

# How energy efficiency has survived restructuring in the U.S. A review and initial assessment of public benefits policies and programs in the United States

Martin G. Kushler, American Council for an Energy-Efficient Economy

---

## 1. SYNOPSIS

---

This paper provides an overview of the latest policy approach to providing energy efficiency programs in the U.S.: state level "public benefits" funding mechanisms.

---

## 2. ABSTRACT

---

Since the era of electric restructuring (liberalisation) began in the U.S. in the mid-1990's, utility spending on energy efficiency has been cut dramatically, falling by over 50%. In response, the concept of state mandated "public benefits" funding has emerged as the primary new mechanism for supporting utility related societal benefits such as energy efficiency. A total of 19 states have enacted some type of public benefits policy to provide energy efficiency, including three-fourths of the states which have restructured to date. ACEEE has been directing a research project, jointly funded with the U.S. Department of Energy, to conduct the first comprehensive review and assessment of public benefit policies in restructured states. The purpose of this paper is to present some of the highlight results of that research.

---

## 3. INTRODUCTION

---

### Background

Two items of background information should be helpful in understanding the context for the research results presented in this paper. First, the U.S. electric system is based on the regulation of utility companies by each individual state in which they provide retail service, rather than by any federal or regional authority.<sup>1</sup> Second, this state-by-state regulation of the retail electric industry has historically been one of the major public policy channels for implementing energy efficiency programs in the United States (spending nearly \$ 2 billion U.S. in 1994).

There are a couple of important implications from these background factors. One is that any fundamental change in traditional utility regulation, such as that presented by electric restructuring, presents a substantial threat to overall energy efficiency efforts in the U.S. Indeed, the on-set of restructuring in the U.S. had already helped precipitate a 50% decline in total U.S. utility spending on energy efficiency by 1998, as measured from its 1994 peak (Kushler and Witte, 2000b). Restructuring has helped lead to this outcome for several reasons: (1) utilities have sought to drop "discretionary" costs in order to make themselves more "competitive"; (2) utilities have new financial motivations to increase kWh sales rather than reduce them; (3) utilities have argued that after restructuring, they have less (or no) responsibility for securing energy resources, so the old rationale for demand-side management (DSM) is diminished or eliminated.<sup>2</sup> For these theoretical and practical reasons, policymakers have tended to create statutory requirements for energy efficiency (usually under the broad category of "public benefits" funding) as a part of their restructuring policy.

The second implication of the structure of regulation in the U.S. is that tracking and understanding what is happening to utility related energy efficiency programs in the U.S. is difficult, because one must monitor the individual actions of 50 different states. Together, the complexity of the situation and the high stakes involved have meant that there has been a great deal of interest among the energy efficiency community in the U.S. in the research presented in this paper. Hopefully these results will provide a useful overview to an international audience as well.

### **Context for this study**

Although it is beyond the scope of this paper, it would be useful to have some theoretical background regarding the concept of utility related "public benefits" in the United States. (As used in this study, "public benefits" is a term applied to public purpose efforts such as energy efficiency, renewable energy and low-income programs, which are provided by and/or funded through the utility system.) The reader is referred to Eto, Goldman and Nadel (1998) for a good conceptual framework and rationale for utility public benefits programs.

As for the origins of this study, it is part of a research project that was jointly funded by the U.S. Department of Energy and several individual states (California, New Hampshire, New York, and Wisconsin). That research was directed toward conducting the first comprehensive review and assessment of public benefit policies in restructured states in the U.S., and was carried out during 2000. This paper presents some of the highlight results of that research. [For more complete details, ACEEE has produced a two volume set of reports on this study. See Kushler and Witte, 2000a and 2000b.]

### **Recent developments**

In just the short time since this research was completed in mid-2000, the electric utility industry in the U.S. has been thrown into even greater turmoil. The extreme situation in California (hugely elevated market prices, rolling blackouts, economic crises for the utilities), together with some early warning signs in a few other states, has caused many to question the wisdom of restructuring, and has effectively halted further restructuring activity in the remaining states.

However, for the public benefits programs which are the focus of this paper, the story has been very different. They have generally been quite successful, and may indeed be the only aspect of restructuring that enjoys broad public approval. Moreover, the mounting concerns over electric reliability and high electricity prices have already boosted interest in providing increased support for energy efficiency.

