

## Minutes of the ECO Innovation Technical Advisory Panel

From: Roisin Curran

Date: 31 July 2019

Location: London

Time: 9:00

### Present

David Glew, Leeds Beckett University  
Jason Palmer, Cambridge Energy  
Neil Cutland, Cutland Consulting Ltd  
Hunter Danskin, BEIS  
Rita Varsani, BEIS  
Adam Bricknell, BEIS  
Eric Baster, Ofgem  
Jessica Kissack (Chair), Ofgem  
Roisin Curran (Secretariat), Ofgem  
Kay Popoola (Observer), BEIS

### Introductory remarks by the Chair

The Chair welcomed all panel members to the meeting.

#### 1. Demonstration Action Application: Safeguard (Stormdry)

- 1.1. The application was for a waterproof masonry coating product that prevents moisture penetration into external walls, on the basis that drier walls have better thermal insulation properties. An application was previously made for the April TAP, and rejected with merit in a fresh application.
- 1.2. As before, the panel agreed the product was 'materially different' to products so far installed under ECO.
- 1.3. The panel thought that the level of estimated cost savings presented were not supported by the included evidence and were unrealistically high, however agreed that the product was reasonably expected to achieve some cost saving.
- 1.4. The panel acknowledged there were no conclusive studies as of yet into the moisture content of the walls of actual UK buildings.
- 1.5. The panel were happy with the monitoring proposal, and sample size. The panel suggested that recruiting all properties from exposure zones 2 and 3 could reduce recruitment and travel costs whilst enabling a more representative UK average cost saving to be determined.

- 1.6. The panel noted from the evidence provided that some wall types are more absorbent than others, with Fletton bricks being the most absorbent. The panel suggested that data covering a representative sample of wall types would be needed to establish a future deemed score for the product.
- 1.7. One panel member noted the secondary benefits of the product, such as a reduction in brickwork damage occurring from freeze-thaw.
- 1.8. The panel agreed the monitoring costs were reasonable, but noted that Technical Monitoring costs should be removed from the budget. Whilst the Demonstration Action application form requests information on technical monitoring requirements, this is to inform consideration of the product as a future ECO measure.
- 1.9. The panel were content that the product is at TRL9.
- 1.10. The panel agreed the safety arrangements for the equipment and installation were reasonable.
- 1.11. The panel agreed this product could have a positive impact on fuel poverty and those vulnerable to the effects of cold.
- 1.12. The panel recommended the application is approved, subject to studying fewer exposure zones with a corresponding change in costs.

## **2. Demonstration Action Application: Chimella**

- 2.1. The application relates to a removable draught proofing system intended to reduce heat loss through open chimneys.
- 2.2. The panel agreed the product was materially different to products so far installed under ECO, and reasonably expected to achieve cost savings in properties where chimneys are not otherwise sealed.
- 2.3. The panel were of the view that the basis for the predicted cost savings and estimate was not adequately explained. The panel anticipate that there is a large variation in infiltration rate within the UK housing stock.
- 2.4. The panel agreed the monitoring proposal was largely appropriate, but that a number of details required further consideration. These included measures to ensure the property sample is representative of the housing stock, and duplication of tests. Further details are given in later paragraphs.
- 2.5. The panel were also concerned about the removable aspect of Chimella, and that savings are highly dependent on household behaviour. It was noted that the planned questionnaire did not appear broad enough to capture this. The panel considered it important to capture instances where the product is removed for any reasons, not just a fire, and the duration of removal. It was also considered important to capture changes in behaviour prompted by the product, for example a reduction in the frequency of fires, as this could have an impact on primary heating use.
- 2.6. The panel suggested that the trial focused on the impact of Chimella on dwellings with single chimneys, to reduce the number of variables being tested. If recruited properties

have more than one chimney, the additional chimneys should be sealed prior to the beginning of testing.

- 2.7. The panel agreed the cost of the proposal was not reasonable. It wasn't clear that the most suitable partner was completing each project element, there appeared to be some overlap between roles and project elements, and the costs for some elements appeared high.
- 2.8. It was noted that the project includes two different pressure test approaches. This was not considered to be justified for the purposes of establishing the effectiveness of the measure, and of the two approaches the panel expressed a preference for blower door testing, as it is currently more established – though the panel also recognised the potential contribution that pulse testing could make in the future.
- 2.9. The recruitment costs were higher than normal, and it was unclear if room temperature sensors had been included. The panel noted that it would be helpful if the costings were explained more clearly.
- 2.10. The panel agreed the sample size would be appropriate provided data was successfully obtained for all properties, and noted it is for the applicant to make provision for drop outs and equipment failures.
- 2.11. It was unclear what property types would be selected and how. The panel anticipated higher heat loss through chimneys in dwellings with suspended timber floors, because of much higher infiltration through the floor. It was recommended that the properties were representative of floor type nationally, with approximately 37% suspended timber floors and the remainder solid floors, and that installations are separated out by floor type in the analysis of results.
- 2.12. The panel were content that the product is at TRL9, as it is currently on the market.
- 2.13. With regard to the safety arrangements for the equipment and installation, the panel questioned whether a process should be implemented to identify and exclude properties where the product could reduce ventilation below recommended levels.
- 2.14. The panel were content with the aftercare arrangements.
- 2.15. The panel agreed this product could have a positive impact on Fuel Poverty for some property types.
- 2.16. The panel recommended the application is approved subject to clarifications in regard to the monitoring plan and associated costs, and in regard to safety.

