

# **Self-Generation Incentive Program Administrator Comparative Assessment**

Prepared for:

Southern California Edison  
2244 Walnut Grove Avenue  
Rosemead, California 91770

Submitted by:

Itron, Inc.  
11236 El Camino Real  
San Diego, California 92130  
(858) 481-0081

September 2, 2003



# Table of Contents

---

<b>Executive Summary</b> .....	<b>1</b>
ES.1 Evaluation Objectives and Approach.....	1
ES.2 Data Collection.....	2
ES.3 Comparison of Organizational Structure .....	2
ES.4 Administrator Effectiveness.....	3
ES.5 Findings and Conclusions .....	3
<b>1 Introduction</b> .....	<b>1-1</b>
1.1 Overview.....	1-1
1.2 Background .....	1-1
1.3 Current Situation.....	1-3
<i>California DG Market Overview</i> .....	1-3
<i>Market Entities</i> .....	1-5
<i>Administration Within San Diego Gas &amp; Electric Service Area</i> .....	1-6
1.4 Report Organization .....	1-7
<b>2 Objectives and Approach</b> .....	<b>2-1</b>
2.1 Overview.....	2-1
2.2 Objectives.....	2-1
<i>Original Program Objectives</i> .....	2-1
<i>Evaluation Criteria</i> .....	2-2
<i>Additional Criteria</i> .....	2-3
2.3 Approach.....	2-4
<i>Overview</i> .....	2-4
<i>Data Collection</i> . The following three elements make up the data collection element of the study approach. ....	2-5
<i>Analysis</i> . The following are the analysis elements that utilize the collected data. ....	2-6
<i>Reporting</i> . A draft report was prepared and submitted to the Self-Generation Incentive Program Working Group for review and comment. Results from their comments will be incorporated into a final version to be filed with the CPUC in August 2003. ....	2-6
<i>Data Collection</i> .....	2-6
<i>Analysis</i> .....	2-7
<i>Reporting</i> .....	2-10
<b>3 Data Collection</b> .....	<b>3-1</b>
3.1 Introduction .....	3-1
3.2 Evaluation Data Sources .....	3-1
<i>Program Tracking Databases</i> .....	3-1
<i>First and Second-Year Process and Impact Evaluations</i> .....	3-3
<i>Utility Market Research</i> .....	3-3
<i>CPUC Documents</i> .....	3-3
<i>ORA's Review of Self-Generation</i> .....	3-3
<i>Industry Papers on Program Administration</i> .....	3-4

3.3 Interview Sample and Protocols .....	3-4
<b>4 Comparison of Organizational Structure .....</b>	<b>4-1</b>
4.1 General Organizational Structure.....	4-1
<i>Organizational Structure Overview</i> .....	4-1
<i>Related Issues</i> .....	4-2
4.2 Compatibility of Program and Policy Goals .....	4-3
<i>Policy and Program Goals</i> .....	4-4
<i>Administrator Goals</i> .....	4-4
<i>Conflict of Interest</i> .....	4-4
4.3 Fiscal Responsibility.....	4-6
4.4 Technical and Administrative Expertise .....	4-7
4.5 Marketing Support.....	4-8
<i>Promotional Activities</i> .....	4-8
<i>Industry Support</i> .....	4-8
4.6 Support of Program M&V Activities.....	4-9
4.7 Other Organizational Characteristics.....	4-9
<i>Customer Account Representatives</i> .....	4-9
<i>Host Customer Information</i> .....	4-10
<i>Proximity to Utility Functions</i> .....	4-10
<i>Host Customer Perceptions</i> .....	4-10
<i>Regulation</i> .....	4-11
<i>Risk Aversion</i> .....	4-11
<i>Program Funding</i> .....	4-11
4.8 Summary.....	4-12
<b>5 Comparison of Administrator Effectiveness .....</b>	<b>5-1</b>
5.1 Overview.....	5-1
5.2 Criteria .....	5-1
5.3 Comparison.....	5-2
<i>Program Participation</i> .....	5-2
<i>Administrative Cost Effectiveness</i> .....	5-4
<i>Administrative Efficiency</i> .....	5-7
<i>Emphasis on Clean Power</i> .....	5-9
<i>Demand Reduction</i> .....	5-12
<i>Market Outreach and Support</i> .....	5-14
<i>Customer Awareness</i> .....	5-17
<i>Customer and Supplier Satisfaction Ratings</i> .....	5-19
5.4 Summary.....	5-22
<b>6 Key Findings .....</b>	<b>6-1</b>
6.1 Summary of Key Findings .....	6-1
<i>Comparison of Organizational Structure</i> .....	6-2
<i>Comparison of Administrator Effectiveness</i> .....	6-3
<b>References .....</b>	<b>1</b>

**List of Tables**

Table ES-1: Comparative Assessment Findings.....5  
Table 1-1: Distributed Generation Operating in California.....1-3  
Table 1-2: Share of Operating Distributed Generation Among IOUs .....1-4  
Table 1-3: Completed Projects: Comparison of Programs .....1-5  
Table 2-1: Self-Generation Incentive Program Approved Evaluation Criteria .....2-3  
Table 5-1: Number of Program Applications and Estimated Installed Capacity .....5-3  
Table 5-2: Program Penetration Rates .....5-4  
Table 5-3: Administration Costs as a Percent of Overall Program Budget.....5-5  
Table 5-4: Administrative Cost per Application.....5-5  
Table 5-5: Administrative Cost per kW of System Capacity (\$/kW) .....5-6  
Table 5-6: Days Active Prior to Completion for Active and Complete Projects .....5-8  
Table 5-7: Clean Power Completed Projects..... 5-10  
Table 5-8: Clean Power Active Projects ..... 5-11  
Table 5-9: Summary of Demand Impacts on 2002 ISO System Peak Demand ... 5-13  
Table 5-10: Administrator Workshops..... 5-14  
Table 5-11: Number of Applications and Marketing Costs by Program Year ..... 5-15  
Table 5-12: Number of Applications Over Time, Active and Inactive ..... 5-16  
Table 5-13: Number of Applications Over Time, Complete and Total..... 5-16  
Table 5-14: Nonparticipant Host Customer Awareness of Self-Generation  
and the Self-Generation Incentive Program ..... 5-18  
Table 5-15: Supplier Comparison Ratings of Satisfaction ..... 5-22  
Table 6-1: Key Findings .....6-5