On the whole, in spite of its chilling effect on electric restructuring in general, the recent turmoil in the U.S. electricity market may have a positive effect on state public benefits efforts. Therefore, the results of the research presented in this paper should still be very relevant to understanding the situation regarding public benefits policies and programs in the U.S.

---

## **4. METHODOLOGY**

---

This project took as its focus the universe of states which had formally passed an electric restructuring policy as of the end of 1999, plus two states which had passed specific public benefits fund legislation but had not formally restructured. For each of these 25 states, the project obtained and reviewed copies of the pertinent legislation and regulatory orders, to extract descriptive information about their public benefits policies and funding.

Then, for each state where some type of energy efficiency related public benefit policy had been adopted, several key parties (e.g., regulatory staff, utilities, energy efficiency advocates, etc.) were interviewed (semi-structured telephone interviews), to obtain their qualitative assessment of both the policy as written and the administrative implementation of that policy to date.

---

## 5. DESCRIPTIVE RESULTS

---

The first segment of results presented in this paper focuses on an objective description of the public benefits related policies and approaches adopted by the 25 states examined in this project.

### **The State score card**

Among the 25 states addressed in this study, 22 have passed electric restructuring legislation (Arizona, Arkansas, California, Connecticut, Delaware, Illinois, Maine, Maryland, Massachusetts, Michigan, Montana, Nevada, New Hampshire, New Jersey, New Mexico, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Texas, and Virginia); one has adopted restructuring through regulatory orders (New York); and two have passed specific legislation requiring public benefits funding but have not actually restructured their electric industry (Vermont and Wisconsin).

Of these 25 states, 19 have included specific requirements to support energy efficiency in their legislation and/or regulatory orders. A couple of additional states are still investigating the issue, while the remainder have shown no indication of including this type of policy requirement.

With regard to renewable resources, 17 of the 25 states have included specific policies supporting renewable energy. A total of 14 states have direct funding of one type or another, and 9 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 total of 17 states results from the fact that six of those states have both direct funding and an RPS mechanism.)

Lastly, a total of 19 states 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 restructuring legislation and/or regulatory orders.

A summary of descriptive data on public benefits policies and funding, on a state-by-state basis, is presented in Table 1. The table includes information for each state that has incorporated at least some specific public benefits policy support in its restructuring related legislation/regulatory orders. The remaining 4 states (Arkansas, Michigan, Oklahoma, Virginia) have been omitted because they had no such policies to summarise.

### **Key issues**

Although restructuring is a very complex undertaking, and legislation/regulatory orders can be very detailed, it was possible to identify a few key issues that were core subjects of debate in just about every state. These include: (1) funding (both the mechanism and the amount); (2) administration (i.e., who will administer and operate the programs); and (3) the duration of any policy/funding requirement. The following material briefly summarises the approaches taken by the states on these issues. (Note: the remainder of this paper focuses just on energy efficiency public benefit policies.)

### ***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 kWh”. (One ‘mill’ is equal to one-tenth of a cent, U.S.) A total of 15 states have adopted that type of approach.

Another three states have used an approach where the funding is either embedded in rates or provided through a flat monthly fee, rather than a per kWh charge. Finally, two 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% of projected load growth.

### ***Funding amount***

In order to provide common bases for comparison, this research has attempted to determine estimates of energy efficiency spending using three standard indices: millions of dollars; mills per kWh; and percent of utility revenue (see Table 1). 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., U.S. Energy Information Administration 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 15 states. For those states, the required funding level for energy efficiency ranged from 0.03 to 3.3 mills/kWh, with a median value of 1.3 mills/kWh.

One interesting public policy question 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 have tended to set their new energy efficiency funding at a level somewhat above recent experience, but significantly below peak utility spending levels of the early to mid 1990s. (For those 15 states, the average level of public benefits spending for energy efficiency is, in real terms, nearly 30% below the spending level for 1993.) However, while most advocates would naturally like to see higher levels of current funding, at least the policy direction has been stabilised. A new study by ACEEE suggests that these public benefit energy efficiency mechanisms may have helped stop the half-decade long slide in national utility energy efficiency spending, and may in fact have helped produce a slight increase in total spending from 1997 to 1998 (Nadel, Kubo and Geller 2000).

### ***Administrative approaches***

The mechanisms selected by states for administering their public benefits energy efficiency (EE) 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.

