Proposals for the Future of Energy Efficiency

Lester W. Baxter, Oak Ridge National Laboratory

Efforts to restructure the U.S. electricity industry are well underway. The Federal Energy Regulatory Commission is advancing competition in wholesale power markets, and regulators and legislators in many states are actively considering restructuring of retail markets. Restructuring proposals focused initially on more competitive market structures for generation, and the integration of transmission within those structures. The role of energy efficiency in a restructured retail market has not been a primary concern of these larger restructuring proposals. Plans that concentrate on energy efficiency's future role have subsequently emerged.

This paper reviews energy efficiency policy of the past two decades and examines the past role public funding for energy efficiency has played. The paper identifies a range of potential policy approaches to energy efficiency in a restructured electricity industry and illustrates features of certain policies by reviewing recent proposals from California, Idaho, Washington, and Wisconsin. The policy issues raised by continued public funding for energy efficiency are identified and discussed. The implementation issues associated with the use of a nonbypassable distribution charge are presented and suggestions for addressing certain implementation issues are discussed.

INTRODUCTION

Early restructuring proposals for the electricity industry focused on sketching the broad structure of future markets for electricity supply and the operation and control of the transmission system. These proposals, particularly the early California proposal (California Public Utilities Commission 1994), created uncertainty about the future role of energy efficiency in the electricity industry. The uncertainty was perhaps inevitable, due at least in part to questions about what market structure would eventually develop and what role energy efficiency policy might play, if any, within that structure. Even a casual reading of the industry press over the past two years suggests that several utilities have responded to this uncertainty by reducing energy efficiency expenditures and changing the focus of their remaining programs. Recent evidence suggests that these anecdotal accounts may indeed by reflecting a larger industry-wide trend toward smaller and less costly energy efficiency efforts (Schweitzer & Pye 1995).

As the restructuring debate enters its third year, however, regulators, analysts, and consumers are beginning to shift their focus from broad outlines to more specific implementation steps. As a result, the future role of energy efficiency in the electricity industry has received increased attention in recent months. This paper has three objectives. First, the utility's historical role in energy efficiency is described. Second, examples of current proposals to continue energy efficiency activity in a restructured electricity industry are identified. Finally, the paper discusses the policy and implementation issues raised by these proposals.

THE ELECTRIC UTILITY'S HISTORICAL ROLE IN ENERGY EFFICIENCY

In the past two decades, U.S. energy efficiency policy in the electricity sector consisted of three major elements: market response, efficiency standards, and public funding for efficiency programs. The first, reliance on market response, refers to the economic forces affecting the demand for and supply of electricity, primarily through the short- and long-run response of consumers and producers to energy price signals. It also includes advances in engineering design that yielded energy efficiency improvements as an indirect benefit. Legislative and regulatory actions contributed to this overall market response through initiatives such as the Public Utility Regulatory Policies Act of 1978, the Natural Gas Policy Act of 1978, the Energy Policy Act of 1992, and various rate-making reforms that provided more accurate price signals to consumers and producers.

The second element, government efficiency standards for buildings and appliances, set minimum energy efficiency performance levels for new buildings and electricity-using equipment. Building standards are typically established by states or other regional bodies, and reflect the climatic conditions in different parts of the country. Appliance standards, initially promulgated by states, have been largely superseded by federal standards, which went into effect in 1988.

The final element, publicly-funded energy efficiency, began in the 1970s, partially in response to the National Energy Conservation Policy Act, but gained momentum in the past

15 years. With few exceptions, state regulators and legislators implemented this policy element by encouraging or compelling electric utilities to offer energy efficiency programs, which were funded by all ratepayers or similar classes of ratepayers.

It is this third element of energy efficiency policy that has come under renewed scrutiny as the electricity industry debates the direction(s) restructuring will take. At this stage of the debate, it is instructive to review why energy efficiency was viewed as a publicly-funded obligation and why utilities were chosen to implement this obligation. As to the former, Hirst & Eto (1995) suggest that the primary rationale was a belief that scarce societal resources were being used inefficiently. More specifically, they note, public funding was justified for the following reasons:

- avoid construction of large, expensive new power plants,
- reduce dependence on foreign oil to generate electricity,
- reduce adverse environmental effects of electricity production and delivery,
- address distortions in electricity prices caused by use of average-cost-based rates,
- overcome market barriers, which were evidenced primarily by ''the payback gap,'' or the observation that consumers did not pursue many energy efficiency opportunities that had very short payback periods, and
- overcome lack of government standards and programs to improve energy efficiency.