**List of Figures**

Figure 2-1: Study Approach.....2-5  
Figure 5-1: Customers “Very Familiar” with Distributed Generation  
Technologies ..... 5-19  
Figure 5-2: Customer Satisfaction Ratings by Application Status ..... 5-20  
Figure 5-3: Supplier Satisfaction Ratings by Technology..... 5-21

# Executive Summary

---

This report addresses the program administrator comparative assessment for the Self-Generation Incentive Program, as required under California Public Utility Commission (CPUC) Decision 01-03-073.<sup>1</sup> Since June 29, 2001, the Program has been available to provide financial incentives for the installation of new qualifying electric self-generation equipment. Under the direction of the CPUC Decision, the Self-Generation Incentive Program is offered and administered on a regional joint-delivery basis through three investor-owned utilities—Southern California Edison (SCE), Pacific Gas & Electric (PG&E), Southern California Gas Company (SoCalGas)—and one non-utility administrator entity, the San Diego Regional Energy Office (SDREO).<sup>2</sup> The Program will continue to accept applications through December 31, 2004, subject to the availability of each regional Administrator’s program funds for specific technologies and their respective program incentive levels within their geographic service areas.

## ES.1 Evaluation Objectives and Approach

The objective of this specific evaluation effort, as stated in Decision 01-03-073, is to provide “an examination of the relative effectiveness of the two administrative approaches.” This assessment does not provide a specific recommendation, nor does it identify a superior approach for the administration of the Self Generation Incentive Program.

The criteria for this assessment were derived from several sources, including: 1) the original goals of the program as stated in the CPUC Decision, 2) approved criteria developed to evaluate those goals for the impact and process evaluations, and 3) additional criteria developed as a result of research prepared for this study on administrative effectiveness.

The general approach for this evaluation consisted of defining the specific comparative assessment evaluation criteria and then analyzing data from program activity to date. More specifically, data were collected from existing information, interviews with key players, and results from the impact and process evaluations. Then, criteria were developed to measure the effectiveness of the two selected administrative approaches. In addition, each administrative approach was characterized with a general description of the organizational structure, staff and resource availability, including the goals and vision and/or mission

---

<sup>1</sup> Interim Opinion: Implementation of Public Utilities Code Section 399.15(b), Paragraphs 4-7; Load Control and Distributed Generation Initiatives. Rulemaking 98-07-037. March 27, 2001.

<sup>2</sup> SDREO was the CPUC-selected Program Administrator for San Diego Gas & Electric customers.

statements of the organization. Further, information was used to assess the effectiveness of each administrator type, relative to the effectiveness criteria that were developed for this assessment. Data from the program-tracking database and from the results of the second-year process and impacts evaluations were used to measure these criteria for both administrative approaches. Finally, summarization of the key findings of this analysis was presented.

## **ES.2 Data Collection**

Data for this comparative evaluation is discussed in Section 3 and were collected from the following sources:

- Review of relevant existing information,
- In-depth interviews with program applicants and key market players, and
- First and second-year program evaluations.

Examples of sources of existing information reviewed for this study include the program tracking database, participating utility market research reports, relevant CPUC documents, and recent industry papers on the administration of energy efficiency programs.

Program administrators in California and other states, as well as other industry representatives were interviewed for their opinions on administrative issues relevant to this study. In particular, respondents were asked about their opinions on the relative advantages and disadvantages of utility and non-utility administrative approaches, key issues surrounding the topic such as conflict of interest and cost effectiveness, and recommendations regarding other data sources.

Results from the Self-Generation Incentive Program Second-Year Process and Impact Evaluations were used in this study. Specifically, survey results on customer awareness and satisfaction, supplier satisfaction, and supplier opinions on program support for the energy services industry were used from the Process Evaluation, and 2002 CAISO peak demand impacts were incorporated from the Impact Evaluation.

## **ES.3 Comparison of Organizational Structure**

Key characteristics of the organizational make-up of each administrative approach were summarized. The issues addressed include the following:

- General organizational structure,
- Alignment of goals of the administrative organization with public policies,

- Conflict of interest,
- Attributes of fiscal responsibility - including accountability and legitimacy,
- Technical and administrative expertise,
- Marketing support,
- Support of M&V activities, and
- Other organizational characteristics.

These overall issues were developed from a review of the literature and from results of interviews with self-generation market players. Furthermore, the strengths and weaknesses inherent in each approach are discussed in Section 4.

#### **ES.4 Administrator Effectiveness**

Using the criteria described above that were developed for this assessment and program data collected through May 2003, a comparison of the administrative effectiveness of each approach was performed by the evaluation team. As stated above, it was not within the scope of this assessment to offer a recommendation or name a particular administrative approach as superior. Rather, a review and discussion of the desirable characteristics and relative performance to the stated comparative assessment criteria is provided in Section 5.

#### **ES.5 Findings and Conclusions**

This assessment evaluated two administrative approaches to the Self Generation Incentive Program, i.e. a utility administrator approach and a non-utility administrator approach, with the latter including the utility providing program funding and reasonableness review for each completed project. Due to the current design and funding mechanism established for the program, a true non-utility administrative approach is not feasible and thus was not able to be considered in this comparative review process.

Furthermore, the required utility fiscal oversight and rate recovery creates an inherent disadvantage in the current non-utility approach, because it necessitates an additional layer of administration required by the utility (SDG&E). Specifically, certain administrative functions involving the final project incentive claim approval are performed by both entities. Moreover, none of these administrative costs of the utility providing those needed functions were considered in this assessment because they are not currently allowed to be charged to the program. This aspect of the current non-utility administrative model should be considered when interpreting the results of this comparative evaluation.

In considering the results, it is important to remember that the program has performed quite well in its first two years, with 463 active or completed projects, representing a total rated



system capacity of roughly 148 MW as of the end of May 2003. Moreover, each administrator has met program objectives and administrative costs have remained well below the program targets as stated in Decision 01-03-073. Furthermore, it is important to recognize that each utility and non-utility administrator, including SDG&E, has contributed to a successful and cooperative administration effort through the Statewide Program Working Group to deliver a consistent, high quality program.

Table ES-1 presents a summary of the key findings of this comparative assessment.