Of the 18 states that have proceeded far enough to allow an assessment, a total of 7 states have chosen to have individual utilities administer their EE programs (albeit often with some type of collaborative advisory process). Six additional states have chosen some type of independent entity (four use a state government agency of some sort and two have competitively selected an independent contractor).

Five states fall into the “hybrid” category. Their approaches range from utility administration within a system of regulatory-appointed planning input 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.

It should be noted 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.

### ***Program delivery***

It is useful to distinguish the function of public benefits program administration (i.e., managing the funds, making decisions about how they should be allocated, hiring implementers, etc.) from the function of program service delivery. Although there are a few exceptions (e.g., some utilities that use their own staff to provide certain services), as a general practice, states use an approach whereby the administrator hires separate entities (private contractors, non-profit agencies, etc.) to actually deliver the energy efficiency services. In fact, some states require that program services be delivered by independent entities selected by a competitive bid process.

**Table 1. Summary table of Public Benefit programmes and electric utility restructuring (March 2001)**

		Details of SBC Funding					Renewables Portfolio Standard	Generation Disclosure	
		R&D	EE	LI	RE	Total			
<b>Arizona</b>	In Dec96, the ACC ordered retail competition beginning in Jan99 and completed by Jan03. Later delayed to begin in 2001. ACC rule requires SBC for LI, EE and RE. Funding determined in indiv. utility cases. Also a separate charge for an "Environmental Portfolio Standard" (see RE). Also, EE may be shifted into RE.	million \$	TBD	8,0	3,9	16,0	28,0	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	0,4	0,2	0,85	1,40		
		% rev.	TBD	0,3	0,2	0,6	1,0		
		admin.	TBD	utility	utility	utility			
<b>California</b>	In Sept96, AB1890 signed into law, with full retail access Apr98. A 4-yr. SBC was created using a non-bypassable wires charge. In Aug00 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 \$400 million for EE pledged by state also not included in table.)	million \$	62,5	228,0	100,0	135,0	525+	None.	Yes. 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	CPUC	CEC			
<b>Connecticut</b>	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. Support for R&D is imbedded in the RE programs. Funds are collected through a non-bypassable wires charge.	million \$	in RE	87,0	8,7	22,0	117,7	Two tier, limits hydro starting at 6% and escalating to 13% by the year 2009.	Included in bill without specifics.
		mills/kWh	in RE	3,0	0,3	0,75	4,00		
		% rev.	in RE	3,0	0,3	0,75	4,0		
		admin.	EE & RE	collab.	DPUC	St. Auth.			
<b>Delaware</b>	Restructuring Act signed in March 1999. Has two SBCs: 0.178 mills/kWh for EE "incentive" programs, overseen by DE Economic Dev. Office, 0.095 mills/kWh for LI bill asst. & EE, overseen by Dept. of Health & Soc. Services. An additional \$250,000 from rates is to go to customer education, esp. regarding RE.	million \$		1,5	0,8	0,3	2,6	None.	Not required. Law says Commission "may" promulgate rules.
		mills/kWh		0,18	0,1	0,03	0,3		
		% rev.		0,3	0,15	0,05	0,5		
		admin.		state	state	state			
<b>District of Columbia</b>	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 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.	million \$		TBD	TBD	TBD	8,0	Commission Working Group is examining the issue.	Disclosure of fuel mix is required. To be reported every 6 months.
		mills/kWh		TBD	TBD	TBD	0,8		
		% rev.		TBD	TBD	TBD	1,0		
		admin.		City	City	City			
<b>Illinois</b>	In Dec97, 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).	million \$		3,0	75,0	5,0	83,0	None.	All electricity retailers would be required to disclose generation mix and emissions.
		mills/kWh		0,03	0,6	0,04	0,7		
		% rev.		0,04	0,8	0,05	0,9		
		admin.		DCCA					

