EXAMINING CALIFORNIA'S ENERGY EFFICIENCY POLICY RESPONSE TO THE 2000/2001 ELECTRICITY CRISIS:

PRACTICAL LESSONS LEARNED REGARDING POLICIES, ADMINISTRATION, AND IMPLEMENTATION

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Other than the comments directly attributed to those interviewees, all opinions, conclusions, and recommendations in this report are those of the authors and are not intended to represent any other individuals or organizations.

EXECUTIVE SUMMARY

Background

By almost any measure, the events surrounding the electricity situation in California in the 2000/2001 time period were simply extraordinary. Between the summer of 2000 and the early winter months of 2001, the California Independent System Operator declared over 70 days of system emergencies, and rolling blackouts were actually initiated on several occasions. In January and February 2001, the California Energy Commission (CEC) projected electricity supply and demand for the summer of 2001 under various temperature scenarios, and analyses suggested that the state could face a potential shortfall of 5,000 megawatts during the months of June through September (CEC 2001).

In reaction to this unprecedented "electricity crisis," California responded with a series of demand-side policy initiatives that were truly historic. California policymakers and utility regulators established a substantial set of policies and programs that involved significant additional funding for existing energy efficiency programs and the development of a large number of new programs. In all, more than $1.3 billion in funding was authorized for demand reduction initiatives, representing a 250 percent increase over the spending in 2000 (Messenger 2001). In particular, the degree of policy emphasis and the amount of funding provided for energy efficiency were without parallel in U.S. history. Indeed, we estimate that the total funding allocated for energy efficiency in California for 2001 (over $900 million) was roughly equivalent to the total energy efficiency program spending in all other states combined.

By the broadest indicators, the totality of this effort was extremely successful. The synergistic effect of all the California programs and policies was immense. In 2001, California averaged a 10 percent cut in peak demand during the summer months (with a record reduction of 14 percent in June), and overall electricity use declined in 2001 by 6.7 percent, after adjusting for economic growth and weather (CSCSA 2002). Perhaps the most meaningful result of all was that California experienced no incidences of rolling blackouts for the entire summer or the rest of 2001.

In the annals of public policy, this California experience was truly a historic set of events and worthy of detailed study. In appreciation of this importance, ACEEE set out to initiate a research project to examine that California experience. At the outset, it was apparent that a good deal of resources were already being devoted by other entities to try to estimate the energy and demand savings impacts of the California energy efficiency and conservation programs. In recognition of this fact, it was decided that a more important and unique area of contribution for this project would be to concentrate on issues related to the administration and coordination of the complex and massive energy efficiency and conservation policy responses in California.

Therefore, the purpose established for this study was to examine this enormous effort and seek to identify practical lessons learned about the policy design, administration, and implementation of energy efficiency programs during this historic time period.

Data Collection

This study utilized two primary modes of data collection: (1) review of documents and materials (such as legislation, regulatory orders, and other research and evaluation reports); and (2) interviews (telephone and in-person) with numerous parties associated with the energy efficiency and conservation program efforts during the 2000/2001 timeframe. In this project, interviews were conducted with:

- Twenty-two different individuals involved in managing specific energy efficiency programs, representing investor-owned utilities (IOUs), municipal utilities, state agencies, a city government, and a private sector vendor
- Twenty-three senior administrative level individuals involved in broad oversight, management, or other roles relating to the California energy efficiency efforts, including utility administrators (IOU and municipal utilities); state regulatory agencies (the CEC and the California Public Utility Commission [CPUC]); other state agencies; and representatives of numerous other stakeholders (customer groups, trade allies, and environmental organizations).

Objectives of this Study

The intent of this project was to conduct an overall policy-level review and analysis of the experience in California during 2000/2001 regarding the design, administration, and delivery of energy efficiency programs and services. The scope of this review included all utility, pubic goods charge (PGC), and state revenue-funded energy efficiency programs. The core objectives of this study were to:

1. Independently document and describe the overall scope, magnitude, and complexity of the historic energy efficiency efforts conducted in California during the electricity crisis of 2000/2001;
2. Identify problems and challenges that arose during the implementation of these efforts, and describe steps taken to address those problems and challenges;
3. Describe key lessons learned regarding the policies and approaches adopted in California during this experience, including program administration, coordination, and delivery; and
4. Provide recommendations regarding future policies, administrative structures, and delivery mechanisms for energy efficiency in California.

Results

This chapter of this report is structured to correspond to the key objectives of this project, as outlined above. Each of the three core research objectives (i.e., independently document and describe the overall scope, magnitude, and complexity of California's energy efficiency and conservation efforts; identify problems and challenges that arose; and describe key lessons learned) is addressed as a distinct section, and the various data sources and methods are applied to each section as appropriate.

Numerous practical observations and "lessons learned" are offered regarding energy efficiency program administration, coordination, and implementation. Most often, these observations are provided in the words of the program managers and senior administrators themselves.

Recommendations

Based on the extensive research performed for this project, as well as nearly two decades of other national and California-specific energy efficiency research conducted by the authors, this report provides a set of four primary recommendations. They are as follows:

Recommendation #1: California should continue to use utility administration of energy efficiency programs, under CPUC oversight, as its core mechanism for delivering energy efficiency programs in the state.

This administrative option received a slight overall edge in the ratings of the 23 senior-level administrators interviewed in this project. However, our recommendation is based on far more than that simple result. Most fundamentally, this energy efficiency delivery structure in California has a proven record of accomplishment over many years (decades, in fact), and the experience and infrastructure represented by that model were keys factor in enabling California to respond so effectively in the crisis of 2000/2001. The demonstrated success of California's core utility-based energy efficiency delivery structure is the envy of most states in the country. Despite some needs for improvement (which we also address), there is no reason to discard this proven mechanism in favor of some untested alternative.

However, in recognition of certain legitimate competing concerns, two important caveats to that recommendation are also offered:

- First, utility performance should continue to be closely monitored to ensure that they continue to strive to do an exemplary job at securing energy efficiency, and if they significantly falter in that responsibility, the option of an alternative energy efficiency delivery structure should be reconsidered.
- Second, well-designed regulatory mechanisms should be employed to help mitigate the effects of conflicting interests on the part of utilities, including: (a) the strategic use of appropriate shareholder incentives for achieving energy efficiency; and (b) the creation of regulatory mechanisms to lessen the typical utility financial interest in increasing sales volume.

Recommendation #2: The CPUC should abandon its attempts to directly administer energy efficiency programs and re-focus its attention and resources on the role of governance and oversight of the utilities in the utility administration of energy efficiency programs.

There was broad general support among the senior-level personnel interviewed in this project for the CPUC role in overall governance of the PGC energy efficiency structure (although a number of areas for improvement were identified and are discussed in the text). However,

there was also widespread agreement among these senior-level staff that the CPUC was not well situated (in terms of resources, experience, or mission) to engage in the operational level tasks of program administration.

One emerging area where it will be particularly important to have CPUC governance and oversight is in developing a regulatory strategy to ensure that energy efficiency is fully incorporated as a resource component under the newly established utility responsibility for resource procurement and portfolio management in California. There will be a great need for practical regulatory mechanisms to ensure that energy efficiency is successfully integrated into that function.

Recommendation #3: Utility administered energy efficiency programs should feature both statewide "core" programs as well as some use of locally or regionally targeted programs, where appropriate.

We would recommend a funding allocation to these two categories that would be similar to that suggested by a couple of the senior-level representatives interviewed in this project, i.e., perhaps 80 to 85 percent for core statewide programs and 15 to 20 percent for local/regional programs. The CPUC should hold a proceeding to solicit input on the design and content area focus for the local/regional components of the overall energy efficiency efforts. These efforts should be administered by the utilities, but we would anticipate that non-profit organizations and other non-utility entities would be eligible for selection as implementers for the local/regional programs, and we would encourage the use of these organizations for such purposes.

Encouraging this level of diversity would help ensure that there are opportunities for creative and innovative energy efficiency program strategies, while still maintaining a large core of statewide energy efficiency programs to ensure stability and continuity for both trade allies and customers.

Recommendation #4: The CPUC and the utilities should explore mechanisms for moving to multiyear planning and implementation of energy efficiency programs.

In order to further enhance stability and continuity in the market, for both customers and trade allies, California should attempt to develop mechanisms for incorporating multiyear planning and implementation of energy efficiency programs. This would help minimize the uncertainty, delay, and discontinuity that often accompanies a process that requires new program filings and approval every year. A number of states (e.g., Massachusetts, New York, and Vermont) are successfully utilizing a multiyear energy efficiency planning approach.

Recommendation #5: The traditional structure for the evaluation of utility energy efficiency programs in California should be maintained, including: (1) broad oversight by the CPUC; (2) administration of the evaluation function by the utilities, via independent evaluation consultants; (3) technical review and input through such multiparty mechanisms as California Measurement Advisory Committee (CALMAC);

(4) an open public process, with full public access to all evaluation reports; and (5) review by the Office of Ratepayer Advocates (ORA) and others in an evidentiary process connected to any utility shareholder earnings from energy efficiency program performance.

This was one area where there was widespread agreement by the senior-level administrators interviewed on this project: that the traditional California approach to the evaluation function worked very well. This approach takes advantage of the extensive experience and expertise of the utility evaluation managers and the community of professional evaluation consultants. It also keeps the evaluation function close enough to the service delivery side that there can be good feedback on how to improve programs, yet provides for a very transparent and open process with full scrutiny to assure objective evaluation results. Indeed, California is widely regarded as the national leader in the depth and quality of energy efficiency research and evaluation activity it provides, so there is no reason to disrupt the current model that has been so successful.

The one area where we note that some improvement is needed is in "closing the loop" on the final verification and application of evaluation results to utility performance incentive earnings. Several of the senior-level administrators noted that the AEAP (Annual Earnings Assessment Proceeding) process at the CPUC was very backlogged, and essentially has been held up for the past couple of years. We understand that there have been several reasons for this delay, but it would be desirable to get this process back on track.

Conclusion

In the face of a dramatic electricity crisis during 2000 and 2001, California responded with a huge and multifaceted policy response directed at energy efficiency and demand reduction. Despite some inevitable problems and pitfalls, it is only fair to conclude that California was very successful in the sum total of its efforts during this electricity crisis. California managed to achieve an average reduction of 10 percent in peak demand during the summer of 2001 (including a record 14 percent reduction in June), was able to reduce overall electricity use by 6.7 percent for the entire year, and was able to completely avoid the rolling blackouts that had been predicted for the summer of 2001 and the remainder of the year.

This study examined the story behind that massive effort and sought to identify "lessons learned" regarding the administration and implementation of those activities. This report presents and discusses those lessons learned and provides some recommendations for the future administration of energy efficiency in California. Beyond the short-term success of California's historic effort in 2000/2001, much was learned that should help assure the success of energy efficiency efforts in California in the future.

INTRODUCTION

Background: The Crisis

In mid-2000, a mere four years after its electric restructuring legislation was signed into law, the electric system in California began to unravel. It is not the purpose of this report to try to explain why the crisis occurred, but suffice it to say, California did experience a true electric system reliability crisis.

In the summer of 2000, the California Independent System operator declared 32 days of emergencies, the majority of which were Stage 2, where operating reserves are below 5 percent and interruptible loads are curtailed. Although electrical demand declined in the fall and winter months, the situation became worse during these months, resulting in 40 days of electrical emergencies, the majority of which were Stage 2 or Stage 3, where operating reserves fall below 1.5 percent and rotating outages begin. Prices for both electricity and natural gas were significantly higher in December and January than in the same time the two previous years, seriously impacting the financial viability of the state's investor-owned utilities, the California Independent System Operator, and the California Power Exchange.[1] In January and February 2001, the California Energy Commission projected electricity supply and demand for the summer of 2001 under various temperature scenarios: analyses suggested that the state could face a potential shortfall of 5,000 megawatts during the months of June through September (CEC 2001).

Mobilizing California's Demand-Side Resources

In reaction to this unprecedented "electricity crisis," California responded with a series of demand-side policy initiatives that were truly historic. California policymakers and utility regulators established a substantial set of policies and programs that involved significant additional funding for existing energy efficiency programs and the development of a number of new programs (see Figure 1). In all, more than $1.3 billion in funding was authorized for demand-reduction initiatives, representing a 250 percent increase from spending in 2000 (Messenger 2001). About 70 percent of total demand-side funding was directed at energy efficiency programs, which focused on reducing overall electricity use, while 30 percent was allocated for demand response and load management programs, which aimed to reduce usage specifically during periods of peak demand.

The recipients of these funds were primarily the California Public Utilities Commission, California's IOUs, and the CEC (see Figure 1), although other organizations (e.g., municipal utilities, state agencies, and universities and colleges) also received a small share of the funds. The CPUC programs and funding represent the largest source of permanent energy

[1] Wholesale electricity prices that previously had ranged between 2 and 3 cents per kWh soared to at least 15 cents, on average, from June through August of 2000 (NRDC/SVMG 2001). That average price then doubled again through December 2000 to January 2001, even though demand levels were far below their summer peaks, and at one point the price reached $1.50 per kWh. Natural gas prices, typically at $2 to $3 per million Btus climbed to nearly $10 per million Btus nationally in January 2001, with prices spiking above $50 in Southern California (NRDC/SVMG 2001).

efficiency improvement of all the agencies, while the programs offered by the other agencies tended to emphasize either behavioral modification by consumers, or load shifting or demand-responsive activities (which typically focus on temporary reductions in energy demand) (CPUC 2001).

The specific policy responses in 2000 and 2001 were varied. The public goods charge energy efficiency programs, funded by electric and gas ratepayers through a surcharge on energy bills,[2] run every year and represent the backbone of energy efficiency programs in California. Legislation extending the PGC through 2012 (AB 995) was signed by Governor Davis in September 2000, and this new legislation provided $5 billion for energy efficiency, low income, renewable energy, and research and development programs over a ten-year period. In August 2000, the State Legislature passed AB 970 and appropriated $50 million in general fund expenditures to the CEC to run additional programs beyond the CPUC's ongoing programs. This legislation also required a fast-track update of California's building standards (Title 24) and fast-track setting of new appliance standards. In April 2001, the governor signed SB 5x and AB 29x, which appropriated $859 million from the general fund for CEC, CPUC, and other state agencies (see Executive Order D-36-01; Office of the Governor 2001a). These funds were to be used for energy efficiency investment programs, public education on energy efficiency, real-time meters, low-income bill assistance, and renewable energy.[3]

In July 2000, the CPUC adopted the Summer Initiative as a "rapid response procedure" to provide "measurable demand and energy usage reductions beginning in summer 2000" (CPUC 2000a). Over $72 million from utilities' unspent energy efficiency funds from program year 1999 and earlier were set aside for the Summer Initiative. The Summer Initiative was specifically designed "to provide maximum impact of demand and energy usage reductions" during the summer of 2000 energy capacity shortage and for the potential energy shortage projected over the next few years. Utilities and other parties were directed to provide the CPUC with "program options that will bring about the largest reductions in electric demand and/or electric usage reductions in the shortest period of time." In August 2000, the CPUC approved a group of programs for funding through December 31, 2001, which were to be implemented by September 11, 2000 (CPUC 2000b).

As noted above, the governor of California was very involved and active in promoting energy efficiency as one part of the solution for addressing the energy crisis. Even before calling a State of Emergency in January 2001 (Office of the Governor 2001b), the governor announced in early January a plan to reduce California's energy use by at least 5 percent within a week of his announcement (Office of the Governor 2001c). The plan included provisions for: (1) a statewide public outreach campaign coordinated by the Department of Consumer Affairs and state departments to promote energy efficiency through newsletters, letters, websites, and public forums; (2) reductions at peak of 200 MW in energy use by state government, including state prisons, state office buildings, and the University of California

[2] The electric and natural gas surcharges comprise approximately 1.0 percent and 0.7 percent, respectively, of each customer's bill on a monthly basis.

[3] Not all of these funds were spent. Unexpended funds were returned to the State Treasury for easing California's debt problems. However, many programs were implemented.

and California State University system; and (3) a CEC-led effort to achieve peak load reductions by cities and counties of 300 MW. And in March 2001, the governor announced in Executive Order No. D-30-01 a "20/20 Energy Rebate Program" for the summer of 2001 (Office of the Governor 2001d). Under this plan, customers would receive a 20 percent rebate on summer 2001 bills if they achieved 20 percent or greater reduction in electricity consumption between June and September versus the previous year. Residential and small commercial customers' rebates would be based on 20 percent reduction of total consumption, while other commercial and industrial rebates would be based on 20 percent reduction of peak load.

Tracking the Funding

In order to appreciate the magnitude and complexity of the total demand-side effort in California during the electricity crisis of 2000 and 2001, it is helpful to have a visual illustration of the various funding flows during that time period. Figure 1 provides an overall picture of how the funds were distributed to energy programs in California. As indicated, there were five major sources of funding for energy efficiency and demand reduction programs during this time period. These sources could also be conceptually sorted into two main categories: (1) the public goods charge funds for investor-owned utilities (i.e., the first and fifth bullets in Figure 1); and (2) various funds from the state treasury (as appropriated by the State Legislature) for a broader array of organizations and programs (i.e., the second, third, and fourth bullets in Figure 1).