**Table ES-1: Comparative Assessment Findings**

<b>Criteria</b>	<b>Result</b>
<b><i>Organizational structure:</i></b>	
Size and makeup of organization	Large organization has access to more resources and ability to utilize economies of scale
Organizational goals aligned with SGIP program	SDREO overall goals are more focused and aligned with the program goals
Fiscal responsibility	Not comparable; utilities must provide fiscal oversight under the prescribed program design
Administrative & technical expertise	Both approaches provide necessary expertise
M & V Support	Both approaches provide good support
Marketing Support	Both approaches provide needed support
Other organizational characteristics	Both approaches have strengths in some areas
<b><i>Administrative effectiveness:</i></b>	
Penetration rates	Slightly higher for utility average when considering all applications; slightly higher for non-utility when considering only the active & complete applications
Admin cost as percent of budget	Non-utility result is roughly one-third higher than utility average to date; However, during the first year (PY2001), one of the utility results was more than twice the non-utility result
Admin cost per application	Non-utility result is roughly 80% higher than utility average to date; However, during first year, non-utility result was less than two of the three utility results
Admin cost per kW of rated capacity	Non-utility result is roughly twice the utility average to date; However, during the first year, non-utility result was less than each utility result
Project completion time	Project completion times were 40% longer for IC engines with the non-utility approach to date; however, the result is affected by many factors not under the administrator's control
Emphasis on clean power technology	Utilities produced a higher percentage of completed projects with clean technologies compared to the non-utility. Utilities produced a higher percentage of kW on-line for both active and completed projects of clean technologies compared to the non-utility.
Admin cost per kW of peak demand impact	Non-utility result is roughly 20% lower than the average utility result; however, two utilities' results were lower than the non-utility result. Peak demand results represent primarily first-year projects with admin costs through mid-2002.
Market outreach through workshops	Non-utility result indicated a higher proportion of potential host customers were reached with workshops
Marketing expenditures	Non-utility approach is 86% higher per application than utility average to date
Growth in number of applications	Inconclusive results
Customer awareness	Both approaches performed similarly
Customer satisfaction	Both approaches performed similarly
Supplier satisfaction	Both approaches performed similarly
Supplier comparative ratings	Both approaches rated highly; however interview results suggest a slight preference for non-utility administrator on part of some suppliers; others are ambiguous between the two

When considering organizational structure, it was found that large organizations might have an administrative advantage, due to their having access to additional resources and use of economies of scale. However, when considering the alignment of an organization's mission and goals with state energy policies and objectives of the program, it was found that a single-purpose organization such as SDREO, exclusively in the business of disseminating information and promoting efficient technologies, has business interests that are more truly aligned with the goals of the program.

In the area of cost effectiveness, the average result of the utility administrative approach was found to be more effective as compared to the non-utility result, as measured by percentage of administrative costs per total program budget, administrative cost per application, and administrative cost per kW of rated system capacity. Utilities on the average were able to process applications and bring systems on-line with fewer administrative dollars; however, not every utility administrator performed better than the non-utility administrator. Results for utilities were often in a wide range, and the non-utility result in many cases fell somewhere within that range. Two major reasons for a lower cost-effectiveness result in the San Diego Gas & Electric service area include: 1) a high level of interest and program activity during 2001 due to the effects of the higher retail electric rates and energy crisis which then dropped off during 2002, and 2) ramp-up of SDREO staff in 2002 in response to this strong early program activity.

In addition, the average result for the utility administrative approach showed a higher percentage of completed projects with clean technologies and a higher percentage of kW online from both active and completed projects of clean technologies as compared to the result for the non-utility administrative approach.

When looking at administrative cost per kW of California ISO peak demand impact for the first nine to twelve months of the program, the result for the non-utility administrative approach was roughly 20% less than the average result for the utility administrative approach. Another area in which results suggest the non-utility administrative approach was more effective is marketing outreach and support. Results showed the non-utility approach reached a higher percentage of potential host customers in their service area through workshops as compared to the average result for the utility approach. Further, comments from some suppliers who had worked with both types of approaches indicated a slight preference for working with a non-utility, while others were ambiguous between the two approaches.<sup>3</sup>

---

<sup>3</sup> Six suppliers representing 62 projects were interviewed for their experience with both utility administrators and the non-utility administrator. Of these, two made statements to the effect that they preferred the non-utility administrator.

Overall, the results of this comparative assessment suggest that both utility and non-utility approaches are able to effectively administer the Self-Generation Incentive Program, and each has demonstrated certain program administration attributes to a greater degree.

# 1

## Introduction

---

### 1.1 Overview

This report is presented in response to a directive contained in the California Public Utilities Commission (CPUC) Decision 01-03-073 (dated March 27, 2001) to provide “an independent analysis of the relative effectiveness of the utility and non-utility administrative approaches” for the Self-Generation Incentive Program. Itron Inc., selected through a competitive bid process as the Self-Generation Program Evaluation consultant, conducted the analysis for the CPUC Energy Division per Decision 01-03-073.

This comparative assessment was performed following the second implementation year of the Program (PY 2002), or approximately 22 months after the program initiated application acceptance activity. Currently, the Program is authorized to continue accepting applications through December 31, 2004, subject to the availability of incentive funding.

The program has performed well to date with 463 active or completed projects having a total rated system capacity of roughly 148 MW as of the end of May 2003. In addition, each administrator has met program objectives and administrative costs have remained well below program targets stated in Decision 01-03-073.

### 1.2 Background

In response to California’s energy crisis of 2000 and 2001, legislation was passed to provide financial incentives for self-generation projects and other load removal programs. Assembly Bill 970 was signed into law September 6, 2000, and directed the CPUC to initiate certain load control and distributed generation program activities. This included a provision for making financial incentives available to eligible customers. The Self-Generation Incentive Program was adopted on March 27, 2001 by the CPUC under Decision 01-03-073. Since June 29, 2001, the program has been available to provide financial incentives for the installation of new qualifying electric generation equipment that will meet all or a portion of the electric needs of an eligible customer’s facility.

Under the direction of Decision 01-03-073, the Self-Generation Incentive Program is administered on a regional joint-delivery basis through the investor-owned utilities:

Southern California Edison (SCE), Pacific Gas & Electric (PG&E), Southern California Gas Company (SoCalGas), and San Diego Gas & Electric (SDG&E). Additionally, the CPUC ordered SDG&E to contract with the San Diego Regional Energy Office (SDREO) for some administrative and all implementation responsibilities. For example, SDREO's responsibilities include developing administrative forms and procedures, hiring a verification contractor, dispersing incentive payments to participants, recruiting customers to participate in the program, reporting to the CPUC, and outsourcing marketing and M&V activities. SDG&E retains responsibility for monitoring the program, disbursing incentive payments to SDREO to be paid to participants, reviewing reports prepared by SDREO, reviewing and verifying cost documentation for incentive payments, and providing customer and other information when needed for program requirements. Furthermore, both parties, as well as other program administrators and representatives of the CPUC and the California Energy Commission (CEC), comprise a statewide Working Group to address common problems and implementation modifications of the program.

