FIVE YEARS IN:
AN EXAMINATION OF THE FIRST HALF-DECADE OF PUBLIC BENEFITS ENERGY EFFICIENCY POLICIES

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Note: Appendices B and C are only available by purchasing the full hard-copy report for $65.

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Finally, this report would not have been possible without the cooperation and input of numerous contacts in each state—program staff at state energy offices, public utility commissions, utilities, contractors, and nonprofit organizations, as well as other key stakeholders. We thank everyone who assisted us by furnishing information and data about the state policies and programs. We greatly appreciate the time and effort these individuals provided that enabled us to prepare this report and share this information with the public.

NOTES ABOUT DATA QUALITY

We took great care in the research and preparation of this report to provide accurate information about each state. Our primary sources of data and information were experts in each state and published materials on the programs and policies. In addition, we sent drafts of the written state profiles to appropriate personnel in each state for review, to help assure the accuracy of this document. However, public benefits policy is a very complex, dynamic subject. Such policies are still evolving and changing in many states. Therefore, we acknowledge that despite our best efforts to provide accurate, up-to-date information in this report, there is always a possibility of errors, omissions, or material becoming out-of-date quickly. If a higher degree of certainty is required, we encourage the reader to contact appropriate agencies or organizations within an individual state to confirm data we present or to obtain more detailed or up-to-date information. (Part of the purpose of this project is to encourage and facilitate communication and information exchange among states.)

If a substantive error is noticed in the tables or state summaries in this report, ACEEE would appreciate receiving notification and a description of the correct information. We will make every effort to provide corrected information in any subsequent distribution of this report.

EXECUTIVE SUMMARY

The move toward electric industry restructuring in the latter half of the 1990s ushered in a new era of utility sector energy efficiency policy mechanisms, broadly categorized as "public benefits" (a.k.a. "system benefits") funds. In 1999, ACEEE conducted the first national review of these public benefits energy efficiency programs, which had been adopted in nearly 20 states. This resulted in the publication in 2000 of a two-volume set of reports (*A Review and Early Assessment of Public Benefit Policies under Electric Restructuring. Volume 1: A State-By-State Catalog of Policies and Actions* (Kushler and Witte 2000a) and *Volume 2: A Summary of Key Features, Stakeholder Reactions, and Lessons Learned to Date*) (Kushler and Witte 2000b).

The purpose of this current study is to provide a follow-up national examination of public benefits energy efficiency policies and programs, now that these approaches have been in operation for a fair amount of time (5 years or more in many cases).

For this project we re-contacted all of the 25 states (plus the District of Columbia) examined in the original project, and gathered all pertinent information (e.g., annual reports, regulatory orders, legislation, etc.) to assess the results of the public benefits programs as well as document and describe any changes that had occurred in the public benefits policies or administrative approaches during that time. We also did follow-up telephone interviews with key stakeholders in each state (e.g., utilities, state government personnel, and advocacy groups) to obtain their qualitative assessments of the public benefits energy efficiency approach in their states.

Of the 26 jurisdictions examined in this project (25 states plus D.C.), 20 have included policies that either require or encourage public benefits energy efficiency programs in their legislation and/or regulatory orders, and 18 of those states currently have such energy efficiency programs in operation (Arizona, California, Connecticut, Illinois, Maine, Massachusetts, Michigan, Montana, Nevada, New Hampshire, New Jersey, New York, Ohio, Oregon, Rhode Island, Texas, Vermont, and Wisconsin).

The policies, administrative approaches, and reported results from each of those states are provided in detailed state-by-state profiles in Appendix C. The main body of this report provides a synthesis and overall summary of that detailed state-level information. Some of the highlight results of this study are provided below.

Funding Mechanism

By far the most common approach used by the states is a "public benefits charge" (or "system benefits charge") consisting of a small non-bypassable per-kilowatt-hour (kWh) charge on the electric distribution service. A total of 12 of the 18 states use that type of approach. The remaining six states use some other type of approach, whereby the funding is either embedded in rates or provided through some type of flat monthly fee, rather than a per-kWh charge.

Funding Level

In order to provide a common base for comparison, we converted available information on the level of funding support provided by states (typically available in different formats in different states, including mills[1] per kWh, percent of revenue, or simply millions of dollars per year) into a common metric: mills/kWh of retail electric sales (1 mill = 1 tenth of a cent). Funding levels for energy efficiency across the 18 states ranged from 0.03 to 3 mills/kWh. The median value was just over 1.1 mills/kWh. (We provide a table of these estimated values for all the states in the body of the report.)

Funding Raids

One phenomenon that has emerged in the last couple of years has been the occurrence of "raids" on the public benefits funds by a few cash-strapped states trying to balance their budgets. This report provides a summary of such incidents that have occurred in the various states with public benefits policies.

Duration of Funding

In the original 2000 study, we reported that six states did not set any specific duration for the funding requirement, leaving it essentially open-ended; four states set a 10-year funding period; another six states specified 5 years; one state established 4 years; and two states set 3 years. We observed that some of the earlier restructuring states tended to specify shorter time periods (e.g., California 4 years, New York 3 years, etc.), whereas the more recent restructuring states tended to specify longer or open-ended periods. We commented that this might reflect an emerging recognition that transforming markets to be energy efficient is not a simple or quick process, and that there is an ongoing need for these public benefits programs.

In the current study we see that the trend toward a longer time period for funding is continuing. Despite a few temporary and partial raids on funds in the last year or two, no state has terminated its energy efficiency public benefits funding or allowed its funding authority to lapse. Four states that originally specified a short time period (3 to 5 years) have officially extended their public benefits funding for energy efficiency: Montana for an additional 2 years; Massachusetts and New York for 5; and California for 10. (Specific information on the authorized duration of each state's energy efficiency public benefits funding is provided in the state-by-state "At a Glance" summaries in Appendix C.)

Administrative Approach

The current study again found a wide variety of approaches being used for administration of the public benefits energy efficiency programs. Half of the 18 states now rely principally on utility administration of the programs, while half feature some type of non-utility administration, relying on either government agencies (7 states) or independent nonprofit organizations (2 states). This represents somewhat of a change over time toward non-utility

[1] One mill = one tenth of a cent. This unit is commonly used in the utility sector.

administration. In the 2000 study, two-thirds of the 18 states were relying on utility administration of the public benefits energy efficiency programs. However, as in the 2000 study, we cannot conclude that there is any single best approach to administration of these programs. There are good examples of success with each type of approach (utilities, government agencies, and independent nonprofit organizations), and the preferred approach in any particular state seems to depend very much on the particular situation in that state.

Qualitative Assessments

As a part of our original 2000 study, we conducted in-depth interviews with key stakeholders (utilities, state agencies, and advocacy groups) in each of the states. Among other things, we asked respondents to assign a letter grade to two aspects of their state's approach to public benefits energy efficiency: (1) the conceptual design of the state approach; and (2) the implementation of that design. The initial ratings of conceptual design were quite positive (nearly 80 percent rating their state's approach as either an 'A' or 'B'). The ratings of implementation were also generally positive, but many respondents assigned a grade of "incomplete."

In the current study, we went back to the same stakeholder organizations (and wherever possible the same individuals) and asked for their updated qualitative assessments. After 4 additional years of experience, the stakeholder assessments of state public benefits energy efficiency approaches were still generally very positive. The modal "grade" assigned was a 'B,' and four-fifths of all respondents assigned an 'A' or 'B' (to both conceptual design and implementation).

This overall picture of consistent high marks over time does obscure the fact that some current state assessments did move up or down as compared to the original interviews. Five states showed a modest increase in ratings and five showed a modest decrease. These rating shifts are attributed to various situation-specific factors in the individual states. However, perhaps the single most common factor had to do with funding (i.e., increases in funding for public benefits energy efficiency tended to be associated with increased favorable assessment, and having experienced funding raids was often cited as a factor in lowered assessments by stakeholders).

Overall, this qualitative assessment suggests that public benefits energy efficiency policies and programs have proven to be fairly popular among key stakeholders in the states that have enacted them. (Individual state assessments are briefly discussed in the state-by-state profiles in Appendix C.)

Lessons Learned

In addition to requesting overall subjective assessments and letter grade ratings, we also asked the stakeholders (as well as state administrative staff) to identify what they considered to be key "lessons learned" from their state's experience with public benefits energy efficiency. Those responses are provided in some detail in the body of this report.

Quantitative Results

This project attempted to gather data from the states on three key quantitative variables: (1) funding/spending; (2) savings impacts; and (3) cost-effectiveness. As a general caveat, it should be noted that there is a great deal of inconsistency across the states in terms of whether data is available in these areas, and if so, how these data are defined and reported.

Funding/Spending

The distinction between funding and spending is an important one, because some states that are relatively early in the implementation process had not yet fully ramped up to a point where actual spending matched authorized funding. At some points in the report we provide information on authorized funding (e.g., in Table 1 and in Appendix A), but in the quantitative results section of the report we provide our best available information on actual spending (see Table 3). For states with comprehensive statewide programs, the level of actual spending tends to be in the range of approximately 0.7 to 3 percent of total utility retail revenues. Across all the public benefits states, total actual annual spending on energy efficiency was just over $900 million in the most recent year for which data were available (either 2002 or 2003).

Savings Impacts

Of the states with some public benefits energy efficiency spending, 12 publicly report impact data, at least electricity savings (kWhs). Eight of these states also report demand (megawatts) savings data from their programs. (Not surprisingly, the states that report these data tend to be the states with the largest programs and the most sophisticated monitoring and reporting requirements. The state-by-state data are briefly summarized in Table 3, and provided in more detail in Appendix C.)

Savings results are clearly correlated to the amount of funding and program activity. Annual energy efficiency program savings as a percentage of total electricity sales range from about 0.1 to 0.8 percent (that is, the amount of new electricity savings achieved from programs in a reporting year expressed as an annual—not lifetime—amount divided by the total reported electricity sales in the state). The mean value for the ten states for which annual savings data were available is 0.4 percent. Programs are achieving electricity savings, although the savings are still relatively small compared to total electricity sales when viewed on an annual basis. Over a longer period, however, these savings compound and can be significant since most efficiency measures have lives of 10 or more years. Such savings can dampen overall electricity demand growth, reducing the need for new capacity and infrastructure, as well as improving system reliability.

Electricity savings also reduce system demand (megawatts).The combined total incremental demand savings being achieved each year by the eight states reporting these data was 1,059 megawatts (MW), the size of one very large base-load power plant or 3 medium-size power plants.

One additional area of savings impacts is the category of environmental impacts. We were able to identify estimated air emissions reductions from public benefits energy efficiency programs from a total of nine states. That information is summarized in Table 4.

Cost-Effectiveness

Information on cost-effectiveness is also very inconsistently reported across the states. We were able to obtain reported estimates of cost-effectiveness (either in terms of a benefit-cost ratio or a reported "cost of conserved energy" figure, or both) from a total of nine states. (Again, these tended to be the leading states in terms of the size of their public benefits energy efficiency efforts and the level of sophistication of their monitoring and evaluation activities.)

The available data does suggest that these state public benefits energy efficiency efforts have been cost-effective. Overall portfolio benefit-cost ratios reported ranged from 1.0 to 4.3, and lifecycle costs of conserved electricity ranged from $0.023 to $0.044/kWh. It is important to keep in mind the caveats that these are data based on often-differing methodologies and assumptions across the states, and that in this project we did not attempt to reconcile these inconsistencies or conduct our own cost-effectiveness analysis. Nevertheless, the consistent positive results and relatively consistent numerical results across this many states are encouraging indicators of the success of these state public benefits energy efficiency policies.

Conclusion

State public benefits funds, using revenues collected through the utility distribution system, emerged in the late 1990s to become perhaps the most significant new policy mechanism for implementing energy efficiency in the past decade. ACEEE conducted an "initial examination" of experience with this new strategy in 2000, concluding that the policy approach looked promising, but that it was still very early in the process.

The current project was designed as a comprehensive follow-up study to that initial research, to examine the results that have been obtained now that public benefits energy efficiency policies and programs have been in place for a half decade or more. Overall, the results are very encouraging.

Public benefits energy efficiency policies have been adopted in at least 20 states, and at least 18 states have currently operating public benefits energy efficiency programs. Despite some notorious "funding raids" in a few states, brought about by severe state budget problems, the qualitative assessment of these public benefits energy efficiency programs by key stakeholders (government, utilities, and advocacy groups) in these states continues to be very positive. In a set of interviews conducted with these stakeholders across 16 states in late 2003, the modal "grade" assigned to their state's public benefits energy efficiency approach and its implementation was a 'B,' with four out of five respondents assigning a grade of 'A' or 'B.' As further concrete evidence of stakeholder support, no state has cancelled a public

benefits energy efficiency policy, and at least 4 states have passed legislation to substantially extend the time period for which its public benefits energy efficiency policy will be effective.

These public benefits energy efficiency programs are also producing significant energy savings impacts. This report summarizes and presents the information we were able to obtain on program spending, savings, and cost-effectiveness. The data indicate that current annual spending across the 18 states currently fielding programs is over $900 million. Annual savings in just the 12 states reporting evaluation data are nearly 2.8 million MWh and 1,060 MW (MW savings data reported by only 8 states). We were able to obtain cost-effectiveness estimates from nine of the most active states, and the results show these public benefits energy efficiency programs to be very cost-effective. Estimated benefit/cost ratios range from 1.0 to 4.3, and estimates of the cost of conserved energy range from $.023 to $.044/kWh. Beyond energy savings, we also report estimated air pollution emission reductions provided by a number of states.

In summary, with 4 more years of documented experience now in hand, the conclusion that public benefits energy efficiency programs are an effective policy mechanism for achieving significant energy savings (and other related goals) seems very sound. Moreover, we still see proven success with public benefits energy efficiency programs using a variety of different administrative strategies, indicating that states can have the flexibility to tailor public benefits approaches to their unique circumstances. Of course it must be acknowledged that not every attempt at implementing public benefits energy efficiency policies in every state has been an unqualified success. There have been occasional problems and set-backs encountered in some areas. Nevertheless, from the overall very positive observations in this study, we feel justified in recommending that additional states, and indeed the federal government, seek to implement such public benefits mechanisms in order to help capture the many benefits of improved energy efficiency.

