Panel 2 Introduction

Residential Buildings: Program Design, Implementation, and Marketplace Issues

This panel reports on a wide variety of energy efficiency mechanisms in residential buildings, including appliance standards, innovative financing programs, market transformation strategies, and innovative technologies systems and equipment. With evolution occurring in the structure of the electric utility industry, the lessons learned from these programs will be valuable for setting the next stage for delivery of energy efficiency programs to the residential building sector.

Voluntary Government Programs: A New Wave of Market Transformation

These papers present a series of U.S. Environmental Protection Agency (EPA) voluntary programs that seek significant market penetration of new technologies without any subsidies or regulations. The residential programs discussed in this panel are based on successful programs such as Green Lights, ENERGY STAR Buildings, and ENERGY STAR Computers. Bretz et al. discuss how EPA's ENERGY STAR Homes Program promotes these valuable benefits through a voluntary labeling program that facilitates important market advantages for builders, builds critical linkages to energy-efficient mortgages, and establishes an easy-to-recognize ''brand name'' for consumers to help make smart home buying choices. May et al. document important steps taken to identify markets, plan program direction, and develop outreach material. Lord et al. present details on the history of other customer feedback billing systems, how the EPA program is being implemented, results of analyses on how to present relative billing information for optimum customer impact, and developments with the first two utilities to join the ENERGY STAR Billing Program.

Energy-Efficient Appliance Programs

Two papers provide a definitive history of the appliance standards program and describe an appliance market transformation initiative. Nadel and Goldstein outline the tumultuous history of the national appliance and equipment efficiency standards program at the U.S. Department of Energy. deLaski and Pope describe the development, scope, and impacts of a national utility-based initiative to help transform the marketplace for residential clothes washers.

International Residential Programs

In many countries, interest in residential energy efficiency is increasing rapidly. These papers provide an overview of (1) a joint effort to increase energy efficiency in Russian buildings, (2) increasing the energy efficiency of wet appliances in the European Union, and (3) the acceptance of energy-efficient measures in Jamaica. Matrosov, Goldstein, and Chao describe the results of a collaboration between an American environmental organization and Russian groups on research and standards for energy efficiency in Russian buildings. Karbo's study focuses on the energy efficiency of wet appliances and policy options that aim to increase the penetration of efficient appliances in the European Union. Taylor et al. discuss a program designed to test the acceptance of energy-efficient programs in 100 Jamaican households.

Financing: A Force For Change

Three papers detail issues surrounding the implementation of the 1992 Energy Policy Act requirements for voluntary national energy rating guidelines and loan guarantees for energy-efficient mortgages (EEMs). Collins, Farhar, and Walsh summarize activities at the national and state level of pilot programs using the home energy rating system (HERS) linked with energy efficiency financing products. Verdict discusses the unique collaboration of organizations that have worked together to launch

the HERS and EEMs programs. Parlin et al. describe a DSM program designed to reduce lost opportunities in the residential construction market.

Program Evaluation: How Are We Doing?

The purpose of these papers is to continue building our knowledge base of what works. The types of programs evaluated in this session include existing code practices and federal procurement activities. Neme et al. describe an evaluation of utility assessment data for new construction practices in Iowa where the Model Energy Code (MEC) is in effect, and in Vermont where it is not in effect. Johnson, McKane, and Harris state that the federal energy expenditures in buildings, facilities, and process applications are roughly $4.5 billion per year. Jones and Norland look at benefits from widespread adoption of the national MEC and present analyses of the latest MEC on a state-by-state basis.

Manufactured and Low-Income Housing Programs

These papers review the Manufactured Housing Acquisition Program (MAP) and two initiatives by the U.S. Department of Housing and Urban Development (HUD). Davis and Eklund describe the role that MAP has played in transforming the market for energy-efficient manufactured homes in the Pacific Northwest. Eklund et al. discuss the creation of the Northwest Energy Efficient Manufactured Home program, a successor to MAP (which ended nine months early). Brinch, Ternes, and Myers report on the results of DOE-HUD Partnerships that have demonstrated significant savings for residents and the federal government through improved energy efficiency in public housing.

Innovative Marketing Programs

Utilities are preparing for possible deregulation and as a result a reduction of demand-side management (DSM) programs. State and federal energy offices are facing significant cutbacks or elimination and several states have eliminated or are considering the elimination of the MEC. Money for research and development programs is becoming increasingly scarce. Three papers provide examples of many opportunities to continue the market transformation to more efficient energy technologies that improve building performance, the economy, and the environment. Nolden and Morgan give an overview of a market aggregation refrigerator initiative similar to the Super Efficient Refrigerator Program. Suozzo and Nadel present assessments of nine current market transformation efforts. Horowitz identifies significant limitations with most home energy rating and utility DSM programs that have been implemented to date and proposes an innovative alternative based on creative financing.

Energy-Efficient Technology Innovations

These papers describe a variety of new and improved residential-oriented technologies, such as information and telecommunications technologies. Goldman et al. review pilot residential telecommunications projects, with analyses of consumer interest in the technology. Biermayer analyzes design options for residential dish and clothes washers to save energy and water. Hammon and Modera describe the results of an ongoing collaboration between the building industry, research and environmental communities, and regulators to develop cost-effective procedures for improved HVAC duct system design, fabrication, and installation.

Diane Pirkey
U.S. Department of Energy

Sam Rashkin
U.S. Environmental Protection Agency