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## **Low-Income Energy Policy in a Restructuring Electricity Industry: An Assessment of Federal Options**

Lester W. Baxter

**MASTER**

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ENERGY DIVISION

LOW-INCOME ENERGY POLICY IN A  
RESTRUCTURING ELECTRICITY INDUSTRY:  
AN ASSESSMENT OF FEDERAL OPTIONS

LESTER W. BAXTER

July 1997

Sponsored by  
Office of Economic, Electricity and Natural Gas Analysis  
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## SUMMARY

This report has three objectives. First, it identifies both the low-income energy services historically provided in the electricity industry and those services that may be affected by industry restructuring. Second, it identifies policies that are being proposed or could be developed to address low-income electricity services in a restructured industry. Third, it discusses potential federal policy options and identifies key policy and implementation issues that arise when considering these potential federal initiatives. To understand recent policy development at the state level, we reviewed restructuring proposals from California, Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island, Vermont, and Wisconsin and the accompanying testimony and comments filed in restructuring proceedings in these states.

Low-income energy programs (electricity and other fuels) were developed to address specific social-equity objectives and to reduce collection costs by fuel suppliers. By 1996, programs funded by federal and state governments, utility ratepayers, and others received at least \$1.8 billion. The federal contribution was slightly more than \$1.1 billion. Developing solid estimates of the funding that supports electricity services is difficult because the data are incomplete. A very rough national estimate is that support for low-income electricity services was between \$400 million and \$600 million in 1996 (out of at least \$1.8 billion for all fuels). A very rough estimate of the federal contribution to low-income electricity services is about \$300 million (out of a federal total of about \$1.1 billion).

In addition to federal funds, funds from state and local sources totaled about \$639 million in 1995 (for electricity and other fuels). Utilities in at least 31 states operated some type of low-income energy programs in 1995, with total funding of about \$336 million. These ratepayer-funded and utility-administered activities are the only form of state-initiated activities for at least 13 states. At least 24 states provided additional funding for energy assistance and weatherization programs that totaled about \$245 million in 1995. However, funding disparities across states were substantial. For example, New Jersey and New York accounted for 77% of this total. A number of smaller programs provided an additional \$58 million in funding for low-income energy assistance and weatherization efforts. Fuel funds reflect voluntary contributions by utility ratepayers and shareholders to energy assistance and, at \$42 million, are the largest of these smaller programs. State spending on low-income electricity services probably ranged between \$60 million and \$320 million (out of a state total of at least \$639 million). While some states offer multiple types of low-income energy services, at least eight states appear to rely solely on federal funding for low-income energy services.

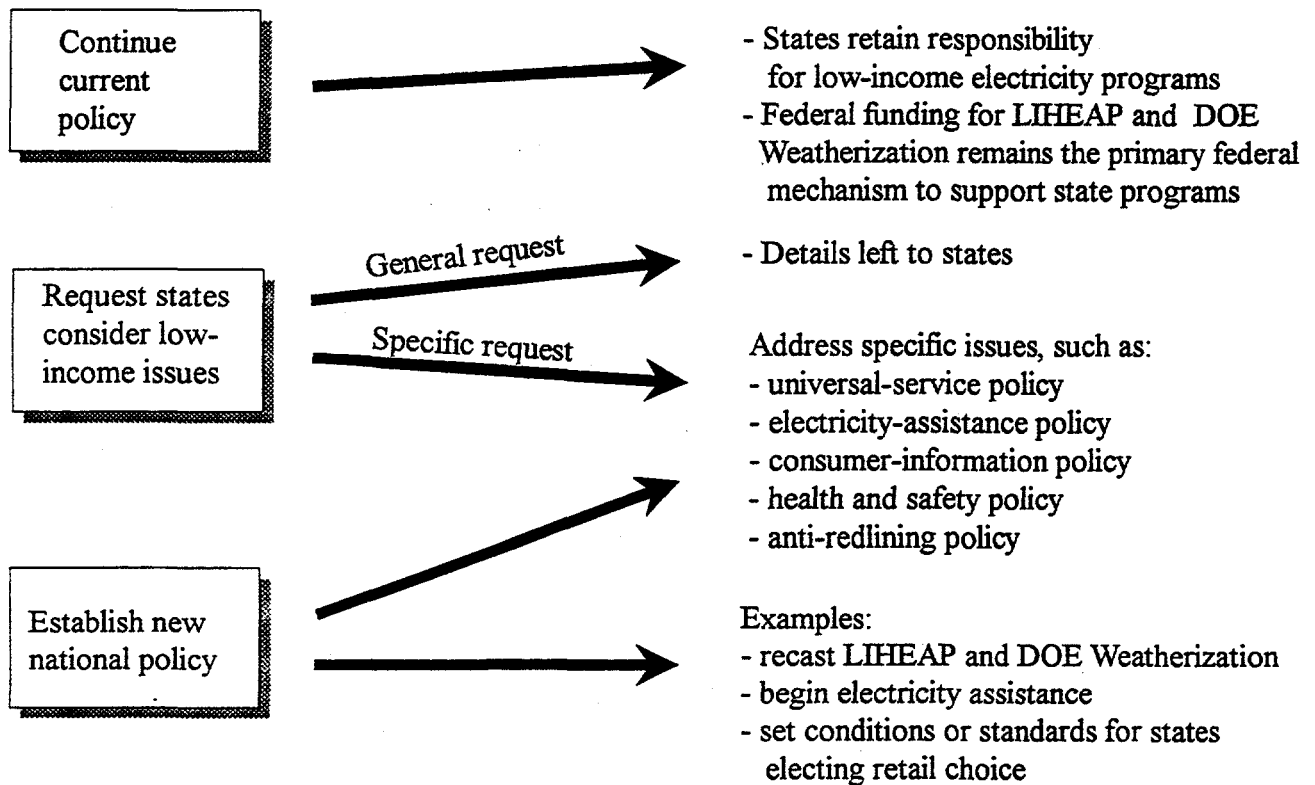
Initiatives to restructure the U.S. electricity industry have at least four implications for low-income electricity policy. First, restructuring may favorably or adversely affect the affordability of electricity. Changes in affordability are particularly important because roughly 65% of the

total household energy budget goes to electricity purchases in low-income households. The affordability of electricity is also an issue not recognized explicitly by any current federal program. Second, low-income customers may lack the market power and financial resources needed to realize the full benefits of restructured retail markets. Third, competitive pressures on utilities may lead to reductions in budgets for discretionary low-income programs. Finally, consumer protections, such as a utility's obligation to serve, will need to be revisited and possibly recast under a new industry structure.

Four general policies regarding the provision of low-income electricity services in a restructured industry have been advanced to date, primarily in state-level discussions: enlisting electricity suppliers, using funds collected from electricity customers or producers or from a broader public base (i.e., general revenue, property, or sales taxes), promoting buyer aggregation, and removing market barriers. Each of the restructuring plans from the eight states we reviewed discusses one or more of these options. All of these states have active low-income energy programs and envision continued funding to support future programs. Most states place the responsibility for continuing or creating low-income electricity services on electricity providers but collect the funding from electricity users. Most states are considering collecting this funding through a nonbypassable charge on retail electricity sales. Most proposals vest the distribution utility with the obligation to provide rate or bill discounts to low-income customers. Some states also call for publicly funded weatherization efforts to continue, but certain proposals are less clear about which entities will implement these programs.

Seven states explicitly recast the obligation to serve. New Hampshire and Pennsylvania recast this obligation through a universal-service policy. Massachusetts, Rhode Island, and Vermont recast the obligation through a policy to provide basic service or a standard service offer. These latter three states then address affordability through separate low-income programs. The basic-service or standard-offer policies are designed to cover customers under three conditions: when customers choose not to select a supplier, when customers are unable to acquire service, or when suppliers fail to provide service. In addition, six states discuss the concept of universal service or a provider of last resort.

We identified three possible federal roles for low-income electricity policy (Figure S-1). First, the federal government could continue a policy of providing federal funding for state low-income programs. This role is largely consistent with the current status and historical development of the federal government's approach to low-income energy policy. Second, the federal government could request that states consider establishing some minimum levels of low-income services, or explicitly consider a specific set of low-income issues, in developing a restructured electricity industry. Third, the federal government could establish a new national policy on low-income electricity services. A new policy could set minimum standards for low-income services for those states electing retail choice or could recast existing federal low-income energy programs. Because of the wide range of existing state programs and policies, such standards may increase the level of low-income electricity-program activity in some states above the program levels observed before restructuring.



**Figure S-1. Three broad federal roles for low-income electricity policy (LIHEAP is the federal government's Low-Income Home Energy Assistance Program; DOE Weatherization is its Weatherization Assistance Program).**

To provide a more thorough examination of the latter two roles, we discussed five specific areas where actions ranging from a request for state consideration to new national programs or standards could be considered: universal service, electricity assistance, consumer information, health and safety, and anti-redlining. The summary points from the discussion of each area follow.

- ▶ **Universal service:** Action that addresses universal service may be justified if the federal government mandates retail choice in a restructured electricity industry. Alternatives to electricity are limited for certain end uses, primarily lighting, refrigeration, and cooling. A universal-service policy that addresses both access and affordability might serve the purposes that could otherwise be served by policies on electricity assistance and health and safety. It might also serve as a partial substitute for anti-redlining measures.

- ▶ Electricity assistance: The need for electricity assistance depends on whether electricity affordability in a restructured industry is a problem and on how well any such problem is addressed by government policies.
- ▶ Consumer information: Information standards have benefits and the federal government has played a role in establishing standards for consumer disclosure in a wide array of markets. The states have historically established consumer-information standards for public utilities in general and electric utilities in particular.
- ▶ Health and safety: Prohibiting disconnection of electricity service when the health or safety of customers is threatened is consistent with the government's larger role to protect citizens. Almost all states have some provisions governing service disconnection.
- ▶ Anti-redlining: The potential for consumer abuses, such as redlining, will increase if retail services are unbundled from distribution. For states implementing or proposing retail unbundling, government action at the federal or state level (or at both levels) may be needed to reduce the likelihood of redlining and other abuses.

The case for changes to federal low-income energy/electricity policies is usefully considered in the context of other restructuring and policy decisions. For example, a federal retail competition mandate involving a substantial change in the preexisting balance of state and federal roles could motivate parallel efforts to reexamine the balance of roles in low-income electricity policy and other areas. The future of the existing federal programs for low-income energy assistance and weatherization is another consideration. Our review of the restructuring plans in eight states indicates that they are proposing programs for low-income electricity services that are designed to complement, rather than substitute for, these existing federal programs.

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## ABBREVIATIONS

AB	Assembly Bill
CARE	California Alternative Rates for Energy
DHHS	U.S. Department of Health and Human Services
DOE	U.S. Department of Energy
DOE Weatherization	Weatherization Assistance Program
DPU	Department of Public Utilities
EIA	Energy Information Administration
FCC	Federal Communications Commission
FERC	Federal Energy Regulatory Commission
FTC	Federal Trade Commission
HB	House Bill
IOU	investor-owned utility
kWh	kilowatt-hour
LIHEAP	Low-Income Home Energy Assistance Program
MWh	megawatt-hour
PSB	Public Service Board
PSC	Public Service Commission
PUC	Public Utilities Commission

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## INTRODUCTION

Electric utilities are one among several businesses, known collectively as public utilities, that historically have been exposed to extensive public regulation. As Phillips (1993, p. 4) notes:

. . . if economic power is not to be controlled by the market, it must be controlled by public authority . . . . Some regulation, moreover, may be undertaken for social or political reasons . . . . There is a high degree of public interest attached to the services rendered by public utilities; this fact is the primary legal basis of regulation.

A principal motive for restructuring the electricity industry is to further introduce market forces to segments of the industry, primarily generation and retail services, where it now appears more feasible to control their economic power through markets. Yet the public interest remains associated with these services, as well as with the services that continue to be regulated.

This public interest is manifest in part by the public obligations that legislators and regulators have vested in public utilities. In the electricity industry, these obligations have focused on three areas: economic progress, environmental protection, and social equity (Tonn, Hirst, and Bauer 1995). A wide variety of public-purpose actions or programs have been developed in each of these areas. For example, research and development programs and energy efficiency programs were developed to satisfy public objectives in all three areas.

As the debate on how to restructure the U.S. electricity industry continues, increasing attention is being focused on turning restructuring plans into actions. The future role of certain public-purpose programs from the historical industry structure is garnering attention from regulators, legislators, electricity suppliers and service providers, and public-interest groups. As the electricity industry begins to implement different restructuring plans, decision makers must explicitly consider which public-purpose programs they wish to carry forward to a restructured industry and by what arrangements.

Much of the discussion about public-purpose programs has focused on support for renewable resources, energy efficiency, research and development, and low-income programs. As we discuss more fully in Chapter 2, low-income programs were established to address specific social-equity objectives and, more recently, to decrease utility costs. By 1996, programs funded by federal and state governments, utility ratepayers, and others received at least \$1.8 billion per year (including funding for electricity and other fuels). The exact share of this funding devoted to electricity is unknown. A very rough national estimate is that support for low-income electricity services was between \$400 million and \$600 million in 1996 (out of at least \$1.8 billion for all fuels). A very rough estimate of the federal contribution to low-income electricity services is about \$300 million (out of a federal total of about \$1.1 billion).



Federal electricity policy in the 1990s has primarily focused on wholesale electricity markets. Yet several pieces of draft legislation that more broadly address the electricity industry were considered by the 104th Congress during 1996, including drafts that would affect retail markets if enacted. More activity on this topic is anticipated by the 105th Congress. Further, the Clinton Administration is expected to release a legislative proposal on the electricity industry sometime in 1997.

In light of the federal government's important historical role in funding low-income programs and the possibility that the federal government will take further action affecting the electricity industry, it is appropriate to examine certain issues more explicitly. Those issues include:

- ▶ defining an appropriate federal role for low-income programs in a restructured electricity industry;
- ▶ reassessing current federal policy on low-income energy issues, particularly as related to electricity; and
- ▶ reconsidering the relationship between federal and state low-income policies.

## **REPORT OBJECTIVES AND APPROACH**

This report has three objectives. First, it identifies both the low-income energy services historically provided in the electricity industry and those services that may be affected by industry restructuring. Second, it identifies policies that are being proposed or could be developed to address low-income electricity services in a restructured industry. Third, it discusses specific federal low-income electricity policy options and identifies key policy and implementation issues that arise when considering these potential federal initiatives.

To understand how electricity-industry restructuring may affect low-income energy services,<sup>1</sup> we reviewed restructuring proposals from the following states: California, Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island, Vermont, and Wisconsin. We selected these states because they have active legislative or regulatory proceedings on restructuring, because they have low-income programs that will be affected by electric-industry restructuring, and because they have a history of involvement with low-income energy issues. We believe states with these characteristics will provide the most thorough examination of the effects of restructuring on low-income energy issues and the policies being considered to deal with these effects. However, these states are not necessarily representative of restructuring activities or low-income energy policies nationwide. We also reviewed testimony and comments filed in

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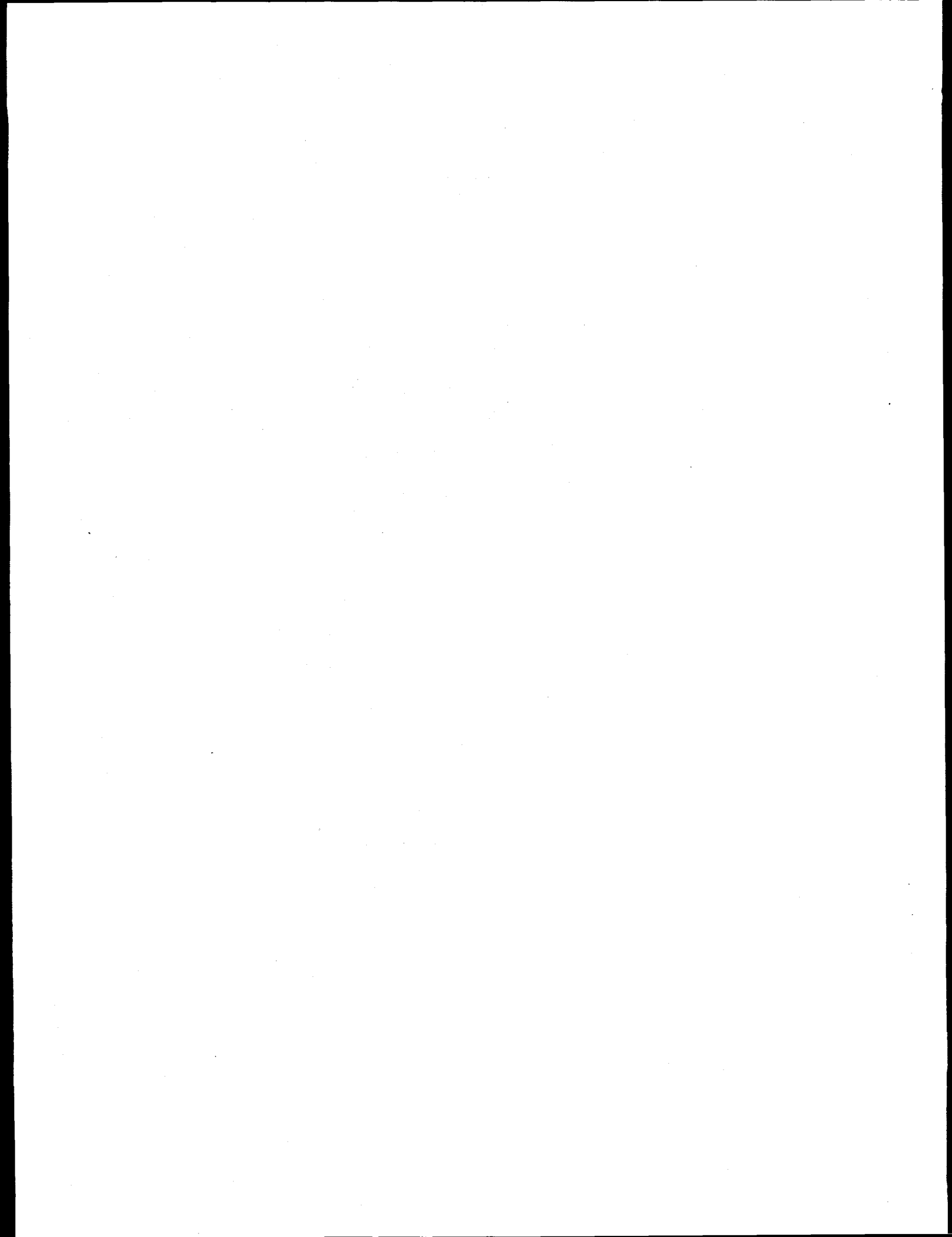
<sup>1</sup>Although this report's focus is on electricity and low-income customers, we frequently refer to energy services rather than electricity services. The reason is because federal policy, and most state policies (with the prominent exception of state policies on service disconnection), do not explicitly focus on electricity. Rather, these policies are fuel neutral. In this report, we refer to low-income energy services when discussing historical and current policies and to electricity services when discussing electricity policies that may develop from industry restructuring.

restructuring proceedings in these states. In addition, we reviewed information from the literature and trade press, contacted leading researchers on low-income energy issues, and had discussions with regulatory staffs and other low-income analysts in California, Indiana, Massachusetts, Pennsylvania, Texas, Vermont, and Wisconsin.

Based on these reviews and discussions, we identified general low-income policies under debate and consideration. From this understanding of policy directions at the state level, we then identified three broad possible federal roles in low-income electricity policy and several more specific federal policy options. We subsequently developed and applied a framework for reviewing these more specific policy options.

## **REPORT OUTLINE**

Chapter 2 discusses the development of low-income energy services and which of these services might be affected by restructuring the electricity industry. Chapter 3 presents examples of policies to provide low-income services in the electricity industry of the future, including a summary of proposals from eight states. Chapter 4 identifies three broad possible federal roles in low-income electricity policy. Chapter 5 discusses the policy and implementation issues associated with possible changes in federal policy. Chapter 6 presents our summary.



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## HISTORICAL PERSPECTIVE ON LOW-INCOME ENERGY SERVICES

This chapter discusses the historical justification for public support of low-income energy services. It also describes the type and prevalence of different low-income energy services and identifies those services that might be affected by restructuring the electricity industry.

### HISTORICAL JUSTIFICATION

Low-income energy services were started after the oil embargo of 1973 to help consumers pay their household energy bills. The recognition that paying for energy was a problem for some households grew out of work by Newman and Day (1975). Their study found that income was a strong predictor of household energy use and that the proportion of household income devoted to energy expenditures increased as income decreased. These observations have since been confirmed by virtually every household energy study undertaken since the 1970s (e.g., Morrison and Gladhart 1976; Hirst, Goeltz, and Carney 1982; Garbacz 1983; Dubin 1985; Baxter et al. 1986). Detailed reviews of this literature note that the association between income and energy use is particularly strong (e.g., Bohi and Zimmerman 1984; Lutzenhiser 1993).

That households spend proportionately more on energy as income decreases is also well supported (e.g., Cooper et al. 1983; Carroll, Donahey, and McBride 1990; Vine and Reyes 1990). Middle- and upper-income households typically spend 5% or less of their total household income on energy purchases (not including energy for transportation), but low-income households on average may spend 10% or more of their income on energy (Figure 1). For the poorest households, energy needs may require more than 20% of their income, sometimes substantially more. Analysts refer to this phenomenon, the disproportionate share of low-income financial resources devoted to energy purchases, as the low-income "energy burden" (e.g., Byrne et al. 1986; Vine and Reyes 1990; Colton 1996a). In addition, household income is associated with other characteristics affecting energy use, including housing type, housing quality, and family composition. Researchers also find that the ability of low-income households to make energy payments is particularly difficult during periods when energy prices increase faster than incomes, as during the oil-price shocks of 1973 and 1979 (King 1975; Perlman and Warren 1977; Morrison, Keith, and Zuiches 1979).

The conditions leading to the low-income energy burden are easily explained. The major premise of those advocating low-income energy services is that a certain level of basic household energy service is essential in a modern industrialized society. Energy is required to heat and illuminate households and to provide other basic household services (e.g., hot water, refrigeration, and food preparation). Because some basic level of energy service (which will differ by type of low-

income household and by region) is both essential and inelastic, many analysts agree that these basic services should be available to low-income households even if these services are provided at below cost. In response to this argument, the Public Utility Regulatory Policies Act required state regulatory commissions to consider the development of lifeline rates for electric and gas customers (Phillips 1993).

One early federal program, the Department of Health and Human Services' Low-Income Home Energy Assistance Program (LIHEAP), was motivated by the oil price shock in 1979, the concern that federal petroleum and natural-gas policies might cause prices to increase in residential markets, and the observation that a substantial portion of households in certain regions used petroleum as a heating fuel. In 1993, for example, 36% of households in the Northeast used fuel oil as their primary heating fuel while the comparable national estimate was about 11% (Energy Information Administration [EIA] 1995). Thus, this program developed out of a specific concern for one aspect of the energy burden—the ability of low-income households in colder states to purchase heating fuel (J. Eisenberg, Oak Ridge National Laboratory, personal communication, September 20, 1996). Recent allocations demonstrate this continued orientation to heating needs; this program allocated roughly 71% of its 1995 budget to heating assistance (L. Litow, U.S. Department of Health and Human Services, personal communication, February 7, 1997).

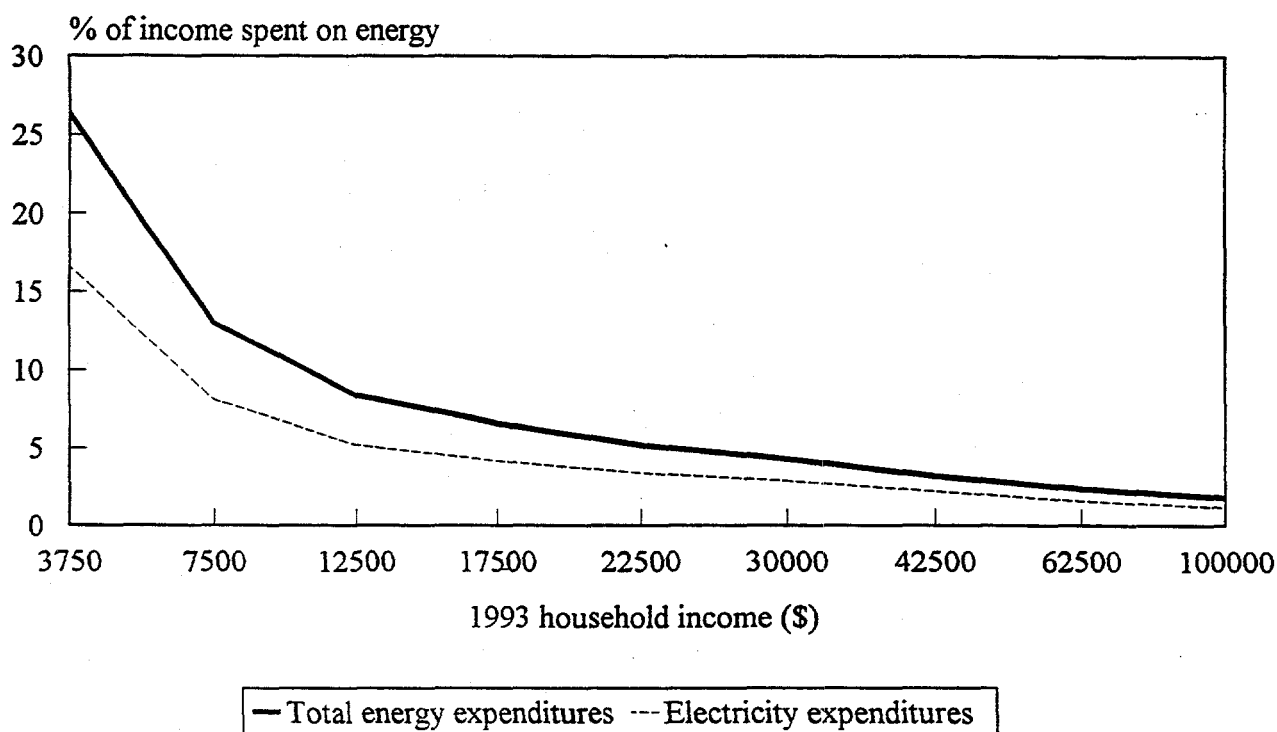


Figure 1. Percent of household income spent on energy in 1993 (Source: Energy Information Administration [EIA] 1995).

