Minutes

Making a positive difference for energy consumers

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

From: Reuben Privett	Date: 5 July 2023 Time: 09:00 – 13:00	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

Chandni Bhudia, 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: Elnur Gabarron Solar High Heat Retention Electric Storage Heater

2.1. The application is for a High Heat Retention Electric Storage Heater (HHRESH) with the capability to utilise surplus solar electricity generation and distribute to multiple heaters within the same property at a lower wattage. The application is for a substantial innovation measure.

2.2. The chair highlighted concerns around whether the ECO Order 2022 restricts this product's approval as an innovation measure if it were found that the majority of the energy it used comes from a non-renewable source.

2.3. The 4.1 amendment to the ECO legislation was discussed.

2.4. The TAP discussed the drive to electrification of heat generation in domestic settings.

2.5. The TAP noted that where the product is installed without being tied to the grid, it could be considered for an innovation uplift. However, they noted that the solution presented in the application of restricting the product to only using electricity from the solar array would not be appropriate as the necessary heat would not be produced in winter.

2.6. The TAP did not raise any concerns about the certifications held for the product.

2.7. The TAP discussed the compatibility of the system with older metering systems which have both peak and off-peak meters. It was suggested that the product may not be compatible with these older types of meters.

2.8. The TrustMark representative did not raise any concerns around PAS compliance and lodgement through TrustMark.

2.9. The comparable measure was discussed and agreed to be appropriate. The TAP noted that where a decision was being made about how to utilise excess solar electricity, it may be preferable to have a system with a diverter and immersion heater. The TAP noted that using excess solar generation to heat water may be more efficient and as such the product would be most efficiently utilised in homes without a water tank.

2.10. The TAP was of the view that the claimed cost savings for the household were overstated. The TAP noted how evidence provided was produced under lab conditions, and that evidence produced from real-life field tests would strengthen the application.

2.11. The TAP discussed whether the product had any form of smart controller which would enable prediction of the solar generation the next day, reducing the demand from the grid and increasing the cost savings for the homeowner. The TAP concluded that inclusion of this technology would strengthen the application.

2.12. The TAP was of the view that the evidence provided in relation to reduced cost of installation was not robust.

2.13. The TAP discussed claims around environmental improvement and found that they were encompassed by the claims within the reduced cost of installation criterion.

2.14. The TAP was of the view that reduced disruption to the householder was not evidenced and the product must be installed in combination with solar PV which increases disruption on the householder.

2.15. The TAP suggested that the product would need to be installed in conjunction with a solar array, which has associated environmental impacts and disruption to the householder which were not considered in the application.

2.16. The TAP discussed other benefits, including benefits to the network operator derived from reducing local exports to the grid, reducing cold on the fuel poor by elongating the heating period of HHRESH, and the reduced energy requirement to start charging the ESH. The TAP was of the view that these were an improvement over comparable measures.

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

2.18. The TAP saw merit in the product under application and noted that, subject to eligibility requirements within the legislation being met, the product could be considered an improvement on the comparable measure. Additional evidence to support the claimed cost reductions, or the incorporation of a smart controller to predict solar input would further strengthen the application.

2.19. However, the TAP acknowledged that the legislative requirements would not allow for the product to be approved as it does not meet the requirements set out in the ECO Order 2022 article 34(2)(f)(iv).

3. Innovation Measure Application: Soltherm PDQ EWI

3.1. The application is for an EWI system which utilises a fast-curing insulation adhesive, and an additive in the basecoat and topcoat to allow installation in a wider range of weather conditions. The application is for a standard uplift only.

3.2. The TAP discussed how the compliance with PAS requirements around insulation below the DPC and the routes to compliance. They noted that the product installation guide states that the start track must be 150mm above ground meaning in practice, fRsi calculations would need to be provided to demonstrate there is no condensation risk. The TAP acknowledged that the product could be installed in accordance with PAS.

3.3. The TAP raised no issues over the comparable measure used in the application.

3.4. The TAP noted that the application did not demonstrate that any processes were able to be removed, and suggested that this being the case, the time savings were not reasonable. The TAP was of the view that in reality contractors would use their time efficiently when installing a comparable measure to undertake jobs simultaneously. In this case, the time-saving benefit described in the application was not apparent.

3.5. The TAP would want to see robust evidence for all time saving claims, with real-life examples against the comparable measure.

3.6. The TAP and TrustMark representative were in agreement that in reality, the comparable measure would be installed with insulation adhesive and the mechanical fixing would be applied immediately. As such, the time saving benefit described in relation to the insulation adhesive is no longer apparent.

3.7. The TAP stated that they would want to see additional technical information from an independent source on the additives described in the application, such as material data sheets. They also expressed concerns around the need for operatives to protect their skin while spray applying the substance.