Legislators, regulators, policy analysts, efficiency advocates, and, in many cases, the utilities themselves, identified utilities as the appropriate primary provider for publicly-funded energy efficiency. Because of their monopoly status and their obligation to serve all customers, utilities have nearly universal contact with the homes and businesses in a modern economy. Hirst & Eto (1995) add that utilities understand their system and customer loads, which contribute to more effective efficiency program design and evaluation. They also note that utilities enjoy name recognition, are viewed as a credible source of information, and have access to comparatively low-cost capital. As a result, utilities have been agents for public policies such as economic development efforts, low-income services, and educational and medical programs.

Energy efficiency became an explicit resource option with the advent of integrated resource planning in the mid-1980s. By 1993, the peak of support for publicly-funded energy efficiency in the U.S., the utilities' central role as service provider appeared secure. Nearly 30% of U.S. electric utilities reported operating a demand-side management (DSM) program in 1993 (Hadley & Hirst 1995). These utilities accounted for 86% of the electricity sold to retail customers and spent nearly $3 billion on DSM activities. Yet, even as publicly-funded energy efficiency activity reached these levels, the changes wrought to wholesale generation markets by the Energy Policy Act of 1992 were already emerging. And in 1994 the California Public Utilities Commission (PUC) proposal to restructure that state's electricity industry fostered a nationwide debate on virtually the entire range of electricity policies, including the future of publicly-funded energy efficiency.

EXAMPLES OF CURRENT PROPOSALS

Several options are available to continue energy efficiency activities in a restructured electricity industry. Table 1 presents summaries of current proposals, and identifies the funding source for energy efficiency services, the agents administering the funds and efficiency programs, and the time period the policies would be in effect. The primary consideration driving the choice of approaches stems from whether the justification for publicly-funded energy efficiency still exists. For those who argue that public funding is not justified, the preferred option is to allow the competitive market to provide energy efficiency services. In this approach, consumers will pursue energy efficiency when the marginal benefits of doing so exceed the marginal costs. Similarly, companies, including regulated distribution companies, will offer energy efficiency services when the marginal revenue from these activities exceeds marginal costs. These same companies may also offer efficiency services as part of efforts to market distinct energy products and services. Under such a market-based policy, limited regulatory intervention may be justified to ensure that consumers receive the information needed to make informed decisions. For example, regulators may encourage the installation of real-time pricing meters or telecommunications linkages to provide consumers with time-differentiated price signals.

For those who argue that publicly-funded energy efficiency continues to be justified, the proposals concentrate on the mechanisms needed to collect and distribute the funds, and the selection of the agents that will provide the energy efficiency services. While several options are available to collect public funds (e.g., a consumption tax on electricity and other fuels to fund efficiency programs, or voluntary contributions from individuals and businesses that wish to support energy efficiency), the current focus in the regulatory community is on a nonbypassable distribution service charge. This mechanism is known variously as a ''universal system charge,'' a ''systems benefits charge,'' or a ''public goods charge.''

Table 1. *Summary of Proposals for Energy Efficiency in the Electricity Sector*

Proposal	Funding Source	Fund/Program Management	Time Period
Market-based	no public funds	decisions by private firms, customers	unlimited
Permanent distribution charge	all retail electricity customers	public or nonprofit agency, or distribution utility	unlimited
Transitional charge			
Limited duration	targeted participant groups	public or nonprofit agency, or distribution utility	specific time period (e.g., 5 yrs)
Unlimited duration	all retail electricity customers	public or nonprofit agency, or distribution utility	evidence of fully sustainable efficiency markets
Two-track approach			
Market track	no public funds	decisions by private firms, customers	unlimited
Public track	all retail electricity customers	public or nonprofit agency, or distribution utility	specific time period (e.g., 5 yrs) or evidence of fully sustainable efficiency markets

The charge is nonbypassable in that it would apply to all retail electricity sales. Thus, most current proposals define distribution as an end-use service rather than service at a particular voltage.