Table 1 presents aggregate data from 1993 on household energy use and expenditures. Natural gas is the dominant fuel used in low-income households and households overall. However, because electricity is a more expensive fuel (per Btu used at site) and is used by virtually all households, electricity costs contribute the most to total household energy costs. Table 2 presents per-household estimates of energy use and expenditures. In 1993, the average household spent about \$1280 on energy, of which about \$840 was devoted to electricity purchases. The average low-income household spent about \$1090 on energy, with roughly \$700 as electricity purchases.

Figure 2 displays regional differences in total energy expenditures and electricity expenditures per household in 1993. Households in all four census regions spend more than half their total energy expenditures on electricity. Households in the South spend the most on electricity in absolute and percentage terms. Western households spend the least on electricity, but the portion of their total energy bill spent on electricity exceeds the national average.

Although electricity purchases are the largest share of the total household energy budget, natural gas is the heating fuel used most frequently by low-income households (Figure 3). Electricity is the next most frequently used heating fuel, although the national average does not reflect the underlying regional variability. Electric heat has the highest penetration in the South and West and much lower penetration in the Northeast and Midwest. The greater penetration of electric heat in the South and West contributes to the high percentage of the total household energy bill spent on electricity in these regions.

With LIHEAP focused primarily on heating assistance, most federal funding is spent on assistance for fuels other than electricity. Yet electricity expenditures are on average the largest

**Table 1. Aggregate estimates of U.S. household energy use and expenditures for 1993**  
(Source: EIA 1995)

	Total Consumption	Electricity <sup>a</sup>	Natural Gas	Other
<b>Energy Use (quadrillion Btu)</b>				
All households	10.01	3.28 (33%)	5.27 (53%)	1.45 (14%)
Low-income households <sup>b</sup>	2.19	0.70 (32%)	1.19 (54%)	0.30 (14%)
<b>Energy Expenditures (billion \$)</b>				
All households	123.91	81.08 (65%)	32.04 (26%)	10.79 (9%)
Low-income households <sup>b</sup>	27.03	17.39 (64%)	7.32 (27%)	2.33 (9%)

<sup>a</sup>Electricity energy use is expressed as fuel used on site (at 3412 Btu/kWh) rather than in primary energy.

<sup>b</sup>Low-income households have incomes at or below 150% of the poverty level.

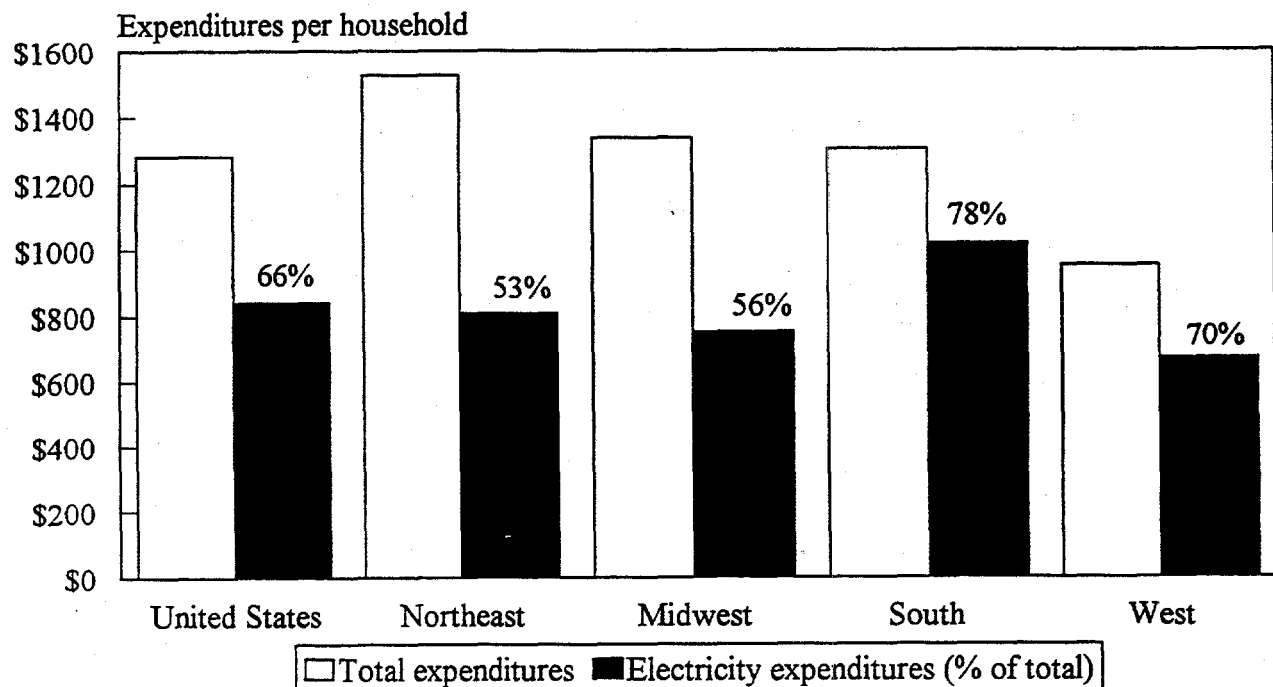
**Table 2. Per-household estimates of U.S. household energy use and expenditures for 1993**  
(Source: EIA 1995)

	Total Consumption	Electricity <sup>a</sup>	Natural Gas <sup>b</sup>	Other <sup>b</sup>
<b>Energy Use (million Btu)</b>				
All households	103.6	34.0	54.5	15.0
Low-income households <sup>c</sup>	88.6	28.5	48.0	12.1
<b>Energy Expenditures (\$)</b>				
All households	1282	840	332	112
Low-income households <sup>c</sup>	1092	704	295	94

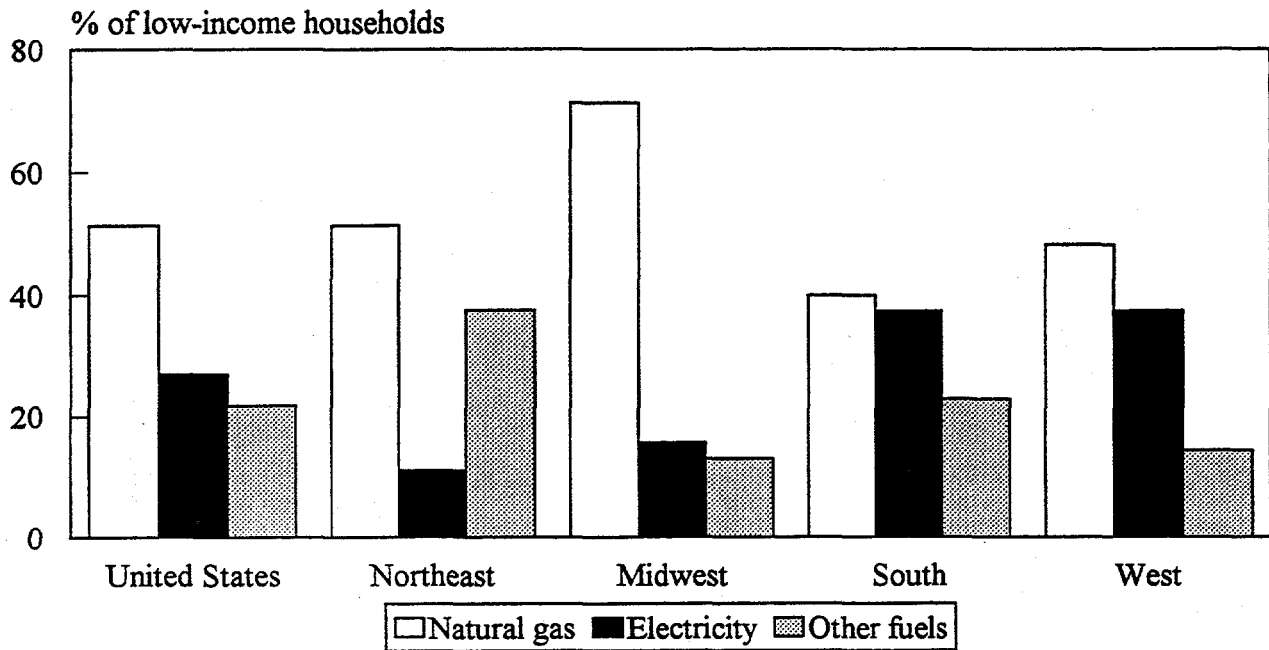
<sup>a</sup>Electricity energy use is expressed as fuel used on site (at 3412 Btu/kWh) rather than in primary energy.

<sup>b</sup>Note that while virtually all households use electricity, the penetration of nonelectric fuels (e.g., natural gas and fuel oil) is not as high. Only about 60% of U.S. households use natural gas, for example. As a result, the average natural gas use for households *with* natural gas will be higher than indicated here.

<sup>c</sup>Low-income households have incomes at or below 150% of the poverty level.



**Figure 2. Total expenditures for energy and electricity per U.S. household for 1993**  
(Source: EIA 1995).



**Figure 3. Percent of low-income households using major types of heating fuels in 1993 (Source: EIA 1995). The fuel with the highest penetration within the category “other fuels” is fuel oil in the United States (9%) and the Northeast (33%) and liquefied petroleum gas in the Midwest (7%), South (10%), and West (2%).**

portion of the household energy budget. This raises the question of whether federal low-income assistance programs should focus on the household’s total energy bill rather than on the fuel used for heating (or cooling). Current federal programs have a strong health and safety orientation; this explains the current focus on assistance with heating (and, to a lesser extent, cooling) services. Targeting assistance to specific fuels, such as electricity, also raises questions. Does such assistance promote the use of electricity as a heating fuel? If so, is this desirable? For example, does electricity provide the lowest-cost heating services? Could greater reductions in low-income heating bills be achieved if, rather than weatherizing electrically heated dwellings, households received assistance to convert to natural gas heating? Most of these questions are beyond this study’s scope; nevertheless, Chapters 3 and 5 discuss some of the policy implications that are raised by the important contribution that electricity makes to the average low-income household’s energy costs.

### TYPES OF LOW-INCOME ENERGY SERVICES

Over the past two decades, policies have been developed to address the energy burden of low-income households. More recently, policies have been developed to reduce utility costs caused by customer nonpayment and service termination. Increasing customer payments decreases utility revenue losses and collection costs. By not disconnecting customers and having them



make a contribution toward arrears, a utility's bad debt is reduced and disconnection (and probably reconnection) costs are saved. These policies have resulted in three major types of programs: energy assistance, weatherization, and consumer protection, as listed in Table 3.

Energy-assistance programs respond directly to the low-income energy burden by attempting to reduce the amount of income these households spend on energy. By making energy more affordable, these programs also help utilities reduce service terminations for nonpayment. Table 3 lists examples of the many types of energy-assistance services provided to low-income households. Among the most common energy-assistance services are direct payments to households for aid with energy bills, rate or bill discounts provided by the appropriate electric and gas utilities, and special payment arrangements for low-income customers. Many individual types of rate or bill discounts exist, for example. These discounts include so-called lifeline or baseline rates (which can take the form of an inverted block rate where the first block, the "lifeline" or "baseline" amount, has the lowest per-unit rate). In some cases, the rate or bill discounts can be increased when household members suffer from temperature-sensitive health conditions. Examples of special payment arrangements include fixed monthly payments, percentage-of-income payment plans, and a host of others. Some energy-assistance programs also provide consumer-education and budget-counseling services. These services are intended to help participants manage all their household financial resources and consumer choices more effectively, including those affecting energy use.

Energy efficiency and weatherization programs developed in response to another, and more recently recognized, low-income energy issue. As energy efficiency programs were first implemented in the 1970s and then proliferated in the early 1980s, analysts realized that low-income households often lacked the financial resources needed to acquire energy efficiency measures and services. Researchers also found that low-income households were among the least efficient energy users primarily because of the poor quality of their housing and, for many of those renting housing, the practice of landlords to roll energy costs into rents (Vine and Reyes 1990).<sup>2</sup> While the earliest programs also sought to reduce the energy burden of these households by reducing their energy use through conservation investments, more recent efforts focused on improving energy efficiency. That is, program designers recognized that certain households may trade off energy savings for increased comfort or other household services. Typical efficiency measures include weatherstripping around windows and doors, duct sealing, water-heater insulation, low-flow showerheads, higher-efficiency interior and exterior lighting, and building-shell insulation. Some programs found it necessary to perform limited building or equipment repairs to capture the energy efficiency potential from other installed measures. Energy audits and customer education targeted specifically at energy decisions are also prominent services in many weatherization programs.

While low-income weatherization programs are commonly subjected to cost-effectiveness tests, the primary intent of these programs is not cost-effective energy efficiency (at least as measured

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<sup>2</sup>This latter problem has been addressed primarily by installing individual utility meters on apartments and not through weatherization measures.

**Table 3. Low-income energy services provided historically**

Major Program	Types of Services
Energy assistance	<ul style="list-style-type: none"><li>▶ Bill payment assistance</li><li>▶ Rate or bill discounts (e.g., lifeline or baseline rates, and inverted block rates)</li><li>▶ Special payment arrangements (e.g., level monthly payments, percent-of-income payments, and fixed credit)</li><li>▶ Consumer education and budget counseling</li></ul>
Weatherization	<ul style="list-style-type: none"><li>▶ Energy efficiency and weatherization</li><li>▶ Building and equipment repair (typically capped per household)</li><li>▶ Energy audits</li><li>▶ Energy education</li></ul>
Consumer protection	<ul style="list-style-type: none"><li>▶ Universal service provisions</li><li>▶ Service termination restrictions (e.g., shut-off moratoria and notice provisions)</li><li>▶ Arrearage measures (e.g., arrearage forgiveness and public payment of arrearages)</li></ul>

by the standard tests used to evaluate energy efficiency programs). Their primary intent is equity—ensuring that low-income households have access to appropriate energy services. Weatherization program designs and activities are often guided by cost-effectiveness principles, but regulators typically do not require that low-income weatherization activities as a whole be cost effective (Brown et al. 1994). A few states, however (e.g., Colorado and New York), require that low-income efficiency programs meet the same cost-effectiveness standards as other utility investments in energy efficiency.

Consumer-protection programs apply to all consumers, but often have more important implications for low-income households. The electric and natural gas utilities' obligation to serve all customers seeking service in exchange for the state's granting an exclusive franchise for these utilities for a specific geographic area is a cornerstone of universal service. Thus, under the current regulatory structure, effectively all households have access to electricity service (and natural gas service, where it is available) regardless of income. Other important elements of universal service include minimum customer service and safety provisions and standardized customer bill formats. Rules governing service termination are another key consumer protection. In a recent summary of disconnection policies, 48 of the 49 states (including the District of Columbia) studied by Brockway and Sherman (1996) have explicit rules addressing service disconnection. Utilities in most states are prevented from terminating service because of nonpayment when the health or safety of customers is threatened. These health or safety protections are typically tied to either temperature (or the season), medical condition(s) of

individuals, or both. Seasonal or temperature-related disconnection moratoria apply during the winter. Moratoria are frequently augmented with arrearage measures, which are designed to allow the utility to recover a greater portion of its outstanding collectibles and to keep customers connected.

Energy assistance and weatherization programs can be found at the federal and state levels. The two major federal programs are LIHEAP and the Department of Energy's Weatherization Assistance Program (DOE Weatherization). The budgets for both programs are approved by Congress. LIHEAP's budget in 1997 is roughly \$1.2 billion (L. Litow, U.S. Department of Health and Human Services, personal communication, February 7, 1997), while DOE Weatherization's is \$121 million (C. Simonson, Princeton Energy Research Corporation, Inc., personal communication, December 17, 1996). These programs have, to date, been implemented at the state level. The federal government has provided funding directly to states for these programs. Funding allocations to states differ for these two programs, but are generally based on low-income energy needs, which are a function of the size of the low-income population, their energy burden, and the severity of the winter climate, among other factors. Thus, all states receive some level of funding from these federal programs. Appendix A provides recent estimates of federal allocations from these programs to states for 1996. The funds are administered by states, and often implemented through local community action organizations.

In addition to these federal funds, funds from state and local sources totaled about \$639 million in 1995 (Appendix A). These funds come from two major sources: utility ratepayers and state and local taxpayers. Table A-1 indicates the types of programs operating in each state in 1995.

Electric- and gas-utility ratepayers fund energy assistance and weatherization programs for low-income customers. Utilities in at least 31 states operated some type of low-income energy programs in 1995, with total funding of about \$336 million (K. Joslin, National Center for Appropriate Technology, personal communication, December 20, 1996). These programs include rate or bill discounts (utilities in 18 states, funding of \$140 million), arrearage forgiveness (utilities in 5 states, funding of \$78 million), energy efficiency measures and services (utilities in 21 states, funding of \$71 million<sup>3</sup>), and deposit or fee waivers (utilities in 11 states, funding of \$46 million). These ratepayer-funded and utility-administered activities are also the only form of state-initiated activities for at least 13 states. In some states, utilities are required by law to provide certain low-income energy services. Consumer-protection programs are found exclusively at the state level.

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<sup>3</sup>This figure may only reflect utility low-income weatherization efforts that qualify as LIHEAP leveraging funds. As a result, the total amount of ratepayer-funded low-income weatherization may be higher than \$71 million. For example, records maintained by the California Public Utilities Commission indicate that investor-owned utilities spent \$52 million on low-income weatherization in 1995 (Office of Ratepayer Advocates 1996). In contrast, the amount of utility low-income weatherization listed as leveraged funding totals about \$13 million for California in 1995 (K. Joslin, National Center for Appropriate Technology, personal communication, December 20, 1996).

At least 24 states provided additional funding for energy assistance and weatherization programs that totaled about \$245 million in 1995. Two states, New Jersey and New York, accounted for about 77% of this total.

A number of smaller programs provided an additional \$58 million in funding for low-income energy assistance and weatherization efforts. Fuel funds reflect voluntary contributions by utility ratepayers and shareholders to energy assistance and, at \$42 million, are by far the largest of these smaller programs.

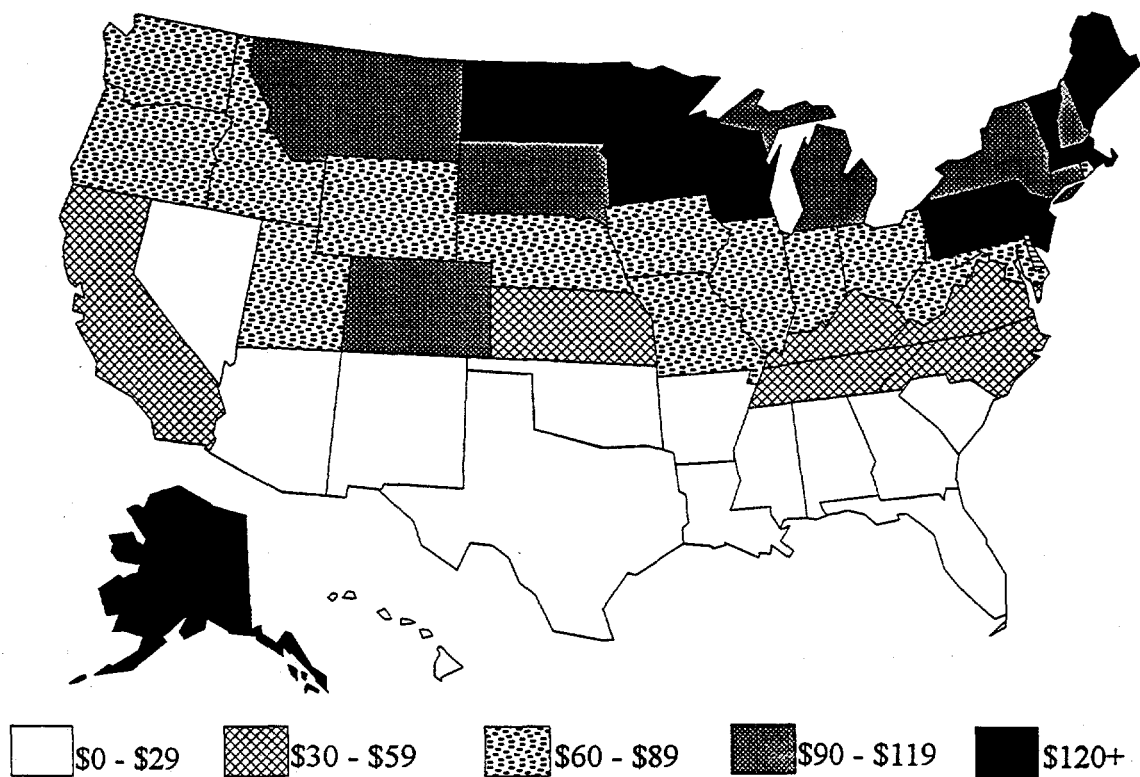
We are not aware of any national study that comprehensively integrates data from federal, state, and local efforts to accurately determine current and historical funding levels for low-income programs. The most recently available data (i.e., from 1995 and 1996) indicate that the total funding for low-income energy services is at least \$1.8 billion. The federal contribution is slightly over \$1.1 billion, or about 60% of the total. To put these estimates in context, the total low-income household energy bill was about \$27 billion in 1993 (Table 1). Eight states appear to rely solely on the allocation of federal funds from LIHEAP and DOE Weatherization to support low-income energy services. At least 43 states (including the District of Columbia) provide the remaining funding from state and local taxes, utility ratepayers, or other sources. These funding totals include programs that target electricity and other fuels as well as programs that are fuel-neutral.

Estimating the portion of the total funding that supports electricity services is difficult (Appendix A). A very rough national estimate is that support for low-income electricity services was between \$400 million and \$600 million in 1996 (out of at least \$1.8 billion for all fuels). A very rough estimate of the federal contribution to low-income electricity services is about \$300 million (out of a federal total of about \$1.1 billion). Appendix A details the assumptions we used to develop these estimates; these details are essential to understand the highly uncertain nature of these estimates. The total low-income household electricity bill was about \$17 billion in 1993 (Table 1). Thus, federal spending for electricity services is about 2% of the total low-income household electricity bill ( $\$300 \text{ million} \div \$17 \text{ billion}$ ), but spending for nonelectric services is about 8% of the total household nonelectric bill ( $\$850 \text{ million} \div \$10 \text{ billion}$ ). The emphasis on nonelectric fuels reflects the focus on providing federal assistance for heating.

Figure 4 illustrates how funding for low-income energy services differs by state. Total funding for each state is normalized by the number of households that meet federal eligibility criteria for LIHEAP as of 1995 (Appendix A).<sup>4</sup> The national average funding is about \$64 per household (national funding divided by the total number of eligible households). Figure 4 highlights the strong geographic characteristics of funding for low-income energy services. The nation's southernmost states all have funding at less than half the national average. Most northerly states have funding much closer to or above the national average. Ten of the twelve most northerly states (those sharing a border with Canada) have funding levels well above the national average.

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<sup>4</sup>According to the U.S. Department of Health and Human Services, the federal eligibility criteria for LIHEAP is the greater of 150% of the federal poverty level or 60% of each state's median income.



**Figure 4. Federal and state funding for low-income energy services per eligible low-income household (Sources: see Appendix A).**

We expect that the level of services available and the need for these services differ substantially by region. Regions with a greater proportion of low-income households will likely have a greater need for services, particularly when combined with more extreme climate conditions or higher-than-average energy prices relative to income levels or both. Ascertaining whether current or recent historical program funding and services are adequately meeting needs (i.e., either underfunding or overfunding) at state and national levels is beyond the scope of this study, however.

### **SERVICES POTENTIALLY AFFECTED BY RESTRUCTURING**

While debate exists about the provision of certain other public-purpose programs (e.g., energy efficiency, renewable energy, and research and development), the proposals we reviewed give no indication that states with low-income energy programs intend to abandon them (see Chapter 3). Many proposals commit to providing at least the same level of low-income energy services under a restructured industry as was provided historically. The recent California legislation, for

example, sets the recent historical level as a starting point in the transition to a restructured industry, and indicates that future service levels should be based on the need for specific services (California Legislature 1996). More broadly, many proposals seem to at least implicitly recognize that these services may need to be recast, along with the relevant funding, administration, and service-provision mechanisms or institutions.

While our review of restructuring proposals from eight states indicates that these states apparently do not intend to reduce low-income services, unintended consequences are possible given the complexity of implementing restructuring and of anticipating how the industry and consumers will respond to this new environment. As an example, a primary objective of all restructuring proposals is to promote economic-efficiency gains through greater competition among electricity generators and more choice for consumers. Over time, the ensuing improvements in productive-efficiency and investment decisions should lead to lower prices to consumers than they would obtain through a regulated market. In principle, lower prices will benefit all consumers, including low-income consumers.

However, the industry's response to restructuring may also lead to changes in price structures. In general, we can expect prices for different classes of service (e.g., residential, commercial, and industrial) and different times of use to be more closely aligned with the costs to provide these services. Although fixed costs dominate total utility costs (i.e., generation, transmission, and distribution), most consumers pay for the bulk of their electricity service through volumetric charges. Under restructuring, a greater portion of costs may be allocated to fixed charges, accompanied by a decline in volumetric rates. Most current rate-discount programs focus on volumetric and not fixed charges. As a result, without accompanying changes in low-income energy-program design, particularly rate-discount and bill-payment-assistance programs, low-income customers may experience negative consequences from restructuring. Further, changes in cost allocation may lead to price increases for certain customers. The fixed costs of serving low-volume customers, such as low-income customers, are proportionally greater than for high-volume customers. As low-volume users, low-income households may confront cost increases. Until restructuring proposals are implemented and markets develop, it is difficult to forecast how residential prices may change relative to today. These changes may not be uniform across regions. Low-income households will obviously benefit if restructuring brings lower electricity prices for services equivalent to those offered today.

In short, restructuring may affect the affordability of electricity. Restructuring proposals intend to make electricity more affordable for society through the competitive pricing of generation services (and perhaps retail services, see Chapter 3) and more effective regulation of transmission and distribution services. Competitively priced generation does not ensure lower prices for low-income customers for the reasons discussed above. To the extent that generation prices are based on spot markets, prices will also vary more than those set by regulated markets.<sup>5</sup>

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<sup>5</sup>Proposals are being developed to proxy the offering of real-time prices to residential customers. The main option considered is to derive a monthly average spot-market price from an estimate of hourly residential load, which would be derived from a statistically valid sample of residential customers. Generation companies or retail-

Of course, electricity demand tends to be less elastic for low-income households than other households (Schwartz and True 1990), which suggests that the potential for efficient load shifting may not be as great for low-income customers.