**Table 1 cont. Summary table of Public Benefit programmes and electric utility restructuring (March 2001)**

		Details of SBC Funding					Renewables Portfolio Standard	Generation Disclosure	
		R&D	EE	LI	RE	Total			
<b>Maine</b>	In May97, a state restructuring law was passed. The PUC has proposed, and legislature has authorized, up to approx.\$17 million/yr. for EE via statewide charge in distribution rates (equiv. to max. of 1.5 mills/kWh). State Planning Office will oversee. Original law also requires LI asst. funding as shown. R&D is voluntary funding.	million \$		17,2	5,5		22,7	30% starting Mar00. Limited to facilities of 100-MW or less.	Yes. Fuel mix and emissions disclosure is required.
		mills/kWh		1,5	0,8		2,3		
		% rev.		1,5	0,5		2,0		
		admin.	TBD	state	utility				
<b>Maryland</b>	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 have 1 mill/kWh residential only SBC for EE ok'd thru settlements. (EE in table just for those)	million \$		13,0	34,0		47,0	PSC to conduct a feasibility study of an RPS and report by 2/1/2000.	Yes. Fuel mix and emissions disclosure is required.
		mills/kWh		1,00	0,6		0.6+		
		% rev.		0,4	0,9		0.9+		
		admin.		Utility	state				
<b>Massachusetts</b>	In Nov97 comprehensive legislation was signed bringing retail access to all customers in 1998. Includes a non-bypassable wires charge for EE, RE and LI. Amounts ramp up for RE and down for EE. Averages shown in table. LI must get at least .25 mills of the EE SBC. (Note: RE excludes .25 mills/kWh for MSW)	million \$		130,0	Incl.	30,0	160,0	Requires a new 1% increment by 2003, 4% more by 2009, 1%/yr. thereafter.	Fuel mix and emissions disclosure is required. Member N.E. Disclosure Project
		mills/kWh		3,00	in	0,7	3,7		
		% rev.		3,00	EE	0,7	3,7		
		admin.		Utility	Utility	MTPC			
<b>Montana</b>	In May97, electric utility restructuring was signed into law. Retail access began July98 and is scheduled to be completed by July02. Using EE and RE funds for R&D is approved by the new statute. Funds will be collected using a "universal system benefit charge." LI must be at least 17% of total.	million \$		8,9	3,3	1,8	14,0	None.	The PSC has proposed disclosure. Hearings are being held.
		mills/kWh		0,7	0,26	0,14	1,1		
		% rev.		1,5	0,6	0,3	2,4		
		admin.		Utility programs +					
<b>Nevada</b>	In July97, electric utility restructuring was signed into law. Retail access was scheduled for March 2000, but has been delayed due to California problems. Public benefit programs, including R&D, are specifically encouraged but funding is not provided by the statute. PUC is working on rules needed to implement the law, EE not addressed yet.	million \$	TBD	TBD	TBD	TBD	TBD	By Jan01 to be 0.2%. Add 0.2% biennially until 1% total in 2009, 1/2 to be new solar.	Bills must contain price variability, and generation mix.
		mills/kWh	TBD	TBD	TBD	TBD	TBD		
		% rev.	TBD	TBD	TBD	TBD	TBD		
		admin.							
<b>New Hampshire</b>	In May96, NHRSA was passed into law. Retail access was to be implemented in Jan98, 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 Jun00, SB472 set an SBC of 2.0 mills/kWh. In Nov00 The PUC allocated 1.2 mills to LI and 0.8 mills to EE.	million \$		6,9	10,4		17,3	None.	Participants in the New England Disclosure Project.
		mills/kWh		0,8	1,2		2,0		
		% rev.		0,7	1,0		1,7		
		admin.		utility	county				

Table 1 cont. Summary table of Public Benefit programmes and electric utility restructuring (March 2001)