Two primary options for managing these funds have surfaced. In the first option, the distribution company collects the funds and is responsible for all publicly-funded energy efficiency programs, with oversight from regulators. The programs funded would include measures that defer investments in distribution plant when such options are least cost. In the second option, the distribution company collects the funds, but a separate organization is responsible for publicly-funded programs. This organization could be an existing state agency, a new agency, or an independent nonprofit entity overseen by government, either directly or through a steering committee.

Between these two major policy positions (''let the market provide'' and ''continue public funding''), at least two transitional or intermediate proposals have emerged. The first has an objective identical to the market-based approach, but posits that a transition period is needed where a regulated entity continues to provide publicly-funded energy efficiency. Proponents of this transitional approach disagree about the length of the transition period. Some argue for a clearly specified transition period (e.g., five years) with gradually reduced public funding over time. Others argue that while a sustainable energy efficiency market is the ultimate goal, it is not possible to define in advance how long this goal will take to achieve. As a result, public funding will be needed until an energy efficiency market is sustainable, with the recognition that certain services (e.g., low income) may never be provided by the market.

Finally, proposals for a two-track approach have appeared. The first track of the approach envisions an existing or rapidly developing efficiency market providing services to consumers. The distribution company would pursue energy efficiency as a shareholder-funded activity in competition with other energy service firms. The second track has an independent nonprofit organization or distribution utility using public funds to foster and manage market transformation activities. These market transformation activities range from providing information to energy users to providing financial incentives for energy-efficient products and services. Most proposals view the public track as finite transitional strategy, though perhaps of considerable duration,

with public funding needed only until fully sustainable efficiency markets emerge. Others, however, argue that the public track's objectives can be met within a specified and limited time period, and that this time period should be established at the outset.

The elements of these proposals are illustrated in the following summaries of options being implemented or seriously discussed in several states. Washington Water Power (WWP) has implemented a distribution charge to continue publicly-funded energy efficiency in Idaho and Washington. This mechanism has been cited as a model by advocates of this approach (e.g., Natural Resources Defense Council & Pacific Gas and Electric Company 1995). The most recent restructuring proposal in California advocates a version of the two-track approach to energy efficiency. Finally, Wisconsin is considering several options to implement a distribution service charge for publicly-funded energy efficiency. Lenssen (1996) briefly describes other proposals in the U.S. and abroad for publicly-funded energy efficiency.

Washington Water Power

In 1994, WWP (1994a, b) filed a proposal before the PUCs in Idaho and Washington for a tariff rider, a pilot proposal designed to support continued utility energy efficiency efforts. The rider is implemented as a volumetric charge applied to all retail energy sales transmitted over the utility's distribution system for all customer classes except special contract customers. For electricity customers, the rider increases rates by 1.55%.

The rider is designed to match funding with anticipated program costs. Any differences between funding and costs are deferred to a balancing account, which accrues a carrying charge. The utility set the overall proposed energy efficiency spending at a level comparable to the national average for utilities in 1992. All program expenses funded through the rider are subject to prudence review at the utility's next rate case. The rider does not cover any net lost revenue resulting from the utility's programs.

WWP's proposal argues for both the continuation of publicly-funded efficiency and the use of a distribution charge to collect the funds. Energy efficiency investments must be justified for reasons other than resource need because WWP indicates it does not need new resources for approximately 10 years. WWP provides five reasons to justify continued public funding of efficiency: (1) maintain continuity in the delivery of energy efficiency during the current uncertainty over the future structure of the industry; (2) provide long-term resource diversity; (3) recognize the timing of resource needs; (4) promote transformation of consumer markets to energy efficient choices; and (5) provide valued services to customers. The utility also reported that acquiring energy efficiency beyond the needs of retail customers, in order to increase wholesale sales to other utilities, will lead to higher retail prices. The company's wholesale marketing guidelines require that wholesale sales activities that increase retail rates must be avoided.

