

## Session 2A

### RENEWABLES

*Moderator: Phil Degens, Energy Trust of Oregon*

#### PAPERS:

##### **Rounding up Renewables: Evaluating NYSERDA's Biomass, Wind, Solar Photovoltaic, Solar Hot Water, and Solar Space Heating Programs 2008-2011**

Shawn Shaw, The Cadmus Group  
Danielle Kolp, The Cadmus Group  
Mary Knipe, The Cadmus Group  
Rebecca Reed Gagnon, NYSERDA  
Jennifer Meissner, NYSERDA

##### **Keep on the Sunny Side: Lessons Learned While Evaluating PV Program Impacts**

Vergil Weatherford, Navigant  
Eric Merkt, Navigant  
Pace Goodman, Navigant

##### **Evaluating a National, Renewable Market Transformation Program over a Decade of Massive Change**

Frank Stern, Navigant  
Charlie Bloch, Navigant  
Edward Vine, Lawrence Berkeley National Laboratory

#### SESSION SUMMARY:

A 2011 study by the Clean Energy States Alliances notes that, "There are relatively few widely accepted protocols for evaluating renewable energy programs. In the clean energy program evaluation arena, energy efficiency has received extensive attention, because state and utility energy efficiency programs have been in place for several decades and regulators have had to develop clear measures of program impacts to determine appropriate payments to utilities for energy efficiency activities. As a result, there has been considerable exchange of evaluation strategies and methods among the various states and evaluation contractors. In comparison, most renewable energy programs are newer, they vary more in their programmatic goals and approaches, and they have not had as much experience with evaluation."

This session is doing its part to fill this perceived gap in renewable energy evaluation. The three papers all put forward and describe in detail evaluation strategies, tools and methods that have been successfully used in the impact and process evaluations of existing renewable energy programs.

"Rounding up Renewables" describes the methods used and the challenges encountered in evaluating a renewable energy program involving a wide range of renewable energy technologies. NYSERDA funded over 3,000 solar photovoltaic (PV), solar hot water, solar thermal, biomass, and small wind energy projects since 2008. The data collected and impact analysis methodology used for each technology are described. Reasons for realization rates varying from 100% are also enumerated and discussed.

“Keep on the Sunny Side” provides great detail on the challenges of doing impact evaluations on PV systems, especially those that lack interval meter data. The authors describe how specific data collection and modeling approaches can be used to estimate the electricity generated by these systems. The paper also provides guidance on what specific data to capture that will ensure more accurate results.

“Evaluating a National, Renewable Market Transformation Program” clearly shows that renewable energy and energy efficiency programs share many common evaluation issues, a prominent one being attribution. The paper also shows that many of the tools and methods that have been employed in the past for energy efficiency programs can similarly be applied to renewable energy. In this case, the evaluation combined a historical tracing and expert judging approach, including a modified Delphi process, to estimate the program’s overall share of influence on wind capacity additions in states that were targeted by a national wind program over a ten-year period.

The results from these evaluation efforts will provide other renewable energy program implementers, evaluators and stakeholders with insights on approaches, methods and tools to successfully design, manage and evaluate renewable energy programs.