		Details of SBC funding					Renewables Portfolio Standard	Generation Disclosure	
		R&D	EE	LI	RE	Total			
<b>New Jersey</b>	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 Mar01. LI seperately funded at prior levels.	million\$	89,5	10,1	30,0	129+	By Jan01 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	1,35	0,16	0,45	1,96			
		% rev.	1,35	0,15	0,45	1,95			
		admin.		Utility	Utility	Util/BPU			
<b>New Mexico</b>	Legislation to restructure (SB 428) was signed in April 1999. Possible delay being discussed. An SBC of 0.3 mills/kWh is required, to fund consumer educ., LI energy efficiency, and renewable energy promotion. Numbers in table are specified min. or max. figures. Funds to be administered by the state Dept. of Environment.	million\$		0.5+	4,0	5.0+	Suppliers required to offer renewables, but no portfolio std. is required.	Required for fuel mix and emissions.	
		mills/kWh		incl.	incl.	0,3			
		% rev.		0,1	0,4	0,5			
		admin.		state	state				
<b>New York</b>	In May96, the PSC issued Order 96-12, requiring all IOUs to file restructuring plans. A July98 Order set \$78 million/year for an SBC, administered by NYSERDA. In Jan01 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)	million \$	26,0	83,0	27,0	in R&D 150,0	None.	Required by PSC Order dated 12/15/98. Working on design to start in 2000.	
		mills/kWh	0,26	0,83	0,27				1,5
		% rev.	0,23	0,72	0,24				1,3
		admin.	NYSERDA	NYSERDA	NYSERDA				
<b>Ohio</b>	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.)	million \$		15,0	100,0		115,0	None.	Yes. Fuel mix and emissions disclosure is required.
		mills/kWh		0,1	0,7		0,8		
		% rev.		0,15	1,1		1,25		
		admin.		state	state				
<b>Oregon</b>	Law passed in July 1999. Includes a "public purpose charge" to fund EE, RI and LI, equiv. to 3% of total IOU revenues (approx. \$50 million). Requires 63% of funds for EE (incl. MT) and 19% to RE. PUC to develop rules. LI gets 18% of PPC for weatherization, plus extra \$10 million for bill payment assistance (incl. in table totals).	million \$		31,5	19,0	9,5	60,0	None. (a "green rate" option is required, however)	Yes. Fuel mix and emissions disclosure is required.
		mills/kWh		1,0	0,6	0,30	1,9		
		% rev.		1,9	1,1	0,60	3,6		
		admin.		TBD	state	TBD			
<b>Pennsyl- vania</b>	In Dec96, a restructuring law was signed. Retail access to be phased-in over 2 yrs. starting Jan99. Law requires EE and LI minimum funding at existing levels (10m and 26m). Exact levels determined in indiv. utility cases have been higher than minimum. EE includes some renewables. LI includes 20% for efficiency.	million \$		11,0	85,0	2,0	98,0	Being addressed in indiv util cases. Also, bidders for "last resort" service need 0.2%.	Yes. Fuel mix is required. (but not emissions data.)
		mills/kWh		0,1	0,7	0,02	0,8		
		% rev.		0,1	0,9	0,02	1,0		
		admin.		Utility	Utility	Utility			

**Table 1 cont. Summary table of Public Benefit programmes and electric utility restructuring (March 2001)**

		Details of SBC Funding					Renewables Portfolio Standard	Generation Disclosure	
		R&D	EE	LI	RE	Total			
<b>Rhode Island</b>	Retail competition phased in by Jan98. Final spending plans exceeded the legislated minimum of 2.3 mills per kWh. Some funding on R&D for "near commercialization" renewables. Funds collected through a non-bypassable wires charge, except low-income efficiency and rate discounts which are funded in rates, not the SBC.	million \$	14,0	in rates	2,5	16,5	None.	Participant of NE Disclosure Project.	
		mills/kWh	2,1	in rates	0,5	2,6			
		% rev.	2,1	in rates	0,4	2,5			
		admin.	Collab.	utility	Collab.				
<b>Texas</b>	Restructuring Law signed in June 1999. Requires utilities to administer EE programs to achieve savings equiv. to 10% of annual load growth by 2004. PUC to establish rates and procedures. Also a small SBC for customer educ. and LI assistance & 10% LI rate discount. (That SBC not to exceed .065 mills/kWh.)	million \$	TBD	TBD		TBD	Requires 2000 MW of new renewables by 2009. (Phase-in, 400 MW by 2003.)	PUC required to develop rules to disclose enviro. impacts.	
		mills/kWh	TBD	TBD		TBD			
		% rev.	TBD	TBD		TBD			
		admin.	utility						
<b>Vermont</b>	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. *(in 1997, S.62 passed Senate but not House.)	million \$	13,1	TBD	TBD	TBD	S62 required 2-tier, existing (up to 15%) & emerging (up to 4%) by 2007.	S62 required price, mix, pollutants, EE notices, and terms. NE Disclosure Proj.	
		mills/kWh	2,5	TBD	TBD	TBD			
		% rev.	2,6	TBD	TBD	TBD			
		admin.	contract	TBD	TBD				
<b>Wisconsin</b>	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 current estimate of funding levels when fully in place.	million \$	1,1	62,0	45,3	2,8	111,2	Requires 0.5% by 12/31/2001. Increases biennially to 2.2% by 12/31/2011.	Not addressed.
		mills/kWh	0,0	1,2	0,92	0,07	2,2		
		% rev.	0,04	2,3	1,7	0,1	4,2		
		admin.	DOA	DOA	DOA	DOA			