INTRODUCTION

In May and September of 2000, ACEEE published a two-volume set of reports providing an initial examination of state experience with the new concept of "public benefits" energy efficiency policies and programs (Kushler & Witte 2000a, 2000b). The current report presents the results of a comprehensive follow-up study to that initial research in order to assess the experience with these policies and programs now that they have been in place for several years.

Defining "Public Benefits" Energy Efficiency

The term "public benefits"[2] has been used to describe a number of ancillary services and benefits that customers (and society in general) have historically received through the regulated utility industry. Typically, this term is considered to encompass such benefits as energy efficiency, renewable energy, and low-income programs, and public-interest-oriented research and development (R&D).

The move to create formal funding mechanisms to support these public benefits grew rapidly in the late 1990s as a reaction to the movement toward electric industry restructuring. It was recognized that, unfortunately, for a variety of reasons, electric industry restructuring creates economic pressures that tend to cause utilities to abandon these traditional services.[3] In addition, the move toward less regulation under restructuring tended to weaken or eliminate prior mechanisms that had helped provide for energy efficiency and renewable energy, such as integrated resource planning (IRP). (See Kushler & Suozzo [1999] for a discussion of these factors and their consequences.) As a result, policymakers and other interested parties sought to develop alternative policy approaches for ensuring that these types of benefits continue.

Since the first states began taking formal steps toward electric restructuring in the mid-1990s, the concept of dedicated "public benefits funding" has emerged as a vital and creative new mechanism for supporting utility-related societal benefits such as energy efficiency. (See Eto, Goldman & Nadel [1998] for a good discussion of the conceptual framework for a public benefits charge policy.) Indeed, later in the section "Descriptive Results," most of the states that adopted electric restructuring included some type of public benefit funding mechanism in their restructuring package. Although the move toward further electric restructuring in the states has stalled out,[4] the public benefits policies and programs that were adopted have largely been continued. Moreover, the basic public benefits model of having a dedicated revenue stream (typically through a small per-kWh charge) for energy efficiency programs is a viable mechanism to employ whether or not a state has restructured its electric

[2] Another common term for this concept is "system benefits." Different states use different terminology for their particular funding mechanism approach. Some examples include "public benefits fund," "system benefits charge," and "public goods charge."

[3] For example, national utility energy efficiency spending declined by 50 percent from 1994 to 1997 as electric restructuring became the dominant trend in the industry (Kushler & Witte 2000b).

[4] No new states have adopted electric restructuring since Michigan in 2000, and several states have either reversed that policy decision or delayed its implementation.

industry.[5] Consequently, there is a great deal of interest among policymakers, advocates, and other involved parties about how this new policy approach of "public benefits" energy efficiency is working.

Context for this Study

In recognition of the importance of this new trend in policy support for energy efficiency, ACEEE has been extensively involved from the outset in directing a series of studies of public benefits policies and actions under electric industry restructuring. The initial effort culminated in a report (Kushler 1998) describing the status of restructuring in each of the 50 states and briefly summarizing the public benefits policies, if any, in each state that had restructured. Since the publication of that report, ACEEE has maintained on its Web site (http://www.aceee.org/briefs/mktabl.htm) a periodically updated summary table of public benefit policies and funding levels in restructured states (see Appendix A for the most recent version).

Building upon those efforts, in 1999 ACEEE launched a major research project to provide the first comprehensive national review and early assessment of state public benefit policies under electric restructuring. This resulted in the publication of a two-volume set of reports. The first report (*A Review and Early Assessment of Public Benefit Policies under Electric Restructuring. Volume 1: A State-by-State Catalog of Policies and Actions*) provided a collection of somewhat detailed (two to four pages per state) objective descriptions of any public benefit policies that had been established as a part of state restructuring, including citations to appropriate legislation and/or regulatory orders. The second report (*Volume 2: A Summary of Key Features, Stakeholder Reactions, and Lessons Learned to Date)* provided both a summary of technical features as well as the results of a qualitative assessment of both the policy development process and the early implementation experience in those states that had enacted public benefits policies.

This current study is a natural follow-up to that earlier foundational research. Now that these public benefits policies and programs have been in place for several years, it is time for a comprehensive assessment of the results and lessons learned from those efforts.

Purpose

The major new policy approach for supporting energy efficiency to emerge in the past decade has been the concept of utility-related "public benefits" funding. That alone would justify a comprehensive research effort to study how this new approach has been working. However, several recent energy-related crises (e.g., soaring natural gas prices, concerns about electric system reliability, increasing evidence of global climate change, and international conflicts related to energy resources) serve to enhance even further the importance of examining the effectiveness of this policy mechanism. The purpose of this project is to provide policymakers, regulators, and other interested parties with information that will assist them in understanding and assessing the "public benefits" energy efficiency approaches that

[5] Indeed, two of the most notable examples of statewide public benefits programs are in states that have not restructured (Vermont and Wisconsin).

have been tried to date, and in designing and implementing even more effective policies in the future.

Organization

The next two sections of this report provide a brief overview of the scope and methodology of this study. Following that, the results of the research are presented in five major components. First, a comprehensive overall summary of the descriptive characteristics of public benefits policies in the states is provided. Second, an overall summary of a qualitative assessment of the design and implementation of these public benefits policies is presented, including key lessons learned. (This assessment is based on interviews with representatives of key parties in each of the states.) Third, a review and discussion of program impacts are provided based on a compilation of impact results available from the various states. Fourth, a discussion of some of the other multiple objectives of public benefits energy efficiency policies is provided. Finally, the appendices present a brief state-by-state update of any changes to a state's overall restructuring policy and public benefits policy since our previous reports, and a comprehensive state-by-state description (when applicable) of the specific public benefits mechanism, administrative process, and implementation status in the state (see Appendices B and C, respectively).

Scope

This follow-up research took as its focus the same states that were included in the scope of our original public benefits study published in 2000. That was the universe of states that had formally passed an electric restructuring policy as of the end of 1999, plus two states that had passed specific public benefits fund legislation but had not restructured. Those states are:

> *Arizona, Arkansas, California, Connecticut, Delaware, Illinois, Maine, Maryland, Massachusetts, Michigan, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, Vermont, Virginia, and Wisconsin*[6]

In addition, we added Washington, D.C., for which Congress enacted a policy of electric restructuring during 2000—too late to be included in our original study.

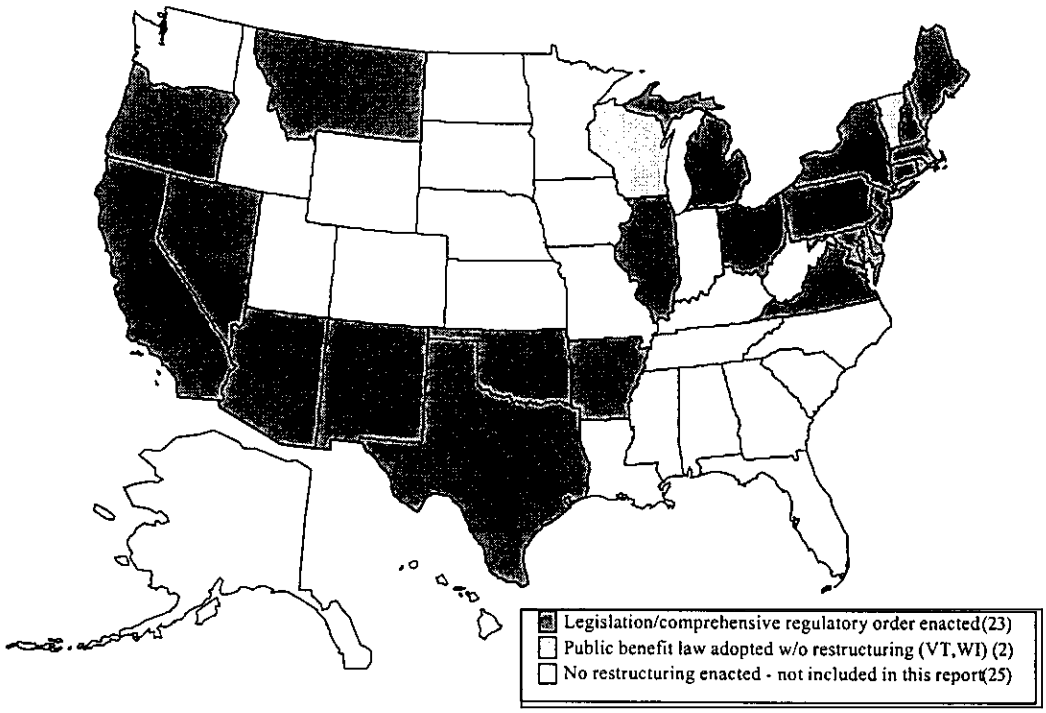
Because it turned out that no additional states have passed electric restructuring or statewide public benefits legislation since our original 2000 report, that group of states (plus D.C.) continues to be the appropriate group of states to use to study the implementation of public benefits energy efficiency policies.[7]

[6] All of those states had formally adopted electric restructuring with the exception of Vermont and Wisconsin, which passed separate public benefits legislation without restructuring. For details on their initial approaches, see Volume 1 of the original study (Kushler & Witte 2000a).

[7] As explained in our original report, there are a number of other non-restructured states that provide utility energy efficiency programs (e.g., Colorado, Florida, Iowa, Minnesota, Washington, etc.) through more traditional regulatory mechanisms, but they are not the focus of this study. We should also mention that North Carolina may have what is the oldest surviving energy efficiency funding mechanism: a tiny surcharge enacted

Figure 1 presents a map illustrating the states that we analyzed.

Figure 1: States Included in this Study



One additional aspect of the scope of this report is worthy of note. The primary focus of this project is on the public benefit area of energy efficiency policies and funding.[8] Although some information is provided regarding the public benefit areas of renewable energy and low-income programs, the major emphasis is on energy efficiency.

in 1980 that helps fund a nonprofit organization called the Advanced Energy Corporation. But that also is outside the scope of the current study.

[8] The Volume 1 report (Kushler & Witte 2000a) does provide additional detail on state policies regarding the other categories of public benefits funding.

METHODOLOGY

For each of the 25 states in the initial study, ACEEE originally obtained and reviewed copies of the pertinent legislation and regulatory orders to extract descriptive information about their public benefits policies and funding. This information was presented in some detail for each individual state in the Volume 1 report (Kushler & Witte 2000a). In the Volume 2 report (Kushler & Witte 2000b), that data was compiled and overall patterns and trends were summarized. For the current project, each of those 25 states was contacted, administrative staff was interviewed, and any subsequent legislation or regulatory orders modifying the original public benefits policy was obtained and reviewed. The results of that review have been incorporated into the issue summaries in the body of this report, and also used to develop the policy updates and detailed state-by-state profiles in Appendices B and C.

After collecting the descriptive data on state public benefit policies and funding, we proceeded to acquire qualitative information from various stakeholders. In the original 2000 study, for each state where some type of energy-efficiency-related public benefit policy had been adopted, several key parties (e.g., regulatory staff, other state agency personnel, utility staff, or energy efficiency advocates) were interviewed. The interviews were semi-structured telephone interviews designed to obtain the respondent's perceptions of the public benefits policies and actions in their state. This included a description of the origin of the public benefits policies (the process, key players, etc.) as well as their qualitative assessment of both the policy as written and the administrative implementation of that policy to date.

For this current project, we contacted those same stakeholders to obtain their updated assessment of their state's approach. Wherever possible, we questioned the same individual who was interviewed for the original study (we were successful in 70 percent of the cases). When that individual was no longer available, a suitable replacement in that same organization was interviewed. This qualitative assessment information is summarized on an overall basis in the section entitled "Qualitative Results" in the main body, and provided individually for each state in the state-by-state descriptions in Appendix C.

DESCRIPTIVE RESULTS

The first segment of results presented in this report focuses on an updated summary and objective description of the public benefits policies and approaches adopted by the 26 jurisdictions (25 states plus the District of Columbia) examined in this project.

The State Score Card: Categories of Public Benefits Provided

Among the 26 jurisdictions addressed in this study, 23 had restructured[9] through legislation (Arizona, Arkansas, California, Connecticut, Delaware, District of Columbia, Illinois, Maine, Maryland, Massachusetts, Michigan, Montana, Nevada, New Hampshire, New Jersey, New Mexico, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, and Virginia), one had adopted restructuring through regulatory orders (New York), and two had passed specific legislation requiring public benefits funding but had not actually restructured their electric industry (Vermont and Wisconsin).

Energy Efficiency

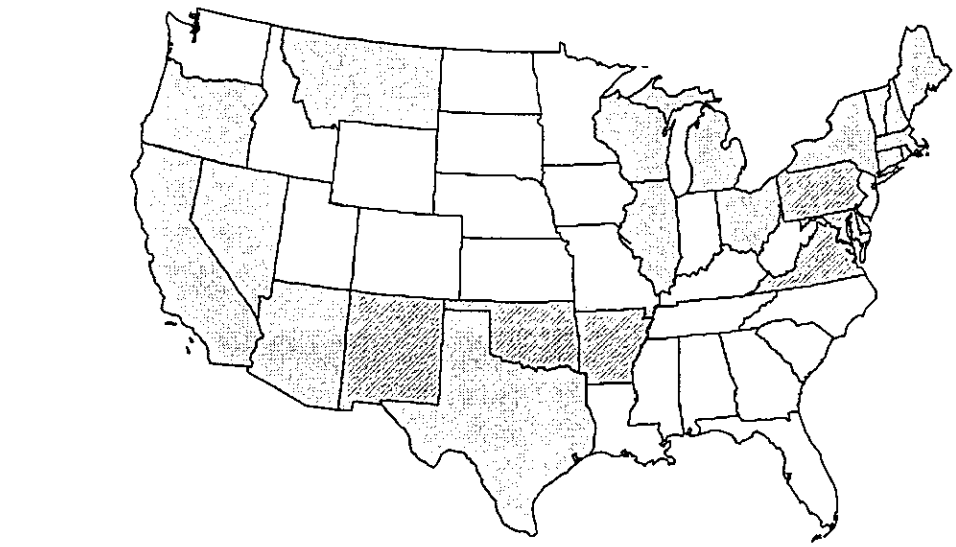
Of these 26 jurisdictions, 20 have included specific policies that either require or permit public benefits energy efficiency in their legislation and/or regulatory orders, and 18 of those states currently have such energy efficiency programs in place. Those states are marked for identification in Figure 2. Beyond those 18 states, a few additional jurisdictions are still investigating the issue (Delaware, D.C., and Maryland), while the remainder have shown no indication of including this type of policy requirement.