Figure 2 provides another perspective on the allocation of funding, describing the organizations receiving the funds from the different funding sources and the intent of the use of the funds (i.e., for energy efficiency purposes or load management purposes). That figure additionally breaks out separately the funding for SB 5X and AB 29X in order to more clearly distinguish the funding flows from those two pieces of legislation. Together, the two figures clearly demonstrate the magnitude of the funding and the diversity of funding sources and recipients of those funds.[4]

Savings Impacts

It is not within the scope of this study to attempt to independently estimate the energy and demand savings impacts of the energy efficiency, conservation, and demand reduction programs operated in California during the electricity crisis. However, it may be useful to consider a brief summary of the estimated impacts that have been reported by others in order to have a better sense of the overall magnitude of the demand-side effort and accomplishments in California during this time period.

Based on estimates from the California Public Utilities Commission (CPUC 2001) and the California Energy Commission (CSCSA 2002), the authors of this report initially calculated that California's energy efficiency and energy conservation-related efforts during 2001 saved nearly 3,700 MW (Kushler, Vine, and York 2002). A more recent study by Global Energy

[4] The sources of the budget numbers provided in Figure 1 and Figure 2 are the following: CPUC 2001; CSCSA 2002; Matthews 2001; and Matthews 2002.

Figure 1. Funding of California Programs

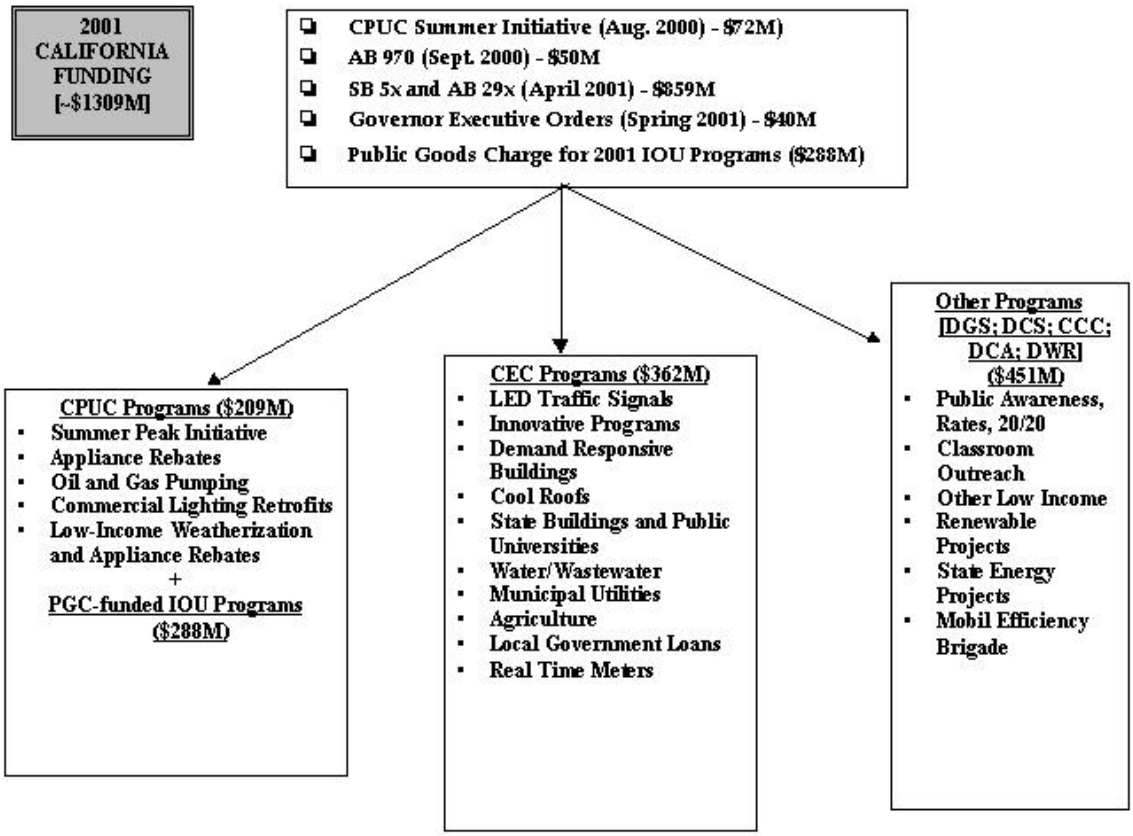
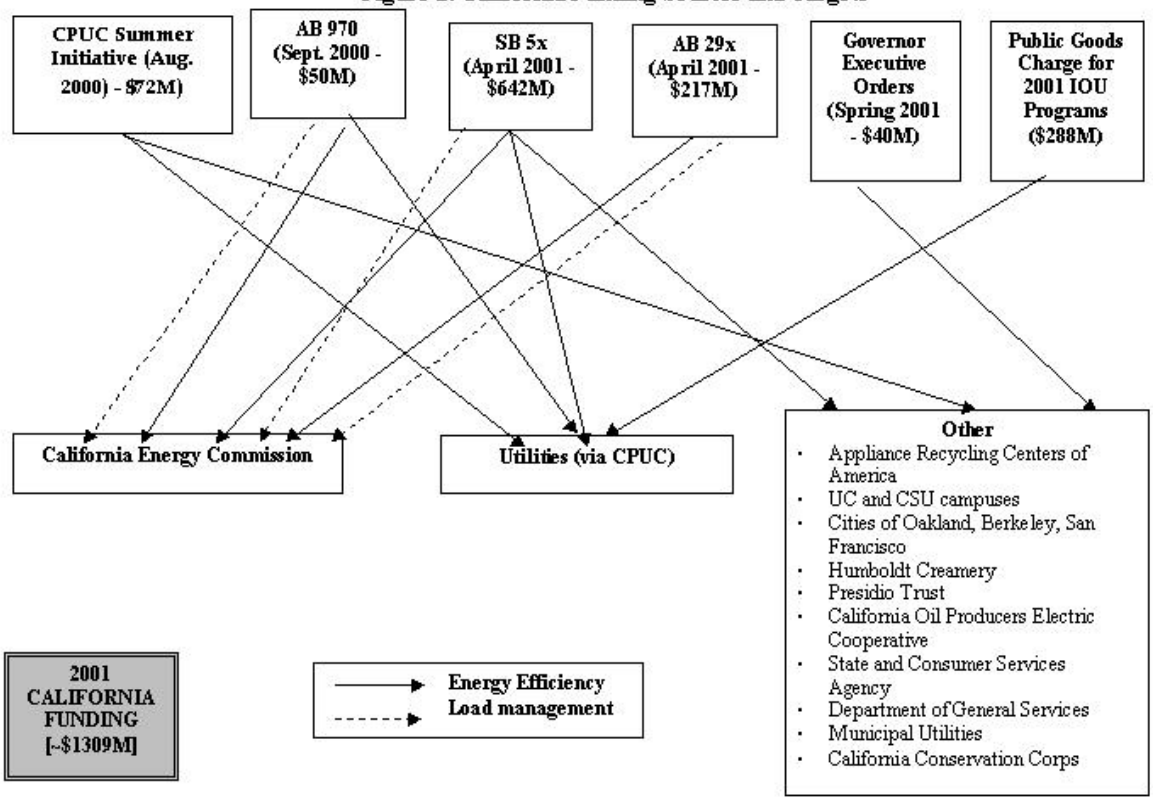


Figure 2. California Funding Sources and Targets



Partners (2003) provided a more comprehensive and up-to-date analysis (albeit still based mainly on reported, unverified data) and estimated that the actual MW savings was a bit lower—3,404 MW and 5,516 GWh.

The savings are expected to be greater over time, since not all the measures had been installed by the end of 2001. For example, in six program elements in the CEC's Peak Load Reduction Program, savings reported by participants as of November 1, 2001 were 245.5 MW and total savings expected by June 1, 2002 were 327.8 MW—a 33 percent increase (Curtis and Rudman 2002). Of course, other programs may have had most of their measures installed, so additional savings may not occur. In addition, under different circumstances, the savings might have even been greater from demand response programs: savings from new demand response programs offered by the utilities and the California Independent System Operator were rarely utilized during the Summer of 2001, because customers successfully reduced their loads through conservation behavior, energy management, and energy efficiency investments.

The Global Energy Partners analysis reported a cost of $0.17 per kWh saved across all programs, loading all the costs into one year of savings. The organization estimated that if the savings were calculated for the lifetime of the measures, the overall costs would be $0.03 per kWh saved. However, these numbers should be treated carefully. For example, the savings are estimated savings, and the costs do not account for incremental customer costs. On the other hand, the savings do not include the value of other fuel savings, or operation and maintenance savings to customers, nor the benefits from reductions in transmission and distribution costs, nor the value of reduced environmental damage. Therefore, while these data should be regarded as preliminary, the initial results suggest that energy efficiency programs can be a cost-effective resource option for addressing electric system reliability concerns.

The results from these programs are still being evaluated, but one evaluation study on a subset of these programs provides evidence that most of the estimated savings for at least one program was realized. In an evaluation of the CEC's Peak Load Reduction Program, the evaluators reported a savings realization rate of 89 percent for six program elements: i.e., while participants reported savings of 245.5 MW, the evaluators found the savings to actually be 218.5 MW (Curtis and Rudman 2002).

The synergistic effect of all the California programs and policies (including the massive public information campaigns, extensive media coverage of the crisis, and electric rate re-design to encourage conservation) was even more impressive. In 2001, California averaged a 10 percent cut in peak demand during the summer months (with a record reduction of 14 percent in June), and overall electricity use declined in 2001 by 6.7 percent, after adjusting for economic growth and weather (CSCSA 2002). Perhaps the most meaningful result of all was that California experienced no incidences of rolling blackouts for the entire summer or the rest of 2001. It is very difficult to assign a quantitative estimate of the value of that result, and we do not attempt to do so here.

Summary

During the 2000/2001 time period, California was hit with a serious electric system crisis, resulting in skyrocketing electricity costs and a number of instances of rotating blackouts. As a part of the response, California made an investment in energy efficiency and demand-reduction initiatives that was unprecedented in size and scope. The state earmarked over $1.3 billion to be spent by the four major investor-owned utilities, several municipal utilities, the California Energy Commission, and a number of state agencies, state colleges and universities, and several other private entities. The purpose of this study is to examine this enormous effort and seek to identify lessons learned about the administration and coordination of energy efficiency programs during this historic time period.

METHODOLOGY

Focus and Parameters of the Study

From the material in the preceding chapter, it is obvious that the magnitude and scope of both the problems California faced and the policy responses it pursued were enormous. In approaching the current report, it will be helpful to have a clear understanding of the focus and parameters of this study relative to that broad universe of possible issues.

The research described in this report focused on certain aspects of the California experience, delimited by parameters of both time and content. This research examined the timeframe generally encompassing mid-2000 through the end of 2001, and directed its attention to policies and programs involving energy efficiency and conservation.[1] Policies and programs involving pricing, demand response, and other load management strategies are touched upon only indirectly, and the "supply" side of the issue (e.g., distributed generation, new power plants, etc.) is explicitly not addressed.

Even within the content area of energy efficiency and conservation, however, the range of factors that could be addressed is very broad. In designing this research, it was apparent that a good deal of resources were already being devoted by other entities to try to estimate the energy and demand savings impacts of the California energy efficiency and conservation programs.[2] In recognition of this fact, it was decided that a more important and unique area of contribution for this project would be to concentrate on issues related to the administration and coordination of the complex and massive energy efficiency and conservation policy responses in California. Therefore, while this report will occasionally make reference to "impact" results from other studies, this primary focus of this report is on what might be referred to as "process" related issues.

Data Collection

This study utilized two primary modes of data collection: (1) review of documents and materials (such as legislation, regulatory orders, and other research and evaluation reports); and (2) interviews (telephone and in-person) with numerous parties associated with the energy efficiency and conservation program efforts during the 2000/2001 timeframe.

A list of documents reviewed is included in Appendix A. The identity of the individuals interviewed is not being made public, and comments cited in the text are not attributed to specific individuals. This arrangement was designed to encourage more candid responses by the interviewees. As a general description, however, interviews were conducted with:

[1] This study directed its primary attention to energy efficiency and conservation issues for a number of reasons, including the fact that this is the area where primary funding emphasis was placed in 2000/2001; where most actual implementation occurred (e.g., as opposed to demand response efforts); and where the associated policy and administrative issues in California are most significant.

[2] Several of those efforts are cited in this report, but we do not attempt to duplicate their efforts.

- Twenty-two different individuals involved in managing specific energy efficiency programs during 2000/2001, representing both utility and non-utility programs, and including individuals from investor-owned and municipal utilities; state agencies (the CEC and the CPUC); a city government; and a private sector vendor
- Twenty-three senior administrative level individuals involved in broad oversight, management, or other roles relating to the California energy efficiency efforts, including utility administrators (IOU and municipal utilities); state regulatory agencies (the CPUC and the CEC); other state agencies; and representatives of numerous other stakeholders (customer groups, trade allies, and environmental organizations)[3].

The 22 program managers were given a more abbreviated interview format, while the other respondents received much longer, in-depth interviews (often lasting an hour or more). Appendix C provides a copy of the two interview guides.

Objectives of this Study

The intent of this project was to conduct an overall policy-level review and analysis of the experience in California during 2000/2001 regarding the design, administration, and delivery of energy efficiency programs and services. The scope of this review included all utility, PGC, and state revenue-funded energy efficiency programs. The core objectives of this study were to:

1. Independently document and describe the overall scope, magnitude, and complexity of the historic energy efficiency efforts conducted in California during the electricity crisis of 2000/2001;
2. Identify problems and challenges that arose during the implementation of these efforts, and describe steps taken to address those problems and challenges;
3. Describe key lessons learned regarding the policies and approaches adopted in California during this experience, including program administration, coordination, and delivery; and

4. Provide recommendations regarding future policies, administrative structures, and delivery mechanisms in California, and in the broader context, address implications for other states.

The remainder of this report presents and discusses the results and recommendations developed in this study.

[3] A complete list of organizations included in the interviews is provided in Appendix B.

RESULTS

This chapter is structured to correspond to the core objectives of this project, as outlined previously in the Methodology chapter. Each of the three core research objectives (i.e., independently document and describe the overall scope, magnitude and complexity of California's energy efficiency and conservation efforts; identify problems and challenges which arose; describe key lessons learned) will be addressed as a distinct section, and the various data sources and methods will be applied to each section as appropriate. A subsequent chapter (Recommendations) will synthesize this information and provide some practical recommendations regarding future policies, administrative structures, and delivery mechanisms in California.

The Context: The Magnitude and Complexity of California's Energy Efficiency and Conservation Efforts During 2000/2001

The scope and magnitude of California's energy efficiency, conservation, and demand reduction efforts during 2000/2001 were truly historic. No single state has ever attempted anything close to the magnitude of what California undertook. Indeed, California's expenditures on energy efficiency and conservation programs during this episode (at least $934 million[4]) easily exceeded the total annual utility energy efficiency spending of all other states combined during that time frame.[5]

The enormity of the crisis California faced, and the sheer magnitude of the policy response, made it almost inevitable that the implementation landscape would be incredibly complex. Virtually all available state agencies and regulatory mechanisms were thrown into the mix. At least seven distinct state departments or agencies were involved in administering and/or implementing energy efficiency, conservation, and/or demand reduction programs.[6]

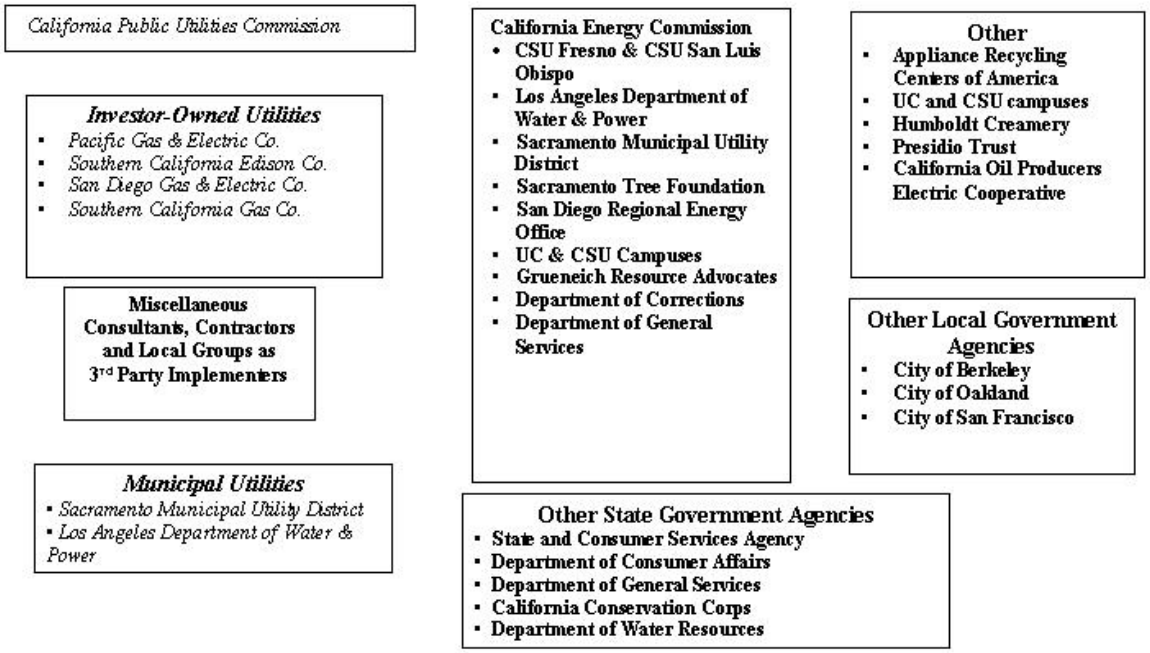
Figure 3 represents an attempt to visually illustrate the mosaic of agencies and organizations involved. On the left side, the boxes represent the types of utility companies (both investor-owned and municipal) that were active in promoting energy efficiency, with the CPUC acting as the primary regulator for the IOUs. The boxes in the middle column represent the state agencies that were actively involved; for the California Energy Commission, we indicate the main administrators used in implementing the CEC programs, showing a mix of private and public enterprises. And on the right side, local government agencies are shown, as well as a mix of private and public organizations. As one can see, the number and diversity of organizations required to implement such a large-scale program in California was enormous.