***Funding duration***

The third key issue regarding public benefit energy efficiency policies has been the length of time for which funding has been required. Here again, there has been quite a bit of variability. A total of six states do 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 specify 5 years, one state set 4 years, and two states set a 3-year period. Most of the states which set a specific time duration indicated that some type of review and determination of future policy would occur as the end of the initial period approached. That process has already begun in several states, and two states (California and New York) have already formally extended their public benefits funding period (by 10 years and 5 years respectively).

---

## 6. QUALITATIVE RESULTS

---

The second segment of results presented in this paper focuses on a qualitative assessment of the policy mechanisms and early implementation experience in states which have adopted public benefits policies. This information is based on telephone interviews with representatives of several key interested parties in each state. The ultimate set of respondents was almost equally divided among five groups: state regulators; other state agencies; utilities; advocacy groups; and “other” (e.g., customer groups, independent electricity suppliers, etc.). 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 qualitative results are summarised below using two different mechanisms: interviewee “ratings” of their state’s public benefit policies and implementation, and key “lessons learned” as identified by the individuals interviewed

**Grading public benefit policies and implementation**

Each of the states identified previously as having passed some type of restructuring related public benefits policy was targeted to receive telephone interviews with representatives of key organisations in the state (see above). Typically from 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 situation 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.

Among the results from those ratings, a few aspects are worthy of note. First, the respondents in these 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% of respondents assigned a ‘B’ or an ‘A’. In general, there were no notable differences between the different types of stakeholder groups in the levels of grades they assigned. There tended to be more difference between states than between stakeholders within a state.

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 judgement on implementation aspects.

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.

For confidentiality and other reasons this paper avoids going into detail about individual states. However, for those looking for a good model for state legislation, the most consistently positive ratings of the “on paper” policy were received for Vermont, Rhode Island, Connecticut and Massachusetts.

### **Lessons learned**

The second aspect of qualitative assessment was to ask respondents to identify what they considered to be the key lessons learned thus far in developing their states’ public benefits policies. For brevity and clarity, the major lessons identified are simply listed below. In viewing these responses, it is useful to keep in mind that most states had not yet actually implemented their public benefits programs (many were tied to the schedule for opening up retail choice of electricity suppliers - which had not yet occurred in many states). Therefore, many of the lessons at this point relate to developing and passing the public benefits policies in the first place, rather than to in-the-field implementation experience.

Key lessons cited include the following:

#### ***Developing and passing a policy***

- Advocates need to get organised 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.
- Form coalitions, especially including business interests, if possible. 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 on 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 minimising 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. (For example, utility administration of the public benefits fund may work well in a state where the utilities are well-experienced and interested in continuing to have that role, but not in another state where those conditions do not exist.)
- Work with existing assets in your state. If some approaches/organisations have worked well, incorporate them into the policy approach. (A good example of this is New York, which called upon an existing state-created energy research organisation, with an excellent track record, to independently administer their public benefits fund programs.)
- 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. (Also applies to subsequent rule making 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.<sup>3</sup>) Be sure to allow sufficient time for policies to work. A number of parties expressed concern that a three or four year time frame for public benefits funding was not sufficient.
- Central statewide administration, or at least close co-ordination among different utilities in a state, is crucial for market transformation strategies.
- Also need to think about regional co-operation among states 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.

### ***Implementation***

- If programs are to be administered by an independent entity rather than the utilities, try to select an organisation with experience and demonstrated capability in this field. This will be much quicker and more effective than trying to create a new organisation.
- 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.
- 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.

---

## **7. INITIAL IMPACT RESULTS**

---

For most of the 19 states which have adopted an energy efficiency public benefits policy, it is too soon to assess program impacts. Indeed, for a majority of those states, actual program implementation either has not yet begun, or just began this past year.

However, there are three states (California, Massachusetts, and New York) which began their public benefit energy efficiency programs in 1998 and have had time to do some initial impact assessment.<sup>4</sup> Each of those states is briefly addressed below.