In addition, the application of regulatory policies that seek to more closely align prices of transmission and distribution services with costs (e.g., performance-based rate making) may lead to higher prices for low-income customers living in rural areas. In contrast, low-income households in urban areas will benefit from a move away from the geographic averaging of transmission and distribution costs.

Some state restructuring proposals do not recognize the changing relationship between state-level and federal-level activities. States setting low-income services at historical levels may not be considering the decline in federal funding for low-income energy assistance and weatherization in 1996 (e.g., DOE Weatherization's budget in 1996 was roughly 50% less than in 1995). States will need to consider current federal-funding levels when developing state-funding levels for low-income energy programs.

All of the restructuring proposals that we reviewed recognize that consumer-protection services will still be needed, particularly those related to health and safety. In competitive markets, however, suppliers are generally free to decide when to stop doing business with customers and under what circumstances. Generation suppliers and retail-service companies can be expected to push for the same flexibility. Given this flexibility, more customers may be exposed to involuntary disconnection of electricity service. In addition, generation suppliers and retail-service providers may set stricter credit and deposit terms for customers deemed at higher risk of nonpayment. Under current regulation, at least 45 states define some limits on the terms utilities can set for credit and deposits (Brockway and Sherman 1996). As regulated monopolies, utilities have been able to recover unpaid bills by recouping these costs from other customers. Competitive pricing will discourage this kind of cost shifting. Redlining is a related problem that has emerged in other deregulated industries.

Thus, questions emerge about who will pay for shut-off moratoria and arrearage forgiveness. Questions also arise about what universal service will mean in a restructured industry. Some proposals indicate that universal service is an assurance of a connection to a distribution system. Other proposals define universal service as a connection to the distribution system plus the provision of some basic level of service (e.g., access to electricity at the prevailing spot-market price). Another aspect of universal service addressed by some state proposals is the need to provide service when a customer's contracted supplier is unable to serve because of an unscheduled outage or other reasons.

The universal-service issue is closely related to affordability. Competitive markets implicitly operate to protect consumers by offering choices of services and prices. Now that the

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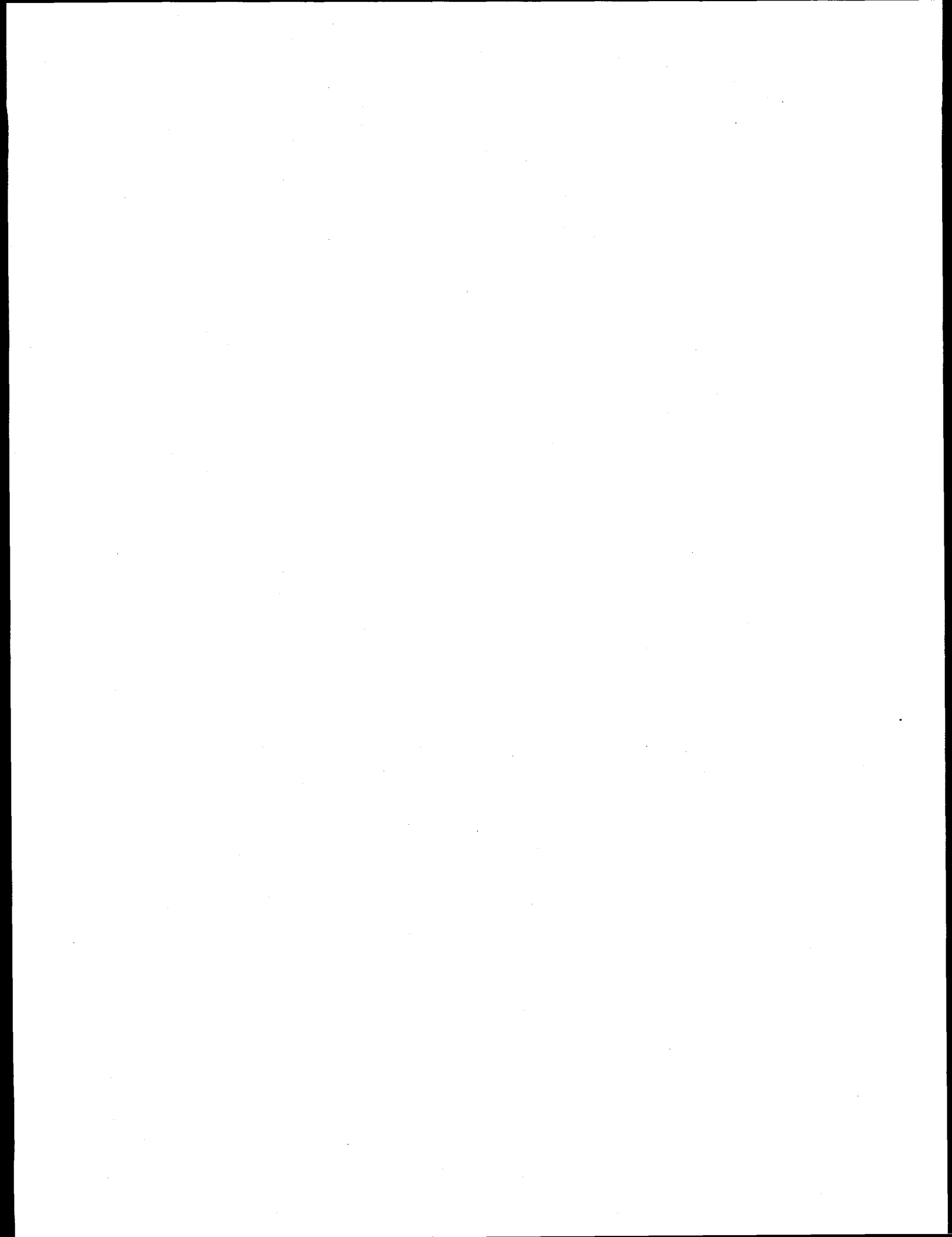
service companies are also likely to offer fixed prices to customers, perhaps at a margin above spot prices.

deregulation of the airlines industry is mature, for example, more than 90% of trips are taken at discounted fares (Kahn 1996). This does not mean that all citizens can afford to fly anywhere at anytime, but it is evidence that a more competitive airlines industry has made air travel more affordable to many consumers. However, competitive markets do not always operate to protect all consumers. Federal deregulation of intercity bus transportation contributed to a substantial reduction in service to rural locations, for example. It is uncertain to what degree all consumers, particularly low-income consumers, will be protected through competitive choice in a restructured electricity industry.

Current levels of energy-assistance and weatherization-program delivery may be at somewhat greater risk than consumer protection. State regulators and legislators generally support the equity objectives these services provide. Specific questions arise, however, about how to provide, fund, and administer these services. Historically, utility ratepayers have been a substantial source of these funds, and the utilities themselves have administered and provided the services. Customer choice severs the geographic link between buyers and sellers, perhaps complicating the traditional policy of charging ratepayers to provide low-income services within their geographic area. In addition, increased competition may change the amount and type of energy efficiency services offered to customers.

Analysts have raised additional concerns about the potential consequences of restructuring for low-income customers. These include lack of customer information about pending changes to the industry (and thus leaving customers unprepared for the new choices and risks these choices bring), and whether new mechanisms will be developed to address customer and supplier disputes. These concerns are not unique to the low-income population, but such households may have fewer resources available to address these issues.





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## LOW-INCOME ELECTRICITY SERVICES IN THE FUTURE: EXAMPLES OF PROPOSALS

This chapter presents examples of general policies to address low-income issues in a restructured electricity industry. These general policies are taken in part from a discussion of restructuring plans from eight states. Before beginning this discussion, however, this chapter presents our general assumptions about the structure of the future electricity industry.

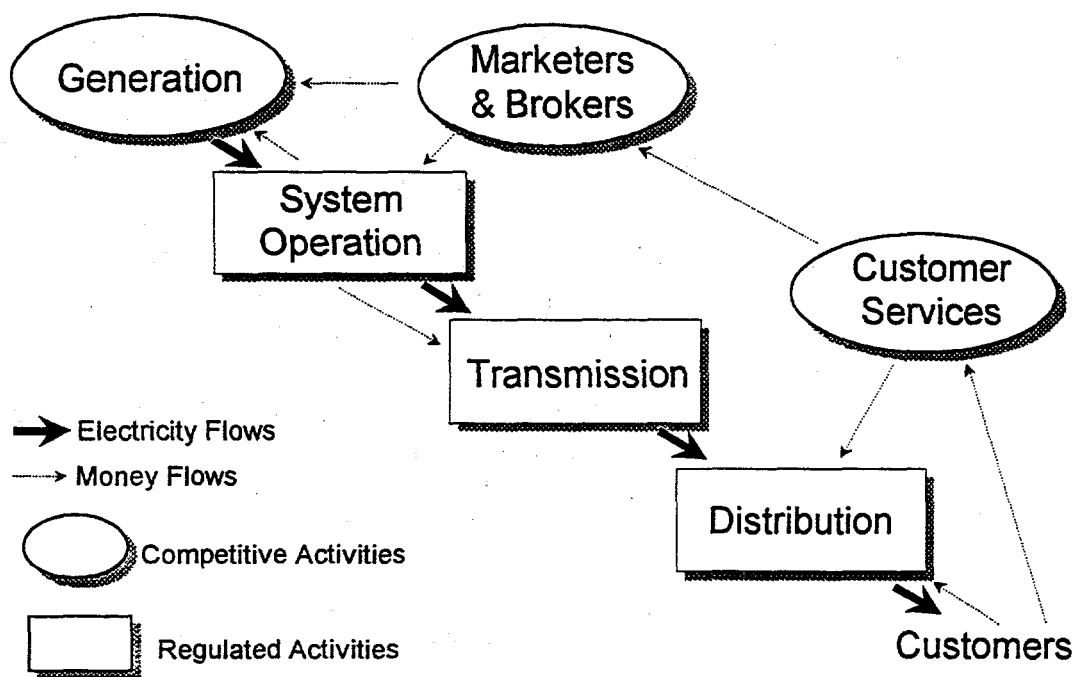
### ASSUMPTIONS ABOUT THE RESTRUCTURING ELECTRICITY INDUSTRY

The electricity industry can be restructured in many ways with attendant effects on existing public-purpose programs. In addition, policies designed to preserve public-purpose programs, such as low-income energy services, may differ under different restructuring models. Answers to two important questions will affect which public-purpose programs will be retained under each model (Brockway and Sherman 1996):

- ▶ Will policy makers rely on private markets to meet needs served by existing public-purpose programs?
- ▶ Alternatively, will policy makers recast existing institutions or create new institutions to serve the needs met by existing public-purpose programs?

The various proposals for new industry structure and regulation differ both in the length of the transition period and in the final structure itself. Yet broadly consistent outlines are beginning to emerge from those states most engaged in restructuring deliberations. The ultimate structure of the electricity industry might include wholesale and retail competition, consistent with the emerging situations in California, Massachusetts, and the few other jurisdictions in which state regulators or legislators have clearly stated their preferences. In this retail-competition scenario, the industry consists of six entities (Figure 5). Three of these entities—generating companies, marketers and brokers, and customer-service companies—are competitive and largely unregulated. Three of these entities—system operation, transmission, and distribution—are monopolies and would continue to be regulated.

Of most relevance to low-income services is the future role of the distribution company. Some proposals envision the distribution utility as purely a “wires” company that owns and maintains connections between end users and the larger electricity network. Under this vision, customer-service companies would offer metering, billing, information, and other services (such as energy efficiency and load management) to consumers. Because customer-service companies would be operating in competitive markets, they would be only lightly regulated. Still other proposals



**Figure 5. Possible structure for the electricity industry of the future.**

allow the distribution utility to also provide these services in competition with customer-service companies. None of the state proposals we reviewed advocate the introduction of competition in the other two major areas of electricity service—the transmission and distribution of electricity.

Thus, restructuring proposals address competition at two levels. At the first level is competition for the generation of electricity. At the second level is competition to provide a host of end-use services. As noted earlier, certain low-income energy policies and specific policy mechanisms appropriate and compatible for one model may not perform well with other models. In short, different models may require different sets of low-income policies. A model that includes competition for end-use services is probably more susceptible to certain consumer abuses, such as redlining, and in greater need of policies to address these potential abuses, for example. Chapter 5 considers this issue in more detail.

### **LOW-INCOME POLICY DIRECTIONS IN EIGHT STATES**

We reviewed restructuring proposals or plans by legislators or regulators (or both) from the following states: California, Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island, Vermont, and Wisconsin. Appendix B contains summaries of low-income electricity policies from each state's restructuring proposal. What follows is an overview of the key policies under development by one or more of these states.

These eight states are clearly in different stages of the electricity-industry-restructuring process. Four states have passed legislation (California, New Hampshire, Pennsylvania, and Rhode Island), and the remaining states have proposals or plans under development by their public utilities commissions (PUCs). The states that have passed legislation place the preponderance of the responsibility to implement industry restructuring with the state PUCs. Thus, the state PUCs will play a central role in developing or implementing low-income electricity policies.

All of the states present policy principles or specific provisions or both, addressing low-income electricity issues. Six states (Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island, and Vermont) discuss the concept of universal service or a provider of last resort. The Wisconsin proposals recommend funding for several electricity-affordability programs that address a key element of universal service. The California plan does not discuss universal service, a provider of last resort, or the obligation to serve.

The universal service concept discussed by these six states has several common features. First, the motivation for universal service is to ensure that all customers have at least one choice of supplier. Second, the plans direct the distribution company to arrange for universal service. Third, electricity affordability is addressed through discounts or other policies. Finally, the costs of universal service, including any rate discounts, are funded through a nonbypassable charge on electricity use for all customers. The exceptions to this general funding mechanism are Rhode Island, which excludes low-income customers from this portion of the nonbypassable charge, and Vermont, which recommends either a general tax or a surcharge on major fuels to fund its proposed low-income programs.

Each state except California explicitly recasts the obligation to serve. For New Hampshire and Pennsylvania, this recasting is through a universal-service policy, which addresses both the access to and affordability of electricity services. For Massachusetts, Rhode Island, and Vermont, this recasting is through a policy to provide basic service or a standard service offer, which addresses access only. These latter three states then address affordability through separate low-income programs. The basic-service or standard-offer policies are designed to cover customers under three conditions: when customers choose not to select a supplier, when customers are unable to acquire service, or when suppliers fail to provide service. Rhode Island and Vermont direct the distribution companies to use competitive-bidding processes to select the retail-service company that will provide basic service.

Each state recognizes that electricity affordability will be a problem for some customers. Every state but New York calls for the current programs that address electricity affordability to continue at least during the transition to a restructured industry. Four states (California, Pennsylvania, Rhode Island, and Wisconsin) set funding floors for low-income programs based on current or recent historical expenditures. California and certain proposals under consideration by the Wisconsin Public Service Commission (PSC) call for future funding based on a needs assessment. The draft revised service rules prepared by Wisconsin PSC staff direct utilities to permanently provide programs to mitigate and prevent energy hardships. The draft rules propose criteria to evaluate the effectiveness of these programs. Two states (Pennsylvania and Vermont)

set rate caps during the transition period; California calls for a rate cut for residential and small commercial customers. Proposals under consideration in Vermont and Wisconsin create state home-energy-assistance programs, in part to address shortfalls in federal funds for energy assistance. These states are unique among the state proposals that we reviewed in explicitly recognizing that the federal and state programs focus on heating assistance.

Finally, customer service protections are addressed in four states (Massachusetts, New Hampshire, Vermont, and Wisconsin). Each of these states plans to continue or strengthen existing service-termination policies, particularly for customers that demonstrate financial hardship. Massachusetts, Vermont, and Wisconsin note a need for expanded or revised customer protections as the industry is restructured. These states vest the implementation of customer protections with the distribution company. Massachusetts argues that expanded consumer protection and registration requirements should be applied to competitive suppliers. The draft revised service rules prepared by Wisconsin PSC staff identify specific billing formats for small customers and require information from prospective suppliers during their registration process that will enable the state to identify problem suppliers. California calls for a consumer-education program about the coming changes to the electricity industry and the choices that will become available to customers. Rhode Island directs the distribution company to issue a notice to customers before they become eligible for retail choice

## **POLICIES TO PROVIDE LOW-INCOME ELECTRICITY SERVICES**

Our review of restructuring proposals, related testimony and filings, the trade press, and interviews with restructuring analysts identified four major types of policies for providing low-income electricity services in a restructured industry. Table 4 summarizes these policies and provides examples of specific policy mechanisms that could be used to implement each policy. Brockway and Sherman (1996) provide additional discussion on these general policies as applied to a broad range of public-purpose programs in the electricity industry.

The policy mechanisms have different implications for which segments of the economy incur the costs of implementation. Most costs imposed on suppliers, for example, will probably be passed through to customers. Mechanisms that rely on licensing requirements, direct regulation, and supplier surcharges will have this effect. Tax measures will either increase payments by taxpayers (e.g., taxes on income, retail sales, or property) or decrease payments by companies or investors (e.g., tax credits or deductions). User surcharges will incur costs to energy users, as will most buyer-aggregation mechanisms. If municipalization is pursued for a segment of customers, it may lead to certain costs being imposed on the broader municipality.

### **Enlist Electricity Suppliers**

This policy requires that market participants provide low-income services as a condition of market entry. These market participants could be private generation companies, power marketers, private customer-service or energy-service companies, or publicly regulated

**Table 4. General policy options to provide low-income electricity services in a restructured electricity industry**

General Policy	Policy Mechanisms
Enlist electricity suppliers	<ul style="list-style-type: none"> <li>▶ Licensing requirements</li> <li>▶ Direct regulation</li> <li>▶ Incentives (tax credits and incentive regulation)</li> </ul>
Use public funding	<ul style="list-style-type: none"> <li>▶ Taxes</li> <li>▶ User surcharge</li> <li>▶ Supplier surcharge</li> <li>▶ Voluntary contributions</li> </ul>
Promote buyer aggregation	<ul style="list-style-type: none"> <li>▶ Municipalization</li> <li>▶ Community-access providers</li> <li>▶ Buying co-ops or clubs</li> </ul>
Remove market barriers	<ul style="list-style-type: none"> <li>▶ Improved information</li> <li>▶ Tax credits</li> <li>▶ Anti-redlining measures</li> </ul>

distribution companies. Alternatively, these entities could provide the funding for these services and contract with others for the actual delivery of services.

Specific mechanisms to implement this policy include licensing requirements, direct regulation, and incentive packages. The operating licenses of generating companies, for example, could contain a requirement to provide or fund low-income services. Licensing requirements will be most applicable to private companies. None of the state proposals we reviewed pose these types of requirements for licensing. With the exception of Wisconsin, the proposed licensing requirements for electricity providers appear to primarily serve a registration function. Direct regulation and incentives will be most applicable to publicly regulated companies. The portfolio standard discussed in California for renewable energy (but rejected by that state's legislature) is an example of direct regulation applied to a distribution company (California PUC 1995). A simple example of a portfolio standard is a requirement that distribution companies purchase a minimum percentage of their total electricity purchases from renewable energy sources. A standard analogous to the renewable portfolio standard could be established for low-income services (e.g., distribution companies must devote a certain portion of their revenues to low-income electricity services). Distribution companies may still be allowed to bundle the costs of low-income services into rates. In this case, regulators may use performance-based incentives to encourage the efficient provision of low-income services (e.g., Burns et al. 1995).

This policy can also be used to implement universal service. The distribution company, for example, can act as the provider of last resort for low-income customers unable to afford or

attract services from other suppliers. The distribution utility can recover the difference between its costs and the revenues collected for providing this service from all suppliers operating in the utility's service territory. The distribution company can also select a provider of last resort using a competitive process, as suggested by the Rhode Island and Vermont plans. The winning bidder provides the required level of service using the minimum subsidy. An alternative is to randomly assign low-income customers to specific suppliers on a proportional basis, according to their level of sales within specific distribution service territories. Finally, states can implement a pay-or-serve policy in which suppliers either serve low-income customers or contribute to a fund to support the suppliers that do (Brockway and Sherman 1996).

### **Use Public Funding**

In effect, this policy pays for the cost of low-income services with public (as opposed to private) funding. This is the policy currently under most serious consideration by states pursuing restructuring. Public funds can be collected from a wide range of sources and thus refer to many types of funding mechanisms. Public funds may be derived from:

- ▶ income taxes paid by businesses and individuals;
- ▶ property taxes paid by owners of commercial or residential property;
- ▶ sales taxes paid by consumers;
- ▶ user surcharges paid by consumers of particular goods and services (e.g., electricity and natural gas surcharges typically have been paid by one or more classes of ratepayers);
- ▶ supplier surcharges paid by producers of particular goods and services; and
- ▶ voluntary contributions by businesses, community groups, and individuals.

With the exception of voluntary contributions, all types of public funding are collected by or for (or both) federal, state, or local governments.

As our review of state proposals illustrates, states place the responsibility for continuing or creating low-income electricity services on electricity providers but collect the cost of the subsidy from electricity users. The popularity of this policy stems from its relationship to existing electricity policy in many states (i.e., ratepayer funding for public-purpose programs, such as energy efficiency, renewable energy, and research and development, is well established in many states) and from the similarity to existing policies in other deregulated industries (e.g., universal access or service fees in telecommunications; airport-use taxes in transportation). This policy also relies on a mechanism very familiar to government—raising funds through taxes or surcharges.

Many specific mechanisms exist to implement this policy, but to date restructuring proposals are focusing on an electricity-use surcharge. This surcharge goes by different names, depending on the proposal. These names include a "public-goods charge," a "system-benefits charge," or a "nonbypassable distribution service charge." Analysts have also used the term "universal-service fund," but this sometimes refers to the more specific application of ensuring that electricity is affordable and accessible for all customers. Under whatever name, the charge is intended to be

nonbypassable in that it would apply to all retail electricity sales. Thus, most current proposals define distribution as any end-use service rather than service at a particular voltage. Of course, no charge is completely nonbypassable. Customers would presumably have the same options that they do today to avoid such a charge: relocation to an area that does not levy such charges, self-generation, or fuel switching.

Most proposals link the charge to electricity use, though it is possible to design a charge targeted at multiple fuels. Problems exist with an energy surcharge, particularly when the surcharge is applied to only one fuel. A single-fuel surcharge has the potential to introduce distortions in fuel prices and demand between fuels that are substitutes (e.g., electricity and natural gas). Energy-user surcharges to support low-income heating assistance may need to consider fuels beyond electricity. The Low-Income Working Group (1996) in California, for example, is examining the simultaneous implementation of a surcharge on electricity and natural gas users (and users of other gaseous fuels, such as propane and butane). Such a surcharge must be targeted at each household's primary heating fuel to avoid overcharging households for a heating-assistance program. In addition, an energy surcharge may encounter public opposition as an unwanted tax. The Vermont plan notes this potential problem and expresses a preference for either a charge on all major fuels to support low-income services or a general tax. These funds would support a fuel-neutral home-energy-assistance program.

Public funds can also be raised through general taxes on income, retail sales of all kinds, or property. Surcharges on suppliers, targeted at multiple fuels or just electricity, are also an option. Most production surcharges (i.e., excise taxes), such as those on gasoline, are shifted to consumers by including the amount of the tax in the selling price. The primary difference between the user and supplier surcharges is who collects the revenue from the surcharge, not who ultimately pays. Voluntary contributions are also a source of public funds. Specific examples include checkoffs on utility bills and tax returns.

### **Promote Buyer Aggregation**

The objective of this policy is to aggregate customer loads to achieve sufficient market power to negotiate not only commodity electricity prices but also other services. These services could include low-income programs as well as other products. The policy is motivated by the belief that large customers already command the market power necessary to strike deals to their best advantage. Aggregation proposals are intended to offer small commercial and residential customers similar advantages. Despite this intent, most proposed aggregations involve large customers (Energetics 1995).

Municipalization is an obvious aggregation strategy. Other strategies include the formation of buying co-ops among public schools, city-government facilities, and low-income neighborhoods. Community-access providers may provide the aggregation service directly to these and other groups. The private market may adopt this latter strategy, thus reducing the need for public policy in this area. Of course, community-access providers may not target low-income households without the stimulus of some policy mechanism.



## **Remove Market Barriers**

This general policy focuses on removing barriers that prevent broader low-income participation in the market. The underlying assumption of this policy is that more efficient markets may respond to a demand for a wider range of energy services (Brockway and Sherman 1996). Brockway and Sherman provide examples of these barriers, such as lack of information, transaction costs associated with offering or obtaining low-income services, difficulty in reaching target markets, and lack of resources by market participants.

Mechanisms to implement this policy are directed at the reduction or removal of specific market barriers. Where lack of information is a problem, information strategies and technologies can be used to provide more accurate price signals and to lower customer transaction costs. Where lack of resources is the issue, tax credits (e.g., the earned-income tax credit at the federal level and renter's tax credit at the state level) can be used to reduce the low-income energy burden. Other measures to address resource issues include private debt financing and programs to provide collaborative electricity services (e.g., enlist consumers to keep utility poles free of debris, such as signs and posters, in return for some level of utility service). Analysts have also suggested a number of anti-redlining measures, such as full disclosure of services and costs by suppliers, licensing conditions that specify equal-service offerings, prohibitions on consumer discrimination, and the promotion of alternative institutions for delivery of electric services to certain communities.

