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Decision 01-03-073 March 27, 2001

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Proposed Policies and Programs Governing Energy Efficiency, Low-Income Assistance, Renewable Energy and Research Development and Demonstration.	Rulemaking 98-07-037 (Filed July 23, 1998)

INTERIM OPINION: IMPLEMENTATION OF PUBLIC UTILITIES CODE SECTION 399.15(b), PARAGRAPHS 4-7; LOAD CONTROL AND DISTRIBUTED GENERATION INITIATIVES

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INTERIM OPINION: IMPLEMENTATION OF PUBLIC UTILITIES CODE SECTION 399.15(b), PARAGRAPHS 4-7; LOAD CONTROL AND DISTRIBUTED GENERATION INITIATIVES

1. Summary

By today's decision, we adopt the Energy Division's program proposals for load control and distributed generation initiatives, pursuant to Pub. Util. Code § 399.15(b), with certain modifications and clarifications. We authorize a total of $137.8 million in funding for these programs, on an annual basis through December 31, 2004.

As discussed in this decision, we cannot raise electric utility rates until the Commission has determined that the rate freeze is over, or unless the Legislature specifically authorizes us to impose an additional charge during the freeze to recover these program costs. Nor can we ignore the Legislature's clear direction to include the cost of these programs in distribution revenue requirements. We recognize that SDG&E's rate freeze is over, although there is a rate cap on SDG&E's generation-related rate component. However, SDG&E is also subject to performance-based ratemaking (PBR) for its distribution revenue requirements. It would be inconsistent with the PBR framework to address the level of SDG&E's distribution revenue requirements and rates on a piecemeal basis. Instead, SDG&E should address the costs of these programs within the context of the PBR mechanism in its next PBR and cost-of-service proceeding. For PG&E and SCE, where the rate freeze is still in effect, we direct them to increase their distribution revenue requirements, without modifying current rates, to reflect today's authorized budgets.

Within 15 days, PG&E and SCE shall file Advice Letters increasing their electric distribution revenue requirements, without modifying current rates, for

this purpose. SDG&E shall address the funding of these programs in its next PBR and cost-of-service proceeding. On the gas side, PG&E, SDG&E and Southern California Gas Company (SoCal) should include the costs of these programs in their next gas rate recovery proceeding, e.g., the Biennial Cost Adjustment Proceeding. In the interim, all program costs should be tracked in memorandum accounts, and the utilities should establish such accounts for this purpose.

By directing this Commission to adopt new utility programs to reduce demand for electricity within six months of the passage of AB 970, the Legislature clearly stated its intent to proceed expeditiously with the deployment of these initiatives. Accordingly, PG&E, SDG&E, SCE and SoCal, collectively referred to as "the utilities," are directed to implement these programs without delay.

Under the adopted programs, SDG&E will administer a demand-responsiveness pilot program, targeted to reach 5,000 residential customers in its service territory. SCE will administer a similar pilot program, targeted to 5,000 small commercial customers. SDG&E and SCE will provide financial incentives to customers who agree to set their thermostats at pre-specified levels. Through an internet interface, the utility will monitor and verify actual interruption of loads at the customer site and provide interactive information to customers about their electric usage, in order to encourage peak demand reduction. Within certain parameters, customers will have the flexibility to override the thermostat settings, subject to pre-specified penalties.

We also authorize a pilot program to provide interactive consumption and cost information to small customers, such as historical energy bill information, representative energy usage and cost information for common appliances, and tariff options. PG&E will contract with an independent web designer to develop

a website that provides customer online access to this information. Our goal is to reach 10,000 to 15,000 customers in PG&E's service territory. The program will be targeted to residential customers with relatively high monthly energy consumption, residential customers with swimming pools, homes and small businesses in the San Francisco peninsula or in Silicon Valley, and/or rural residences and small businesses.

We also authorize today a self-generation program across all the utility service territories. "Self-generation" refers to distributed generation technologies (microturbines, small gas turbines, wind turbines, photovoltaics, fuel cells and internal combustion engines) installed on the customer's side of the utility meter that provide electricity for a portion or all of that customer's electric load. Under the program, financial incentives will be provided to distributed generation technologies as follows:

Incentive category	**Incentive offered**	**Maximum percentage of project cost**	**Minimum system size**	**Maximum system size**	**Eligible Technologies**
Level 1	$4.50/W	50%	30 kW	1 MW	▪ Photovoltaics ▪ Fuel cells operating on renewable fuel ▪ Wind turbines
Level 2	$2.50/W	40%	None	1 MW	▪ Fuel cells operating on non-renewable fuel and utilizing sufficient waste heat recovery
Level 3	$1.00/W	30%	None	1 MW	▪ Microturbines utilizing sufficient

					waste heat recovery and meeting reliability criteria ▪ Internal combustion engines and small gas turbines, both utilizing sufficient waste heat recovery and meeting reliability criteria

For SDG&E's service territory, the program will be administered (via contractual arrangement) through the San Diego Regional Energy Office. PG&E, SCE and SoCal will administer programs in their service territories.

All program administrators are required to outsource to independent consultants or contractors all program evaluation activities, and are encouraged to outsource as many other aspects of program implementation as possible. Independent contractors, and not program administrators[1], will perform all installation of technologies (hardware and software) at customer sites. We encourage the program administrators to coordinate and work closely with local governments, community-based organizations and business associations to recruit and contact interested customers.

[1] SDG&E would not be precluded from bidding to perform installations, since it will not be serving as program administrator.

Attachment 1 describes the authorized programs and funding levels in greater detail.

2. Background

AB 970, signed by the Governor on September 6, 2000, requires the Commission to initiate certain load control and distributed generation activities within 180 days. By ruling dated October 17, 2000, we assigned the implementation of Pub. Util. Code § 399.15(b) (codifying AB 970), paragraphs 4 through 7 to this proceeding. The relevant excerpts from the statute are as follows:

> 4. Incentives to equip commercial buildings with the capacity to automatically shut down or dim nonessential lighting and incrementally raise thermostats during peak electricity demand period.
>
> 5. Evaluation of installing local infrastructure to link temperature setback thermostats to real-time price signals.
>
> 6. Incentives for load control and distributed generation to be paid for enhancing reliability.
>
> 7. Differential incentives for renewable or super clean distributed generation resources.

In the same October 17, 2000 ruling, we directed the Energy Division to "develop specific program plans for implementing load control and distributed generation initiatives per § 399.15(b) for our consideration." We also consulted with the California Energy Commission (CEC) during the development of these programs.

The Energy Division report on recommended programs was issued for comment on January 31, 2001. The following organizations responded: Cannon Technologies, Capstone Turbine Corporation (Capstone), CEC, California Independent System Operator (ISO), California Retailers Association, Natural

Resources Defense Council (NRDC), Office of Ratepayer Advocates (ORA), PG&E, SDG&E/SoCal (jointly), SCE, Solar Development Corporation, The Utility Reform Network (TURN) and Xenergy, Inc. (Xenergy).

3. Energy Division's Program Recommendations

Below, we briefly summarize Energy Division's January 31, 2001 program proposals. For all programs, Energy Division recommends extensive outsourcing of installation, outreach, and as many aspects of program administration as possible. Energy Division also recommends that all program evaluation activities be outsourced to independent consultants or contractors.

For each program type and utility distribution company, the table below presents Energy Division's recommended annual collections and budgets through the end of 2004, which is the sunset period of AB 970.[2]

Utility	**Demand Responsiveness Budget ($ million)**	**Self Generation Budget ($ million)**	**Total Annual Budget ($ million)**
PG&E	$3.0	$60.0	$63.0
SCE	$5.9	$32.5	$38.4
SDG&E	$3.9	$15.5	$19.4
SoCal	NA	$17.0	$17.0
Total	**$12.8**	**$125.0**	**$137.8**

[2] The comments appear to reflect some confusion on this point. We clarify that the program designs, budgets and annual funding levels are authorized through the end of 2004, consistent with the sunset period of AB 970, unless further modified by subsequent Commission decision.

3.1 Demand-Responsiveness Programs

Energy Division proposes three pilot programs to implement demand-responsiveness initiatives pursuant to AB 970. SDG&E is designated to administer the residential sector pilot, SCE to administer a small commercial sector pilot, and PG&E to implement an internet information test pilot reaching both residential and small commercial customers.

3.1.1 Residential Demand-Responsiveness Pilot Program

The residential pilot program proposed in the Energy Division report calls for installing remotely controlled thermostats using an internet-based communication link. This approach differs from existing "direct control" air-conditioning (A/C) cycling programs in that it uses internet technology as the means to communicate and monitor customer demand responsiveness. It also allows participants to maintain control over their equipment and even override the remote signal, if so desired, via the internet connection.

Energy Division recommends that the program be designed for a pool of 5,000 customers in SDG&E's service territory. Program participants would receive the equipment and installation free of charge from the utility. In addition, Energy Division recommends that the customer receive an incentive of $100 at the end of each year of program participation.[3] The incentive would be reduced by $2 each time the default thermostat setting is overridden, although it would never be less than $0.

[3] Several parties interpret Energy Division's recommendations to mean that only a one-time incentive would be offered at the end of the first year. This was not the intent, and Attachment 1 clarifies that incentives would be available for the entire duration of the pilot period, i.e., through the end of 2004.

Under Energy Division's proposal, SDG&E would target three distinct customer groups: 1) residential customers whose average monthly electricity consumption is greater than 250 kWh; 2) residential customers residing in geographical areas in SDG&E's service territory known to have high electric consumption due to climate; and 3) customers residing in known limited- to moderate-income areas. Energy Division's preliminary estimates indicate that the program will save approximately $6.6 million over ten years (1.68 benefit-cost ratio).

3.1.2 Small Commercial Demand-Responsiveness Pilot Program

Energy Division recommends that 5,000 small commercial customers in SCE's service territory receive the same demand-responsiveness technology described above. These customers would be paid $250 at the end of each year of program participation. The incentive would be reduced by $5 each time the default thermostat setting is overridden.

SCE would administer the pilot and target commercial customers 1) with high average consumption in the summer, 2) with high consumption due to climate, and/or 3) located in small cities or rural areas. Energy Division estimates that the program will produce $13.1 million in savings over ten years (2.22 benefit-cost ratio).

3.1.3 Interactive Consumption and Cost Information For Small Customers Pilot Program

Energy Division recommends that PG&E contract with an independent web designer to develop a website that provides customer online access to historical energy bill information and presents information on tariff options, representative energy usage and cost information for common appliances, and other information to better support the needs of small customers. Energy Division proposes to reach 10,000 to 15,000 customers under this pilot,

targeted to: 1) residential customers with monthly consumption of more than 250 kWh, 2) residential customers known to have swimming pools, 3) homes and small businesses in the San Francisco peninsula or in Silicon Valley, and/or 4) rural residences and small businesses.

Energy Division recommends that PG&E provide an incentive to a customer for actually logging onto the web site and accessing their own energy profile. The incentive could be in the form of a gift certificate of approximately $20 for a home improvement center, appliance store, or a particular product, such as a compact fluorescent lamp. Energy Division does not present a projection of expected energy savings in its report, due to the difficulty in generating such an estimate at this time.

3.2 Self-Generation Program

In its report, Energy Division defines "self-generation" as "distributed generation (DG) installed on the customer's side of the utility meter, which provides electricity for a portion or all of that customer's electric load." (Report, p. 5.) DG units sited on the utility-side of the customer's meter or owned by the distribution utility or a publicly-owned utility would not be eligible for incentives under Energy Division's proposal.

For the purpose of this program, Energy Division defines DG technologies as internal combustion engines, microturbines, small gas turbines, wind turbines, photovoltaics, fuel cells, and combined heat and power or cogeneration. A subset of these technologies is considered renewable and eligible for differential incentives, as required by § 399.15(b) paragraph (7), including wind turbines, photovoltaics and fuel cells. Diesel-fired DG resources and emergency or backup systems would not be eligible under the program.

Energy Division proposes to limit the AB970 initiatives to renewable self-generation technologies that are 30 kW or greater in capacity. The proposed

program offers incentives of $4.50 per watt of installed on-site renewable generation capacity, up to a maximum of 50% of total installation costs. Non-renewable self-generation (of any capacity) would also be eligible under the program, but with a lower incentive: $1.00 per watt of on-site generation, up to 30% of total costs.

In addition, Energy Division recommends that the utilities be required to waive interconnection and standby fees for any self-generation units installed through this program, as well as through the CEC renewables buy-down program.

Energy Division estimates program costs at $125 million, and projects benefits of $1.12 billion over the life of the units (benefit-cost ratio of 9.98).