### **3. Demonstration Action Application: CB Energy**

- 3.1. The application was for a boiler optimisation device intended to reduce fuel use by increasing the length of time between boiler burn cycles.
- 3.2. The panel agreed the product was 'materially different' to products so far installed under ECO.

- 3.3. The panel agreed the product was reasonably expected to achieve cost savings, but thought the level of estimated costs savings were unrealistic. The panel noted that the test certificate quotes a range of savings for a commercial setting from 0 to 16% depending on load, and that the maximum of this range had been selected without justification. The panel questioned whether savings would be fully transferrable to a domestic setting due to more intermittent heating patterns, and whether the product achieved savings by reducing internal temperature. It was noted that monitoring results from at least one home installation would have improved confidence.
- 3.4. The panel considered the planned monitoring/testing methodology was largely reasonable but required some clarification. The panel considered that internal temperatures should be monitored, and comfort analysis carried out. The panel were content with the proposal to monitor gas use directly on a sample of installations only, to check the assumption that boiler firing time is a suitable proxy, but noted this is an important part of the monitoring.
- 3.5. The panel welcome the day on/day off test method and consider that this should be used throughout the test period, however recognise some adjustment may be required to accommodate comfort analysis – for example, conducting a small part of the trial with the product always on. A 'comfort diary' approach was alternatively suggested.
- 3.6. The panel considered a sample size of 200 homes was reasonable, but suggested that the sample should cover a range of insulation levels/EPC ratings as well as property archetypes and boiler types.
- 3.7. The panel noted there was no mechanism in place to prevent the householder from switching the product on or off.
- 3.8. The panel agreed the estimated monitoring costs are reasonable, but were concerned some elements may not have been fully considered.
- 3.9. The panel consider that independent verification of monitoring data – and also of selection of the properties for direct monitoring of gas use – should be included in the methodology.
- 3.10. The panel were concerned that the instructions for the product were complicated, and recommend simplification for the domestic market. It was also unclear how the will householder would know if the product had failed.
- 3.11. The panel agreed the product is at TRL8.
- 3.12. The panel were not satisfied that the equipment and installation safety arrangements were reasonable. The panel question whether the installation of the product would breach the terms of a boiler's warranty or service plan, and how this situation would be dealt with.
- 3.13. The panel agreed the aftercare arrangements were not reasonable. The budget only included contingency money for the first year of the trial, whereas the second year also needs to be considered. The costs should include provision for the removal of the product after the trial period if requested by the householder: the householder should not be charged for removal.

- 3.14. The panel agreed this product could have a positive impact on Fuel Poverty, but voiced concern that lower room temperatures may impact those vulnerable to the effects of cold. It is unclear if there are any safeguards currently in place.
- 3.15. The panel recommended the application is rejected, but agreed there could be merit in a future application if they could address the concerns outlined above.

#### **4. Demonstration Action Application: Kensa/Switchee (GSHP and Smart Controls)**

- 4.1. The application was for the installation of shared ground loop GSHP system and a smart controllers intended to optimise heating hours around a time-of-use electricity tariff.
- 4.2. The panel did not agree the proposed project was materially different to products so far installed under ECO. There was good potential for an element of the proposal, heating controls featuring the phase 2 algorithm, to be considered materially different if separated out from other elements, however this element is not at a sufficient TRL to be considered for a demonstration action currently and the panel considered only phase 1.
- 4.3. The panel agreed the method could reasonably result in a cost saving, but that the predicted cost savings were not supported. The percentage saving referenced in the application did not appear to come from the modelling included as evidence, which in any case was highly simplified.
- 4.4. The panel agreed the monitoring proposal would benefit from additional detail and clarity. The timeline was unclear in that monitoring was due to start before installation of the GSHP was due to be completed. The panel also suggested that external temperatures should also be considered.
- 4.5. The panel were concerned a householder may inadvertently flip the switch on the product to 'off' during the trial.
- 4.6. The panel agreed the costs of installation and monitoring were unreasonably high. The panel considered that the GSHP element was not part of the innovation being tested, and should not be included in project costs. The panel also noted that no justification was provided for management and related costs, though large amounts were listed. Overall, the proposal required a more detailed and clear breakdown of the projected costs. The panel were also concerned that the plan indicated project costs would only be confirmed later in the project, rather than before application.
- 4.7. The panel would also expect to see an independent body or person with recognised expertise in monitoring projects involved in at least the design of the monitoring plan and the verification of results.
- 4.8. The panel considered the proposed number of installations was not justified. Given the relatively high claimed level of saving, it would normally be anticipated that fewer installations would be sufficient to demonstrate the effectiveness of the product.
- 4.9. The panel noted that the effect of the project on occupants' comfort level was not adequately considered, and had concerns over the impact of the proposed heating regime on those vulnerable to the cold.

- 4.10. The panel had concerns around aftercare arrangements, and questioned whether, in the absence of comparable tariffs from alternative suppliers, householders could be disadvantaged by not being able to switch.
- 4.11. The panel recommended the application is declined, with merit in a fresh application once the phase 2 algorithm has achieved the relevant TRL which addresses the issues set out above, and excludes the GSHP element from project costs.

### **Date of next meeting**

The next meeting of the TAP is on Monday 7<sup>th</sup> October 2019 in London.