely and how predictive maintenance has led to a better service for the consumer. This should include detail on the most common replacements made in practice.

3.7. The TAP questioned what faults would be identified with the SGL and domestic hot water system, and which would not be identified. How would these unidentifiable faults be addressed?

3.8. The TAP questioned how the error thresholds or anomalies were set and what triggers an in-person visit. They also questioned what the result of an anomaly may be. For example, would the system delivering a lower COP or not meeting comfort requirements trigger a

physical visit? They were of the view that additional information would be needed to demonstrate how this works.

3.9. The TAP accepted that not requiring in-person visits to maintain the warranty could be beneficial, given this would be more resilient against end-user churn. However, they also recognised that there may be a risk that this results in improper maintenance during the 10-year warranty period and therefore more expensive remediation after this period ended.

3.10. The TAP questioned how customer feedback and interaction was managed. This includes having functionality to enable consumers to contact the manufacturer directly to adjust settings on their system remotely. This is significant because there is likely to be end-user churn in social housing and the user may not be familiar with this type of heating system.

3.11. The TAP was of the view that a QR sticker should be clearly affixed to the system which gives access to details of the servicing, warranty and remote monitoring provided.

3.12. The TAP was of the view that the manufacturer must ensure that if a callout is triggered but the fault is outside of the warranty, the end user does not pay.

3.13. The TAP noted that many of the comparable measures do include a similar remote monitoring functionality, but this system uses AI. They questioned whether the AI had already been trained so that it recognises issues which arise and how to deal with them. They were concerned that if the system had not been trained, then there was a risk that it would need to learn by being installed in fuel poor households.

3.14. The TAP questioned whether there would be shared learning between multiple heat pumps installed on the same ground loop.

3.15. The TAP discussed the exclusions set out in the warranty. They noted that it had not been adapted to what was presented to the TAP. For example, the terms state that financial compensation is not provided where regular maintenance is not carried out, but this maintenance is not required where the remote servicing is in place. The TAP was of the view the warranty needs to be updated to refer specifically to the monitoring platform.

3.16. The TAP acknowledged that the warranty would remain valid where the remote monitoring platform was active, which distinguishes it from similar systems approved as innovation measures with ASHPs as standard innovation measures.

3.17. The TAP was of the view that the manufacturer should provide a data sim without relying on the landlord to provide broadband access. They were of the view that this would lead to limited additional cost but would enable the benefits to be achieved more robustly. This is especially important given the reliance on remote monitoring only.

3.18. The TAP noted that the response to clarifications made clear that an in-person visit would be required for the water cylinder regardless. They noted that this affected the claimed reduction in cost. To support this claim, the TAP would want to see evidence of cost savings which take into account the cost of inspecting the water cylinder as well as the reduction in SCOP of the product against the comparable measure. This is distinct from similar ASHP applications given the in-person visit is occurring.

3.19. The TAP discussed the noise produced by the product. They noted that it was higher than the comparable measures set forward in the application. They were of the view that this counted as a disbenefit of this system. They discussed the EU maximum sound limits as well as the World Health Organisation recommended limits and felt that regulation on

noise was outdated. They felt that noise level is a valid concern, even where the noise produced is within the legislative thresholds.

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

3.21. The panel recommended that the product be rejected as a substantial innovation measure. They recommended that the product should be approved as a standard innovation measure, subject to adequate responses being provided to clarifications. They noted that additional evidence was needed for the measure to be reconsidered as a substantial innovation measure.

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

4.1. The application was for an ASHP which is installed inside the home. It comes with a 10-years remote monitoring and data plan, and a 10-year warranty. It uses R32 refrigerant. The application is for a substantial uplift.

4.2. The chair noted the application contained the same remote monitoring, warranty and data plan as has been approved as a standard innovation measure with an outdoor ASHP. The application for the indoor ASHP was reviewed in TAP14 and rejected as insufficient evidence was provided to support the durability claims. This application no longer contains those claims.

4.3. No issues were raised with the standards.

4.4. The TAP discussed claims around the product being able to be installed in situations where external heat pumps were prohibited. They noted that it would be beneficial to have some case studies which showed this occurring, although they accepted that it is

likely that there are situations where the heat pump can be installed where an outdoor system is not permitted or where access is too difficult.

4.5. The TAP discussed the warranty, and noted that there appear to be more exclusions than were on the warranty provided with the outdoor version of the product. The TAP noted that the wording excludes issues caused by incorrect commissioning. However, given a commissioning check is provided, there should be no issues with commissioning.

4.6. The TAP discussed noise levels in depth. They noted that MVHR was used as a comparison on the noise level, but that this was likely going to be installed in a plant room and therefore have a limited impact on the occupant. This AHSP is more likely be installed in a living area so the noise produced would have a greater impact. They noted that the applicant has shown that the product complies with noise regulations. However, the appropriateness of those regulations was questioned given they are not specifically related to heating systems which would be running constantly and would be in living areas.

4.7. The TAP noted that old permitted development rules for external ASHPs limited sound at a neighbours window to 42dB. While this is a different circumstance, they felt that this showed noise restrictions should be lower than the current standards. Equally, the World Health Organisation (WHO) guidance on indoor noise suggests that 40db should be the limit. While the TAP accepted that the product was compliant with regulations, they were of the view that the noise produced is a valid disbenefit to consider.