[4] The study by Global Energy Partners (2003) estimated that the total reported cost of all 218 energy efficiency programs they could identify was $934 million.

[5] Nationwide expenditures on utility and related public benefits energy efficiency programs, excluding California, totaled approximately $814 million in 2000. See York and Kushler (2003).

[6] A partial list would include the California Public Utilities Commission, California Energy Commission, Department of Consumer Affairs, Department of General Services, California Conservation Corps, Department of Water Resources, and the State and Consumer Services Agency.

Figure 3. Organizations Involved in Administering and/or Implementing Energy Efficiency/Demand Reduction Programs in California During the 2000/2001 Crisis



The governor's office must, of course, bear ultimate responsibility for the overall design and coordination of the multi-faceted administrative and implementation structure that was employed. However, it is illuminating to consider the extent to which the legislature specified particular administrative approaches and implementation targets in the key pieces of legislation passed during this time frame, and how that may have affected the nature and extent of challenges faced by administrators.

Effects of Legislation on Administration and Implementation

Each of the four key pieces of relevant legislation[7] passed during this timeframe (AB 970; AB 995; SB 5X and AB 29X) contained certain directions regarding the administration and implementation of energy efficiency, conservation, and demand reduction efforts. The key aspects in that regard for each of those bills are summarized below.

AB 970 (signed September 6, 2000): This bill established the pattern for a large scale and very complex administrative response to the California electricity crisis. The high water mark in this regard was the establishment of the governor's "Clean Energy Green Team," created to work on power plant construction and renewable energy issues. This team was directed to include: the Chair of the Electricity Oversight Board; the President of the CPUC; the Chair of the Energy Resources Conservation and Development Commission; the Secretary of the Resources Agency; the Secretary of the Trade and Commerce Agency; the director of the Governor's Office of Planning and Research; representatives from the U.S. EPA and Fish and Wildlife Service; and representatives from local and regional agencies in California.

In one respect, that effort represented a laudable attempt to "get everyone involved." However, that type of "everything but the kitchen sink" approach (as opposed to other types of approaches, such as an "energy czar" with a single point of ultimate responsibility) does have implications for administrative and coordination challenges. For better or worse, California tended to adopt the "get everyone involved" style of management approach throughout the electricity crisis time period.

In the area of energy efficiency, the number of players specified in AB 970 was fewer but the legislation was still prescriptive in terms of several administrative issues, including the requirement for involvement by multiple administrative and implementation entities. For example, it directed the CEC to work with the CPUC in the implementation of peak electricity demand reduction programs, and it specified several particular programs for inclusion (e.g., price responsive heating and cooling; "cool communities"; public universities and state facilities; light-emitting diode traffic signals, etc.). In addition, it specified procedures for contracting out the delivery of these programs and mandated the contracting out of the evaluation of the programs to "one or more business entities."

The legislation also directed the CPUC to work "in consultation with the Independent System Operator," and "in consultation with the State Energy Resources Conservation and Development Commission" (i.e., the CEC) in adopting "energy conservation demand-side

[7] See Appendix D for a brief summary of the major elements of each of these pieces of legislation.

management and other initiatives….," and it spelled out a long list of required initiatives in those areas.

Finally, in a provision with a clear potential to adversely affect ultimate administration of the overall effort, the legislation limited administrative costs to "no more than 3 percent" of the funds appropriated.[8]

On the positive side, there were some aspects of AB 970 that were beneficial to the prospects for effective administration of these efforts. For example, the legislation did explicitly allow the CEC to use sole source contracting for program delivery and for program evaluation "if the cost to the state will be reasonable and the commission determines that it is in the state's best interest." The legislation also set aside a specific portion of the funding for the various state agencies involved to hire "temporary staff resources" to assist in the implementation of the legislation. Lastly, in contrast to some of the later legislation, the goals for AB 970 were clearly stated and contained no inherent conflicts:

- It is the intent of the Legislature that these funds for staff resources be expended exclusively to implement programs that achieve the maximum feasible cost-effective energy conservation and efficiency…. [Sec 8 (a)(2)]
- The commission shall prioritize conservation and demand-side management programs funded pursuant to this subdivision to ensure that those programs that achieve the most immediate and cost-effective energy savings are undertaken as a first priority. [Sec 8 (c)]

AB 995 (signed September 30, 2000): This bill is rather narrowly focused on issues relating to the extension of the nonbypassable system benefit charge (which supports energy efficiency, renewable energy and public interest research and development) until January 1, 2012. Because the administrative roles and procedures for these programs were well established, this legislation did not address much in that regard. However, it did explicitly continue the dual roles of the CPUC and the CEC in administering energy efficiency programs ("The bill would also require the Public Utilities Commission and the Energy Commission to continue to administer energy efficiency programs, as defined, following prescribed guidelines.")

In addition, the legislation contributed to administrative complexity when it spelled out the requirements on the CPUC. It stated that the CPUC shall ensure:

> That local and regional interests, multifamily dwellings, and energy service industry capabilities are incorporated into program portfolio design and that local governments, community-based organizations, and energy efficiency service providers are encouraged to participate in program implementation where appropriate. [Sec 399.4 (b)(1)]

[8] This notion of severely limiting administrative costs was subsequently replicated in the two other bills with state appropriations for energy efficiency and demand reduction activities (SB5X and AB29X).

That provision also reflected the introduction of "equity" related goals for this funding, as does a later component [Sec 399.8 (f)(4)(A) and (B)] which called explicitly for consideration of "net benefits secured for residential customers" and "whether the programs provide a balance of benefits to all sectors that contribute to the funding." These equity-oriented objectives could have created some potential conflict with the "maximum cost-effective energy conservation" goal spelled out in AB 970.

On the positive side (in terms of facilitating near-term administration), the best aspect of AB 995 was that it did leave in place the basic administrative and implementation mechanisms that were already in operation for the public goods charge (PGC) programs in California. This likely was very helpful in enabling the PGC-funded energy efficiency programs to ramp up quickly to address the 2000/2001 electricity crisis.

SB 5X (signed April 11, 2001): This legislation contributed to the administrative complexity of the California response in several respects. To begin, it specifically appropriated funds for energy efficiency efforts to a wide array of state agencies, including: the CPUC; the CEC; the Department of Consumer Affairs; the Department of General Services; and the Department of Community Services. It also mandated significant pass-through of funds to municipal utilities and to "third parties to implement innovative peak demand reduction measures."

In addition to specifying a wide variety of organizational entities, the legislation also prescriptively allocated specific funding amounts to each of a long list of different content areas. This included everything from agricultural pumps to low-energy usage building materials for schools and universities.

Unfortunately, the legislation provided no guidance on how this great mosaic of players and programs should be coordinated. Furthermore, effective coordination and administration may have been hampered by very tight limits on administrative costs ("not more than 2 ½ percent of the amount of the funds expended") imposed by the legislation.[9] Moreover, the legislation mandated a very tight time frame. Funds that were unencumbered by March 31, 2002 would revert to the General Fund.

Finally, the legislation could be regarded as having somewhat conflicting policy goals. On the one hand, the primary objective of the legislation was framed in terms of the response to "an energy crisis" and the focus was clearly spelled out:

> To the maximum extent feasible, the expenditure of funds appropriated pursuant to this act shall be prioritized based upon immediate benefits in peak energy demand reduction and more efficient use of energy. [Sec 1 (d)]

The legislation also identified a specific energy savings target of "a total reduction in peak electricity demand of not less than 2,585 megawatts." [Sec 5]

[9] The legislation did allow "costs associated with marketing or evaluation" to be excluded when computing the 2 ½ percent limit.

On the other hand, the long laundry list of diverse funding recipients, delivery channels, and targeted technologies spelled out in the legislation clearly suggested certain political and equity priorities at work as well. From an overall administrative standpoint, these somewhat conflicting directives could have contributed to the difficulty of the administrative challenge.

As for positive features, the most notable element in terms of facilitating ease of administration was in Section 6 of the bill, where state agencies were given exemptions from a long list of normal state contracting procedural requirements, for contracts entered into pursuant to this legislation. Without a doubt, these waivers did help the state to respond to the electricity crisis in an expedited time frame.

AB 29X (signed April 11, 2001) As initially passed, this bill would have contributed to administrative complexity in a very similar manner to SB 5X, by specifying that energy efficiency funding be directed to a lengthy list of state agencies and other entities. However, in signing the legislation, the governor vetoed the funding for several of these projects, including funding targeted for California Community Colleges; the Department of Community Services and Development; the CEC; the Department of Corrections; and the CPUC.

Interestingly, for at least a couple of these projects, the concern about administrative complexity appears to have played a role in the veto. The governor specifically indicated a concern about creating new administrative structures and procedures, citing in his veto message the problem that "these new programs require the establishment of administrative procedures and will not deliver peak reduction savings for this summer."

Also similar to the SB 5X legislation, AB 29X included two other provisions that could be seen as creating serious challenges for program administration: a limit on administrative costs of 2 ½ percent of the total budget, and an extremely aggressive implementation time frame (e.g., projects to be "in place by the summer of 2001").

Finally, AB 29X also included some goals that tend to contain some inherent conflicts that could have posed challenges for administrators and implementers. For example, some segments of the bill set objectives in terms of peak load savings (MW), while other sections specified reduced energy usage (in kWh). In addition, this bill also gave directives to pursue both equity objectives (e.g., targeting "low-income households and small businesses") and maximum savings impact objectives ("To the maximum extent feasible…expenditure(s) …should be prioritized based upon immediate benefits in peak energy demand reduction and more efficient use of energy"). In fact, in one case these directives were given on the same page! [Chapter 4, Sec 14421]

On the positive side, like the SB 5X legislation, AB 29X included temporary exemptions from many state contracting procedural requirements, in order to expedite the contracting process.

Summary Assessment of Legislative Effects

There seems little doubt that the complex set of policy responses implemented during the 2000/2001 time period, with their sometimes inconsistent goals and objectives, created some problems in terms of administration and coordination of the energy efficiency/demand reduction efforts in California. The recent study by Global Energy Partners for the California Measurement Advisory Council (Global Energy Partners 2003) commented as follows:

> Traditionally, California has focused its program objectives on producing kWh savings and its evaluation efforts on measuring those energy savings. However, in the last couple of years, as price spikes and emergency conditions became major concerns, the program objectives of some of the newer programs, especially those not administered by the IOUs, have turned to peak demand reduction. The result was a grab-bag of programs in 2001 with different objectives and different emphases on what was reported. (p. 4-7)

Similarly, the Global Energy Partners study concluded that the presence of objectives and/or mandates to serve "hard-to-reach" customers likely adversely affected program cost-effectiveness in certain programs (p. 2-4).

To some extent, it can be argued that complicating factors such as those outlined above are perhaps not a surprising outcome from a legislative process, particularly given the circumstances within which California found itself in 2000/2001. There were many competing interests that had to be reconciled, and a rapid response to a perceived crisis had to be crafted. Nevertheless, without passing judgment on how those interests were balanced in this case, it is important to at least acknowledge that the legislative and regulatory policy underpinnings of the California energy efficiency response efforts helped contribute to some of the difficulties observed during the implementation phase. In assessing administrative performance, it is important to begin with an understanding of the cards the administrators were dealt.

On the other hand, it should also be acknowledged that the legislature did take strong policy actions in a relatively quick time frame, and that these core pieces of legislation did include some positive aspects for administrators. In particular, the waiver of the normal procedures regarding the solicitation for, and issuing of, state contracts was particularly helpful.[10]

Perspectives of Program Managers

Surveys were conducted with a total of 22 individuals involved in energy efficiency program management in California during the 2000/2001 time frame. The majority of these individuals were with one of the four investor owned utilities, but nearly a third were with other entities, including the CEC, the CPUC, city government, a municipal utility, and a

[10] However, it is important to bear in mind that this was a temporary fix, implemented in an emergency. On an ongoing basis, those extensive procedural contracting requirements remain in place. The burden they create is one reason why other administrative mechanisms (e.g., utility administration of the PGC energy efficiency funds) have historically been employed.

private vendor. Sources of funding for these programs included AB 995 (the PGC programs), the CPUC 2000 "Summer Initiative," AB 970 and SB 5X.

For the purposes of this section of the report, these surveys included four items pertinent to the issues discussed above.[11] Respondents were asked whether the goals and objectives for the funding for their program were clearly spelled out; what they understood to be the goals and objectives for their program; whether they had perceived any conflicting or inappropriate goals; and whether they experienced any challenges in terms of coordination of their program with other energy efficiency or demand response programs operated during 2000/2001.

Goals. The results regarding program goals were quite interesting. Only one respondent out of 22 indicated that the goals for their program were not clearly spelled out (a person involved with the CPUC Summer Initiative programs). However, only three of the 21 who felt the goals and objectives for their program were clear cited the funding legislation as a source for that information (and two of those individuals indicated the legislation only offered general guidance). Nearly all of the respondents cited sources such as their utility's filings, CPUC orders, or decisions made by state agencies such as the CEC.

The respondents' descriptions of their goals and objectives were even more intriguing. Ten of the respondents (45 percent) simply stated the goal was energy and demand savings (e.g., "kWh saved and kW reduced," "energy and capacity savings," "reduce demand and save energy— pretty clear"). Another six respondents (27 percent) cited production goals, in terms of units of service (e.g., "number of measures to be installed," "get as many traffic lights installed by June 1, 2001 as possible," etc.) Two respondents (9 percent) reflected both energy savings and equity-oriented goals ("kWh and MW savings to be achieved and to reach a certain percentage of the hard-to-reach population," "energy savings (primarily) and to educate and inform customers"). Lastly, four respondents (18 percent) only cited goals that were oriented toward customer service and equity objectives (e.g., "help consumers control utility costs," "put incentive dollars into the hands of ratepayers," "provide energy measures to small business customers," etc.).

Lastly, respondents were asked if they perceived any inappropriate or conflicting goals that were applied to their programs. Most respondents did not see any conflict. However, without prompting, three respondents cited the inherent conflict between trying to maximize cost-effective energy savings versus trying to meet equity objectives. Nevertheless, it is interesting to note that none of the three considered the conflict insurmountable:

- The CPUC requires us to go to hard-to-reach people, but this conflicts with energy saving goals. A balance is needed. The goals do conflict, but the conflict is not dysfunctional.
- We were given a kW and kWh goal in a sector that is hard to provide this type of savings. Ideally you go out for the big fish and then go for the little guy. But one can do both.
- The hard-to-reach customer goals were set tight, but we met them.

[11] Other components of the surveys will be discussed in other sections of this report.

Four other respondents identified what they believed to be inappropriate or less than ideal goals regarding their programs. There was no consistent theme among these examples, and they tended to represent questions about fundamental policy rather than issues related to administration. Nonetheless, they do raise some interesting issues, so they are briefly listed below.

- Funding for energy efficiency should be for long-term investment rather than short-term load management purposes. This distinction was new to policymakers who approved the funds.
- The PUC order called out cost-effective programs and never fully defined what that meant.
- We could not provide a comprehensive approach to new construction because we could not advise on renewable energy (e.g., building-integrated PV, solar PV, or solar DHW), or on cogeneration (where fuel switching was involved).
- Is it appropriate to have kW and kWh savings for gas utilities? Regulators don't understand that electric savings are available from gas utilities."

