Panel 7 Introduction

Energy Efficiency and the Utility of the Future

At the 1986 and 1988 Summer Studies, we called this panel ''Planning and Forecasting.'' In 1990 and 1992, we called it ''Integrated Resource Planning.'' In 1994, ''Resource Planning Methodologies.'' And now, ''Energy Efficiency and the Utility of the Future.''

What's in a name? In this case, plenty. As the electricity industry has evolved during the past decade, its support of customer energy efficiency has changed substantially. Ten years ago, most electric utilities were just beginning to get serious about helping their customers to improve energy efficiency. To the extent that utilities thought about energy efficiency then, it was primarily as an inexpensive customer service.

Next, integrated resource planning took hold and utility views on demand-side management (DSM) changed. No longer just a customer service, these programs were viewed as legitimate (and often low-cost and environmentally benign) alternatives to construction of new power plants. Stimulated by the economics of DSM, the environmental consequences of building new power plants, and pressure from state regulators, electric utilities greatly expanded their DSM programs. For example, electric utility spending on DSM increased from $870 million in 1989 to $2,720 million in 1994, a three-fold increase.

The Energy Policy Act of 1992, the California Public Utilities Commission's 1994 Blue Book, and the Federal Energy Regulatory Commission's 1995 proposed rule and its 1996 final rule on open-access transmission, as well as many other legislative and regulatory proceedings, began to dramatically restructure the electricity industry. Driven by improved combustion-turbine technologies, low natural gas prices, and increasing public support for competitive markets rather than regulated markets, the electricity industry is now in the throes of major changes in structure, operations, and regulation.

These changes will surely influence the extent and type of activities that electric industry participants undertake with respect to energy efficiency and renewable energy. This panel explores some of the options that are being considered and adopted throughout the United States. These topics include:

(1) A shift from rebate-driven DSM programs to those that focus on market transformation, including ways to motivate utilities to implement such programs (papers by Alexander and Marge; Centolella; and Schlegel and Gordon).

(2) The future of integrated resource planning, including the role of different entities in resource planning and the role of energy service affiliates of regulated utilities (paper by Hirst).

(3) Energy efficiency and advances in telecommunications and computing, including the role of the Internet, automated meter reading, real-time pricing, and other information technologies and services (papers by Rufo; and O'Neill, Skrivan, and Kim).

(4) Possible roles for future utilities, especially distribution companies, in promoting and paying for energy efficiency, and the distinctions between private (for profit) and public customer service programs (papers by Messenger; Berkowitz, Karl, and Edgar; and Baxter).

(5) New forms of DSM programs, including promotion of electrotechnologies (papers by York and Narum; Nelson; and Rothmann, Katz, and Zavattero).

(6) The role of distributed utilities, including the use of DSM and renewables as alternatives to distribution-system expansion (papers by Blecker; Letendre, Byrne, and Wang; and Chernick and Wallach).

(7) Making energy efficiency profitable to providers, including efforts to increase the contributions from program participants, more sophisticated marketing, multi-utility sponsorship of programs, and use of DSM to retain customers (papers by Hewitt et al.; Plunkett and Parker; and Prindle).

(8) Alternative funding sources for future energy efficiency programs, including financing, greater reliance on participant fees, and performance contracting (papers by Meal, Monson, and Selting; and Higgins).

Overall, these papers demonstrate considerable optimism and creativity concerning the future of energy efficiency and renewable resources programs. The authors identify many ways that in the future, a more competitive and less regulated electricity industry can support these environmentally benign resources. Whether that optimistic future actually unfolds depends in part on the practicality and profitability of the ideas developed in these papers as well as on future natural gas and electricity prices, advances in generation and transmission technologies, and state regulation.

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