Decision 01-03-073 instructed that the Program Administrators meet several basic requirements for program delivery; in particular, these included:

- Incentive levels are fixed on a statewide basis.
- Inspections are conducted on-site to verify equipment installation and operational status.
- Measurement and verification protocols to include either a census or a sampling of energy production from the operational projects.
- With the exception of measurement and verification activities, program administration expenditures are limited to 5% of program funding.

In addition, Program Administrators are required to use independent contractors for system installation and are encouraged to outsource other aspects of program administration and implementation, to the extent feasible.

The CPUC Decision further required that, in addition to regular impact and process evaluations of the program, an independent analysis be conducted to compare the effectiveness of the two types of administrative approaches. The approach for PG&E, SoCalGas and SCE is considered a utility administrative approach. In contrast, the approach implemented for SDG&E service area is considered a non-utility administrative approach, with SDG&E retaining accountability for program expenditures and SDREO conducting the implementation of the program under contract to SDG&E. This report addresses the requirement for an independent comparative assessment of these two particular administrative approaches. Other potential alternative program administrative approaches are not within the dictate of the Decision and therefore are not considered in this assessment.

### 1.3 Current Situation

#### **California DG Market Overview**

California has long been a leader in renewable energy and distributed generation applications, due primarily to favorable state energy policies and to the State’s emphasis on technological energy-related innovation. In California, the energy crisis of late 2000 and early 2001 significantly impacted the development of the distributed generation market, including small-scale renewable energy systems funded through this program, as well as other state and local municipal utility programs. Government policymakers, energy service providers, and energy users all continue to consider distributed generation as a contributing solution to the state’s many energy market and supply challenges.

As indicated in Table 1-1, the amount of non-utility distributed power generation operating in California is extensive. Distributed generation, broadly defined as all generation close to the point of consumption, accounts for nearly 10,000 MW of rated capacity on a statewide basis, which represents roughly one-fifth of the peak demand of the California Independent System Operator (CAISO). Smaller distributed generation resources (i.e., 20 MW or less) provide 1,880 MW of capacity, excluding the sole application of emergency backup generation.

**Table 1-1: Distributed Generation Operating in California<sup>1</sup>**

<b>Generating Facilities</b>	<b>PG&amp;E MW</b>	<b>SCE MW</b>	<b>SDG&amp;E MW</b>	<b>SMUD MW</b>	<b>Riverside MW</b>	<b>Total MW</b>
All sizes	5,443	4,142	216	13	4	9,819
< 20 MW	1,039	766	58	13	4	1,880
< 10 MW	472	379	58	13	4	927
< 5 MW	241	139	28	13	4	426
< 1 MW	57	38	12	13	4	124

Furthermore, these data suggest that the three electric IOU’s have different shares of the market for distributed generation. Specifically, for the category of less than one MW, which is most comparable to the Self Generation Incentive Program, the shares of this market vary as shown in Table 1-2.

---

<sup>1</sup> Table prepared by Scott Tomashefsky of the California Energy Commission, 12/3/02. Note that estimates do not include merchant plants, utility-retained generation, or backup generation. These estimates do include non-utility cogeneration facilities. Non-utility retailers are not required to report facilities below 1 MW. Data taken from the following responses to Energy Commission reporting requirements: 1) PG&E 7/25/02, 2) SCE 6/02, 3) SDG&E 11/14/02, 4) SMUD 12/3/02 ([www.smud.org/info/powersupply.html](http://www.smud.org/info/powersupply.html)), 5) Riverside 4/10/02 public utilities presentation.

**Table 1-2: Share of Operating Distributed Generation Among IOUs**

	PG&E	SCE / SoCalGas	SDG&E
Share of MW of operating facilities generating < 1 MW <sup>1</sup>	53%	36%	11%
Share of online capacity of Self Generation Incentive Program operating projects <sup>2</sup>	18%	65%	17%

<sup>1</sup> From data in Table 1-1.

<sup>2</sup> From data collected for the Self Generation Incentive Program Second Year Impact Evaluation Report, April 2003. Note that SoCalGas and PG&E service areas also include several municipal electric utilities (e.g., LADWP, SMUD, BGP, etc.) that became eligible for Program funding in the second program year.

As shown, the shares of operating distributed generation for facilities generating less than one MW are 53% for the PG&E service area, 36% for SCE, and 11% for the SDG&E service area. While this is clearly a simplistic proxy for the relative size of the market of these electric IOU service areas, it does provide a historical indication of the size of these markets prior to the Self Generation Incentive Program's incentives. Comparing this to the share of estimated on-line capacity for operating Self Generation Incentive Program projects as of mid-2002, also shown in Table 1-2, it appears that the share of Self Generation Incentive Program activity is greater than that found in the general market for SDG&E and SCE/SoCalGas areas and less than the general market in the PG&E area. Again, this is a simplistic estimate of relative market shares among these utility areas, and it does not address the gross or net potentials of the market.

Table 1-3 presents a comparison of completed projects during a comparable time period for the CEC Buydown Program and Level 1 projects from the Self Generation Incentive Program.<sup>2</sup> Level 1 projects from the Self-Generation Incentive Program are the most comparable element to the Buydown Program. As shown in Table 1-3, The Self-Generation Incentive Program Level 1 projects brought roughly three times the amount of kW online during the time period under comparison as compared to the Buydown Program. The difference in the number of projects compared to the amount of kW of rated system capacity is due to Self-Generation Incentive Program projects being larger, having a minimum system size requirement of 30 kW, while projects in the Buydown Program are smaller than this. Thus, even though it is recognized that the distributed generation markets are now a little more mature, overall the Self Generation Incentive Program appears to be performing quite well compared to the early implementation period of the CEC's Emerging Buydown Program.

---

<sup>2</sup> Data for the Buydown Program taken from the following report: Regional Economic Research, Inc., *Renewable Energy Program Preliminary Evaluation - Emerging Renewable Resources Account*, Prepared for the California Energy Commission, October 30, 2000.



**Table 1-3: Completed Projects: Comparison of Programs**

Program	No. Projects	kW
CEC Buydown Program	344	1,709
CPUC Self Generation Incentive Program – Level 1	43	5,278

Period for CEC Buydown Program: 11/18/98 through 8/14/00

Period for CPUC Self Generation Incentive Program: 6/29/01 through 3/26/03

Note: Although the Buydown Program incentivises solar thermal projects, none were completed during this time frame. So technologies under both programs are photovoltaic, fuel cells and wind.