Coordination. The program managers were equally divided on this issue, with half reporting that coordination with other programs was a challenge they faced, and half indicating that it was not an issue for them. Concerns tended to cluster in two areas: customer confusion and "double-dipping."[12] As examples of the former:

- Another program was providing similar incentives to our program, so coordination on a statewide level was impossible. (Res. program manager)
- Customers were sometimes confused and they had to be educated about the different programs from different providers. (C&I program manager)
- There was some confusion for customers and industry on how CEC programs differed from utility programs. But for utilities, there was no confusion." (Res. program manager)

As examples of double-dipping:

- The CEC ran similar programs. We had to make sure incentives were not paid twice for the same project. Customers had to participate in only one program, and they had to be educated on that point. (C&I program manager)
- A competing program was run by CEC. We were careful to make sure that there was no double-dipping. This measure was also excluded from the utility SPC program. (LED program manager)

Overall, it appears that the complex array of programs did require some extra attention and diligence and did contribute to customer confusion in some cases. However, it is fair to say

[12] i.e., a customer claiming an incentive from two different programs for the same measure or action.

that most of the program managers surveyed did not regard coordination as a major impediment to program implementation.

Summary Assessment of Program Managers Perspectives

In assessing the perspectives of program managers on these issues, a few noteworthy themes emerge. First, virtually all of the program managers felt that there were clear goals and objectives for their program. This is a desirable result and is typically regarded as a threshold condition for operating successful programs.

Second, the overwhelmingly predominant goal perceived in the field was to go out and capture immediate energy savings. Sometimes this was expressed directly, in terms of kW and kWh, and sometimes in units of service.[13] But the overall emphasis on delivered savings clearly got through. In the words of one respondent: "The main goal was energy savings. Market transformation went out the window."

Third, there were still some lingering elements of having equity-related objectives (e.g., serving hard-to-reach customer segments), but even where such conceptually conflicting goals were noted, respondents did not seem to perceive the conflict as insurmountable. In effect, they simply pursued both objectives: energy savings and serving hard-to-reach customers.[14]

Overall, it is noteworthy that the perceived primary emphasis on energy/demand savings reported by most of these program managers would seem to be consistent with the legislative intent of the key funding bills reviewed previously. This is particularly interesting because only three of these managers even mentioned the legislation as a source for their understanding of their program's goals. This suggests that the primary legislative policy intent during this crisis was fairly well transmitted through the administrative structure to the program level. Furthermore, even in those cases where potentially conflicting goals were still present (i.e., to serve "hard-to-reach" customer groups), the critical objective of achieving rapid energy savings impacts does not appear to have been significantly jeopardized.

Lastly, responses from the program managers suggest that the complex array of energy efficiency and demand reduction programs implemented during 2000/2001 did present some coordination challenges, particularly in the areas of clearing up customer confusion and avoiding double-dipping. However, most program managers felt that they were able to sufficiently overcome those challenges.

[13] Over 80 percent of the program managers cited one or the other, or both.

[14] Note that although program managers tended to feel they were able to successfully address both objectives, there is an inevitable trade-off involved. To the extent that hard-to-reach customers are pursued (necessitating a somewhat higher average cost to serve) the overall level of energy savings achieved is diminished somewhat. The end result of this compromise may be acceptable, but it is still a compromise.

Perspectives of Senior Administrators

In-depth interviews were conducted with 23 individuals that held more senior-level administrative positions in organizations related to California's energy efficiency efforts, including utilities, state regulatory agencies (the CPUC and the CEC), other state agencies, and representatives of various other stakeholders (customer groups, trade allies, and environmental organizations). Among many topics, these interviews encompassed several items relating to issues discussed in the preceding sections of this report, including: their perception of whether there were clear goals for the energy efficiency funding; what the primary goals were; and whether there were any conflicting or inappropriate goals. They were also asked a few questions relating to the complexity of the energy efficiency delivery structure during 2000/2001, their perception of any coordination problems, and their thoughts on the desirability of requiring statewide energy efficiency programs.

Goals. Similar to the program manager level respondents, these administrative level interviewees were nearly unanimous in their perception that the goals of the energy efficiency programs they were involved with were clearly defined. These higher level administrators were more likely to identify legislation as a source of the goals (nearly two-thirds mentioned that source), but were similar in characterizing the legislation as a more general source of information in this regard, and in citing subsequent actions by the CPUC or the CEC as providing the more specific detailed goals and objectives.

These higher-level administrators were also more likely to identify the program goals in terms of energy/peak savings, with all but two respondents identifying the goals in that manner (e.g., "energy savings," "peak savings," "MW and MWh savings," etc.). The other two were fairly similar to the energy savings metric as well, with one citing "installing hardware" and the other saying "avoiding blackouts." Only two respondents (one from the utility sector and one from the CPUC) mentioned the goal of serving hard-to-reach customers, and each of those mentioned it as a secondary goal.

One interesting observation was the distinction in how the savings goals were phrased. All but one of the eight respondents from the utility sector mentioned "energy savings" or "energy and demand savings" ("MWh and MW), as did both of the respondents from the CPUC. In contrast, all five respondents from the CEC only mentioned "MW" or "peak savings" in their description of program goals. This difference in responses can be considered appropriate given the different emphases of the different pieces of legislation that most applied to each group (see earlier discussion), and would seem to indicate that these administrators were indeed paying attention to the legislative intent in regard to goals for their organization.

These administrative level respondents were also asked about any perceived conflicts in goals, and were specifically asked about whether they perceived any conflicts between energy/demand savings goals and equity-oriented goals such as serving hard-to-reach customers. Virtually all of the utility, CPUC and CEC respondents acknowledged the presence of that conflict, although several of the CEC respondents pointed out that it was

primarily a problem for the utility programs through the PGC, and didn't really apply to most of what the CEC was involved with.

Similar to the program manager surveys, these administrative level respondents seemed to feel that the two different types of goals did not present irreconcilable problems. The utility respondents in particular seemed most accepting of the presence of the two types of goals. Some example comments included:

- We have generally had that tension there historically. You can't just do 'maximum savings'. All customers pay in and deserve the opportunity to achieve savings. I think it was handled ok.
- The programs were really approved to help customers, not just to achieve savings for the state. The legislators voted for these things to help their constituents. So it's hard to say it's really a conflict.
- The job never was just to get the biggest bang for the buck. We want to help our customers while also getting savings. We need to marry these goals together and do both.

In the end, however, there was fairly general agreement that achieving savings was the predominant goal during the crisis period. One CEC administrator phrased it this way: "Peak reduction trumped concerns about hard to reach." The representative from the municipal utility sector had a similar terse assessment: "The siege mentality to get energy savings really swamped anything else." The nearly universal listing of energy/demand savings as the program goal by these 23 interviewees, as discussed previously, tends to confirm those assessments.

Lastly, a few other interesting conflicts were also mentioned. A respondent from the CEC and another from the CPUC each mentioned the logical conflict between having a rate freeze (or even reducing rates in some cases, such as low-income customers) and promoting the goal of energy efficiency. They opined that holding rates down was a contradictory message to the pleas to conserve energy. A couple of others mentioned the severe limits placed on administrative costs in the legislation (e.g., 2 ½ percent in SB 5X) as being in conflict with the objective of running effective programs. Another respondent mentioned the conflict between targeting MW and MWh as a prime goal, and that sometimes an MW goal can have adverse effects on achieving cost-effective energy efficiency. Finally, one respondent (from a ratepayer advocate group) mentioned that there was a fundamental conflict in having utilities in charge of doing energy efficiency and that this likely leads to an under-spending on energy efficiency.

Complexity and coordination. As one barometer of complexity, respondents were asked how many major sources of funding were associated with the areas of energy efficiency that they were involved with during the 2000/2001 time period. Almost all of the respondents listed several sources. The utility and CPUC/Office of Ratepayer Advocates (ORA) respondents all listed AB 995 (the PGC programs) and SB 5X, as well as the CPUC "Summer Initiative" that provided an additional PGC related funding process. The CEC respondents listed AB 970, SB 5X and AB 29X. The non-utility, non-regulatory respondents

were more varied, with three (trade ally, environmental group and a ratepayer group) just listing the PGC programs, but the others listing some combination of two to four different sources.

Respondents were also asked if they experienced or heard about any difficulties or problems in terms of coordination or conflicts among the different energy efficiency or demand response programs that were operating in 2000/2001. All but four of the respondents indicated that they had, but perhaps half of those indicated that their perception was that the problems were not too bad. Several noted that there were problems with opportunities for "double dipping" (i.e., a customer getting incentives from two different programs for the same efficiency measure), especially between energy efficiency and demand response programs, although most of those indicated that they didn't have first hand knowledge of such problems occurring. However, one utility respondent did report that there were incidents of customers dropping out of the SPC energy efficiency program because they could get higher incentives with less M&V (measurement and verification) requirements from a CEC demand reduction program.

Another frequently cited concern was customer confusion, with all the different entities involved in implementing programs. However, several respondents touted the online website set up by the CEC to provide information to customers about program options available for their circumstances as a great help in resolving such problems. Those problems reportedly were more widespread early in the process, but were diminished with the advent of the CEC website.

Statewide programs. Respondents were asked to discuss the issue of whether administration of energy efficiency efforts in California would be easier if all programs were statewide. Interestingly, viewpoints on the issue of statewide programs were remarkably consistent. Only two respondents (both from the CEC) expressed support for requiring all programs to be statewide. In the words of one of those individuals:

> Yes. This would result in fewer regional organizations that would have to be dealt with. They would still have to work with local people, but they wouldn't have to work with program design. They would work with a state model—that would be more efficient.

In contrast, all of the other respondents spoke of the need to have some regional or local differentiation available. As one utility sector administrator put it: "California is just too big to have a 'one size fits all' approach." Another added: "There are specific needs in each service territory that need to be addressed, so it can't be all statewide." A third utility administrator provided a specific example:

> There are some local conditions where you don't need statewide programs. PG&E recently filed with the CPUC to have San Francisco elements of statewide programs allowed. San Francisco has a unique reliability challenge over the next few years. Thus, we need to tailor some statewide programs to

> San Francisco. Statewide programs are great, but you need to have flexibility for policy reasons.

Even the manufacturing sector representative opined: "Some programs are served best through IOUs and Munis (municipal utilities). They know how to administer programs in their service territories."

Overall, most respondents supported a mixed approach, where some statewide programs were in place along with some more tailored approaches. Responses ranged from favoring mostly statewide programs to mostly local or regional programs. The only two respondents to assign a numerical distribution (a representative from an environmental group and someone from the CEC) had very similar allocations:

- There should be a combination of statewide and non-statewide programs. For some programs, statewide implementation makes sense. For other programs, they need to be local to work with local entities and to fill in gaps. Bottom line: most money would go for statewide programs, perhaps 85 percent, and 15 percent would go to local programs. (environmental group representative)
- In general, it's good to have statewide programs. Many advantages in getting the market allies, retail chains, etc. involved. But not everything can be statewide. Maybe give 10–20 percent to regional efforts. (CEC representative)

Summary of Senior Administrator Perspectives on Administrative Complexity

The interviews revealed a perhaps surprising degree of agreement across senior administrative level personnel from a wide variety of involved organizations. There was nearly unanimous opinion that the goals of the energy efficiency programs with which they were familiar were clear, and those goals were almost universally framed in terms of securing energy/demand savings. There was widespread acknowledgment of the existence of possibly conflicting equity objectives of serving "hard to reach" customers, but a similarly widespread feeling that the conflict was not a substantial problem and that energy/demand savings were successfully pursued as the predominant goal.

The complexity issue was confirmed by the fact that nearly all respondents reported that programs they were familiar with had to deal with multiple funding sources and originating legislation, and all but four of the respondents reported hearing of or observing some problems with coordination or conflicts among programs. On the other hand, roughly half of those individuals indicated that the problems in that area were fairly minor.

Finally, there was very widespread agreement with the general notion that there should be both statewide programs and regional/local/service territory specific programs, in order to capture the efficiencies of statewide consistency as well as allow flexibility to address more targeted needs.

Key Problems and Challenges in Administering California's 2000/2001 Energy Efficiency Efforts

Both the program managers and the senior-level administrators were asked to identify what they regarded as the most significant challenges experienced in terms of administering the California energy efficiency programs during 2000/2001. They were also asked to discuss how those challenges were addressed. This chapter presents the results obtained regarding those issues.

Perspectives of Program Managers

Major challenges. Not surprisingly, program managers tended to focus on practical challenges they faced in terms of meeting program production objectives. Probably the single most frequently cited challenge was simply the very tight time constraints facing the programs. The time frames for achieving results that were specified in several of the funding bills, and in subsequent CPUC orders and CEC contracts, were very aggressive. Moreover, in most cases these program managers were being asked to do more than usually required (e.g., increase production, add new measures, etc.), or in some cases to implement entirely new programs. The following comments are illustrative:

- We had to get the program going fast. We had to train existing contractors about installation rules for new measures. We had to develop statewide policies and procedures regarding acceptable efficiency levels for measures. Startup took a long time.
- A lot to do in a very short time. Developing contracts, reviewing of contracts, and signing contracts. Moving people along quickly.

Another area of challenge was keeping up with increased customer demand for services. The combination of publicity about the energy crisis, official pleas for people and businesses to conserve, utility rate incentives for conserving (i.e., the 20/20 program), and, in many cases, increased program incentives, all helped lead to rapid growth in program participation. Some program manager comments illustrating the challenges in this regard included:

- High incentives created a large demand for product, and this demand could not be met in the designated time frame.
- We had difficulty responding quickly to the increased need for human resources to meet the goals that were doubled over night.

A third area of challenge was dealing with bureaucratic agencies and getting them to make decisions in a timely manner. This seemed to be a particular problem with cities and local governments due to their internal decision making processes. One utility statewide program manager commented:

> Follow-up with cities and municipalities on paperwork was very challenging. There were problems in getting cities and municipalities to participate, due to their budget approval process which took a lot of time.

Even the program manager from the local government sector that was surveyed commented: "Our own bureaucracy slowed us down in getting us to implement this program."

Of course, local governments were not the only source of problems with the bureaucracy, as one utility program manager commented: "Getting program approval from the CPUC on a timely basis was a problem. The CPUC didn't approve the programs until late in the year."

The other significant administrative challenge mentioned in these surveys was the issue of coordination among and between programs. That issue was discussed previously and will not be repeated here.

Finally, two issues were noteworthy because of their almost complete lack of mention as a significant challenge. The first of these was the issue of needing to serve hard-to-reach customers. Only one of the program managers mentioned that as a problematic issue for their program. This would seem to be consistent with the earlier discussion in suggesting that program managers were generally able to reconcile the potentially conflicting goals of seeking maximum savings but also serving hard-to-reach customers.

The second of these was the issue of adequate funding. Only one of the 22 program managers mentioned a lack of adequate funding as a challenge facing their program.[15] Even with all the increased demands on programs, high production goals, new measures, etc., there were almost no complaints about lack of funding. It would appear that at least one thing California did right was to make sure that the massive program response called for by legislators was adequately funded. That obviously removed one key threshold barrier to success that often plagues legislative policy mandates.[16]

How challenges were addressed. In general, the responses of these program managers to the question of how the challenges they mentioned were addressed could be characterized as: "whatever it took to get the job done." The following are some illustrative examples:

- The utilities and the Office of Ratepayer Advocates met regularly to come up with policies and implement them. Internally, we trained lots of contractors through special classes.
- We brought on some supplemental staff and consultant help.
- We ramped up marketing, information and outreach, and had account representatives working with customers and vendors. We had a dedicated administrative person that tracked each application and followed up with program participants and provided them with any supporting documentation that they needed.
- The attorneys had to talk and compromise on a number of issues. In some cases, the utility gave a little; in most cases, the city gave.
- We did a lot of marketing. Rebates for the hard-to-reach customers were increased. Some measures were doubled and some were tripled.

[15] Although some programs did eventually run out of funds due to consumer demand for program services.
[16] This observation is intended as a general truism, and is not intended to single out the California legislature.

Perspectives of Senior Administrators

Major challenges. The major challenges identified by the senior-level administrators shared some common themes with the program managers, but also had some different aspects. Perhaps not surprisingly, one of those differences was a much more visible concern with the overall "big picture" coordination of different funding sources and administrative structures. As one senior-level utility administrator expressed:

> There was an enormous challenge with coordination. All these new players, and lots of money being spent, with no requirement for uniform reporting or monitoring.

Although he went on to add:

> One big positive was the coordination of the IOUs with the Muni's, especially SMUD. We coordinated very well on the statewide efforts.[17]

On the regulatory side, an administrator at the CPUC also cited overall coordination issues as a major challenge:

> There were a lot more coordination issues… with the CEC, the Power Authority, the federal government (e.g., LIHEAP), and there were lots of information exchanges. It was a huge time sink.

