SESSION 5A

ENERGY EFFICIENCY AS A CAPACITY RESOURCE: WE DEMAND RESPECT

Moderator: Kevin Galligan, Cape Light Compact/Barnstable County

PAPERS:

Demand Reduction in the Forward Capacity Market: Expectations & Reality
Kathryn Parlin, West Hill Energy and Computing, Chelsea, VT
Jennifer L. Chiodo, Cx Associates, LLC, Burlington, VT
Demand Response Evaluation, Cost-Effectiveness and System Planning
Nik Schruder, Ontario Power Authority, Toronto, ON
Josh Bode, MPP, Freeman, Sullivan & Co, San Francisco, CA
Reducing T&D Investments through Energy Efficiency: An Impact Assessment
Kathryn Parlin, West Hill Energy and Computing, Chelsea, VT
Gene Shlatz, Navigant Consulting, Burlington, VT
Walter Poor, Vermont Department of Public Service, Montpelier, VT

SESSION SUMMARY:

This session will address: (i) implementation of evaluation of forward capacity market demand reductions in Vermont; (ii) demand response as a supply resource when integrated into system planning; and, (iii) results of a geotargeted effort to defer or avoid transmission and distribution (T&D) investments through energy efficiency.

The Forward Capacity Market (FCM) is a mechanism developed by New England's Independent System Operator (ISO-NE) to purchase future power capacity from a variety of suppliers, including demand reductions that result from energy efficiency programs. ISO-NE has instituted rigorous verification protocols to ensure the reliability of demand reduction bids. The first round of Vermont's FCM verification is complete and the first paper covers the lessons learned in developing detailed evaluations of over 100 custom commercial and industrial (C&I) projects, most of which received individual Measurement & Verification Plans, on-site metering and custom analysis to comply with the ISO-NE verification protocols. Parlin and Chiodo describe methods used, findings and lessons learned from verifying the custom C&I component of Vermont's energy efficiency portfolio for the FCM.

Schruder and Bode describe the Ontario Power Authority's approach to incorporate demand response (DR) benefits into system planning. The valuation of DR and its integration into planning varies across North American jurisdictions. This paper describes how demand response evaluation was executed to simultaneously serve the evaluation requirements and produce results that directly tie to the system planning process and cost-effectiveness. The authors demonstrate the use of time-varying avoided costs in combination with weather-adjusted load impacts to ensure that the values used are cost-effective and may be incorporated into system planning. In addition, the negative impact of DR driven load increases during non-event hours that are a direct result of load shifting or snapback are taken into account. The purpose is to not only be able to compare DR resources to each other, but also to allow comparison with supply resources and other demand side management resources.

Finally, Parlin, Shlatz and Poor provide an overview of "geotargeted" (GT) efforts in specific regions of Vermont that the Vermont Public Service Board directed Efficiency Vermont to focus resources on that required substantial T&D investments over a ten year period. Efficiency Vermont

developed and implemented a combination of new programs and intensified delivery of existing energy efficiency programs to test this concept. The authors' work suggests that the GT programs in some regions achieved the same level of savings two to three years earlier than the non-GT statewide programs and that the characteristics of the GT region were a major factor in the success of these efforts. There are also indications that intensive GT efforts may yield higher savings in the first two years with diminishing returns as implementation continues. The authors will synthesize the issues and provide a discussion of the potential applicability of this strategy to future efforts designed to reduce T&D investments through energy efficiency.