SESSION 8A

EVALUATION METHODS FOR FEEDBACK, COMPARATIVE USE AND OTHER RESIDENTIAL BEHAVIOR CHANGE APPROACHES

Moderator: Monica Nevius, NMR

PAPERS:

Experimentation and the Evaluation of Energy Efficiency Programs: Will the Twain Meet?

Edward Vine, Lawrence Berkeley National Laboratory and California Institute for Energy and Environment
Michael Sullivan, Freeman, Sullivan & Company
Loren Lutzenhiser, Portland State University
Carl Blumstein, California Institute for Energy and Environment
Bill Miller, SRA International

Quantifying Savings from Comparative Usage Programs: Are the Differences Reconcilable?

Donald Dohrmann, ADM Associates, Inc.
Nicholas Fitzgerald, ADM Associates, Inc.
Wim Bos, SMUD

Residential Smart Home Energy Monitoring Pilot

Christopher Mayhew, Tetra Tech Inc.
Robert Baumgartner, Tetra Tech Inc.
Kevin Galligan, Cape Light Compact
Briana Kane, Cape Light Compact
Phil Moffitt, Cape Light Compact

SESSION SUMMARY:

This session will focus on the evaluation of programs that use behavior change tools and approaches to achieve energy savings among households. The first paper addresses the use of experimentation, especially randomized controlled trials (in which subjects are randomly assigned to treatment and control conditions), in the evaluation of such programs. The authors hold that experimentation has rarely been applied to rigorously test alternative energy efficiency program design features and determine the benefits of energy efficiency activities, and that this is impeding progress in the development of effective energy efficiency programs. The paper presents a brief overview of experimental methods and describes the advantages and disadvantages of conducting experimentation in the context of the development and evaluation of energy efficiency programs. It discusses barriers to the use of experimental methods for energy efficiency programs, and suggests some ways of overcoming these barriers. The authors make recommendations for implementing key social experiments, including the types of energy efficiency programs and issues that can make use of experimentation and variables that one might use for selecting treatments.

The second paper focuses on the evaluation of an increasingly popular program approach, "comparative usage." Comparative usage programs provide information to residential customers on their energy use as compared to usage of similar customers. The authors compare and contrast several different evaluations of one large-scale, prominent comparative usage program to help shed light on basic questions about these programs, such as: How much savings can be achieved? How can savings be measured and verified? How will customers react to receiving the reports? The paper is intended to help

program administrators and evaluators better assess prospects for the implementation of such programs and likely evaluation outcomes.

The final paper focuses on the evaluation of a home energy monitoring pilot using experimental treatment and control groups. In this program, participants received a home energy monitoring system and were encouraged to set household energy savings goals. They were provided with real-time feedback on their electricity usage and savings via an Internet-based dashboard. The evaluation assessed the energy savings impact from this treatment—an average reduction of more than 9 percent—and identified the aspects of the program that appeared to be most instrumental in driving energy savings. The authors conclude the paper with a summary of ways to improve this pilot and similar efforts, and of plans for implementation and evaluation of the second phase of the pilot.