4. Discussion

The comments we received on Energy Division's proposals were extensive and generally very constructive. In the following sections, we concentrate on the chief points of contention, and do not try to summarize every nuance in the comments.

4.1 Cost Recovery and Ratemaking

Pub. Util. Code § 399.15 specifies that the Commission shall "include the reasonable costs involved…in the distribution revenue requirements of utilities regulated by the commission, as appropriate."

To implement this provision, Energy Division recommends that funding for the proposed programs be collected from ratepayers through a non-bypassable usage-based charge, similar to the public goods charge. Energy Division assigns some of the program costs for self-generation to gas ratepayers; however, the majority of program costs are allocated to electric ratepayers. Energy Division recommends that program expenditures be tracked in a

balancing account until ratemaking can be formally addressed in each electric utility's next cost of service/performance-based ratemaking proceeding, and SoCal's next biennial cost adjustment proceeding.

The utilities strongly object to Energy Division's recommendations to track costs until future rate recovery proceedings, arguing that such an approach would further jeopardize their already fragile financial position. SDG&E and SoCal take the positions that the entire public, and not just utility ratepayers, should be responsible for funding these programs.

TURN contends that most of the private benefits of the self-generation program accrue to non-residential program participants, and argues that residential customers should probably not subsidize these program costs at all. TURN requests that we track all program costs and benefits by customer class before adopting a specific cost allocation.

Until we have determined that the electric rate freeze is over for PG&E and SCE,[4] or until there is specific Legislative authority to impose an additional charge to recover these costs, we cannot consider granting the rate relief requested by the utilities, particularly not in this rulemaking proceeding. Nor can we ignore the Legislature's clear direction to include the cost of these programs in distribution revenue requirements. We recognize that SDG&E's rate freeze is over, although there is a rate cap on SDG&E's generation-related rate component. However, SDG&E is also subject to PBR for its distribution revenue requirements. It would be inconsistent with the PBR framework to address the level of SDG&E's distribution revenue requirements and rates on a piecemeal basis. Instead, SDG&E should address the costs of these programs within the

[4] We are examining this issue in A.00-11-038 et al.

context of the PBR mechanism in its next PBR and cost-of-service proceeding. For PG&E and SCE, where the rate freeze is still in effect, we direct them to increase their distribution revenue requirements, without modifying current rates, to reflect today's authorized budgets.

Should general fund appropriations be made available for demand-responsiveness and self-generation programs through subsequent Legislative action, we will consider augmenting today's approved programs. As described further below, the Energy Division's proposed programs consist of a focused set of pilots that can be broadened to encompass additional market sectors, technologies and system sizes, if and when appropriate.

Within 15 days, PG&E and SCE shall file Advice Letters increasing their electric distribution revenue requirements, without modifying current rates, for this purpose. SDG&E shall address the funding of these programs in its next PBR and cost-of-service proceeding. On the gas side, PG&E, SDG&E and Southern California Gas Company (SoCal) should include the costs of these programs in their next gas rate recovery proceeding, e.g., the Biennial Cost Adjustment Proceeding. In the interim, all program costs should be tracked in memorandum accounts, and the utilities should establish such accounts for this purpose. We will address specific cost allocation issues, including the one raised by TURN, when we address the rate recovery for these programs. In the meantime, the utilities should track all program costs and benefits by customer class, as TURN recommends.

Several parties request clarification regarding the allocation of costs for the self-generation program between electric and gas customers of the combined utilities. As discussed in the Energy Division report, some of the program costs for self-generation are assigned to gas ratepayers, as well as electric ratepayers, to reflect the public benefits (e.g., environmental) that will

accrue to gas ratepayers as well. (Report, p. 7.) To establish the budget for each individual utility, Energy Division allocated the total costs for the self-generation program (developed on a statewide basis) to each service territory based on the relative proportion of costs currently allocated to each utility for energy efficiency programs. In our opinion, this represents a reasonable proxy for the allocation of benefits between gas and electric customers that we can expect from the self-generation program. In the Advice Letter filings described above, PG&E and SDG&E should present the specific factors they use to allocate costs between their electric and gas customers, for the purpose of increasing their electric distribution revenue requirements.

4.2 Size and Scope of AB 970 Initiatives

The comments reflect divergent opinions concerning the appropriate size and scope of the AB 970 demand-responsiveness and self-generation initiatives. ORA, for example, recommends a much larger overall program funded at $300 million per year, whereas other parties, such as PG&E, express concerns that the level of ratepayer funding proposed by the Energy Division may be too ambitious at the proposed $138 million annual level.

Parties also differ with respect to the scope of technologies and applications that should be eligible under the proposed programs. Whereas the Energy Division recommends that all customer sectors be eligible under the self-generation initiatives, ORA recommends limiting the incentives to non-public sector retrofit applications for residential and small/medium businesses. CEC recommends expanding eligibility to cover installations of DG systems on either side of the customer's meter, rather than only on the customer side, as recommended by Energy Division. Capstone recommends that the eligibility of renewable technologies be expanded by lowering the proposed size minimum of

30kW to 10kW, while PG&E and SDG&E recommend that self-generation units be subject to specific size limits.

With respect to the demand-responsiveness pilots, several parties propose significant expansions in scope to include additional options and technologies. For example, CEC recommends that the demand-responsiveness pilots include load curtailment options that address lighting (e.g., dimmable ballasts), metering technologies and market-based rate designs. CEC also recommends that the internet information test pilot be expanded to encompass full-scale deployment of metering systems that provide real-time usage data feedback through internet-based systems to customers. Cannon Technologies recommends that the pilots be expanded to include additional peak reduction technologies that allow the utilities to interrupt load on a one-way basis. Along these lines, TURN recommends that the Commission authorize expansions in the utilities' existing direct load control air-conditioning cycling programs as part of the AB 970 initiatives.

It is clear from the comments that the AB 970 initiatives could be expanded to greatly exceed the $138 million annual budget developed by Energy Division, by including a wider array of technologies, system sizes and applications. However, we are not persuaded that such expansion is in the public interest at this time. Instead, we concur with Energy Division that the § 399.15(b) initiatives should encompass a specific set of programs that can be tested on a pilot basis, without risking major investment of ratepayer funding on a full-scale statewide rollout. In this way, we will complement, rather than duplicate, initiatives for peak-demand reductions that are being explored in the Commission's rulemaking into the operation of interruptible programs (Rulemaking (R.) 00-10-002), proceeding on real-time pricing (Application

(A.) 00-07-055), as well as programs being implemented under the CEC's AB 970 demand-responsiveness grant programs and renewables programs.

We believe that Energy Division's proposal for overall program size and scope best accomplishes this goal. Although several parties critique various aspects of the Energy Division's preliminary cost-benefit analysis, no party presents convincing argument or analysis to indicate that the level of proposed funding represents an unreasonable investment in demand-responsiveness and self-generation, relative to expected benefits.[5] We find that Energy Division's proposed annual funding level of $137.8 million for the § 399.15(b) demand-responsiveness and self-generation initiatives to be reasonable. Should additional funding become available via legislative action, we may consider expanding today's adopted demand-responsiveness and self-generation initiatives in a subsequent decision. We may also consider future funding increases for these programs via distribution rates, in this rulemaking, as we gain further experience with the programs adopted today.

SCE requests that we clarify the relationship between the programs adopted in this rulemaking and those being considered in the interruptible rulemaking, R.00-10-002. Nothing in this decision is intended to preclude or prejudge the Commission's consideration of additional initiatives involving interruptible programs (for all customer groups including the residential and small commercial sector) in that proceeding.

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[5] ORA presents an analysis of program cost-effectiveness that produces a benefit cost ratio for self-generation of 2:1, which is significantly less than Energy Division's preliminary analysis, but still comparable to the energy efficiency portfolios of the combined utilities. See ORA's comments, p. 5.

Although we generally concur with the Energy Division's proposed size and general scope of program initiatives, we do lower the minimum size requirement for receiving renewables incentives and make specific improvements to design and implementation parameters, in response to parties' comments. These modifications are discussed below, by general category and specific program initiative.

4.3 Program Administration

In its report, Energy Division assumes that the utilities will administer these programs "for the purposes of expediency," at least for 2001. (Report, p. 6.) SDG&E, SCE and SoCal concur with this approach, and recommend that the Commission affirmatively state now that the utilities will serve as the administrators through at least 2004. PG&E suggests that the Commission consider alternatives to utility administration, particularly if the expectation is to have utilities gear up for only a one-year assignment of program administration.

Although TURN does not propose a specific alternative to utility administration, it recommends that the Commission "find any other entity, private, non-profit or government, whose interest is more aligned with program success" to administer the self-generation program. In TURN's view, the utilities have presented positions in the distributed generation rulemaking (R.99-10-025) that reflect their perception that self-generation will reduce distribution revenues.

ORA expresses similar concerns, and recommends that SDG&E contract with the San Diego Regional Energy Office to provide administrative services for the self-generation programs in SDG&E's service territory. For the longer-term, ORA urges the Commission to establish a statewide network of Commission- certified regional energy offices to become administrators of both energy efficiency public purpose programs and self-generation programs.

ORA's proposal to designate the San Diego Regional Energy Office as program administrator for self-generation in SDG&E's service territory provides us with an opportunity to explore non-utility administration on a limited basis. We believe that such exploration will be valuable, given the concerns raised by parties regarding utility administration in this proceeding. The independent evaluation of the self-generation program should include an examination of the relative effectiveness of the two administrative approaches we adopt today.

Today's decision is not the appropriate forum for addressing the administrative structure of energy efficiency and self-generation programs for the longer-term, as proposed by ORA, and we will not adopt ORA's recommendation to establish regional energy offices for this purpose. However, nothing in today's decision precludes the Commission from considering alternatives to utility administration for future demand-responsiveness or self-generation program initiatives, based on our evaluation of the § 399.15(b) pilot results or other relevant information.

We direct the utilities to administer today's adopted pilot programs through the funding period, i.e., through December 31, 2004, with the exception of the self-generation program in SDG&E's service territory. For this program, SDG&E shall contract with the San Diego Regional Energy Office at the full budget amount specified herein ($15.5 million) to provide administrative services.

Energy Division recommends that the self-generation program be administered through the utility's existing standard performance contract (SPC) program. The SPC programs rely on third parties such as energy service companies to install equipment at customer facilities. Contractors then follow an established program procedure to install the equipment, measure and verify the

equipment's impact on on-site consumption, and collect payment from the utility.

SDG&E/SoCal point out in their joint comments that SoCal does not currently administer an SPC program for energy efficiency. Therefore, SoCal requests flexibility to utilize other approaches for implementing the self-generation program. Xenergy also comments that their knowledge from conducting the statewide SPC program evaluations suggests that there may be other equally viable, and potentially less burdensome, program delivery choices. Like SoCal, the San Diego Regional Energy Office also does not have an existing SPC program. Given this, we will grant the program administrators flexibility in program delivery mechanisms, as long as they meet the following basic requirements:

- Available incentive funding (dollars per watt or percentage of system cost) is fixed on a statewide basis at the levels described below. (See table in Section 4.6.1.)
- Inspections are conducted to verify that the funded self-generation systems are actually installed and operating.
- The measurement and verification protocols established by the administrators include some sampling of actual energy production by the funded self-generation unit over a statistically relevant period. (See also Section 4.6.2 below.)
- As discussed below, the target expenditures for program administration be limited to 5% of program funding, with the exception of measurement and verification activities.

Finally, we clarify our expectations regarding outsourcing by program administrators. While we afford administrators the flexibility to select the manner of outsourcing (e.g., competitive bidding, sole source contracting) for these pilot programs, we do require program administrators to outsource to

independent consultants or contractors all program evaluation activities. This requirement, coupled with the role of Energy Division in the evaluation process (see Section 4.8 below), will ensure that the programs are independently evaluated. In addition, all installation of technologies (hardware and software) at customer sites shall be performed by independent contractors and not utility personnel (for those utilities that will administer their own programs), or agency personnel (in the case of the San Diego Regional Energy Office). This requirement will ensure that market actors other than the program administrators are involved in program delivery, consistent with the manner in which we implement energy efficiency and low-income assistance programs.

Program administrators should also outsource other aspects of program administration and implementation, to the extent feasible. In particular, the majority of program marketing and outreach activities should be outsourced, to the extent feasible, although the program administrator should actively participate and assist contractor efforts for this purpose. We also encourage the program administrators to coordinate and work closely with local governments, community-based organizations, business associations and other entities to recruit and contact interested customers.