### **California**

The state of California was unquestionably a prominent pioneer in this area, both for electric restructuring in general, and for the concept of public benefit funding in particular. California was among the first states to pass comprehensive restructuring legislation and one of the first to create a specific non-bypassable wires charge to support energy efficiency. (They also included a wires charge to support other public benefits, including renewable energy; research and development; and low-income programs.)

California created an initial four-year period for its “Public Goods Charge” (PGC), and specified a funding level for energy efficiency that is nominally the largest in the nation, with an average annual funding of approximately \$218 million per year. (On a per kWh basis, this charge is equivalent to approximately 1.3 mills/kWh, about in the middle range of states with energy efficiency public benefit funding.)

The initial intention in California was to “bid out” the administration of the energy efficiency programs. However, after encountering a variety of legal and administrative obstacles, the California Public Utilities Commission

eventually decided to allow the individual utilities to continue administering the programs through the initial 4-year authorisation period.

California began its PGC energy efficiency programs in 1998, and has implemented a wide variety of energy efficiency approaches. There has been a particular emphasis on market transformation, and in pursuit of that objective there are a number of state-wide programs being coordinated among the major utility companies. The California Board for Energy Efficiency (CBEE, 2000) reported that total electric energy efficiency PGC spending for 1999 was \$200 million, with estimated annualised savings of 825 million kWh and 156 MW of peak demand, producing net benefits (benefits in excess of program and customer costs) of about \$140 million.<sup>5</sup>

### **Massachusetts**

Massachusetts passed restructuring legislation in 1997, which included public benefits funding for energy efficiency, renewable energy, and low-income programs. In Massachusetts the PBF, which began operating in 1998, is administered by distribution utilities, in accordance with plans filed with and approved by state agencies. Energy efficiency programs include a mixture of traditional DSM programs operated by individual utilities and regional market transformation programs in which many utilities from New England hire a single program contractor to serve many utility service areas.

In the first year of PBF operation, nearly 150,000 customers participated in direct PBF programs, spanning all customer classes. According to an analysis by the Massachusetts Division of Energy Resources (DOER, the state energy office), energy efficiency programs reduced participating customer energy use by 6-13 percent (varying by customer class), saving customers \$19 million annually in electricity costs. Over the lifetime of these measures, benefits are projected to be \$265 million, exceeding the cost to achieve these savings (including investments by participating customers and the PBF) by about \$140 million. DOER calculates that the cost to conserve energy from those programs will be about 60% less than the cost to buy electricity over the life of these efficiency measures, and that the overall benefit cost ratio of the energy efficiency programs is 1.8 to 1. DOER also reports substantial job creation benefits and environmental emissions reductions from the programs (DOER, 2000).

### **New York**

New York started its PBF in July 1998. The program is largely administered by the New York State Energy Research and Development Authority (NYSERDA), a semi-independent organisation established by the state government in 1975. NYSEDA developed a plan calling for about 30 complementary energy efficiency programs addressing different sectors, measures and market niches. Over the past two years, NYSEDA has been steadily launching these new programs. Programs are run by independent contractors selected by NYSEDA through competitive solicitations.

After nearly two years of work, NYSEDA had got 25 programs operational. Measures already installed are projected to save consumers and businesses \$12.5 million annually, providing a 1.4 year payback on the \$17 million spent to date. Furthermore, experience to date is that for each \$1 NYSEDA invests, customers, energy service companies and others are investing \$3, providing good leveraging of the public fund. By the end of year 3, NYSEDA expects the programs that are already in operation to reduce energy bills by more than \$100 million annually, providing an approximately 0.7 year payback on public funds invested.

---

## **8. CONCLUSION**

---

While it is of course too soon to draw firm conclusions about the relative success of public benefit fund policies regarding energy efficiency, the early indications are quite positive. Collection of the fund revenues and actual implementation of the energy efficiency programs has begun in at least ten states, with several states having had their programs "in the field" now for at least two years. The early results from those states are very favourable, as discussed above.

In addition, these public benefit policies regarding energy efficiency receive high marks from various stakeholders in the respective states. ACEEE interviewed multiple parties (i.e., administrators, utilities, advocate groups, etc.) in each of the states with such policies in place. The results indicate that respondents had an overall quite positive regard for the public benefits policies adopted by their state, and in most cases, for the implementation efforts to date.

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, California), while others are succeeding with programs administered by state agencies (e.g., New York, 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. That is, 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.