Renewable Energy

With regard to renewable resources, 21 of the 26 jurisdictions in this study have included some type of policy supporting renewable energy. A total of 13 states have direct funding of one type or another (and another four states have supportive language but no funding as of yet). A total of ten states have a "renewable portfolio standard" (RPS), whereby electricity suppliers are required to have renewable energy sources comprise some minimum percentage of their overall generation supply. (The original total of 21 states with supporting policies cited above results from the fact that six of those states have both direct funding and an RPS mechanism.) States with public benefits policies for renewable energy are indicated in Figure 3. (Note: the four jurisdictions with supportive language but no actual funding yet [Arizona, D.C., Maryland, and Michigan] are still coded as "no direct funding and no RPS" in the Figure 3 map.)

[9] Several states have subsequently rescinded or delayed their overall electric restructuring policy. The details on such changes are provided in the state updates in Appendix B. Thus far, only one state that had public benefits programs has eliminated such programs as a result of rescinding its restructuring policy (New Mexico eliminated the renewable energy and low-income public benefits funding it had previously adopted).

Figure 2: States with Public Benefits Energy Efficiency Programs

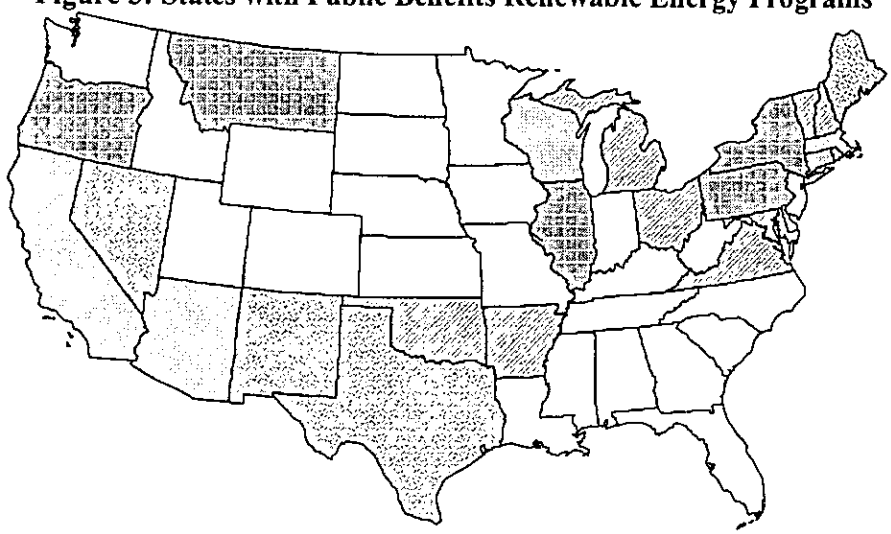


States with public benefit funding for energy efficiency

No public benefit funding for energy efficiency

Not in this study

Figure 3: States with Public Benefits Renewable Energy Programs



Both RPS and direct funding for RE

Direct funding for RE only

Renewable Portfolio Standard (RPS) only

No direct funding and no RPS

Not in this study

Low-Income Programs

Lastly, a total of 23 of the 26 jurisdictions include specific funding policies supporting low-income programs (typically some type of bill payment assistance and some support for weatherization or other energy efficiency services) in their legislation and/or regulatory orders. Those states are indicated in Figure 4.

For a convenient overview, a summary table of descriptive data on public benefits policies and funding, on a state-by-state basis, is presented in Appendix A.

Key Decision Areas in Energy Efficiency Public Benefits Policy

The presentation of descriptive information about state public benefits energy efficiency policies and approaches begins with three key issues that were core subjects of debate in just about every state that has passed such policies. These include: (1) funding (i.e., the mechanism, sources, and the amount); (2) administration (i.e., who will administer and operate these programs); and (3) the duration of any policy/funding requirement. The following material briefly summarizes the approaches taken by the states on these issues.

Funding

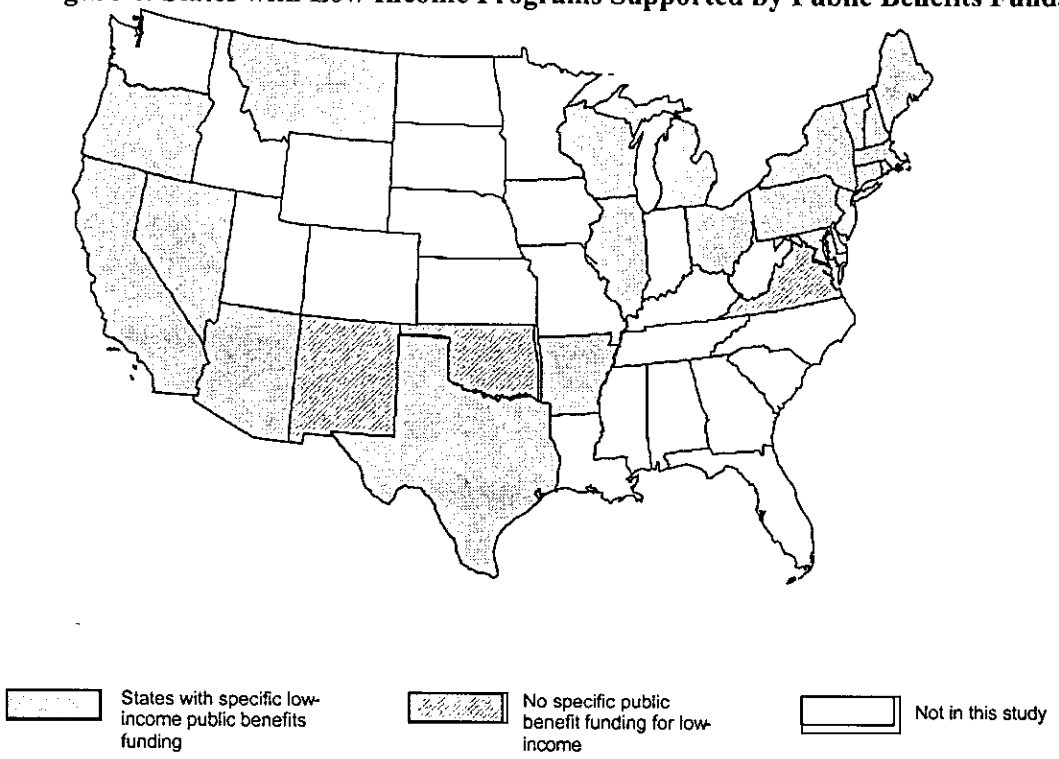
The single most important threshold issue for achieving the successful implementation of public benefits energy efficiency programs is to identify the funding arrangement that is going to support the programs. This typically includes at least three components: the funding mechanism; the funding source(s); and the funding amount.

Funding mechanisms. By far the most common approach to funding energy efficiency public benefit programs is a mechanism typically referred to as a "system benefit charge" (or "public benefit charge"). This is a non-bypassable charge on the distribution service (thus being "competitively neutral" because customers pay the charge no matter who their generation supplier is), usually expressed in "mills per kilowatt-hour."[6] A total of 12 states have adopted that type of approach.

The other six states have used approaches where the funding is either embedded in rates or provided through a flat monthly fee, rather than a per kilowatt-hour charge. Interestingly, two of the 18 states have included approaches that are thus far somewhat unique. Illinois (in addition to a very small requirement for utility funding of some state-administered programs) has established a large "Clean Energy Trust Fund" (funded with $250 million from Commonwealth Edison as part of a larger agreement on restructuring-related issues) that will be used, in part, for energy efficiency efforts. Texas, in contrast to virtually every other state, did not establish a funding amount. Rather, it set a requirement for utilities to achieve energy savings each year equivalent to 10 percent of projected load growth. The utilities then submit rate filings to the Public Utility Commission (PUC) of Texas to cover the estimated costs of achieving those savings goals.

[6] One "mill" is equal to one-tenth of a cent.

Figure 4: States with Low Income Programs Supported by Public Benefits Funds



Funding sources. One policy concern embedded within the broader issue of funding mechanisms is the question of whether all customers would pay to support these funds or would some customers or customer classes be excluded. Large industrial customers and their advocate organizations have frequently argued that they do not need or want these "public" programs and therefore should not be required to pay for them. Although a good argument can be made that energy efficiency benefits all customers in a number of ways,[7] these large customers often have significant political clout and in some cases have succeeded in achieving full or partial exemptions (see below).

It should be emphasized that the predominant approach for public benefits funding, by far, has been that all customers should pay to help support these programs (in keeping with the principle that these programs produce many "public" benefits). This has also been the notion behind making the rate charges that support these programs "non-bypassable" (i.e., they are paid whether the customer purchases electricity from the utility or some other retail supplier).

Nevertheless, there have been some policy exceptions made. A few states have included some preferential treatment for very large industrial customers (typically those in excess of 1

[7] Societal benefits of energy efficiency include environmental benefits from reduced electricity generation, reductions in peak demand that benefit system reliability, general downward pressure on rates from reducing overall demand, etc.

MW of demand) in their restructuring legislation. For example, Montana provides for a smaller per kWh charge for customers of 1 MW demand or greater, and also allows for "credits" against that charge for documented self-spending on energy efficiency projects. Oregon allows a similar partial credit for large customers' (greater than 1 MW) documented self-spending, plus has a special discounted per kWh charge for aluminum smelters. Vermont has a "C&I Customer Credit Program," whereby large business customers that meet several conditions (including being certified under ISO Standard 14001) can receive a refund of up to 70 percent of the cost they would otherwise pay to support the statewide energy efficiency utility. This is based on the amount of documented "qualified" expenditures they make on energy efficiency improvements in their facilities. Despite a few such examples, however, the vast majority of states have required their energy efficiency public benefit funding to come from an equal per kWh charge applied to all customers.

Funding amount. In order to provide common bases for comparison, we have attempted to determine estimates of energy efficiency funding using three standard indices: millions of dollars; mills per kWh; and percent of utility revenue (see the table in Appendix A). Typically, a state's legislation and/or regulatory orders might only clearly specify one of those indices, so this project developed estimates of the remaining indicators from other available data (e.g., Energy Information Administration [EIA] data on utility sales and revenues, etc.).

The indicator for which we were able to obtain the best information was mills per kWh, and we were able to find or develop estimates of that indicator for all 18 states with currently operating public benefits energy efficiency programs. For those states, the required funding level for energy efficiency ranged from 0.03 to 3 mills/kWh, with a median value of between 1.1 and 1.2 mills/kWh.

Table 1 provides a listing of the level of public benefit funding in each state, expressed in terms of mills/kWh, for each of the three major public benefit areas. (Note that the values in the table only represent funding that was specifically identified in restructuring or public benefits legislation and/or regulatory orders. Some of the states have other miscellaneous ongoing or supplemental funding from other sources, e.g., for low-income programs or additional resource procurement, such as in California, etc., which are not reflected in the table.)

One interesting public policy question in this area is how the level of funding for energy efficiency under these new public benefits approaches compares to historical utility energy efficiency spending. The results indicate that, with a few exceptions, states tended to set their public benefits energy efficiency funding at a level comparable to recent prior experience, but significantly below peak utility spending levels of the early to mid-1990s. This pattern is well-illustrated by the data in Figure 5. Across the 15 states for which we were initially able to identify public benefit funding levels for energy efficiency in the 2000 study, we now compared the level of public benefit funding to the states' historical utility energy efficiency spending levels (EIA 2002a and 2002b). Figure 5 presents average historical spending and estimated annual public benefits funding levels across those 15 states.

Table 1: Public Benefit Funding Level by State (mills/kWh)

Total Fund[1, 2]			Energy Efficiency[3]			Low Income[4]		Renewable Energy[5]		
state	mills		State	mills		state	mills	state	mills	
Connecticut	4.05	+[3]	Connecticut	3.00	li	New Hampshire	1.20	Arizona	0.87	p
California	3.00	+	Vermont	2.90	li	Wisconsin	0.85	California	0.80	p
Massachusetts	3.00	+	Massachusetts	2.50	li	Ohio	0.84	Connecticut	0.75	p
New Hampshire	3.00	+	Rhode Island	2.30	r	Maine	0.80	Massachusetts	0.50	p
Vermont	2.90	+	New Hampshire	1.80		Texas	0.65	New Jersey	0.43	p
Maine	2.30		Maine	1.50	li	Oregon	0.63	Oregon	0.31	
Rhode Island	2.30		California[6]	1.30	+	Illinois	0.60	Delaware	0.18	
Oregon	2.20		New Jersey[7]	1.30		Maryland	0.60	New York	0.16	
Wisconsin	2.14		Oregon	1.26		Pennsylvania	0.60	Montana	0.14	
New York	1.75	+	Wisconsin	1.15		California	0.50	Wisconsin	0.09	p
New Jersey	1.73		New York	1.02	+	Michigan	0.40	Pennsylvania	0.05	
Montana	1.10		Montana	0.70		Nevada	0.39	Illinois	0.04	
Arizona	1.07		Nevada	0.43		Connecticut	0.30	Rhode Island	EE	
Texas	1.00	+	Texas	0.33		Montana	0.26	Maine	RPS	
Ohio	0.97		Ohio	0.13		New York	0.26	Nevada	RPS	
Nevada	0.82		Michigan	0.10		DC	0.19	New Mexico	RPS	
DC	0.80		Arizona	0.06		Delaware	0.18	Texas	RPS	
Pennsylvania	0.69		Illinois	0.03		New Jersey	0.16	DC	TBD	
Illinois	0.67	+	Maryland	TBD		Arizona	0.14	Maryland	TBD	
Michigan	0.50		DC	TBD				Michigan	TBD	
Delaware	0.36							Arkansas	TBD	
Maryland	TBD	+								

Source: In many cases, values in the table are directly from state legislation and/or regulatory orders. In other cases, they are estimated using inputs from those sources, interviews with state agencies, and other available data (e.g., EIA data on electricity sales, etc.). Data were not available for all categories of public benefits in each state. **The values in the table are based on authorized funding levels according to the public benefits policy in the state.** They are not adjusted to reflect exact actual spending, which may vary from year to year. They also do not reflect recent temporary funding diversions that have occurred in some states. (That information is provided elsewhere in this report.)