4.4 Budget Allocations and Fund Shifting Flexibility

In its January 31, 2001 report, Energy Division recommends that administrative expenses be limited to 5% of total program funding, for each program, and estimates a 3% budget allocation for certain evaluation activities in developing the overall funding levels.[6] Based on the comments of Xenergy and others, we believe that the administrators should be afforded some flexibility in

[6] See Energy Division Report, p. 6 and program budgets on pp. 15 and 21.

allocating the authorized budget for each program (e.g., $3.9 million for the residential demand-responsiveness pilot) among the various cost categories (administration, program evaluation, installation, service and operation costs, customer incentives). We agree with Energy Division that contract administration, marketing and regulatory reporting should be undertaken as cost-efficiently as possible by program administrators, so that proportionately more funds are available for hardware installations and customer incentives. However, we also recognize that it is difficult to estimate at the outset precisely what the appropriate allocation across cost categories should be for these programs. For this reason, we are establishing are target of administering these programs at a cost no greater than 5% of program funds, with the exception of measurement and evaluation activities. In any event, the actual cost of administration must be reasonable.

We will provide some flexibility, enabling the utilities to shift funds across cost categories within the overall budgeted amounts for each of the four programs (i.e., residential demand-responsiveness, small commercial demand-responsiveness, interactive information for small customers and self-generation programs), with the following exceptions. First, utilities may not shift any funds between the demand-responsiveness and self-generation programs that they administer without first obtaining Commission authorization. Second, one-third of the self-generation incentive funds is initially allocated to each of the self-generation categories. Although the utilities may exercise full discretion in moving funds from non-renewable self-generation categories to the renewable category, a utility must seek approval through advice letter prior to shifting additional funds into either of the non-renewable categories. The utilities shall not unreasonably withhold funds that could be used to deploy a greater amount of renewable self-generation. Finally, with the exception of measurement and

evaluation activities, administrators must obtain Commission authorization to allocate more than 5% of program funds to "administrator costs" (i.e., contract administration, marketing, and regulatory reporting) within each program budget, for either demand-responsiveness or self-generation programs. Such authorization may be requested via Advice Letter. The funds authorized today are designated exclusively for approved § 399.15(b) demand-responsiveness and self-generation activities, and shall not be used for other purposes.

4.5 Design Parameters For Demand-Responsiveness Pilot Programs

As discussed above, Energy Division proposed a specific set of customer incentive levels and selected a particular load control technology to test under the residential and small commercial demand-responsiveness pilot programs. Several parties argue that the effectiveness of these programs, which are intended to induce customer behavioral changes, will best be achieved by allowing some flexibility and experimentation in the design of customer incentives, marketing approaches, technology type and other design parameters.

We agree that the effectiveness of these pilot programs will be enhanced by allowing some flexibility in their implementation. In particular, within the overall program funding levels authorized for each pilot, we will allow the utilities to experiment with alternative incentive designs. This may involve higher annual customer incentives and override penalties, or other signals that will differentiate usage of air conditioning during peak periods, as some parties suggest. Similarly, for the interactive consumption and cost information pilot, PG&E should have the flexibility to select the design and amount of the incentive, as suggested in its comments. (PG&E Comments, p. 4.)

We also will allow some flexibility in the overall number of pilot participants, as recommended by Xenergy and others. The utility administrators should consider the 5,000 participant level (for the residential and small

commercial) and 10,000-15,000 participant level (for the small customer information pilot) as general targets, rather than strict requirements. In this way, the utility administers will be able to make reasonable modifications to other program design parameters (e.g., incentive levels) and also accommodate within the authorized program budgets any additional costs (e.g., equipment) that exceed the Energy Division's preliminary estimates.

SDG&E and others comment that the 250 kWh threshold for residential customers, as suggested in the Energy Division report, may not be an appropriate level for targeting higher electric load residences. We will afford SDG&E and SCE flexibility in establishing monthly consumption threshold levels in order to define a target group of participants with high average consumption.

However, we will not retreat from Energy Division's recommendation that the residential pilot also target limited- to moderate-income areas. In its comments, SDG&E argues that these customers are unlikely to use central air conditioning, an assertion that appears nonsensical given the high summer temperature climate zones within SDG&E's service territory. SDG&E and TURN also suggest in their comments that many limited- to moderate-income customers do not use personal computers (with internet access), and therefore cannot effectively participate in the residential pilot program. This reflects a basic misunderstanding of the "internet connectivity" referred to in Energy Division's report. Customers are not required to have internet capability via a personal computer, although this is one technology option. Rather, at a minimum, the thermostat equipment itself needs to be capable of internet interface, an option that does not require the customer to own or operate a personal computer. As discussed below, the utilities may elect to employ more than one technology in implementing the pilots, and we expect them to take into consideration the targeted market in making such choices.

Finally, we clarify our intent to allow some flexibility with respect to the specific technologies employed in the residential and small commercial demand-responsiveness pilot programs, and encourage the utilities to solicit multiple bids for this purpose. However, such flexibility is not intended to alter the focus of the pilot program recommended by Energy Division in its January 31, 2001 report. Consistent with those recommendations, we will not test technologies that simply allow the utility to interrupt load on a one-way basis. More specifically, any technology installed for the demand-responsiveness pilot programs must include the following features:

(1) Allow each customer some level of control over its own HVAC equipment (over-ride, etc.),

(2) Provide interactive information for consumers to make consumption decisions (e.g., via the thermostat or a computer internet connection), and

(3) Allow the administrator to verify actual interruption of the individual device at the customer site, including duration and level of kW demand reduction.

With respect to the interactive consumption and cost information pilot, Xenergy seeks to ensure that PG&E pursues other methods of providing customers with information on their energy usage profile and the benefits of various rate options, including mail out audits, telephone approaches and other alternatives. We do not intend this pilot to replace or diminish other effective methods that PG&E might also employ to provide energy information to smaller customers. However, we are not persuaded that including several, very different information dissemination approaches in a single pilot program, as suggested by Xenergy, would enhance the effort. We therefore retain the focus of the pilot,

which is to implement and test the website approach proposed by the Energy Division.

4.6 Design Parameters For Self-Generation Program

Parties provided extensive comments on the various aspects of this proposed program, including incentive design, warranty requirements and the waiver of interconnection fees and standby charges. We summarize the main areas of contention in the following sections, and describe the modifications we adopt to Energy Division's proposal.

4.6.1 Technology Categories, Incentive Levels and Size Limits

Energy Division proposed two categories of self-generation technologies and associated incentives, based on a consideration of various system dimensions, including air emissions characteristics, fuel type, and system cost. After considering parties' comments, we modify certain aspects of Energy Division's proposal, as discussed below.

Several parties argue that incentives are not required or warranted for non-renewable self-generation systems. They argue against funding these systems because they are less efficient and more polluting than combined cycle technologies without waste heat recovery. We find merit in these concerns. Section 399.15(b) requires the Commission to establish both "incentives for… distributed generation to be paid for enhancing reliability" as well as "differential incentives for renewable and super clean distributed generation resources." We agree with PG&E that many fossil fuel applications would fail to satisfy any of these criteria.

As NRDC and TURN have pointed out, some micro-turbines operating on natural gas may be cleaner than large central station fossil generators, but combustion turbines and other small natural gas generators may actually be more polluting than modern central station facilities. While we have not created an exhaustive record in this proceeding from which to reach a firm conclusion, there is nothing to suggest that these technologies offer "super clean" generation, and when run on natural gas, certainly are not renewable.[7] Thus, to qualify for incentives, a fossil facility must serve to enhance system reliability.

Since all new generation could arguably add incrementally to the reliability of available generation, the language of § 399.15(b) suggests that the Legislature had in mind some other contribution to system reliability. In order to qualify for incentives, a fossil-fired facility must make a demonstrable contribution to the reliability of the transmission or distribution system. We

[7] We note that neither the Energy Division report nor the applicable statute provide a definition for "super clean" generation and find that the information before us does not provide a basis for declaring that any particular fuel-burning technology fits in such a category.

expect the utilities to work with those customers seeking incentives for fossil-fueled facilities to determine whether a proposed facility will enhance transmission or distribution reliability and document those benefits prior to approving an incentive payment.

We note Capstone's suggestion that micro-turbines be allowed to qualify for renewable incentive levels if they utilize renewable fuels. While it is logical to consider such facilities as providing renewable power, the incentives, that we are offering here, relate to capital cost. Capstone has not suggested that micro-turbines using renewable fuels would be appreciably more expensive to install a unit using renewable fuel than it would to install one using fossil fuels. However, it would be appropriate to enable such a facility to qualify for a normal micro-turbine incentive payment without meeting a "system reliability" test. We will consider expanding the program to include renewable-fuel micro-turbines once we determine what comprises a renewable fuel and are persuaded that a facility that once qualifies for a "renewable fuel" incentive would not later switch to fossil fuel. We seek the Energy Division's assistance in answering these questions and ask the staff to report back to us.

In addition, we will modify Energy Division's proposal, as recommended by TURN and ORA, to require that non-renewable technologies utilize waste heat recovery at the customer site. This further mitigates concerns over providing incentives to nonrenewable technologies. Accordingly, we modify the technology categories to require that fuel cells utilizing non-renewable fuels, microturbines, and internal combustion engines, be installed in combined heat and power applications, in order to be eligible for incentives

under the self-generation program.[8] However, this requirement only becomes meaningful if the opportunity for heat recovery and reuse is meaningful. We ask the Energy Division to work with interested parties to develop heat recovery standards and to submit those standards to us for subsequent consideration.

Further the CEC recommends creation of an additional category for fuel cells operating on a non-renewable fuel source, stating that these systems do not yield the same benefits as fuel cells operating on renewable fuels. We agree that this distinction is warranted, and establish a $2.50 per watt incentive for this category, up to a maximum of 40% of project cost.

NRDC points out that a small number of very large units could easily use up most or all of the available funding, and suggests that the Commission consider adopting a size limit. PG&E specifically recommends limiting the size of units eligible for funding to 10 MW or less, because PG&E generally does not interconnect any project larger than 10 MW to its distribution system.

We believe that a size limitation is reasonable in order to provide options to assist in the installation of self-generation systems for as many California customers as possible. We prefer adopting a size limit to specifying a maximum percentage of available budget that can be paid to a single customer or system, which is an approach often used in program design. Use of such a mechanism in this case, however, would result in widely varying system size

[8] This modification also makes moot Energy Division's proposal to pay additional incentives for energy savings from the installation of combined heat and power systems.

limitations across service territories, because of differing budget allocations for the various administrators.

In our judgment, a system size limit of 1 MW will effectively address the concerns raised by NRDC and others. This size represents a fairly large installation for a single customer site and, at the same time, will not use up an unreasonable amount of program funding. We note that one system of this maximum size would only receive about one-third of the available funding in SDG&E's service territory, which is the smallest budgeted program. Individual customers may apply for incentives for more than one system, as long as the combined size does not exceed 1 MW.

In addition, we will preserve the funds available for use in this program by adjusting incentive payments to complement those offered by the CEC, rather than to compete with them. We discuss this change in Section 4.9, below.

Finally, CEC and NRDC express concern over potential overlap between Energy Division's proposed self-generation program and CEC's renewables buy-down program, even with the 30 kW minimum size requirement. We note that only seven systems above 30 kW have been installed under CEC's renewables buy-down program (from a total of 332 systems installed, or 2%) since its inception. Out of 176 additional systems that CEC has approved, but are not yet installed, only nine (5%) represent systems greater than 30 kW.[9] With the higher incentive level offered under today's adopted program,

[9] Source: From "Appendix C: Emerging Renewable Resources Account" in "Renewable Energy Program: Annual Project Activity Report to the Legislature", CEC publication nos. P500-00-004 (March 2000) and P500-00-021 (December 2000). Available online at

Footnote continued on next page

we believe that this market can be effectively reached, and will allow customers to participate in both programs, subject to the requirements set forth below.

With the modifications described above, we adopt the following incentive structure for the self-generation program:

Incentive category	**Incentive offered**	**Maximum percentage of project cost**	**Minimum system size**	**Maximum system size**	**Eligible Technologies**
Level 1	$4.50/W	50%	30 kW	1 MW	Photovoltaics Fuel cells operating on renewable fuel Wind turbines
Level 2	$2.50/W	40%	None	1 MW	▪ Fuel cells operating on non-renewable fuel and utilizing waste heat recovery
Level 3	$1.00/W	30%	None	1 MW	▪ Microturbines utilizing waste heat recovery and meeting reliability criteria ▪ Internal combustion engines and small gas turbines, both utilizing waste

http://www.energy.ca.gov/reports/2000-12-04_500-00-004.PDF and http://www.energy.ca.gov/reports/2000-12-04_500-00-021.PDF.

					heat recovery and meeting reliability criteria

Based on California Retailers Association's comments, we clarify that hybrid DG systems that incorporate technologies from different incentive categories will receive payments based on the appropriate category. For example, a 100 kW system that utilizes 60 kW of microturbines and 40 kW of photovoltaics may receive $1.00/W for the 60 kW microturbine system and $4.50/W for the photovoltaic system. The program administrators shall provide for multiple technologies to be included in the customer's program application.

