Panel 6 Overview:
Utility and Private Sector Conservation Programs

The 1980's have been a dynamic period for the electric and gas utility industries. Numerous changes have occurred in the marketplace. Energy efficiency programs, once mandated by federal and state regulatory bodies, are now being considered based upon utility corporate goals or integrated planning objectives. Utilities are becoming actively customer focused and are seeking to listen to their customers and identify their needs.

In response, a wide-variety of demand-side management programs have been tested and implemented. While the types of programs are varied, they can be summarized to include: information programs, audit services, financing support, and arrangement for turnkey delivery of services. In addition, program evaluation has evolved as an important component. Historically, evaluation has taken place after a program has been implemented. Currently, many utilities are implementing program evaluations as part of their overall marketing strategies to meet customer needs.

This panel is concerned with all the activities being undertaken by utilities to consider demand-side program approaches. We believe this panel provides a rich menu of the activity currently taking place in demand-side utility activities. The design of programs, implementation considerations and evaluation issues are discussed. While some of the more traditional utility approaches are covered, there is also an emphasis on the newer program directions. In fact, the emphasis of this panel is on the lessons learned from traditional and innovative program approaches. What are we learning from market research? What have we learned from implementing programs? What has the marketplace taught us? What do we think the new directions will be given what we have learned?

The first topic to be dealt with in this panel focuses on pricing demand-side management. As demand-side management and energy efficiency programs become more popular, ensuring that programs are cost-effective is a critical activity for utilities. While energy efficiency programs in the utility industry have been underway for a number of years, Wisconsin Power and Light implemented several financing programs in 1987. Of the lessons learned from that experience, one of the most important was to consider how cost-effective those programs really were. Rick Winch, WP&L, cited that the larger-scale programs had to use a case-by-case analysis. Sample size did not always accommodate analytical needs. Barbara McKellar and Rick Winch's paper, "Demand-Side Management Evaluation: WP&L's Experiences" focuses on those issues.

Richard Jamieson and Ken Keating then turn to another aspect of pricing demand-side management. That is, how should financial incentives be structured given the need to deliver energy efficiency to small versus large customers. "Designing Least-Cost/Most Effective Financial Incentives In The Commercial Sector" discusses the lessons-learned by the Bonneville Power Administration in having customers respond to various forms of financial incentives. BPA's incentive structure has evolved through several stages of testing. Steve Nadel of the New England Electric System brings a third perspective to the pricing issue. That utility tested three different incentive approaches in a lighting efficiency program. "Utility Lighting Efficiency Incentive Programs: A Comparative Evaluation Of Three Different Approaches Used By The New England Electric System" offers practical lessons for differing responses by customer groupings. The trade-offs between administrative ease and customer acceptance are a key component of his presentation.

Two more papers also deal with the pricing issue on the residential side. Andrew Goett and Dennis Keane's, "Customer Participation And Load Impacts Of The PG&E Voluntary Residential Time-Of-Use Experiment," and Dr. James Cole and Joseph Rizzuto's, "Residential Applications Of Real-Time Pricing" provide excellent discussions of this topic. It is interesting to note the different approaches taken in designing these two experiments. While the results of the New York state work is not yet in, the conclusion of both papers is that residential real-time pricing is a viable and workable option for the demand-side menu.

Close to the pricing issue is a look at an innovative program being developed by several rural utilities. Jill Kunka's "Utility Interest In Economic Development" examines the role that utilities might play in promoting the local economy. Given the marginal economic condition of many of these areas, spurring economic development could result in an improved situation for the utility itself. Thus, those ancillary issues must be rolled into the pricing considerations of utilities. This paper examines the programs of several utilities and identifies a series of unresolved issues that must still be dealt with.

A review of current utility programs indicates that lighting and appliance programs are common undertakings. Three papers focus on this topic. First, Howard Geller looks at, "Lessons From Utility Experimentation With Efficiency Incentive Programs." Since the 1986 ACEEE Summer Study, appliance energy efficiency standards have been adopted at the federal level. The implications for utility programs is enormous. What have been the general lessons learned by utilities to date in this area? Next, Grant Vincent looks at a specific approach of a utility working with dealers to promote appliance efficiency. His paper, "Blue Clue: Appliance Dealer Participation," examines the results of the Bonneville Power Administration program to use dealers as the delivery mechanism. This paper focuses on the advantages and limitations of using such a conduit. Finally, Sunita Ghandi

presents, "Program Design And Success: A Preliminary Overview Of Utility Lighting Programs." Comparing two different utility programs, Ms. Ghandi identifies the elements that made both programs successful. The reader is provided with an understanding of the key program elements in designing an effective lighting efficiency program targeted toward two different sets of end-users, i.e. residential and commercial customers.