Notes:

[1] The total is the sum of energy efficiency, low-income, renewable energy, and other programs not specifically listed, such as research and development (which is not listed separately in this table, so the totals may be greater than the sum of EE, LI, and RE values).

[2] A plus sign [+] next to a value means that additional funding is available in the state from other sources, due to other government requirements, programs by utilities not covered by the public benefits charge (e.g., municipals and co-ops, power authorities), etc.

[3] "li" in right column indicates that some low-income programs are included; "r" indicates that some renewable energy programs are included, "+" indicates there are other EE programs

[4] These values still might not capture all low-income program activity in a state as many offer programs through other organizations, such as community action programs, that are not included in our research.

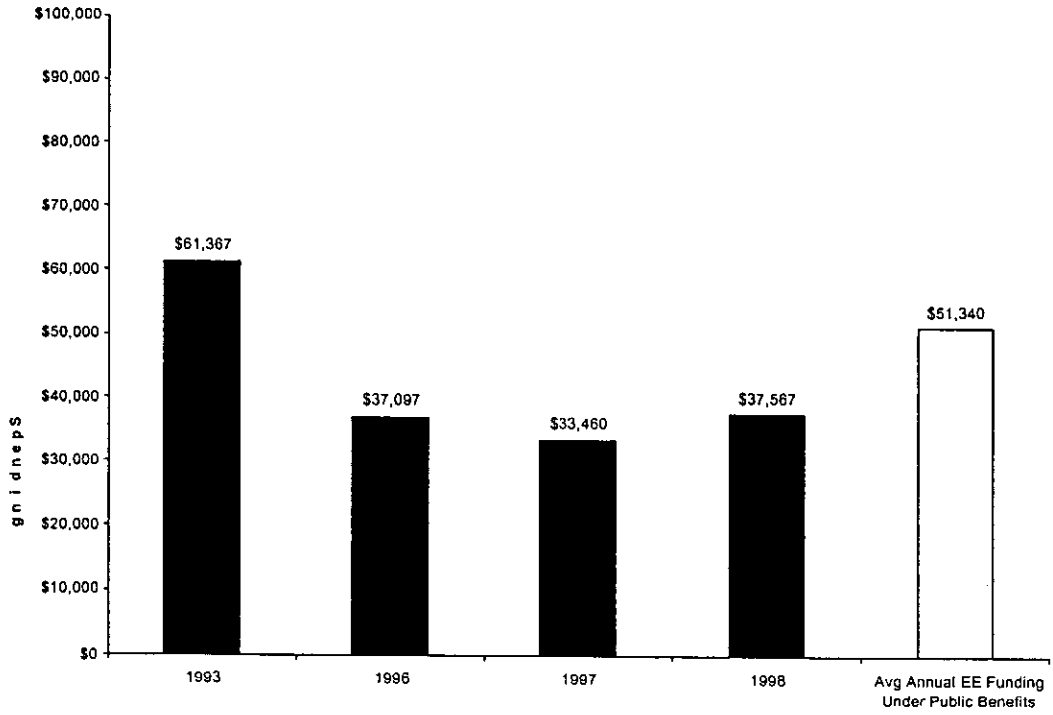
[5] "p" in the right column means there also is a "renewable portfolio standard" in place.

[6] "EE" funding is for public good programs only; it does not include "procurement funding" for additional energy efficiency programs to meet energy resource needs as identified in recent strategic planning.

[7] EE spending includes current year spending, not payments for past standard offer contracts.

While many advocates would like to see higher levels of funding for energy efficiency, it appears that at least the policy direction has been stabilized. A recent study by ACEEE suggests that the cumulative effect of these public benefit energy efficiency mechanisms has helped stop the half-decade long slide in national utility energy efficiency spending that occurred with the onset of restructuring in the mid-1990s, and in fact helped produce a slight increase in national spending from 1997 to 2000.[8]

Figure 5: Energy Efficiency Spending
Average EIA Data vs. Public Benefits Funding Allocations
for the 15 States with Public Benefits Funding Amounts Available



Finally, one additional factor that should be taken into account when considering these public benefits funding levels is the recent occurrence in a few states of the temporary diversion of some of the public benefits funds to other purposes in order to help address current state budget crises. These temporary diversions have thus far not reflected any change in the underlying public benefits policies, and thus are not reflected in the core authorized funding levels presented in Table 1. However, they do represent a potential threat to the effectiveness of public benefit policies, and they do affect the net amount of energy efficiency support that reaches customers in any given time period. Therefore, we do present

[8] In 2002, we estimated that while national utility energy efficiency spending declined by nearly 50 percent in real terms from 1993 to 1997, the inclusion of public benefit fund energy efficiency spending helped lead to an approximately 20 percent increase in such national spending from 1997 to 2000 (from $900 million to $1.1 billion) (York and Kushler 2002).

a summary of the information we obtained from the states regarding any public benefits fund diversion in the section, "Funding Raids," of this report.

Administrative Approaches

Table 2 provides a state-by-state listing of the administrators of the various public benefit programs. Of particular interest for this report are the administrative approaches for the energy efficiency programs. The mechanisms selected by states for administering their public benefits energy efficiency programs can be sorted into three basic categories: (1) utility administration; (2) independent administration by a government or other non-utility entity; and (3) some type of "hybrid" approach. (That numerical code is incorporated into the table.)

Of the 18 states that have adopted some type of public benefits funding and implementation mechanism for energy efficiency, a total of six states can be categorized as having individual utilities administer their energy efficiency programs (albeit often with some type of collaborative advisory process). Nine states have chosen some type of independent entity (seven use a state government agency of some sort and two use an independent nonprofit organization).

Lastly, three states fall into what this study refers to as a "hybrid" category, where utilities have a significant administrative role, but the approach can't really be categorized as simple utility administration. In that group, approaches range from utility administration within a system of substantial planning and direction from a regulatory-appointed body and requirements for certain "statewide" programs, to a system whereby utilities get "credit" for any programs they run themselves and only need to remit any remaining portion of the total spending requirement to a state agency for administration.

In terms of trends over time, it is interesting to observe that there has been somewhat of a migration toward independent, non-utility administration of public benefits energy efficiency programs. In our original report in 2000, we determined that most of the 18 states with public benefits energy efficiency programs at that time still relied on utility companies for administration of their energy efficiency programs. (Seven states could be classified as having utility administration and another five as having a hybrid approach with at least some major role for utilities.) Only six states were classified as having independent administration (four by state government agencies and two by nonprofit organizations). By 2003, the pattern had changed and half (9 of 18) of the states with public benefits energy efficiency mechanisms were relying on state government agencies (seven) or nonprofit organizations (two) to administer their programs, while the other half of the states relied on utilities (six) or utilities with a substantial government role (three) for energy efficiency program administration.

As a final note, however, it should be emphasized that although it is possible to sort states into three general categories, most states have various elements and features that make their approach somewhat unique. This is truly an area where a lot of interesting experimentation is occurring (see Appendix C for details on each state).

Table 2: State Administrative Approaches for Public Benefits Programs

State	Oversight Body	EE Admin	LI Admin	RE Admin
AZ	Arizona Corporation Commission (ACC)	(1) Utility	(1) Utility	(1) Utility
AR[i]	Department of Finance and Administration	No programs offered	(2) Department of Human Services	(2) Alternative Fuels Commission
CA	CA Public Utilities Commission (CPUC)	(3) Utilities and third parties, with substantial CPUC direction	(3) Utilities with oversight by CPUC (which is advised by the LIOB)	(2) CA Energy Commission
CT	CT Department of Public Utility Control (DPUC)	(3) Individual utility distribution companies with assistance from the Energy Conservation Management Board and oversight by DPUC	(3) Individual utility distribution companies with assistance from the Energy Conservation Management Board and oversight by DPUC	(2) CT Innovations, Inc. (quasi-public agency)
DC	Public Service Commission of the District of Columbia	No programs offered	(2) D.C. Energy Office	No programs offered
DE	Delaware Public Service Commission	No programs offered	(2) Department of Health and Social Services	(2) State energy office
IL	Department of Commerce and Economic Opportunity (DCEO) (formerly Department of Commerce and Community Affairs or DCCA)	(2) DCEO	(2) DCEO	(2) DCEO
MA	Department of Telecommunications and Energy (DTE) and Division of Energy Resources (DOER)	(1) Utility with Collaborative input, oversight by state DOER and DTE	(3) Utilities via existing weatherization and fuel assistance network	(2) MA Technology Park Corporation
MD	MD Public Service Commission	No programs offered (utility programs are under consideration)	(2) Department of Human Resources	No programs offered
ME	Maine Public Utilities Commission (MPUC)	(2) MPUC	(2) Maine State Housing Authority	No programs offered (Maine has an RPS requirement)
MI	MI Public Service Commission (MPSC)	(2) MPSC	(2) MPSC	(2) Some RE supported with energy efficiency funding in the LI/EE Fund
MT	MT Public Service Commission	(3) Utility with state as back-up	(3) Utility with state as back-up	(3) Utility with state as back-up
NV	Public Utilities Commission of Nevada	(1) Utility	(2) Welfare division	No programs offered (Nevada has an RPS requirement)

State	Oversight Body	EE Admin	LI Admin	RE Admin
NH	NH Public Utilities Commission	(1) Utility with extensive PUC guidance and oversight	(3) Utility under the direction of the Low-Income Working Group	No programs offered
NJ	NJ Board of Public Utilities	(2) NJ BPU	(1) Utility	(2) NJ BPU
NM	N/A[ii]	N/A	N/A	N/A (NM does have an RPS)
NY	New York State Energy Research and Development Authority (NYSERDA)	(2) NYSERDA	(3) NYSERDA (Note: NYSE&G and NiMo still administer their own low-income programs, until 06/30/04)	(2) NYSERDA
OH	Public Utilities Commission in Ohio	(2) Department of Development	(2) Department of Development	(2) Department of Development
OK	Restructuring legislation has no provisions for public benefits programs.			
OR	OR Public Utility Commission	(2) Energy Trust of Oregon	(2) Housing and Community Service Department	(2) Energy Trust of Oregon
PA	PA Public Utility Commission	No real EE programs (small amount of EE included in Sustainable Energy Funds)	(1) Utility	(2) Sustainable Energy Funds
RI	RI Public Utilities Commission	(1) Utility with collaborative oversight	(1) Utility	(3) State Energy Office
TX	Public Utility Commission of Texas (PUCT)	(1) Utilities (a different mechanism than SBC— have % savings mandate, with associated costs put in T&D rates)	(2) PUCT	No programs offered (TX has an RPS requirement)
VA	SBC funding has never been agreed upon; no programs exist.			
VT	VT Public Service Board and the Vermont Department of Public Service	(2) Independent contractor (Efficiency Vermont or "EVT") selected via RFP	(2) EVT is required to service LI as part of EE[iii]	TBD
WI	Department of Administration	(2) Department of Administration	(2) Department of Administration	(2) Department of Administration

(1) Utility is the primary administrative entity
(2) Independent (non-utility) administration
(3) "Hybrid" mixture of utility and other administrative structures
TBD = to be determined

[i] On February 21, 2003, the Arkansas General Assembly passed Act 204 of 2003, the Electric Utility Regulatory Reform Act. Act 204 repealed electric restructuring in Arkansas. The original restructuring legislation did not have provisions for system benefits programs. However, on February 17, 2003, the Arkansas Legislature passed Act 21 and Act 22, adopting an Alternative Fuels Fund and the Arkansas Weatherization Assistance Fund. Utility participation in the programs is voluntary. Participating electric and natural gas utility companies are assessed fees based on sales to Arkansas residential customers of one-tenth of a cent (0.1¢) per kilowatt-hour sold or one-tenth of a cent (0.1¢) per hundred cubic feet of natural gas sold. The utility may recover the cost of these fees by assessing a direct charge on each residential customer's bill that shall not exceed one dollar ($1.00) per customer in any month. Recently the Acts have become the object of a civil lawsuit. Currently, Entergy is the only company that has chosen to opt into the SBC.

[ii] New Mexico's restructuring legislation was repealed in 2003 with the passage of SB 718. None of the state's public benefits programs survived.

[iii] In addition, in 1990, the Vermont Legislature passed bill H 832 which established the Vermont Weatherization Trust Fund (WTF). The WTF provides state funding for weatherization through a one-half percent gross receipts tax on all non-transportation fuels sold in the state. Approximately 80 percent of the average annual statewide weatherization funding of $4.5 million is supported by the WTF, with the balance of the funding provided by the federal Department of Energy.

Duration of the Public Benefits Policy

The third key issue regarding public benefit energy efficiency policies has been the length of time for which the policy, and the associated funding, has been required. Here again, there has been quite a bit of variability. In the original 2000 study, we reported that: a total of six states did not set any specific duration for the funding requirement, leaving it essentially open-ended; another four states set a 10-year funding period; six states specified 5 years; one state set 4 years; and two states set 3 years. We also observed that it was interesting to note that some of the earlier restructuring states tended to specify shorter time periods (e.g., California 4 years, New York 3 years, etc.), whereas the more recent restructuring states tended to specify longer or open-ended periods. We commented that this might reflect an emerging recognition that transforming markets to be energy efficient is not a simple or quick process, and that there is an ongoing need for these public benefits programs.

Now in the current study we see that the trend toward a longer time period for funding is continuing. No state has terminated their energy efficiency public benefits funding[10] or allowed their funding authority to lapse. Four states that originally specified a short time period (3 to 5 years) have officially extended their public benefits funding for energy efficiency: Montana for 2 years; Massachusetts and New York for an additional 5 years; and California for an additional 10 years. (Specific information on the authorized duration of each state's energy efficiency public benefits funding is provided in the state-by-state "At a Glance" summaries in Appendix C.)

Funding Raids

As discussed in the previous section, only one state has terminated its public benefits policies, and that was in the context of abandoning its entire electric restructuring policy. In contrast, since our 2000 report, at least four states have officially extended the duration of their public benefits funding policy, two states have adopted new public benefits policies, and the other 16 states continue their originally adopted public benefits policies. In general, it would appear that support for public benefits policies in the states that have adopted them remains strong.

However, it is also true that most states have been facing serious budget deficits in the past couple of years, and this has sometimes led to "funding raids" on the state public

[10] One state (New Mexico) terminated their public benefits mechanisms supporting renewable energy and low-income programs (they did not have an energy efficiency public benefits mechanism). However, that termination was done in the context of their repeal of their entire electric restructuring policy, not as the result of any direct dissatisfaction with their public benefits policy.

benefits funds. As a part of this project, we made a systematic review of the extent to which such funding raids have occurred.