We require that program administrators keep the incentive levels fixed on a statewide basis throughout the program period. This requirement differs from the flexibility afforded to the administrators in the demand responsiveness programs for several reasons. First, the self-generation program is not designed to induce or monitor changes in consumer behavior, but rather to encourage the purchase of equipment. We believe that considerable flexibility in designing incentive levels is warranted in the former instance, but not necessarily in the latter. Moreover, a program design that varies the incentive payment levels may confuse consumers, or cause them to wait for the possibility of higher incentives before installing self-generation systems. In addition, we believe that the incentive payment for this program should be uniform statewide, as the market for self-generation technologies is not limited to or differentiated by a particular region or utility territory.

4.6.2 Monitoring Peak Demand Reductions

Energy Division's proposal for the self-generation program does not impose operating requirements or establish differential incentives

related to on-peak operation. As a result, SDG&E/SoCal argue that the proposed program design does not ensure that generation units will contribute to peak demand reduction. PG&E also requests that we clarify whether units are required to operate during peak.

We are not persuaded that it is necessary or reasonable to impose operating requirements or incentives related to on-peak operation for this program. We believe that customers willing to invest in self-generation already have sufficient economic incentive from energy prices to employ time-of-use meters to measure their usage and to operate their self-generation systems during peak periods. Moreover, the system output for solar technologies is generally coincident with afternoon system peak without any operating requirements. In addition, a per-watt or percentage of system cost up-front payment is already employed through the CEC's Emerging Renewables Buy-Down Program ("renewables buy-down program"). Maintaining that approach should help minimize market confusion and disruption.

However, for program evaluation purposes, we will require program administrators to monitor the extent to which self-generation units installed under this program operate during peak periods. Program administrators should direct their independent evaluation consultants or contractors to develop a process for monitoring and collecting this data from program participants. At the end of the first program year, administrators should report to the Commission on peak operation from the program, and continue this reporting in subsequent years. By the end of the second program year, the consultants or contractors should present recommendations on incentive or program designs that could improve on-peak load reduction from self-generation.

It is not the intent of this evaluation process to penalize customers for not running their self-generation during peak periods. Nor may the program administrators use the collected information in any way to penalize or restrict the ability of customers to run their self-generation systems. Rather, the purpose of this information is to assist us in identifying potential improvements in program design and incentive mechanisms for self-generation programs in the future.

We offer an example of how this operational data might be obtained for evaluation and ongoing program design purposes. If the self-generation unit does not already have built-in logging capability for this purpose, then the unit could be outfitted with a low-cost single-channel datalogger and sensor (such as a relay switch) which would at least enable the utility to determine when the unit is operating and producing electrical output. Program administrators should develop and disseminate the specific requirements for system installations and monitoring capabilities required for program evaluation. The costs of the required monitoring equipment should be paid from program funds.

4.6.3 Warranty Requirements

Under Energy Division's proposal, self-generation systems must be covered by a warranty of not less than three years. CEC recommends a warranty period of five years for eligible systems, consistent with the requirements under CEC's renewables buy-down program and industry practices. We concur with the CEC's recommendation, and adopt a five-year warranty requirement for technologies in Levels 1 and 2 above.

For Level 3 technologies, however, we adopt a different requirement, based on SDG&E's observation that equipment manufacturers for these technologies typically offer warranties of only three to 12 months. In our

opinion, a three-year warranty period is sufficient to ensure the continued operation and reliability of these systems and will encourage manufacturers and vendors to offer high quality products. We will adopt SDG&E's recommendation that the customer installing these self-generation systems purchase a three-year (minimum) maintenance contract from the manufacturer or vendor in order to comply with this requirement, if the system does not already include the required warranty. The customer may include the cost of this warranty in the system cost, for purposes of calculating their program incentive, up to the maximum percentage levels specified.

4.6.4 Waiver of Interconnection Fees and Standby Charges

The utilities strongly object to Energy Division's recommendation that interconnection fees and standby charges be waived for any self-generation units installed through the program. They argue that this recommendation is not justified and would ignore the Commission's recent decision on interconnection standards (Decision (D). 00-12-037) as well as the record developed in R.99-10-025 on standby charges. California Retailers Association, on the other hand, supports this recommendation and urges the Commission to adopt it.

We conclude that the appropriate forum for addressing interconnection fees and standby charges for distributed generation is R.99-10-025. We will not prejudge the issues still being considered in that proceeding, or modify prior Commission decisions regarding interconnection fees in designing the § 399.15(b) programs we adopt today. However, we do clarify that the interconnection fees (as defined in D.00-12-037) should be included in total installation costs for the purpose of determining the maximum size of the self-generation incentive. In this way, program dollars can be used to defray a portion of those costs.

4.7 Cost-Effectiveness

AB 970 directs the Commission to reexamine the methodologies used for cost-effectiveness, and revise them in "in light of increases in wholesale electricity costs and of natural gas costs to explicitly include the system value of reduced load on reducing market clearing prices and volatility." (§ 399.15(b)(8).) In its January 31, 2001 report, Energy Division proposes refinements to existing cost-effectiveness testing for this purpose, on a preliminary basis. Energy Division applied this new methodology to estimate the benefits and costs of the proposed self-generation and demand-responsiveness programs.

In their comments, the utilities and CEC contend that Energy Division's estimates for certain cost-effectiveness parameters (e.g., avoided transmission and distribution costs, reliability benefits) are overstated, and that the analysis does not take into account all of the costs associated with DG. ORA presents its own cost-effectiveness test results that it contends is more consistent with the approach (and inputs) used by the Commission to evaluate demand-side management programs.

Despite criticisms of certain aspects of Energy Division's analysis, none of the parties present convincing argument or facts to indicate that Energy Division's recommended programs will not produce sizeable public benefits.[10] They do recommend, however, that we continue to refine our cost-effectiveness methods for the future. We concur with this recommendation, and clarify that

[10] ORA presents an analysis of program cost-effectiveness that produces a benefit cost ratio for self-generation of 2:1, which is significantly less than Energy Division's preliminary analysis, but still comparable to the energy efficiency portfolios of the combined utilities. See ORA's comments, p. 5.

the cost-effectiveness inputs and methods applied to the Energy Division proposals are limited only to these pilots.

An appropriate cost-effectiveness method for future, longer-term programs still needs to be developed. Energy Division's proposal to hire an independent consultant to perform such a task, utilizing funds appropriated for implementation of AB 970, is a reasonable approach. The scope of work should encompass the development of methodologies, input assumptions and forecasts for addressing § 399.15(b)(8) and other cost-effectiveness issues. In particular, we seek to develop a cost-effectiveness methodology that can be used on a common basis to evaluate all programs that will remove electric load from the centralized grid, including energy efficiency, load control/demand-responsiveness programs and self-generation.

Energy Division should submit the final consultant report no later than December 31, 2002, and serve a notice of its availability to all appearances and the state service list in this proceeding (or its successor). Energy Division may hold public workshops with the consultant and interested parties during the development of this methodology, as it deems appropriate. The schedule for comments on the final report will be established by Assigned Commissioner or Administrative Law Judge ruling.

4.8 Program Evaluation

The programs adopted today will be evaluated during and after the program period, consistent with Energy Division's recommendations. For the residential and small commercial demand-responsiveness pilot programs, SDG&E and SCE will each conduct a process evaluation during 2001 and an energy savings and peak demand savings impact study at the end of 2002. For the interactive and cost information pilot program, PG&E or its evaluation contractor will contact site users and non-users to discuss their satisfaction with

the information on the site and suggest potential improvements. Program administrators for the self-generation program are required to perform program evaluations and load impact studies to verify energy production and system peak demand reductions, as described in greater detail in Section 4.6.2. They are also required to conduct an independent analysis of the relative effectiveness of the utility and non-utility administrative approaches we adopt today. (See Section 4.3.)

As discussed above, program administrators are required to outsource to independent consultants or contractors these evaluation activities. Energy Division shall assist program administrators in the development of the scope of work, selection criteria and the evaluation of submitted proposals to perform these program evaluations. The assigned Administrative Law Judge, in consultation with Energy Division and the program administrators, shall establish a schedule for filing the required evaluation reports. Energy Division should hold a workshop with program administrators as soon as practicable to develop scheduling proposals for this purpose.

4.9 Coordination and Eligibility Issues

Several parties commented on coordination and eligibility issues, particularly with respect to the CEC's programs. In particular, CEC and NRDC express concern over potential overlap between Energy Division's proposed self-generation program and CEC's renewables buy-down program. As the CEC points out, the CEC's program currently offers payments to renewable self-generators at a level lower than that approved in this order. The CEC argues that rather than add to the over-all deployment of renewable resources, a parallel program, offering larger incentives, would drive participants away from CEC program altogether. This would not be a sensible result.

We encourage the CEC to consider adopting a rebate level equal to that adopted in this order. However, as long as the CEC does not reduce its "buy-down" levels, it is appropriate for those receiving CEC incentives to also receive incremental payments from the utilities, bringing the total incentive payments up to the level approved in this order. Of course, this process must be carefully monitored to ensure that no customer can play one program off against another, to achieve exorbitant incentive payments.

It is unlikely that these programs can be successfully coordinated unless there is a common application process for involvement in either program. Thus, we direct the utilities and the Energy Commission to work with the CEC to develop a one-step application process, for use by all customers seeking a CEC renewables "buy-down" or utility renewable self-generation incentive payment.

Energy Division's program proposals for both demand-responsiveness and self-generation state that customers receiving incentives from these programs cannot also participate in any other interruptible or curtailable rate programs. Some parties, including TURN, argue that this prohibition should be eliminated. We agree with the Energy Division that participation in multiple programs could potentially allow an individual customer to receive multiple incentive payments for taking a single action. For example, a commercial customer could be receiving an interruptible rate discount, while at the same time utilizing incentives from the self-generation program to assist in the purchase of on-site generation for use during interruption periods. However, we do not find it necessary to prohibit customers from participating in an interruptible program with load that is not displaced by self-generation receiving incentives through this program.

In its comments, the CEC refers to the guidelines already in place for CEC's renewables buy-down program. Although we do not specifically adopt

the CEC guidelines today, we do agree with the CEC that the administrators of these new self-generation programs should take advantage of the work already done by the CEC in developing appropriate program details to encourage self-generation. Those program parameters are available at http://www.energy.ca.us/greengrid/. In order to ensure that the new self-generation program is available as consistently as possible on a statewide basis, we direct SoCal to take the lead in convening a working group including PG&E, SCE, SDG&E, and the San Diego Regional Energy Office to select final program details for statewide implementation. These details may include eligibility criteria for heat recovery levels or system efficiency.

We note that SoCal and SCE generally serve the same service territory and customers. Accordingly, SCE and SoCal must coordinate their marketing and tracking of program incentives very carefully in order to ensure that customers do not receive incentives for the same self-generation equipment from both utilities. In the alternative, as ORA proposes, SoCal may administer the self-generation program for the combined geographic region, if SCE and SoCal so agree.

We recognize that additional incentives for self-generation and demand-responsiveness programs may be authorized by the Legislature in the coming months. As several parties point out, additional issues regarding eligibility and coordination may need to be addressed at that time. We delegate to the Assigned Commissioner the task of clarifying these and other implementation issues by ruling, if and when such a need arises.

5. Comments on Draft Decision

The draft decision of Commissioner Lynch and Administrative Law Judge Gottstein in this matter was mailed to the parties in accordance with Section 311(g)(3) of the Public Utilities Code and Rule 77.7(f)(9) of the Rules of Practice

and Procedure. AB 970 requires that these programs be implemented in March 2001. In order to meet this goal, we must reduce the 30-day period for public review and comment. As defined in Rule 77.7(f)(9), the public necessity of adopting this order outweighs the public interest in having the full 30-day period for review and comment. We therefore shorten the comment period to seven days. Comments were filed on March 9, 2001 by SCE, SDG&E/SoCal, PG&E, ORA, NRDC, TURN, and Caterpillar, Inc. In response to the comments, we make minor corrections and clarifications to the draft decision and attached report, but do not make substantive changes to the program or ratemaking directives contained therein.

