SESSION 8C
DIFFERENT PARADIGMS FOR ENERGY SAVINGS

Moderator: Richard H. Karney, US Department of Energy

PANELISTS:

Do-it-yourself Home Energy Audits: Tricks and Techniques
Joseph S. Lopes, Lopes Energy Consulting, Inc., Glen Cove, NY
Revisiting Energy Savings from PC Power Management Software
Kathryn Hile, The Cadmus Group, Portland, OR
Heidi Ochsner, The Cadmus Group, Portland, OR
Laura Feinstein, Puget Sound Energy, Bellevue, WA
Assessing Energy Savings Attributable to Home Enery Reports
Brian A. Smith, Pacific Gas and Electric Company, San Francisco, CA
Michael Sullivan, Freeman, Sullivan and Co.

SUMMARY DESCRIPTION:

Three different innovative methodologies are provided determining energy use and potential cost reductions by using inexpensive metering in a single household, targeting computer standby energy and instituting a new behavior-based concept, the latter two across entire utility service territories.

In our first paper, the author initiated a do-it-yourself home metering project to reconstruct how energy was used and, most importantly – when! With the expected adoption of smart grid and time-differentiated rates, it is no longer sufficient to simply know how much electric energy is used. Knowing what and when electricity is used could enable cost savings even where overall reduction in energy usage may be minimal. The results of the study provided significant and unexpected potential sources of energy savings not otherwise noted in typical utility web sites. The most valuable information from the study was the various tricks and techniques developed for metering. Using inexpensive short-term metering, the author was able to identify 100% of the energy end use in the home at a reasonable cost. These techniques could be used by consumers and utilities to provide energy and cost-savings tips for residences, which will prove invaluable in the near term and persist once the new smart-grid-enabled rates begin.

In our second paper, we will learn how Puget Sound Energy (PSE) implemented a personal computer power management (PCPM) incentive program to encourage managers at school district buildings, institutional facilities, and commercial buildings throughout its service territory to install software on their users' desktop computers to manage power settings and save energy. While previous studies showed a deemed desktop savings at 148 kWh per workstation (computer and monitor) per year, the authors analyzed data from metered computers with and without PCPM software to determine a new deemed savings value. The new data, from PSE program participants and from similar nonparticipants within PSE's service territory, showed found savings of 135 kWh per workstation per year.

Our last paper, delves into the new. The current energy efficiency program cycle in California (2010-2012) is the first time the California Public Utilities Commission is allowing California's investor-owned utilities to claim energy savings resulting from behavior-based efficiency programs. The decision authorizing utilities to claim savings from behavioral-based programs mandates experimental design methodologies be used and explicitly points out that special care will be necessary "to ensure that savings credited to these programs do not represent double-counting," so the issue of attribution of

savings is critical. Pacific Gas and Electric Company is seeking to claim savings from this type of program. This paper describes the requirements for demonstrating energy savings from behavioral programs, outlines the research design to be used to determine the magnitude of savings resulting from a specific behavioral program based on home energy reports and discusses how the important issues related to attribution of savings between multiple, competing programs can be resolved.