### **Market Entities**

A variety of market players are involved in the distributed generation market. This is due not only to the complexity of some distributed generation projects, but the fact that many customers are adopting on-site generating technologies for the first time. The Self-Generation Incentive Program has encouraged third party providers, such as distributed generation-oriented engineering/construction and energy service companies, to market the program to host customers and to help them navigate through the technical and administrative hurdles of their projects.

In many respects, the distributed generation marketplace is still immature. Host customers are largely unaware of available options and their possible energy efficiency and economic advantages. The technologies are sufficiently complex and specialized that a host customer (with the possible exception of a few photovoltaic customers) cannot easily undertake the planning and analysis of a distributed generation project on their own, even when they are participating in a utility program. Consequently, host customers often choose to work with these third party entities. In most cases, it is the vendor or manufacturer representatives, or energy service companies, that initially approach the host electric customer about the Self-Generation Incentive Program project. These private sector companies then assume major responsibility for tasks that can include cost-effectiveness analysis, applying to the program, permitting, selecting/procuring equipment, and installation. Without this third party involvement, many of these distributed generation projects, no matter how viable otherwise, simply would not be developed.

The level of support that customers require varies widely. ESCOs and firms offering turnkey installation services provide the broadest support to customers. In these cases, distributed generation customers may have little exposure to the sometimes difficult process of participating in the Self-Generation Incentive Program. They are usually aware of these difficulties in a vague sense when they occur, insofar as they sign application materials prepared by third parties and they may hear about permitting and interconnection issues and

related delays. It seems as though they know just enough to be relieved that they are not directly involved in the process.

True distributed generation systems are, by their nature, designed to operate in parallel with the utility grid. Therefore, they have the potential to influence the electric system in some fashion. These influences by distributed generation systems can be favorable or unfavorable, depending on many factors. Potentially favorable effects can occur with distributed energy systems that are allowed to feed energy back to the grid (presently restricted to renewable-fueled generation sources), including local stabilization of voltage and frequency and potential deferral of the need for major distribution system expansion investments (e.g., power transformation equipment and related switchgear). Potentially unfavorable influences can occur if distributed generation systems are not properly synchronized with the grid when feeding power into the grid. Also, for safety of utility distribution maintenance workers, the distributed generation system must be disconnected from the grid during utility local distribution system outages (referred to as “islanding”). To ensure this safety issue is addressed, all program participants are required to install anti-islanding devices.

Although efforts are underway to improve the process, interconnection issues continue to be a significant problem for many program participants. Distributed generation industry groups including the IEEE P-1547 Working Group and the California Energy Commission’s Rule 21 Working Group have developed protocols to standardize the requirements for electrical interconnection. The Rule 21-related language was adopted by the CPUC (D.00-12-037 (12/21/00) - CPUC Decision Adopting Interconnection Standards). Despite these efforts, interconnection issues continue to arise at several stages of the Self-Generation Incentive Program project implementation process.

### ***Administration Within San Diego Gas & Electric Service Area***

The CPUC’s designation of SDREO as administrator for the program in the SDG&E service area was intended as an opportunity to allow a non-utility entity to experiment with administering the program on a limited basis. However, the “experiment” as implemented was not a true test of a non-utility administrator for a number of reasons, including the following:

- SDG&E retains a significant portion of the administrative responsibility of the program. Specifically, they are responsible and accountable for all program funding, which will ultimately be recovered from ratepayers. Moreover, the SDG&E program manager reviews each completed incentive claim and each of SDREO’s administrative invoices before payment, accompanies the verification contractor on site visits, participates in the statewide program working group, and coordinates and disperses information relative to interconnection, net metering, and other utility implementation issues.

- The statewide program working group provides an administrative sounding board for each of the program administrators. In particular, all program design and many administrative and implementation issues are discussed and resolved, with the consensus of this working group. The working group thus provides a valuable source of expertise, information and consultation for each of the administrators, which augments their own personal technical and administrative skills. In effect, and as planned, none of the administrators implements the program in isolation.
- SDREO holds little ultimate financial responsibility for the incentives administered under the program. In effect, all expenditures and incentive claims must be approved by SDG&E before any project payment is made to SDREO. The “experiment” therefore removed this administrative burden from SDREO and the results do not address how a non-utility organization might handle the additional responsibility and accountability of fiscal management.
- SDREO’s performance is limited to the market within the SDG&E utility service area. As such, there may be economic, market or geographic barriers to participation in the program that may be either different or nonexistent in other parts of the state.

However, the current situation does provide information on the hybrid administrator approach provided by SDREO and SDG&E. Further, with the current funding situation of the program in which the utilities collect expenditures in balancing and memorandum accounts to be recovered from ratepayers, it is not clear that a non-utility organization could feasibly be a stand-alone administrator of the program without utility oversight.<sup>3</sup>

## **1.4 Report Organization**

The remainder of the report is organized as described below.

- Section 2 discusses the objectives and the approach used in this comparative assessment.
- Section 3 summarizes the sources of data collected for this evaluation.
- Section 4 presents a comparison of the organizational structure and other characteristics of the two administrative approaches.
- Section 5 presents an assessment of administrative effectiveness, based on a number of criteria developed for this evaluation.
- Section 6 summarizes the results and presents overall conclusions.

---

<sup>3</sup> It was outside the scope of this evaluation to research and analyze the effectiveness of other funding structures and other models of administration.

# 2

## Objectives and Approach

---

### 2.1 Overview

This section describes the objectives and approach for this study. The objectives are based on the original goals of the program, criteria developed to evaluate those goals for the impact and process evaluations, and additional criteria developed as a result of research done for this study on administrative effectiveness. The approach consists of defining the specific comparative assessment evaluation criteria and then analyzing data from program activity to date.

### 2.2 Objectives

In D. 01-03-073, the CPUC stated the objective of this evaluation is to provide “an examination of the relative effectiveness of the two administrative approaches.” Consequently, this assessment does not attempt to derive a single best approach to program administration, nor does this report provide a recommendation on what the best approach might be. Rather, both approaches are described along with reported advantages and disadvantages to each. In addition, results from the first two years administration of the program are presented so that a comparison of the two approaches can be made.

#### ***Original Program Objectives***

For the purposes of this assessment, the concept of “effectiveness” needed to be clarified. Essentially, to be effective means to cause an effect. To identify what kind of an effect was desired by the CPUC, it was necessary to consider the original objectives of the program as derived from the legislation. These are to provide “incentives for distributed generation to be paid for enhancing reliability,” and to provide “differential incentives for renewable or super clean distributed generation resources.”<sup>1</sup> Furthermore, the CPUC expanded these objectives to include the following:<sup>2</sup>

- “Utilize an existing network of service providers and customers to provide access to self-generation technologies quickly,

---

<sup>1</sup> AB970 contained in PU Code 399.15(b) paragraphs 6 and 7.