WWP proposed a distribution charge, as opposed to cost recovery in a rate case, for at least two reasons. First, at a time when new resources are not needed, the utility wants to avoid investments that increase its capital costs and rates. Second, the utility wants to avoid the creation of additional regulatory assets, which would result from the current regulatory treatment of program cost recovery. In WWP's view, the rider addresses the retail wheeling concerns related to energy efficiency, is consistent with policy and rate recovery issues of the PUCs in both states, and does not require a rate case to implement.

The utility plans to implement programs requiring participants to pay a greater share of the total costs for the energy efficiency services. The utility anticipates these new programs will focus on increasing participation from commercial and industrial customers. WWP will maintain a few programs available to broad customer groups, and will target remaining programs at market transformation of selected market niches. The following conditions, among others, are incorporated into the rider approved by the Idaho PUC (Washington Water Power & Idaho PUC Staff 1995). First, the elimination of any planned programs terminates the rider. Second, the utility will perform measurement and evaluation to determine the amount and cost effectiveness of savings achieved. WWP proposes to perform these analyses internally, using the total resource cost test as the primary cost-effectiveness screening tool. Third, PUC staff will provide comments on the utility's evaluation plans and efforts. Fourth, the rider may be reduced if the utility's rate of return exceeds that authorized in its last rate case. Fifth, the utility will work with regulatory staff to develop activities that fit appropriate energy efficiency spending.

California

The California PUC and California Energy Commission (CEC) both advocate a two-track approach to future energy efficiency. The California PUC (1995) prefers publicly-funded energy efficiency to focus on programs in the broader public interest, such as market transformation and education efforts not otherwise provided by the competitive market. The Commission suggests that public resources may be more appropriately used for educating residential and small business customers rather than large electricity users. Financial incentives may also be appropriate if they focus on transforming the market for products and services, but the Com-

mission explicitly rejects its past policy of using public funds as the predominant source of capital for the installation of energy efficiency measures. Market transformation programs cited by the Commission include the Super-Efficient Refrigerator Program and rebates for compact florescent lights and high efficiency motors. The Commission anticipates that public funds will be needed only for a specified and limited period of time, after which, presumably, the market alone will provide efficiency services.

The California PUC's (1996) adopted plan for implementing the transition to restructuring contains a prominent role for working groups, including one for energy efficiency. The Commission acknowledges the need for additional information before determining the energy efficiency activities to be supported by public funds. The Commission also notes that additional information may cause it to modify its definition of appropriately funded activities adopted in the December 1995 order or change the level of funding. In response to the Commission's request for information, the energy efficiency working group intends to identify the scope of future energy efficiency activities (and their interactions) in each of the two tracks, the nature of the surcharge (e.g., scope, magnitude, structure), and the administration and implementation of surcharge funds (Messenger 1996).

The Commission recommends that the state legislature adopt a nonbypassable distribution charge to fund future energy efficiency activities. The Commission plan calls for energy efficiency costs to be unbundled from rates by January 1, 1998, and collected through a charge applied to retail electricity sales. Energy efficiency will be only one of the activities included in this charge. The Commission recommends an initial line item rate for each utility to correspond to currently authorized DSM funding. The Commission envisions the same surcharge eventually will be applied to all the state's investor-owned utilities. Until energy efficiency funding is removed from embedded rates, a decoupling mechanism will be retained to account for energy efficiency's effects on utility revenues. In the Commission's view, there will be a short transition period, after which the surcharge funds should be managed by an independent nonprofit entity. The Commission hopes to use the expertise and knowledge that utilities have gained in administering programs as this transition begins.

The CEC (1995) advocates adoption of policies (e.g., unbundling electricity services, efficient pricing) to further develop private markets for energy efficiency services. The CEC further argues that public funding is needed to pursue market transformation activities that private markets will not deliver even after restructuring proposals are implemented. The agency recommends that energy efficiency services that provide customer value should be pursued in the market track by private firms and unregulated utility subsidiaries, using shareholder funds to pursue these opportunities.[1] In the public track, market transformation programs and programs to increase meaningful customer choices in the energy services markets should be pursued. The CEC's analysis suggests that continued vertical integration of utilities may present cross-subsidy and conflict-of-interest problems between the distribution and generation segments of these companies. In addition, access to the utility information assets by energy service providers must be considered to ensure that broad and fair competition emerges. Publicly-funded energy efficiency should be coordinated by a state agency and implemented by a combination of utilities, energy service providers, and public/private consortia. Finally, shareholder incentives may still be appropriate for regulated distribution utilities to target programs that defer investments in distribution facilities.