On the other hand, many of the challenges cited by these senior-level personnel were very similar to those reported by the program managers. In particular, the very aggressive time frames and trying to handle the enormous volume of customer participation were frequently cited as major challenges by both groups.

One interesting distinction observed was between the responses from the utility sector and those from the CEC. Due to the differences in their prior roles regarding energy efficiency implementation and in the funding legislation affecting their activities, the utilities were typically faced with the challenge of modifying and/or ramping up existing programs, whereas the CEC had to create new programs from scratch. The following responses help illustrate that difference:

- There was a tremendous challenge of ramping up to the huge crush of customer demand to do something about their energy use, and this had to be done in a very short time frame. (utility administrator)
- The major challenge was the speed required in getting the money and the programs out the door. There were no pilots. It was hard to figure out what incentives were needed. We did not have time for focus groups to learn what would work. (CEC administrator)

[17] It should be noted that the program manager surveyed from that municipal utility gave a similar positive description of their coordination with the IOUs.

Finally, a very interesting finding was the difference observed in the perceptions of those within the system (i.e., utilities, CEC, CPUC) versus some of the key players outside the delivery system. While those within the system had major angst about all of the administrative challenges, those outside the system (essentially key stakeholders or "consumers" of the programs) apparently were oblivious to much of those challenges. The following comments from key stakeholders, in response to a question about their opinion regarding what were the most significant challenges that were experienced in administering the various California energy efficiency programs during 2000/2001, help illustrate this contrast.

- Once we were introduced to the California IOU managers, there were no challenges. My biggest barrier was getting an introduction to the right people at the utilities. Once that was done, it was easy. There was lots of sharing among the utilities, and it was easy to meet other utilities and key players. (major retail chain)
- The major challenge was getting the programs in place by the summer of 2001. They did a pretty good job. (manufacturers' association)
- I don't know. Everything seemed pretty good to me in 2001. (ratepayer advocate group)

These responses could be interpreted as suggesting that the energy efficiency delivery system did a pretty good job at overcoming all their internal administrative challenges and ended up successfully presenting an effective image to stakeholders outside the system.

How challenges were addressed. Similar to the program managers, the predominant response regarding how the major challenges of short time frame and enormous volume of response were addressed can be generally characterized as "hard work." In the words of one CEC senior administrator: "Lots of dedicated staff worked overtime." Similar sentiments were echoed by many of the respondents.

In a more tangible sense, however, there were a few key mechanisms that were employed to help address these serious administrative challenges. For example, there was a top level weekly meeting held to facilitate direct communication and coordination among the major state agencies involved. As described by a senior CEC administrator:

> There was a weekly Conservation Team meeting (Tuesdays at 5:00 PM) in David Freeman's Office. Attendees included commissioners and senior administrators from the CEC, CPUC representatives, and a representative from the Governor's office. The purpose of the meeting was administration and coordination of all the different programs.

Another senior CEC administrator described the prevailing frame of mind during the crisis:

> There were major coordination and duplication challenges. Initially there were arguments over things like turf and program details. But the Governor's

> office essentially said: 'Forget about turf, we need it all! Coordinate if you can, but go get it!'

A second example that was cited by several CEC respondents as particularly important were the legislative waivers of state contracting procedural requirements (described earlier in this report). Without those waivers, the CEC's ability to respond and get programs implemented quickly would have been severely constrained.[18]

On the utility program side, both utility and CPUC senior administrators referred to a watershed moment at the CPUC in early 2001, which helped break through some of the administrative barriers. As described by a senior utility administrator:

> There was an 'all parties' meeting at the CPUC, where President Lynch announced she was suspending all the prior program requirements and calling on the utilities to deliver savings. In exchange, she said 'We will hold your feet to the fire to get results.'

Another senior utility administrator described the situation as follows:

> There had been a strong tension between different policy goals the CPUC had. But in early 2001 they did a smart thing: they stepped back from their heavy involvement in designing the programs, mandating a market transformation approach and so forth, and just said: 'Go get the resource.'… and gave the utilities the flexibility to do it.

A senior CPUC administrator provided a parallel characterization of the CPUC response to the administration challenge:

> We threw more people on it. We moved up a lot of timelines. We told the utilities that they had the flexibility to meet goals. Prior to that, we were more prescriptive, and we had to work with individual utilities. This time we told them that they just had to do it and do it fast.

Beyond these more formal events, there were countless informal attempts to address the administrative and coordination challenges. As one utility administrator put it:

> There was a lot of effort in ad hoc activities to coordinate, conference calls and so forth. There really was a good faith effort to coordinate on the part of all parties.

In summary, judging from the positive perceptions of key stakeholders discussed earlier, and from the overall energy and demand reductions achieved in California during 2001, it would appear that the responses to the administrative challenges were fairly successful.

[18] Some senior CEC staff suggested in the interviews that with the normal requirements for notification processes, procurement requirements, and lengthy contracting procedures, it might well have been impossible to respond in time had those waivers not been granted.

Lessons Learned from California's 2000/2001 Energy Efficiency Administration and Implementation Experience

As with the prior focus areas, both the program managers and the senior-level administrators were asked what they thought were the major lessons learned about administering a large-scale energy efficiency effort in California. This portion of the chapter presents and discusses those results.

Perspectives of Program Managers

In reviewing the responses obtained from program managers, it was possible to generally sort the reported 'lessons learned' into four broad categories: planning; coordination; implementation; and 'bigger picture'. Not surprisingly, most of the lessons cited by these program managers were of a practical nature, focusing on program-level concerns in the first three of those four categories.

Planning. The very compressed time frame and the lack of proper time for planning was cited by several respondents. Comments included:

- Planning! That was the big item. Not a lot of time to plan. Need more time to plan for proper implementation. (utility program manager)
- Everybody was pushing for June 1, 2001. Customers and contractors couldn't be turned on and off. One needs to give people the maximum flexibility for meeting timelines. Make it a 2-year program. It takes time to market, educate, get infrastructure in place, and find out how people make a decision. (CEC program manager)
- Take a measured and less panicked approach. People had good intentions, but it was a frenzied approach. Caused turmoil in the beginning. If people had more time, they would have gotten better results. (utility program manager)

Coordination. Although most lessons focused on their specific programs, a couple of the managers did comment on the need for better coordination.

- Importance of statewide coordination. Especially in dealing with all the actors involved in programs like appliance rebates (manufacturers, retailers, consumers, etc.). More uniformity needed. Still utility-specific framework in 2001. Programs were all over the map. More coordination needed in other related efforts, e.g., low-income programs. Better communication needed in general. Admittedly, these problems were partly due to the tight time frame. (CPUC program manager)
- Make sure the left hand knows what the right hand is doing. There were multiple funding sources, and some people were confused. A more measured approach is needed. (utility statewide program manager)

Implementation. Not surprisingly, this is where most of the program managers' lessons focused. The following are some good examples of some of the practical suggestions received.

- Use resources that already exist. There is an established distribution system…So program administrators can leverage resources and channels that already exist, including all the ground work that is provided by having a qualifying list of ENERGY STAR® products.[19]
- Work with other agencies to see what has been successful in their processes, for example, for the University of California, interagency agreements worked, rather than contracts.
- Keep the program and the measures as simple as possible.
- Make sure you have the ability to handle a large volume of customer interest. There was a lot of pent up demand in the market. Customers don't want problems, such as busy signals or delays in accessing the website. Customers need to have a call center that can handle this. Internet orders work well also. Need the ability to seamlessly handle consumer demand.
- Ensure that you have a clear channel of communications getting the message out about the program—explaining what the benefits are and where to get help.
- Handling a large-scale effort takes a lot of follow-through. Constant follow-up is needed—weekly if not semi-weekly. Have to monitor things very carefully. Set milestones for meeting deliverables. Look ahead and monitor things carefully and keep everyone informed. Set up a team and process in-house to handle this.

Bigger picture. While most lessons cited by the program managers focused on practical program issues, there were a few comments about broader lessons, particularly concerning the importance of the extensive media coverage during the California crisis.

- The messaging is very important. Paid and free media in California were extensive. Repeated messages via multiple waves was great. Multi-prong approach, utilities and government moving in the same direction. Credibility and knowledge of the utilities helped immensely. People were comforted with the past experience of utilities.
- It helped that we were in the middle of an energy crisis. This made energy a number one priority for people. There was a lot of free press on programs, and it mattered to people. It was easier for us to market the program. People wanted to respond.

[19] The availability of ENERGY STAR as a platform was also cited as a crucial factor by an administrator at the CEC. This will be discussed in more detail in the section on perspectives of senior administrators.

Finally, from one of the utility program managers, there was an implicit acknowledgment of the importance of the CPUC having loosened the reins during the crisis (as was discussed earlier in the section on how the challenges were addressed).

> Getting the regulators on board was very important. Regulators had to understand that utilities know what to do—don't micromanage us—customers trust us, and we know what we are doing. We are serving the customers and serving the state.

Discussion

To some extent, many of the lessons cited by the program managers (e.g., regarding such things as the need for time for planning and coordination) may have been in response to problems that were somewhat unavoidable, given the crisis atmosphere and the need for very quick results. However, they tend to underscore the importance of what was identified as one of the key conclusions of an earlier ACEEE national study of "reliability-focused" energy efficiency programs operated in 2001:[20]

> In terms of preparation and readiness, it appears that having an established program infrastructure in place for pursuing energy efficiency is extremely important in providing the ability to roll out accelerated programs in an emergency. Exiting institutions with authority and experience are crucial to achieving a rapid ramp-up of activity in the field. (p.33)

If a state has a solid foundation of energy efficiency programs in place on an on-going basis, challenges of planning and coordination during a crisis are much easier to overcome, because they are already being addressed to a great extent. Fortunately for California, the state had at least one solid foundation in place with the PGC programs, which greatly facilitated the overall state response. As one utility program manager commented: "This experience was not a big challenge for us. We escalated what we were already doing. Starting from scratch would have been impossible."

Beyond this fundamental strategic planning concern (which is really more of a policy related issue), the most useful lessons cited by the program managers pertained to program implementation issues. In that regard, the citations provided in the preceding text would seem to furnish some excellent suggestions for the management of programs that face aggressive implementation timeframes and goals.

Perspectives of Senior Administrators

Overall ratings of California's energy efficiency performance. Early on in the interview process, in order to assess their general perception of the 2000/2001 experience, the 23 senior-level administrators were asked to give their opinion regarding California's energy

[20] *Energy Efficiency and Electric System Reliability: A Look at Reliabilty-Focused Energy Efficiency Programs Used to Help Address the Electricity Crisis of 2001.* Martin Kushler, Ed Vine and Dan York. Washington, D.C.: ACEEE, April 2002.

efficiency performance during that time period. As a part of that assessment, they were asked to assign a single overall numerical rating, on a 1-10 scale (with '10' being the highest possible rating), of the "overall success of the energy efficiency efforts" in California during the 2000/2001 crisis. The results obtained are presented in Table 1.

On the whole, the subjective ratings by these 23 senior-level representatives were quite positive. The overall average rating was nearly '8' (7.8), with only one person providing a rating less than '5'. As a follow-up to the numerical rating, respondents were asked to provide the reasons for their particular rating. In order to provide a good illustration of the range of perspectives, comments from those offering both low and high ratings are provided below. First, the comments of all individuals who rated the overall success as a '6' or lower on the scale:

- There were some successes and some boondoggles. I have an IRP (integrated resource planning) background, and look at treating energy efficiency seriously as a resource. Some of what was done wasn't very serious. (utility administrator)
- Money was spent very quickly without really thinking of longer-term objectives. A lot of money was spent on 'PR' and the 20/20 Program—a hugely inefficient way of spending money. (CEC administrator)
- For getting attention to the issue, I'd give it an '8'. For the actual installed energy efficiency, I'd say a '3'. So maybe a '5' overall. Personally I was not all that pleased. A lot of money was spent, but not sure we had that big of an impact in real savings. So to some extent it was a 'lost opportunity' because of the lack of time to develop the best programs. (CPUC administrator)
- The timing was the problem. Everything came together too late and in an ad hoc fashion—reflecting the nature of the energy crisis. (manufacturers' association)
- I'd say 7 to 8 for the consumer response, in the residential sector, 3 to 4 for utility response and provision of programs. There was some improvement for penetration of energy efficient air conditioning in 2001, but the impact on penetration was minor. Inadequate program design and delivery in this sector (residential A/C) (ratepayer advocate organization)

It is interesting that even the individuals providing the lowest ratings had what might be characterized as "mixed" rather than uniformly negative opinions about the overall effort. Most of the respondents, however, had a very positive assessment. A few illustrative comments are provided below.

- The best year I've ever experienced in this business. More energy savings, enormous response to programs, change in market share, change in retailers' approaches. (utility administrator)

Table 1. Respondent Ratings* of the Overall Success of California's Energy Efficiency Efforts During the 2000/2001 Crisis

	Overall Rating
Utilities	
IOU RESPONDENT #1	9
2	9
3	9
4	6
5	10
6	9.5
7	9
MUNI	7.5
Avg	8.6
CEC	
CEC RESPONDENT #1	8
2	8
3	4
4	7.5
5	9
Avg	7.3
CPUC/ORA	
CPUC RESPONDENT #1	5
2	6.5
ORA	7
Avg	6.2
Others	
ENVIRONMENTAL	9
UNIV. & PUB BLDG	7
RETAIL CHAIN	10
MANUFACTURERS ASSN	6
RATE ADVOCATE	5.5
STATE OTHER	10
MAJOR MUNICIPALITY	7
Avg	7.8
Overall Avg	7.8

* Respondents were asked to rate each option on a 1 to 10 scale, with 10 being the highest possible rating.

- Exceeded everyone's wildest expectations. Got almost 5000 MW at peak! Without the conservation stuff we would have really been in trouble. CEC went from $30 million to $400 million in 10 months, all with no additional staff! The Governor forced all the agencies to work together. CPUC and CEC did a pretty good job of cooperating and coordinating—especially considering that the CPUC and CEC were at one of their low points in getting along just prior to the crisis. (CEC administrator)
- It really helped keep the lights on. Got a large amount of savings in a short period of time. Not a 10, though. Some things were done too quickly, without a lot of thought. (environmental organization)
- The IOUs' knowledge of energy efficiency and types of products. The cooperation of the IOUs. They know what the energy efficiency factors are and they had a good grasp of which sectors to target. (major retail chain)
- For the state as a whole, a '9'. We did fantastic things. Our company incented 7.5 million CFLs. Not a '10' though. Things were late getting out of the chute. It would have been nice to be able to get going faster. (utility administrator)

Scope of Lessons Learned. As might be expected given their higher-level roles in the process, and given the more in-depth format of the interviews they received, the senior administrators addressed a more wide-ranging set of issues under the umbrella of lessons learned than did the program managers.

For example, a number of respondents touched on the bottom line issue of how well the California efforts worked, and most were quite positive.

- 2001 showed that parties can work together on mutual goals. There was more coordination than before. And they were able to avert an energy crisis, by reducing peak demand and providing diversity in energy resources.
- The biggest lesson was that California has an enormous potential for energy savings, and with hard work, you can achieve a lot!

However, there were also some cautionary notes. While acknowledging the overall success, a couple of respondents added:

- Be careful in extrapolating the experience of 2001 to the future. There was a lot of free PR due to the energy crisis, which generated a lot of interest in programs and short-term conservation efforts. People were looking at their utility bills as prices went up. Also, people had a clear mandate on what to do, making it easier for people to work well together
- More analysis/evaluation is still needed. For example, how much of the savings from the 20/20 programs are sustainable? For the non-IOU programs, are the savings real?

Nevertheless, the prevailing opinion of the respondents was quite upbeat, and most of the lessons learned were in the form of trying to identify reasons for the overall success.

Two of the most exuberant responses were provided by senior administrators from the utility sector and from the CEC, albeit with somewhat different perspectives. (The reader can probably guess which was which.)

- The CPUC challenged the IOUs to be successful. The IOUs met the challenge. 2001 showed that the IOUs can step up to the plate to meet the challenge.
- The importance of all entities working together and having proper motivation was crucial. The motivation was provided by the crisis, and by the Governor insisting that the parties get together and work together. I'd give the Governor very high marks for that.