<sup>2</sup> Decision 01-03-073, Attachment 1, pages 23-24, March 26, 2001.

- 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 the trust of small consumers, and
- Take advantage of customers' heightened awareness of electricity reliability and cost.”

### ***Evaluation Criteria***

During the initial evaluation for the Self-Generation Incentive Program, evaluation criteria were developed for each of these objectives. The criteria were then approved by the CPUC's Associate Law Judge (ALJ) for process and impact evaluations of the Self-Generation Incentive Program. The approved criteria and their associated program objectives are presented in Table 2-1.

**Table 2-1: Self-Generation Incentive Program Approved Evaluation Criteria**

Program Goal/Rationale/Objective	Criteria for Meeting Goal
G1 Encourage the deployment of distributed generation in CA to reduce peak electrical demand	<b>C1.A</b> Increased customer awareness of available distributed generation technology and incentive programs
	<b>C1.B</b> Fully subscribed participation in program (i.e., total installed capacity, number of participants)
	<b>C1.C</b> Participants' demand for grid power during peak demand periods is reduced
G2 Give preference to new (incremental) renewable energy capacity	<b>C2.A</b> Development and provision of substantially greater incentive levels (both in terms of \$ per watt and maximum percentage of system cost)
	<b>C2.B</b> Provision of fully adequate lead-times for key program milestones (i.e. 90 day and 12 month)
G3 Ensure deployment of clean self-generation technologies having low and zero operational emissions	<b>C3.A</b> Maximum allocation of combined budget allocations for Level 1 and Level 2 technologies
	<b>C3.B</b> A high percentage of Level 1 and Level 2 projects are successfully installed with sufficient performance
G4 Use an existing network of service providers and customers to provide access to self-generation technologies quickly	<b>C4.A</b> Demonstration of customer delivery channels for program participation to include distributed generation service providers and existing utility C-I customers networks
G5 Provide access at subsidized costs that reflect the value to the electricity system as a whole, and not just to individual customers	<b>C5.A</b> Demonstrate that the combined Incentive level subscription, on an overall statewide program basis (i.e. the participant mix of Levels 1, 2, and 3 across service areas), provides an inherent generation value to the electricity system (avoided generation, capacity and T&D support benefits).
G6 Help support continued market development of the energy services industry	<b>C6.A</b> Quantifiable program impact on market development needs of the energy services industry
	<b>C6.B</b> Demonstrated consumer education and program marketing support as needed
	<b>C6.C</b> Tracking of energy services industry market activity and participation in the program
G7 Provide access through existing infrastructure, administered by the entities (i.e. utilities and SDREO) with direct connections to, and the trust of small consumers	<b>C7.A</b> Ensure that program delivery channels include communications, marketing and administration of the program, providing outreach support to small consumers
G8 Take advantage of customers' heightened awareness of electricity, reliability and cost	<b>C8.A</b> Use existing consumer awareness and interact with other consumer education/marketing support related to past energy issues to market the program benefits.

***Additional Criteria***

For this evaluation involving a comparison of administrative approaches, the Evaluation Team conducted a number of interviews of key program players and other Program Administrators. As part of the interview, respondents were asked their opinions about appropriate criteria and metrics for evaluating administrative effectiveness. In addition, a number of recent papers in the area of energy efficiency presented information relative to administrative models and effectiveness, and these were reviewed for matters pertinent to

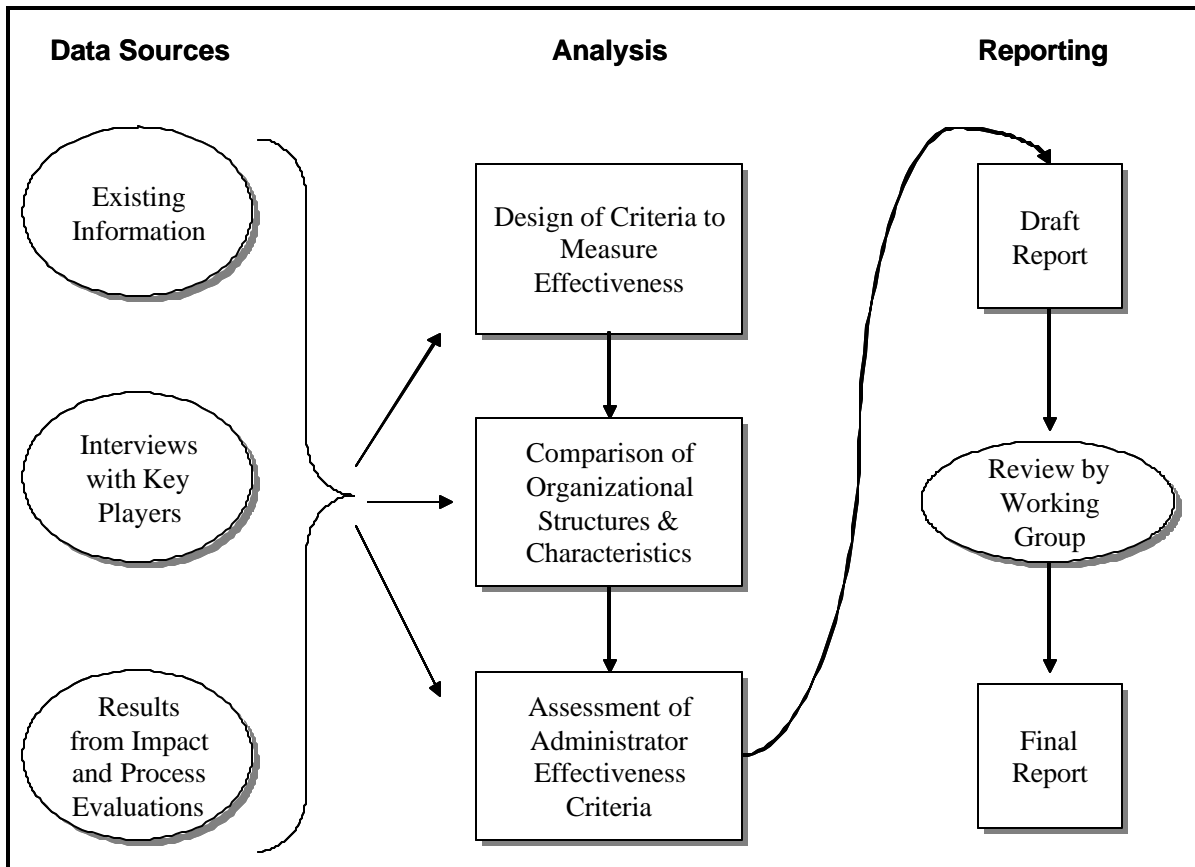
this evaluation. After a thorough review of this data, the evaluation criteria from Table 2-1 were amended to a set of criteria more relevant to the intent of this present evaluation effort. These changes are discussed under Section 2.3.