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**FEDERAL ROLES IN DEFINING FUTURE POLICY OPTIONS**

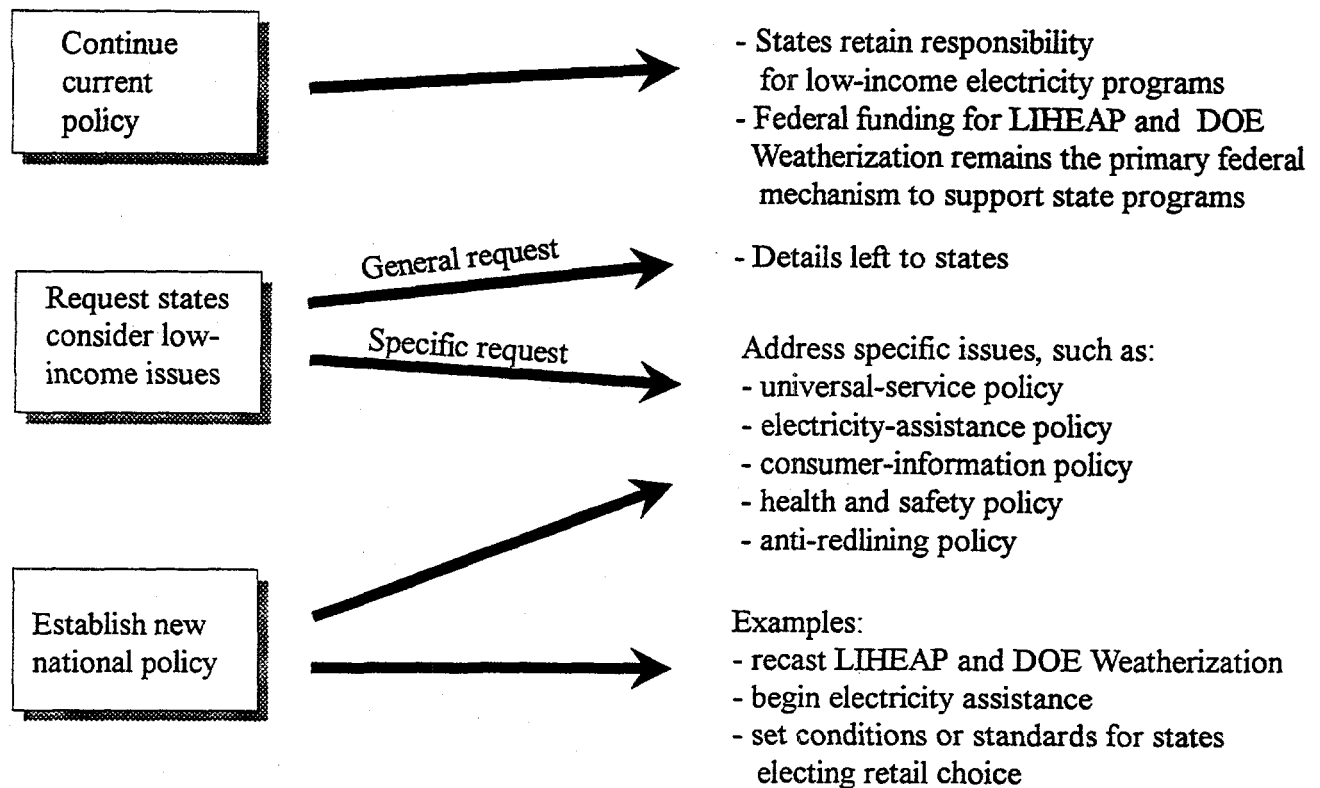
Three broad federal roles for low-income electricity policy can be identified (Figure 6). The first role is to maintain current federal policy. The second role is to request that states consider the effects of electricity-industry restructuring on low-income households. The third is to establish new federal policy on low-income electricity issues.

**NO CHANGE IN FEDERAL POLICY**

First, the federal government could continue a policy of providing federal funding for state programs for energy assistance and weatherization for low-income customers. This role is largely consistent with the current status and historical development of the federal government's approach to low-income energy policy. The two major federal programs, DHHS's LIHEAP and DOE's Weatherization, allocate funds to states on the basis of an agreed-upon formula. More importantly, these federal programs are fuel neutral; that is, they are not targeted explicitly at specific fuels, such as electricity. Instead, they are intended to assist low-income households with their energy bills and to weatherize their homes. Although state grantees may work with local electric utilities, there is no federal requirement that they do so. Thus, current federal low-income energy programs are not targeted directly to the electricity industry. Administration of local low-income energy programs has historically been a state matter, as has the regulation of local electric companies.

A federal decision to maintain its low-income energy policy should not necessarily be viewed as a judgement that this policy area is unimportant or that no further action by any party is needed. Rather, no additional federal action may mean that the federal government is leaving states to address policy issues arising from restructuring proposals that primarily affect retail electricity markets. This position is not only historically consistent with current federal electricity policy, but it is also consistent with the more recent trend to transfer federal responsibility for certain policy issues, where appropriate, to the states.

Maintaining current federal policy on low-income electricity services, however, may not be consistent with a federal initiative to require retail choice. A federal mandate for retail choice without any conditions or standards to ensure universal service, consumer protections, and fair competition would ignore many of the existing low-income electricity services that may be adversely affected by retail choice (Chapter 2). A policy addressing low-income issues that accompanies a federal mandate for retail choice demonstrates a federal intention to anticipate and address the ensuing consequences of such a mandate. In this case, the federal government's low-income electricity policy may be more consistent with either of the two other broad roles identified below.



**Figure 6. Three broad federal roles for low-income electricity policy.**

In considering federal action, it is important to note that a primary objective of the state-sponsored restructuring proposals that we reviewed is to reduce the costs of electricity services for consumers compared to those obtained through a regulated market. The result could be a substantial benefit to low-income households. Recognizing this, the National Association of Regulatory Utility Commissioners (1995) adopted a resolution on restructuring and low-income customers. The resolution urges the Federal Energy Regulatory Commission (FERC) and individual states to apply the following principles, among others, when developing policies that will affect low-income customers:

- ▶ prevent unfair cost-shifting between customer classes,
- ▶ make available the benefits of a competitive market to each customer class without undue discrimination, and
- ▶ sustain commission-approved low-income energy efficiency and rate programs.

Current federal support for low-income energy programs is not established in response to restructuring the nation's electricity industry. The budgets for LIHEAP and DOE Weatherization may continue to be set independently of restructuring activities, and the objectives and

administration of these programs may remain unchanged.<sup>6</sup> States would then continue to have the primary responsibility for establishing and implementing policies on low-income energy programs through state legislative or regulatory arenas, or both.

One major question for this policy is whether electricity-industry restructuring will have any effect on the ability of LIHEAP and DOE Weatherization to meet their respective objectives. For example, restructuring may lead to lower electricity prices for low-income customers. Alternatively, restructuring may lead to changes, such as increases in fixed customer-service or demand charges, that adversely affect low-income households. The balance between favorable and adverse changes will determine the extent that funding levels of LIHEAP and DOE Weatherization need to be adjusted. State adoption of retail choice without consideration of any ensuing effects on low-income customers may also lead to pressure on the federal government to adjust funding for these two federal programs.

These considerations suggest that current federal programs will need to be reassessed particularly if states take the lead on restructuring retail electricity markets, as several are now. The potential changes of most relevance to low-income policy include state policies and programs on low-income energy issues, the pricing and availability of electricity services, and electricity's contribution to the household's total energy burden.

## **FEDERAL REQUEST TO STATES**

The federal government could request that states consider establishing some minimum levels of low-income services, or explicitly consider a specific set of low-income issues, in developing a restructured electricity industry. Section 111 of the Energy Policy Act of 1992 contains an analogous request of states in the area of energy efficiency investments in power generation and supply. In this legislation, the federal government asked state regulators to consider the disincentives caused by existing rate-making policies and to consider incentives that would encourage more efficient electricity generation, transmission, and distribution equipment. As another example, Title I of the Public Utility Regulatory Policies Act of 1978 requires state PUCs to consider adopting a rate structure that provides for the essential needs of residential customers at costs below the cost of service.

At least two options are possible with this second role (Figure 6). Under the first option, the federal government could make a general request that states consider low-income issues when developing restructuring proposals, leaving the details of these considerations to the states. In the second option, the federal government could develop a set of more specific low-income issues that states are asked to consider. Under this alternative, states would be free to consider any additional issues they deemed necessary but would, at a minimum, consider the issues identified

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<sup>6</sup>Restructuring offers the opportunity to reassess the full range of historical electricity policies. The states moving ahead with restructuring proposals have taken this opportunity, for example, to reconsider which public-purpose programs they wish to continue in a restructured industry and by what means.

at the federal level. Under both options, states could be asked to report to DOE the results of their considerations.

The first option gives states the most flexibility to identify, assess, and implement those low-income policies that best meet state needs. This option also represents the least federal intrusion into the state regulation of retail markets. The second option is slightly more intrusive than the first one. States must consider at least those issues identified by the federal government, but states are still free to examine other options and to tailor policies to meet state needs. This policy also ensures that states will consider certain important low-income issues.

Both options avoid two jurisdictional issues between federal and state governments. The first issue is the extent of federal authority to direct or condition state action in the regulation of retail electricity markets. The second and larger issue is determining the circumstances when the federal government can direct or compel the states to take action. It is clear that the federal government can request that states take an action. Under the first option, this action is to consider low-income issues in response to state efforts to restructure retail electricity markets. The federal government can also preempt state action. For example, certain civil rights have been guaranteed for all U.S. citizens by acts of Congress. Difficulties can arise, however, when the federal government requests that states take action, while at the same time holding the prospect of federal preemption should states fail to act. Examining these jurisdictional issues in further detail is beyond this report's scope, but these issues will be important for certain options considered below under the third broad federal role.

Both options can also provide a state forum to address low-income issues. This forum would emerge from a state's public consideration of low-income issues. Finally, these two options require no additional federal resources to implement and minimum federal responsibilities to follow up on state actions.

## **DEVELOP NEW NATIONAL POLICY**

The federal government could establish a new national policy on low-income electricity issues. A new national policy could take many forms, such as establishing minimum national standards for low-income services or defining a specific national policy mechanism to provide these services (Figure 6). We discuss a few general examples of federal options below, but note that these options are illustrative rather than exhaustive.

The federal government could support a policy promoting universal access to affordable electricity service, providing energy efficiency services to low-income customers, and ensuring that the health and safety of low-income households are not jeopardized by service disconnections (or some other combination of desired electricity services for low-income households). One way to support such a policy is to have the federal government raise funds and then redistribute these funds to states. The funds could come from general revenues or from other sources, such as surcharges on electricity producers or end users. The redistribution to states could be either in block grants or matching grants or some combination of the two. The

federal government could establish guidelines that direct states to target funds to specific purposes, such as support for universal service or weatherization services. By accepting these grants, states would agree to abide by the relevant federal guidelines. States would have the authority to design and implement programs, subject only to federal guidelines.

This example builds on the operation of current federal low-income energy programs. If the primary federal concerns are electricity affordability and weatherization services, then the current federal programs provide a useful foundation for this policy. The focus of these programs may need to be revised (e.g., to include explicit support for electricity) or broadened (e.g., to encompass household energy assistance, not just heating and cooling assistance). Funding levels for existing programs would need to be reassessed in response to a revised or broadened focus. Designating at least a portion of the available funds as a matching grant would encourage states to provide funding assistance for this policy.

This approach could ensure that a minimum level of support would be set for low-income services. This option would also seem to avoid jurisdictional issues. States would be free to accept or decline federal funding. States would also maintain responsibility for program implementation and structure. If existing federal programs were expanded, however, new sources of revenue or cuts in other federal expenditures would be required. Depending upon how any new revenues are collected, some states may be charged out of proportion to their needs.

As a second example, the federal government could establish low-income electricity policy as part of a larger federal proposal to restructure the electricity industry. An important aspect of the larger proposal could be a federal mandate for an expeditious but orderly transition to retail choice (with or without a date certain) with specific conditions. States could still control the implementation of retail choice, but the federal government would preempt any state decision to forego retail choice. Among the conditions the federal government might set would be the need for states to address issues affecting low-income customers, such as any or all of the issues discussed in Chapter 5. Alternatively, the federal government could allow states to implement retail choice if they choose (i.e., no federal mandate for retail choice), but only if states adopt policies that address certain low-income issues.

Both of these options would ensure that certain low-income issues would be addressed during and after the transition to retail choice. The exception would be any state with inadequate low-income policies that also elects to forego retail choice (under the alternative discussed in the second example), thus exempting itself from the need to adopt new low-income policies. Both of these options may also provide states with some flexibility in meeting federal conditions or policy standards, but these options are clearly more intrusive than any we previously discussed. These two options may raise the jurisdictional questions we identified earlier in the chapter. For example, some states may resist or challenge any federal mandate for retail choice or any federal policy standards established in return for deferring to states on the matter of retail choice. As a result, these two options may be more difficult or riskier to implement, particularly if one goal of government action is to facilitate industry change. State resistance or challenge could delay transforming the electricity industry. Finally, these options could lead to greater federal

responsibility for enforcement and follow-up to ensure that states meet the federal conditions or policy standards.

To conclude, the second and third broad roles briefly discussed in this and the previous section represent departures from the current and historical federal approach to low-income energy services. These second and third roles may be justified should the federal government determine that a substantial portion of the low-income population would not otherwise have adequate access to electricity services in a restructured industry or would have difficulty paying for electricity service at prevailing market prices. These roles may also be justified should the federal government direct all states to implement retail choice. The following chapter discusses several policy options that the federal government could pursue under either the second or third roles described above.

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## FIVE OPTIONS UNDER AN EXPANDED FEDERAL ROLE

This chapter describes the assessment framework we use to discuss possible federal policy options. It then presents an assessment of five policy options: universal service, national electricity assistance, consumer information, health and safety, and anti-redlining.

### ASSESSMENT FRAMEWORK

To structure the discussion of low-income policies, we develop an assessment framework and then apply the framework to each policy. Each assessment begins with a brief description of the policy.<sup>7</sup> We then proceed to discuss a range of policy and implementation issues (Table 5).

Under policy issues, for example, we discuss the issue or problem the policy intends to address, including the policy's motivating premises or assumptions. At this point we do not address whether this motivation is necessarily well founded; instead, we present the rationale used to support the policy. Discussion of subsequent criteria touches upon the strength of the policy's underlying rationale. We discuss the need for federal action by considering, among other issues, whether entities other than the federal government could take action to meet the policy's objectives. We also discuss whether the proposed federal action has precedence in the electricity industry or other industries. Closely related to the need for federal action is the need for federal funding. Under federal funding, we discuss whether the proposal requires a major new source of funds.

Each policy proposal raises specific implementation issues as well. Related to the need for federal action is the extent to which federal agencies have expertise with the relevant issues. Under decision-making authority, we identify the entities that would be candidates to be vested with the authority to meet the policy's objectives. We also identify the candidate entities to administer and implement the specific programs or processes designed to meet the policy's objectives. In discussing these issues, we suggest where possible conflicts may arise among agencies with decision-making authority, with administrative responsibility, and with implementation responsibility. The discussion of funding mechanisms is only important for policies that would require new sources of funds. In general, any of the funding mechanisms identified in Chapter 3 could be used to support new or expanded federal initiatives. These funding mechanisms include income taxes, general sales taxes, targeted sales taxes, user

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<sup>7</sup>In the description and assessment of each policy, we attempt to separate policy issues from program-design issues and focus on the former. Certain program-design issues are mentioned briefly to illustrate different options for implementing a policy.



**Table 5. Assessment framework for low-income electricity policies**

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Policy Issues	<ul style="list-style-type: none"><li>▶ Issue or problem to be addressed</li><li>▶ Policy objectives to address issue or problem</li><li>▶ Need for federal action</li><li>▶ Need for federal funding</li></ul>
Implementation Issues	<ul style="list-style-type: none"><li>▶ Expertise on relevant issue within federal agencies</li><li>▶ Entities with decision-making authority</li><li>▶ Entities that administer and manage the process or programs</li><li>▶ Entities that implement and monitor the process or programs</li><li>▶ Funding mechanisms</li><li>▶ Feasibility</li></ul>

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surcharges, supplier surcharges, and voluntary contributions (see Table 4). A national electricity sales tax, for example, could be used to fund any or all of these policies. We focus the funding discussion, where appropriate, on more specifically targeted mechanisms (e.g., electricity-user surcharges) because these are the options receiving the most attention by states. Should new funding mechanisms be needed, we identify a number of issues, including who pays, how much they pay, and how this amount is determined. We avoid detailed discussion of funding-design issues, which (because of their complexity) are beyond the current report's scope. Finally, we consider feasibility issues, including a qualitative discussion of the policy's possible costs and benefits.

## **UNIVERSAL-SERVICE POLICY**

A universal-service policy ensures that all consumers have access to basic levels of affordable electricity service. Several state-level restructuring plans or proposals refer to the need to consider universal service, such as those in New York, Massachusetts, and Pennsylvania. California's Assembly Bill (AB) 1890 (1996) does not specifically discuss universal service, but the legislation does call for minimum rate reductions for all residential customers. The report of the Low Income Working Group (1996) in California urges the California PUC to adopt principles that include the "right to affordable electric service" and further recommends that restructuring should not result in undue rate increases on low-income households. The report of the Direct Access Working Group (1996) contains similar language. These plans, proposals, and reports focus on the rates charged for services, which are one aspect of universal service.

The Ohio Electric Roundtable Conference (1996) defines universal service more broadly as universal access to bundled electricity service (i.e., generation, transmission, distribution, and retail services) for essential human needs, regardless of customer income or location. The Roundtable includes the following elements in universal service:

- ▶ adequate distribution lines and facilities for all customers,
- ▶ adequate customer deposits,
- ▶ federal and state low-income energy assistance,
- ▶ state bill credits,
- ▶ extended payment plans offered by utilities,
- ▶ arrearage measures,
- ▶ termination prevention during certain medical conditions, and
- ▶ standards for the content and format of customer bills.

A group of low-income advocates met in Arizona in September of 1995 to develop principles on low-income energy issues in response to electricity-industry restructuring (J. Eisenberg, personal communication, Oak Ridge National Laboratory, September 20, 1996). One set of principles endorsed by this group urges state and federal regulators to adopt "affordable access," which includes the following elements:

- ▶ Utilities or other providers should serve as the provider of last resort.
- ▶ Low-income customers must obtain electricity essential to health and safety.
- ▶ Electricity services provided should be affordable.
- ▶ Governments should provide comprehensive energy conservation grant programs.
- ▶ Affordable deposit and deferred-payment policies should be developed.

The Telecommunications Act of 1996 (TA 96) contains a section on universal service that is a potential model for the electricity industry. TA 96 directs the Federal Communications Commission (FCC) to form a federal-state joint board to recommend changes to any existing regulations that are necessary to implement universal service. TA 96 instructs this board and the FCC to base policies for the preservation and advancement of universal service according to several principles:

- ▶ Quality services must be available at just, reasonable, and affordable rates.
- ▶ Access to advanced telecommunication and information services must be provided in all regions of the country.
- ▶ Consumers in all regions should have access to services comparable to services available in urban areas (including advanced services) and at comparable rates.
- ▶ All providers of telecommunication services must contribute to universal service.
- ▶ Specific and predictable support mechanisms at federal and state levels must be established to support universal service.

TA 96's definition of universal service is not fixed, but is designed to evolve and to be revised periodically in light of advances in technologies and services. Those services to be included in universal service are based upon the extent to which they are essential to education, health, or safety; have been subscribed to by a substantial majority of residential customers as a result of market choices; are being deployed in public telecommunication networks by carriers; and are consistent with the public interest.

TA 96 authorizes the FCC to design and implement a federal funding mechanism to preserve and advance universal service. TA 96 thus creates a two-tier universal service system, with federal standards for interstate service and state standards for intrastate service. This model is consistent with traditional federal and state jurisdictional responsibilities in regulating telecommunications services. This aspect of the TA 96 model may not be appropriate for the electricity industry; the discussion of policy issues expands on this point.

TA 96 gives states considerable latitude and authority in establishing state funds. For example, TA 96 requires every carrier providing intrastate service to contribute to a state universal service fund, but in a manner determined by each state. States also determine the amount of intrastate contributions and may adopt universal-service requirements and standards beyond those identified in TA 96. The state mechanisms must be specific, predictable, and sufficient to support additional state obligations without relying on the federal universal-service fund.

The federal government has at least four options for a universal service policy for electricity. First, the federal government could maintain its current policy, which would mean no direct federal action on universal service. This policy would allow each state to consider the need (or lack thereof) for universal electricity service. Second, the federal government could request that states consider the need for universal service. This is consistent with the second broad federal role discussed in Chapter 4. Third, the federal government could set universal service as a condition (or a standard) that states must meet to implement retail choice. This option would leave decisions about specific funding mechanisms and policy implementation with states. Finally, the federal government could play a role in funding universal service through block grants or matching grants to states. Federal funds could come from general revenues or from the electricity system (e.g., service providers or users or both). Under either of these last two options, the federal government could convene a joint federal-state board to define the extent of universal service and make recommendations about funding mechanisms.

### **Policy Issues**

This policy raises two fundamental issues. The first issue is whether the federal government should establish a national policy on universal electricity service, as it has for telecommunications. The second issue is whether the federal government has any role to play in implementing universal service. Our discussion addresses both issues.

The concept of universal service represented by this policy is related to the traditional utility's obligation to serve. In exchange for the state's granting a monopoly service franchise to a utility, the state requires the utility to provide quality service at reasonable rates to all who desire. Restructuring provides an opportunity to reconsider, and possibly recast, the utility's traditional obligation to serve. Because the utility itself is being redefined, as we discussed in Chapter 3, the regulated entity (perhaps still called a "utility" but no longer vertically integrated) may no longer be the appropriate entity to vest with the obligation to serve. In addition, the franchise service area and traditional regulatory policies, such as cost-of-service rate making, ensured that the utility would recover its costs of serving all customers. Without explicit reconsideration, existing

provisions related to universal service may be inadequate or inappropriate for the restructured industry. Certain provisions may not be competitively neutral or may not clearly specify the entity responsible for providing service, for example.

The above consideration also raises a question about whether universal service means affordable service. Universal service is defined as affordable service in this policy. This definition is consistent with five of the state plans that we reviewed (six states discuss a universal service concept). As a result, the policy shares one of the objectives of electricity assistance programs, which is making electricity bills affordable.<sup>8</sup>

The universal-service policy's primary objective is to promote social equity. More specifically, the objective is to ensure that all residential customers who seek electricity service are able to obtain it.<sup>9</sup> While universal service applies to all residential customers, the benefits of this policy are most likely to accrue to customers that are less profitable or unprofitable to serve or to customers having other characteristics that suppliers may find undesirable. Universal service in telecommunications is also not specifically a low-income policy, but applies to all residential customers, including those in remote areas, as well as to certain services, including those offered by public schools, hospitals, and libraries.

In considering the need for federal action and funding, it appears that only the telecommunications industry has an explicit federal requirement to pursue universal service. Past federal policies dealing with rural electrification and the formation of rural electrical cooperatives indicate that the federal government has recognized the need for and benefits of providing electricity services in rural and insular areas (Hill 1988). Yet this federal recognition has not extended to any explicit finding that some level of electricity service is necessary for low-income households, particularly those living in urban areas. Thus, federal policy to support universal electricity service would be a departure from past federal electricity policy.

Arguments have been made that electricity, like telecommunications, should be a universal service (e.g., Rabago, Jaussaud, and Benenson 1992). Electricity enhances the ability of all persons to acquire certain household services, such as lighting, refrigeration, and space conditioning. Even when electricity is not the primary conditioning fuel, it is often necessary for the operation of associated equipment, such as fans, compressors, and ignition devices. Electricity is also needed to enhance the public's access to information about public safety, health, education, and assistance services through radio and television broadcasts and to

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<sup>8</sup>Universal service ensures that all low-income customers have the choice of at least one generation supplier. Electricity assistance makes electricity more affordable to low-income customers (which is an important element of universal service), but does not guarantee that low-income customers will be able to acquire a generation provider.

<sup>9</sup>One alternative is to limit universal electricity service to that level deemed adequate for health and safety. Another is to make electricity available, but not address affordability. These alternatives are not consistent with the universal-service model established in TA 96. Arguments considering the relative importance of telecommunication and electricity services are presented below.

participate more fully in society. In addition, certain states (e.g., California) require that a residence have access to electricity to be declared habitable.

The need for universal service, then, depends on whether electricity services are considered necessary in an industrialized society. It is true that alternatives to electricity exist for many end uses. Natural gas and propane are widely available as alternative heating fuels, for example. For certain end uses, however, such as lighting, space cooling, and refrigeration, electricity is today the overwhelming fuel of choice. In urban areas where natural gas is unavailable, electricity is also the preferred heating fuel. Without access to electricity, households would be forced to go without cooling, refrigeration, or lighting because of a lack of acceptable alternatives to provide these end-use services.

Thus, the question of a federal policy role stems not from whether universal electricity service can be justified—the answer here is yes—but from whether the federal government should set policy in an area (local electricity service) that has historically been a state matter. TA 96 faced a similar question. Regulation of the terms and conditions of intrastate telecommunication services, particularly local services, has historically been left to the states. Yet TA 96 (1996, p.102) states “Every telecommunications carrier that provides intrastate telecommunications services shall contribute, on an equitable and nondiscriminatory basis, in a manner determined by the State to the preservation and advancement of universal service in that State.” This statement could provide the basis for a federal policy on universal electricity service as well. The federal government could work with the states to define those electricity services that should be universal, as was the case with TA 96, or leave it to the states to develop their own definitions. A joint federal-state board is one way to facilitate federal and state involvement on universal service.

While some of the arguments used to support a universal electricity-service policy rely on analogies with universal service in telecommunications, we must recognize that electricity and telecommunication systems differ. Some of these differences bear on the appropriateness of making distinctions between federal and state responsibilities for universal electricity service analogous to those made for telecommunications. The distinction between intra- and interstate telecommunication services is reasonably clear, for example. Local telecommunication carriers can distinguish between (and arrange for separate billing of) local calls, calls that are not local but are within the same area code, and long-distance calls. These distinctions are less clear for certain electricity services. Retail electricity customers do not now choose the types of services that are engaged when they use electricity; they flip the light switch, for example, and the electrons flow. These electrons may be generated and transmitted using purely local (i.e., in-state facilities) or using distant, perhaps even international, facilities.

Perhaps more importantly, the federal implementation of universal service under TA 96 addresses that portion of retail sales (i.e., long distance) under federal jurisdiction.<sup>10</sup> The federal government does not set retail electricity rates for any electricity services; these rates have long been the province of state government. FERC (1996), in Order 888, did not draw a "bright line" between transmission functions (subject to federal jurisdiction) and distribution functions (subject to state jurisdiction). Order 888 continues with past federal policy, however, by leaving regulation of retail electricity markets as a state responsibility.

The distribution system is essential to provide universal service. The state restructuring plans that we reviewed recognize this link between distribution and universal service. The state plans that discuss a universal service policy vest the owner and operator of the distribution system with universal service responsibilities. Further, states will continue to regulate distribution. Thus, universal service will almost certainly be implemented more effectively by states than the federal government.

If the federal government determines that low-income customers need access to affordable electricity, it could consider directing states to implement universal electricity service as a condition for allowing states to elect retail choice. Alternatively, the federal government could consider establishing standards for universal service that states must meet to implement retail choice. A joint federal-state board could facilitate the development of standards and help ensure the consistent implementation of universal service across states.

