Energy Savings Scheme Rule December 2015 consultation submission from: Simon Ray

Submission content:

I am a Lead Auditor on the ESS Audit Panel and a Certified Measurement and Verification Professional acting as a M&V consultant on projects relevant to the PIAM&V method.

My submission relates to the proposed changes to the statistical requirements for PIAM&V and an area where no changes are proposed, but I believe are desperately required.

Firstly I believe the proposed changes to the statistical requirements will open up many opportunities for projects under this method. In my experience the main problem from a practical perspective has been meeting the requirements in the baseline model, before any implementation has occurred and I think using an average model instead of a linear regression model is a particularly common sense move.

However I believe that changes should be made to the 'Effective Range' principal in the OEH tool. The term used in the ESS Rule is the 'Effective Range is consistent with the range of measured values for Independent Variables and Site Constants, where relevant' but the PIAMM&V tool interpretation of this is much more extreme and inconsistent with the ESS Rule. It is effectively 'Measured values must be a subset of the Effective Range'. This interpretation means that if energy usage changes to lower or higher values than in the Effective Range the claim is invalid, on the basis that the energy model only applies to the Effective Range. This is despite also having to account for changes in static factors/ non-routine adjustments.

This principle is suggested in Appendix B-2.1 of the IPMVP and is based on the risk of the relationship between the independent variables and energy usage not being the same at different ranges of independent variables. However the IPMVP, the world's best practice measurement and verification protocol, does not say that any calculated savings are invalid but just that the principle should be considered.

Similar to the statistical requirements, I think that it would be much more appropriate for the M&V professional to decide if the priniciple is relevant to the project. For example, it could be inapplicable to technologies with known performance curves as most equipment such as variable speed drives, high efficiency motors and pumps etc typically work more efficiently the closer they operate to full loads, therefore meaning the calculated energy savings are likely to be understated if anything, not invalid.

In practice the principle is also not rigorous because model predictions get progressively less accurate the farther from the mean x, y values and do not abruptly change from accurate to inaccurate at the arbitrary boundary set by the minimum and maximum values during the normal year.

Finally, the current interpretation also defies an extremely valid principle of implementing energy efficiency projects, known as energy productivity as the tool only recognises energy reductions. That is to say that the interpretation discredits projects where energy usage remains constant but production/ output increases, which is a genuine gain in energy efficiency.

Regards, Simon Ray.