Findings of Fact

1. Energy Division's proposed programs to comply with Pub. Util. Code § 399.15(b), as modified by this decision, are expected to produce sizeable public benefits in the form of electric peak-demand reductions, environmental and other benefits, relative to their cost. Some of these benefits (e.g., environmental) are expected to accrue to gas, as well as electric, ratepayers.

2. The Commission has not yet determined that the electric rate freeze has ended for SCE and PG&E. The electric rate freeze is over for SDG&E, although there is a rate cap on SDG&E's generation-related rate component and SDG&E is also subject to PBR for its distribution revenue requirements.

3. The self-generation programs adopted today will produce significant public (e.g., environmental) benefits for all ratepayers, including gas ratepayers.

4. The Legislature has not authorized an additional charge, above current electric rate freeze levels, to recover the costs of § 399.15(b) programs. The current allocation of energy efficiency funding between gas and electric customers, on a percentage basis, is a reasonable proxy for the allocation of

benefits between these customers that we can expect from the self-generation program.

5. Energy Division's proposed programs, as modified by this decision, encompass a specific set of initiatives that can be tested on a pilot basis, without risking major investment of ratepayer funding on a full-scale rollout. The proposed programs complement, rather than duplicate, initiatives for peak-demand reductions that are being explored in other Commission proceedings, as well as programs being implemented by the CEC.

6. ORA's proposal to designate the San Diego Regional Energy Office as program administrator for the self-generation program in SDG&E's service territory provides us with an opportunity to explore non-utility administration on a limited, pilot basis.

7. ORA's proposal to establish non-utility administrators for energy-efficiency and self-generation programs for the longer-term is beyond the scope of the issues related to § 399.15(b) implementation and Energy Division's report.

8. Energy Division's requirement that the self-generation program be administered through the utility's existing SPC program for energy efficiency poses implementation problems because SoCal and the San Diego Regional Energy Office do not currently administer such a program. There may also be equally viable, and potentially less burdensome, program delivery choices.

9. Requiring administrators to outsource program evaluation, and involving Energy Division in the process, will ensure that the programs authorized today are independently evaluated. Requiring that the installation of technologies at customer sites be performed by independent contractors ensures that market actors other than the program administrators are involved in the programs. These requirements are consistent with the manner in which Commission-

authorized energy efficiency and low-income assistance programs are implemented.

10. Because the programs we authorize today are new, it is difficult at this time to establish budget allocations across individual cost categories (e.g., administration, evaluation) that will not be unduly restrictive to program administrators. At the same time, affording program administrators unlimited flexibility in allocating the program budgets will not ensure that an appropriate level of funding is available for hardware installations and customer incentives.

11. The effectiveness of Energy Division's proposed demand-responsiveness programs will be enhanced by allowing some flexibility and experimentation in the design of customer incentives, marketing approaches, technology selections and other design parameters, within the guidelines described in this decision.

12. There is no evidence to support SDG&E's contention that limited- to moderate-income residential customers in its service territory are unlikely to use central air conditioning.

13. The residential and commercial demand-responsiveness programs require only that the thermostat itself is capable of internet interface, an option that does not require the customer to own or operate a personal computer.

14. Including several, very different information dissemination approaches in the interactive consumption and cost information pilot would detract from the focus of the pilot, i.e., to test a specific website approach, and would not enhance the effort.

15. Categorically excluding non-renewable technologies from the self-generation program adopted today would not be consistent with the legislative intent reflected in Pub. Util. Code § 399.15 (b), which also allows technologies to qualify if they enhance system reliability.

16. Without waste heat recovery, certain non-renewable self-generation technologies may be less efficient and more polluting than combined cycle technologies. Requiring that these technologies utilize waste heat recovery at the customer site mitigates these concerns and is consistent with our goal of improving the overall efficiency of the electrical generation system.

17. Creating an additional category under the self-generation program for fuel cells operating on a non-renewable fuel source recognizes that these systems do not yield the same benefits as those that operate on renewable fuels.

18. Without some form of size or funding limitation, a small number of very large self-generation units could easily use up most or all of the available program budget. This problem can be addressed by 1) establishing a unit size limit or 2) specifying a maximum percentage of funding that can be paid to a single customer or system. The latter approach, however, would result in widely varying system size limitations across service territories because of differing budget allocations.

19. A system size limit of 1 MW for self-generation projects represents a fairly large installation for a single customer site and, at the same time, will not use up an unreasonable amount of program funding.

20. Affording program administrators flexibility to design the self-generation incentive levels for their individual programs may confuse consumers, or cause them to wait for the possibility of higher incentives before installing self-generation systems. In addition, a uniform, statewide incentive for this program recognizes that the market for self-generation technologies is not limited to or differentiated by a particular region or utility service territory.

21. Establishing on-peak/off-peak operating requirements or differential financial incentives for self-generation systems may not be necessary or reasonable because:

1) It is likely that customers willing to invest in self-generation already have sufficient economic incentive from energy prices to operate their systems during peak periods,

2) The system output for solar technologies is already generally coincident with afternoon system peak, without any further requirements, and

3) The incentive approach (dollars per watt installed) proposed by Energy Division is consistent with the CEC's renewables buy-down program and maintaining that approach should help minimize market confusion and disruption.

22. Monitoring the extent to which self-generation units installed under the program operate during peak periods will assist us in improving program design and incentive mechanisms for self-generation programs in the future.

23. Requiring a five-year manufacturer's warranty for technologies eligible under CEC's renewables buy-down program is consistent with CEC's program requirements and industry practice for those technologies.

24. Manufacturers of other distributed generation equipment (e.g., microturbines) typically offer warranties of only three to 12 months. Requiring a three-year warranty, either from the equipment manufacturer or through a maintenance contract, is sufficient to ensure continued operation and reliability of the system, and will encourage manufacturers and vendors to offer high quality products.

25. Any determinations in this decision regarding the waiver of interconnection fees or standby charges could prejudge the issues being considered and addressed in R.99-10-025.

26. The cost-effectiveness methods and inputs applied to Energy Division's proposals are preliminary and limited only to these pilot programs. An appropriate cost-effectiveness method for future, longer-term programs still needs to be developed.

27. Participation in multiple load control and self-generation programs would potentially allow an individual customer to receive multiple incentive payments for taking a single action. For example, a commercial customer could be receiving an interruptible rate discount, while at the same time utilizing incentives from the self-generation program to assist in the purchase of on-site generation for use during interruption periods.

28. Careful coordination is required to ensure that consumers are not "double dipping" and inappropriately receiving incentives from more than one program, whether sponsored by this Commission, CEC, the ISO or other state agencies. Coordination is particularly needed between SoCal and SCE in implementing the self-generation program, since they generally serve the same service territory and customers.

Conclusions of Law

1. Energy Division's proposed programs and annual funding levels for the implementation of Pub. Util. Code § 399.15(b), as modified by this decision and described in Attachment 1, are reasonable and should be adopted.

2. Until the Commission determines that the electric rate freeze has ended for SCE and PG&E, or until there is specific Legislative authority to impose an additional charge to recover the costs of § 399.15(b) programs, we cannot grant the rate relief requested by the utilities. Although the rate freeze has ended for SDG&E, it would be inconsistent with the PBR framework to address the level of SDG&E's distribution revenue requirements and rates on a piecemeal basis, rather than within the PBR context in its next PBR/cost-of-service proceeding.

3. The utilities should proceed with today's authorized programs without further delay and establish memorandum accounts to track all program costs. As discussed in this decision, the utilities should also track all program costs and benefits by customer class.

4. It is reasonable that program administrators for the demand-responsiveness programs should have flexibility to design the customer incentive and pilot program according to the guidelines established in this decision and within the adopted program funding levels.

5. The residential demand-responsiveness pilot program should also target limited to moderate-income areas, as recommended by Energy Division.

6. The interactive consumption and cost information pilot should implement and test the website approach recommended by Energy Division, and not be expanded to include other information dissemination approaches. However, nothing in today's decision is intended to diminish or replace other effective methods that PG&E might also employ to provide energy information to smaller customers.

7. Given the concerns raised by parties regarding utility administration of self-generation programs, it is reasonable to explore a non-utility administrative option, on a limited basis, during the implementation of today's adopted programs. For this purpose, ORA's proposal to designate the San Diego Regional Energy Office as program administrator for SDG&E's self-generation program is a reasonable approach and should be adopted.

8. Program administrators should have flexibility in selecting program delivery mechanisms for the self-generation program, as long as they meet the basic requirements described herein.

9. In implementing today's adopted pilot programs, program administrators should outsource program implementation and administrative activities according to the guidelines established in this decision.

10. It is reasonable to establish fund-shifting rules that provide program administrators with sufficient flexibility to manage program costs, while

ensuring that an appropriate proportion of funding goes to hardware installations and customer incentives.

11. It is reasonable to require that certain distributed generation technologies also employ waste heat recovery, as a prerequisite for funding under the self-generation program.

12. It is reasonable to establish a third category of technology and incentive level under the self-generation program for fuel cells operating on non-renewable fuel.

13. The incentive structure described in this decision for the self-generation program is reasonable and should be adopted.

14. Hybrid self-generation systems that incorporate technologies from different incentive categories should receive payments based on the appropriate category, as described in this decision.

15. The self-generation incentive levels we adopt today should be fixed and applied uniformly on a statewide basis throughout the program period, unless modified by subsequent Commission decision.

16. It is reasonable to require a warranty period of five-years for Level 1 and 2 technologies. For Level 3 technologies, it is reasonable to require a warranty period of three years. The customer installing the self-generation system should purchase a minimum of a three-year warranty from the manufacturer or a vendor in order to comply with this requirement, if the system does not already include the required warranty. The customer may include the cost of this warranty in the system cost, for purposes of calculating their program incentive, up to the maximum percentage levels specified.

17. The appropriate forum for considering Energy Division's proposal to waive interconnection fees and standby charges is R.99-10-025, and not this

proceeding. However, it is reasonable to use program funds to defray a portion of a project's interconnection fees (as defined in D.00-12-037) by including these fees in the total installation costs when determining the maximum size of the self-generation incentive.

18. As described in this decision, Energy Division should hire an independent consultant to develop a cost-effectiveness method that can be used on a common basis to evaluate all programs that will remove electric load from the centralized grid, including energy efficiency, load control/demand-responsiveness programs and self-generation.

19. The programs authorized today should be evaluated during and after the program period, as described in this decision.

20. Customers installing self-generation systems eligible for the CEC buy-down program should be allowed to augment the funding received from that program with funding available from today's adopted self-generation program, up to the maximum incentive limits.

21. It is reasonable that administrators of today's adopted self-generation programs should take advantage of the work already done by the CEC in developing appropriate program details to encourage self-generation.

22. SCE and SoCal should carefully coordinate their marketing and tracking of program incentives very carefully in order to ensure that customers do not receive incentives for the same self-generation equipment from both utilities. In the alternative, SoCal may administer the self-generation program for the combined geographic region, if SCE and SoCal so agree.

23. As discussed in this decision, the Assigned Commissioner may further clarify eligibility and other implementation issues by ruling, if and when such a need arises.

24. Public necessity, as defined in Rule 77.7(f)(9) requires that the usual 30-day review and comment period on the draft decision be shortened to seven days.

25. In order to implement today's adopted programs as expeditiously as possible, this order should be effective today.

INTERIM ORDER

1. The programs and annual budgets described in Attachment 1 are approved through December 31, 2004. Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company (SoCal), collectively referred to as "the utilities," shall implement these programs without delay, consistent with today's decision.

2. The annual program budgets approved today are as follows:

Utility	**Demand Responsiveness Budget**	**Self Generation Budget ($ million)**	**Total Annual Budget ($ million)**
PG&E	$3,000,000	$60,000,000	$63,000,000
SCE	$5,940,000	$32,500,000	$38,440,000
SDG&E	$3,930,000	$15,500,000	$19,430,000
SoCal	NA	$17,000,000	$17,000,000
Total	**$12,870,000**	**$125,000,000**	**$137,870,000**

Within 15 days of the effective date of this decision, PG&E and SCE shall file Advice Letters increasing their electric distribution revenue requirements, without modifying current rates, to include today's authorized program budgets. SDG&E shall address the funding of these programs in its next PBR and cost-of-

service proceeding. PG&E, SDG&E and SoCal shall include the costs of the programs allocated to gas customers in their next gas rate recovery proceeding, e.g., the Biennial Cost Adjustment Proceeding. In these filings, PG&E and SDG&E shall present the specific factors they use to allocate self-generation program budgets between their electric and gas customers. These factors shall reflect the current allocation of energy efficiency programs between these customers, as discussed in this decision. The utilities shall establish memorandum accounts to track program costs, and shall also track all program costs and benefits by customer class.

