SESSION 1C

REALIZING THE FULL VALUE OF COMMERCIAL/INDUSTRIAL PROGRAMS

Moderator: Jennifer Meissner, NYSERDA

PAPERS:

Moving Beyond the Menu to Capture Savings from Soup to Nuts
Shawn Duff Intorcio, DNV KEMA Energy & Sustainability
Wendy Todd, National Grid

Impact and Process Evaluations of Northern Illinois Retro-Commissioning Programs
Randy Gunn, Navigant Consulting
Roger Hill, Navigant Consulting
George Malek, Commonwealth Edison
Richard Tonielli, Commonwealth Edison

Using In-depth Interviews to Estimate Non-energy Impacts Resulting from Commercial and Industrial Energy Efficiency Measures
Noel Stevens, DNV KEMA Energy & Sustainability
Lindsay Foley, National Grid
Susan Weber, DNV KEMA Energy & Sustainability
Pam Rathbun, Tetra Tech
Miriam Goldberg, DNV KEMA Energy & Sustainability

Auditing Audits: Big Savings Found in Long-Term Assessment
Jonathan B. Maxwell, ERS
Satyen Moray, ERS
Rebecca Reed Gagnon, NYSERDA

SESSION SUMMARY:

Evaluating commercial and industrial (C&I) programs can present many challenges to the evaluator. This session highlights four different evaluations that explored new issues or applied improved and innovative approaches in order to gain fresh insight on program design, energy savings and non-energy impacts. The featured evaluations cover a wide range of program types including audit, retro-commissioning, whole-system and custom programs.

The first paper by Intorcio and Todd presents the results of a literature review on "whole-system" C&I energy efficiency programs. While many programs offer incentives for a comprehensive array of energy efficient measures and incentivize customers to achieve savings at the building level, "whole-system" programs attempt to exhaust all cost-effective savings opportunities within end-use systems and offer other services, such as custom design or operation and maintenance actions. The paper provides an understanding of market barriers for energy efficiency programs that promote the complete optimization of individual energy end-use systems in the C&I sector, and describes key elements contributing to the success of the reviewed programs. The results of this paper have been used as a basis for conducting in-depth interviews with program administrators and stakeholders, and testing the feasibility of implementing similar programs in Massachusetts.

The second paper by Gunn et al. presents a comprehensive impact and process evaluation of one of the largest retro-commissioning (RCx) programs operating in the United States. This paper discusses

the fourth evaluation of the Program and focuses on enhancements to the net-to-gross (NTG) analysis after subsequent evaluations saw a decline in the NTG ratio from 92% to 71%. The evaluation described in this paper resulted in a NTG value upwards of 100%. The authors detail approaches used in this evaluation to attain more reliable results, including integrating service provider and customer data in the NTG analysis and increasing survey response rates.

The third paper by Stevens et al. presents the methods and results of a non-energy impact (NEI) study of C&I energy efficiency measures in Massachusetts. The paper highlights one of the largest and most systematic studies of nonresidential NEIs to date. In addition to developing quantitative NEI factors for future program planning and evaluation, the study explored the relationship between NEIs and program influence on participant decisions. The evaluation approach included in-depth interviews with 505 participants to identify and quantify NEIs associated with 789 measures, and a multi-step process to translate qualitative interview responses into quantitative NEI estimates. In nearly all cases, the study found statistically significant average NEIs per unit of energy savings.

The final paper by Maxwell, Moray and Gagnon presents an enhanced evaluation method for collecting and analyzing measure adoption and savings from C&I energy audits. The method differs from previous approaches by taking a long-term perspective, tracking adoption over time, and using engineering interviews and validation site visits to confirm or adjust savings. The large amount of data spanning many years allowed construction of temporal measure adoption curves. The evaluation described in this paper determined outcomes for more than 2,400 measures recommended in more than 300 C&I energy audits and found long-term measure adoption rates in excess of 65%, which is significantly higher than other known studies. The authors conclude that both the evaluation method and program design characteristics contribute to the high measure adoption rate.