Panel 3 Introduction

Residential Buildings: Program Evaluation

As so often happens, the ‘‘Residential Evaluation’’ panel offers some truly excellent papers that should interest a broad audience. Evaluation modelers will not want to miss the papers on innovative methods: What works? Check out papers on program results, persistence, and innovative financing. Policy mavens will be interested in our market transformation, information, and conservation code papers. All reflect an eye to the future of the industry and a push toward developing profitable energy services.

New Construction—Code Compliance

These papers tell you everything you need to know about construction codes. First, Vine examines the areas of the code that are most and least often ignored. The implications of non-compliance on utility-sponsored new construction programs are evaluated. Wang then looks at the California experience to show the energy efficiency implications of code non-compliance. These figures are compared with planning assumptions to determine what policies need to be implemented to meet energy savings goals in California. Mahone et al. demonstrate an inexpensive way to estimate site-specific energy use estimates using Statistically Adjusted Engineering regression (SAE) techniques. His method produced higher statistical confidence and lower standard error than simulation results alone.

Results

Three papers focus on results, an eclectic array that brings together some impressive efforts. These papers should provide guidance in the development of more effective and cost efficient programming options. Megdal provides executive insight into the conduct of arrearage studies. Her decision tree analysis will tell you when it makes sense to conduct such a study and what information can usefully be brought into the analysis. Bell and Meek discuss two performance bidding projects in Oregon. These projects show how a low income program can be structured to work for utilities and communities alike. Erickson and Reed examine seven utility-sponsored energy efficiency programs to show cost-effective ways to capture greater energy efficiency in the residential sector.

Market Transformation and Market Effects (I)

What do McDonald’s, Coca Cola, and AT&T know that the energy industry is still working on? Transforming markets is the only way to stay in business!

The first set of papers on market transformation consists of three on residential market transformation efforts and results. Kushler, Schlegel, and Prahl explore natural gas furnace markets in Michigan and Wisconsin, highlighting the transformation of the Wisconsin market in which high-efficiency furnaces have become standard practice. This transformation has led to large energy savings, lower costs for customers, and large benefits for the economy of Wisconsin. Rosenberg describes a study of market transformation, market effects, and spillover resulting from residential lighting programs operated by New England utilities. This study is one of the most extensive analyses of the market effects of utility programs to date, and the paper discusses both the methods used and the results. Lee and Conger summarize a national evaluation of the Super Efficient Refrigerator Program (SERP), which focused on identifying leading indicators of the market effects of SERP using a variety of data collection and analysis methods.

Market Transformation and Market Effects (II)

The second group of papers on market transformation features three that show practical applications and real world results. Gillman et al. show how market and evaluation research can be integrated to reduce the feedback lag and increase penetration

of horizontal axis washers. Brown and Wisniewski then present an analysis of the decision-making process and how joint procurement programs can reduce the premium price for efficient appliances. Their discussion of the market for super-efficient apartment-sized refrigerators is sure to interest anyone operating in an urban center. Finally Peach et al. discuss how Bonneville Power and the other Northwest regional utilities leveraged an investment of $100 million into purchases of $2.5 billion to reach virtually 100 percent market share of efficient measures in manufactured housing.

Information Programs and Marketing Efforts

These papers focus on information programs and marketing efforts. Waide, Lebot, and van der Sluiss describe a study on the change in the energy efficiency of European domestic refrigerators brought about by the phase-out of CFCs and an energy labeling program. Bogenrieder and Davis discuss the evaluation of utility marketing efforts, and the changing role of evaluation in a competitive marketplace. Kandel and Parikh present a discrete choice regression method that can be used to estimate shifts in demand or supply of energy-efficient technologies due to information and market transformation programs.

Incentives and Financing

Incentives and financing, and their roles in motivating customers, are the focus of these two papers. First, Revelt and Train investigate the impacts of programs that offer loans rather than rebates to encourage purchases of energy-efficient refrigerators. They simulate the choices of customers under various loan programs using a random-parameters logit model. Tiedemann examines the impact of a residential fuel switching program that subsidized space and water heating installations on customer value, total resource costs, and environmental emissions.

Persistence

A joint presentation with Panel 6, measurement of the persistence of savings, comes into focus with two excellent papers. Minor West et al. use both site inspection and field measurement data and billing analyses to determine savings persistence seven years after program participation. These results are used to improve program operations at BPA. Robison, Cohan, and True present a method of estimating measure life that does not require longitudinal data. In addition to saving evaluation cost, Robison et al. show that their method gives better long-term results. An application to residential water heaters is demonstrated.

Methods, Issues and Innovations

Three papers explore evaluation methods, innovations, and results. Tribwell and Lerman summarize a study of baseline residential lighting energy use in the Pacific Northwest. Parker describes an approach for estimating end-use loadshapes using data visualization techniques, simulation modeling, and existing load research data. Finally, Bohac et al. present a short-term evaluation system designed to provide timely, reliable feedback and accountability for a low income weatherization program in Minnesota. Their paper discusses a field test of this evaluation and monitoring system.

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