3. The utilities shall be the program administrators for the demand-responsiveness programs described in Attachment 1. For the self-generation program authorized in SDG&E's service territory, SDG&E shall contract with the San Diego Regional Energy Office to provide administrative services at the full budgeted amount for that program ($15.5 million). PG&E, SCE and SoCal shall administer the self-generation programs in their service territories. However, as discussed in this decision, SoCal and SCE may assign to SoCal the administration of self-generation programs for their combined service territories.

4. In implementing today's adopted programs, program administrators shall outsource program implementation and administrative activities as directed below:

- Program administrators shall outsource to independent consultants or contractors all program evaluation activities.
- All installation of technologies (hardware and software) at customer sites shall be done by independent contractors and not utility personnel (or agency personnel, in the case of the San Diego Regional Energy Office).
- Program administrators shall also outsource as many other aspects of program administration and implementation as feasible. In particular,

the majority of program marketing and outreach activities should be outsourced, to the extent feasible, although the program administrator shall actively participate and assist contractor efforts for this purpose.

- Program administrators shall have the flexibility to select the manner of outsourcing (e.g., competitive bidding, sole source contracting) for the programs adopted today.

5. Under the self-generation program authorized today, program administrators shall offer the following incentives on a uniform, statewide basis:

Incentive category	**Incentive offered**	**Maximum percentage of project cost**	**Minimum system size**	**Maximum system size**	**Eligible Technologies**
Level 1	$4.50/watt (W)	50%	30 kilowatt (kW)	1 megawatt (MW)	▪ Photovoltaics ▪ Fuel cells operating on renewable fuel ▪ Wind turbines
Level 2	$2.50/W	40%	None	1 MW	▪ Fuel cells operating on non-renewable fuel and utilizing waste heat recovery
Level 3	$1.00/W	30%	None	1 MW	▪ Microturbines utilizing waste heat recovery and meeting reliability criteria ▪ Internal combustion engines and small gas turbines, both utilizing waste heat recovery and meeting reliability criteria

6. As described in this decision, hybrid self-generation systems that incorporate multiple technologies shall be eligible for payments based on the appropriate incentive category, and the program applications should provide for these systems.

7. Interconnection fees for systems funded under the self-generation program shall be included in the total installation costs when determining the maximum size of the self-generation incentive. Today's decision does not address or adopt policies regarding the waiver of these fees or of standby charges for distributed generation technologies.

8. Level 1 and 2 technologies installed under the self-generation program shall be covered by a warranty of not less than five years, consistent with the requirements of the California Energy Commission's (CEC) Emerging Renewables Buy-Down Program. Level 3 technologies shall be covered by a warranty period of not less than three years. The customer installing the Level 3 system shall purchase a minimum of a three-year maintenance contract from the manufacturer or a vendor in order to comply with this requirement, if the system does not already include the required warranty. The customer may include the cost of this warranty in the system cost, for purposes of calculating the program incentive, up to the maximum percentage levels allowed.

9. As described in this decision, program administrators shall have flexibility in selecting program delivery mechanisms for the self-generation program, subject to the following requirements:

- Available incentive funding (dollars per watt or percentage of system cost) is fixed on a statewide basis at the levels authorized in today's decision.
- Inspections are conducted to verify that the funded self-generation systems are actually installed and operating.

- The measurement and verification protocols established by the administrators include some sampling of actual energy production by the funded self-generation unit over a statistically relevant period.

10. Program administrators shall have flexibility to reallocate and shift funds within the authorized program budgets as described in this decision.

11. As described in this decision, program administrators for the demand-responsiveness programs shall have flexibility within the adopted program funding levels to 1) select the design and level of customer incentive, 2) establish monthly consumption threshold levels for defining the high consumption target groups, and 3) select the specific technologies employed in the residential and small commercial demand-responsiveness programs. However, any technology installed for these programs must include the following features:

- Provide customers some level of control (e.g., thermostat setting override) over their own heating, ventilation and air-conditioning equipment.
- Provide interactive information for consumers to make consumption decisions (e.g., via the thermostat or a computer internet connection), and
- Allow the administrator to verify actual interruption of the individual device at the customer site, including duration and level of kW demand reduction.

12. The programs authorized today shall be evaluated during and after the program period, as follows:

- For the residential and small commercial demand-responsiveness pilot programs, SDG&E and SCE shall each conduct a process evaluation during 2001 and an energy savings and peak demand savings impact study at the end of 2002.

- For the interactive and cost information pilot program, PG&E shall contact site users and non-users to discuss their satisfaction with the information on the site and suggest potential improvements.

- Program administrators for the self-generation program shall perform program evaluations and load impact studies to verify energy production and system peak demand reductions. In particular, program administrators shall monitor the extent to which self-generation units installed under this program operate during peak periods. The costs of monitoring equipment installed for this purpose shall be paid from program funds. Program administrators shall direct their independent evaluation consultants or contractors to develop a process for monitoring and collecting this data from program participants. At the end of the first program year, administrators shall report to the Commission on peak operation from the program, and continue this reporting in subsequent years. By the end of the second program year, the consultants or contractors shall present recommendations on incentive or program designs that could improve on-peak load reduction from self-generation.

- Program administrators for the self-generation program shall also conduct an independent analysis of the relative effectiveness of the utility and non-utility administrative approaches we adopt today.

13. Program administrators shall outsource to independent consultants or contractors all program evaluation activities. Energy Division shall assist program administrators in the development of the scope of work, selection criteria and the evaluation of submitted proposals to perform these program evaluations. The assigned Administrative Law Judge, in consultation with Energy Division and the program administrators, shall establish a schedule for filing the required evaluation reports. Energy Division shall hold a workshop with program administrators as soon as practicable to develop scheduling proposals for this purpose.

14. As described in this decision, Energy Division shall hire an independent consultant to develop a cost-effectiveness method that can be used on a common

basis to evaluate all programs that will remove electric load from the centralized grid, including energy efficiency, load control/demand-responsiveness programs and self-generation. Energy Division shall utilize funds appropriated for the implementation of AB 970 for this purpose.

The scope of work shall encompass the development of methodologies, input assumptions and forecasts for addressing § 399.15(b)(8) and other cost-effectiveness issues. Energy Division shall submit the final consultant report no later than December 31, 2002, and serve a notice of its availability to all appearances and the state service list in this proceeding (or its successor) . Energy Division may hold public workshops with the consultant and interested parties during the development of this methodology, as it deems appropriate. The Assigned Commissioner or Administrative Law Judge shall establish a schedule for comments on the final report.

15. Customers installing self-generation systems eligible for the CEC Emerging Renewables Buy-Down Program may augment the funding received from that program with funding available from today's adopted self-generation program, up to the maximum incentive limits. Program administrators shall work with the CEC to ensure the appropriate tracking and accounting of who receives funding, so that an applicant can be easily crosschecked to make sure that there is no duplication.

16. Program administrators should take advantage of the work already done by the CEC in developing appropriate program details to encourage self-generation, and SoCal shall convene a working group including PG&E, SCE, SDG&E, and the San Diego Regional Energy Office to select final program details for statewide implementation, as soon as practicable.

17. SCE and SoCal shall coordinate their marketing and tracking of program incentives very carefully in order to ensure that customers do not receive incentives for the same self-generation equipment from both utilities. In the alternative, SoCal may administer the self-generation program for the combined geographic region, if SCE and SoCal so agree.

18. The Energy Division shall work with the respondent utilities and the California Energy Commission (CEC) to develop reliability criteria for fossil generators participating in the self-generation program and to ensure coordination with CEC programs as discussed in this decision.

This order is effective today.

Dated March 27, 2001, at San Francisco, California.

LORETTA M. LYNCH
President
CARL W. WOOD
GEOFFREY F. BROWN
Commissioners

I dissent.

/s/ HENRY M. DUQUE
Commissioner

I dissent.

/s/ RICHARD A. BILAS
Commissioner

Attachment 1

Adopted Programs to Fulfill AB970 Load Control and Distributed Generation Requirements

(Public Utilities Code Section 399.15(b))

(Paragraphs 4 through 7)

March 26, 2001

Table of Contents

DEMAND - RESPONSIVENESS PROGRAMS

Residential Demand-Responsiveness Pilot Program

Overview

Brief description

This pilot program is designed to test the viability of a new approach to residential load control and demand-responsiveness through the use of internet technology and thermostats to affect HVAC energy use. This program is designed to include approximately 5,000 residential customers in the San Diego Gas & Electric service territory, representing an estimated 4 MW in peak demand reduction, to produce savings before the end of 2002. Consumers will be provided with the necessary technology installation and a small incentive for program participation.

Rationale

We prefer this program to other residential load control program options for the following reasons:

- Potential for peak demand reduction through control of residential and small commercial HVAC appliances
- Probability of customer acceptance
- Utilization of internet platform, which ensures likelihood of forward compatibility of technology
- Data collection ability for measurement and evaluation purposes
- Ability to test residential customer response to energy market demand and price fluctuations.

SDG&E will be the administrator of this pilot program.

Objectives

The main objective of this program is to fulfill the statutory requirement of AB970 contained in PU Code 399.15(b) paragraph 5. This paragraph requires the PUC to undertake the following activity: “Evaluation of installing local infrastructure to link temperature setback thermostats to real-time price signals.”

This pilot program will accomplish this directive, while simultaneously testing other assumptions of interest to the PUC including:

- Consumer participation and behavior patterns in the program
- Consumer satisfaction with newer interactive load control technologies
- Responsiveness of residential customer load to price or system demand signals
- Ability of such programs to deliver reliable and verifiable energy and demand savings.

Administrative responsibility

Commission role

For this pilot program, the Commission will perform traditional oversight of program design, roll out, and implementation. In addition, the Commission will post program information on its web site, so that consumers and other interested parties may learn about the program.

Utility role

SDG&E's functions for this pilot program include:

- Collecting and accounting for program funding from electric distribution customers
- Fine tuning program design and implementation
- Contracting with a third party for program services and equipment
- Acting as a contract administrator for program delivery
- Conducting customer recruiting for program participation, including posting information on utility web site
- Providing marketing assistance and facilitation to contractor(s) providing program delivery
- Performing regulatory reporting functions for the program
- Contracting with independent evaluator(s) to conduct a process evaluation beginning in 2001 and a load impact evaluation after 2002 and at the end of the pilot period (or another schedule established by the Commission).

Third party role

The third party (or parties) for this program will be equipment and service providers. These third parties will provide:

- Connected HVAC programmable thermostats for residential customers
- Data services and software
- Installation services
- System administration
- Communications services
- Settlements and / or reporting of program activity.

The utility will also be required to hire an independent contractor to perform the program evaluations and load impact studies to verify energy savings and peak demand reductions produced by this pilot program.

Eligibility

Participant

For purposes of this pilot program, SDG&E will target three distinct residential customer groups to test program concept viability for each. These include: 1) residential customers whose average monthly electricity consumption is greater than average for their customer class, with the exact specified consumption level to be determined by SDG&E; 2) residential customers residing in geographical areas in SDG&E service territory known to have high electricity consumption due to climate; and 3) customers residing in known limited- to moderate-income areas.

Technology

SDG&E has flexibility to select the exact nature of the technology utilized for this program, based on bids received from technology suppliers. The preferred technologies eligible to be included in this program should be programmable HVAC (connected) thermostats with two-way internet connectivity. SDG&E should not consider technologies that simply allow the utility to interrupt load on a one-way basis. At a minimum, the technology selected must have the following characteristics:

- Allow each customer some level control over its own HVAC equipment (override, etc.)
- Provide interactive information for consumers to make consumption decisions (e.g. via the thermostat or a computer internet connection), and
- Allow the administrator to verify actual interruption of the individual device at the customer site, including duration and level of kW demand reduction.

Program Expenditures

Budget

The table below includes initial estimates of annual program costs. These will be further refined once the utility issues a request for proposal and receives bids from contractors for exact costs.

Item and assumptions	Estimated Cost
Administrative Costs	
Contract administration, marketing, and regulatory reporting, and program evaluation (admin. and marketing may not exceed 5% of total budget)	$786,000
Installation, service, and operation costs	
Includes hardware, software, installation costs, communications costs, and customer incentives	$3,144,000
Total Annual Program Budget	**$3,930,000**

Incentive Structure

All program participants will receive the equipment and installation free of charge from the utility. In addition, the customer should receive an incentive at the end of each year of program participation. The program administrator shall set a program incentive, which may include an annual program incentive, override penalties, and / or on-peak interruption bonuses.

