

PANEL 7E

EVALUATING ENVIRONMENTAL COSTS AND BENEFITS—THROWING LIGHT ON SHADOW PRICES

Moderator: Deborah Dahlke, Lower Colorado River Authority

PANELISTS:

Martin J. Bernard III, Bevilacqua-Knight, Inc.

Fred Sissine, Congressional Research Service

PANEL DESCRIPTION:

This panel provides a forum to discuss the emerging issue of environmental externalities in evaluating energy conservation and demand-side management programs. The questions to be discussed include:

- What is the status of state, federal, and international regulation regarding environmental costs, energy production, and energy efficiency?
- How are environmental costs and benefits being quantified and by whom?
- Should environmental costs be added to resources' prices and benefits accrued to conservation programs in least-cost planning? Or, are regulatory incentive programs a more effective way of including environmental costs?
- What have been the effects and impacts so far of including environmental costs in conservation and DSM programs?
- What problems or issues do the different mechanisms of including environmental costs and benefits raise for evaluators and evaluation research?

Martin J. Bernard III, Bevilacqua-Knight, Inc.

We have entered a decade of enhanced environmental awareness. While considerable agreement exists that accounting for environmental externalities in least-cost utility planning is important, in actual practice environmental considerations are often given *qualitative* attention, at best. Given the political difficulty in deriving financial test of demand-side projects, this is not surprising. Each step—from energy extraction, through one or more conversions, transport and transmission, and to use—could impact the environment considerably. So might the extraction of materials for the production and the disposal of related hardware. To mitigate these effects, state and federal legislation requires such actions as land reclamation, emission controls, and improved energy conversion efficiency. Consider a typical electric utility refrigerator rebate program. The replaced refrigerator's foam insulation and freon contain CFCs. Its metal has value. But the evaluation of the utility's high-efficiency refrigerator rebate program did not account for the cost of disposing of the refrigerator in an environmentally sound manner; *i.e.*, it missed some costs. Understanding environmental aspects of demand-side programs and the methods to include them in planning puts most practitioners of utility planning in an unfamiliar arena. This presentation outlines a process of including environmental planning and environmental costs and benefits in utility planning. It is based on the classical planning process and a method for making the trade-offs among environmental and other effects of utility programs.

Fred Sissine, Congressional Research Service

The monetary assessment of environmental and other external impacts from energy generation and use is a relatively young science. A variety of pollutants, impacts, and valuation methods are under study. The design and choice of valuation methods is a growing, often hotly debated analytic area, with some parallels to impact evaluation research and important implications for the future of conservation program breadth, competitiveness, and cost-effectiveness evaluation. Air, water, and land pollution from energy use clearly have local impacts that merit state PUC action on environmental costing. However, the line dividing state from federal responsibility is less clear for pollutants that contribute to regional or world environmental problems, such as acid rain and global warming. Further, the national security costs for protecting imported oil sources rest squarely with the federal government. Momentum is currently with the states that are internalizing environmental costs in the planning and rate-making process for utilities. However, legislation (S. 741, Wirth) introduced in the 102d Congress does include a provision (Sec. 241) that would encourage states to "consider external costs of energy use" in least-cost planning efforts. Additionally, the Department of Energy and the Environmental Protection Agency are studying potential policy options for addressing environmental costs. This discussion will address questions such as: What are the most appropriate methods for valuing environmental and other external costs of energy use? What role should the federal government have in regulation, methods research, or other ways of assisting the states? What are the implications for energy conservation, renewable energy, and program evaluation?