Out of the 23 states in our study with some category of public benefits funding policy, at least 11 have experienced a significant attempt to divert monies from one or more of their public benefits funds. These efforts have met with varying degrees of success. Of the 18 states in our study with operating energy efficiency public benefits programs, a total of 4 states (Connecticut, Illinois, Ohio, and Wisconsin) experienced some form of successful diversion of a portion of their funds during the past couple years. For the other categories of public benefits funds (renewable energy, low-income programs, and R&D), we also identified a total of four states (California, Delaware, Massachusetts, and Texas) that experienced some form of successful diversion of funds. The various occurrences of attempted funding raids we identified, both successful and unsuccessful, are briefly listed below.

State Examples of Public Benefits Funding Raids

California: In 2003, the state took $20 million from the public benefits R&D fund to help with the budget deficit. Several other various California PUC funds have been taken, with a value estimated to be at least $350 million (although none of these were public goods charge funded programs). Thus far there have been no successful raids on the public benefits energy efficiency or renewable energy funds.

Connecticut: In 2002, the Connecticut public benefits energy efficiency fund experienced a raid of $12 million (out of a total energy efficiency public benefits fund of approximately $85 million/year) to transfer money to the state budget (presumably to use on state facilities). In 2003, there was an initial attempt to take the entire public benefits energy efficiency fund. After a long and complex process, an agreement was reached to use the energy efficiency public benefits stream of revenues to pay back a bond that was used to provide revenues to the state budget. The net loss to the Connecticut energy efficiency public benefits programs is estimated to be about one-third of the normal funding amount per year, for the next several years until the bond is paid off.

Delaware: The public benefits "Green Energy Fund" that supports renewable energy had $1 million taken in 2003 (about one-fifth of its accumulated balance) to pay fuel bills for low-income customers.

Illinois: During 2003, the state took $1 million of the $3 million state administered public benefits energy efficiency fund and $3 million of the $4 million public benefits renewable energy fund to help with the state budget deficit. The state is also attempting to take $125 million of the approximately $225 million of funds held in the Illinois Clean Energy Community Trust Fund. That attempt is being challenged in court and is currently unresolved.

Massachusetts: The state took $17 million from the renewable energy public benefits fund (out of approximately $150 million of accrued principal). In exchange, the governor

promised to have the state buy at least $10 million in green power. Thus far there have been no raids on the public benefits energy efficiency funding in Massachusetts.

Michigan: Not really a "raid," but in response to budget difficulties and rising fuel costs, the state has allocated almost all of the approximately $50 million per year fund originally planned for both low-income and general energy efficiency programs to low-income programs, and most of that to paying low-income fuel bills.

Montana: Legislation passed in 2001 to terminate the public benefits programs, but a referendum overturned that move. In 2003, the legislature affirmed the decision to continue public benefits programs and extended the funding through 2005.

New Hampshire: In 2003, some legislators proposed taking 0.1 mill/kWh of the public benefits energy efficiency funding, but no such legislation passed.

Ohio: The state took $2.5 million from energy efficiency for the general fund in 2001. In 2003, the entire annual funding for energy efficiency of approximately $10 million was transferred to pay low-income fuel bills.

Texas: The low-income public benefits fund was hit in two ways. The low-income rate discount was reduced from 20 to 10 percent, and the low-income fund support for the weatherization network was eliminated. The public benefits energy efficiency programs are funded through utility rates and were not affected.

Wisconsin: There was a major raid on the public benefits programs to take funds to help with the state budget deficit. Approximately $18 million was taken for 2003, and $29 million for 2004 (nearly half of the $62 million annual budget for public benefits energy efficiency).

In viewing this recent experience, an important question that arises is whether there are any particular approaches to policy and funding structures that appear to make public benefits funds more or less vulnerable to funding raids by the state government. From the results of this study, it does appear that several states that directed the funds to a state agency for administration were subjected to successful funding raids (i.e., Illinois, Ohio, and Wisconsin). On the other hand, some other states that used state administration did not experience raids, and some states that did not administer the money through state agencies did experience funding raids (e.g., Connecticut and the portion of Illinois funding administered by the Clean Energy Community Trust Fund).

One broad interpretation supported by our observations is that any funding policy the legislature and executive branch had a hand in creating seems to be considered fair game as a target for a funding raid when a state faces a budget crisis. Thus we are forced to conclude that there is no "bullet proof" strategy for preventing attempted raids on public benefits funds. However, as a practical matter, it does appear that approaches that do not involve the transfer of funds into the state budget for administration by a state agency may offer a little greater protection from subsequent funding raids.

QUALITATIVE RESULTS

The second major segment of results presented in this report focuses on a qualitative assessment of the policy mechanisms and implementation experience in states that have adopted energy efficiency public benefits policies. This information is based on telephone interviews with representatives of several key interested parties in each state. The interviews targeted three basic groups: state agencies; utilities; and advocacy groups. These ratings are of course subjective, and come from groups involved in the issue rather than "neutral parties." Still, the nature of the groups interviewed provides a good range of perspectives.

These interviews were designed as a follow-up to the qualitative assessment interviews that were conducted in the original 2000 study. Wherever possible, we interviewed the same person who was interviewed for the original 2000 study (we were successful in 70 percent of the cases). When that individual was no longer available, a suitable replacement in that same organization was interviewed. In this manner, we attempted to maximize the ability to gauge any change in opinions of key stakeholder groups over time.

These qualitative results are summarized below in two different categories: (1) interviewee "grading" of their state's public benefit policies and implementation; and (2) key "lessons learned" as identified by the individuals interviewed.

Grading Public Benefit Policies and Implementation

Year 2000 Results[11]

In the original 2000 study, telephone interviews with representatives of key organizations (see above) were conducted for each of the 19 states identified previously as having passed some type of restructuring-related energy efficiency public benefits policy. Typically, three to five interviews were conducted in each state. As a part of the interview, in order to provide a general indicator of their degree of satisfaction, respondents were asked to assign a letter grade ('A' to 'F') to two aspects of the energy efficiency public benefits policy in their state: (1) the adequacy/quality of the "on-paper" policy that their state had adopted; and (2) the administrative execution/implementation of that policy thus far.

In presenting the results from those ratings, we noted a few key aspects. First, the respondents in those states had an overall fairly positive regard for the public benefits policies adopted by their state. The modal grade assigned was a 'B,' and over 80 percent of respondents assigned a 'B' or an 'A.'

With a few exceptions, grades assigned for "implementation to date" tended to be the same or slightly lower than the "on-paper" policy grade. However, respondents in a number of cases assigned an incomplete because they felt it was too early to pass judgment on implementation aspects.

[11] Technically, these interviews were conducted in November and December of 1999, and thus the ratings apply to the respondents' experience through calendar year 1999.

The two most common reasons offered for downgrading the state's policy were a lack of clarity in the legislation (leading to subsequent argument and delays) and that the funding levels were too low. Reasons for downgrading on the implementation side tended to focus on administrative delays, with occasional mention of lack of support for the policy by certain agencies responsible for implementation.

Year 2003 Results

For this current study, we went back almost exactly four years later and re-contacted the key stakeholder groups surveyed in the original study. As it turned out, three of the original 19 states (Delaware, Maryland, and Pennsylvania) that had enacted policies authorizing public benefits energy efficiency programs never really implemented such programs.[12] Therefore, our qualitative assessment follow-up surveys in this current study focused on the remaining 16 states from our originally surveyed group that had implemented public benefits energy efficiency programs (Arizona, California, Connecticut, Illinois, Maine, Massachusetts, Montana, New Hampshire, New Jersey, New York, Ohio, Oregon, Rhode Island, Texas, Vermont, and Wisconsin).

Grading Conceptual Design

In terms of respondent assessment of their state's conceptual approach to energy efficiency public benefits, the results were remarkably similar to the "initial assessment" in the 2000 report. Overall, the ratings were again quite positive. The modal grade assigned to the overall energy efficiency public benefits policy approach was a 'B,' and 80 percent of all respondents assigned a 'B' or an 'A.' For the most part, four years of experience with actual public benefits energy efficiency policies seems to have left these key stakeholders with generally favorable assessments of their state's policy approach.

Grading Implementation

Not surprisingly, this follow-up survey (conducted four years later in the process) found almost no one assigning a grade of "incomplete" to their state's implementation of their public benefits energy efficiency policy. Also, this time the ratings of implementation generally matched quite closely the ratings of the conceptual design. Indeed, on an aggregate basis, the modal grade assigned to implementation was also a 'B,' and four-fifths of respondents assigned a grade of 'B' or 'A.' Overall, with a few exceptions, these stakeholders were generally pleased with the implementation of their state's public benefits energy efficiency policy.

Changes over Time

While the overall results were very comparable to the 2000 report, there was a certain amount of fluctuation in the assessments within states across the two time periods. Five states (Massachusetts, New Hampshire, New York, Oregon, and Rhode Island) showed a modest

[12] Although they did each implement low-income and/or renewable energy focused programs, these were not the target of our study.

increase in the grades assigned, five showed a modest decrease (Arizona, Connecticut, Maine, Ohio, and Wisconsin), and six remained quite stable. Of course with these very small sample sizes (an average of three interviews per state), it is not possible to attach any statistical significance to these trends. But there were some interesting qualitative explanations given for the individual grades assigned.

In particular, two of the states with notable declines in grades assigned were the two states that have undergone the most prominent funding raids (Connecticut and Wisconsin), and those raids were cited as key factors in deciding upon the grades assigned. Beyond that, other common reasons cited for providing a lower assessment included a lack of commitment by the state to aggressively implementing the energy efficiency policy, and/or poor management of the energy efficiency programs by the entity designated to administer the programs.

Common factors cited in states with increases in the grades assigned included: the fact that the state increased its funding commitment to the public benefits energy efficiency policy; that there was an effective collaborative process to ensure stakeholder input; and that the state was making good use of evaluation to pursue continual improvements in energy efficiency program performance.

Highest Graded States

In order to help protect our sources (who were promised anonymity), and to resist trying to draw too many distinctions with an admittedly limited data set, we intentionally avoid going into detail about individual ratings and don't try to make direct comparisons between states. However, in our original 2000 report, we noted that for those looking for a good model for state legislation, the most consistently positive ratings for the "on-paper" policy were received for Connecticut, Massachusetts, Rhode Island, and Vermont.

Interestingly, in the current project, three of those four states (Vermont, Rhode Island, and Massachusetts) were again noteworthy for their high marks, both for their conceptual policy approach to public benefits energy efficiency and for their implementation of that policy. (Connecticut's ratings suffered in this follow-up study, particularly because of the funding raid problems it has experienced.)

For those interested in individual state results, a brief synopsis of the qualitative assessments received is provided in the state-by-state information presented in Appendix C.

Lessons Learned

The second aspect of qualitative assessment was to ask respondents to identify what they considered to be the key lessons learned in developing and implementing their state's public benefits policies. This question was first addressed in the initial 2000 study, when state public benefits energy efficiency policies were in their very early stages. As a consequence, many of the lessons learned at that point focused on issues related to developing and passing a state policy, and less were focused on actual design and implementation issues. In the

current study, with four more years of experience, the focus had shifted much more to those latter issues.

For convenience, so that all "lessons learned" cited by respondents in both studies can be found in one location, we present the combined results in this report. For brevity and clarity, the major lessons identified are simply listed below, using four categories: (1) developing and passing a policy; (2) designing the approach; (3) implementation; and (4) overall lessons. New lessons identified in this current study are identified in italics.

Major lessons cited by these key stakeholders include the following.

Developing and Passing a Policy

- Advocates need to get organized early in the process and make sure they have a seat at the table as restructuring policies are initially discussed. Advocates in many states expressed regret at having entered the process too late to achieve optimal results.
- If possible, form coalitions, especially including business interests. It has been particularly helpful to include businesses that are directly involved in program delivery (contractors, suppliers, etc.) to make clear the positive impact on jobs and local economic activity.
- It is very important to try to find a legislative and/or regulatory "champion" for the policy—someone who will take ownership of the issue and work within the system to make sure that the policy remains intact throughout the process.
- In communicating regarding this issue to policymakers, make clear all the benefits of the policy. Don't let the debate focus just on the costs. In particular, there is often a tendency for policymakers to focus inordinate attention on minimizing rates, thus ignoring all the economic and other benefits resulting from providing funding for energy efficiency.
- Make sure the legislative language is specific and clear (especially regarding the funding amount and mechanism). This helps avoid arguments and delays later.
- Every state is unique. There is no single solution for all situations.
- Work with existing assets in your state. If some approaches/organizations have worked well, incorporate them into the policy approach.
- Be diligent throughout the process. Make sure final legislative language is correct. Don't just assume that the original verbal deal is correctly translated into actual language. Details matter. (This also applies to subsequent rulemaking and orders.)

Designing the Approach

- Set up a dedicated fund to support the public benefits, rather than relying on general revenues and/or annual appropriations. Clear dedicated funding is crucial.
- Programs take time to implement properly (especially market transformation). Be sure to allow sufficient time for policies to work. (A number of parties expressed concern that a 3- or 4-year time frame for public benefits funding was not sufficient.)
- Central statewide administration, or at least close coordination among different utilities in a state, is crucial for market transformation strategies.