3.8. The TAP noted that while the product may be able to be applied below 5 degrees Celsius, there would be a significant risk of frost on the substrate and other materials which may undermine the application of the EWI. 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.

3.9. The TAP highlighted the problems posed later in the system's life if it were to be applied at temperatures below 4 degrees Celsius.

3.10. The TAP noted that the benefit described around wash-off and weather proofing were not significantly different from other products, where an adhesive would rarely be left for the time stated in the application.

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

3.12. The TAP was in consensus that the application should be rejected with feedback.

4. Innovation Measure Application: Matilda's Blanket

4.1. The application is for an IWI system, primarily for solid wall homes of brick, stone, or concrete construction. It is designed to replace batten and board techniques, and is manufactured off site.

4.2. The application history was outlined by Ofgem, including reference to a previous application under ECO3.

4.3. No concerns were raised around the appropriateness of the comparable measure.

4.4. The TAP raised a number of issues in relation to how the product can be installed in accordance with PAS.

4.5. The TAP discussed at length moisture risk control and the DESNZ (formerly BEIS) Best Practice Guidance.

4.6. The TAP raised concerns about the system's use in scenarios where there are suspended timber floors, noting that there is a risk of air breaching the foil layer and coming up through the floor void into the sealed cavity. The TAP would like additional evidence on how the product interacts with suspended timber floors. The TAP accepted that the foil vapour control layer extends beyond the track, but they would like additional information on how this was achieved and the extent to which it is a robust process. Additional evidence should also show that a sealed solution is consistently achieved, which could be through air tightness investigations.

4.7. The TAP noted that the thermal bridging images do not illustrate the surface condensation risk calculations to demonstrate that the surface temperature is above the critical

temperature factor. The TAP would like to see additional information on the InfraRed diagrams provided which they felt contained inconsistencies.

4.8. The TAP were concerned by the lack of detail around how window and door reveals are treated, as well as how the boards are sealed where they meet each other and the edges of the system. These were considered key in order to assess whether thermal bridges are not present in the system.

4.9. The TAP noted that there was not sufficient detail on how the survey is undertaken to ensure accurate measurements for the product are produced given the prefabricated nature of the product. The TAP found that the accuracy of this survey is critical and will ultimately impact the extent to which the claimed improvements are valid. Additional detail is needed to demonstrate how remediation takes place where pieces of the system are manufactured incorrectly.

4.10. The TAP noted that the thickness of the product was inconsistent between the BBA and other evidence provided. The TAP noted that the cavity of 40mm stated in the BBA did not appear to be included in other material, and as a result the u-value noted in the BBA may not be achieved where the product is installed in accordance with the training guides. The TAP would like to see a u-value calculation for the product when installed at an 81mm thickness for assurance that the required u-value would be met. Concerns were also raised around the u-value calculations given the use of PIR board at the edges of the system, which are difficult to seal. As such, the TAP were not able to assess the claimed annual cost savings.

4.11. The TAP were of the opinion that the cost of installation of the system in the application did not demonstrate cost savings over comparable measures. Additional evidence

supporting this claim, such as full job costings including detail on storage costs on site, would strengthen the application.

4.12. The TAP accepted that the product would be stronger than plasterboard. More robust evidence on this claimed improvement would strengthen this application. The TAP accepted that the panels may be more durable, but noted that given their construction, any repair to wiring or pipework needed in the cavity behind the system would require additional work than the comparable measure.

4.13. The TAP were of the opinion that a reduction in water use would be better suited in the reduction in disruption criterion.

4.14. The TAP discussed the importance of an accurate survey for the reduced environmental impact criterion claims. They noted that in order for that claim to be assessed fully, additional evidence on the process for ensuring accurate measurements are taken would need to be provided. They noted that the additional PIR filling which is used around the edges of the system would need to be cut on site and lead to waste which was not factored in to the evidence provided. Additional evidence which demonstrates the waste production during manufacturing of the product as well as waste produced on site, taking in to account any additional boards produced where the survey was inaccurate would support the application. This evidence should be robust from real world cases.

4.15. The TAP discussed whether the system would likely require only a single-trade. They noted that moving sockets and radiators would be conducted by electricians and plumbers respectively.

4.16. The TAP were of the opinion that the reduction in disruption criterion had not been evidenced sufficiently. In particular, they noted that it is often impractical for installations to be carried out one room at a time and that this is possible for other products in the

market. Additionally, the TAP noted that in practice central heating systems would not be drained in sections.

4.17. The TAP found that there was not evidence to support the claim that tenants were supported throughout the process.

4.18. The TAP suggested that other IWI systems do not require a plaster finish to be applied and as such the reduction in disruption to the householder criterion was not apparent.