Any federal funding role for universal service would be supported by general tax revenues or electricity supplier surcharges. Continued pressure on the federal budget reduces the probability that general tax revenues could be used to fund universal service. The larger question, however, is whether funds could be raised more effectively by states or the federal government. States also face limitations on funding mechanisms. A supplier surcharge would be difficult for states to implement, for example, because a state cannot assess a charge on out-of-state providers. A state charge on the electricity system would have to come from electricity users. Because universal services will be provided at the distribution level, it may be more effective for states to develop the funding mechanism, unless it can be clearly demonstrated that federal funding would be more effective.

### **Implementation Issues**

Expertise on the regulation of retail electricity markets lies with state government, primarily at state PUCs. FERC has general expertise on electricity issues, but FERC's principal expertise is on regulation of wholesale electricity transactions and interstate operation of the transmission network. These areas are not directly related to universal service, however. Because of its general expertise, FERC could provide representation on a joint federal-state board. Other

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<sup>10</sup>Note, however, that TA 96 contains a federal direction to states to implement universal service in intrastate markets, which are under state jurisdiction. The federal role in this element of TA 96 is analogous to the third federal role discussed in Chapter 4.

agencies, including DOE, could provide input on specific principles underlying universal service at the retail level. DHHS has federal expertise on energy affordability for low-income households. FERC, DHHS, and DOE are candidate agencies that could be given authority to institute a joint federal-state board to recommend coordination of state efforts.

States also have expertise on low-income issues. This expertise can be found in state PUCs, as well as state housing, welfare, or human-services agencies. These state agencies will understand existing state policies related to universal service; detailed characteristics of the low-income population; and the climatic, energy-price, and energy-availability conditions that may contribute to different levels of universal service within the state.

State authority on decision making, administration, and implementation will most likely reside with PUCs. In some states, these commissions may require state legislative action to give them statutory authority to implement universal service. State PUCs are also a logical choice to oversee universal-service efforts if the affordability component of service is provided through discounts on electricity rates or prices. If states address affordability through direct payments to low-income customers (e.g., vouchers), then state housing, welfare, or human services agencies would also be candidates to administer and implement this portion of universal service.

The funding mechanism for universal service should be specific, predictable, and sufficient, as defined by the joint federal-state board or by individual states. A common set of questions exists for state funding mechanisms: Who pays (which we addressed in part above)? How much? How is this amount determined? What is the design of the mechanism? Because we envision that most of these questions will be addressed by states, we only note a few issues that states may consider.

The question of the funding requirements for universal service is linked to the definition of universal service. Basic electricity service has no uniform definition. The level of service that is "basic" will depend, in part, on the fuels used to heat and cool homes, the price of electricity, the climate, the size of the household and the size of the dwelling, among other factors. The universal-service concepts put forward by consumer advocates are much closer to the objectives contained in the Telecommunications Act: quality electricity services, comparable to those offered to customers in urban areas, should be accessible and affordable by all, including low-income, rural, and isolated customers. Thus, the definition of basic electricity service may differ by region and possibly by type of household.

Several states are debating whether all or only some portion of customers should pay for universal service. The surcharge proposed in California and some other states is based on electricity use and would be paid by all distribution customers. In Rhode Island, low-income customers would be exempt from a surcharge for universal service. Some argue that costs for universal service should be paid by residential customers alone or that costs for nonresidential customers should be capped. States must also consider the need to distinguish universal-service funding from funding for other public-purpose programs. Universal service would be needed primarily because a competitive market will not protect low-income customers. In contrast, public funding for energy efficiency or research and development, for example, may be needed

because a competitive market may not provide the appropriate level of investment from society's perspective. States may want to maintain separate funding mechanisms or accounts to recognize this distinction and to reduce the possibility of these different public-purpose programs competing for a common set of funds.

The policy's costs include the surcharge costs to electricity end users, the administrative costs that distribution providers incur to collect and transfer the surcharge funds, and the costs to states (and the federal government in the case of a joint board) to define universal service and to administer the surcharge account. The policy's benefits include a distribution network that supports and provides universal service. If states have the responsibility for universal service, then the states will incur administrative costs, and electricity customers within each state will incur the direct costs.

## ELECTRICITY-ASSISTANCE POLICY

Energy-assistance programs are designed to reduce the energy-related financial burden of low-income households. The existing federal energy-assistance program focuses primarily on aiding these households to meet their heating needs. Less attention is paid to cooling needs and the larger role that electricity purchases play for many low-income households. As discussed in Chapter 2, about 65% of the total low-income household energy budget goes to electricity purchases. This policy would broaden the current focus of national energy assistance to reflect the overall role of electricity in low-income households, whether used for heating, cooling, or other services. The goal would be to assist low-income households with payment of their electricity bills, thereby reducing the portion of income devoted to these purchases.<sup>11</sup>

Electricity responsibilities of LIHEAP could be transferred to this program. Alternatively, LIHEAP's focus could be expanded to include the household's total energy bill. The program could be designed much as LIHEAP is now with national funding allocated to states on the basis of need. As with LIHEAP, national funding could be in the form of a block grant to each state. The federal government could include guidelines about the disposition of funds by the states. For example, the federal government could set a cap on the amount of funding devoted to program administration. Each state would then be free to design programs that target specific needs as defined by the state.

The program could also be designed as a matching grant, where states obtain federal matching funds if they also spend state funds to address electricity needs for low-income households. A cap for the matching funds could be based on a determination of state-specific needs with a process similar to the one used to allocate existing federal funds to states. Funding for such a program could come from general treasury funds. Another option is to create a unique funding mechanism. This mechanism could be some type of national electricity surcharge, as discussed

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<sup>11</sup>A national electricity assistance policy could also include a weatherization component, although we do not discuss that option here.



with certain other options. A program based on matching grants could also be designed to supplement or even replace the energy assistance currently funded by utility ratepayers.

Finally, the program could be funded and operated entirely at the state level. The federal government could authorize states to collect funds for electricity assistance in response to federal directions to states to implement such a program.

### **Policy Issues**

The issue motivating this policy is that energy purchases are substantial for low-income households and electricity is the dominant share of these purchases. The difficulty is not just with heating-fuel purchases, but with electricity purchases overall. The affordability of electricity is an issue not recognized explicitly by any current federal program. An additional concern is that current utility assistance programs (primarily discount and arrearage programs) may not be sustained in a restructured industry. Thus, what are now locally-funded services may need to be replaced with a federal or state initiative.

The policy's objective is to make electricity more affordable for low-income customers. This objective furthers a social-equity objective, which is to make at least a certain basic level of electricity service affordable to residential customers. Unlike universal service, electricity assistance is specifically a low-income policy. In addition, a matching-grant program may encourage states to design replacements for existing energy-assistance programs administered by electric utilities.

Earlier we noted the relationship between universal service and electricity assistance (see Footnote 8). Universal service addresses the access to and affordability of service, while electricity assistance addresses affordability alone. This distinction is relevant for two reasons. First, a universal-service policy would eliminate the need for a separate policy on electricity assistance. Second, certain of the issues raised earlier in discussing the need for a universal-service policy are applicable to electricity assistance and consideration of the need for federal action. As a result, we will not repeat in detail here the relevant discussion from the previous section. Instead, we note the common issues and how they bear on the question of federal action.

The argument for electricity assistance is that, because a certain level of electricity service is basic and essential, this service should be affordable. A minimum definition of basic service is a level of service that ensures the health and safety of customers. More expansive definitions include service levels beyond that needed to provide for health and safety.

The need for electricity assistance depends on whether affordability is a problem. Many analysts have argued that energy affordability is a substantial problem (Chapter 2). Analysts have devoted more attention to the household's total energy budget, however, than to electricity's contribution. Yet we observed in Chapter 2 that electricity costs dominate total energy costs when viewed across all low-income households. This observation suggests that electricity costs are an important contributor to a larger energy-affordability problem. In addition, virtually all low-

income households use electricity for some services; thus the affordability problem may be widespread. Finally, 41 states have either a state-funded or ratepayer-funded energy-assistance program (K. Joslin, National Center for Appropriate Technology, personal communication, December 20, 1996), which suggests that most states recognize energy affordability as a problem.

One observation mitigates this view somewhat. Affordability problems are exacerbated by the seasonal differences in energy bills. Winter heating needs, in particular, pose payment problems for some low-income households. For households where the seasonality of energy payments is the affordability problem, electricity may not be the primary cause because most low-income households do not use electricity as their primary heating fuel. In addition, seasonal payments may not be as large a problem in those parts of the country where electric heating has the highest penetrations (the South and West). The heating season in the South and certain portions of the West is both shorter and less severe than in the rest of the country. Despite the South's mild heating season, total household electricity costs are 20% above the national average (Figure 2).<sup>12</sup>

The available evidence suggests that affordability is a problem and that electricity costs contribute to this problem. However, questions remain about a new federal role. The existence of LIHEAP reflects federal recognition that affordability of heating (and secondarily, cooling) is a problem for low-income households and that the federal government is prepared to address this problem. An electricity-assistance policy, however, represents a departure from the current focus of federal policy on heating needs and from the fuel neutrality of this program. As a result, other fuel providers may raise concerns that their fuels are not subsidized by the federal government. Nevertheless, the focus of current policy on heating has the implicit effect of focusing aid on natural gas, the dominant heating fuel among low-income households.

The effects of federal and state efforts to restructure the electricity industry on the case for a new federal role must also be considered. Federal initiatives to make natural gas markets more competitive are associated with lower prices for residential consumers (e.g., EIA 1996, Figure 14). A similar outcome is anticipated for electricity markets, but future electricity prices are uncertain, particularly for smaller customers that currently lack sufficient market power to negotiate the most attractive terms for service. In addition, electricity's price is only one part of the affordability issue. Another consideration is the relationship between electricity prices and the income of low-income households. Even in the face of real price declines, affordability will continue to be a problem for many.

Even if restructuring brings lower prices to many customers, low-income customers and other small users may not see this benefit. If low-cost-of-service customers leave a utility's generation service, then the average costs for remaining generation customers will increase. This situation may be a particular risk for plans that require the distribution utility to be (or to arrange for) the

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<sup>12</sup>A household's ability to pay energy bills is related to the amount of the bill and the household's income. With electricity expenditures above the national average and median incomes below the national average, the South's households may spend a higher percentage of their income on electricity.

provider of last resort. Low-income customers without choice may face these higher costs. As noted by California's Direct Access Working Group (1996), this situation could be exacerbated if aggregators successfully serve the more desirable portion of the small consumer market and if the unbundling of more retail-distribution functions enables customers to avoid distribution-company services. If customer-service costs differ among customers, average costs for customer service could increase if lower-cost customers seek service from aggregators.

Any consideration of a new federal role should be cognizant of likely initiatives at the state level. State proposals we reviewed demonstrate a willingness to maintain current levels of state assistance. We are uncertain whether current state energy-assistance programs are appropriately funded. Federal action and funding are not needed if LIHEAP sufficiently addresses national needs for energy assistance, including electricity used for heating and cooling.

The federal government and state governments have both played important roles in funding energy assistance. If electricity assistance is needed, then these two levels of government could continue to play important roles. The federal government could provide some assistance to every state, based on a needs assessment. Alternatively, the federal government could play the sole funding role. Or the federal government could direct states to develop funding mechanisms to provide a level of electricity assistance sufficient to meet state needs. As we discussed with universal service, it may be more effective for states to develop the funding mechanism. State funding may be particularly appropriate if assistance is provided through rate discounts on distribution service, which will continue to be regulated by states.

### **Implementation Issues**

The federal government has experience with low-income energy assistance. DHHS has many years of experience administering LIHEAP at the federal level. Should Congress decide to fund an electricity-assistance program from a source other than general revenues, then it must also authorize a federal agency, such as FERC, in conjunction with DHHS, to collect these funds. Issues of affordability stem from retail electricity markets that are regulated by states. Thus, FERC has little or no experience with retail affordability or estimating funding needs for energy assistance.

An electricity surcharge could be collected from electricity users by distribution utilities or retail-service providers. These funds could then flow directly to states. States would be the logical authorities to implement a retail surcharge. A federal surcharge may be applied to electricity suppliers. These funds could then flow to the federal treasury or to the administering federal agency. If a national electricity surcharge is used, Congress would be the entity responsible for establishing the surcharge and for authorizing the appropriate entities to collect this surcharge.

DHHS or DOE are candidate agencies to have authority to meet policy objectives and to administer a federal program, including allocating funds to each state. States would then have responsibility to administer funds for state-level activities, as is currently the case with LIHEAP.

If the program is implemented as a matching fund, then a federal agency would determine the cap on matching funds and whether matching funds should be awarded. States would apply annually to the administering federal agency for matching funds.

The costs of the policy, assuming funding is through a generation surcharge, would include direct costs to generation providers or users; administrative costs to the implementing federal agency and participating entities to establish the surcharge; administrative costs to generation companies to collect and transfer funds; and administrative costs to DHHS or DOE to manage the program, including establishing and administering a balancing account. These costs would be partially offset by any administrative cost savings that might be obtained by integrating electricity assistance within LIHEAP or by other economies of scale for program administration. If funding is through a state-level mechanism, then costs would include direct costs to electricity users, and administrative costs to distribution companies and the relevant state entities. The benefits of the policy include increasing the ability of low-income households to make timely payments on their electricity bills (particularly during periods of high use), the potential to reduce payment delinquencies and ensuing costs for providers, and the possibility of increasing the portion of the low-income household budget that can be used to meet nonelectricity needs .

## **CONSUMER-INFORMATION POLICY**

A consumer-information policy specifies the types of information that electricity suppliers must display in advertising for services, communicating the terms and conditions of services, and billing for services. Here we broadly define electricity suppliers to mean any commercial entity that markets electricity services directly to retail consumers. Thus, suppliers can be electricity generators, distribution utilities, power marketers, and other retail entities, such as billing-service companies. This policy could be implemented as a set of federal standards or as a federal request or direction to states to develop such standards.

Of course, consumer-information policy is not only a low-income issue. Information standards can benefit a broad range of customers. Many issues addressed by consumer-information policy, however, are particularly applicable to low-income customers. Low-income households generally exhibit lower levels of educational attainment and have less access to informational resources than other households. As a result, low-income households may be less aware of the different electricity service options that restructuring will provide and may have greater difficulty comparing the options that they do identify. These circumstances may make low-income households more susceptible to deceptive pricing schemes and other unfair business practices than households at large. In addition, several consumer-protection issues that information standards address are particularly relevant for low-income households. These issues include disconnection procedures and forms of notification (of special significance because of the possible health and safety consequences of winter disconnections), regulation of late payments, credit determinations, and account-deposit criteria.

Standards for advertising could include the following principles:

- ▶ The services advertised and rates charged must be presented in a cogent and understandable manner.
- ▶ The total price of service(s) must be displayed in cents/kWh (or in some other common metric to facilitate comparison with advertised offers from other providers) regardless of other specific terms and conditions presented.
- ▶ Certain format and content attributes must be followed, such as presentation (e.g., a minimum size of type); and the listing of the actual provider's name (e.g., this would apply when the advertisement is made by a retail-service provider that is packaging generation services for sale).

Standards for the terms and conditions of service could include the following principles:

- ▶ Prior to any written or oral agreement between a service provider and a customer leading to the initiation of service, the customer must be informed of all rates and charges for services, any other rates and charges that will appear on the first bill, and any penalties for early withdrawal from a contract with the provider.
- ▶ The customer must be clearly informed of the actions required to maintain service.
- ▶ The customer must be clearly informed, with adequate advance notice, of the factors leading to changes in prices or other terms of service.
- ▶ Steps leading to the involuntary termination of service must be clearly identified to the customer prior to the start of service.

Standards for customer bills could include the following principles or provisions:

- ▶ Customer bills must include the billing due date.
- ▶ Any detailed charges must be clearly identified, including a list of and charges for each service (e.g., generation, transmission, distribution, and other services, if used, such as billing and metering), as must the period of service covered by the bill.
- ▶ Late-payment charges and the conditions when such charges will be applied must be identified.
- ▶ Instructions about how to pay the bill must be included.
- ▶ The name of the billing agent (if used) must be provided.
- ▶ A toll-free number for service or billing questions must be identified.
- ▶ Instructions about how to file customer complaints must be provided.
- ▶ A single price, reflecting the overall rate for services, expressed as cents/kWh for comparison purposes, must be provided.
- ▶ The existence of a program or policy for a provider of last resort must be clearly communicated to all customers. This could be provided on the bill or on material included with the bill.

Additional billing principles for consideration include identifying the fuel mix used by the electricity supplier and defining a notice period for any changes in service status, such as the price charged and service termination (outages excepted). This last principle addresses the practice of "slamming," which is a change in service provider and rates made without the

consent or knowledge of the customer. Slamming has surfaced as a problem in the telecommunication industry.

Models of such information standards exist in other industries, such as the securities industry. The Securities and Exchange Commission under the antifraud provision of the Investment Advisers Act of 1940 and Rule 206-1 has promulgated policies on performance advertising (Podesta 1990). These policies govern the presentation of actual and model performance results and advertising. Recognizing the benefits of public trust in investment institutions, the Association for Investment Management and Research (1990) also developed standards for investment-performance presentation.

Consumer information standards are part of a broader set of consumer-protection issues that restructuring raises.<sup>13</sup> While the need for consumer protection is discussed in all the state-level restructuring proposals we reviewed, only the draft service rules prepared by the Wisconsin PSC staff are comprehensive. The remaining state plans contain few details about the specific issues they do cover. Another comprehensive discussion of consumer issues raised by industry restructuring is the report of the Direct Access Working Group in California (1996). A few analysts, notably Alexander (1996), have written more extensively on consumer-protection issues.

### Policy Issues

This policy assumes that many consumers, particularly low-income customers, are unaware of pending changes in the electricity industry. As a result, these customers may be unprepared for, or at least not well informed about, the choices (and risks) that these changes will bring. In addition, consumers may have difficulty comparing offers from different providers, and the billing for services rendered may become more complex. Many consumers attempting to select a long-distance telephone provider experienced these difficulties. It is possible, therefore, that restructuring will also lead to increased transaction costs for low-income customers.

This policy's primary objective is to provide clear guidelines for advertising, service provision, and billing to promote the consumer's understanding of the terms and conditions of electricity service. Achieving this objective will, in principle, reduce transaction costs for small commercial and residential consumers, including low-income electricity consumers, and will also facilitate well-informed consumer choices.

Few economists or consumer advocates (and perhaps even electricity-service providers) would argue about the benefits of well-informed consumers. Many service providers were members of the Direct Access Working Group in California, for example, and supported certain consumer-

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<sup>13</sup>Consumer-protection issues include at least the following: setting market rules and standards of conduct, including fair dealing; establishing terms and conditions for initiation and termination of customer service; using and accessing metering and data-communication systems; addressing right-to-privacy issues; setting customer-billing standards; implementing customer education; and establishing mechanisms to resolve customer complaints.

information standards. Indeed, experience in some other restructured (or deregulated) industries, such as telecommunications and banking, suggests a need for some type of consumer-information standards.

The key issue here, however, is the respective role of federal versus state consumer-information policies.<sup>14</sup> The justification for federally sponsored information standards in the securities market, which arose to correct certain fraudulent practices and to permit consumers to compare performance results among firms, could be applied to electricity. Because many generation-services transactions in the future are likely to cross state lines, an argument could be made for a federal role to augment existing state authority. One of FERC's objectives with Order 888, for example, was to make the terms and conditions of transmission access clearer, thus facilitating the operation of interstate wholesale markets through information exchanges about transmission availability and pricing. Yet the states have historically established consumer-information standards for public utilities in general and electric utilities in particular. State licensing requirements are one vehicle states could use to regulate out-of-state providers and their interaction with in-state customers and prospective customers. Any company seeking to do business within a particular state would have to abide by the state's customer-information standards as one condition of acquiring a license to do business there. It is difficult to determine whether states will use licensing requirements, or other means, to regulate provider conduct. The service rules considered in Wisconsin and the recommendations of California's Direct Access Working Group are useful points of departure for other states. State legislatures could also empower state PUCs or attorney generals (or both) to develop and enforce consumer-information standards.

Should a federal role in consumer-information policy be desired, however, the funding requirements would not be substantial. Federal resources would be needed to design and implement the standards and to monitor compliance to ensure that the standards are met. These requirements could be met by existing agencies, perhaps with only modest increases in resources. Federal action could also involve a request that states consider consumer-information standards as part of restructuring.

### **Implementation Issues**

Federal expertise is considerable in both electricity regulation and consumer protection. FERC, DOE, and perhaps other agencies, such as the Department of Justice, understand the operation

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<sup>14</sup>Some might argue for an industry rather than a government role in setting consumer information standards, perhaps citing the reliability standards set by the electricity industry through the North American Electricity Reliability Council as an example. Where the establishment of standards primarily benefits suppliers or suppliers and consumers, as is the case with electricity reliability standards, then industry may be expected to act. Consumer information standards primarily benefit consumers, however, thus blunting the motivation(s) for suppliers to take collective action. The securities industry has developed certain information standards, but only long after the federal government took action. The telecommunication, banking, and insurance industries have not voluntarily established consumer information standards; we see no motivation for a restructured electricity industry to respond differently than these industries.

and structure of the existing industry and are aware of proposals about the future electricity industry. The Federal Trade Commission (FTC) has substantial experience dealing with rules of market conduct and consumer-protection issues, but this agency has no substantial experience with the electricity industry.

The FTC is a candidate agency to design, implement, and monitor information standards. This policy would not require a unique funding mechanism, although the FTC may need additional staff resources to undertake and enforce this effort. The policy's costs include the costs of compliance by service providers and the government's costs of designing and enforcing the standards. As discussed above, the policy's benefits include improved consumer information and market operation.

## **HEALTH AND SAFETY POLICIES**

Customer health and safety protections in the electricity industry have two major thrusts. The first—safety standards for appliances, utility equipment (e.g., meters and distribution lines connecting customers to the local network), and building wiring—are addressed by federal, state, or local government regulations or industry standards. Most of these standards will be unaffected by industry-restructuring proposals. An exception may be standards for certain utility equipment, primarily customer meters. Here the issue will be one of responsibility rather than of the need for continued enforcement of applicable safety standards. We do not examine this narrower issue here.<sup>15</sup>

The second important set of customer health and safety protections directly addresses disconnection and service policies. These policies define the circumstances under which a utility can stop serving customers and the terms for initiating or maintaining service. These terms address the need for establishing the customer's credit worthiness and the use of customer deposits to secure service. States with disconnection policies set them to protect consumers. The policies are designed to prohibit or restrict a utility's actions to terminate service when the health and safety of residential customers would be jeopardized. While all customer classes are subject to disconnection and the total amount of uncollected debt includes all customers, evidence suggests that low-income customers contribute disproportionately to these uncollected revenues (Quaid and Pigg 1991).

Brockway and Sherman (1996) summarize disconnection and credit policies in 49 states (including the District of Columbia) as of 1994. Provisions regulating customer disconnections exist in 48 of these states. Only New Mexico appears to have no formal provisions governing disconnection. Most disconnection policies are based on seasonal (e.g., no disconnections between December 1 and March 31), weather (e.g., no disconnections when outdoor temperatures are at or below freezing), or customer-health (e.g., no disconnections if the health

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<sup>15</sup>A decrease in the reliability of the electricity generation and delivery system would also have implications for customer health and safety. Maintaining system reliability is a central concern of restructuring proposals.



of any occupant would be jeopardized) considerations. Of the policies Brockway and Sherman reviewed, 26 are primarily based on seasonal or temperature considerations, 9 are primarily health based, and 10 use a combination of the seasonal/temperature and health-based factors. The remaining states with policies use other considerations.

The rigor of these policies differs by state. Florida only restricts disconnections on weekends and holidays, for example. Pennsylvania utilities cannot disconnect residential customers between December 1 and March 21 without the permission of the state PUC. California utilities cannot disconnect residential customers at any time if customer health is at issue. Several states require utilities to negotiate payment plans with low-income customers in lieu of disconnecting service during cold weather.

Only four states set no limits on customer credit terms or deposits. The remaining states enforce provisions that govern when utilities can request deposits, when deposits must be returned to customers, and what interest payment is due to customers.

A federal policy on health and safety for residential electricity customers could require states to consider a prohibition on any disconnection of electricity service that jeopardizes customer health or safety or directly prohibit such disconnections. Such policy, whether considered at the state level or implemented nationally, could include the following provisions:

- ▶ conditions for disconnection that are tied to a season or temperature or when the health of any occupants is at risk;
- ▶ directions to electric companies to include different options for payment when disconnection notices or warnings are sent to residential customers; and
- ▶ guidelines on the terms and conditions for initiating or resuming service that electric companies set.

### **Policy Issues**

Competitive businesses are generally free to decide when to discontinue service to specific customers. The concern motivating this policy is that competitive generation providers in a restructured electricity industry will push for the same freedom and that the result will be an increase in disconnections that threatens the health and safety of low-income customers. Traditional regulation of vertically integrated electric utilities permits the costs of disconnection prohibitions or restrictions to be recovered from other customers. Competitive generation markets will not tolerate such cost shifting. As a result, the market itself is unlikely to place limits on disconnections related to such customer issues as health and safety. Generation costs differ by utility, but averaged about 66% of total costs in 1994 (Baxter, Hadley, and Hirst 1996). Thus, that portion of the industry moving towards a more competitive market structure is also the largest share of most customer's electricity rate. Payment problems may be more likely for generation services than for other electricity services.

The objective of this policy is to prohibit the termination of electricity service whenever doing so jeopardizes the health or safety of low-income customers. Combining a prohibition with a requirement that electric companies develop payment options for customers facing disconnection also implies an objective of prohibiting termination because of a temporary financial difficulty by the customer.

The case for a federal role is not clear. An argument for federal action begins by noting that government is endowed with a basic obligation to protect citizens. Government actions to provide safety include the creation of military and police forces, a coast guard, and a national weather service, among other actions. Government also has an interest in the health of its citizens, as evidenced by the broad array of public-health laws aimed primarily at disease prevention and consumer protection and by such programs as Medicare and Medicaid that deliver direct health services. Prohibiting disconnection of electricity service when the health or safety of customers is threatened is consistent with the government's larger role to protect citizens. This policy is also consistent with the view that electricity is an industry affected with the public interest that is a vital part of the nation's economy and infrastructure (Phillips 1993). As a result, the electricity industry has historically been subject to different legislative and regulatory policy treatment than many other industries.