## **2.3 Approach**

### **Overview**

Figure 2-1 illustrates the approach used in this study. As shown, data was collected from existing information, interviews with key players, and results from the impact and process evaluations. Then, criteria were developed to measure the effectiveness of the two administrative approaches. In addition, each type of administrator was characterized with a general description of the organizational structure, staff and resource availability, and goals and vision of the organization. Further, information was used to assess the effectiveness of each administrator type relative to the effectiveness criteria that were developed. Data from the program tracking database and from the results of the second-year evaluations were used to measure these criteria for each type of approach. Finally, the salient attributes of an effective Program Administrator for the Self-Generation Incentive Program were summarized and draft and final reports provided.

Figure 2-1: Study Approach



**Data Collection.** The following three elements make up the data collection element of the study approach.

- ***In-depth Interviews with Key Market Players.*** Program administrators and staff, CPUC staff, and other Program Administrators (both utility and non-utility within and without of California) were interviewed for their opinions on administrative approaches and relevant issues.
- ***Results from the Second-Year Impact and Process Evaluations.***<sup>3</sup> Results from previous Self-Generation Incentive Program evaluations were reviewed. In some cases, results were reformulated in utility and non-utility categories to facilitate comparison for this study.
- ***Review of Relevant Existing Information.*** Existing information in the form of industry reports, utility customer satisfaction and awareness research, and program documentation was reviewed.

<sup>3</sup> See Itron, Self-Generation Incentive Program Second Year Process Evaluation, Submitted to Southern California Edison, April 2003; and Itron, The California Self-Generation Incentive Program Second Year Impact Evaluation Report, April 2003.



**Analysis.** The following are the analysis elements that utilize the collected data.

- ***Development of Criteria to Measure Effectiveness.*** Criteria were developed to measure the extent of the effect that each administrative approach had on accomplishing the goals of the program. These criteria included the original evaluation criteria developed for the Self-Generation Program evaluations, as well as additional criteria developed from research for this evaluation.
- ***A Comparison of the Organizational and Administrative Characteristics of the Two Approaches.*** Characteristics of each approach were summarized and the strengths and weaknesses inherent in each approach were discussed.
- ***Assessment of Administrator Effectiveness.*** The effectiveness of each approach was considered based on the results of two years of program activity. The criteria developed were measured from data collected, and a comparison of the two administrative approaches was made.

**Reporting.** A draft report was prepared and submitted to the Self-Generation Incentive Program Working Group for review and comment. Results from their comments will be incorporated into a final version to be filed with the CPUC in August 2003.

Each of these three study elements (data collection, analysis, and reporting) is discussed in more detail below.

### **Data Collection**

#### Review of Relevant Existing Information

Several reports and data sources were reviewed for this study, including:

- Self-Generation Incentive Program tracking database,
- Utility market research reports,
- CPUC Decision 01-03-073,<sup>4</sup>
- ALJ Ruling 4/24/2002,<sup>5</sup>
- Relevant comments filed in CPUC Rulemaking 98-07-037,
- ORA's review of costs and benefits of self-generation,<sup>6</sup> and
- Relevant papers on the administration of energy efficiency programs.<sup>7</sup>

---

<sup>4</sup> Interim Opinion: Implementation of Public Utilities Code Section 399.15(b), Paragraphs 4-7; Load Control and Distributed Generation Initiatives. March 27, 2001.

<sup>5</sup> Administrative Law Judge's Ruling on Schedule for Evaluation Reports. Rulemaking 98-07-037. April 24, 2002.

<sup>6</sup> ORA. Public Financing for Self-Generation: Costs and Benefits of Onsite Photovoltaic, Fuel Cell, and Micro-turbine Systems. January 2001.

<sup>7</sup> See References at the end of this report.

*In-Depth Interviews with Key Market Players*

In-depth interviews were conducted with the following groups:

- Self-Generation Incentive Program Administrator staff,
- CPUC Energy Division Working Group,
- CPUC ORA staff,
- The Utility Reform Network (TURN) representative,
- Other Program Administrators in California, and
- Other Program Administrators in other states,

*First and Second-Year Program Evaluations*

Results from the Self-Generation Incentive Program Second-Year Process and Impact Evaluations were used in this study. Specifically, survey results on customer awareness and satisfaction, supplier satisfaction, and supplier opinions on program support for the energy services industry were used from the Process Evaluation, and demand impacts were used from the Impact Evaluation. The data were reexamined by utility and non-utility categories in order to make comparisons applicable to this analysis.

***Analysis***

*Development of Criteria to Measure Effectiveness*

As described above under Objectives, the original criteria developed for the Self-Generation Incentive Program Evaluations were reviewed and amended to measure the effectiveness of each type of program administrative approach. The discussion below outlines the changes to the criteria and organizes them according to program goals.

- ***Goal 1: Deployment of Distributed Generation.*** The original criteria developed for evaluating this goal will be used and include the following:
  - *Increased customer awareness of available distributed generation technology and incentive programs.* This criterion will be measured from survey responses conducted for the second-year process evaluation
  - *Fully subscribed participation in the program (i.e., total installed capacity and number of participants).* This criterion will be measured from the number of applications and associated capacity documented in the program tracking database.
  - *Participants' demand for grid power during peak demand periods is reduced.* This criterion will be measured with results from the second-year impact evaluation.
- ***Goal 2: Preference to Renewable Energy.*** This goal is satisfied by the design of the program. In particular, incentive rates for systems using renewable fuel are higher than they are for systems using nonrenewable fuel. In addition, the

program milestone schedule of 90-day and one-year periods is standard statewide. As a change in administrator structure would not change this aspect of the program, it is not an appropriate objective to use in this evaluation.

