SESSION 9

IMPROVING AND HARMONIZING EM&V METHODS

Moderator: Even Bjørnstad, Enova SF

PAPERS:

The Development of a National Energy Efficiency Data-framework and Its Use in Evaluating Energy Efficiency Policies

Mary Gregory and Julian Prime, Department of Energy and Climate Change, UK

Ontario's EM&V Protocols and Requirements: An Author's Perspective

Kevin Monte de Ramos, KMDR Research, Canada

Comparable Energy Savings: How to Ensure that Singers Form a Harmonious Chorus?

Harry Vreuls, NL Agency, The Netherlands

SESSION SUMMARY:

This session will focus on issues relating to the quality of the methods applied for evaluation, measurement and verification of energy programs.

The paper by Gregory and Prime gives an overview of the National Energy Efficiency Data (NEED) framework which has been developed in the UK. This innovative and award-winning approach merges data from several data sources to form a comprehensive micro-level household database that is well suited to evaluate a diversity of energy efficiency programs.

Using the individual property's Unique Property Reference Number (UPRN) as a spine, meter data obtained from Energy Suppliers (gas and electricity) are added together with the Homes Energy Efficiency Database (HEED), which includes information on energy efficiency measures undertaken at the individual property. Further, key property attribute data are obtained from the Valuation Office Agency (VOA); and finally data on household characteristics at address level as modeled by Experian. The database includes data from around 30 million electricity meters and 25 million gas meters.

In addition to describing the structure of NEED, the authors also perform statistical analyses on the basis of these data. Key descriptive statistics on energy use related to home and household characteristics are presented, and effects of energy efficiency measures installed under previous programs are evaluated.

Kevin Monte de Ramos takes an author's perspective when offering insights into the development of the Province of Ontario's *Evaluation Monitoring & Verification (EM&V) Protocols and Requirements*. The protocol and its supporting resources give guidelines for evaluation planning for all program types, evaluation contractor procurement, cost-benefit tests, and regulatory oversight used to assess Ontario's $1.4 Billion Conservation and Demand Portfolio. By sharing this experience, other jurisdictions may benefit while attempting to synthesize an evaluation framework for the verification of energy savings and demand reductions. The protocols are based on theory-driven methods of evaluation, and the author illustrates the protocol by outlining the five steps of the key section II of the protocol; *Requirements and prerequisites to procuring an evaluation contractor*.

Harry Vreuls' paper points at the importance of harmonizing the methods for energy efficiency calculations both within and across jurisdictions. He reports findings from a project within the IEA-DSM program that aims to identify basic concepts, calculation rules and systems for calculation standards based on data from the six countries participating in the project. A key tool in the project is a template document that is used to record relevant data for the individual energy efficiency programs. The template covers general program information, formulas used for

calculating energy savings, including baseline and normalization issues, data and calculation issues, and finally greenhouse gas emissions reductions from the program.

A handful of technologies were selected for analysis, and it is demonstrated that there are indeed different approaches among countries to the same problem. However, calculations can still often be made comparable. Mr. Vreuls also performs an analysis of the sensitivity of the calculation results due to differences in key calculation parameters.