As we noted previously, almost all states have some provisions governing service disconnection. States will need to revisit these policies as industry restructuring moves forward. For example, states may need to redirect provisions to distribution companies (i.e., the new state-regulated utility) or broaden them to include generation companies and other retail service providers. Six of the eight state plans that we reviewed explicitly discuss the need to maintain or recast existing disconnection policies.

Of course, the observation that most states already have disconnection policies begins an argument against a federal role. A federal policy may not be needed if existing state policies are adequate; evidence suggests that states recognize the need to review these policies as the electricity industry changes. A federal policy on disconnections is not consistent with the current federal stance that leaves states with responsibility for retail electricity matters. This observation is particularly true with any federal policy to specify the terms and conditions governing such issues as customer deposits.

Nevertheless, a federal policy on health and safety shares at least one motivation with the largest federal program on low-income energy. LIHEAP began in part out of the concern that residential heating needs could not be met because of income constraints. Ultimately, the case for a federal role depends on two considerations. First, will states with effective or sufficient disconnection policies maintain or weaken these policies? Second, will customers be harmed in those states with ineffective or insufficient policies or no policy at all?

Evidence from our review of state restructuring plans suggests that states will maintain or strengthen disconnection policies. This evidence is limited by not being drawn from a representative sample of states, however. Based on a national study for 1990, the disconnection

rate for residential customers because of nonpayment was 4.1% (DHHS 1992). Rates in the Midwest (6.2%) and South (6.0%) were about three times higher than in the Northeast (2.1%) and West (1.7%). DHHS suggests that these regional differences could be related to disconnection policies. At the time of the study, all states in the Northeast and West had disconnection policies, which was not the case in the Midwest and South. These disconnections no doubt resulted in costs to the affected households, but the study did not address the health or safety consequences of these disconnections. Burns et al. (1995) supports the observation that customer disconnections for nonpayment are higher in the South, possibly because of fewer disconnection moratoria there. If states eliminated or substantially weakened all disconnection policies, a risk to public health and safety could develop.

A federal policy would not require creation of a large federal government program or substantial new funds. The policy's costs could be imposed on generation providers, for example. The alternatives are seeking program funds from general tax revenues or instituting a federal electricity surcharge for health and safety. The federal government may need a small number of staff to monitor state compliance with the federal policy, but this monitoring function need not be permanent. Staffing needs would increase if the federal government undertook monitoring, implementation, and enforcement of the policy, particularly regarding the compliance by individual generation or distribution companies. Some analysts argue that the costs utilities incur to collect customer debt and, failing collection, to disconnect and then reconnect customers, exceeds the debt cost (Colton 1996a). Thus, utilities may benefit from reduced costs when effective health and safety programs are implemented.

### **Implementation Issues**

The federal government has little specific expertise with this aspect of electricity regulation. Several agencies are candidates to implement and administer this policy, including FERC, DOE, DHHS, and the Department of Justice. The federal government's role in implementing and administering this policy need not be large, particularly if states take the lead role. Thus, no new federal funding mechanism would be required for this policy.

The direct costs of the policy include uncollected revenues from customers that would otherwise be disconnected and the costs borne by providers to comply with the policy. Indirect costs include slightly higher electricity prices, reflected as a decrease in consumer welfare. The benefits include reductions in disconnection costs for distribution companies, reductions in health impacts to affected households, and reductions in structural damage to the dwelling caused by inoperable conditioning equipment.

### **ANTI-REDLINING POLICIES**

Colton (1995) defines redlining as a form of geographic discrimination in which a company either refuses to serve, or to serve on equal terms, an area that is defined primarily by racial or socioeconomic characteristics. Certain of these racial or socioeconomic characteristics are

correlated with household income; thus, geographic areas subject to redlining are frequently inhabited by a greater proportion of low-income households than the area outside the red lines.

Redlining has generally not been a problem among electric utilities or nonutility generators. The only major exception in this century is rural electrification, which required federal initiatives to bring electricity service to certain remote, less accessible, or otherwise insular areas. Redlining has emerged as an issue in banking, insurance, and telecommunications. Certain consumer advocates are concerned that a competitive electricity industry will also be associated with redlining (e.g, Brockway and Sherman 1996; Colton 1996b).

Colton (1995) lists several potential actions that could constitute redlining in a competitive electricity industry:

- ▶ refusal to serve particular geographic areas, such as low-income areas;
- ▶ territorial pricing in which prices differ by location<sup>16</sup>;
- ▶ lack of infrastructure development, such as when a company refuses to provide equipment or facilities that would lead to expanded services or higher quality services; and
- ▶ differences in the level and type of services by location, such as installing prepayment meters in low-income areas.

Colton (1995) recommends several policy initiatives to address the potential for a more competitive electricity industry to engage in redlining.

- ▶ Disclosure: Market participants providing retail electricity services should be required to develop and disclose data that will identify redlining practices. Colton recommends the Home Mortgage Disclosure Act of 1975 as a model for the electricity industry. This act requires depository institutions to report annually the number and dollar amount of mortgage loans on residential property by geographic area, such as census tract or metropolitan statistical area (Home Mortgage Disclosure Act of 1975).
- ▶ Licensing conditions: States can require prospective market participants to obtain a license from the state. Granting of the license could be based, at least in part, on the redlining practices of the applicant. This license would be subject to periodic renewal.
- ▶ Prohibiting discrimination: The state or federal government could adopt a policy of nondiscriminatory access to and availability of electricity services. Colton recommends using TA 96 as a model for the electricity industry; that is, it should be unlawful for any electric service provider to refuse to provide access to or to deploy retail electricity services with the purpose or effect of discriminating on the basis of race, national origin, income, or residence in a rural area.

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<sup>16</sup>Even in a well functioning competitive market, electricity prices will almost certainly differ by location because of resource availability, transmission constraints, environmental-compliance costs, customer density, and customer demand patterns, to name just a few influences. Regional differences in electricity prices, without examining the cause of these differences, is not sufficient evidence of redlining.

- ▶ Incentives and promotion: Government can provide tax credits for companies that serve low-income communities. In addition, government can promote the formation of community energy-development institutions that could finance or deliver a variety of energy services to low-income households.

The discussion on policy issues for redlining deals with each of these initiatives separately, except for licensing. Licensing is clearly a state issue and does not require federal action. One question for states is how to evaluate license applications in the manner suggested by Colton when firms are unlikely to have a history of discriminatory service behavior (or an opportunity to exhibit such behavior).

### **Policy Issues**

The primary issue of concern is that competitive firms will attempt to serve the most profitable market segments. Competitive firms will pursue less profitable segments with reduced vigor and will not willingly serve unprofitable market segments. Low-income households may define one of these less profitable or unprofitable market segments. A corollary concern is that competitive firms will not provide the same level of service to different areas, or will provide the same service but at different prices that may or may not reflect different costs.

We note that an effective universal-service policy implemented by state or federal governments will address major consequences of the potential redlining actions Colton (1995) discusses. Universal service will defuse concerns about refusal to provide generation service. An effective universal-service policy will ensure that every residential consumer has at least one generation provider offering service at affordable prices.

Concerns about territorial pricing may be misplaced in a restructured electricity industry, at least for generation service (see also Footnote 16). Generation costs are more sensitive to the timing and level of customer demand than to customer location. In addition, electrons are substitutable from the customer's perspective. For many, the actual generation provider will be less important than the offered price.<sup>17</sup> Transmission and distribution costs are related to customer density and the distance of customer load centers from generation, however. This could lead to cost-based differences in rates for these services between geographic areas. Of course, transmission and distribution rates and services will continue to be regulated for the foreseeable future. Federal and state regulators can exercise the oversight necessary to ensure that redlining of transmission and distribution services does not develop.<sup>18</sup>

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<sup>17</sup>Customers interested in supporting specific generating technologies, such as hydro, wind, or biomass, are an exception here.

<sup>18</sup>We raise but do not address the question of whether the geographic averaging of telecommunication services envisioned by TA 96 is appropriate for a restructured electricity industry. The averaging of transmission and distribution service is common in vertically integrated utilities. A universal service policy may also seek to continue this averaging for low-income households in insular areas, but deaveraging may be appropriate for middle- and upper-income households and businesses in rural areas.

In a restructured electricity industry, certain retail services would appear to have greater potential for redlining than generation, transmission, and distribution. Examples of these services include metering, billing, customer credit standards, account deposit requirements, and other services (e.g., aggregating loads and energy efficiency). The extent to which redlining becomes a problem depends on which services are vested with a distribution company that continues to be regulated and which become unregulated services offered by retail companies or unregulated distribution companies.

The potential for redlining (and other consumer fraud and abuse) probably increases the more retail services that are unbundled. Retail-service providers will be more interested in serving affluent communities than poor communities. In addition, if metering is unbundled, some retail providers may refuse to serve poor neighborhoods on the grounds of employee safety. Complete unbundling may allow marketers to rebundle services so their customers would not pay any charges directly to the local distribution utility. Instead, marketers would directly compensate the distribution utility for the cost of serving these customers. This level of unbundling could affect the ability of regulators to monitor and address redlining and other practices of consumer abuse. Any federal role on redlining will be complicated by the diversity of state decisions on retail unbundling.

The federal government could adopt a disclosure policy that would apply to retail providers operating in states with unbundled retail services. States could supplement these federal efforts with licensing processes and conditions that consider redlining issues. Disclosure requirements may not be particularly meaningful for generation providers that sell into a power pool or exchange. Retail-service companies and generation companies that make substantial sales through bilateral contracts are better candidates for disclosure, although such contracts may be more prevalent with larger customers. The case for a federal role is unclear. A disclosure policy anticipates a problem that is not yet evident, although redlining has been found in other industries. A precedent for federal action exists in banking, for example. But unlike electricity, banking products are not commodities. Products provided by retail-service companies will not have commodity characteristics, which makes these companies better candidates for disclosure. In addition, all the state restructuring plans that we reviewed highlight the need to provide energy efficiency services (one element of retail service) to low-income customers. Should the federal government implement a disclosure policy, new funding requirements would be small for the staff needed to analyze the disclosure data.

The possibility for a federal role to prohibit discrimination in retail electricity service raises questions similar to those raised by disclosure. The case for state or federal action in this area depends on whether the industry has a universal-service policy, whether low-income energy efficiency programs are maintained by federal or state government, and the risk that electricity-service providers will not offer retail services to low-income or other customers.

For those states that do not unbundle retail services and commit to continuing energy efficiency programs for low-income customers, a specific antidiscrimination policy is probably not needed at this point. For states implementing or proposing retail unbundling, government action at the

federal or state level (or both levels) may be appropriate to reduce the likelihood of redlining and other abuses.

Turning to Colton's (1995) fourth recommended policy, tax credits to promote offerings by retail-service companies to low-income customers may help to discourage discrimination. Tax credits may be useful if states scale back or do not offer low-income energy efficiency programs or if other energy services are otherwise unprofitable to offer. The state plans that we reviewed do not suggest a retreat from low-income energy programs, however. In addition, because states also have means to offer tax credits, the case for federal tax credits does not appear to be pressing at this time.

Redlining may occur in a restructured electricity industry. One option for the federal government is to allow states to consider retail choice but direct them to implement appropriate redlining policies if they unbundle retail services. Federal disclosure and antidiscrimination policies may be appropriate adjuncts to state efforts.

### **Implementation Issues**

Because the need for federal action on this issue is either not strong, not clear, or dependent on the actions taken by individual states, we do not discuss implementation issues.

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## CONCLUSIONS

Low-income energy services were first provided when the oil price shocks in 1973 and 1979 prompted investigators to examine the effects of rising energy costs on families. Early studies showed that low-income households spent a substantially greater share of income on energy purchases than did other households. Subsequent studies also indicated that low-income households either did not have access to or could not afford the energy efficiency services available to other households. In addition, low-income households spent more on electricity than for all other fuels combined; electricity expenditures required about 65% of their total household energy budget in 1993.

In the past two decades, policies to address these energy issues resulted in three major types of low-income programs: energy assistance, weatherization, and consumer protection. Energy-assistance programs attempt to reduce the amount of income that low-income households spend on energy. These programs typically offer payment assistance, rate or bill discounts, and special payment arrangements. Weatherization programs reduce household energy use and costs or increase energy efficiency. These programs offer energy-efficiency measures, limited building and equipment repair services, energy audits, and energy education. Finally, consumer-protection programs apply to all consumers, but many elements of these programs often have more important implications for low-income households. These elements include provisions governing universal service, customer disconnections, and customer payment problems.

Federal and state government policies play important roles in providing many of these low-income energy services. Total funding for these services in 1996 was at least \$1.8 billion. The federal contribution was about 60%, or \$1.1 billion, of this total. Estimating what portion of these federal funds was spent on electricity is difficult (see Appendix A), but our rough estimate is about \$300 million. The two major federal policy initiatives are LIHEAP, the nation's energy-assistance program, and DOE Weatherization, the nation's weatherization program. These two federal programs have focused historically on helping low-income households meet their heating needs. The affordability of electricity is an issue not recognized explicitly by any current federal program.

At least 43 states provide the remaining funding for energy assistance and weatherization programs from state and local taxes, utility ratepayers, and other sources. Ratepayer-funded programs, totaling at least \$336 million in 1995, are the largest single source of funds at the state level. The federal funds are fuel neutral; that is, they provide energy assistance and weatherization services regardless of the specific fuels used in the household. Certain state programs are also fuel neutral, but ratepayer-funded programs target specific fuels. For example, electricity ratepayers fund programs targeted at this fuel. Finally, states also provide consumer-protection programs.



Initiatives to restructure the U.S. electricity industry have at least four implications for low-income electricity policy. First, restructuring may affect the affordability of electricity. Restructuring proposals intend to make electricity more affordable, and this outcome would be favorable for low-income customers. However, restructuring does not ensure lower prices for low-income customers. That electricity currently constitutes the greatest share of total household energy costs underscores the importance of affordability. Second, low-income customers may lack the market power and financial resources needed to fully participate in restructured retail markets. Third, competitive pressures on utilities may lead to reductions in budgets for discretionary low-income programs. Even in states that commit to continue low-income programs, decisions must be made about which entities are responsible for administering and implementing these programs. Finally, a utility's obligation to serve, which is an important element of traditional regulation, must be revisited and possibly recast under a new industry structure.

### **GENERAL POLICY OPTIONS IN RESTRUCTURING INITIATIVES**

Four general policies have emerged to provide low-income electricity services in a restructured electricity industry: enlisting electricity suppliers, using public funding, promoting buyer aggregation, and removing market barriers. Each of the eight state restructuring plans that we reviewed discusses one or more of these options. All eight states envision using public funding to support future low-income programs. As our review illustrates, most states place the responsibility for continuing or creating low-income electricity services on electricity providers but collect the cost of the subsidy from electricity users. Most states recommend collecting this subsidy through a nonbypassable charge on retail electricity sales. The popularity of this policy stems from its relationship to existing electricity policy in many states and from its similarity to existing policies in other deregulated industries.

Important questions remain about how to implement such a surcharge and how to administer the public funds. Most proposals vest the distribution utility with the obligation to provide rate or bill discounts to low-income customers. Some states also call for publicly funded weatherization efforts to continue, but certain proposals are less clear about which entities will implement these programs. A few proposals also vest the distribution utility with this obligation. One state envisions utilities acting with local community action organizations to provide weatherization services.

Certain proposals discuss buyer aggregation, but none of the state plans that we reviewed either promote or prohibit buyer aggregation. Some policies that states are developing in other areas, such as consumer protection, may affect the ease with which aggregation could be achieved. One state's requirement that a change of electricity supplier must be accompanied by the customer's written permission could inhibit aggregation of small customers, for example.

Seven states explicitly recast the obligation to serve. New Hampshire and Pennsylvania recast this obligation through a universal-service policy. Massachusetts, Rhode Island, and Vermont

recast the obligation through a policy to provide basic service or a standard service offer. These latter three states then address affordability through separate low-income programs. The basic-service or standard-offer policies are designed to cover customers under three conditions: when customers choose not to select a supplier, when they are unable to acquire service, or when suppliers fail to provide service. Rhode Island and Vermont direct the distribution companies to use competitive-bidding processes to select the retail service company that will provide basic service.

Six states (Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island, and Vermont) discuss the concept of universal service or a provider of last resort. The universal service concept discussed by these six states has several common features. First, the motivation for universal service is to ensure that all customers have at least one choice of supplier. Second, the plans direct the distribution company to arrange for universal service. Third, electricity affordability is addressed through discounts or other policies. Finally, the costs of universal service, including any rate discounts, are funded through a nonbypassable charge on electricity use for all customers. The exceptions to this general funding mechanism are Rhode Island, which excludes low-income customers from this portion of the nonbypassable charge, and Vermont, which recommends either a general tax or a surcharge on major fuels to fund its proposed low-income programs.

Finally, customer-service protections are addressed in three states (New Hampshire, Vermont, and Wisconsin). Vermont and Wisconsin note a need for expanded or revised customer protections as the industry is restructured. These states vest the implementation of customer protections with the distribution company.

## **POSSIBLE FEDERAL ROLES AND OPTIONS**

We identified three alternative federal roles for low-income electricity policy. First, the federal government could continue a policy of providing funds for state low-income programs. This role is largely consistent with the current status and historical development of the federal government's approach to low-income energy policy. Current federal low-income energy programs are not targeted solely to the electricity industry. Instead, the federal programs primarily deal with all space-conditioning fuels. Administration of local low-income energy programs has historically been a state matter, as has the regulation of local electric companies. This role is also consistent with the more recent trend to transfer federal responsibility for certain policy issues, where appropriate, to the states. Maintaining current federal policy on low-income electricity services, however, may not be consistent with a federal initiative to require retail choice. If retail choice becomes a federal requirement, it may be desirable to change the federal government's low-income policy to be more consistent with either of the two other broad roles identified below.

Second, the federal government could request that states consider establishing some minimum levels of low-income services or that they explicitly consider a specific set of low-income issues

in developing a restructured electricity industry. At least two options are possible with this second role. In the first option, the federal government could make a general request that states consider low-income issues when developing restructuring proposals, leaving the details of these considerations to the states. Alternatively, the federal government could develop a set of more specific low-income issues that it asks states to consider. Under this alternative, states would be free to consider any additional issues they deemed necessary, but would, at a minimum, consider the issues identified at the federal level.

Third, the federal government could establish a new national policy on low-income electricity issues. A new national policy could take many forms, such as establishing minimum national standards for low-income services or defining a specific national policy mechanism to provide these services, or both. Several federal options are consistent with this role. We provide a few examples below:

- ▶ The federal government could support a policy of promoting universal access to affordable electricity service, providing energy efficiency services to low-income customers, and ensuring that the health and safety of low-income households are not jeopardized by service disconnections. One way to support such a policy would be to have the federal government raise funds and then redistribute these funds to states.
- ▶ The federal government could establish low-income electricity policy as part of a larger federal proposal to restructure the electricity industry. An important aspect of the larger proposal could be a federal mandate for an expeditious but orderly transition to retail choice (with or without a date certain), but with specific conditions. Among those conditions could be the need for states to address certain issues affecting low-income customers, such as any or all of the issues discussed in Chapter 5. Alternatively, the federal government could allow states to implement retail choice if they choose (i.e., no federal mandate for retail choice), but only if states adopt policies that address certain low-income issues.

The second and third roles represent departures from the current and historical federal approach to low-income energy services. These second and third roles may be justified should the federal government determine that a substantial portion of the low-income population would not otherwise have adequate access to electricity services in a restructured industry. These roles may also be justified should the federal government direct all states to implement retail choice.

Under these latter two broad federal roles, we examined five more specific federal policy options: universal service, electricity assistance, consumer information, health and safety, and anti-redlining. Before summarizing this discussion, two points are worth noting. First, taken individually and independently, the relevant question for the first four policy options is whether the federal or state government should establish the policy and not whether policy action can be justified. Some insight on future state actions may perhaps be gleaned from a historical review of state policies, which this report did not address. Second, a universal-service policy that addresses both access and affordability might serve the purposes that could otherwise be served by policies on electricity assistance and health and safety. It might also serve as a partial substitute for anti-

redlining measures. The potential for consumer abuses, such as redlining, will increase if retail services are unbundled from distribution. Federal or state action to unbundle services like billing and metering will increase the need for accompanying government action on redlining.

### **Universal Service**

A federal policy that addresses universal service may be justified if the federal government mandates retail choice in a restructured electricity industry. Our review indicates that alternatives to electricity are limited for certain end uses, primarily lighting, refrigeration, and cooling. A universal-service policy could be designed to replace the existing industry's obligation to serve. The federal government has established universal service in the telecommunications industry.

The federal government has at least four options on a universal service policy for electricity. First, the federal government could maintain its current policy, which would mean no direct federal action on universal service. This would allow each state to consider (or ignore) the need for universal electricity service. Second, the federal government could request that states consider the need for universal service. Third, the federal government could set universal service as a condition (or a standard) that states must meet to implement retail choice. This option would leave decisions about specific funding mechanisms and policy implementation with states. Finally, the federal government could play a role in funding universal service. This funding could be block grants or matching grants (or both) to states. Federal funds could come from general revenues or from the electricity system (e.g., service providers or users or both). Under either of these last two options, the federal government could convene a joint federal-state board to define the extent of universal service and make recommendations about funding mechanisms.

### **Electricity Assistance**

The need for federal electricity assistance depends on whether electricity affordability is a problem and on whether the states will address affordability in industry-restructuring plans. LIHEAP and DOE Weatherization are intended to address energy affordability for low-income customers. Federal initiatives to make residential natural gas markets more competitive have almost certainly contributed to lower prices for consumers. A similar outcome is anticipated for electricity markets, but future electricity prices are uncertain, particularly for smaller customers that currently lack sufficient market power to negotiate the most attractive terms for service. Even in the face of real price declines, affordability may continue to be a problem if income growth for low-income households stagnates.

Federal action and funding will not be needed if states provide sufficient electricity assistance through state mechanisms. State proposals that we reviewed demonstrate a willingness to at least maintain current levels of state assistance. Our review is not national in scope, however. Nor is it clear whether current funding levels are aligned with needs. The federal government and state governments have both played important roles in funding energy assistance. If electricity assistance is needed, then these two levels of government could continue to play important roles. The federal government could provide some assistance to every state, based on a needs

assessment. And states could be free to design programs to meet the specific needs of their low-income households and to augment federal with state funds if the state chooses. Alternatively, the federal government could play the sole funding role. Or the federal government could ask states to develop funding mechanisms to provide a level of electricity assistance sufficient to meet state needs. State funding may be particularly appropriate if assistance is provided through rate discounts on distribution service, which will continue to be regulated by states.

### **Consumer Information**

This policy's primary objective is to provide clear guidelines for advertising, service provision, and billing to promote the consumer's understanding of the terms and conditions of electricity service. Achieving this objective will, in principle, reduce transaction costs for small commercial and residential consumers, including low-income electricity consumers, and also facilitate well-informed consumer choices.

Consumer information policy addresses the types of information that electricity suppliers must display in advertising for services, communicating the terms and conditions of services, and billing for services. The key issue is whether there is a need for federal versus state action. The states have historically established consumer-information standards for public utilities in general and electric utilities in particular. In a restructured electricity industry, state licensing requirements are one vehicle states could use to regulate out-of-state providers and their interaction with in-state customers and prospective customers. It is difficult to determine whether states will use licensing requirements, or other means, to regulate provider conduct. The service rules being considered in Wisconsin and the recommendations of California's Direct Access Working Group are useful points of departure for other states. Thus, although information standards have benefits, a clear case for federally sponsored standards for retail-electricity consumers has not yet been demonstrated. Federal action could also involve a request that states consider consumer-information standards as part of restructuring.

### **Health and Safety**

Competitive businesses are generally free to decide when to discontinue service to specific customers. The concern motivating this policy is that competitive generation providers in a restructured electricity industry will push for the same freedom and that the result will be an increase in disconnections that threatens the health and safety of low-income customers. Traditional regulation of vertically integrated electric utilities permits the costs of disconnection prohibitions or restrictions to be recovered from other customers. Competitive generation markets will not tolerate such cost shifting. As a result, the market itself is unlikely to place limits on disconnections related to such customer issues as health and safety.

The need for action by the federal government is not clear. Prohibiting disconnection of electricity service when the health or safety of customers is threatened is consistent with the government's larger role to protect citizens. This policy is also consistent with the view that

electricity is an industry affected with the public interest that is a vital part of the nation's economy and infrastructure.

Almost all states have some provisions governing service disconnection. States will need to revisit these policies as industry restructuring moves forward. For example, states may need to redirect provisions to distribution companies (i.e., the new state-regulated utility) or broaden them to include generation companies and other retail-service providers.

That most states already have disconnection policies argues against the need for federal action. A federal policy may not be needed if existing state policies are adequate. Evidence suggests that states recognize the need to review these policies as the electricity industry changes. A federal policy on disconnections is also not consistent with the current federal stance that leaves states with responsibility for retail-electricity matters. Ultimately, the case for a federal role depends on whether states maintain effective disconnection policies. Evidence from our review of state restructuring plans suggest that states will maintain or strengthen disconnection policies. Clearly, if states eliminated or substantially weakened all disconnection policies, a risk to public health and safety could develop.

### **Anti-Redlining**

Redlining may occur in a restructured electricity industry, but the need for preemptory action by the federal government is unclear at this time. The risk from redlining is perhaps greater from retail-service providers than from other parts of the industry. For those states that do not unbundle retail services and commit to continuing energy efficiency programs for low-income customers, a specific federal antidiscrimination policy is probably not needed at this point. Additional benefits to low-income consumers would appear to be small. For states implementing or proposing retail unbundling, then government action at the federal or state level (or at both levels) may very well be needed to reduce the likelihood of redlining and other abuses. As a result, the federal government could request that states consider the possibility of redlining as part of their deliberations on industry restructuring and request that states take appropriate action to correct redlining if this practice emerges as the electricity industry is restructured.

In summary, protection of low-income electricity consumers remains an important public-policy concern in a restructuring U.S. electricity industry. Policies and programs are needed to ensure that low-income households have enough electricity at all times to protect their health and safety, that they have access to affordable electricity, that they are not preyed upon by unscrupulous suppliers, and that they do not experience unfair discrimination from electricity providers.