Others focused on some perhaps more practical lessons from the 2000/2001 experience:

- You really need to have a streamlined application and reporting process, in order to minimize burdens to customers and avoid discouraging them from investing in energy efficiency. (Consultant working with customers in the universities and public facilities area.)
- People did react to program economic incentives and the marketing of energy efficient appliances. The reduction in payback periods led to better consumer response. (ratepayer advocate group)
- State contracting procedures can be waived with positive results. Unfortunately, state contracting procedures are now back to that traditional 6 months. (CEC administrator)
- It is critically important to involve trade allies. They need advance notice and need to be involved in the planning process. (utility sector administrator[21])

ENERGY STAR. Another interesting program design lesson identified, which re-affirmed a lesson cited earlier by a program manager, was the importance of the federal ENERGY STAR program in contributing to the California success. A senior administrator at the CEC commented that early on in the crisis, he had called a colleague in New York, who told him one of their key conclusions had been regarding the importance of ENERGY STAR in facilitating their energy efficiency efforts. California's experience clearly confirmed that conclusion. In the words of the CEC administrator:

> Having ENERGY STAR there was very helpful, because we could make our message very simple: 'Buy ENERGY STAR,' rather than have to design our own complex technical message. Plus, having the infrastructure there (i.e., testing, labeling, etc.) for products makes program implementation simple.

[21] This utility administrator recited an incident where they once had a window air conditioner program all designed, but when they got ready to launch, there weren't any qualifying products available in their market area.

Lessons learned about who should administer energy efficiency programs. One key policy question in California revolves around the issue of administration and oversight of energy efficiency programs. These senior-level administrators were asked whether they thought the 2000/2001 experience provided any lessons about who should be involved in administering energy efficiency programs. Not surprisingly, this provoked a considerable response.

Before examining those responses, it is important to acknowledge that this policy issue (administration of energy efficiency programs) is an area where many of the parties interviewed have some vested interest, and where opinions are sometimes strongly held. Indeed, this policy issue has been a subject of discussion for many years. For example, during the discussion of restructuring in California in the late 1990s, this topic generated many ideas about possible administrative and governance structures, roles, and responsibilities among the different parties (e.g., CEC 1999). This issue is still being addressed and is expected to be the focus of a regulatory proceeding by the CPUC in the near future. Furthermore, the CPUC, the CEC, and the Power Authority have been meeting periodically to discuss how their activities can be efficiently and effectively coordinated. In addition, the State Legislature is examining the roles and responsibilities of key state energy organizations in California, to see if reorganization would lead to a more cost-effective and efficient entity (ies) for addressing the state's energy problems.[22]

Because of this background and sensitivity, this report will identify the sector affiliation for each quote provided in this section. In that way, the reader can interpret comments in the context of the organizational perspective of the respondent, while still preserving the confidentiality of the individual offering the comment.

To begin, some parties responded to the query about lessons learned regarding who should administer energy efficiency programs with a simple declarative statement:

- Clearly, the IOUs succeeded tremendously. (utility administrator)
- The CEC did a really good job in resource acquisition. The CEC surprised people who doubted that the CEC could do this. (CEC administrator)

Most, however, included some rationale for their proposed lessons learned. One central issue in many of the responses was the role of the utilities, and as might be expected, a number of the utility administrators gave earnest rationales for utility administration. For example:

- Admittedly, I'm biased, but if anyone looks at the facts, it proves that if you give the IOUs the freedom to put their expertise, infrastructure and experience to work, and use the credibility we have with our customers, that's the way to get real, hard-wired energy efficiency done. Look at the LBL study on what was actually installed by the end of 2001!

[22] There have been several attempts by the State Legislature over the years to reorganize the state energy organizations (e.g., combining the CPUC and the CEC into one organization), but all of these attempts have failed.

- I don't want to be self-serving, but certainly the utilities have been in the business a long time, and we have a history of being under CPUC jurisdiction. When the CPUC tries to work with parties that they don't have jurisdiction over, it's a lot tougher.

On the other hand, as one might also expect, there were some differing opinions on the role of utilities. Perhaps the most strongly held in that respect was the representative from a ratepayer advocate group:

> Our principal philosophy is that IOUs are not the appropriate organization to administer these programs. Not just for 2001. The 2001 experience was unusual, but nothing happened in 2001 to change our viewpoint about IOUs. There is a conflict of interest: IOUs are more interested in selling energy than in saving energy. They are more interested in increasing shareholder value by growing (i.e., selling more energy).

Another, perhaps more practical rather than philosophical objection came from a CEC administrator:

> It's important to have open processes when soliciting implementers, and even customers. And government agencies are better than IOUs in that respect.

Interestingly, even one of the utility administrators made a distinction between ratepayer funds and tax dollars in terms of the appropriateness of involving other entities in administration:

> I would distinguish between utility ratepayer funds versus state tax dollars in terms of whether other parties are appropriate.

Beyond the utility administrators, however, it is important to note that other parties had favorable conclusions regarding utility administration as well. One of the most favorable was the representative from a large retail chain:

> California utility companies have been totally professional, and they really understand what they want to promote—not only on the retail side, but also on the commercial side. The utilities know their business better than anyone else—not like some third party. Lots of dollars by consumers get into energy efficiency. We don't need a layer in between that adds costs. That money would then not get into actual energy efficiency.

Others, including the environmental representative and a senior administrator from a manufacturing association, also spoke favorably regarding the role of IOUs as energy efficiency administrators.

- The IOUs should provide overall administration and direction. They can hire lots of consultants to run the programs. The IOUs are needed for

consistency and non-redundancy. The CPUC is not staffed up to do that. (environmental organization)

- Some programs are best served through IOUs and Muni's. They know how to administer programs in their service territories. (manufacturers association)

In addition to utilities, some other organizations were also addressed in the discussions surrounding the issue of lessons learned regarding who should administer energy efficiency programs. One particularly harsh assessment of the California Power Authority was made by a CEC administrator:

> The Power Authority was a huge failure and caused lots of disruption. It was created quickly with little staff and high expectations, and they were hog-tied with their structure. They relied on revenue bonds. They had $5 billion of spending authority—but it all had to be repaid. The Power Authority still has not figured out a program to repay the treasurer with the programs they want to create.

Curiously, no other respondent even mentioned the Power Authority in connection with the administration questions. This may be because the Power Authority never actually administered any energy efficiency programs during this time frame, so people generally didn't associate that organization with these issues.

Role of non-profit organizations. Another subject addressed in the interviews was the potential role of non-profit organizations. Respondents were asked: "What is the role of non-profit organizations in administering programs?" Interestingly, there was almost unanimous agreement that non-profit organizations had at least some legitimate role in the delivery of energy efficiency programs, although most characterized that role as implementation-oriented rather than overall administration. Some typical comments included:

- Yes, non-profits can implement programs. (utility administrator)
- There is a role for non-profits, especially community-based organization would be good. Some have good records. As long as they meet qualifications and deliver on promises. (manufacturers association)
- They could really do a good job. The Sacramento Tree Foundation did a good job on 'Cool Roofs'. (CEC administrator)
- Non-profits can be good if used appropriately. We actually have supported a proposal to create a non-profit to continue *the Flex Your Power* program. But for administration and accountability, clearly the IOUs are the best. (utility administrator)
- I don't think taking programs away from utilities and giving them to non-profits is a good idea, but utilities do need some improvement. More creativity. Utilities should supplement their efforts with third parties. Also, possibly a policy oversight board with multiple entities might be helpful. (Major municipality non-utility program administrator)

Beyond these more targeted roles, only two of the 23 respondents advocated a broader overall role for non-profits.

- Absolutely, non-profits have a role as administrators, and as implementers too. For the design and delivery of programs. (consultant to the universities and public buildings sector)
- Non-profits certainly could play a role. We prefer a non-profit dedicated to energy efficiency. Even a for-profit dedicated to energy efficiency. (ratepayer advocate group)

In contrast, on this issue of an overall administrative role, a senior utility administrator offered the following:

> There are some good examples of non-profit administration in some other states, but every state and region has its own players and history. In California, I frankly think we'd be crazy to take all the effort spent to create this capability we have and try to re-create it all over again.

CPUC role. In addition to the general question about lessons learned regarding energy efficiency administration, another key issue that was explored was the role of the CPUC regarding energy efficiency during this time period. These senior-level administrators were asked about two aspects of CPUC involvement: (1) the CPUC role in terms of overall governance of the PGC- funded programs; and (2) the CPUC role in administering programs more directly.

(1) CPUC Governance. In general, the CPUC role in overall governance of PGC fund efforts received favorable reviews. Some examples of comments received include the following:

- Other than the late start in 2001, the CPUC did a really good job. They gave IOUs higher-level goals and flexibility, and gave the IOUs a challenge without tying their hands. (utility administrator)
- Good job, although the hard-to-reach requirement caused people to lose focus and diverted a lot of resources away from saving energy. (environmental organization)
- They did a decent job. (consultant to universities and public sector buildings)
- The CPUC did a good job in requiring reporting for where the money went. They did as good a job as they could. (ratepayer advocate)
- The really good thing they did was that under a crisis condition, they loosened the reins to allow IOUs to really perform, they didn't micro-manage. (utility administrator)

Conversely, there was one particularly negative assessment of the CPUC in its broad oversight role:

> They did a lousy job. A huge problem at the CPUC. They don't make timely decisions and consistent decisions. (CEC administrator)

Most of the remaining impressions were generally favorable regarding the role of the CPUC in overall governance, but with a number of suggestions for improvement. Some of these included:

- The Commission has a real advantage because it has a long history and process for governance of these funds. Where they strayed was in trying to go further and trying to implement some of the process themselves. Also, timeliness was a big problem. There were delays in some of the decisions. For example, the 2000 programs were not approved until mid-year. They gave very short time frames for program filings and comments, and these timing problems have continued. (utility administrator)
- The CPUC did not focus on peak power. That is not the focus of the public goods charge. They only did energy efficiency. This was a policy problem. CPUC only followed what was in AB1890…which says it has to be energy efficiency. (CEC administrator)
- There is still some confusion on what the policy goals are (e.g., resource acquisition, market development, equity issues, etc.). Also, there have been some areas of 'guerilla warfare' between the CPUC and the utilities, in part relating to other issues, which makes it harder to do cooperative work on energy efficiency. (utility administrator)
- They did a good job, but need to provide clear guidance on compensation earnings. Also, provide advance information on timelines—different steps in the process with a schedule. Also, need to develop a better protocol for ensuring a more balanced portfolio of programs. (environmental organization)
- There was a lot of pressure on the CPUC to 'find a solution' to the energy crisis, so they tried to come up with program designs and goals, and a 'hard-to-reach' emphasis, and so forth. But there hasn't been time to really consider what is the best approach since the 2000 crisis. There haven't been the open hearings and workshops that California has used in the past to help with planning. 'We're in the outback and we have no map!' Everything is last minute, in a hurry, not well planned out. Plus, we seemed to have lost the collaborative spirit that we used to have. There is a lot of baggage from other CPUC/utility relations (e.g., bankruptcy hearings, etc.) that may be spilling over into oversight of energy efficiency programs. (utility administrator)

Overall, it would appear that some general themes for suggested improvement in the CPUC role in overall governance of the PGC process would include: (1) establishing a logical planning process; (2) providing adequate and well-laid-out time frames for filings, comments, and Commission decisions; and (3) working to enhance cooperation and collaboration among key parties.

(2) CPUC Direct Administration. The second area of CPUC involvement that respondents were asked about was the CPUC role in actually selecting and administering energy efficiency programs during the 2000/2001 crisis. In contrast to the CPUC role in overall governance, here the comments were almost uniformly critical. The only positive comment came from the ratepayer advocate organization:

> They did an okay job. They selected programs but did not really administer them. The IOUs signed contracts to so some administration. The CPUC does not have legislative authority to sign contracts.

The remaining comments were essentially all unfavorable in one respect or another. Some illustrative examples include:

- Getting involved in designing specific approaches and 'picking winners' and issuing contracts makes the CPUC the administrator, which is in conflict with their oversight and governance role. This is a fundamental conflict for the CPUC to try to do this. Plus, they didn't really have adequate staff resources, or any experience in this role. (utility administrator)
- I don't like that process and how they got into that. It was a 'one-time' thing, but my concern is that they will try to institutionalize that. (ORA administrator)
- The CPUC doesn't have staff and resources to administer the programs—to review scope of work, cost-effectiveness calculations, etc. They should give other people the autonomy to do the administration…. The IOUs are doing a fine job with the CPUC oversight. Better guidance is needed from the CPUC, and the guidance should be more timely and consistent. (environmental organization)
- The CPUC does not have the expertise in evaluating programs. They lack an understanding of the differences between local and national organizations for participating in these types of programs. (consultant to universities and public sector buildings)
- I don't want to be self-serving, but certainly the utilities have been in the business a long time, and we have a history of being under CPUC jurisdiction. When the CPUC tries to work with parties that they don't have jurisdiction over, it's a lot tougher. (utility administrator)
- They did a lousy job. In 2001, local initiatives were promoted by the CPUC. This was a major change in direction from programs administered in the last ten years. Municipalities were not ready for this. Utilities did not welcome this. (CEC administrator)
- The CPUC is a regulator, not a 'doer' in the sense of managing or running programs. (utility administrator)

Even an administrator with the CPUC offered the following comments:

> I don't think we have the resources or staff experience to handle this role. There is a division of opinion on this within the CPUC, and this is still an unresolved issue at the CPUC (i.e., whether we should try to do both levels: overall governance and direct administration of programs).

Bidding. Another administration-related issue raised in the interviews was the strategy of using competitive bidding to select energy efficiency providers. Respondents were asked: "Is competitive bidding for using PGC funds a good idea?" This query elicited a wide range of opinions. A couple of respondents were very supportive for conceptual reasons:

- Yes. Need to show that there is an open process for getting reasonably priced services and products. Presumably utilities do this in their own solicitations. Bidding is useful for informing procurement decisions. (CEC administrator)
- Yes. Because you get entities really concerned with energy efficiency and don't have a conflict of interest in the effectiveness of energy efficiency. (CPUC administrator)

Another was conceptually supportive but saw some practical problems:

> This is a good first step, but fairly labor intensive. Maybe not a long-term solution. The CPUC is not equipped to handle lots of proposals. There also was an inherent flaw—the CPUC could not sign contracts, only utilities. (ratepayer advocate organization)

Some others were largely opposed to bidding, for practical reasons or a lack of demonstrated efficacy.

- No. The CPUC does not have the expertise in evaluating programs. They lack an understanding of the differences between local and national organizations for participating in these types of programs. (Consultant to universities and public sector buildings.)
- Even the old DSM bidding pilots haven't been evaluated. That was supposed to be the testing of the 'third party' ideas. (utility administrator)

One key reason cited for opposing a broad reliance on competitive bidding was the disruption such a process creates for program continuity. This concern was described most thoroughly by a senior utility sector representative:

> Bidding violates the one consensus conclusion that you need consistency and continuity in these programs, for customers and trade allies. Bidding disrupts that continuity. The very act of bidding itself, even if you picked the same administrator, creates uncertainty and discontinuity.

That concern was also voiced by several others, including:

- Annual competition for program implementation is not good. Especially when considering planning purposes….Implementing a whole bunch of programs annually is not a good idea. One thoughtful plan is a good idea. It seems disruptive to have an annual bid for programs. (consultant to the governor's office)
- The annual bidding of programs is a recipe for disaster. (environmental organization)

Ultimately, perhaps the closest thing to a majority position on this issue would be something characterized as supporting the use of some bidding for energy efficiency implementation, but only employed in a strategically targeted manner. Some illustrative comments in this regard include:

- You need to consider this program by program. Some programs may be acceptable for bidding (e.g., an educational or school program). Other programs (e.g., appliance rebate programs) need long-term certainty and have to be statewide. (consultant to the governor's office)
- The bidding used was too open-ended: 'give us your bid'. It is better to earmark funds for certain activities or sectors… in order to get a more balanced portfolio. [However,] contractual issues are still a problem. Don't underestimate them. Bidding is not a panacea. (environmental organization)
- For IOUs doing their work, competitive bidding is okay. For the CPUC to administer programs, competitive bidding is not okay. (utility administrator)

Evaluation. One final specific area addressed in the interviews was the issue of evaluation. Respondents were asked: "Who should have oversight authority over program evaluation?" and "Where should evaluation reports go, who should receive them?" In contrast to some other issues, this is one area where there was very widespread agreement. With the exception of a CEC administrator who recommended the formation of an independent panel to oversee evaluation, virtually everyone else who expressed an opinion was basically supportive of the current PGC model of CPUC oversight, utility administration through independent evaluation contractors, and broad public availability of evaluation reports. In the words of one utility administrator:

> The current model is very appropriate. Utility oversight of the evaluation contractors, with CPUC oversight of utilities, plus a public process, so everyone can observe what is being done and what the results are. It's not broken, why would you want to change it?