Verification

Purpose

The purpose of verification in the context of this program is to ensure that the technologies installed in residential homes through the program are installed and operating properly, and have the potential to deliver energy and peak demand savings. Verification should also produce the information necessary to estimate the energy and peak demand savings delivered at each customer site. Evaluation of the aggregate energy and demand savings achieved by the program should be the responsibility of the independent evaluator hired by the utility.

Responsibility

Responsibility for verification of installation of technologies and program operation should be retained by the utility. The utility should verify that the third party hired to deliver the program to consumers has installed operating equipment at residential customer sites. Site inspections should be done on a

random sample of at least 10% of homes participating in the program. The utility or its agents should be responsible for these verification inspections.

Procedures or protocols

The hardware and software offered by the delivery contractor for this program should have the capability for periodic reporting of thermostat settings and consumer behavior, for payment settlement purposes. This information should also be made available to the program evaluator hired by the utility in order to estimate aggregate energy savings and peak demand reduction impacts of the pilot program.

Program process

The first step in the program process for this residential pilot is for the utility to issue an RFP and select a contractor or team of contractors to handle technology installation at customer sites, as well as software setup at the utility site. The contractor or contractors should be competitively selected through an open solicitation process. Once this contractor is selected, the utility and contractor can jointly begin to recruit residential customers for program participation.

Application

No application from individual customers should be required for this program, except a signed affidavit from the customer agreeing to have the equipment installed at their home and that they understand the terms and conditions of the pilot program. The contractor should have the authority to interact with the customer to make sure the necessary paperwork and program understanding is accomplished with each and every participating residential customer.

Installation

The contractor should also coordinate with individual consumers to arrange installation and setup of equipment. The utility may either manage this process or ask that the contractor handle the scheduling and coordination of equipment installations.

Operation

Once equipment has been installed at the customer's home, the program can be operated by setting a customer's thermostat to a preset default, the exact nature of which should be determined at the outset of the program by SDG&E. SDG&E should define what will be considered an "event." A maximum number of events during an annual program period should be set. A customer should have the ability to override the thermostat setting at any time during an event, with some loss of incentive. The program operators may wish to vary the thermostat

settings and / or the numbers of hours over which each event occurs to test consumer tolerance and reactions to different operating procedures or schedules.

Payment

Customers should receive free equipment and installation at the beginning of program participation. At the end of each year of participation, the customer should receive from the utility for the amount set by the applicable incentive program.

Evaluation

The utility should contract with a third party consultant to conduct both a process evaluation during 2001 and an energy savings and peak demand savings impact study at the end of 2002, and thereafter on a schedule to be set by the Commission.

Marketing and Promotion

At a minimum, information about the program should be made available to target households through the utility web site and bill inserts. Community-based organizations should also be involved in program marketing and outreach, to the extent feasible. In addition, utility representatives should work with the program delivery contractor to contact and recruit interested customers.

The CPUC will also include information about the program on its web site, and include links or contact information at the utility where consumers can request more information.

Small Commercial Demand-Responsiveness Pilot Program

Overview

Brief description

This pilot program is designed to test the viability of a new approach to small commercial load control and demand-responsiveness through the use of internet technology and thermostats to affect HVAC energy use. This program is designed to include approximately 5,000 small commercial customers in the Southern California Edison service territory, representing an estimated 4 MW in peak demand reduction, to produce savings before the end of 2002. Consumers will be provided with the necessary technology installation and a small incentive for program participation.

Rationale

We chose this program over other small commercial load control program options for the following reasons:

- Potential for peak demand reduction through control of small commercial HVAC appliances
- Probability of customer acceptance
- Utilization of internet platform, which ensures likelihood of forward compatibility of technology
- Data collection ability for measurement and evaluation purposes
- Ability to test customer response to energy market demand and price fluctuations.

We direct that SCE implement this pilot program.

Objectives

The main objective of this program is to fulfill the statutory requirement of AB970 contained in PU Code 399.15(b) paragraphs 4, 5, and 6 to "equip commercial buildings with the capacity to automatically control thermostats…", "evaluate installation of local infrastructure," and provide "incentives for load control." This pilot program will accomplish these directives, while simultaneously testing other assumptions of interest to the PUC including:

- Consumer participation and behavior patterns in the program

- Consumer satisfaction with newer interactive load control technologies
- Responsiveness of small commercial customer load to price or system demand signals
- Ability of such programs to deliver reliable and verifiable energy and demand savings

Administrative responsibility

Commission role

For this pilot program, the Commission will perform traditional oversight of program design, roll out, and implementation. In addition, the Commission will post program information on its web site, so that consumers and other interested parties may learn about the program.

Utility role

SCE's functions for this pilot program include:

- Collecting and accounting for program funding from electric distribution customers
- Fine tuning program design and implementation
- Contracting with a third party for program services and equipment
- Acting as a contract administrator for program delivery
- Conducting customer recruiting for program participation, including posting information on utility web site
- Providing marketing assistance and facilitation to contractor(s) providing program delivery
- Performing regulatory reporting functions for the program
- Contracting with independent evaluator(s) to conduct a process evaluation in 2001 and a load impact evaluation after 2002, and annually thereafter (exact schedule to be determined).

Third party role

The third party (or parties) for this program will be equipment and service providers. These third parties will provide:

- Connected HVAC programmable thermostats for small commercial customers
- Data services and software
- Installation services
- System administration
- Communications services

- Settlements and / or reporting of program activity.

The utility will also be required to hire an independent contractor to perform the program evaluations and load impact studies to verify energy savings and peak demand reductions produced by this pilot program.

Eligibility

Participant

For purposes of this pilot program, we recommend targeting three distinct small commercial customer groups, to test program concept viability for each: 1) small commercial customers with high average monthly consumption in the summer; 2) small commercial customers in geographical areas in SCE service territory known to have high electricity consumption due to climate; and 3) customers located in small cities or rural areas. Small commercial customers are precluded from participating in both the §399.15(b) demand responsiveness programs and other demand responsiveness programs offered by other state agencies or the interruptible programs being considered in R.00-10-002.

Technology

SCE has flexibility to select the exact nature of the technology utilized for this program, based on bids received from technology suppliers. The preferred technologies eligible to be included in this program should be programmable HVAC (connected) thermostats with two-way internet connectivity. SCE should not consider technologies that simply allow the utility to interrupt load on a one-way basis. At a minimum, the technology selected must have the following characteristics:

- Allow each customer some level control over its own HVAC equipment (override, etc.)
- Provide interactive information for consumers to make consumption decisions (e.g. via the thermostat or a computer internet connection), and
- Allow the administrator to verify actual interruption of the individual device at the customer site, including duration and level of kW demand reduction.

Program Expenditures

Budget

The table below shows initial estimates of annual program costs. These will be further refined once the utility issues a request for proposal and receives bids from contractors for exact costs.

Item and assumptions	Estimated Cost
Administrator Costs	
Contract administration, marketing, and regulatory reporting, and program evaluation (admin and marketing limited to a maximum of 5% of budget)	$1,188,000
Installation, service, and operation costs	
Includes hardware, software, installation costs, communications, and customer incentives	$4,752,000
Total Annual Program Budget	$5,940,000

Incentive Structure

All customers participating in the program should receive the equipment and installation free of charge from the utility. In addition, the customer should receive a one-time incentive payment at the end of each year of program participation. The program administrator shall set a program incentive, which may include an annual program incentive, override penalties, and / or on-peak interruption bonuses.

Verification

Purpose

The purpose of program verification is to ensure that the technologies installed at small commercial sites through the program are installed and operating properly, and have the potential to deliver energy and peak demand savings. Verification should also produce the information necessary to estimate the energy and peak demand savings delivered at each customer site. Evaluation of the aggregate energy and demand savings achieved by the program should be the responsibility of the independent evaluator hired by the utility.

Responsibility

The utility will have responsibility for verification of technology installation and program operation. The utility should verify that the third party hired to deliver the program to consumers has installed operating equipment at small commercial customer sites. Site inspections should be conducted on a random

sample of at least 10% of small businesses participating in the program. The utility or its agents will be responsible for these verification inspections.

Procedures or protocols

The hardware and software offered by the delivery contractor for this program should have the capability for periodic reporting of thermostat settings and consumer behavior, for payment settlement purposes. This information should also be made available to the program evaluator hired by the utility in order to estimate aggregate energy savings and peak demand reduction impacts of the pilot program.

Program process

The first step in the residential pilot program process is for the utility to issue an RFP and select a contractor or team of contractors to handle technology installation at customer sites, as well as software setup at the utility site. The contractor or contractors should be competitively selected through an open solicitation process. Once this contractor is selected, the utility and contractor can jointly begin to recruit small commercial customers for program participation.

Application

No application from individual customers should be required for this program, except a signed affidavit from the customer agreeing to have the equipment installed at their site and that they understand the terms and conditions of the pilot program. The contractor should have the authority to interact with the customer to make sure the necessary paperwork and program understanding is accomplished with each and every participating small commercial customer.

Installation

The contractor should also coordinate with individual consumers to arrange installation and setup of equipment. The utility may either manage this process or ask that the contractor handle the scheduling and coordination of equipment installations.

Operation

Once equipment has been installed at the customer's site, the program can be activated by setting a customer's thermostat to a preset default for a maximum time period to be determined at the outset of the program. Each interruption period will be considered an "event." A maximum number of events during an annual program period should also be determined at the beginning of the program and communicated to the customer. A customer should have the ability to override the thermostat setting at any time during an event. The program

operators may also wish to vary the thermostat settings and / or the numbers of hours over which each event occurs to test consumer tolerance and reactions to different operating procedures or schedules.

Payment

Customers will receive free equipment and installation at the beginning of program participation. At the end of each year of participation, the utility should pay the applicable program incentive to the customer.

Evaluation

The utility must contract with a third party consultant to conduct both a process evaluation during 2001 and an energy savings and peak demand savings impact study at the end of 2002. Other evaluation schedules will be set by the Commission.

Marketing and Promotion

At a minimum, information about the program should be made available to target small commercial customers through the utility web site and bill inserts. Community-based organizations and small business associations should also be involved in program marketing and outreach, to the extent feasible. In addition, utility representatives should work with the program delivery contractor to contact and recruit interested customers.

The CPUC will also include information about the program on its web site, and include links or contact information at the utility where consumers can request more information.

Interactive Consumption and Cost Information for Small Customers

Overview

Description

The purpose of this program is to provide small, less sophisticated electric customers with access to high-quality information about the changing electricity market. This program requires PG&E to hire a web-site designer to develop a pilot site to test internet support for the needs of small customers. In addition to market information, including prices and costs, customers should be able to access their demand and consumption profiles, to help them understand better how their electric bills are (or will be) influenced by their load profiles.

Rationale

In this rapidly changing electricity market, many consumers, especially small ones, require access to dependable and straightforward information about electricity prices and costs. Missing from many press and public agency accounts of the crisis is the link between activities of the FERC, ISO, PUC, Legislature, Governor, or utility and the customer's own energy profile. This pilot program will explore how provision of this type of information to smaller consumers can be tailored to help close the information gap.

Objectives

The program objectives are:

- Link market information with customer consumption information
- Test costs and benefits of this approach to consumer outreach (in addition to more traditional audit programs PG&E already offers)
- Link information contained on this site to customer solutions, including equipment and appliance manufacturers that provide high-efficiency products and services
- Explore the nexus of utility and third party services to consumers.

Administrative Responsibility

Commission role

The Commission will oversee program design and implementation. The Commission will also post announcements of this pilot on its web site.

Utility role

We nominate PG&E to administer this program, because we find their current online customer services already more advanced than those of the other utilities. We do not, however, recommend that PG&E develop this web site in-house. Instead, we recommend that PG&E take on the role of marketing the new site to a select group of customers. PG&E should also hire an independent web design consultant to develop the site. PG&E should hire an independent evaluation contractor to study customer reaction to the site and recommend changes and improvements before more widespread deployment of the strategy. We understand that several similar efforts have been ordered in various Commission decisions and that the utilities are already working on a joint statewide website. This effort is intended to be more robust and go beyond those activities.

Third party role

As discussed above, an independent web design contractor should develop and host the site linked from the PG&E main web site. Since the site will contain individual customer data, the web developer will likely be required to sign a confidentiality agreement to protect consumer usage data.

PG&E should hire a separate contractor to evaluate the program concept and customer reaction.