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## REFERENCES

- Alexander, B. 1996, "The Consumer Protection Agenda in the Electric Restructuring Debate," draft prepared for William A. Spratley & Associates, Winthrop, ME, May 31.
- Association for Investment Management and Research 1990, "Performance Presentation Standards," Charlottesville, VA, August 2.
- Baxter, L., S. Feldman, A. Schinnar, R. Wirtshafter 1986, "An Efficiency Analysis of Household Energy Use," *Energy Economics* 8: 62-73.
- Baxter, L., S. Hadley, and E. Hirst 1996, *Strategies to Address Transition Costs in the Electricity Industry*, ORNL/CON-431, Oak Ridge National Laboratory, Oak Ridge, TN.
- Bohi, D., and M. Zimmerman 1984, "An Update on Econometric Studies of Energy Demand Behavior," *Annual Review of Energy and the Environment*, Vol. 9: 105-54, J. Hollander, Ed., Annual Reviews Inc., Palo Alto, CA.
- Brockway, N., and M. Sherman 1996, *Stranded Benefits in Electric Utilities Restructuring*, Item #4118, National Council on Competition and the Electric Industry, Washington, D.C.
- Brown, M., L. Berry, R. Balzer, and E. Faby 1993, *National Impacts of the Weatherization Assistance Program in Single-Family and Small Multifamily Dwellings*, ORNL/CON-326, Oak Ridge National Laboratory, Oak Ridge, TN.
- Brown, M., M. Beyer, J. Eisenberg, E. Lapsa, and M. Power 1994, *Utility Investments in Low-Income Energy-Efficiency Programs*, ORNL/CON-379, Oak Ridge National Laboratory, Oak Ridge, TN.
- Burns, R., J. Beecher, M. Eifert, and Y. Hegazy 1995, *Alternatives to Utility Service Disconnection*, NRRI 95-07, The National Regulatory Research Institute, Columbus, OH.
- Byrne, J., C. McDonnell, F. Tannian, and Y. Wang 1986, "Equity and Efficiency Implications of Lifeline Electric Rates," *Proceedings of the ACEEE 1986 Summer Study on Energy Efficiency in Buildings*, Vol. 7: 7-19, American Council for an Energy-Efficient Economy, Washington, D.C.
- California Legislature 1996, *Assembly Bill 1890*, Sacramento, August 31.
- California PUC (Public Utilities Commission) 1995, *Decision 95-12-063 (December 20, 1995) as Modified by D.96-01-009 (January 10, 1996)*, Docket No. R.94-04-031, San Francisco.



California PUC 1997, *Interim Opinion on Public Purpose Programs—Threshold Issues*, Docket No. R.94-04-031, San Francisco, January 17.

Carroll, D., R. Donahey, and J. McBride 1990, "Trends in Energy Consumption and Expenditures for Low-Income and Minority Households from 1973–1985," *Proceedings from the Socioeconomic Energy Research and Analysis Conference: 73–93*, U.S. Department of Energy, Washington, D.C.

Colton, R. 1995, "Understanding 'Redlining' in a Competitive Electric Utility Industry," unpublished paper, Fisher, Sheehan & Colton, Belmont, MA, December.

Colton, R. 1996a, *Funding Fuel Assistance: State and Local Strategies to Help Pay Low-Income Energy Bills*, Flying Pencil Publications, Scappoose, OR.

Colton, R. 1996b, *Assessing Impacts on Small-Business, Residential and Low-Income Customers*, Item #4117, National Council on Competition and the Electric Industry, Washington, D.C.

Consumers First! Coalition 1997, *Proposal for Preservation of Public Energy Benefits in a Restructured Utility Industry*, Docket No. 05-BU-100, Wisconsin PSC, Madison, January 31.

Cooper, M., T. Sullivan, S. Punnett, and E. Berman 1983, *Equity and Energy: Rising Energy Prices and the Living Standards of Lower Income Americans*, Westview Press, Boulder.

DHHS (U.S. Department of Health and Human Services) 1992, *Low Income Home Energy Assistance Program, Report to Congress for Fiscal Year 1991*, Washington, D.C.

Direct Access Working Group 1996, "Design and Implementation of Direct Access Programs," submitted to the California PUC in response to Decision 96-03-022, Docket No. R.94-04-031, San Francisco, August 30.

Dubin, J. 1985, *Consumer Durable Choice and the Demand for Electricity*, North Holland, New York.

EIA (Energy Information Administration) 1995, *Household Energy Consumption and Expenditures 1993*, DOE/EIA-0321(93), U.S. Department of Energy, Washington, D.C.

EIA 1996, *Natural Gas Annual 1995*, DOE/EIA-0131(95), U.S. Department of Energy, Washington, D.C.

Energetics 1995, "Making Electricity Restructuring Work for Small Customers: A Preliminary Review of Fourteen 'Load Aggregation' Proposals," Energetics, Inc., Washington, D.C.

FERC (Federal Energy Regulatory Commission) 1996, Order No. 888, *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Docket Nos. RM95-8-000 and RM94-7-001, Washington, D.C., April 24.

Garbacz, C. 1983, "A Model of Residential Demand for Electricity Using a National Household Sample," *Energy Economics* 5: 124-28.

Hill, L. 1988, *Public Power in the U.S. Electric Utility Industry: Regulatory Issues and Comparative Financial Indicators Across Ownership Types*, ORNL/TM-10497, Oak Ridge National Laboratory, Oak Ridge, TN.

Hirst, E., R. Goeltz, and J. Carney 1982, "Residential Energy Use: Analysis of Disaggregate Data," *Energy Economics* 4: 74-82.

*Home Mortgage Disclosure Act of 1975*, Public Law No. 94-200, 89 Stat. 1125.

Kahn, A. 1996, "Two Decades of Deregulation in the United States," 17th Annual North American Conference of the U.S. Association for Energy Economics, Boston, October 28.

King, J. 1975, *The Impact of Energy Price Increases on Low Income Families*, PB-262 098, U.S. Federal Energy Administration, Washington, D.C.

Low Income Concerns 1997, *Low Income Concerns Proposal*, Docket No. 05-BU-100, Wisconsin PSC, Madison, January 28.

Low-Income Working Group 1996, "Low-Income Working Group Report," submitted to the California PUC in response to Decision 96-03-022, Docket No. R.94-04-031, San Francisco, October 1.

Lutzenhiser, L. 1993, "Social and Behavioral Aspects of Energy Use," *Annual Review of Energy and the Environment*, Vol. 18: 247-89, R. Socolow, Ed., Annual Reviews Inc., Palo Alto, CA.

Massachusetts DPU (Department of Public Utilities) 1996, *Electric Industry Restructuring Plan: Model Rules and Legislative Proposal*, D.P.U. 96-100, Boston, December 30.

Morrison, B., and P. Gladhart 1976, "Energy and Families: The Crisis and the Response," *Journal of Home Economics* 68: 15-18.

Morrison, B., J. Keith, and J. Zuiches 1979, "Impacts on Household Energy Consumption: An Empirical Study of Michigan Families," *Sociopolitical Effects of Energy Use and Policy*: 7-73, C. Unseld et al., Eds., National Academy of Sciences, Washington, D.C.

National Association of Regulatory Utility Commissioners 1995, "Resolution on the Impact of Electric Industry Restructuring on Low-Income Residential Consumers," Washington, D.C., July 26.

New Hampshire Legislature 1996, *House Bill 1392*, Concord, May 21.

New Hampshire PUC (Public Utilities Commission) 1997, *Restructuring New Hampshire's Electric Utility Industry: Final Plan*, DR 96-150, Concord, February 28.

Newman, D., and D. Day 1975, *The American Energy Consumer: A Report to the Energy Policy Project of the Ford Foundation*, Ballinger, Cambridge, MA.

New York PSC (Public Service Commission) 1995, *Recommended Decision by Administrative Law Judge Judith A. Lee and Ronald Liberty*, Vol. I, Case 94-E-0952, Albany, December 21.

New York PSC 1996, *Opinion No. 96-12 in the Matter of Competitive Opportunities Regarding Electric Service*, Cases 94-E-0952 et al., Albany, May 20.

New York PSC 1997, *Order Modifying Procedure*, Cases 94-E-0952 et al., Albany, February 6.

Office of Ratepayer Advocates 1996, "Demand-Side Management Expenditures and Cost Effectiveness: Trends and Patterns 1988 - Current," California PUC, San Francisco, December.

Ohio Electric Roundtable Conference 1996, "Components of Universal Service," Note No. 41.1, Ohio PUC, Columbus, June 5.

Pennsylvania General Assembly 1996, *House Bill No. 1509* (Senate Amended), Harrisburg, November 20.

Perlman, R., and R. Warren 1977, *Families in the Energy Crisis: Impacts and Implications for Theory and Policy*, Ballinger, Cambridge, MA.

Phillips, C., Jr. 1993, *The Regulation of Public Utilities*, 3rd ed., Public Utilities Reports, Inc., Arlington, VA.

Podesta, M. 1990, "Performance Advertising Under the Investment Advisers Act of 1940," unpublished paper, U.S. Securities and Exchange Commission, November 19.

Public Benefits Alliance 1997, *Delivery of Public Energy Benefits*, Docket No. 05-BU-100, Wisconsin PSC, Madison, January 31.

Quaid, M., and S. Pigg 1991, "Measuring the Effects of Low-Income Energy Services on Utility Customer Payments," *Proceedings of the 1991 International Energy Program Evaluation*

*Conference: 144-51, Department of Energy, CONF-910807, National Program Evaluation Conference, Evanston, IL.*

Rabago, K., D. Jaussaud, and S. Benenson 1992, "An Alternative Framework for Low-Income Electric Ratepayer Services," unpublished paper, Public Utility Commission of Texas, Austin.

Rhode Island Legislature 1996, *Chapter 316, 96-H 8124B*, Providence, August 7.

Schwartz, D., and B. True 1990, "What Households Do when Electricity Prices Go Up: An Econometric Analysis with Policy Implications," *Proceedings of the ACEEE 1990 Summer Study on Energy Efficiency in Buildings*, Vol. 2: 121-30, American Council for an Energy-Efficient Economy, Washington, D.C.

*Telecommunications Act of 1996*, Public Law No. 104-104, 110 Stat. 56.

Tonn, B., E. Hirst, and D. Bauer 1995, *Public-Policy Responsibilities in a Restructured Electricity Industry*, ORNL/CON-420, Oak Ridge National Laboratory, Oak Ridge, TN.

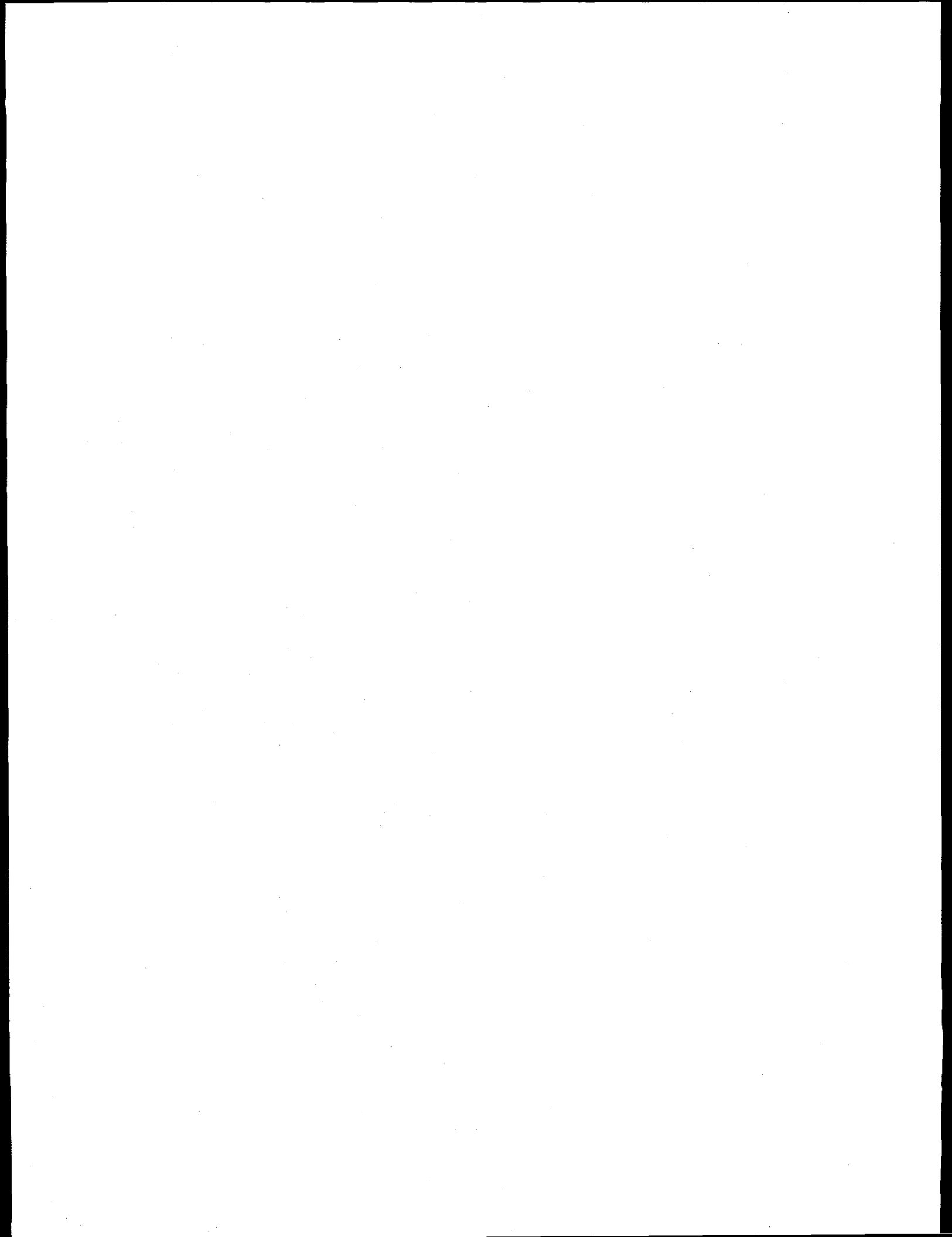
Vermont Public Service Board 1996, *The Power to Choose: A Plan to Provide Customer Choice of Electricity Suppliers*, Docket No. 5854, Montpelier, December 31.

Vine, E., and I. Reyes 1990, "Residential Energy Consumption and Expenditure Patterns of Low-Income Households in the United States," *Proceedings from the Socioeconomic Energy Research and Analysis Conference: 134-88*, U.S. Department of Energy, Washington, D.C.

Wisconsin Gas Company 1997, *Public Benefits Proposal*, Docket No. 05-BU-100, Wisconsin PSC, Madison, January 31.

Wisconsin PSC (Public Service Commission) 1996, *Report to the Legislature on Electric Industry Restructuring*, Madison, February 22.

Wisconsin PSC Staff 1996, "Proposed Revision of Chapter PSC 113, Wisconsin Administrative Code - Service Rules for Electric Utilities," Madison, September 17.



## RECENT FUNDING ESTIMATES

Table A-1. Funding (thousands of \$) for low-income energy services by state<sup>a</sup>

State	LIHEAP	DOE WX	Leveraged Funds			Total	State Totals
			States	Utilities	Other		
Alabama	9,030	1,181	0	3,145	2,378	5,523	15,734
Alaska	3,837	836	7,965	0	0	7,965	12,638
Arizona	4,080	664	454	3,489	160	4,103	8,847
Arkansas	6,926	1,014	0	0	219	219	8,159
California	48,362	3,101	0	70,849	9,185	80,034	131,497
Colorado	16,978	2,673	3,401	2,538	911	6,850	26,501
Connecticut	22,148	1,232	9,602	8,112	1,828	19,542	42,922
Delaware	2,940	283	0	83	227	310	3,533
District of Columbia	3,440	318	0	1,619	0	1,619	5,377
Florida	14,355	974	0	0	574	574	15,903
Georgia	11,355	1,425	n/a	n/a	n/a	n/a	12,780
Hawaii	1,144	98	n/a	n/a	n/a	n/a	1,242
Idaho	6,513	967	52	274	433	759	8,239
Illinois	61,302	6,808	111	6,138	1,535	7,784	75,894
Indiana	27,749	3,216	404	0	1,455	1,859	32,824
Iowa	19,671	2,440	n/a	n/a	n/a	n/a	22,111
Kansas	9,022	1,242	n/a	n/a	n/a	n/a	10,264
Kentucky	14,444	2,223	216	0	520	736	17,403
Louisiana	9,278	853	n/a	n/a	n/a	n/a	10,131
Maine	13,826	1,496	227	5,814	1,578	7,619	22,941
Maryland	16,959	1,303	8,397	5,161	3,640	17,198	35,460
Massachusetts	44,293	3,219	1,454	38,584	2,422	42,460	89,972
Michigan	57,975	7,466	547	18,247	5,221	24,015	89,456
Minnesota	41,931	4,841	3,342	5,077	1,154	9,573	56,345
Mississippi	7,769	808	0	75	633	708	9,285
Missouri	24,487	2,961	0	0	1,488	1,488	28,936
Montana	6,592	1,246	0	1,472	257	1,729	9,567
Nebraska	9,729	1,224	n/a	n/a	n/a	n/a	10,953
Nevada	2,062	398	5	50	945	1,000	3,460
New Hampshire	8,386	731	1,575	785	525	2,885	12,002
New Jersey	41,026	2,501	72,729	14,343	104	87,176	130,703
New Mexico	5,084	950	n/a	n/a	n/a	n/a	6,034
New York	134,023	9,840	116,786	8,424	855	126,065	269,928
North Carolina	19,660	2,036	0	162	2,612	2,774	24,470
North Dakota	7,335	1,236	0	0	300	300	8,871
Ohio	54,231	6,698	5,728	20,399	1,465	27,592	88,521
Oklahoma	7,700	1,276	0	1,441	0	1,441	10,417
Oregon	13,039	1,377	0	2,491	1,068	3,559	17,975
Pennsylvania	72,135	7,263	4	85,121	6,162	91,287	170,685
Rhode Island	7,265	569	0	1,307	323	1,630	9,464
South Carolina	7,209	870	0	0	316	316	8,395
South Dakota	5,637	938	74	0	408	482	7,057

State	LIHEAP	DOE WX	Leveraged Funds				State Totals
			States	Utilities	Other	Total	
Tennessee	14,631	2,048	18	0	435	453	17,132
Texas	23,893	2,729	n/a	n/a	n/a	n/a	26,622
Utah	7,730	1,037	0	165	178	343	9,110
Vermont	6,285	630	3,086	0	195	3,281	10,196
Virginia	20,657	1,963	0	117	1,266	1,383	24,003
Washington	20,799	2,210	4,060	9,696	2,878	16,634	39,643
West Virginia	9,559	1,569	0	3,746	120	3,866	14,994
Wisconsin	37,744	4,207	5,307	16,798	1,538	23,643	65,594
Wyoming	3,159	581	0	0	127	127	3,867
Total	1,045,384	109,769	245,544	335,722	57,638	638,904	1,794,057

<sup>a</sup>These numbers include expenditures for electricity and all other fuels. In addition, these numbers were gathered from disparate sources and may not be directly comparable. Estimates for LIHEAP and DOE Weatherization (DOE WX) are for 1996; estimates for leveraged funds are for 1995. The LIHEAP estimates are net of allotments to Indian tribes. Estimates for leveraged funds do not include data from eight states (i.e., n/a means not available). Leveraged funds may not include all state-level expenditures on low-income energy programs.

Sources:

LIHEAP: J. Fox, U.S. Department of Health and Human Services, September 2, 1996.

DOE Weatherization: J. Jakopic, National Association for State Community Service Programs, January 14, 1997.

Leveraged Funds: K. Joslin, National Center for Appropriate Technology, December 10, 1996.

**Table A-2. Low-income energy funding per eligible low-income household by state<sup>a</sup>**

State	Low-Income Households: State Criteria <sup>b</sup> (thousands)	Total \$ per Household	Low-Income Households: Federal Criteria <sup>c</sup> (thousands)	Total \$ per Household <sup>d</sup>
Alabama	435	36	535	29
Alaska	33	383	49	258
Arizona	388	23	433	20
Arkansas	174	47	300	27
California	2,192	60	3,252	40
Colorado	126	210	288	92
Connecticut	212	202	374	115
Delaware	49	72	80	44
District of Columbia	65	83	86	63
Florida	1,160	14	1,584	10
Georgia	402	32	743	17
Hawaii	78	16	102	12
Idaho	80	103	107	77
Illinois	667	114	1,171	65
Indiana	205	160	481	68
Iowa	214	103	277	80
Kansas	139	74	311	33
Kentucky	248	70	401	43
Louisiana	489	21	479	21
Maine	72	319	114	201
Maryland	282	126	540	66
Massachusetts	480	187	752	120

State	Low-Income Households: State Criteria <sup>b</sup> (thousands)	Total \$ per Household	Low-Income Households: Federal Criteria <sup>c</sup> (thousands)	Total \$ per Household <sup>d</sup>
Michigan	937	95	972	92
Minnesota	242	233	460	122
Mississippi	263	35	327	28
Missouri	217	133	468	62
Montana	87	110	89	107
Nebraska	104	105	160	68
Nevada	122	28	162	21
New Hampshire	75	160	107	112
New Jersey	488	268	905	144
New Mexico	185	33	223	27
New York	1,743	155	2,286	118
North Carolina	401	61	728	34
North Dakota	59	150	69	129
Ohio	826	107	1,138	78
Oklahoma	231	45	369	28
Oregon	151	119	277	65
Pennsylvania	783	218	1339	127
Rhode Island	88	108	124	76
South Carolina	281	30	452	19
South Dakota	61	116	69	102
Tennessee	446	38	550	31
Texas	1,405	19	1,973	13
Utah	60	152	129	71
Vermont	30	340	61	167
Virginia	367	65	671	36
Washington	369	107	580	68
West Virginia	152	99	230	65
Wisconsin	282	233	395	166
Wyoming	33	117	57	68
Total	18,678	96	27,829	64

<sup>a</sup>Expenditure levels per eligible low-income household (third and fifth columns, Table A-2) are developed by dividing the state totals (last column, Table A-1) by the two different estimates of eligible households (second and fourth columns, Table A-2).

<sup>b</sup>State eligibility criteria may be set largely at the discretion of each state's LIHEAP office. The primary federal requirement is that states must set the minimum eligibility standard at 110% of the federal poverty level.

<sup>c</sup>Federal eligibility criteria are the greater of 150% of the federal poverty level or 60% of a state's median income.

<sup>d</sup>These are the estimates used to construct Figure 4.

Sources:

Low-income households by state: D. Carroll, Response Analysis Corporation, March 10, 1997.



## National Estimate of Funding for Low-Income Electricity Services

Estimating the amount of low-income energy funding that supports electricity services is difficult for several reasons. Federal, state, and some other low-income energy programs do not necessarily track program expenditures for specific fuels. Utility programs are generally fuel-specific, but we are not aware of any national data on utility expenditures for low-income energy assistance, weatherization, and arrearage measures by fuel type. Weatherization measures that improve the efficiency of the building shell will affect heating and cooling (when present) energy use. Because heating and cooling are often provided by different fuels, this effect further complicates the allocation of program expenditures to specific fuels. Finally, energy assistance delivered through vouchers or direct payments to low-income households may not be used to defray expenses for the "intended" fuel (indeed, these payments may not be used for energy).

With these caveats in mind, we developed a very rough estimate of the amount of national funding for low-income energy services that may be spent on electricity. We estimate that about 29% (\$300 million) of LIHEAP's 1996 budget to states (\$1,045 million) may have gone to electricity. We estimate that about 10% (\$10 million) of DOE Weatherization's 1997 budget to states (\$110 million) may have gone to electricity. Thus, of the \$1,155 million in federal monies provided for low-income energy programs, perhaps about \$310 million were spent on electricity. We emphasize that this is a very rough estimate; the relevant assumptions are detailed below.

Estimating the amount of leveraged funds devoted to electricity is even more uncertain. Short of conducting a state-specific analysis, we do not know of any accurate way to estimate the amount of leveraged funds spent on electricity. We guess that the actual amount probably lies between 10% and 50% of the total. For 1995, this suggests that somewhere between about \$60 million and \$320 million of the leveraged funds were spent on electricity.

Thus, of the roughly \$1.8 billion provided for low-income energy programs in 1995 and 1996, perhaps about \$400 million to \$600 million were spent on electricity.

**Electricity Estimates for the Low-Income Home Energy Assistance Program.** The LIHEAP budget is allocated to many uses, but the dominant uses are energy assistance in the form of heating, cooling, crisis assistance, and weatherization benefits. Approximately 6% of the 1995 budget went to cooling benefits (D. Carroll, Response Analysis Corporation, personal communication, March 18, 1997). About 71% of the 1995 budget went to heating benefits and heating crisis assistance in 1995 (L. Litow, Department of Health and Human Services, personal communication, February 7, 1997). We assume these percentages hold for 1996. Thus, of the 77% of the budget that pays for direct energy assistance, about 6% is allocated to cooling. We assume that the remaining 23% of the budget (which is allocated to weatherization, administrative costs, and other costs) is allocated to cooling in this same percentage (i.e., 6% out of 77%). Thus, we estimate that about 2% of the remaining LIHEAP budget is allocated to cooling.

As a result, we estimate that about 92% (\$961 million) of the total LIHEAP allocation to states goes to heating and the remainder, 8% (\$84 million), goes to cooling. We assume that all the

cooling expenditures are for electricity. Further, about 28% of LIHEAP-eligible households used electricity as their major heating fuel in 1993 (L. Litow, Department of Health and Human Services, personal communication, December 19, 1996). Thus, we assume that about 28% of the heating expenditures are for electricity. We adjust our estimate to reflect that, on average, low-income households heating with electricity have lower heating costs (\$302) than low-income households overall (\$371) (D. Carroll, Response Analysis Corporation, personal communication, March 18, 1997).