4.8. The TAP noted that there was a low noise setting which could be selected by the occupant. They questioned what the impact of this would be on the noise produced as well as the output and efficiency of the system. They were of the view that it would be more valuable for the occupier to be able to set quiet periods automatically (e.g. at night)

rather than having to push a button each time. They also questioned what the impact would be on the temperature of the house and whether the system would be able to raise the temperature sufficiently at the end of the quiet period in line with the occupier's heating schedule.

4.9. The TAP commented on the evidence provided in relation to sound impacts. They noted that the evidence did not clearly detail what the old heating system was, where it was located, or provide clear evidence of what the occupants said about the noise.

4.10. The TAP questioned the servicing costs compared to outdoor ASHPs.

4.11. The TAP questioned the clearances set out in the application and noted that the best practice examples provided did not appear to adhere to those guidelines.

4.12. In the Q&A, the TAP questioned the noise output from the system and what the noise output was when the quiet mode was engaged, as well as the effect on efficiency and heat output. The applicant offered to share technical detail after the meeting. They noted that this doesn't affect the COP of the system but the heat output will be lower. The representative also confirmed that the product meets relevant standards for noise output, and that they had added additional guidance on siting the system away from bedrooms. The TAP clarified that in their view the standards are not specific to an indoor heating system and while other systems (MVHR, dishwashers, washing machines) may create similar noise levels, they are not operating constantly over a heating season. They would be interested to see a graphical representation of the noise level over time.

4.13. In the Q&A, the TAP questioned what the impact of the low noise mode would be on the ability of the house to come up to temperature in the morning, and whether the higher demand when it does come back up to normal operation would reduce the COP during this period. Additionally, would the need to meet the set point mean that the low

noise mode would need to deactivated and cause noise issues for the occupier. They asked whether technical figures could be provided to demonstrate this impact.

4.14. In the Q&A, the TAP questioned whether the low noise mode could be set automatically by the occupant. The representative said that this could likely be programmed in.

4.15. In the Q&A, the TAP questioned the evidence provided in relation to the impact of noise including what the previous heating system was. The representative stated that the systems were gas boilers and the noise related to flue noise. Equally, the boiler was in the kitchen while the ASHP was moved to a cupboard.

4.16. In the Q&A, the TAP also clarified that meeting the WHO guidelines would also be important.

4.17. In the Q&A, the TAP questioned what the servicing costs are for an indoor ASHP. The representative explained that they are equivalent to the outdoor version. They also train installers to provide servicing on indoor ASHPs.

4.18. In the Q&A, the TAP mentioned that the clearances set out in the guidance were not adhered to in the examples put forward, and what the impact of this would be. The representative stated that where the clearances cannot be met, only access to the front of the system is required for servicing.

4.19. The panel recommended that the measure should be rejected as a substantial innovation measure. They recommended that the measure may be approved as a standard innovation measure, subject to additional evidence being provided through clarifications and this evidence being satisfactory. This relates to issues with the warranty, the noise produced and the impact of the low noise mode on efficiency. The TAP was of the view that a sound specialist may be needed to support the application.

5. Innovation Measure Application: Archai JA Solar PV

5.1. The application is for a solar PV panel with panel level optimisation which aims to increase power output and reduce damage caused by shading. The application details the inclusion of a communication gateway which enables remote monitoring. The system includes safety features such as PV-off automatic rapid shutdown, arc fault detection, and thermal overload protection. The system comes with a 25-year warranty. The application is for a substantial uplift.

5.2. The chair outlined previous history relating to this application, including that the application was previously reviewed during TAP15 and was rejected with clarifications. These clarifications related to providing more information on how the measure functioned in practice, demonstrating the cost savings achieved through optimisation, and ensuring that warranty exclusions did not negatively affect the end-user.

5.3. The TAP raised no concerns around installation standards or the comparable measure selected.

5.4. The TAP discussed the claimed increase in annual cost savings and felt that the explanation of the cost savings report was more satisfactory than previously provided. As with other previously approved solar PV IMs, they felt that the cost savings were likely not as great as being set forward and some of the assumptions used to calculate additional savings were incorrect. Additionally, the data was extrapolated from a limited number of months and therefore the extent of the improvement is hard to conclusively demonstrate. However, they accepted that there was a mechanism whereby additional cost savings could be achieved.

5.5. The TAP discussed the claimed increase in durability of the measure. They remained concerned that the warranty exclusions could lead to an invalid warranty being produced. They wanted assurance that the measure registration guide would be updated to require either confirmation that the measure has not been installed in a coastal area, or that the installer has manufacturer approval to install within 500m of the coast so that the warranty is valid.

5.6. The TAP questioned whether in circumstances where the measure is installed close to the coast, is it the manufacturer who is taking on the liability or the guarantee provider.

5.7. The TAP was of the opinion that the amended QR digital registration process had reduced the burden on the consumer to retain information relating to their system.

5.8. The TAP felt there was an improvement in relation to durability, subject to clarifications on the warranty terms.

5.9. The TAP discussed the improvement in environmental impact. They noted that the quality of the LCA was relatively good, and this showed a reduced environmental impact during the production of the panels. It was not clear whether the full system was included in this evidence and therefore the extent of this improvement was limited. The TAP was also of the view that the industry is moving towards this manufacturing approach.

5.10. The TAP discussed the other improvements. They accepted that the product demonstrated the same safety features as previously approved measures and therefore was an improvement in this criterion.

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

5.12. The panel recommended that the product be approved as a substantial innovation measure, subject to appropriate responses being provided to clarifications.

6. AOBs

6.1. No AOBs were raised.

7. Date of next meeting

7.1. The next meeting of the TAP is scheduled for 3 December 2025. The dates of future TAP meetings are available on our website.