- Need to think about regional (in addition to intra-state) cooperation for certain strategies (especially things like market transformation and renewable portfolio standards).
- Need to develop an infrastructure and renewables industry if renewable mandates are going to succeed. A number of parties expressed concern that there is presently an inadequate infrastructure for renewable energy to meet the renewable energy market penetration objectives being established in some states.
- *Make sure you have a way to protect the program funding from raids. (Several respondents in the follow-up survey made similar comments.)*
- *Set a public benefits charge as a floor for spending on energy efficiency, and allow utilities to spend more if necessary to address system resource needs.*
- *Don't allow new public benefits funds to be used to pay off old program debt. New funds received should be used for new program services.*
- *There is a lot of positive aspects to having the utilities administer the programs, including: good knowledge of the electric system and its needs; good relationships with customers; and good history and experience with electric equipment and technologies. The trade-off is that you have to give them decent incentives to keep them motivated.*
- *It is crucial to provide assured multiyear funding so that programs and trade allies can make plans with some degree of certainty.*
- *Get the funds for these programs out of the hands of the state government in order to avoid having the funds taken back when there are state budget difficulties.*
- *We have proven that utility administration and delivery of public benefits energy efficiency can produce very positive results. The jury is still out on the effectiveness of switching program administration to the state.*
- *The legislature has assured funding for an extended period (10 years). That takes away the uncertainty of year-to-year decision-making and is really helpful for planning.*
- *It would be good to examine the potential for targeting some of the public benefits energy efficiency programs toward achieving savings in specific locations where there are T&D system needs.*

Implementation

- If programs are to be administered by an independent entity rather than the utilities, try to select an organization with experience and demonstrated capability in this field. This will be much quicker and more effective than trying to create a new organization.
- In delivering programs, try to take advantage of existing experienced delivery channels, while still allowing some opportunity for testing creative new approaches. There is room to incorporate both strategies.
- Don't commit all available program dollars immediately at the outset. Retain some flexibility to direct funds to good program ideas that emerge as experience unfolds.
- Use of multiparty collaboratives for program guidance and oversight can be an effective mechanism for avoiding litigation and other challenges and delays, and can be done in a reasonably efficient manner.
- *Keep program designs simple and clear. This will help facilitate both trade ally and customer participation.*

- *Having a good communication process and a well-functioning public input process is very important. Our stakeholder process has enabled us to develop some very good programs.*
- *Having a regular process for monitoring program success and feeding information back for program improvement is very important.*
- *Increasing the funding for public benefits energy efficiency really helped. It allowed us to field more types of programs and do some experimentation to identify more effective strategies.*
- *Having a good process for evaluation and feedback leads to continual improvement in program effectiveness over time.*
- *Non-utility stakeholder participation in planning and oversight is fine, but we need to take some steps to streamline the process.*
- *The collaborative stakeholder process has really paid off in developing good plans. Even though the process is sometimes arduous, the product is good.*
- *Do the evaluations and improve programs based on evaluation, not just people's opinions about what should be done. Use objective criteria.*
- *We need to do a better job of integrating utilities into the public benefits energy efficiency programs. They no longer administer these programs, but they have important information and connections with customers.*
- *The program efforts are really spread too thin. We could really use additional funding.*
- *Don't assign administration of energy efficiency to state agencies that don't have the experience, training, or staff to perform that function.*
- *Evaluation has been very helpful in identifying some specific changes to improve program implementation.*
- *Build more of a team approach with the utilities.*
- *Independent administration of energy efficiency works!*
- *The best role for government is high level, to set goals and provide funding, and then let the experts design and implement programs and be held accountable.*

Overall Lessons

- *It is possible to obtain a very strong customer energy efficiency response if you put sufficient effort into it. We achieved a terrific customer response.*
- *Our programs have learned to do even better than we originally thought in delivering programs cost-effectively.*
- *The whole area of peak demand savings needs to be addressed more effectively. The market hasn't stepped up well, and that is an area where the public benefits programs could be applied.*
- *Need to insulate program funding and program decisions from politics.*
- *We are going to be facing a key challenge in how to integrate public benefit charge energy efficiency with any new energy efficiency that emerges from the default supplier planning process.*
- *The public benefits energy efficiency policy has proven to be very important because the initial theory that the market would stimulate these services has not panned out. Retail suppliers see themselves as just commodity providers.*

- *We should be spending more on energy efficiency. Studies have shown they could increase spending significantly and still be cost-effective.*
- *It is crucial to do a good job communicating to the legislature and other stakeholders about what the programs are doing and the benefits that are being provided by the public benefits energy efficiency programs.*

QUANTITATIVE RESULTS—ENERGY EFFICIENCY PROGRAMS

Many of the states profiled in this report established the basic framework and mechanisms for their public benefits programs in the late 1990s. Consequently, in our 2000 report we had limited quantitative program data to provide; many programs were just being developed or launched. In this current update, many more states had at least some quantitative data available on program impacts. Some of the states now have several years of program experience from which to draw these data. Programs in other states, however, are still relatively new. In these cases, quantitative data may still be limited. Additionally, such programs may not be "ramped up" to full operational levels yet.

In this section we examine key quantitative measures of program activity and performance: (1) funding/spending; (2) savings impacts; and (3) cost-effectiveness. We relied on reported data from the states themselves, such as from annual reports and evaluation reports. We did no independent evaluation or verification of reported data, as that was beyond the scope of this project. Thus the reader should be cautioned about making direct comparisons between states because different states often use somewhat different methods and assumptions when estimating program savings and calculating cost-effectiveness. Nevertheless, these data should provide the most comprehensive summary available of public benefits energy efficiency spending, savings, and cost-effectiveness.

Funding and Spending

The relative level of funding for public benefits energy efficiency programs varies widely, but in the states with comprehensive, statewide programs for energy efficiency, the level of funding tends to be in the range of 1 to 3 percent of total utility revenues (see Table 3 below).

Total annual spending on public benefits energy efficiency in the 18 states was over $900 million ($924 million) for the most recent reporting years available in each state (generally 2002 or 2003). This amount includes some low-income energy efficiency programs (home weatherization primarily) from states in which all efficiency programs are administered together, rather than having low-income programs administered separately by a different entity.

Several states that had been the pioneers in establishing public benefits programs have worked through their start-up phases and have full-fledged, comprehensive portfolios of individual efficiency programs in place. The budgets for these programs generally have hit full funding status. States in this category include California, Massachusetts, New Jersey, New York, Rhode Island, and Vermont.

Table 3: Energy Efficiency Program Spending and Savings[1]

	Budgets		Electricity Savings			Year	Notes
	$ millions	% of revenues	MWh	% of sales	MW		
AZ	2.0	0.1%	NA	NA	NA	2002	NA = Not Available
CA	240.0	1.5%	933,365	0.8%	103	2003	Based on IOU PGC funding only
CT	87.1	3.1%	246,000	0.8%	98.7	2002	Reflects CT performance prior to 2003 funding raids
DC	—	—	—	—	—	—	D.C. has low-income programs only
DE	—	—	—	—	—	—	No utility or PGC energy efficiency programs; LI and RE only.
IL	2.0	0.02%	NA	NA	NA	2003	Reflects $1 million decrease due to state budget shortfall
MA	138.0	3.0%	241,000	0.7%	48	2002	EE includes low-income efficiency improvements.
MD	—	—	—	—	—	—	Low-income only, no EE/RE to date; may begin EE programs in 2004; some load management programs still offered—data on them not included here.
ME	2.9	0.3%	25,500	0.3%	NA	2003	Projected values; Efficiency Maine was created in 2002; 2003 was first full program year and included interim programs; EE includes LI-EE; full EE program budgets to be about $9 million/year
MI	7.8	0.1%	NA	NA	NA	2002	EE only; 88% of LI and EE fund grants have gone for LI programs, including payment assistance.
MT	14.3	2.0%	NA	NA	NA	2002	
NH	5.2	0.5%	12,039	0.1%		2002–2003	Partial--start-up was June 2002—data for 10 months: June 1, 2002-March 31, 2003. Annual savings based on estimates of lifetime savings/15 years.
NJ	99.6	1.5%	171,692	0.2%	242	2002	Includes LI energy efficiency. Does not include payments on "standard offer" contracts established in earlier program years.
NY	129.0	1.3%	290,000	0.3%	382	2002	Annual data for 2002 estimated used reported cumulative data, 1999–2003
NV	11.2	0.5%	NA	NA	NA	2003	
OH	14.3	0.1%	NA	NA	NA	2002	
OR	19.1	0.9%	112,100	0.4%	NA	2002	Partial year data; programs began March 1, 2002.
PA	—	—	—	—	—		Sustainable Energy Fund primarily RE and R&D
RI	16.4	2.7%	50,568	0.8%	14.6	2002	Narragansett Electric data only (~entire state ee program)
TX	69.0	0.4%	455,700	0.2%	135.2	2002	
VT	16.8	3.3%	38,400	0.8%	NA	2002	
WI	49.7	1.4%	214,800	0.4%	35.9	FY2003	Does NOT include effects from public benefits cuts, which affect FY04 and FY05 funding cycles
Total	924.4		2,780,254		1,059.3		

[1] Percentages given are based on revenues and sales of utilities affected by public benefits funding requirements.

A few other states have more recently finalized their policies and mechanisms to administer their statewide energy efficiency programs. Such states include Maine, New Hampshire, Oregon, and Texas. With these initiatives have come significant funding commitments as programs recently have been developed and implemented. Funding reported for 2002 or 2003 for these states typically represents funding levels below full authorized funding levels. This kind of ramp-up in funding levels is typical and represents the reality of building the infrastructure and capabilities to develop, implement, administer, and evaluate public benefits programs.

Finally, it should be mentioned that funding in two states that had been among the leading states for establishing statewide public benefits programs recently fell partial victim to budget "raids" resulting from larger statewide budget crises. These states are Connecticut and Wisconsin. The funding levels in both of these states have subsequently been reduced significantly (by about a third), at least on a temporary basis. Even after the cuts, however, the programs have adjusted and will still represent significant commitments to provide energy efficiency programs and services.

Savings Impacts

Of the 18 states with some public benefits energy efficiency spending, 12 publicly report impact data, at least electricity savings (kWh). Eight of these states also report demand (MW) savings data from their programs.

As the data in Table 3 suggest, savings results are clearly related to the amount of funding and program activity. Annual energy efficiency program savings as a percentage of total electricity sales range from about 0.1 to 0.8 percent (that is, the amount of new electricity savings achieved from programs in a reporting year expressed as an annual—not lifetime—amount divided by the total reported electricity sales in the state). The mean value for the ten states for which annual savings data were available is 0.4 percent . Programs are achieving electricity savings, although the savings are still relatively small compared to total electricity sales when viewed on an annual basis. Over a longer period, however, these savings compound and can be significant since most efficiency measures have lives of ten or more years. Such savings can dampen overall electricity demand growth, reducing the need for new capacity and infrastructure, as well as improve system reliability.

Electricity savings also reduce system demand (MW).The combined total incremental annual demand savings for the eight states reporting these data was 1,059 MW, the size of one large baseload power plant or three medium-sized power plants.

Another critical benefit of these electricity and other energy savings (some state programs target natural gas efficiency, too) is the reduction achieved in emissions of air pollutants from fossil fuel combustion, including sulfur dioxide (SO_2), nitrous oxides (NOx), carbon dioxide (CO_2), and mercury. Many of the state public benefits programs were established with clear environmental objectives. Consequently, emission reductions are tracked and reported by many state programs. Those for which we were able to identify reported values are presented in Table 4 below.

Table 4: Emissions Reductions from State Energy Efficiency Programs

State	SO_2 (tons)	NOx (tons)	CO_2 (tons)	Mercury (lbs)	Notes
Connecticut	762	234	182,875	NA	2002 annual
Maine	22	6	4,837	NA	2003 interim program
Massachusetts	1,581	791	280,100	NA	2001 annual
New Hampshire	382	76	57,500	NA	2003 start-up period—3 months; annual estimated from reported lifetime (LT/10)
New Jersey	559	265	165,040	5.9	2002 annual
New York	1,115	713	584,000	NA	2002 annual
Rhode Island	124	43	35,306	NA	2002 annual
Vermont	1,461	448	350,667		2000–2003 cumulative/3
Wisconsin	713	446	185,457	4.9	2001–2002 cumulative/2

Evaluation and Cost-Effectiveness

Evaluation is generally integral to public benefits programs as many of the state statutes and regulatory orders that created such programs also require periodic reporting on program results to state legislatures and regulatory commissions. The breadth and depth of evaluation activities varies widely, however. Some states have strong, independent evaluation processes and mechanisms in place to document, analyze, and report program results and impacts. Other states may have much more limited evaluation processes and requirements in place, or the state programs may be too new to have completed program evaluations yet. In times of tight budgets, those expenditures marked for evaluation activities are often some of the first to be reduced in order to maintain program implementation budgets.

Most public benefits programs have established clear objectives for program cost-effectiveness. Therefore, evaluation is a critical function as it yields the data necessary to estimate the cost-effectiveness of programs. Table 5 presents two measures of program cost-effectiveness as reported by state programs—benefit/cost ratios and cost of conserved energy. These data show clearly that the programs in aggregate are very cost-effective, with benefit/cost ratios ranging from 1.0 to 4.3 and lifecycle cost of saved electricity from $0.023 to $0.044/kWh. These data were only available for a few states, but they are indicative of the cost-effectiveness of programs in states where programs have been in place long enough to achieve and measure results through evaluation.

Table 5: Energy Efficiency Program Cost-Effectiveness

State	Benefit/Cost All Programs	Benefit/Cost Comm./Ind. Programs	Benefit/Cost Residential programs	Cost of Saved Energy ($/kWh)	Notes
California				0.03	
Connecticut	NA	2.4–2.6	1.5–1.7	0.023	
Maine	1.3–7.0				Range of ratios for individual programs
Massachusetts	2.1	2.4-2.7	1.3–2.1	0.04	
New Jersey				0.03	
New York				0.044	
Rhode Island	2.5	3.3	1.5		
Vermont				0.03	
Wisconsin	3.0	2.0	4.3		
Median	2.1–2.5	2.5–2.6	1.6–1.7	0.03	

Note: Median value for the "all programs" column was estimated using assumed value of 2.0 for Connecticut and reported data for Massachusetts, Rhode Island, and Wisconsin. Maine is not included in this estimate because of the wide range of individual program values. Median value for the C/I programs column was estimated using assumed values of 2.5 for Connecticut and 2.6 for Massachusetts. Median value for the residential programs column was estimated using assumed values of 1.6 for Connecticut and 1.7 for Massachusetts. (Those two states did not report point estimate values for those variables, just the ranges shown.) We developed the median range estimates shown in the last row of the table in order to give a rough indication of overall program cost-effectiveness across this set of states. Readers are advised not to put too much emphasis on these exact figures, but regard them as broad indicators.

OTHER PUBLIC BENEFITS ENERGY EFFICIENCY OBJECTIVES

States implement public benefits energy efficiency programs in order to pursue a number of policy objectives. Particular objectives identified in this study (from state legislation, regulatory orders, and stakeholder interviews) included the following:

- Save energy
- Help ensure electric system reliability
- Help the state's markets for goods and services to be more energy efficient
- Benefit the environment
- Improve the state economy
- Help businesses be more competitive
- Help disadvantaged customers
- Ensure an equitable distribution of program services

Most states identified a number of the items on that list as part of their objectives in implementing a public benefits energy efficiency program. The following sections summarize what this project found in terms of how states were addressing several of those key issue areas.