Wisconsin

In December, the Wisconsin Public Service Commission (PSC) referred the issue of whether and how to construct a public benefits wires charge to an advisory board, which will convene and make recommendations in 1996 (R. Prahl, Wisconsin PSC, personal communication, January 3, 1996). At least three options have been put forward in Wisconsin. One option calls for the creation of a central fund administered by an existing agency (Advisory Committee 1995). The funds would be collected through an unbundled distribution charge, and used to transform energy efficiency activities to a sustainable market. The proposal indicates that funds should be targeted to, and paid for by, the residential, agricultural, and small commercial and industrial sectors because, this proposal argues, large customers already have access to competitive efficiency services. Initial funding is proposed to correspond to current expenditures in those sectors. Funding should only continue for a set period and terminate after that period. An advisory board would oversee and direct the fund's work. The administering entity has the responsibility to evaluate the market and determine where market transformation efforts are required.

A second proposal calls for a statutory fee (e.g., line charge, revenue fee, pollution tax), paid by all electricity customers, to support competitive acquisition of energy efficiency services and other public policy obligations, such as renewable resources, research and development, and public advocacy (Advisory Committee 1995). The fund would support an independent nonprofit organization that would administer the funds, with oversight from a board or committee of stakeholders. The proposal recommends funding at about current levels for these programs, possibly using integrated resource planning to provide energy efficiency goals and to define the nature and level of future programs. The fund would not terminate by a certain date, but funding levels

should be reviewed periodically after each utility's strategic planning process (using an IRP-type analysis to set energy efficiency goals), and terminated when a sustainable energy services market is established.

Wisconsin PSC staff is also developing an informal proposal for creation of a public fund and administrative organization that would promote market transformation and provide energy efficiency services not delivered by the competitive market (R. Prahl, Wisconsin PSC, personal communication, January 3, 1996). In this proposal, the Wisconsin PSC would oversee collection of the funds and then contract with a non-utility, third-party fund administrator to manage the necessary programs, research, and evaluations. Energy efficiency services would be provided by competitively-selected vendors under contract to the administrator. An evaluation administrator would also be selected to assess program performance. The PSC would have ultimate authority over fund disbursement and the activities of the administrator and evaluator. The fund would initially focus on services for the residential market. Other markets would be pursued as the administrator gains experience. Until then, utilities would continue to serve the nonresidential markets, although the proposal does not specify how utility efforts will be funded during the transition period.

The Wisconsin PSC (1996) has subsequently recommended that public funding continue for several policies that now provide public benefits, including energy efficiency, and that a Public Benefits Advisory Board be established through regulatory or legislative action. The Advisory Board will provide public input and oversight for appropriate public policy programs. The Wisconsin PSC recommends that the need for the Advisory Board and public funding should be reviewed every three years. The Commission's recommended goal for publicly-funded energy efficiency is to transform the delivery of these services to a customer-driven market, using uniform statewide programs delivered by non-utility providers.

POLICY ISSUES

The major policy issue these proposals raise is whether a rationale still exists for continued public support of energy efficiency. The debate over the need for public funding for energy efficiency is not new. Early justification for market intervention was provided by what is now regarded as the technologist's view. This view saw economic potential far above observed efficiency levels as prima facie evidence of the need for government policies to correct the ''market barriers'' inhibiting efficiency investments. Economists later added important insight by emphasizing the distinction between market barriers and market failures. Economists argued that the former are characteristic of many competitive markets while only the latter may justify government intervention in the marketplace, and only then when the cost of intervention is less than the anticipated benefits. Chamberlin & Herman (1995) emphasize that in a fully competitive electricity market, only the failure of markets to achieve societal goals justify government intervention to support energy efficiency. One of three important market failures cause social goals to be unmet: externalities, public goods, and imperfect information.

