California survival strategies: Taking advantage of programs that promote energy efficiency and peak demand savings

California's electricity crisis has prompted the states' policymakers, regulators, and utilities to substantially increase the scope and breadth of energy efficiency and peak demand reduction programs. Federal customers (and all end users) in California now confront a somewhat bewildering array of public benefit programs, demand response programs offered by utilities and the CA ISO, as well as grant programs offered by various state entities. This article attempts to provide a roadmap of these programs, focusing on those opportunities that are the most applicable to Federal energy managers.

Table 1 includes the following information on California's existing energy efficiency programs: program type, program administrator, sources of funds, program budget in 2001 (unless otherwise indicated), and key programs of interest to Federal customers.

- The California Public Utilities Commission (CPUC) sets policies and oversees the electric and gas energy efficiency programs that are administered by the state's investor-owned utilities (PG&E, SCE, SDG&E, and SoCal Gas). On January 31, 2001, the CPUC approved budgets and programs totalling ~$321.8 million for 2001. Programs that may be of particular interest to Federal customers include the statewide Standard Performance Contract program where financial incentives were included for *both energy savings and peak demand reductions and contract terms were shortened* to one year with simpler measurement and verification requirements for many technologies. The CPUC also expanded funding for the Express Efficiency program, which provides rebates for efficient equipment, and the Savings By Design program, which provides incentives and technical assistance for new construction and major renovations. Funding permitting, some utilities are still accepting applications for their PY2000 programs. The 2001 programs are expected to roll out during March or April 2001. The CPUC also directed the utilities to set aside 8% of their budgets or $23 million for "third party initiatives" which will be awarded to energy service providers and/or customers based on RFPs issued by the utilities.

- The municipal and publicly-owned utilities in California also offer an extensive array of energy efficiency programs. Programs offered vary by utility, although some public utilities, such as Sacramento Municipal Utility District, have been leaders in energy efficiency programs for many years.

Table 2 includes the following information on California's load management and demand response programs: program type, program administrator, source of funds, program budget in 2001 (unless otherwise indicated), and key programs of interest to Federal customers.

- In response to high electricity prices and outages in the summer of 2000, the California Legislature passed Assembly Bill (AB) 970. The bill provided, among other measures, $50 Million in 2000 to the California Energy Commission for grants to reduce electricity peak load. The program includes six elements and offers financial incentives (see Table 2); Federal customers are eligible to participate in several of the program elements. As of February 15, 2001, the CEC had awarded $43.5 million in grants for 94 projects with an estimated peak load reduction of 283.7 MW (URL is http://www.energy.ca.gov/efficiency/ab970/). To our knowledge,

only one Federal customer has submitted an application for a grant: the General Services Administration has submitted a proposal in the Demand-responsive HVAC and Lighting program area for ~300K, which will likely be approved in March 2001. The CEC expects to receive substantial new funding for this program in 2001 and we would urge Federal customers to consider applying in program areas where they are eligible, such as Demand-Responsive HVAC and Lighting, Innovative Energy Efficiency and Renewables, and LED Traffic Signal Conversion. As a practical matter, because of the program eligibility guidelines, the CEC's program provides grant funds, typically around $250/kW, for "innovative" energy efficiency as well as demand management technologies/strategies.

- The California ISO has developed three demand response programs for 2001 in order to minimize or eliminate the need for involuntary rotating blackouts. First, Federal customers are eligible to participate directly as customers in the Demand Relief Program if they have at least one MW of demand reductions or work through a Load Aggregator (e.g., utility, retail energy service provider). The ISO will pay customers a monthly reservation payment of $20,000/MW-month to be available on weekdays between 11 AM and 7 PM from June1 through September 30 to curtail load at the ISO request whether or not they are asked to curtail. Customers will also be paid $500/MWh for the actual demand that they curtail. Curtailments are limited to 24 hours per month and customers must have an hourly interval meter. As of February 2001, the CA ISO had received ~1156 MW of demand reductions from loads and received approval to begin contract negotiations with 596 MW of loads. As an example of Federal leadership in this area, the General Services Administration has submitted a proposal to the CA ISO for ~1.3 MW of savings through innovative demand limiting strategies at four GSA buildings. Second, the CA ISO also offers a Participating Load (i.e., Ancillary Services) program that allows customers to bid directly into CAISO-run markets for non-spinning reserve, replacement reserve, and supplemental energy. In 2000, the program's stringent telemetry (four second) requirements posed a major technical barrier to participation; the CA ISO is rethinking these requirements for 2001.

- Third, the CA ISO is also developing a Discretionary Load Curtailment program that will operate year-round and is designed to attract voluntary curtailments prior to emergency conditions from Load Aggregators. Calls would be placed to aggregators early in the morning or in the late afternoon on the day ahead when the ISO expected emergency alerts or warnings to be issued. Federal agencies can be Load Aggregators or they can work through other entities such as utilities. The ISO would request curtailments on the day-ahead or day-of and pay participants between $250 – 500 per MWh for demand reductions. The CA ISO hopes to issue an RFP for this program in March 2001.

- Several of the California utilities also offered pilot "voluntary" demand response programs in 2000, such as the PG&E E-Bid program. In these programs, eligible large C/I customers were notified via pager or phone when day-ahead prices in the Power Exchange were forecasted to be above a certain trigger price. Customer can then offer "voluntary" demand curtailments through a web-based system, which calculates their estimated financial incentives for reducing demand. Customers were not penalized if they didn't achieve these reductions and were compensated for actual

demand curtailments through a bill credit. The utilities have proposed to expand these programs in 2001 and the CPUC is expected to issue a decision in March 2001.

