Session 3B

R&D INNOVATION

Moderator: Rosalie Ruegg, TIA Consulting, Inc.

PAPERS *(in order of appearance)*:

An Innovative Product's Path to Market. The influence of laboratory and field evaluations on adoption and implementation

John Proctor, Proctor Engineering Group
Adrian Hairrell, Proctor Engineering Group

Incubating Innovation

Eileen Nebhut, Southeast Energy Efficiency Alliance
Linda Olsson, Cadmus
Carol Mulholland, Cadmus

R&D Methods and Approaches: Impact Evaluation of an R&D Demonstration Program

Kathryn Parlin, West Hill Energy and Computing, Inc.
Lori Lewis, Analytical Evaluation Consultants, LLC
Tara Rainstrom, NYSERDA

SESSION SUMMARY:

This session features evaluations of three efforts to foster innovation through field testing, incubations, and demonstrations. Two are state-sponsored innovations, and one is the result of a federal-regional alliance partnership. The first paper traces performance from the laboratory into the field of an innovative, inexpensive device to reduce air conditioning energy use in dry climates The second paper examines the experience of a consortium of 13 cities funded under DOE's Better Buildings Neighborhood Program for the purpose of dramatically increasing the effectiveness of building energy efficiency retrofits across the Southeast region of the U.S. The third paper assesses impacts of NYSERDA-supported R&D demonstration projects, taking into account the fact that a major program goal was inducing replications. Underlying the three papers is a common theme: It is not easy to move innovations into wider spread applications even when they show promise.

The paper by John Proctor and Adrian Hairrell of Proctor Engineering Group tells a story of innovation that began more than 20 years ago. It is an account of R&D, followed by in-field testing, followed by "back-to-the-drawing-board" modifications, and a recent comparison of savings resulting from home installations with laboratory projected savings. The Hot Dry Air Conditioner (HDAC) Project was sponsored by the California Energy Commission PIER Research Program. Given that it was low in cost, appeared simple to apply, and showed a potential for substantial energy savings when initially tested, one might have expected it to be on a fast track to market, but that has not been the case. In fact, the history of this innovation illustrates a number of challenges that may be encountered in bringing an innovation to market.

The paper on incubating innovation recounts the experience of the a consortium of 13 cities formed by the Southeast Energy Efficiency Alliance (SEEA) in partnership with DOE to design and implement innovative programs for fostering building retrofits in each city. Despite SEEA's and DOE's support, a variety of challenges were encountered that derailed some of the programs near the beginning of the effort. Some of the remaining struggled to hang on while they looked to others for ideas that

worked. Only several that had forerunner efforts underway were able to take more innovative approaches and achieve results within the scheduled time frame. Generally the challenges faced and the time required were greater than had been initially envisioned. Linda Olsson and Carol Mulholland of Cadmus and Eileen Nebhut of SEEA provide an assessment of what went wrong and what went right.

The paper on evaluating R&D demonstration projects implemented by the New York Energy Research and Development Authority (NYSERDA) provides a new dimension to evaluation of these projects by including the effects of replications. This reportedly had not been done before despite the fact that inducing project replication was a prime goal of the demonstration efforts. Kathryn Parlin of West Hill Energy and Computing, Inc., is joined by Lori Lewis of Analytical Evaluation Consultants, LLC, and Tara Rainstrom of NYSERDA, to describe the evaluation approach, implementation, results, and implications, as well as to recommend ways to improve future evaluations of R&D demonstration efforts. They found that replications were common among the demonstration projects, and that accounting for savings from replications substantially increased total savings from the demonstration projects. At the same time, they found that continued involvement by NYSERDA to provide funding and technical assistance--beyond its support of the demonstration projects--appeared to be key to the success of many of the replications. The evaluation findings illustrate that the path to bringing an innovation from the R&D demonstration stage into wider use can be challenging.

Although these papers speak through evaluation to the challenges of innovation, they also shed light on how it may be accomplished. They serve to condition expectations for public programs aimed at promoting innovation, even as they inform policy makers, public program administrators, and the evaluation community.