### **Prognosis for the future**

Although the future of utility-related public benefits programs in the U.S. appears bright at this point, there are some potential roadblocks. One significant unknown as this paper is being written is the role of the new presidential administration, which in contrast to the prior administration, is not expected to be a supporter of such public benefit programs. The second unknown is the way in which the spreading problems related to utility restructuring may affect the willingness of states to continue public benefits funding. (For example, the growing concern over electric price increases may cause policymakers to cut the public benefits charge in the name of reducing rates. Even though those charges are quite small, some have targeted them as a place to cut.)

Fortunately, thus far those impediments do not appear too threatening. The influence of the administration in Washington, D.C. on state public benefits will likely only be indirect, and it is unlikely they would try to be openly hostile to these programs because they are very popular with the public. As for restructuring problems, thus far they have not seemed to adversely affect public benefits support. In fact, two of the states which have been most identified with restructuring related price and reliability problems (California and New York) have recently re-authorised their public benefits funding mechanisms for an even longer time period and at increased levels of spending. This was done in recognition of the positive effects that energy efficiency can have in reducing electricity demand, thereby helping to improve system reliability and put downward pressure on electricity prices.

In summary, the experience to date with public benefit funds in the U.S. has been quite positive. Most importantly, they have proven to be a very effective strategy for sustaining energy efficiency improvements in restructured electricity markets. While it is still early in the process, and further monitoring and evaluation are necessary, the results thus far indicate that the creation and use of a public benefit funding mechanism can be an effective policy approach.

---

## 9. REFERENCES

---

- CBEE, 2000. *Annual Report on 1999 Energy Efficiency Programs and Activities*. San Francisco, CA: California Board for Energy Efficiency.
- DOER, 2000. *1998 Energy Efficiency Activities in Massachusetts*. Boston, MA: Massachusetts Division of Energy Resources.
- Eto, Joseph, Charles Goldman and Steven Nadel. 1998. *Ratepayer-Funded Energy-Efficiency Programs in a Restructured Electricity Industry: Issues and Options for Regulators and Legislators*. Washington, D.C., American Council for an Energy-Efficient Economy.
- Kushler, Martin and Margaret Suozzo. 1999. *Regulating Electric Distribution Utilities as if Energy Efficiency Mattered*. Washington, D.C.: American Council for an Energy-Efficient Economy.
- Kushler, Martin and Patti Witte. 2000a. *A Review and Early Assessment of Public Benefit Policies Under Electric Restructuring. Volume 1: A State-By-State Catalog of Policies and Actions*. Washington, D.C., American Council for an Energy-Efficient Economy.
- Kushler, Martin and Patti Witte. 2000b. *A Review and Early Assessment of Public Benefit Policies Under Electric Restructuring. Volume 2: A Summary of Key Features, Stakeholder Reactins, and Lessons Learned to Date*. Washington, D.C., American Council for an Energy-Efficient Economy.
- Nadel, Steven, Toru Kubo and Howard Geller. 2000. *State Scorecard on Utility Energy Efficiency Programs*. Washington, D.C., American Council for an Energy-Efficient Economy.

---

## 10. END NOTES

---

- <sup>1</sup> Although the federal government does have authority over interstate transmission of electricity, historically this function has had no relationship to energy efficiency programs.
- <sup>2</sup> See Kushler & Suozzo (1999) for further discussion of the economic incentives created by restructuring which tend to cause utilities to abandon energy efficiency programs.
- <sup>3</sup> Market transformation is the term used for a new type of energy efficiency program approach which has emerged over the past few years. Simply stated, it focuses on strategic intervention with the full range of market actors (e.g., manufacturers, distributors, retail firms, contractors and customers) to help "move the market" to be more energy efficient, rather than using the more traditional DSM program focus on motivating individual customers to install specific energy efficiency measures. (See Eto, Goldman & Nadel, 1998, for a good discussion of the market transformation concept.)
- <sup>4</sup> Like other aspects of utility regulation and public benefits administration in the U.S., there is no uniform or national standard or requirements for evaluation of public benefits programs. Each state is responsible for its own evaluation approach. However, over the years the evaluation profession in the U.S. has become quite experienced and methodologies tend to be fairly consistent across states.
- <sup>5</sup> Note that California also has natural gas energy efficiency programs, funded through gas rates rather than a separate PGC. In 1999 the gas programs spent about \$43 million, saved 14 million therms, and also produced benefits in excess of program and customer costs.