Other illustrative comments included:

- This is one of the few things I wouldn't change. The recent historical model of utilities doing the evaluation task and oversight by ORA has worked very well. (CPUC administrator)

- I'm very much in favor of the way things have been done…oversight by the CPUC but functional administrative authority by the utilities. Evaluation needs to be close to programs managers for feedback, but with enough independence to be credible. Having independent contractors do the evaluation has been effective at giving credibility, plus CPUC oversight and reports are vetted and reviewed by ORA and everything is done in an open public process. (utility administrator)
- The CPUC is not qualified. You need a Ph.D. in energy efficiency to do this. We don't have these people. We need to have someone [contractors] do this. (CPUC administrator)
- Keep the process as it is. (manufacturers' association)

Similar thoughts on the strengths of the current system were expressed by the ORA in comments prepared for a joint CPUC/ CPA/CEC meeting last summer (ORA 2002):

> These programs, the bulk of which have been administered by the UDCs and regulated by the terms and conditions set by the CPUC, have a 'track record' in terms of such key regulatory oversight as: standardized reporting requirements; standardized procedures for establishing costs, benefits, and cost-effectiveness; and a designated annual evidentiary hearing whereby reported costs and benefits are subject to verification….In the near term (i.e., the next few years) additional energy efficiency programs can be expected to continue to contribute to re-establishing supply-demand equilibrium. Continued, on going, ex-post verification of reported costs and benefits, using standard and common procedures for cost-effectiveness, will be necessary. <<footnote: For almost a decade, energy efficiency programs administered by the investor-owned UDCs and regulated by the CPUC have been subjected to annual review in the Annual Earnings Assessment Proceeding (AEAP); ORA hopes that this convention continues for as long as ratepayer funds are used to provide assistance to consumers to assess remaining energy efficiency choices. (pp. 5–6)

Overall model for energy efficiency administration. After discussing all of the preceding issues in a qualitative format, respondents were asked to provide a numerical rating, on a 1-10 scale (with 10 being the highest), for each of five different potential strategies for "administering energy efficiency programs in California." The five strategy descriptions were:

- Contract out energy efficiency administration to a single independent statewide entity.
- Have the utilities responsible for energy efficiency administration under CPUC oversight, as they traditionally have been.
- Have the California Energy Commission administer the energy efficiency programs.
- Have some other government agency administer the programs.
- Have different components of the energy efficiency programs administered by different entities, including utilities, government agencies, and perhaps other types of organizations.

The results obtained from these ratings are provided in Table 2. The ratings of each respondent are provided, organized by sector (e.g., utility respondents 1–7, plus a municipal utility sector respondent ; CEC respondents 1–5; CPUC/ORA respondents 1–3; and "other."[23] Simple mean scores are provided for each sub-group, and for the overall pool of respondents.

These ratings by senior-level administrative individuals are perhaps most meaningfully interpreted by examining the results within each of the four sub-groups. While it is important to bear in mind the limitations imposed by the small sample, some interesting patterns do emerge.

First, it is clear that the respondents in the utility sector strongly prefer the traditional California model of utility administration under CPUC oversight. There is very little support for any of the other models, with the exception of the one municipal sector respondent giving a higher rating to the possibility of contracting out the administration function.

Second, the CEC respondents were almost evenly divided across three different options, with an overall slight edge to the concept of a multi-pronged approach to administering energy efficiency in the state. Interestingly, there was no great support for having the CEC as the overall administrator of energy efficiency, and only one of the five CEC respondents made that option their highest ranked strategy.

Third, and perhaps surprisingly, the CPUC/ORA group strongly favored "contracting out" the administration of energy efficiency as their highest ranked option, with the current CPUC/utilities approach rating no better than third. Again, however, caution must be exercised because this really only represents the opinions of two individuals at the CPUC (albeit two individuals that were closely involved in the 2000/2001 energy efficiency experience). The ORA representative did rate the traditional CPUC/utilities model equivalently with the contracting out approach, although that individual placed the highest rating on an "other" strategy they suggested (i.e., having a statewide multi-party executive committee to give broad policy guidance and then contracting out administration to multiple different regional entities).

Fourth, the remaining group of other respondents had a fair amount of internal variability, but overall selected the current model of CPUC/utility administration as the highest rated strategy—slightly ahead of the multiple administrator option. Three of the six individuals responding (the environmental organization, the major retailer, and the manufacturers association) ranked the CPUC/utilities option as their highest (or tied for highest) strategy, while one (ratepayer advocate group) ranked it as lowest. Similarly, three individuals (the major municipality non-utility administrator, ratepayer advocate, and manufacturer association) ranked the multiple administrator option highest (or tied for highest), while one (major retailer) ranked it the lowest. No other option received more than one highest rating.

[23] Caution is advised in interpreting this data due to the very limited sample sizes. For example, sector labels like "environmental," or "manufacturing" are provided for broad identification purposes, but it would be inappropriate to assume that these responses necessarily represent the opinions of all organizations in those sectors.

Table 2. Ratings* of Different Options for Energy Efficiency Administration in California

	Contract Out	Utilities/ CPUC	CEC	Other Govt.	Multi-	Other
Utilities						
1	3	9	2	1	4	
2	5	10	4	2	4	
3	2	10	2	1	1	
4	3	7	4	5	6	
5	-	-	-	-	-	
6	3	10	5	3	1	
7	1	10	1	1	2	
MUNI	9	6.5	2	2	2	
Avg	**3.71**	**8.93**	**2.86**	**2.14**	**2.86**	
CEC						
1	6	4	7	5	6	
2	5	9	1	1	10	
3	8	7	5	3	2	
4	8	5	7	3	8	
5	6	7	8	5	9	
Avg	**6.60**	**6.40**	**5.60**	**3.40**	**7.00**	
CPUC/ORA						
1	9	4	7	5	4	
2	8.5	0	0	8.5	0	
ORA	7	7	2	0	5	10
Avg	**8.17**	**3.67**	**3.00**	**4.50**	**3.00**	**N/A**
Others						
ENVIRO	2	9	5	1	7	
PUB BLDG	8	5	4	5	4	
RETAIL	1	10	2	0	0	
MANUF	4	6	-	-	6	
RATE ADV	5	1	3	6	7	
STATE OTHER	-	-	-	-	-	
MJR MUNICIPALITY	2	5	6	1	8	
Avg	**3.67**	**6.00**	**4.00**	**2.60**	**5.33**	
Overall Avg	**5.02**	**6.74**	**3.85**	**2.93**	**4.57**	**N/A**

* Respondents were asked to rate each option on a 1 to 10 scale, with 10 being the highest possible rating.

Finally, for the total sample as a whole, the current CPUC/utilities strategy for administering energy efficiency programs in California received the highest overall rating. This numerical outcome is admittedly strongly influenced by the larger number of utility administrators in the overall sample. However, even if the four subgroups were equally weighted, the CPUC/utilities model would still be the highest overall rated option.

Discussion

Through the use of in-depth interviews, these 23 senior-level administrators were asked to comment on a wide range of issues relating to lessons learned during 2000/2001 and the resulting implications for the administration of energy efficiency programs in California. Overall, there was a surprising amount of commonality among the opinions expressed.

On some issues there was nearly universal agreement. For example, regarding the best approach for handling the evaluation function, there was widespread support for the current model of CPUC oversight, with the utilities performing the administrative function and hiring independent evaluation contractors, and all evaluation reports being broadly distributed and publicly available. Similarly, there was nearly unanimous opinion that having statewide energy efficiency programs was important, but that there needed to be some flexibility to allow some local or regionally (or service territory) specific programs.

On several other issues, it was possible to identify some common ground that would likely be acceptable to most, if not all, parties (e.g., support for the careful use of techniques such as competitive bidding and/or the funding of non-profit organizations, to implement some energy efficiency programs in certain niches[24]).

Similarly, there appears to be quite a bit of common ground in the perceptions of the role of the CPUC. There was fairly widespread acknowledgment that the CPUC had performed reasonably well in the role of broad governance of the PGC - funded energy efficiency programs administered by the utilities, but that the CPUC was much less well suited to try to directly administer and manage programs itself. There were also a number of thoughtful suggestions on how the CPUC might improve its oversight and governance of PGC - funded energy efficiency programs.

Lastly, there were some areas where more differences of opinion were noted among this diverse group of respondents. Principal among these was the issue of what strategic model was preferred for the overall administration of energy efficiency programs in California. On a strictly numerical basis, the slight edge would go to the traditional California model of utility administration under CPUC oversight. But there was also a fair amount of support for models based on either a contracting out of overall administration to a single party or a multiple administrator approach featuring a number of different entities with administrative responsibility over different aspects of the energy efficiency effort.

[24] Some respondents would like to see even more aggressive use of these techniques, but a large majority would appear to at least support the selective and targeted use of these strategies.

In the final chapter of this report, we provide our recommendations regarding this and other issues related to the administration of energy efficiency programs in California.

RECOMMENDATIONS

This chapter presents the recommendations of the ACEEE research team regarding a number of issues relating to the administration and implementation of energy efficiency programs in California. In framing these recommendations, we drew upon extensive data collection within California, including: 22 surveys with individuals who were energy efficiency program managers during 2000/2001; 23 in-depth interviews with individuals who were senior-level administrators with a wide variety of involved organizations during that time period; and the review of numerous documents, including the four principal pieces of energy efficiency funding legislation, various CPUC orders, and a number of research and evaluation reports. We also drew upon our own knowledge gained from having conducted several national studies of utility and public benefit energy efficiency programs across the country,[25] and from our own direct experience in research and evaluation activities in California over the past decade.[26]

In presenting these recommendations, we start with establishing the primary overall structure for energy efficiency administration, and then proceed to address various issue areas within that structure. The format used is to first state the recommendation, and then provide a brief discussion and rationale for that recommendation.

Recommendation #1: California should continue to use utility administration of energy efficiency programs, under CPUC oversight, as its core mechanism for delivering energy efficiency programs in the state.

This administrative option received a slight overall edge in the ratings of the 23 senior-level administrators interviewed in this project. However, our recommendation is based on far more than that simple result. Most fundamentally, this energy efficiency delivery structure in California has a proven record of accomplishment over many years (decades, in fact), and the experience and infrastructure represented by that model was a key factor in enabling California to respond so effectively in the crisis of 2000/2001. The demonstrated success of California's core utility-based energy efficiency delivery structure is the envy of most states in the country. Despite some needs for improvement (which we will address shortly), there is no reason to discard this proven mechanism in favor of some untested alternative.

The question naturally arises: "What about taking the responsibility for energy efficiency away from the utilities and placing it under some independent organization?" In response, it has been our observation in the national studies we have conducted that the few examples

[25] See, for example: Kushler and Witte 2000a; Kushler and & Witte 2000b; and Kushler, Vine, and York 2002.

[26] For example, Dr. Kushler was part of the consultant team on the evaluation of DSM shareholder incentive mechanisms for the CPUC in 1992; was part of the consultant team on evaluation of utility DSM bidding pilots for the CPUC in 1994; and was one of the Technical Consultants to the California Board for Energy Efficiency (CBEE) on multiple projects during 1997–1999. Dr. Vine was a member of the California DSM Measurement Advisory Committee (CADMAC) that examined the evaluation of California's energy efficiency programs in the 1990s. During the last decade, Dr. Vine was the manager of the national and international data bases on energy efficiency programs (DEEP and INDEEP), many of which were based in California. He also was involved in promoting the use of emerging energy efficiency technologies and practices in the design and implementation of California's IOU programs.

where such an option has proven successful thus far have been in states where the utilities were willing to relinquish the energy efficiency function, and where there was a clear "consensus choice" alternate organization readily available to fill such a role (e.g., the New York State Energy Research and Development Authority—NYSERDA—in New York, and the Vermont Energy Investment Corporation in Vermont).

Neither of those two conditions exist in California today. Based on our observations, and the comments of the senior-level utility administrators interviewed in this project, we believe that the utilities in California are still motivated to perform the energy efficiency function.[27] Furthermore, the lack of any consensus on an alternate energy efficiency administrative structure in the responses to the in-depth interviews, together with the contentious history in California on these issues (e.g., recall the CBEE experience), convinces us that no logical "easy" choice for an alternative administrative structure exists.

The CEC is perhaps the one other existing entity in the state with the expertise to consider attempting to assume the duties of administering the energy efficiency programs in California. However, that organization faces two very significant drawbacks. The first is the very onerous contracting procedures required for state contracts. These were waived during the emergency of 2000/2001, but are back in effect now and are unlikely to be waived on a permanent basis. The second is that the CEC is structurally disconnected from the focal points for utility resource decision-making and has no statutory authority or regulatory powers over the utilities. This would make the integration of energy efficiency into utility resource management, and the assurance of utility compliance with energy efficiency efforts, much more difficult. Lastly, it is noteworthy that 4 of the 5 senior-level administrators from the CEC interviewed in this project did not rate the CEC as their preferred option for energy efficiency administration in California. The CEC already has a number of very important responsibilities, and there may be a feeling that those are sufficient.

Before leaving this issue, however, we must acknowledge that the concern about the inherent potential for conflicting utility interests at the corporate level regarding energy efficiency does lead to **two important caveats to our primary recommendation for core administration.**

- **First, the performance of utilities should continue to be closely monitored to ensure that they continue to strive to do an exemplary job at securing energy efficiency, and if they significantly falter in that responsibility, the option of an alternative energy efficiency delivery structure should be reconsidered.[28]**
- **Second, well-designed regulatory mechanisms should be employed to help mitigate the effects of conflicting interests on the part of utilities, including: (a) the strategic use of appropriate shareholder incentives for achieving energy efficiency; and (b)**

[27] The recent CPUC decision [D.02-10-062, October 24, 2002] regarding utility responsibility for resource procurement and the inclusion of energy efficiency in that context provides an additional rationale for utility administration of energy efficiency programs, and, if properly implemented, should serve as an additional mechanism to encourage utilities to pursue energy efficiency as a serious resource option.

[28] For example, recent studies (e.g., XENERGY 2002a and 2002b) indicate that significant energy savings are still available to be mined in California, and it will be interesting to see how utilities design their programs to take advantage of those energy-saving opportunities.

the creation of regulatory mechanisms to lessen the typical utility financial interest in increasing sales volume.[29]

Recommendation #2: The CPUC should abandon its attempts to directly administer energy efficiency programs and re-focus its attention and resources on the role of governance and oversight of the utilities in the utility administration of energy efficiency programs.

There was broad general support among the senior-level representatives interviewed in this project for the CPUC role in overall governance of the PGC energy efficiency structure. However, there were a number of areas for improvement that were identified. In particular, there is a real need for the CPUC to focus on: (1) broad strategic direction for energy efficiency in California (including facilitating input from, and feed back to, the various stakeholders in the state); (2) establishing and adhering to realistic schedules for filings, comments, and CPUC orders; (3) ensuring timely completion of performance reviews, including the award of any appropriate incentives; (4) encouraging the participation of parties that have tended to not participate in previous stakeholder meetings (e.g., local governments, municipal utilities, non-profits, etc.); and (5) generally helping to establish a more cooperative and collaborative tone and approach to improving and sustaining the quality and effectiveness of energy efficiency efforts in California.

In addition, a critically important need that is emerging is for the CPUC to develop a regulatory strategy, including practical operational mechanisms, for ensuring that energy efficiency is fully incorporated as a resource component under the newly established utility responsibility for resource procurement and portfolio management.[30]

Together, these higher-level regulatory issues are a much more important and appropriate focus for the CPUC than trying to engage in operational level matters such as program design, contractor selection, or project management. Indeed, there was a widely held perception among the senior-level individuals interviewed that the CPUC was not well situated (in terms of resources, experience, or mission) to engage in the operational level tasks of energy efficiency program administration.

Recommendation #3: Utility administered energy efficiency programs should feature both statewide "core" programs as well as some use of locally or regionally targeted programs, where appropriate.

[29] These regulatory concepts have been discussed at length elsewhere. See, for example, Kushler and Suozzo 1999 and Cowart 2001.

[30] In regard to this issue of fully incorporating energy efficiency as a resource, a recent study (XENERGY 2002a) provides very encouraging results regarding the potential for significant amounts of additional energy efficiency resource savings in California. The organization estimates that current energy efficiency spending levels could actually be quadrupled and still produce savings cost-effectively, and that such a "maximum efficiency" policy would cut California's projected peak demand growth over the next decade in half. Clearly, it will require creative and effective regulatory policy in order to capture even a meaningful fraction of that potential. It would seem that this should be an important area of attention for the CPUC.

We would recommend a funding allocation to these two categories that would be similar to that suggested by a couple of the senior-level representatives interviewed in this project, i.e., perhaps 80 to 85 percent for core statewide programs and 15 to 20 percent for local/regional programs. The CPUC should hold a proceeding to solicit input on the design and content area focus for the local/regional components of the overall energy efficiency efforts. These efforts should be administered by the utilities, but we would anticipate that non-profit organizations and other non-utility entities would be eligible for selection as implementers for the local/regional programs, and we would encourage their use for such purposes.

Encouraging this level of diversity would help ensure that there are opportunities for creative and innovative energy efficiency program strategies, while still maintaining a large core of statewide energy efficiency programs to ensure stability and continuity for both trade allies and customers.

Recommendation #4: The CPUC and the utilities should explore mechanisms for incorporating multiyear planning and implementation of energy efficiency programs.