Eligibility

Participant

We recommend targeting this program at approximately 10,000-15,000 selected residential and small commercial customers in PG&E's service territory. Targeted customers could be any or all of the following:

- Residential customers with higher than average monthly consumption for their customer class (the exact specified amount is to be determined by PG&E)
- Residential customers known to have swimming pools
- Homes and small businesses on the San Francisco peninsula or in Silicon Valley
- Rural residences and small businesses

Technology

The site developed should be located on the web, hosted by an independent web site developer, and contain the following information, at a minimum:

- Up-to-date information about the structure of the California electricity market and how it affects small customers
- Information about how electricity is priced
- Rate tariff options for residential customers, explained in simple terms (not simply copies of tariff schedules)
- Customer online access to their own historical energy bill information
- Representative energy usage and cost information for common appliances, including refrigerators, ovens, dishwashers, clothes washers, dryers, televisions, and computers
- Links to manufacturers or retailers of high-efficiency appliances, tailored to the appliance or equipment needs of the individual
- Information about low-cost efficiency options and how much energy and bill savings they could produce, tailored to customer's geographic area
- Information about renewable self-generation options, costs, and benefits
- Links to manufacturers or retailers of self-generation equipment.

Program Expenditures

Budget

The table below gives preliminary annual budget information for planning purposes. Actual expenditures will likely vary, depending on the bids received by PG&E for web development and hosting services, as well as for program evaluation.

Item and assumptions	Estimated Cost
Administrator Costs	
Contract administration, marketing, and regulatory reporting, and program evaluation (admin. & marketing limited to 5% of total budget)	$600,000
Service and Operation Costs	
Includes web development and hosting, including secure access to customer confidential historical billing data, plus incentives for consumers	$2,400,000
Total Annual Program Budget	**$3,000,000**

Incentives

We recommend that PG&E provide a small incentive to a customer for actually logging onto the web site and accessing their own energy profile. This incentive could be in the form of a gift certificate of approximately $20 for a home improvement center, appliance store, or a particular product, such as a compact fluorescent lamp. This small bonus is intended to produce initial interest in viewing the site. Our intention is to provide customers with useful information on the site so that they will return to the site to further increase their energy consumption knowledge.

Verification

Purpose

In the case of this program, the purpose of verification is to determine how many customers access the web site, what kinds of information they look at once there, and if they make repeat visits. "Click-through" rates to sites of appliance manufacturers or retailers should also be tracked.

Responsibility

The web development consultant and hosting contractor will be responsible for verification. Verification information should be reported by PG&E in its periodic reporting to the Commission.

Program Process

Development

The first step is for PG&E to issue an RFP to hire a web development consultant to develop the web site. Development of the information aspects of the site should proceed first so all utility customers can use it. Customer-specific data, including secure access over the web, should be developed second.

Monitoring

The web-hosting contractor should perform periodic statistical analysis of site usage. The contractor should also provide PG&E with information about which customers have accessed the site. This will allow PG&E to send that customer their incentive coupon or gift certificate.

Payment

When the web site contractor notifies PG&E that a customer has access their own energy profile on-line, PG&E should process the incentive/gift and send it directly to the customer.

Evaluation

PG&E should hire an independent evaluation contractor to contact site users and non-users to discuss their satisfaction with the information on the site and suggest potential improvements.

Marketing and Promotion

While the site is under development, PG&E should select customers for receipt of program marketing materials encouraging testing of the site. Bill inserts should be sent to those eligible customers explaining the features of the site and offering the incentive gift certificate or coupon.

SELF - GENERATION PROGRAM

Self-Generation Program

Overview

Description

This program is intended to encourage installation of several types of self-generation technologies, both renewable and non-renewable, as detailed below. The installations may occur at any type of customer site in California. This proposal is designed to complement the current CEC buy-down program, which tends to fund smaller renewable units, while capturing the significant benefits of larger distributed generation units. Such benefits include: greater reduction of grid-supplied electricity, lower installation cost per kW, and, in the case of renewable installations, greater environmental benefits for all Californians.

This program targets photovoltaic, wind, and renewable fuel cell installations of 10 kW or greater. Customers installing units beginning January 1, 2001 should be eligible for program incentives regardless of when they become available.

This program offers differential incentives for self-generation technologies, differentiated by their fuel type, air emissions characteristics, and system costs. Photovoltaics, wind turbines, and fuel cells using renewable fuels are eligible for $4.50 per watt of installed on-site renewable generation capacity, up to a maximum of 50% of total installation costs. Nonrenewable fuel cells utilizing waste heat recovery and meeting reliability criteria may receive $2.50 per watt, up to a maximum of 40% of system cost. Any type of microturbine or internal combustion engine utilizing waste heat recovery may qualify for $1.00 per watt of on-site generation, up to 30% of total project costs. Administrators will administer this program through their existing energy efficiency standard performance contract (SPC) programs and / or similar program approaches. Contractors and energy service companies participating in this program will also be eligible to receive incentives on behalf of customers.

Rationale

In AB 970, the California legislature demonstrated that renewable technologies and self-generation are a policy priority. Self-generation and the use of renewables can provide significant benefits to Californians by improving the quality and reliability of the state's electricity distribution network, which is critical to the state's economic vitality, while protecting

the environment and developing "green" technologies. The statute directs the Commission to adopt incentives for distributed generation to be paid for enhancing reliability, and differential incentives for "renewable or super-clean distributed generation resources."[11]

The self-generation incentives provided through this programs are intended to:

- encourage the deployment of distributed generation in California to reduce the peak electric demand;[12]
- give preference to new renewable energy capacity; and
- ensure deployment of clean self-generation technologies having low and zero operational emissions.

Given the high prices experienced over the last year, the transmission constraints that will persist in California for the near future, air quality considerations, California's residents and businesses are more receptive than ever to thinking about alternative generation resources. The biggest drawback is cost. It is in the best interest of all Californians to reduce the strains on infrastructure, economy, and environment, by actively promoting renewable and super-clean technologies.

Objectives

The main objectives of this program are to fulfill the requirements of PU Code §399.15 (b) paragraph 6 and 7, which call for "incentives for distributed generation to be paid for enhancing reliability" and "differential incentives for renewable or super clean distributed generation resources." This program also meets the following additional objectives:

- Utilize an existing network of service providers and customers to provide access to self-generation technologies quickly
- Provide access at subsidized costs that reflect the value to the electricity system as a whole, and not just individual consumers
- Help support continuing market development of the energy services industry
- Provide access through existing infrastructure, administered by the entities with direct connections to and trust of small consumers

[11] AB970 contained in PU Code 399.15(b) paragraphs 6 and 7.

[12] For this reason, self-generators installed primarily as backup or emergency power are not eligible for the program.

- Take advantage of customers' heightened awareness of electricity reliability and cost.

Administrative Responsibility

Commission role

The Commission will oversee program design, roll out, and program implementation. In addition, the Commission will post program information on its web site, so that consumers and other interested parties may learn about the program.

Administrator role

PG&E, SCE and SoCalGas will administer the program in their own service territories, while SDG&E should contract with the San Diego Regional Energy Office (SDREO) to implement the program in its territory. We ask SoCalGas to lead a working group of all five entities to refine program design and ensure statewide consistency in program delivery. The utilities will be responsible for collecting and accounting for funding collected from their distribution customers. All administrators (including SDREO) will be responsible for the following:

- Fine tuning program design and implementation
- Modifying program forms and administrative procedures
- Verifying, or hiring a contractor to verify, installation of systems at customer sites
- Dispersing payment for installed systems after verification of installation
- Working with contractors and energy service companies participating in other energy efficiency programs to conduct customer recruiting for program participation
- Posting program information, including application form, on the internet
- Performing regulatory reporting functions for the program
- Contracting with independent evaluator(s).

Third party role

The third party (or parties) may be energy service companies or general contractors who install self-generation systems at eligible customer sites. The administrator will be required to hire an independent contractor to perform the program evaluations and load impact studies to verify energy production and system peak demand reductions produced by this program.

Eligibility

Participant

Any customer of an investor-owned distribution company in California is eligible to receive incentives from this program. In addition, contractors or energy service companies who install self-generation units at these customers' sites are also eligible to receive program incentives in lieu of customer receipt of the incentives, as long as the customer agrees.

The following entities are not eligible for incentives under this program:

- Customers who have entered into contracts for DG services (e.g. DG installed as a distribution upgrade or replacement deferral) and who are receiving payment for those services; (this does not include power purchase agreements, which are allowed)
- Customers who are participating in utility interruptible or curtailable rate schedules or programs
- Customers who are participating in any other state agency-sponsored interruptible, curtailable, or demand-responsiveness program
- Utility distribution companies themselves or their facilities.

Technology Eligibility and Incentive Structure

For purposes of this program, renewable and non-renewable self-generation technologies will be eligible for incentives according to the following structure:

Incentive category	Incentive offered	Maximum percentage of project cost	Minimum system size	Maximum system size	Eligible Technologies
Level 1	$4.50 / W	50%	30 kW	1 MW	▪ Photovoltaics ▪ Fuel cells operating on renewable fuel ▪ Wind turbines
Level 2	$2.50 / W	40%	None	1 MW	▪ Fuel cells operating on non-renewable fuel and utilizing waste heat recovery
Level 3	$1.00 / W	30%	None	1 MW	▪ Microturbines utilizing waste heat recovery and meeting reliability criteria ▪ Internal combustion engines and small gas turbines, both utilizing waste heat recovery and meeting reliability criteria

Systems installed under Levels 1 and 2 must be covered by a warranty of not less than five years. Systems installed under Level 3 must be covered by a warranty of not less than three years. Where those Level 3 systems are not warrantied by the manufacturer for at least three years, customers should purchase a minimum of a three-year service contract from the manufacturer or a vendor in order to comply with this requirement. The customer may include the cost of this warranty in the system cost, for purposes of calculating their program incentive, up to the maximum percentage levels specified.

"Hybrid" self-generation systems that incorporate technologies from different incentive categories will receive payments based on the appropriate category. Diesel-fired systems are ineligible for participation in this program.

In addition, applicants to the program will be allow to consider interconnection fees charged by the utilities as part of the cost of the system, for purposes of calculating the incentive.

Program Expenditures

Budget

The table below gives annual estimates of program costs for each administrator.

Item and Assumptions	PG&E	SCE	SoCalGas	SDREO
Administrator Costs				
Incremental design, contract administration, marketing, regulatory reporting, and program evaluation (admin. and marketing not to exceed 5%)	$12,000,000	$6,500,000	$3,400,000	$3,100,000
Incentives				
Maximum available for all types of systems	$48,000,000	$26,000,000	$13,600,000	$12,400,000
Total Program Budget	**$60,000,000**	**$32,500,000**	**$17,000,000**	**$15,500,000**

Verification

Purpose

The purpose of program verification is to ensure that the self-generation units installed at customer sites are installed and operating properly, and have the potential to deliver electric generation. Safety of electrical connections and interconnection (if applicable) should be an important priority of the verification process.

Responsibility

As with the current SPC programs, the responsibility for measurement and verification of energy savings rests with the applicant to the program. The administrator or its independent contractors should be responsible for inspection of installations, but not verification of energy production from self-generation systems.

Procedures or protocols

The existing SPC programs have protocols and procedures designed to measure energy savings from energy efficiency measures. These protocols should be modified and updated to include measurement and verification of energy production from self-generation and cogeneration units, as well as any associated gas or electric efficiency gains. Although the administrator has discretion to utilize other non-SPC program delivery, any program design must include a protocol for estimating the energy production of the self-generation units through a consistent and accepted methodology (using monitoring,

statistical sampling techniques, etc.). The administrators are responsible for designing, or hiring a contractor to design, the exact protocols required by the self-generation programs.

Program process

The preferred approach is to operate the self-generation program through existing SPC program rules and procedures, where possible. The administrators, through the working group led by SoCalGas, should finalize all program details prior to program launch in each service territory. Additional requirements related to self-generation installations are included below.

Application

The applicant must provide copies of the following information as proof of installation and parallel operation with the utility distribution grid:

- the final purchase invoice of the self-generation system;
- affidavit signed by the installer of the system and customer stating that the system has been purchased and installed, and that an administrator representative or contractor will be allowed to inspect or monitor the system;
- the building permit showing final inspection signoff;
- an interconnection agreement executed with the utility for the system (if applicable).

Marketing and Promotion

Program marketing should be conducted through existing networks of SPC program service providers. Administrators are also required to provide information about this program to professional organizations representing distributed generation manufacturers, vendors, potential customers, and other interests. Examples of such organizations are the Distributed Power Coalition of America (DPCA) and the California Alliance for Distributed Energy Resources (CADER). Promotion should also be conducted through bill inserts, Internet (e.g. PUC, utility, and industry additional web sites), and other media.