FOR THE NUMBERS: EVALUATION METHODS

Moderator: Iris M. Sulyma, Research 4 Results

PAPERS:

Practical Guidance for Selecting Opt-In Research Designs: Addressing Methodological Trade-offs and Avoiding Common Pitfalls
Lucy Morris, Pacific Gas and Electric Company
Brian Arthur Smith, Pacific Gas and Electric Company

Comparison of Bayesian Billing Analysis to Pooled Fixed Effects and Variable Base Degree Day
Benjamin Hannas, Ecotope, Inc.
Michael Logsdon, Ecotope, Inc.

Cage Match or Happy Couple? Engineering Simulation Models and Billing Analysis
Lauren Gage, Bonneville Power Administration
Dave Baylon, Ecotope, Inc.
Josh Rushton, Rushton Analytics
Michael Baker, SBW Consulting
Justin Spencer, Navigant Consulting

Measurement Uncertainty and Risk in Measurement and Verification Projects
Herman Carstens, Centre for New Energy Systems, University of Pretoria
Xiaohua Xia, Centre for New Energy Systems, University of Pretoria
Sarma Yadavalli, Centre for New Energy Systems, University of Pretoria

SESSION SUMMARY

This session provides detailed comparisons of current evaluation approaches and highlights methods used less frequently by the energy efficiency and demand side management evaluation community.

Morris and Smith present a detailed overview of the three commonly used research methodologies applied to opt-in behavioral programs, and the strengths and weaknesses of each: Randomized Control Trials (RCTs), Randomized Encouragement Design (RED) and the quasi-experimental Variance-In-Adoption approaches to a smart thermostat trial.

Hannas and Logsdon present a Bayesian inference model (BIM) to overcome some of the limitations of the most frequently used methods. The results of BIM are compared to pooled fixed effects (PFE) and two-stage variable base degree day (VBDD) analyses for ductless heat pump (DHP) retrofit installations.

Gage et al present describe the strengths, weaknesses and best uses of engineering simulation models and billing analysis for estimating electricity savings from residential HVAC and weatherization measures.

The relative contribution of measurement uncertainty to combined measurement and sampling uncertainty is investigated in the context of Measurement and Verification (M&V) projects where the whole population is not metered. The relative contribution of measurement uncertainty to combined measurement and sampling uncertainty is investigated in the context of Measurement and Verification (M&V) projects where the whole population is not metered. In most M&V electricity meter sampling cases the cost of higher accuracy is not justified by the increased reporting accuracy.