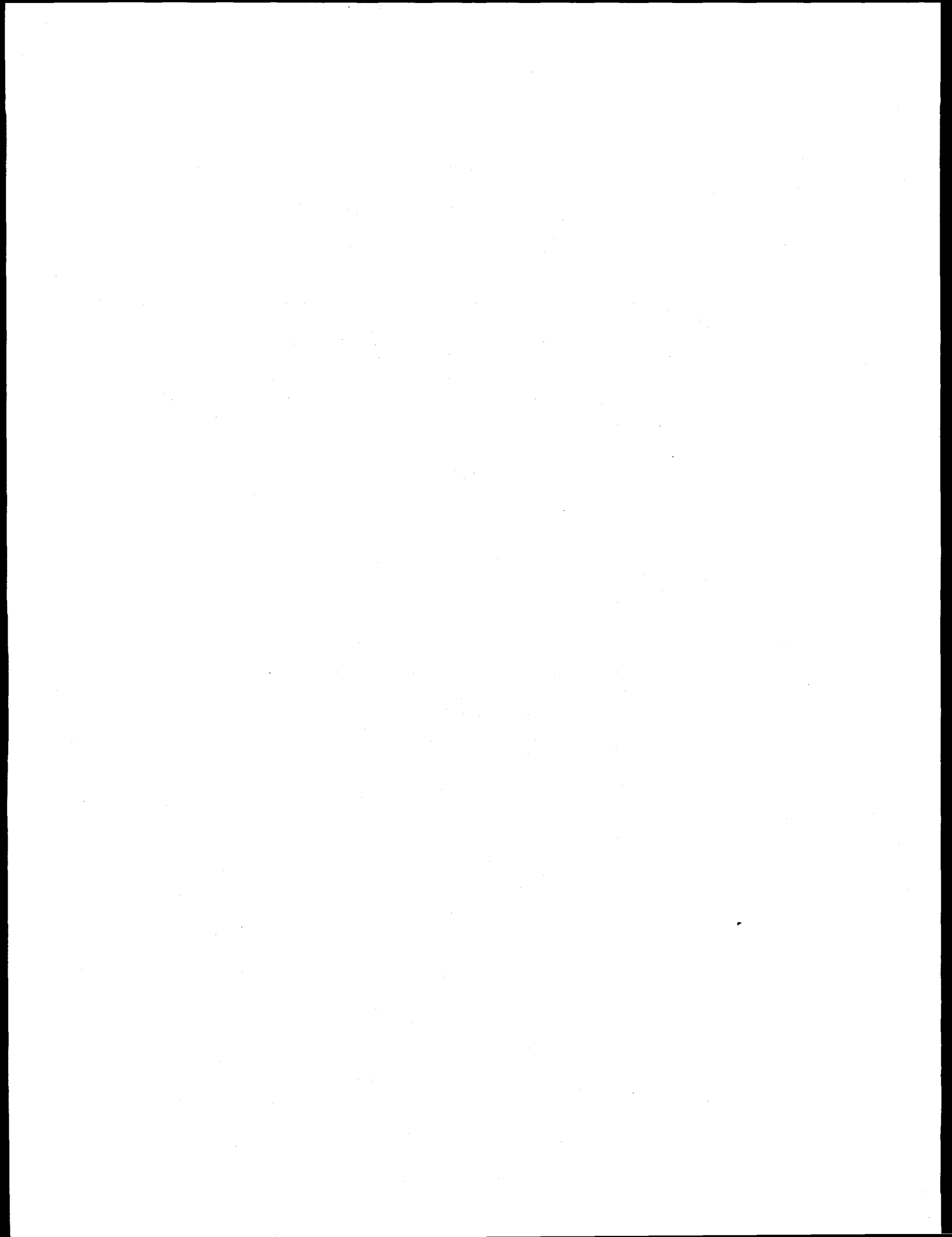
Given these assumptions, the estimate of the portion of LIHEAP's 1996 allocation to states that was spent on electricity is:

$$\text{Electricity Funds} = (\text{Heating Funds} \times \text{Electric-Heating Penetration}) \times (\text{Average Electric Heating Costs} \div \text{Average Heating Costs}) + \text{Cooling Funds}.$$

Inserting the values from above into this expression yields:

$$\$303 \text{ million} = (\$961 \text{ million} \times 0.28) \times (\$302 \div \$371) + \$84 \text{ million}.$$

**Electricity Estimates for the Weatherization Assistance Program.** The most recent national evaluation of DOE Weatherization estimates that about 10% of the dwellings weatherized were heated with electricity (Brown et al. 1993). This study also estimated that the average weatherization costs per dwelling differed by less than 10%, regardless of the primary heating fuel used. Our estimate of the total DOE Weatherization budget allocated to states that is spent on electricity is thus 10%, which is based on the proportion of weatherized dwellings that heat with electricity.



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## SUMMARY OF STATE-SPECIFIC PROPOSALS

To the best of our knowledge, these summaries are based on the state-level restructuring plan or document that was current as of March 1997.

### CALIFORNIA

AB 1890 was signed by Governor Pete Wilson in September (California Legislature 1996). AB 1890 calls for continued funding for programs provided to low-income electricity customers. These programs include targeted energy efficiency programs and the California Alternative Rates for Energy Program (CARE), which provides a 15% rate discount for enrolled customers. The latter program applies to the state's investor-owned utilities (IOUs) and is funded by ratepayers. IOUs' low-income energy efficiency programs, designed in response to earlier state legislation, focus on basic weatherization measures, such as attic insulation, caulking, weather stripping, low-flow showerheads, water-heater blankets, and minor home repairs.

AB 1890 sets a floor for future funding at the levels authorized for 1996, but also directs that future funding be based on an assessment of customer needs. Funds for low-income programs are to be collected through a nonbypassable distribution-service charge for all customers based on electricity use. Low-income programs are one element of this charge, which will also include funds for energy efficiency, public-interest research and development, and renewable resources. The only ceiling imposed on funds is that the charge must not lead to an increase in rates during the transition period. AB 1890 also directs publicly owned utilities to establish an analogous nonbypassable charge to be set no lower than the lowest expenditure level of the three largest electric IOUs (as a percent of revenue). These funds may be used to provide targeted energy efficiency services and rate discounts, as well as energy efficiency, public-interest research and development, and renewable resources.

Other aspects of AB 1890 relevant to low-income households include provisions for rate freezes, rate reductions, cost shifting, customer aggregation, consumer information, and consumer protection. Each IOU is to freeze electric rates at June 10, 1996, levels, and these levels are to be maintained until the earlier of March 31, 2002, or when certain transition costs are fully recovered. All residential and small commercial customers are to receive at least a 10% rate reduction by 1998 and a subsequent and cumulative reduction of at least 20% by April of 2002. The 20% reduction, however, excludes the costs of competitively procured electricity and the costs of rate-reduction bonds (i.e., it excludes most generation costs). When combined with the continuation of rate discounts provided by CARE, low-income households may see substantial reductions in their electricity rates, however. Assuming that CARE discounts continue at 15%, then low-income households will see a 24% reduction in rates by 1998 (relative to total

electricity rates in 1996) and a cumulative reduction of about 22% by 2002.<sup>19</sup> In addition, AB 1890 prohibits transition-cost recovery from leading to cost shifts between customer classes. That is, transition costs allocated to residential and small commercial customers must be recovered from these customers. The same holds for larger customer classes.

AB 1890 specifies the minimum unbundling and pricing of services to appear on a customer's bill. IOUs and the California PUC must develop and implement an education program to inform customers of the coming changes in the electricity industry. Entities offering electricity services to residential and small commercial customers must register with the PUC. These entities must also provide potential customers with a written notice that describes the price, terms, and conditions of service. The PUC has responsibility to help resolve consumer complaints.

In January, the California PUC (1997) issued a draft decision on the administration of public-purpose programs, including low-income programs. The draft decision recommends that the PUC establish a governing board to oversee low-income energy-assistance and weatherization programs. This low-income governing board is to coordinate closely, particularly on weatherization and education programs, with an independent board that the PUC recommends be established to oversee public funding for energy efficiency services. The low-income governing board will include seven representatives to be selected from the PUC, the California Department of Community Services and Development, and the public. This board's initial major task is to issue a request for proposals, subject to the PUC's approval, to hire an administrator for public-purpose low-income programs. The administrator will collect and allocate funds for rate discounts, verify customer eligibility, and make energy efficiency and education services available to eligible low-income customers. The IOUs will be eligible to bid for the administration of these programs, but the PUC will no longer provide shareholder incentives to encourage utility participation. The PUC directs the IOUs to continue administering low-income energy programs until the new administrative structures are fully in place. The board is also expected to appoint an advisory committee, which should be designed to encourage public participation.

The draft PUC decision also carries forward a policy proposed in an earlier decision (California PUC 1995) to treat electric and gas utilities consistently. As a result, once the transition to the new administrative structure is complete, the low-income governing board and administrator will apply to both electric and gas low-income programs. In addition, the governing board is to explore design options for low-income programs and make recommendations to the PUC for the design of CARE and programs to provide energy efficiency services, including education. The governing board, with input from the advisory committee, is also directed to conduct a needs analysis, as specified in AB 1890.

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<sup>19</sup>The estimate of a 22% reduction in total rates assumes that 60% of total costs stem from generation.

## MASSACHUSETTS

In December, the Massachusetts Department of Public Utilities (DPU) issued an electric industry restructuring plan (Massachusetts DPU 1996). The plan contains a set of model rules that establish a new regulatory framework for electricity and a legislative proposal to make state law consistent with the new framework. The central low-income policy creates a new type of generation service, default service, and a discounted tariff for low-income customers. The proposed policy is based on the principle that the new industry structure must ensure continuation of universal service and provide a level of protection for low-income customers that is equivalent to that provided within the current industry structure. Thus, the DPU concludes that:

- ▶ electric service is essential and should be available and affordable to all customers;
- ▶ all customers should have the opportunity to benefit from competition;
- ▶ electric companies have an obligation to serve all customers;
- ▶ residential customers that meet certain requirements should receive discounted rates; and
- ▶ certain protections should ensure that electricity is available to customers whose health and safety could be jeopardized by their inability to pay the full cost of electric service.

Default generation service is implemented by a distribution company for customers who previously received competitive service but who, for any reason, have stopped receiving service. These reasons could include a supplier that no longer wishes to provide service to a customer or fails to provide service. DPU intends for default service to be a safety net for all customers. This service will be priced at the spot-market clearing price. The DPU plan requires distribution companies to file terms and conditions for default service for DPU approval.

During the transition to fully competitive generation markets, DPU also directs distribution companies to prepare a standard-offer generation service. This service is only for those customers who have never had a competitive supplier. The price for standard offer generation service will be regulated by the DPU. Each distribution company will develop a five-year rate schedule for standard-offer service, subject to DPU approval. DPU offers guidelines to the distribution companies in preparing these rate schedules. These guidelines indicate that the new rates must be no higher than current rates (and should be lower if possible) and that the distribution companies should use competitive solicitations to select suppliers for the standard offer.

Under the DPU's proposed rules, distribution companies are required to continue to offer discounts to eligible customers. These discounts should provide the same subsidy existing on the effective date of the final rules and should be awarded on the basis of existing eligibility criteria. The discount would apply to the distribution portion of the customer bill and, during the transition period, to the transition-cost-recovery charge. This arrangement will lead to higher percentage discounts than in the current regime because the discount will be applied to a smaller portion of the eligible customer's bill. The cost of the subsidy is to be allocated to all rate classes and collected by means of a nonbypassable general access charge. Existing provisions for

resolving billing disputes, termination disputes, and termination protection (during the heating season for certain residential customers) will continue and will be applied to the distribution company.

Default generation service and standard-offer service will replace one element of the obligation to serve found under the current industry structure. The distribution company also has an obligation to provide all customers within a service territory with a connection to the distribution system and to provide distribution service. Termination of service will apply only to the distribution company; that is, a competitive generation company's decision to terminate transactions with a customer will not result in a loss of electric service. The distribution company will instead provide default service until the customer acquires a competitive supplier.

Policies place the responsibility for protecting low-income customers on the distribution companies and keep existing distribution service territories intact at least until the transition to competitive generation markets is complete. DPU notes that unbundling customer services from distribution service raises difficult questions about such issues as consumer protection and safety that cannot be effectively addressed during the initial phase of a restructuring proceeding. At present, the DPU intends to apply all existing consumer protections to all existing distribution companies. These protections include, among others:

- ▶ a winter moratorium on termination of service to electric-heat customers that demonstrate financial hardship;
- ▶ prohibition of termination to elderly and ill customers and to customers who have an infant and can demonstrate financial hardship;
- ▶ restrictions on termination of service to tenants whose electricity bills are paid by their landlord; and
- ▶ a process for dispute resolution.

In addition, the DPU argues that registration and consumer protection requirements beyond those enforceable under existing state and federal laws must be developed and applied to competitive suppliers. Other policies relevant to low-income customers include provisions for load aggregators, billing, requirements for service, security deposits and late-payment charges, right to change suppliers, and corporate rules of conduct.

## **NEW HAMPSHIRE**

In May, New Hampshire enacted House Bill (HB) 1392 to restructure the state's electricity industry (New Hampshire Legislature 1996). Under a number of restructuring policy principles, HB 1392 calls for universal service, minimum residential-customer service safeguards and protections, and programs that enable low-income customers to afford essential electricity requirements. HB 1392 authorizes use of a nonbypassable and competitively neutral system-benefits charge to fund programs for low-income customers and other public-benefits programs. This charge is to be applied to use of the distribution system.

HB 1392 delegates much of the implementation detail to the New Hampshire PUC, which is to proceed with general supervision from a legislative oversight committee on restructuring. In February, the New Hampshire PUC (1997) issued a final restructuring plan in response to HB 1392. This plan defines four elements of universal service:

- ▶ Local distribution companies will have an obligation to physically connect all customers that request service.
- ▶ Default power service must be available for customers who do not or cannot participate in the open market or when suppliers fail to meet their contractual obligations.
- ▶ Low-income customers must have manageable and affordable electricity bills.
- ▶ Consumer protections must be in place that provide customers with access to the distribution grid, establish uniform terms for disclosure of billing and price information, and provide protection from anticompetitive behavior by suppliers.

The distribution company's obligation to connect includes the delivery of energy and capacity, restoration of service following outages, service extensions, customer information, and system safety. Under this obligation, distribution companies will continue to provide all customer services, such as metering and billing, for small customers, at least during the transition period.

Default power service will be available to all residential and small commercial customers and implemented by the distribution company. The distribution company must procure the electricity supply for default service from the competitive generation market by competitive bids, spot-market purchases, or both. Contractual agreements with suppliers to provide default service must be short-term and cannot create additional transition costs. The PUC will review the performance of default service after two years to determine whether the market itself offers sufficient protection for all customers or, failing this, whether default service can be improved to provide greater benefits to customers.

The PUC authorizes the creation of a low-income energy-assistance program to be funded through a systems-benefit charge. The PUC establishes three goals for this program: to make electric bills affordable; to encourage conservation and energy efficiency to make electric bills manageable; and to make the most effective use of limited funding. The PUC comments favorably on a program design based on percentage-of-income payment, but calls for a working group to advise the Commission on the development, implementation, and monitoring of the program. The annual fund for this program must not exceed \$13.2 million and will be collected from all customers statewide as a flat amount per kWh of use.

Distribution companies will be subject to the existing consumer-protection provisions reflected in state law. The PUC notes that some of these rules may not be appropriate in a restructured market and plans to initiate a rulemaking this year on revisions to these rules. The PUC will also implement rules that address the unauthorized transfer of service from one supplier to another (i.e., slamming), notice requirements prior to termination of an energy contract, and billing information. Generation service will not be disconnected because of failure to pay the generation component of a customer bill. The distribution company will be able to disconnect electricity



service for nonpayment of transmission and distribution charges, subject to the PUC's rules. Disclosure requirements on customer bills will include an average price in cents per kWh for electricity service. Suppliers will also be required to disclose to prospective customers their resource mix and may be required to disclose certain environmental characteristics of this mix. The PUC declines at this time to develop rules on redlining, noting that redlining has not emerged as a problem in other deregulated utility sectors.

Also of interest to low-income customers, the PUC recommends that utilities with rates at or below regional averages should be given a greater opportunity to recover transition costs exposed as a result of industry restructuring. In addition, the PUC proposes to develop supplier registration requirements, to continue to mediate disputes between customers and utilities, and to develop a comprehensive public-education program, with the assistance of a working group, to facilitate the transition to a competitive market.

## **NEW YORK**

The New York PSC issued an opinion (New York PSC 1996) that largely reaffirms the recommended decision issued earlier (New York PSC 1995). Consistent with its findings on natural gas and telecommunication competition policies, the PSC declares that customers shall have access to electricity service at reasonable rates during the transition to a competitive environment. The PSC concurs with the recommended decision in directing that the transmission and distribution companies should be the providers of last resort for electricity service, at least for the short term. This arrangement also maintains certain existing customer-complaint and customer-protection mechanisms. The PSC lists "continuing customer protections and the obligation to serve" as one of its six major goals of the future regulatory regime.

Another of these major goals is "continuing programs that are in the public interest." Achieving this goal may involve continuing specific measures to preserve certain programs, including low-income programs. Further, responding to statutory requirements to ensure that all citizens have access to safe and reliable electricity service at just and reasonable rates, the PSC recognizes that some customers may face financial hardships that could place their access to electricity service at risk. The PSC recommends an ongoing examination of approaches to cost-effectively address this issue.

The PSC also authorizes the development of a system-benefits charge during the transition to competition. This charge will be used to fund public-policy initiatives that are not expected to be addressed by competitive markets. The charge will be collected from users of the distribution system and will be set at about the level of current utility expenditures. Low-income programs are not mentioned specifically in this discussion.

The PSC directs the seven major New York utilities and interested parties to file specific implementation plans that will address identification of relevant public-policy programs that need special rate treatment and provision of customer-protection rules, among other issues.

Utilities filed these plans on October 1, 1996. The New York PSC (1997) subsequently decided to consider a range of issues associated with public-policy programs (e.g., funding amount, program management, and duration of funding) in a separate procedural forum to facilitate broad participation by interested parties.

## **PENNSYLVANIA**

The Pennsylvania General Assembly (1996) enacted HB 1509 in November. The bill requires investor-owned utilities and electric cooperative corporations to ensure that universal service and energy conservation services and activities are appropriately funded and available in their respective service areas. Under universal service and energy conservation, HB 1509 refers to measures that help low-income customers to maintain electricity service, including customer-assistance, usage-reduction, and education programs. HB 1509 authorizes the creation of nonbypassable and competitively neutral cost-recovery mechanisms to fully recover the costs of universal service and energy conservation efforts. The bill directs the Pennsylvania PUC to establish such mechanisms for each electric utility.

As a matter of policy, HB 1509 finds that electricity service is essential and should be available to all customers on reasonable terms and conditions. In addition, the state must, at a minimum, continue the protections, policies, and services that now assist low-income customers to afford electricity service. The Pennsylvania PUC is to encourage the use of community-based organizations to provide services that assist low-income customers to afford electricity service. HB 1509 directs each electric utility to file a plan with the PUC that describes how it will meet its universal-service and energy conservation obligations.

The distribution of electricity will continue to be regulated as a natural monopoly service. Distribution companies will be the electricity provider of last resort to ensure the availability of universal service unless another provider is approved by the Pennsylvania PUC. Another important provision of relevance to low-income customers is a 4 ½-year cap on electricity rates.

## **RHODE ISLAND**

The Rhode Island Legislature (1996) approved a utility-restructuring act in August. The act calls for the preservation of existing low-income programs. Specifically, the act requires that discounted rates for low-income customers in place at the time the act becomes effective must be continued. The costs of these discounts will be included in the distribution rates charged to all but low-income customers. In addition, distribution companies may offer new discounted rates or other programs for low-income customers subject to approval by the PUC.

The act further requires that all existing rules dealing with customer-complaint resolution, debt collection, deposit and deferred-payment arrangements, termination of utility service, winter moratorium, and medical-emergency protections will be applicable to any electricity distribution

utility. Each distribution utility is required to arrange a standard power-supply offer to customers that do not select a supplier. The price for this standard offer must equal the bundled rate in effect during the 12-month period ending September 30, 1996. This rate will be adjusted annually for 80% of the change in the consumer price index for the preceding 12-month period and for other factors beyond the control of the distribution utility and its wholesale power supplier. Distribution companies must make this standard offer available within three months after retail access is available to 40% or more of the kWh sales in New England and continue the offer through the year 2009. Once a customer purchases from another supplier, however, the distribution utility is no longer required to provide the standard offer.

At the same time that the standard offer is made, distribution utilities must also arrange for a supplier of last resort for customers who are no longer eligible to receive service under the standard offer and are unable to acquire service from power suppliers. The distribution companies are directed to solicit bids from generation suppliers for providers of last resort. These bids are to be at market prices plus a fixed contribution from the distribution companies. The bids requiring the lowest fixed contributions from the distribution companies are to be accepted. The acceptance of bids and the terms and conditions for last-resort service are subject to the PUC's approval. All fixed contributions and other reasonable costs incurred by the distribution companies for arranging this service will be included in distribution rates charged to all other customers. The act recognizes that electricity is an essential service.

Also of interest to low-income customers, the Retail Licensing Commission had to submit a plan to the legislature by January 1, 1997, that included proposals for consumer protections, among other items. Distribution companies are also required to notify customers of their electricity-service options at least 90 days before these customers become eligible for retail service. Distribution utilities are required to provide safe, reasonable, and adequate services at reasonable and just charges. The Division of Public Utilities is responsible to protect the public interest in connection with unregulated power producers seeking to sell electricity in retail markets.

## VERMONT

In December, the Vermont Public Service Board (1996) issued a report and order on restructuring the electricity industry. The report acknowledges a need for continued policies and programs for low-income electricity customers.

The Public Service Board (PSB) recommends creating a home-energy-assistance program funded by a general tax or a competitively neutral charge on all major fuels. Participation and benefit levels in the proposed program would be governed by need and not by a household's principal heating fuel. Should the legislature not authorize such a program, the PSB recommends targeted assistance for payment of electric bills by low-income households funded by a nondiscriminatory charge on all electricity customers. The PSB expresses concerns that this second approach may promote inefficient uses of electricity and market distortions. The PSB recommends that program eligibility should be certified by a program administrator that is

independent of utilities and energy providers. Program participants should be expected to apply for other available energy-assistance programs, including LIHEAP, and the program should encourage energy efficiency.

The Board proposes that existing disconnection policies be continued. These policies include requiring adequate notice, providing an opportunity to negotiate repayment plans, and limiting the ability of utilities to disconnect customers during the winter. The Board further proposes that disconnections should be permitted only when customers fail to pay for distribution charges; customers should not be disconnected for failing to pay for generation or other retail electricity services. Retail-service companies must provide adequate notification of service termination to the affected customer and the customer's distribution company. At the date of termination, the distribution company will begin to offer basic generation service. The distribution company will thus arrange for a provider of last resort, at least during the transition to competition. That is, each distribution utility must develop a basic service offer for each customer class. An offer will be made available over a specific contract period through a retail service provider. The terms of service will be established by competitive bids. The PSB's proposed provider of last resort is similar in motivation (i.e., the essential nature of electricity service and the desire to transfer the obligation to serve to the restructured environment) and intent (i.e., to ensure that all paying customers have at least one service option) to ones developed by other states. What is unique about Vermont is that the proposal apparently applies to all customers and not just residential or low-income customers.

The PSB recommends that current consumer protection policies should be maintained and that new policies will be needed. The PSB's jurisdiction over consumer abuses, such as unfair trade practices, fraud, and misrepresentation, should be extended to new providers, for example. The PSB recommends that format standards for bills must be developed and that bills and other customer information must be readily understandable to customers. The report calls for the development of an enhanced institutional capacity on the part of both the PSB and the Department of Public Service to address the new needs for public advocacy, dispute resolution, and regulatory oversight that restructuring will require. The PSB also endorses the consumers right to privacy and the protection of certain customer information available solely through a customer's distribution utility. The Board intends to set high standards for service quality and reliability and supports a consumer bill of rights proposed initially by the Department of Public Service. The PSB believes that customers should be permitted to form retail service purchasing entities to seek the benefits of load aggregation. The PSB expresses support for the development of nonprofit entities to provide customers with a greater variety of service options.

## **WISCONSIN**

In February 1996, the PSC issued a report to the Wisconsin legislature that explained the changes the PSC will attempt to make in the electric industry (Wisconsin PSC 1996). The Commission's work plan, included in the legislative report, contains 32 steps that could end with retail competition for all customers in 2000 or 2001. Two of the steps initiated in 1996 are

important for low-income energy policy: the formation of a Public Benefits Board and the revision of service rules for electric utilities.

In January 1997, the PSC received four proposals for the formation of a Public Benefits Board (Consumers First! Coalition 1997; Low Income Concerns 1997; Public Benefits Alliance 1997; Wisconsin Gas Company 1997). These proposals address issues such as the Board's scope, funding, organization, authority, and governance. Each proposal also makes explicit recommendations about future low-income energy services. While the proposals do not agree on many specific issues (see below), the proposals do largely agree on certain fundamental issues. For example, the proposals agree that low-income customers are more likely to be adversely affected by industry restructuring if adequate actions are not taken to maintain current low-income programs. The proposals also generally agree that universal service, the winter shut-off moratorium, and current levels of health and safety protections must be preserved in a restructured industry.

The proposals are not in consensus about several more specific issues, including:

- ▶ the need for a second public board to specifically oversee low-income-program activities,
- ▶ the amount of future public-benefit funding,
- ▶ the allocation of these funds to energy-assistance and weatherization activities,
- ▶ the mechanism used to collect these funds,
- ▶ the entity(or entities) responsible for providing and collecting these funds,
- ▶ the need to contribute funds to offset anticipated shortfalls in LIHEAP funding, and
- ▶ the entity responsible for the obligation to serve and provider of last resort during and after the transition to a restructured industry.

In September of 1996, PSC staff drafted revisions to the state's service rules for electric utilities (Wisconsin PSC Staff 1996). In time, some version of these service rules will be adopted by the Commission. The existing rules already contain detailed consumer-protection provisions addressing disconnection (including cold-weather disconnection), reconnection, and billing, among other issues. The staff draft revisions also contain new provisions for low-income energy-service requirements and truth-in-rate disclosures. The low-income-service requirements direct utilities or service providers to "...permanently operate and maintain a program that insures safe, affordable, reliable service, and attempts to mitigate and prevent energy hardships before they arise" (Wisconsin PSC Staff 1996, p. 14). The draft revisions propose a series of performance criteria to judge the effectiveness of these programs. Examples of these criteria include the ratio of the number of disconnections of low-income customers to the total number of residential customers and the ratio of low-income payment plans to the total number of low-income households.

The truth-in-rate disclosures, which would only apply to residential and small commercial customers, specify billing formats and information content for different types of pricing (e.g., average rate vs variable rate). The disclosure must also display the average cost per kWh for an

average residential ratepayer. The draft revisions contain example disclosure templates for customers on an average- and a variable-kWh schedule.

Another customer protection found in the draft revisions is a requirement that energy suppliers obtain written or recorded customer authorization to provide service. New generation and energy service companies must also register to do business in Wisconsin. Part of the proposed registration application includes a report that contains the number and nature of complaints received by regulatory bodies in other states.