Pursuing Equity Issues

This project looked at two particular indicators of states' interest in pursuing equity in the implementation of their public benefits program: (1) the extent to which the states targeted disadvantaged groups (sometimes called "hard-to-reach" sectors of the customer population); and (2) the extent to which the states pursued distributional equity in terms of funding for residential versus non-residential programs.

Programs for Hard-To-Reach Segments

Overall, we found that nearly all states with public benefits energy efficiency programs had at least some incorporation of policy objectives for serving disadvantaged customer segments. Most typically this was reflected in having specific programs for low-income customers, where energy efficiency programs are specially targeted to households below a certain income level (typically 150, 175, or 200 percent of poverty). In some cases, however, there were also programs to target other hard-to-reach groups, such as the small commercial sector and non-English-speaking populations within the residential sector. The presence of these types of policy objectives demonstrates that despite policymakers' frequently expressed desires to have public benefits fund-supported energy efficiency programs be "cost-effective," they do also recognize and pursue other societal objectives through these programs.

Residential vs. Non-Residential Funding

Another key issue related to equity concerns is the relative distribution of public benefits program funding among different customer classes. Oftentimes there is some

policymaker/regulator interest in ensuring that public benefits fund expenditures reflect the relative contribution of ratepayer dollars into the fund. This also is an area where equity concerns bump into the desire for cost-effectiveness, since a pure focus on cost-effectiveness would lead to directing most or all program funds into the large commercial and industrial sectors, where the cheapest energy savings typically can be found.

For simplicity in looking at this issue, and in order to maximize the number of states for which we could obtain data, we categorized the sectors as "residential" versus "non-residential." Overall, we noted that virtually all states with a significantly sized funding of public benefits energy efficiency had strong program support for both residential and non-residential customers. We were able to obtain the relative funding distribution for most of these states, and found that the relative distribution of energy efficiency program funding was fairly evenly divided between residential and non-residential classes in most cases, although a couple states had as much as a two-thirds to one-third split in favor of commercial and industrial (C&I) over residential customers.

Many states made a point of noting their broad distribution of funds to the different customer classes in their annual reports, and some went so far as to monitor and report their equitable distribution of program expenditures across geographic segments of their states (even at the county-by-county level). Once again, it is clear that policy objectives such as distributional equity at least "share the stage" with objectives of cost-effective energy savings.

Linkages to Resource Planning

Another interesting issue related to state objectives that we sought to examine in this study was the extent to which these public benefits energy efficiency programs were connected with, or provided input into, electric resource planning. We found that with a few notable exceptions, most of the public benefits energy efficiency programs had no connection at all with electric resource planning or electric supply decisions.

That result is perhaps not surprising when one considers that the origins of the concept of "public benefits" funding for energy efficiency was in the movement toward electric restructuring. One of the fundamental tenets of electric restructuring was that centralized planning for electric supply was not necessary, that the market would provide the necessary supply resources. Most of the states that enacted public benefits funding embraced that market philosophy, and consequently established the energy efficiency programs to address other objectives (e.g., to assist consumers, provide economic benefits, improve the environment, etc.).

The nature of this disconnect between public benefits energy efficiency and electric resource decision-making is perhaps best illustrated by some of the responses obtained from utility representatives interviewed in this project, when asked whether the savings results from these programs were fed back into resource planning. These responses were obtained from utilities in three eastern states, each with major public benefits energy efficiency programs.

- "Keep in mind that we are a distribution utility now, so we don't do resource planning."
- "Our state model is based on market forces. The IRP process has pretty much gone by the wayside. It's a deregulated market now. Utilities provide default service, but that's done through a statewide bidding process."
- "It's no longer in any utility company's interest to pursue integrated resource planning. How would we make any money at it? Plus, it smacks of the old world, and no one wants to do that."

In fairness, it should be noted that respondents in several states did go on to mention that there was some consideration of public benefits energy efficiency program impacts in the context of transmission and distribution (T&D) system decisions, and in a few states (e.g., Connecticut and New York) there were some explicit efforts to target energy efficiency programs in areas where T&D resource challenges were identified. Also, several states' representatives noted that they do report the public benefits program savings data to the regional ISO for their use in developing load forecasts. But as for generation supply decisions, most of these public benefits states have truly disconnected energy efficiency programs from that process.[13]

At the other end of the spectrum, there were also a few states (e.g., Oregon, Vermont, and Nevada) where explicit requirements for IRP have been retained, and where public benefits energy efficiency program results are formally linked to electric resource planning.

Finally, and perhaps most noteworthy, are the developments in a couple of restructured states (California and Montana) to re-connect energy efficiency and electric resource planning, in the context of providing for "default service" to ratepayers. This is a particularly interesting development because, with the widespread failure of restructuring to produce competitive retail electricity markets, virtually all restructured states are being confronted with the need to provide reliable default electric service to their non-competitive customers—i.e., essentially all their residential and small commercial customers. Rather than simply rely on spot market purchases (which can be a very risky and volatile strategy), some states are examining the potential for re-instituting some kind of an IRP approach to help assure a stable, reliable, and low-cost electric resource portfolio. These developments hold great potential for re-connecting energy efficiency to electric resource planning.[14]

Linkages to Environmental Objectives

Another interesting development has been the trend toward increasing the linkage between energy efficiency program impacts and various state environmental objectives. Historically, there has always been some recognition of the fact that energy efficiency

[13] One reason why this is important is because avoided generation costs are a significant portion of the "resource value" of energy efficiency. Considering T&D avoided costs alone significantly under-represents the value of energy efficiency.

[14] California has already made significant strides toward this objective, and its major utilities have announced plans to spend an additional $245 million on energy efficiency resource "procurement" over the next 2 years (above and beyond its already committed public benefits energy efficiency funding). The Montana PSC has also issued regulatory orders that will attempt to move Montana in this direction.

programs produce environmental benefits by reducing the need for electricity generation, but it has typically been a qualitative acknowledgment that this was a nice additional feature, rather than any explicit quantification of program benefits.

More recently that lack of quantification of environmental impacts has been changing, and we were able to identify at least nine states that attempted to estimate and report the environmental impacts (i.e., tons of pollutants avoided) from their public benefits energy efficiency programs. In a few cases (e.g., Massachusetts, New York, and Rhode Island), we found instances where states were working to have savings impacts from public benefits energy efficiency programs explicitly factored in to efforts to meet environmental objectives, such as NOx caps and greenhouse gas emission reduction commitments. We expect that this will be a growing trend as future clean air policies become further defined.

CONCLUSION

State public benefits funds, using revenues collected through the utility distribution system, emerged in the late 1990s to become perhaps the most significant new policy mechanism for implementing energy efficiency in the past decade. ACEEE conducted an "initial examination" of experience with this new strategy in 2000, concluding that the policy approach looked promising, but that it was still very early in the process.

The current project was designed as a comprehensive follow-up study to that initial research in order to examine the results that have been obtained now that public benefits energy efficiency policies and programs have been in place for a half decade or more. Overall, the results are very encouraging.

Public benefits energy efficiency policies have been adopted in at least 20 states, and at least 18 states have currently operating public benefits energy efficiency programs. Despite some notorious "funding raids" in a few states, brought about by severe state budget problems, the qualitative assessment of these public benefits energy efficiency programs by key stakeholders (government, utilities, and advocacy groups) in these states continues to be very positive. In a set of interviews conducted with these stakeholders across 16 states in late 2003, the modal "grade" assigned to their state's public benefits energy efficiency approach and its implementation was a 'B,' with four out of five respondents assigning a grade of 'A' or 'B.' (In addition to this issue of overall performance, we also provide the key "lessons learned" from the experiences in the states, as reported in the interviews by these stakeholders.)

As further concrete evidence of stakeholder support, no state has cancelled a public benefits energy efficiency policy, and at least 4 states have passed legislation to substantially extend the time period for which its public benefits energy efficiency policy will be effective.

These public benefits energy efficiency programs are also producing significant energy savings impacts. This report summarized and presented the information we were able to obtain on program spending, savings, and cost-effectiveness. The data indicate that current annual spending across these programs is over $900 million, and annual savings in just the 12 states reporting evaluation data are nearly 2.8 million MWh and 1,060 MW (MW savings data reported by only eight states). We were able to obtain cost-effectiveness estimates from nine of the most active states, and the results show these public benefits energy efficiency programs to be very cost-effective. Estimated benefit/cost ratios range from 1.0 to 4.3 (median in the ~ 2.1 to 2.5 range), and estimates of the cost of conserved energy range from $.023 to $.044/kWh (median = $0.03/kWh). Beyond energy savings, we also report estimated air pollution emission reductions provided by a number of states.

In addition to these direct program impacts, we describe some of the additional objectives states have identified for these public benefit energy efficiency policies, and discuss key emerging opportunities for broader use of these programs (such as the re-emerging interest in integrated resource planning in the context of the provision of default electric service in restructured states.)

Finally, in terms of overall conclusions, the results of this study essentially confirm the two key findings from the initial early assessment of public benefits energy efficiency programs that ACEEE published in 2000:

> The principal public policy lesson learned from this study is that it is indeed possible to establish a statewide public benefit energy efficiency funding mechanism and achieve practical success in administering and delivering programs funded by that mechanism. The very visible success of such efforts in numerous states clearly demonstrates that fact.
>
> A significant corollary lesson is that there does not appear to be any single "correct approach" for the design of such a system. Some states are having success with utility-administered programs (e.g., Massachusetts, Connecticut, and California), while others are succeeding with programs administered by state agencies (e.g., New York and Illinois) or even by an independent entity selected by an RFP (e.g., Vermont).
>
> This translates into what might be the primary strategic and tactical lesson of the study—once having met an overall policy threshold of having public benefit funding support for energy efficiency, each state should take advantage of its own strengths and assets in designing the specific details of its energy efficiency policy implementation approach.
>
> (Kushler & Witte 2000b, p. 23)

In summary, with four more years of documented experience, the conclusion that public benefits energy efficiency programs are an effective policy mechanism for achieving significant energy savings (and other related goals) seems very sound. Moreover, we still see proven success with public benefits energy efficiency programs using a variety of different administrative strategies, indicating that states can have the flexibility to tailor public benefits approaches to their unique circumstances. Of course it must be acknowledged that not every attempt at implementing public benefits energy efficiency policies in every state has been an unqualified success. There have been occasional problems and setbacks encountered in some areas. Nevertheless, from the overall very positive observations in this study, we feel justified in recommending that additional states, and indeed the federal government, seek to implement such public benefits mechanisms in order to help capture the many benefits of improved energy efficiency.

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APPENDIX A: SUMMARY TABLE OF PUBLIC BENEFIT PROGRAMS

			Details of SBC Funding					Renewables Portfolio Standard	Generation Disclosure
Arizona	In Dec '96, the ACC ordered retail competition beginning in Jan '99 and completed by Jan '03. Later delayed to begin in 2001. Currently re-evaluating divestiture (Decision No. 65154). ACC rule requires SBC for LI, EE and RE. Funding determined in indiv. utility cases. Also a sep. charge for an "Environmental Portfolio Standard" (see RE). Also, EE may be shifted into RE.		R&D	EE	LI	RE	Total		
		million $	TBD	2.0	5.0	25.0	32.0	ACC rule calls for 0.2% by 2001, up to 1.1% by 2007. Half must be solar elec.	Fuel mix and emissions are required by ACC rule.
		mills/ kWh	TBD	0.06	0.14	0.875	1.07		
		% rev.	TBD	0.08	0.19	1.18	1.45		
		admin	TBD	Utility	Utility	Utility			
California	In Sept '96, AB1890 signed into law, with full retail access Apr. '98. A 4-yr. SBC was created using a non-bypassable wires charge. In Aug '00 the SBC got 10-yr extension, with inflation adjustment. Table shows just the 4 large IOUs. Small IOUs and muni's are also spending over $100 million/yr on pub ben. (New additional EE procurement funding ($245 mil.) not included in table.)		R&D	EE	LI	RE	Total		
		million $	62.5	228.0	100.0	135.0	525+	SB1078, passed in Sept. '02, req. min. increase of 1% per year, escalating to 20% by 2017	A "power content label" is required for generation mix.
		mills/ kWh	0.4	1.3	0.5	0.8	3.0		
		% rev.	0.4	1.3	0.5	0.8	3.0		
		admin.	CEC	Utility	Utility	CEC			
Connecticut	In April 1998 Public Act 98-28 was signed into law. Phases in retail access during 2000. It funds EE, RE, and LI. RE ramps up over time, average is in table. Some LI in EE. Support for R&D is imbedded in the RE programs. Funds are collected through a non-bypassable wires charge. In May 2003, the RPS was strengthened to apply to all providers.		R&D	EE	LI	RE	Total		
		million $	in RE	87.0	8.7	22.0	117.7	By 2010, 10% of all power must come from renewables (7% from the preferred sources)	Disclosure of fuel mix and emissions is required to be submitted to the DPUC.
		mills/ kWh	in RE	3.0	0.3	0.75	4.05		
		% rev.	in RE	3.0	0.3	0.75	4.05		
		admin.	EE &RE	Utility	Utility	St. Auth.			
Delaware	Restructuring Act signed in March 1999. Had two SBCs: 0.178 mills/kWh for EE "incentive" programs, and 0.095 mills/kWh for LI bill asst. & EE. An additional $250,000 from rates went towards customer education, esp. regarding RE. SB93 (June '03) renamed the Environmental Incentive Fund to the Green Energy Fund. Focus now on RE and LI.		R&D	EE	LI	RE	Total		
		million $			1.5	1.5	3.0	None.	Rules require all elec. suppliers to disclose fuel mix. Standard label is not required.
		mills/ kWh			0.18	0.18	0.36		
		% rev.			0.30	0.30	0.60		
		admin.			State	State			
District of Columbia	In May 2000 Congress passed restructuring bill for D.C. Includes a "Reliable Energy Trust Fund" To be funded by a non-bypassable charge of up to 0.8 mills/kWh. (After 4 years, can increase to a maximum of 2.0 mills/kWh.) Covers EE, RE and LI. To be administered by the local District government. As of Mar. '04, charge is 0.19 mills with further allocation TBD.		R&D	EE	LI	RE	Total		
		million $		TBD	2.1	TBD	8.0	Comm-ission Working Group is examining the issue.	Fuel mix is required to be reported every 6 months to the Comm-ission.
		mills/ kWh		TBD	0.19	TBD	0.8		
		% rev.		TBD	0.26	TBD	1.0		
		admin.		City	City	City			