Golove & Eto (1996) summarize the current status of the debate on the need for intervention in energy efficiency markets. They observe that energy efficiency advocates and free market advocates are conducting a largely ideological debate focused on the appropriate role of government in economic life. Future research, Golove & Eto argue, is unlikely to resolve this debate. A position intermediate to these ideologically-motivated views acknowledges the existence of well-defined market failures and recognizes that an appropriately structured benefit-cost or net social welfare analysis is necessary to assess whether any proposed policy intervention is suitable.

Consistent with this intermediate position, Golove and Eto observe that certain energy service markets are characterized by two fundamental market failures. First, certain markets are not achieving efficient resource allocations due to the negative environmental externalities of energy supply, which leads to social costs in excess of market prices. Second, certain energy service markets suffer from imperfect information, which leads to high transaction costs and underinvestment in energy efficiency. Before deciding to intervene when these market failures are present, Golove & Eto recommend that policy options be assessed in light of the size of the problem(s), and the effectiveness and consequences of each option.

Social science research is unlikely to resolve the debate between the energy efficiency and free market advocates. Some will no doubt argue that without a clear case for intervention, the proper course is to allow competitive markets to operate. Others will suggest caution in taking an extreme position on either side of this debate. During any transition to full retail competition, this middle course may be the most prudent strategy. Several recent proposals call for publicly-funded efforts to reduce identifiable and meaningful sources of high transaction costs in certain energy efficiency markets. As Golove and Eto note, identifying the nature and source of these transaction costs, and targeting policies to reduce these costs, are areas where empirically-based policy analysis can make a difference.

A secondary but still important policy issue concerns the appropriate mechanism for government intervention. Herman & Chamberlin (1995) argue that a distribution charge

involves continued cross subsides between all consumers and program participants. Time is also an element in these transfer payments, as current consumers pay for benefits that accrue to participants over several years. Herman and Chamberlin further argue that cross subsidies can be sustained in a competitive environment only if the charge is nonbypassable. The mechanism proposed in most states where public funding is under consideration is intended to be nonbypassable, although customers would still have the option to switch fuels, self-generate, or relocate, as they currently do, to avoid the charge. At least one proposal advocates limiting program participation to specific customer groups and levying the charge only on those customer groups. If the distribution charge is intended to support programs that target achievement of broad societal objectives, however, all electricity users should pay. If benefits actually accrue to society in general, it is not consistent to limit the charge to certain segments of society.

Yet another issue is determining the role of future federal appliance standards and state and local building standards in energy efficiency policy. Existing standards come into play when new building or appliance stock are added and, in some cases, when existing buildings are retrofit. Assuming that efficiency standards will continue to be evaluated and revised as cost-effective technology advancements are incorporated, publicly-funded energy efficiency will be more usefully targeted at those segments of the market unaffected by existing standards. These market segments include the retrofit of existing buildings and the early replacement of appliance stocks.

A final policy issue to consider is the compatibility of a distribution charge with proposed market models. Viewed broadly, the type of charge proposed for the electricity sector has analogs with mechanisms implemented in other deregulated industries. Air travelers pay fees with each ticket purchased to support airport infrastructure, a public good. Telephone users pay fees to support service to uneconomic segments of the market, predominantly in rural areas. Insuring universal access to service reflects a social equity objective; the telephone is viewed as an essential service in industrialized societies. In general, these types of fees are not incompatible with competitive markets, so long as the fees are nonbypassable and the resulting services are targeted to achieve specific social objectives not provided by markets.

Thus, the type of nonbypassable charge being considered for energy efficiency would be broadly consistent with either a wholesale or retail access market model. Unless the argument is that a competitive market will provide no energy efficiency services, it also is reasonable to use public funds to achieve specific social objectives (e.g., correcting underinvestment in energy efficiency due to externalities or imperfect information) rather than duplicating services a market will provide. Like telephones, access to electricity service is viewed as essential in industrialized societies, and should be available to all who want the service. Public funds will also be needed, therefore, to support minimum service levels to market segments that would otherwise be unprofitable or less desirable to serve.