- Since the mid-1980s, the California utilities have offered a Non-firm Rate tariff to large C/I customers that were willing to interrupt/curtail loads (I-6 tariff for SCE; E-19 and E-20 tariff for PG&E). This program provides a rate discount of about 15% for those customers that are willing to curtail their loads to a specified Firm Service Level when called by the utility in response to a system emergency. Program rules specify the frequency of interruptions (i.e., 25-30), maximum number of hours per interruption (i.e., 6 hours), total hours of interruption allowed per year (i.e., 100 –150 hours) as well as substantial penalties for non-compliance. Historically, customers in this program were infrequently called to curtail, but this situation changed dramatically beginning in 2000 when customers were interrupted 20-30 times per year. These programs have provided 1200-1400 MW of demand curtailment during system emergencies, and were critical in 2000 to avoiding Stage III emergencies on 4-5 occasions. In 2001, the programs have already been exhausted in PG&E service territory and the CPUC/utilities are looking to revise the program in order to entice customers to continue participating. In terms of demand curtailment options, Federal customers can expect to be able to choose between a revised Non-Firm Rate program or the demand response programs offered by the utilities or the ISO. These programs can be quite lucrative financially and could prove critical in 2001 as California seeks to minimize rolling blackouts.

Near- and Long-term Prospects for Energy Efficiency & Demand Response Programs in California

Given California's electricity crisis, a large number of bills have been introduced in the Legislature to provide additional funding for energy efficiency, peak demand reduction programs, distributed generation, etc. Source of funds for most of these bills is a portion of California's current budget surplus; funding ranges from $400M to $1.0 billion. The ultimate prospects for these bills is unclear, but there is a very good chance that some amount of additional funds from general tax revenues will be approved by the Legislature and signed by the Governor in 2001.

The CPUC also has several on-going proceedings in the area of demand response programs and self-generation as well as the non-firm rate program (i.e., interruptible/curtailable program). The CPUC is expected to issue several decisions in Spring 2001 that will significantly influence and shape future demand response and curtailable/interruptible programs offered by the utilities.

In 2000, the California Legislature extended funding for the Public Purpose programs funding for up to 10 years at current funding levels plus adjustment for inflation.

FEMP plans to continue to monitor and summarize the rapidly changing situation in California; programs; information on energy efficiency and demand response opportunities available to Federal customers can be found on the FEMP restructuring web site (www.femp-restructuring.org) as well as special newsletters/articles on the California situation which will be distributed via email and at FUPWG meetings.

Table 1: Summary of California's Energy Efficiency Programs (2001)

Program Type	Administrator	Source of Funds	Program Budget	Key Programs of Interest
Electric energy efficiency programs	Investor-owned utilities (PG&E, SCE, and SDG&E)	Ratepayers via public benefits fund surcharge (~1.3 mills/kWh)	$259.2M (2001)	Statewide programs include: - Standard Performance Contract (incentives for delivered savings) - Express Efficiency (rebates) - Savings By Design (new construction) - Third Party Initiatives (respond to RFP)
Natural gas energy efficiency programs	Investor-owned utilities (PG&E, SoCal Gas, and SDG&E)	Bundled gas rates, set in rate case	$62.6 M (2001)	Statewide programs include: - Standard Performance Contract (incentives for delivered savings) - Express Efficiency (rebates) - Savings By Design (new construction) - Third Party Initiatives (respond to RFP)
Energy efficiency programs offered by municipal utilities	Public-owned utilities (SMUD, LADWP, other smaller publicly-owned utilities)	Bundled in rates; funding floor level set by restructuring Legislation	~100M*	Programs vary by utility

Notes: Municipal utilities have disgression to spend public benefits funds on energy efficiency, low-income programs, or renewables.

Table 2: Summary of California's Peak Demand and Demand Response Programs

Program Type	Administrator	Source of Funds	Program Budget	Key Programs of Interest
AB970 Peak Load Efficiency Grant Program	California Energy Commission (CEC)	General tax funds	$50.0M (2000)	Program elements include: - Demand-responsive HVAC and Lighting Systems ($10M) - Innovative Efficiency and Renewables ($8.5M) - LED Traffic Signal conversion ($10M) - Water & Wastewater Treatment Pump and related Equipment Retrofits ($5M) - State Buildings and Public Universities ($5.5M) - Cool Roofs and Communities ($9.4M)
ISO Demand Response	California Independent System Operator (ISO)	ISO Tariff paid by Ratepayers	$~50 M for DRP	Three major programs: - Demand Relief Program (DRP) - Discretionary Load Curtailment Program (voluntary curtailments before emergency conditions) - Participating Load/Ancillary Services Program
Utility Demand Response Programs	PG&E, SCE, SDG&E (SMUD)	Electricity rates	NA	Pilot programs in 2000; Utilities propose significant expansions in 2001 - PG&E E-Bid SCE Voluntary Demand Response SDG&E Demand Response
Non-firm Interruptible Rate	PG&E, SCE, and SDG&E	Tariff (I-6 for SCE; E-19, E-20 for PG&E)	Rate Discount	-Existing program