			Details of SBC Funding				Renewables Portfolio Standard	Generation Disclosure
Illinois	In Dec '97, PA 90-561 was signed. It provides funding for EE, RE and LI (although EE and RE are at low levels), using non-bypassable flat monthly charges on customer bills. ("mills/kWh" equiv. includes $ from gas & electric.) Also, one-time ComEd $250 million Clean Energy Trust fund ok'd by legis. May '99 (not in table).	**R&D**	**EE**	**LI**	**RE**	**Total**		
		million $	3.0	75.0	5.0	83.0	20 ILCS 688, Jul. '01, cites a renewables goal of 5% by 2010 & 15% by 2020. No mandate.	All electricity retailers are required to disclose generation mix and emissions to customers.
		mills/ kWh	0.03	0.6	0.04	0.67		
		% rev.	0.04	0.8	0.05	0.9		
		admin.	DCEO	DCEO	DCEO			
Maine	In May '97, a state restructuring law was passed. The PUC has proposed, and legislature has authorized, a surcharge equivalent to approximately 1.5 mills/kWh. State PUC oversees. Some LI in EE. R&D is voluntary funding.		Details of SBC Funding				Renewables Portfolio Standard	Generation Disclosure
		R&D	**EE**	**LI**	**RE**	**Total**		
		million $	15.0	6.1		21.1	30% starting Mar. '00. Limited to facilities of 100-MW or less.	Fuel mix and emissions disclosure is required.
		mills/ kWh	1.5	0.8		2.3		
		% rev.	1.3	0.55		1.85		
		admin.	TBD	MPUC	State			
Maryland	Restructuring Law signed in April 1999. Includes $34 million/yr. tax funded "Universal Service Fund" for bill assist. and EE for LI customers. (Table shows mills/kWh and % rev. equiv.) In addition, 2 of state's 3 largest utilities agreed in settlements to have up to 1 mill/kWh EE addressed in settlements with individual utilities.		Details of SBC Funding				Renewables Portfolio Standard	Generation Disclosure
		R&D	**EE**	**LI**	**RE**	**Total**		
		million $	TBD	34.0		TBD	PSC produced an RPS feasibility report in Dec. '99. To date, no RPS legis. has been passed.	Fuel mix and emissions disclosure is required.
		mills/ kWh	TBD	0.6		TBD		
		% rev.	TBD	0.9		TBD		
		admin.	Utility	State				
Massachusetts	In Nov. '97 comprehensive legislation was signed bringing retail access to all customers in 1998. Includes a non-bypassable wires charge for EE, RE and LI. LI must get at least .25 mills of the EE SBC. (Note: RE excludes .25 mills/kWh for Municipal Solid Waste). In Feb. 2002, legislation was signed extending the SBC for five years, through Dec. 2007.		Details of SBC Funding				Renewables Portfolio Standard	Generation Disclosure
		R&D	**EE**	**LI**	**RE**	**Total**		
		million $	117.0	Incl.	24.0	141.0	Requires a new 1% increment by 2003, to 4% by 2009, 1%/yr. thereafter.	Fuel mix and emissions disclosure is required. Member N.E. Disclosure Project
		mills/ kWh	2.50	in	0.5	3.0		
		% rev.	2.50	EE	0.56	3.06		
		admin.	Utility	Utility	MTPC			
Michigan	Restructuring law (PA 141) passed in 2000. The bill authorized creation of a "low income and energy efficiency fund", to be funded through savings from utility securitization. The MPSC implemented a Request for Proposal process for distributing funds and determining allocations to LI and EE projects. Funding is estimated to be $50 million/year for 6 years.		Details of SBC Funding				Renewables Portfolio Standard	Generation Disclosure
		R&D	**EE**	**LI**	**RE**	**Total**		
		million $	10.0	40.0	in	50.0	None.	Fuel mix and emissions disclosure is required.
		mills/ kWh	0.1	0.4	EE	0.5		
		% rev.	0.14	0.56		0.7		
		admin.	MPSC	MPSC	MPSC			

Montana	In May '97, electric utility restructuring was signed into law. Retail access began July '98 and was originally scheduled to be completed by July '02. Retail choice for all customers has been delayed until July 1, 2027. Using EE and RE funds for R&D is approved by the statute. Funds are collected using a "universal system benefit charge." LI must be at least 17% of total.		**Details of SBC Funding**				**Renewables Portfolio Standard**	**Generation Disclosure**
			R&D	**EE**	**LI**	**RE**	**Total**		
		million $		8.9	3.3	1.8	14.0	None.	The PSC has proposed disclosure but no orders have been issued.
		mills/ kWh		0.7	0.26	0.14	1.1		
		% rev.		1.5	0.6	0.3	2.4		
		admin.		Utility	Utility	Utility			
Nevada	In July '97, electric utility restructuring was passed. Retail access was scheduled for March 2000, but delayed due to CA problems. In 2001, AB 369 halted restructuring. RPS and disclosure passed separately in 2001. In 2003, EE funding was approved as part of the utility's Integrated Resource Plan, (rather than its restructuring plan), so the EE funding source is technically not an SBC.		**Details of SBC Funding**				**Renewables Portfolio Standard**	**Generation Disclosure**
			R&D	**EE**	**LI**	**RE**	**Total**		
		million $		11.2	10.0		21.2	SB 372 passed in 2001. Requires 5% by 2003, 15% by 2013.	AB 197 of 2001 requires disclosure of fuel mix and emissions info., twice a year.
		mills/ kWh		0.43	0.39		0.82		
		% rev.		0.5	0.45		0.95		
		admin.		Utility	State				
New Hampshire	In May '96, NHRSA was passed into law. Retail access was to be implemented in Jan '98, but conflicts over stranded costs delayed the process. The statute authorized funding for R&D, EE, RE and LI, but the initial PUC plan only funded LI. In June '00, SB 472 set an SBC of 2.0 mills/kWh. In Nov. '00 The PUC allocated 1.2 mills to LI and 0.8 mills to EE. In 2002, EE was increased to 1.8 mills.		**Details of SBC Funding**				**Renewables Portfolio Standard**	**Generation Disclosure**
			R&D	**EE**	**LI**	**RE**	**Total**		
		million $		15.0	10.4		25.4	None.	Participants in the New England Disclosure Project, though not required yet.
		mills/ kWh		1.8	1.2		3.0		
		% rev.		1.52	1.0		2.52		
		admin.		Utility	Utility				
New Jersey	Restructuring law passed in Jan. '99. Requires SBC funding for EE/RE at same level as existing DSM costs (approx. $235 million/yr.). Full SBC is 3.6 mills. Half would pay for costs from prior years, half for new programs. 25% of new must be RE. Numbers in table are new programs only, set in BPU order Mar. '01. LI separately funded at prior levels.		**Details of SBC funding**				**Renewables Portfolio Standard**	**Generation Disclosure**
			R&D	**EE**	**LI**	**RE**	**Total**		
		million$		89.5	10.1	30.0	129+	By Jan. '01 to be 0.5% from "Class 1", by Jan. '06 1.0%. Ramps up to 4% by 2012.	Required for fuel mix and emissions.
		mills/ kWh		1.30	0.16	0.43	1.89		
		% rev.		1.35	0.15	0.45	1.95		
		admin.		NJ BPU	Utility	NJ BPU			

			Details of SBC Funding					Renewables Portfolio Standard	Generation Disclosure
New Mexico	New Mexico's restructuring legislation, SB 428, signed in April 1999, was repealed in 2003 with the passage of Senate Bill 718. None of the state's public benefits programs survived.		**R&D**	**EE**	**LI**	**RE**	**Total**		
		millionS						March '04 law signed requiring 5% by 2006 escalating to 10% by 2011	Required for fuel mix and emissions.
		mills/ kWh							
		% rev.							
		admin.							
New York	In May '96, the PSC issued Order 96-12, requiring all IOUs to file restructuring plans. A July '98 Order set $78 million/year for an SBC, administered by NYSERDA. In Jan '01 the PSC raised the SBC to $150 million/yr and extended it for 5 years. (Table shows allocation minus 10% held open). R&D incl. $14 million/yr for RE. Table doesn't incl. $100 million/yr. EE by Power Authorities.		**R&D**	**EE**	**LI**	**RE**	**Total**	**Renewables Portfolio Standard**	**Generation Disclosure**
		million $	26.0	87.0	22.0	14.0	150.0	Considering goal of 25% in 10 yrs. Decision in Case 03-E-0188 expected early in 2004.	Required by PSC Opinion dated 12/15/98.
		mills/ kWh	0.30	1.02	0.26	0.16	1.7		
		% rev.	0.23	0.75	0.19	0.12	1.3		
		admin.	NY-SERDA	NY-SERDA	NY-SERDA				
Ohio	Restructuring Law (SB3) signed in July 1999. Includes an SBC for up to $15 million/yr. for an "Energy Eff. Revolving Loan Fund" admin. by the state, plus a "Universal Service Rider" for LI bill asst. and efficiency. LI in table based on recent historical spending. (EE does not incl. addtl. agreements by indiv. utilities.)		**R&D**	**EE**	**LI**	**RE**	**Total**	**Renewables Portfolio Standard**	**Generation Disclosure**
		million $		15.0	100.0		115.0	None.	Fuel mix and emissions disclosure is required.
		mills/ kWh		0.13	0.84		0.97		
		% rev.		0.15	1.1		1.25		
		admin.		State	State				
Oregon	Law passed in July 1999. Includes a "public purpose charge" to fund EE, RI and LI, equiv. to 3% of total IOU revenues (approx. $60 million). Requires 67% of funds for EE (incl. MT) and 17% to RE. PUC to develop rules. LI gets 15% of PPC for weatherization, plus extra $10 million for bill payment assistance (incl. in table totals).		**R&D**	**EE**	**LI**	**RE**	**Total**	**Renewables Portfolio Standard**	**Generation Disclosure**
		million $		40.0	20.0	10.0	70.0	None.(a "green rate" option is required, however)	Fuel mix and emissions disclosure is required.
		mills/ kWh		1.26	0.63	0.31	2.2		
		% rev.		2.0	1.0	0.50	3.5		
		admin.		ETO	State	ETO			
Pennsylvania	In Dec. '96, a restructuring law was signed with retail access to be phased-in over 2 yrs. starting Jan '99. The restructuring law resulted in PUC-approved restructuring settlement agreements for each electric company. Each settlement agreement created a system benefits fund for LI programs and a Sustainable Energy Fund (except for Duquesne)		**R&D**	**EE**	**LI**	**RE**	**Total**	**Renewables Portfolio Standard**	**Generation Disclosure**
		million $	5.0		85.0	6.0	96.0	None.	Fuel mix is required (but not emissions data.)
		mills/ kWh	0.04		0.60	0.05	0.69		
		% rev.	0.05		0.9	0.06	1.0		
		admin.	SEF		Utility	SEF			

			Details of SBC Funding				Renewables Portfolio Standard	Generation Disclosure
Rhode Island	Retail competition phased in by Jan. '98. The legislation required a minimum SBC of 2.3 mills per kWh for EE and RE. Actual spending plans exceeded that. Some funding on R&D for "near commercialization" renewables. Low-income EE and rate discounts are funded in rates, not the SBC. In July 2001, the 2.3 mills minimum SBC was extended for 5 more years.		**R&D**	**EE**	**LI**	**RE**	**Total**		
		million $		15.2	in rates	in	15.2	None.	Participant of NE Disclosure Project.
		mills/ kWh		2.3	in rates	EE	2.3		
		% rev.		2.3	in rates		2.3		
		admin.		Utility	Utility	State			
Texas	Restructuring Law signed in June 1999. Requires utilities to administer EE programs to achieve savings equivalent to 10% of annual load growth by 2004. PUC has established rates and procedures. Est. total annual cost is $80 million by 2003. Also a small SBC for customer educ. and LI assistance & 10% LI rate discount. (Has been set at statutory maximum .65 mills/kWh.)		**R&D**	**EE**	**LI**	**RE**	**Total**	**Renewables Portfolio Standard**	**Generation Disclosure**
		million $		80.0	157.0		237.0	Requires 2000 MW of new renewables by 2009. (Phase-in, 400 MW by 2003.)	Aug '01 PUCT Rule §25.476 requires fuel mix and environ-mental impact disclosure.
		mills/ kWh		0.33	0.65		1.00		
		% rev.		0.55	1.10		1.65		
		Admin.		Utility	PUCT				
Vermont	VT has not yet restructured, but in June 1999, S.137 passed, giving PSB the authority to establish an SBC to fund statewide EE thru a non-utility entity, in place of utility programs. $17.5 million/yr maximum. 5-year ramp-up budget was set in settlement, averages shown in table. EVT = Efficiency Vermont.		**R&D**	**EE**	**LI**	**RE**	**Total**	**Renewables Portfolio Standard**	**Generation Disclosure**
		Million $		17.5	in		17.5	None.	S62 required price, mix, pollutants, EE notices, and terms. NE Disclosure Proj.
		mills/ kWh		2.9	EE		2.9		
		% rev.		3.4			3.4		
		admin.		EVT	EVT				
Wisconsin	Act 9 of 1999 passed Sept. '99 includes elec. Reliability provisions which designate the WI Dept. of Admin. as the state agency to design and implement public benefit programs. Industry restructuring has not yet been addressed. Totals in the table reflect best estimate of funding levels when fully in place.		**R&D**	**EE**	**LI**	**RE**	**Total**	**Renewables Portfolio Standard**	**Generation Disclosure**
		million $	2.2	62.0	46.0	5.0	115.2	Requires 0.5% by 12/31/2001. Increases biennially to 2.2% by 12/31/2011.	Not addressed.
		mills/ kWh	0.0	1.15	0.85	0.09	2.14		
		% rev.	0.08	2.3	1.73	0.18	4.3		
		admin.	DOA	DOA	DOA	DOA			

TBD = to be decided

SBC funding amounts provided in the table are average annual funding levels.