In order to further enhance stability and continuity in the market, for both customers and trade allies, California should attempt to develop mechanisms for incorporating multiyear planning and implementation of energy efficiency programs. This would help minimize the uncertainty, delay, and discontinuity that often accompanies a process that requires new program filings and approval every year. A number of states (e.g., Massachusetts, New York, and Vermont) are successfully utilizing a multiyear energy efficiency planning approach.

Recommendation #5: The traditional structure for the evaluation of utility energy efficiency programs in California should be maintained, including: (1) broad oversight by the CPUC; (2) administration of the evaluation function by the utilities, via independent evaluation consultants; (3) technical review and input through such multiparty mechanisms as the California Measurement Advisory Committee; (4) an open public process, with full public access to all evaluation reports; and (5) review by ORA and others in an evidentiary process connected to any utility shareholder earnings from energy efficiency program performance.

This was one area where there was widespread agreement by the senior-level administrators interviewed on this project: that the traditional California approach to the evaluation function worked very well. This approach takes advantage of the extensive experience and expertise of the utility evaluation managers and the community of professional evaluation consultants. It also keeps the evaluation function close enough to the service delivery side that there can be good feedback on how to improve programs, yet provides for a very transparent and open process with full scrutiny to assure objective evaluation results. Indeed, California is widely regarded as the national leader in the depth and quality of energy efficiency research and evaluation activity it provides, so there is no reason to disrupt the current model that has been so successful.[31]

[31] We do note an emerging issue that deserves some attention: the trend toward "cross-over" by evaluation consulting firms into the role of program implementation. Concerns have been raised about whether it is

The one area we have identified where some improvement is needed is in "closing the loop" on the final verification and application of evaluation results to utility performance incentive earnings. Several of the senior-level administrators noted that the AEAP (Annual Earnings Assessment Proceeding) process at the CPUC was very backlogged, and essentially has been held up for the past couple of years. We understand that there have been several reasons for this delay, but it would be desirable to get this process back on track. This is an important mechanism for oversight of utility program evaluation activity.

Finally, beyond the five primary recommendations provided above, the preceding Results chapter discussed of a number of more specific "lessons learned" that may be useful to consider when framing future energy efficiency efforts in California.

appropriate for the same firm to be working "both sides of the street" in this field. We recommend that this issue be carefully examined, and policy guidelines considered.

CONCLUSION

In the face of a dramatic electricity crisis during 2000 and 2001, California responded with a huge and multi-faceted policy response directed at energy efficiency and demand reduction. Despite some inevitable problems and pitfalls, it is only fair to conclude that California was very successful in the sum total of its efforts during this electricity crisis. California managed to achieve an average reduction of 10 percent in peak demand during the summer of 2001 (including a record 14 percent reduction in June), was able to reduce overall electricity use by 6.7 percent for the entire year, and was able to completely avoid the rolling blackouts that had been predicted for the summer of 2001 and the remainder of the year.

This study examined the story behind that massive effort and sought to identify "lessons learned" regarding the administration and implementation of those activities. This report presented and discussed those lessons learned and provides some recommendations for the future administration of energy efficiency in California. Beyond the short-term success of California's historic effort in 2000/2001, much was learned that should help assure the success of energy efficiency efforts in California in the future.

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APPENDIX B: ORGANIZATIONS INCLUDED IN THE PROJECT INTERVIEWS*

I. Organizations Included in the Program Manager Interviews

- Pacific Gas & Electric
- San Diego Gas & Electric
- Southern California Edison
- Southern California Gas
- Sacramento Municipal Utility District
- California Energy Commission
- California Public Utilities Commission
- City of Oakland
- Private sector program manager**

II. Organizations Included in the Senior-level In-Depth Interviews

- Pacific Gas & Electric
- San Diego Gas & Electric
- Southern California Edison
- Southern California Gas
- Sacramento Municipal Utility District
- California Energy Commission
- California Public Utilities Commission
- California Office of Ratepayer Advocates
- California state government, other (advisor to the governor's office)
- Major environmental organization**
- Major consumer products retail chain**
- Major manufacturers association**
- Ratepayer advocacy organization**
- Consultant to universities and public sector customers**
- Major municipality administering non-utility programs**

* Organizations are listed in this report in order to provide information regarding the perspectives and background of the individuals interviewed. Comments from these individuals should NOT be regarded as official positions or policy statements of any of these organizations.
** These organizations are listed by generic type in order to help protect confidentiality.

APPENDIX C: INTERVIEW GUIDES

Interview Guide for Program Managers

Thinking back to the crisis summer of 2001, I'd like to ask you a few questions about that experience.

1. What was the funding source or sources that provided the funds for the _____ [program] in 2001?

_____

2. Were the goals and objectives for that funding clearly spelled out somewhere?
   a) yes
   b) no

   [If yes: Where? _____

[Regardless of whether spelled out or not, ask 3]

3. What was your understanding of the goals and objectives that applied to the _____ [program] during 2001? [LIST ALL THEY CAN RECALL]

_____
_____

4. Did you perceive any conflicting goals or inappropriate goals?
   a) yes
   b) no

   [If yes, describe: _____
   _____

5. What were the most significant challenges that were experienced in terms of administering the _____ [program] in 2001? [PROBE: ANYTHING ELSE?]

_____
_____
_____

6. How were these challenges addressed? _____
   _____
   _____

[IF NOT MENTIONED IN 5:
7. Did you experience any challenges in terms of coordination of the _____ [program] with other energy efficiency or demand response programs that were operating in 2001?
   a) yes
   b) no
   [If yes: Please describe: _____

8. And finally, thinking of the whole California experience from top to bottom in 2001, what would you say should be the major lessons learned about administering a large-scale energy efficiency effort in California?

[GET THEM TO DISCUSS THEIR PERCEPTIONS OF THE WHOLE "BIG PICTURE" EFFORT AND HOW IT MIGHT BE IMPROVED. INCLUDE ALL ASPECTS IF THEY WANT, BUT ESPECIALLY IN TERMS OF ADMINISTRATION.]

Thank you very much for your participation in this survey.

Interview Guide for Senior Administrative Personnel

1. When you think of the 2000/2001 electricity crisis in California, and the various energy efficiency efforts that were undertaken, what thoughts come to mind?
   [sort of a word association exercise… to get their minds focused back on these events]

2. If you had to rate the overall success of the energy efficiency efforts, on a 1 to 10 scale (with 10 being the highest), how would you rate the overall success?
   [if asked: this is just your overall subjective rating, on whatever basis they'd like to make the assessment]

   2a) What are the **main factors** you considered in choosing that rating? [e.g., cost-effectiveness, spending budget]

   2b) [If needed, get them to discuss the **reasons** they selected that particular rating.]

3. Could you describe your position and role in the energy efficiency efforts of 2000/2001? [Write in if known]

4. From your recollection, how many different sources of funding were there for energy efficiency programs in California during 2000/2001?

   3a) Can you list them?

5. What were the major sources of funding associated with the areas of energy efficiency that **you were substantially involved with during that time period?**

[FOR EACH FUNDING SOURCE MENTIONED IN 4]

6. Do you recall whether there were specific goals and objectives associated with the funding? _____

   If yes, what were those?
   Anything else?

   6a) Were those goals clearly spelled out somewhere? Or just assumed?

   [IF CLEARLY SPELLED OUT: Where? _____

   6b) Did you perceive any conflicting or inappropriate goals or objectives?
   [IF YES: explain:

6c) [IF NOT MENTIONED: I'd like to ask you about one specific area of possible conflicting goals that some people have mentioned: the goal of achieving maximum energy and demand reductions vs. the goal of being sure to serve "hard to reach" segments of the customer population. Did you observe or hear about any concerns about possible conflicts regarding those goals in the California energy efficiency efforts?

[FOR EACH FUNDING SOURCE:]

I am going to ask you questions about program administration, and program governance and oversight (dealing with broad policy goals and budgets).

7. Can you please describe the **administrative structure** associated with the energy efficiency programs with which you were involved? In other words, briefly describe the "chain of command" from the source of the funds down through the actual delivery of services at the customer level.

8. To whom were these programs **accountable**, and what was the level of **oversight** and reporting required?

9. Within the overall California effort, were different programs, funded by different funding mechanisms, subjected to different levels of accountability and oversight? [E.g., utility programs versus non-utility programs; different levels of evaluation requirements] What recollections do you have in this area?

[IF NOT MENTIONED]

9a) How about programs run by utilities and third parties versus programs run by state or local government?

10. In your opinion, what were the most significant challenges that were experienced in terms of **administering** the various California energy efficiency programs in 2000/2001?

[GET THEM TO DISCUSS. PROBE: ANYTHING ELSE?]

10a) How were these challenges addressed?

[IF NOT MENTIONED IN 10:

11. Did you observe or hear about any difficulties or problems in terms of coordination or conflicts among the different energy efficiency or demand response programs that were operating in 2000/2001?

a) yes
b) no

[IF YES: Please describe: _____]

11c) Who should be responsible for coordination?

[IF NO: Did the programs from different funding sources interact much, or were they fairly separate from each other?

Did they ever compete for the same customers? [IF YES: How did that go?]

12. Thinking of the whole California experience from top to bottom in 2001, what would you say should be the major **lessons learned** about **administering** a large-scale energy efficiency effort in California?
[GET THEM TO DISCUSS THEIR PERCEPTIONS OF THE WHOLE "BIG PICTURE" EFFORT AND HOW IT MIGHT BE IMPROVED. INCLUDE ALL ASPECTS IF THEY WANT, BUT ESPECIALLY IN TERMS OF ADMINISTRATION.]

[IF NOT MENTIONED:]

12a) Do you think the experience of 2000/2001 in California provided any lessons about which organizations or entities should be involved (or perhaps not involved) in **administering** energy efficiency programs?

[IF YES: What do you think those lessons were?

And why?

[IF NOT MENTIONED:]

13. Would administration be easier if all programs were statewide?

1. Yes (explain:)

2. No (explain:)

IF YES: Who should administer and implement these statewide programs?

Should there be only one administrator of programs?

IF NO: Who should administer and implement the statewide programs?

The non-statewide programs?

[IF NOT MENTIONED]
13a) What is the role of non-profit organizations in administering programs?

14. Funding levels for energy efficiency programs in 2001 were at an all-time high. From an overall perspective, how effectively did California administer this large amount of resources?

    14.(a) Do you think the institutions in the state learned anything from this experience that would enable them to more effectively administer a similarly large effort in the future?

    IF YES: What?

15. What kind of job did the CPUC do in **governing** the use of Public Goods Charge funds?

    What could have been improved?

    Is competitive bidding for using PGC funds a good idea?

    a) Yes (explain:)

    b) No (explain:)

    What is the alternative to bidding?

    Could another organization do a better oversight job regarding the PGC than the CPUC?

16. What kind of job did the CPUC do in **administering** programs itself?

    What could have been improved?

    Could another organization do a better job administering programs?

17. Some people have commented that California has had a tendency to fund a number of different organizations and entities to administer energy efficiency programs, perhaps thinking that having more entities involved is itself a desirable objective.

    I'd like to ask you two questions about that.

    17a) First, would you agree that California has had that tendency?

17b) Second, what is your opinion about having that objective of using multiple different types of organizations to administer energy efficiency programs?

18. If an overall strategy was going to be selected for administering energy efficiency programs in California, I'd like you to rate on a 1-10 scale (with 10 being the highest rating), each of the following options for energy efficiency administration in California:

___ contract out energy efficiency administration to a single independent statewide entity

___ have the utilities responsible for energy efficiency administration under CPUC oversight, as they traditionally have been.

___ have the California Energy Commission administer the energy efficiency programs

___ have some other government agency administer the programs

___ have different components of the energy efficiency programs administered by different entities, including utilities, government agencies, and perhaps other types of organizations.

___ other [Do you have any other recommended approach to administering EE program?]

19. Finally, I have some evaluation questions for you.

19a) Who should have oversight authority over program evaluation?

19b) Where should evaluation reports go – who should receive them?

19c) What key metrics should be evaluated? [kWh, kW, therms, market changes, emissions, equity, etc.)

Is there anything else you would like to add about the California experience with energy efficiency?

Thank you very much for your assistance with this survey

APPENDIX D: CALIFORNIA LEGISLATION FUNDING ENERGY EFFICIENCY AND DEMAND REDUCTION

AB 970

The California Energy Security and Reliability Act (signed Sept. 6, 2000) was directed at easing the State's energy crisis by: (1) decreasing the time it took to site new power plants; and (2) increasing State funding for programs that encouraged energy conservation and peak load reduction. The legislation also created a new body, the Clean Energy GREEN Team that advises the governor on power plant development, energy-efficiency investments, and renewable energy funding. AB 970 set aside $57.5 million, of which $50 million was allocated to the California Energy Commission (CEC) for grant programs that reduce peak load consumption. The CEC staff and State agencies received $5.2 million to administer AB 970 provisions (e.g., completion of 175 energy audits, installation of building demand response systems, and the establishment of energy emergency load shedding response plans in specific buildings). The California Public Utilities Commission (CPUC) received $2.3 million to expand existing and develop new energy-efficiency programs.

AB 970 directed the CEC to administer seven different Peak Load Reduction Programs:

- Price responsive heating, ventilation, air-conditioning and lighting systems
- Cool communities
- Energy-efficiency improvements for public universities and other State facilities
- State building peak-reduction measures
- Light-emitting diode (LED) traffic signals
- Water and wastewater treatment pump retrofits
- Renewable energy funds for on-site distributed energy or commercial-scale projects

AB 970 also directed the CEC to update and revise its minimum efficiency standards for appliances and new buildings that result in maximum feasible reductions in uneconomic, inefficient consumption of electricity.

AB 995

The Electric Restructuring: Public Benefits Programs bill (signed September 30, 2000) had, as its primary objective, the extension of the California nonbypassable system benefit charge to support energy efficiency and conservation, public interest research and development, and development of renewable resources technology. Among other things, it also continued the administration of energy-efficiency programs by the California Public Utilities Commission and the California Energy Commission. This Act extended the collection of the system benefit charge to support these programs through January 1, 2012. The Act ordered the investor-owned utilities (IOUs) to fund cost-effective energy efficiency and conservation activities at a total budget level of $228 million. It specified that this amount would be allocated among the three major investor owned electric utilities at the levels set for the year 2000: $32 million per year for San Diego Gas and Electric; $90 million per year for Southern California Edison Company; and $106 million per year for Pacific Gas and Electric Company. It also directed that these amounts shall be adjusted annually at a rate equal to the lesser of the annual growth in electric commodity sales or inflation, as defined by the gross

domestic product deflator. Thus, the IOUs were able to fund their base energy-efficiency programs in the residential, commercial, industrial, and agricultural sectors.

SB 5X

SB 5x was emergency legislation passed by the State Legislature and signed into law by Governor Davis on April 11, 2001. The legislation authorized state agencies to implement energy-related projects on a fast-track basis to ensure immediate implementation of energy-efficiency programs in order to reduce consumption of energy and reduce costs associated with energy demand. Of the $642 million appropriated, approximately 38% ($242 million) went to the CPUC and utilities for energy-efficiency programs. Additional funding went to: (1) residential air conditioning incentives and appliance rebate programs through the investor-owned utilities, (2) 15% discounts off the utility bill for low-income consumers, (3) low-income weatherization programs, (4) oil and gas pumping projects, and (5) incentives for commercial lighting. About $400 million went to state agencies, including the CEC, the State and Consumer Services Agency, and several other state agencies to initiate new emergency programs to minimize peak demand in the Summer of 2001. The California Energy Commission used their funds to support: (1) demand responsive building systems, (2) low-energy usage building materials, (3) innovative peak load reduction projects, (4) agriculture peak load reduction projects, (5) outreach programs to teach school children about energy efficiency at home and at school, and (6) retrofit of existing generation units to local water districts to reduce emissions. The Department of General Services received $40 million to retrofit state buildings and facilities for energy efficiency (part of a larger efficiency effort, which used energy-efficiency revenue bonds and capital outlay funds to improve energy efficiency in state buildings). The Department of Consumer Affairs used their funds to conduct a statewide media campaign and other public awareness initiatives (Flex Your Power).

AB 29X

AB 29X was emergency legislation passed by the State Legislature and signed into law by Governor Davis on April 11, 2001. The State appropriated $35 million to the CEC to install time-of-use and real-time meters and communications links for all commercial/industrial customers with a demand of 200 kW or greater, which represented about 30% of the investor-owned utilities' peak demand. In addition, the CEC used these funds to provide 3% interest loans to local government and schools. The California Conservation Corps used their funds to distribute 1.5 million compact fluorescent lights. Funds were also allocated for renewable energy projects: (1) CEC's "Buydown Program" for solar photovoltaics, wind, solar thermal electric, and fuel cells; (2) CEC rebates for small distributed generation; (3) loan guarantees by the Trade and Commerce Agency to purchase and install renewable energy system projects; and (4) financial assistance provided by the California Alternative Energy and Advanced Transportation Financing Authority for renewables, distributed generation, and emerging technologies.

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