Problems emerge in specific market structure proposals related to who administers and receives public funds to implement efficiency programs. In the transition to competition, those utilities that remain vertically integrated face a fundamental conflict between their generation business and their responsibility to implement publicly-funded energy efficiency. While utilities may attempt to address this conflict with the best of intentions, witness WWP's guidelines on wholesale transactions, the possibility for conflict remains. The surest way to resolve this conflict is to prohibit the vertically integrated utility from receiving these public funds. Even in the case of a vertically disintegrated utility, so long as the distribution utility (or its affiliates) has financial ties to the generation company (or a common parent), the potential for conflict exists, and the distribution company should not receive public funds. Eto, Goldman, & Kito (1996) propose a framework for deciding who should administer publicly-funded energy efficiency efforts. They, too, argue that significant conflicts of interest must be mitigated before considering whether the utility should continue to play a central administrative role. They also pragmatically note that the performance records of other administrative candidates, such as non-profit or other existing government agencies, should be assessed before vesting primary administrative responsibilities with these organizations.

A related issue is how to deal with what some call the utility's ''information asset''—the data utilities have on customer location, energy use behavior, and equipment (Schultz 1996a). This issue becomes less important if the distribution utility is prohibited from receiving public funds. Other market competitors are then on equal footing. The question remains, however, whether the availability of this asset would improve energy service offerings and promote customer choice beyond the selection of an electricity supplier. Policy makers need to decide whether to pursue making this asset more broadly available to energy service providers and, if so, how. Policy makers must also consider what rights utilities may have to restrict access to their customer data bases or to be compensated for the costs of making these data available to other energy service providers. Strictly speaking, these questions need not be pursued at all if the utility is prohibited from receiving public funds. It is probably desirable to make this information asset available (within the bounds of customer consent) to service providers receiving public funds to promote a wider range of costumer demand-side options.

IMPLEMENTATION ISSUES

Once the policy issues are resolved, use of a nonbypassable distribution charge raises several implementation questions. These implementation issues relate to administering the funds, determining the size of the charge, determining what programs to implement, deciding what agents implement the programs, and deciding whether programs should be evaluated and, if so, how.

Most proposals call for a government role in administering the public funds. Differences emerge as to whether this role should be direct and active or indirect and advisory. For states with a history of active regulatory and legislative energy efficiency policy, either path is possible. These states have expertise in energy efficiency administration and regulation, either at the regulatory commission or energy office. The public staff could perform these tasks within their existing organizations or in a new organization created to oversee publicly-funded energy efficiency activities. These same states are perhaps more likely to have fostered nonprofit organizations that could also perform these activities, with oversight from a state agency or advisory board comprised of relevant state officials. States without a history of energy efficiency regulation are less likely to have existing expertise in place to administer these funds. Should they decide to assign this administrative responsibility to an existing agency, the expertise must be acquired. Such states may find it easier to solicit the services of a nonprofit organization to act as the fund administrator. As discussed earlier, the utility could also continue in its role as central administrator, with oversight from state regulators, given a continued commitment to energy-efficiency services by utility management and the absence of conflicts of interest.

Most proposals suggest ad hoc rules for determining the size of the distribution charge. The WWP charge is based approximately on national average efficiency expenditures, while many other proposals suggest funding at existing or recent historical levels. One of the Wisconsin proposals acknowledges a need to reevaluate future funding in light of changing circumstances. This proposal suggests a planning process, initiated by utilities in this instance, but subject to review by regulators. Of course, historical levels of funding may have been determined through planning, but it would be only an accident that these levels are appropriate for future public funding, particularly as time passes. Thus, it seems clear that some planning activity is needed to determine the size of the distribution charge and the type and size of programs to implement. This planning activity could resemble the integrated planning of the recent past, although substantially streamlined and without the overemphasis on measurement precision that accompanied the evaluation of shareholder incentive programs in recent years. Others suggest a planning approach in which the objectives of public intervention (e.g., reducing transaction costs) help define the funding level (e.g., Goldstone 1995).

Setting the size of the distribution charge using ad hoc rules may be preferable, however, if establishing funding levels derived from some planning activity proves to be overly contentious or unproductive (Schultz 1996b). This approach dispenses with the notion of setting the surcharge based on reasoned policy analysis, but Schultz sees an advantage in removing funding issues from disputes over how to link funding decisions to program planning objectives and processes.