Market assessment considerations are the first steps towards a successful program. While much has been written about market analysis, three papers bring additional perspectives to the planning discussion. In "Comprehensive Assessment Of Conservation And Load Reduction Program: Results Of The GPU Case Study," Doug Norland of the Alliance To Save Energy discusses the assessment undertaken for that utility. Through an analysis of 75 conservation and load management options in the residential, commercial and industrial sectors, it was determined that 70% of the opportunity for savings would not be captured without some form of market intervention. Mr. Norland identifies the potential for savings to GPU by the end-use consuming sectors. Virginia Kreitler follows with, "Conjoint Analysis For Evaluating Load Control Program Design Options." In this paper, Ms. Kreitler discusses the use conjoint analysis to assess the market acceptability of a residential direct load control program. Her study looks at customer acceptance levels, characteristics of customer segments, and economic/behavioral barriers to acceptance. The resulting conclusions then form the basis for further program planning activity by ConEdison. Finally, Bonnie Brown Jacobson, Sara Ellison, Michelle Gallicchio, Ann Bachman and Fred Gordon discuss an innovative approach to comparing different programs to meet the needs of low-income customers. Their paper, "Demand Management Development Decision Matrix For Low-Income/Special Needs Customers: A Program Ranking Tool" describes and assesses the use of this special planning model.

Turning to the marketing of utility programs, three papers look at the residential, commercial and industrial sectors. In the residential area, Rebecca Vories and Harry Misuriello discuss home energy rating systems, what has worked and what has not worked. Looking at different programs in "Evaluation Of Seven Home Energy Rating Programs For Existing Single-Family Homes," the authors present information that Montgomery County, Maryland used to select a rating system for their jurisdiction. In the commercial sector, Claire Hobson, Fred Gordon, Dave Baylon and Gail Katz discuss how to sell energy efficiency to chains and franchises. "Energy Efficiency Decision Making In Chains and Franchises" summarizes the results of a study undertaken by the Bonneville Power Administration to determine demand-side management acceptance within those organizations. The authors highlight the decision-making structures in the various subsectors of commercial buildings. Finally, Jane Peters looks at the industrial sector in "Lessons In Industrial Conservation Program Design." This paper is also based upon a study

undertaken by BPA. Here, the decision criteria for industrial facilities is arrayed, enabling the reader to see the inherent differences which reside in this sector.

Looking to the future, many utilities are developing and offering programs that provide the full-range of energy efficiency services in one package. These programs may be ordered by regulators, or the utility may choose to pursue them as part of a least-cost planning strategy. One example of this type of program approach is Wisconsin Power and Light's Smart Money Program. Tom Hawley of that utility presents that program and its major lessons-learned in his paper, "Wisconsin Electric Power Company's Experience With The Smart Money Energy Program." Of interest are the key decisions WP&L made regarding rebate form and level, and how that has affected the success of the overall program.

Building on the turnkey approach of many utilities, some testing of bidding for demand-side resources has begun. Similar to competitive auctions for supply-side resources being conducted by many utilities, planners and regulators are asking why a similar acquisition process cannot be used to secure demand-side options. Dr. James Cole, Mike Weedall and Dave Wolcott present a summary of existing utility programs in, "Competitive Bidding Of Demand-Side Management," and discuss how that experience is being used to design a pilot program at Orange and Rockland in New York. In a similar vein, Harvey Michaels discusses the key elements that went into planning New England Electric's bidding program. "Bulk Purchase Of Conservation By Competitive Bidding" particularly focuses on the valuing of energy efficiency given the time at which it is delivered to the utility. Mr. Michaels also provides some comparisons to the incentive structure chosen for the New England Electric program, versus those pursued by other utilities.

From this grouping of papers, several conclusions present themselves to the reader. First, utilities are becoming more creative and will continue to expand their activity in developing and delivering demand-side oriented programs. If there is one area that energy efficiency activities will grow dramatically in the next several years, it is in the utility area. Further, that growth will be based upon increased sophistication from the "lessons-learned" and a continued trend toward innovation to best serve the utility's customers as part of least-cost planning activities. This process will result in the development of the "next generation" of energy efficiency programs.

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