Session 4A

BUILDING ENERGY SAVINGS: FROM THE GROUND UP

Moderator: Rich Hackner, Principal, GDS Associates

PAPERS *(in order of appearance)*:

The Road to Drive Savings
Jay Robbins, DMI
Arlis Reynolds, Cadmus
Chad Telarico, DNV KEMA
Whitney Brougher, National Grid
Elizabeth Titus, Northeast Energy Efficiency Partnerships

HVAC and Lighting Interaction, a Waste Heat Factor by Any Other Name
David Korn, Cadmus
Shannon Donahue, Cadmus
Caleb Wisch, Cadmus

Compared to What? An Alternative Strategy for Estimating Commercial and Industrial New Construction Baselines
Jennifer Chiodo, Cx Associates
Jennifer Meissner, NYSERDA
Judeen Byrne, NYSERDA
Lori Lewis, Megdal and Associates
Jon Maxwell, ERS
Kathryn Parlin, WHEC

Innovative Market Framework to Enable Deep Renovation of Existing Buildings in IEA Countries
Yamina Saheb, International Energy Agency
Aurelien Saussay, French Economic Observatory
Vida Rozite, International Energy Agency
Charlotte Johnson, University College London
Alastair Blyth, University of Westmnster

SESSION SUMMARY:

This session covers a wide array of building-related topics including: new ways to develop new construction baselines, HVAC and lighting interactive effects, variable frequency drive M&V, and macro-economic modeling of building programs.

The first paper discusses the scope, methods, and findings from the two evaluation studies, including: a review of the types of VSD projects implemented through PA programs; an analysis of VSD operations in commercial facilities; and a comparison of equipment operations before and after VSD retrofit projects. In addition, the paper compares the evaluation processes for the pre/post and post-only metering efforts, discussing the benefits and challenges of each.

Another paper surveys existing calculations used in a variety of Technical Resource Manuals (TRMs) and evaluations and reviews the primary material used for these calculations including an ASHRAE source from 1993. The paper then discusses laboratory research on recessed lighting and the

portion of heat lost to occupied and other spaces using a variety of arrangements including insulation contact (IC) rated and non-rated recessed cans under a variety of different temperatures.

The last paper presents an alternative baseline strategy that was developed for a recent impact evaluation of the New York State Research and Development Authority's C&I New Construction Program. This approach included calibrated simulation modeling for a sample of projects under three scenarios: 1) as-built, 2) energy code baseline and 3) project-specific baseline. The models were used to determine gross savings and modeled partial net savings (MPN) which includes free ridership (FR) and inside spillover. MPN also uses surveys of multiple decision makers and triangulation of survey results.

The MPN method quantifies the energy use of the specific technologies intended to be installed in the building prior to program intervention. This accounts for deviations in baseline from code. MPN analysis allows evaluators to obtain and incorporate a level of detail that cannot be acquired through traditional FR survey techniques. The paper describes the evaluation design, implementation and results with a specific focus on the MPN methods and findings.