Revised cost-effectiveness tests may be appropriate to develop as part of this planning process. Analysts have focused considerable attention on devising revised tests by incorporating explicit elements characterizing customer value, for example (Herman 1994; Hobbs 1991). These customer value tests will clearly be relevant in the world of competitively marketed energy efficiency services. These tests may not be appropriate for publicly-funded energy efficiency, however, particularly programs that focus on market transformation where certain measures may not be cost effective in today's market environment. Other programs also will not be cost effective, but equity concerns will dictate making continued offerings, as in the case of certain low-income programs. As a package, however, it is clearly desirable to have the benefits of these publicly-funded activities exceed their costs.

Thus, a role remains for program evaluation. The role will be challenging, however, because evaluation will move beyond its historical focus on energy savings to begin to assess the benefits of achieving sometimes broadly defined social goals, such as equity, environmental stewardship, and overcoming imperfect information. These evaluation responsibilities should ultimately lie with the program administrative organization, with the recognition that evaluators will not be immune from the political forces affecting this organization. The Wisconsin PSC staff's proposal, to create a separate program evaluation function within the administrative organization, maintains a useful boundary between program administration and evaluation. Schultz's (1996b) proposal for a public ''energy efficiency exchange'' also calls for program evaluation responsibility to fall within the administrative organization. Schultz explicitly recommends the integration of evaluation and program oversight and planning activities within the administrative entity. It will no doubt be more efficient if the evaluations themselves are conducted by vendors selected by the evaluator rather than building a public staff with the full compliment of evaluation skills.

SUMMARY

As the restructuring debate moves from broad policy issues to implementation specifics, the future role of energy efficiency has emerged as one of the issues requiring more detailed attention. The major policy question is whether energy efficiency continues to justify public funding. Social science research cannot resolve the ideological debate between energy efficiency and free market advocates. Researchable questions remain about proposed policies to address failures in existing energy service markets—the magnitude of the market failure in specific markets, the effectiveness of possible policies, and the consequences of these policies. It is clear, however, that a fully competitive electricity market will not provide certain social objectives. Providing energy efficiency services to unprofitable market segments, such as low-income consumers, is one example. As a result, public funding is necessary to provide these social objectives.

Several options for public funding are available, but the current focus is on a nonbypassable distribution charge. The proposals differ on several implementation issues: the size of the charge; who pays the charge and for how long; who administers the funds; how program implementation decisions are made; and the need for program evaluation.

Policy questions also center on whether a distribution charge is the most appropriate funding mechanism, the compatibility of such a charge with different competitive market models, and the future role of government building and appliance efficiency standards. To the extent that a distribution charge is nonbypassable and designed to collect funds targeted to achieve societal goals, then this type of charge is appropriate and compatible with proposed market models. Potential conflicts arise, however, when utilities remain vertically integrated and continue to receive public funds for energy efficiency. This conflict can be addressed by denying vertically integrated utilities these public funds. Such restrictions should also apply to distribution-only utilities that maintain financial ties to the generation company or a common parent company.

Unless decisions about funding levels are arbitrarily made, planning is needed to establish program objectives and measures, and thus, the amount of funding needed. Government has an important role to play in overseeing the planning necessary to set appropriate funding levels, program objectives, and ensuring that public funds are effectively applied to achieve specific social objectives.

ACKNOWLEDGMENTS

I thank Sheryl Carter, Wayne Hart, Mike Messenger, Bill Mills, Ralph Prahl, Don Schultz, Deborah Stevens, and Kathy Treleven for contributing state-specific materials on future energy efficiency policy. An earlier draft of this paper benefitted from reviews by Paul Berkowitz, Joe Eto, Liz Hicks, Eric Hirst, Mike Messenger, Karen Peterson, Don Schultz, and Bob Wirtshafter.

ENDNOTES

1. A customer value perspective continues to evaluate DSM programs on direct costs and energy savings, but would also attempt to value other attributes that provide value to customers. The approach advocated by Herman (1994) and others, for example, attempts to value any indirect costs and benefits consumers experience when acquiring energy efficiency.

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