DEEP: Database on Energy Efficiency Programs

Edward L. Vine, Lawrence Berkeley Laboratory
David R. Wolcott, New York State Energy Research and Development Authority

Introduction

Utilities and government (federal, state, and local) have sponsored hundreds of energy efficiency programs in all sectors of society (residential, commercial, industrial, agricultural, transportation), and much has been learned about how to operate programs that achieve high participation rates and high energy savings and are cost-effective to the utility and to society. However, this information is not readily available to program analysts that are involved in designing, implementing, and evaluating programs conducted by their own organization. As regulatory directives and integrated resource planning requirements force utilities and government agencies toward implementation of energy efficiency programs, the demand for real-world data about energy efficiency programs, technologies, costs, and impacts will increase. If all of this information is in one place, the cost of obtaining such information is considerably reduced, and the potential for comparing programs and synthesizing program experience is facilitated.

Investment in energy efficiency programs by utilities and government agencies is expected to increase substantially in the next ten years and, therefore, the value of information on program experience will significantly increase. Program analysts will be deciding which types of programs to promote (e.g., high efficiency lighting versus high efficiency water heaters) and which kinds of market delivery strategies to pursue within a program (e.g., rebates, direct mail, onsite audits, and shared savings), so that a data base containing this kind of information based on practical experience will be particularly useful.

DEEP

DEEP will contain a description of the program and critical program features: e.g., energy savings, demand savings, participation rates, program costs, and measurement evaluation methodologies. The information in the data base will be national in scope, up-to-date, and accessible to all interested parties. Individuals and organizations interested in designing, implementing, and evaluating energy efficiency programs will be able to access the data directly. In addition, summaries of pertinent data will be provided periodically that present the lessons learned in particular types of programs (e.g., new residential, existing commercial, and appliance rebates). As more and more energy efficiency programs are implemented, their experience will be transferred to the data base.

Cofunding commitments for the development and testing of DEEP have been obtained from the U.S. Department of Energy (DOE), the New York State Energy Research and Development Authority (NYSERDA), the Bonneville Power Administration (BPA), the Electric Power Research Institute (EPRI), and the Rockefeller Family and Associates (RFA).

The following activities will be conducted in this project: (1) development of the data base structure and pretesting of data base templates; (2) development of the data collection instrument and pretesting of instrument; (3) collection of data on energy efficiency programs; (4) analysis of data quality and entry of data into a data base; (5) preparation of lessons learned (synthetic) reports; and (6) dissemination of data base information and analytical results.

DEEP Data Fields

The type of data to be collected in DEEP is shown in Table 1.

Lessons Learned Reports

Many energy efficiency programs are being conducted without learning from the efforts of similar programs being conducted elsewhere. Aside from a few cases, there has been very little synthesis of existing programs. For example, improved information on predicting customer acceptance of energy efficiency programs is needed to predict the market penetration of energy efficiency options. It is important to know which delivery techniques work best and what is transferable to other organizations and to other areas of the country. Accordingly, syntheses of lessons learned on particular topics (e.g., appliance rebates, free riders, and market penetration) will be prepared as the data base grows in size; depending on the amount of resources available for the entire project, up to five reports are planned to be completed by the end of the

Table 1. Proposed DEEP Data Fields

1. Name and location of utility or government agency
2. Name of program
3. Type of program (e.g., audit, lighting, HVAC)
4. End uses (markets) and end-use measures covered
5. Program objectives
6. Marketing methods
7. Program delivery agent
8. General description of incentives being used
9. Whether the program is a pilot or a full-scale program
10. Start and end dates of the program (in most cases, the programs are still ongoing)
11. Start and end dates of collected information
12. Eligibility criteria
13. Eligibility market(s)
14. Customer class(es)
15. Number of customers eligible for the program
16. Number of customers participating in the program
17. Estimated annual GWh and therms savings for all measures completed under the program
18. Estimated MW savings (both coincident with the system peak and absolute savings) for all measures completed under the program
19. Estimated annual GWh and therms savings per measure category
20. Estimated MW savings (both coincident with the system peak and absolute savings) per measure category
21. Adjustments included in savings estimates (e.g., free riders)
22. Direct program costs (e.g., incentives paid to consumers)
23. Indirect program costs (e.g., marketing and staff expenses)
24. Participant costs
25. Total program costs
26. Measure lifetimes
27. Sources of data for savings estimates
28. Methods used to analyze savings estimates
29. Evaluation studies
30. Additional program information
31. Related programs
32. Regulatory incentives earned by utility
33. Utility profile (e.g., number of customers, annual energy sales, revenues)
34. Program manager: contact name, address, and phone number.
35. Program evaluator: contact name, address, and phone number.

second year. The first report will focus on lighting programs for the commercial sector.

DEEP Organization

The DEEP project will be conducted by Lawrence Berkeley Laboratory. Two advisory groups provide guidance to the activities undertaken in this project: the Management Board and the Technical Advisory Group.

Management Board

The Management Board assists the management of the project and will provide advice at critical junctures during the process of designing and implementing the data base (e.g., selection of contractors, initial scope of data base, and marketing efforts). The Management Board is composed of representatives of DEEP's cosponsoring organizations. Current members are: Diane Pirkey of DOE's Office of Utility Technologies, Bob Carver of NYSERDA, Bruce Cody of BPA, and Wade Green of the

Rockefeller Family and Associates, and Phil Hanser of EPRI. Diane Pirkey will serve as Chair of the Management Board.

Technical Advisory Group

The Technical Advisory Group (TAG) will be more involved in the operational parts of the data base project by providing advice and input in designing the data base and in preparing data collection and data analysis activities. Current members are: Dorothy Conant (NEES/NORDAX), Ted Flanigan (IRT Environment), Paul Meagher (EPRI), Peter Miller (NRDC), Dan Quigley (PG&E), Sam Swanson (NYPSC/NARUC), and Tony Usibelli (WSEO).

DEEP Collaboration

DEEP will assist and coordinate its activities with DOE, EPRI, IRT Environment, the Northeast Region DSM Data Exchange (NORDAX), and the U.S. Environmental Protection Agency. DEEP is also exploring the possibility of working with the International Energy Agency, the European Community, and OECD member countries in developing an international DEEP.

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