4.19. The TAP was of the opinion that the application would be strengthened by robust evidence of worked examples comparing the system with other IWI systems to determine the extent to which the householder is disrupted.

4.20. The TAP accepted that there would be a simple aftercare process for the occupant.

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

4.22. The TAP saw some merit in the system but were in consensus that before a recommendation could be made, additional evidence must be provided.

5. Innovation Measure Application: UKSOL

5.1. The application is for a solar PV panel with a factory fitted optimiser which aims to increase power output and reduce damage caused by shading. The application details additional benefits offered by an optional module to be fitted at an additional cost.

5.2. The chair gave an overview of the product history, including that it is an existing innovation measure. The application is for a substantial uplift.

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 was of the view that a cost saving was demonstrated. The TAP discussed how the annual cost saving figure was calculated and noted that the headline figure referred to savings of the amount of energy usually lost to shading. Additional evidence, such as a daily cycle of generation of the product, would strengthen the application. The TAP discussed the value of the savings and found that they were minimal when taking in to account self-consumption and export rates.

5.5. The TAP discussed the decreased cost of installation of the product, noting that the product is designed for specific properties with multiple roof orientations and angles. The TAP noted that as a proportion of the entire project, cost savings derived from a cheaper inverter were minimal.

5.6. The TAP noted that the evidence provided was from case studies in Greece and suggested that they were not representative of the UK market.

5.7. The TAP was of the opinion that robust evidence was not provided for the claimed reduction in degradation of the panels.

5.8. The TAP were supportive of the warranty provided on the optimiser and the yearly increments on power output. They noted that additional information would be necessary to understand how the warranty mechanism works in practice for the consumer. The TAP noted that if the additional module was not purchased then it would be difficult for the consumer to know that their panel was failing.

5.9. The TAP discussed the functionality provided by the optional modules and was of the view that the module should be included at no cost to the householder.

5.10. The TAP discussed at length the safety features offered by the optional module and queried if there was a mechanism in place which notified the fire service that the solar array was no longer live.

5.11. The TAP discussed whether the safety features were enabled where the system was not connected to the internet.

5.12. In the Q&A, the TAP queried the process of a customer making a claim on the warranty. The representative explained that the householder's single point of contact would be UKSOL, who would expect the original installer to return to the property in order to assess the cause of the fault. Where the panel or optimiser is faulty, UKSOL would arrange with the contractor to fund a replacement.

5.13. In the Q&A, the TAP queried how the householder would know their generation capacity had fallen. The representative explained that where the customer had access to the optimiser monitoring data, they would be able to review the amount of energy being produced. Where the customer does not have this functionality, they would be able to monitor through a standard generation meter.

5.14. In the Q&A, the TAP queried why the additional cost of the optional module was not included as standard and whether it could be installed retrospectively. The representative noted that there may be occasions where the module is out of stock, which would limit the installation. The representative also noted that the module would need to be installed on the roof at the same time as the panels. The representative accepted that they would install the optional module in all cases.

5.15. In the Q&A, the TAP queried the requirement for internet connection and noted that the application would benefit from including a data plan free of charge to the homeowner where they do not have Wi-Fi. The representative explained the different approaches to connectivity.

5.16. The TAP subsequently noted that the addition of a data plan free of charge to the homeowner where they do not have access to Wi-Fi so that they would be able to access the data produced by the additional modules would strengthen the application. Furthermore, an alarm system which notified multiple parties to a fault in the system would strengthen the application.

5.17. In the Q&A, the TAP queried whether the system still benefits from the safety features where there is no Wi-Fi connection. The representative explained that the module would not need a Wi-Fi connection, and that it would disconnect the power when it loses power.

5.18. In the Q&A, the TAP queried how the fire service were informed that the panels are no longer live in a fire. The representative suggested they could add a sticker to the panel for the fire service to use.

5.19. The TAP subsequently noted that under MCS, labelling at various points in a solar PV system is required. The TAP were of the opinion that no additional benefit would be gained from this alteration.

5.20. In the Q&A, the TAP queried whether the optimiser has any bearing on the inverter lifespan. The representative took this query away to address at a later date.

5.21. In the Q&A, the TAP queried whether the system had Arc fault detection. The representative took this query away to address at a later date. The TAP were of the opinion that the inclusion of Arc fault detection would strengthen the application.

5.22. The panel recommended that the application is approved as a 45% uplift, subject to satisfactory clarifications being provided.

6. Date of next meeting

6.1. The next meeting of the TAP would be on Wednesday 12 July 2023. Further planned upcoming TAP meetings are available on our website.