- **Goal 3: Deployment of Clean Technologies.** The original criteria developed for evaluating this goal will be used and include the following:
  - *Maximum allocation of combined budget allocations for Level 1 and Level 2 technologies.* This criterion will be measured with the quantity of paid and/or reserved funds in these incentive levels as documented in the program tracking database.
  - *A high percentage of Level 1 and Level 2 projects are successfully installed with sufficient performance.* This criterion will be measured with the percentage of paid claims in these incentive levels as documented in the program tracking database.
- **Goal 4: Use of Existing Market.** This goal is partly satisfied by the design of the program. That is, sales and installation of systems is accomplished by vendors and energy service companies and not by the utility. Therefore, this part of the criterion will not be measured for this evaluation. The second part, use of existing utility C/I customer networks, is problematic to measure. While a portion of customers surveyed in all areas for the second-year process evaluation reported hearing about the program from their utility representative, only one utility reported using their customer database and account representatives to actively solicit program participation. Moreover, SDREO did not have access to SDG&E's utility customer networks, and therefore a comparison between utility and non-utility results for this criterion would be misleading. Therefore, this goal will not be measured in this evaluation.
- **Goal 5: Subsidized Costs Reflect Statewide System Value.** This goal is not applicable to this evaluation, as it has to do with valuing the program's impacts at a statewide or system-wide level.
- **Goal 6: Support Market Development.** The original criteria developed for evaluating this goal will be used and include the following:
  - *Quantifiable program impact on market development needs of the energy services industry.* This criterion will be discussed with survey results from the second-year process evaluation. In addition, the number of workshops or training seminars offered to the energy services industry will be reported.
  - *Demonstrated consumer education and program marketing support as needed.* This criterion will be discussed with a summary of marketing activities and expenditures.
  - *Tracking of energy services industry market activity and participation in the program.* This criterion will not be measured, as none of the administrators collected data that could be used to track this type of activity.
- **Goal 7: Provide Access to Small Consumers.** This goal will not be evaluated for this study. Program administrators reported concentrating their outreach efforts on

third parties rather than customers. While some efforts at consumer outreach were employed (such as field representative contact, workshops, web site content, and radio advertisements), no specific targeted outreach to “small”<sup>8</sup> customers was reported by any of the Program Administrators. However, looking at the distribution of number of employees or cost of electric bill over survey respondents from the second-year process evaluation, it is clear that the percentage of “small” customers in the program is low for all Program Administrators.

- ***Goal 8: Use Existing Consumer Awareness of Energy Issues.*** As stated above for Goal 7, outreach efforts for the Self-Generation Incentive Program did not target customers for the most part. Therefore, this goal will not be evaluated for this study.

In addition, research for this study led to other criteria not included in the original set presented above that was primarily developed for the impact and process evaluations. These new criteria were developed from interview responses of key market players, a review of recent relevant papers in the area of the administration of energy efficiency programs, and the evaluators’ judgment. Moreover, they are more direct indicators of administrative effectiveness. They include the following:

- ***Administrative cost per number of applications and per unit of installed capacity.*** This criterion was developed to assess the approximate administrative cost per applicant or system installed. Administrative costs minus evaluation were used in the numerator. The number of active and completed applications or the kW of installed capacity was used in the denominator.
- ***Administrative cost as a percent of overall program budget.***
- ***Penetration rate.*** This is estimated from the number of applications per 1,000 eligible applicants in service area. This criterion was developed to assess the approximate effect of marketing efforts.
- ***Growth rate of projects over time.*** This criterion was developed to assess the approximate effect of marketing efforts. The number of active and complete applications as well as the number of withdrawn and rejected applications from the first to the second year were compiled.
- ***Customer satisfaction ratings.***
- ***Supplier satisfaction ratings.***
- ***Average response times to program submittals and inquiries.***

#### *A Comparison of Organizational Characteristics*

Characteristics of the organizational make-up of each approach were summarized. The issues addressed include the following:

---

<sup>8</sup> Note the criteria for determining a “small” customer was not provided in the Decision.

- The general organizational structure,
- The alignment of the goals of the administrative organization with public policies,
- Conflict of interest,
- Attributes of fiscal responsibility including accountability and legitimacy,
- Influence of regulation,
- Technical and administrative expertise, and
- Support for M&E activities.

These overall issues were developed from a review of the literature and from results of interviews with market players. Furthermore, the strengths and weaknesses inherent in each approach were discussed. A comparison of the two administrative approaches using these characteristics as a guide is presented in Section 4.

#### *A Comparison of Administrative Effectiveness*

Using the criteria described above that were developed for this assessment and program data collected through May 2003, a comparison of the administrative effectiveness of each approach was made. The results of comparing the two administrative approaches using these criteria as a guide are presented in Section 5.

As stated above, it was not in the scope of this assessment to offer a recommendation or name a particular administrative approach as superior. Rather, a review and discussion of desirable characteristics is provided.

#### ***Reporting***

A draft report was prepared and submitted to the Self-Generation Incentive Program Working Group to review and comment. Results from their comments will be incorporated into a final version to be filed with the CPUC on August 1, 2003.

# 3

## Data Collection

---

### 3.1 Introduction

This section summarizes the data sources and collection methods used in this analysis. Each of the following sources is discussed below:

- Self-Generation Incentive Program Administrator tracking databases,
- In-depth interviews of market players,
- First and Second-Year Process and Impact Evaluations,
- Utility market research reports,
- CPUC Decision 01-03-073,<sup>1</sup>
- CPUC ALJ Ruling 4/24/2002,<sup>2</sup>
- Relevant comments filed on CPUC proceeding 98-07-037,
- ORA's review of costs and benefits of self-generation,<sup>3</sup> and
- Industry papers on the administration of energy efficiency programs.<sup>4</sup>

### 3.2 Evaluation Data Sources

Each of the data sources that were used in this comparative assessment is described below.

#### ***Program Tracking Databases***

Each Program Administrator maintains its own Self-Generation Incentive Program tracking system. These systems include hard copy files and electronic data. Additionally, each Program Administrator provides the California Public Utilities Commission (CPUC) Energy Division with monthly activity and project summary reports of the Self-Generation Incentive

---

<sup>1</sup> Interim Opinion: Implementation of Public Utilities Code Section 399.15(b), Paragraphs 4-7; Load Control and Distributed Generation Initiatives. Rulemaking 98-07-037. March 27, 2001.

<sup>2</sup> Meg Gottstein. Administrative Law Judge's Ruling on Schedule for Evaluation Reports. Rulemaking 98-07-037. April 24, 2002.

<sup>3</sup> ORA. Public Financing for Self-Generation: Costs and Benefits of Onsite Photovoltaic, Fuel Cell, and Micro-turbine Systems. January 2001.

<sup>4</sup> Blumstein, et. al, Op. Cit.

Program under its jurisdiction. The monthly CPUC status reports include the majority of the tracking data requested in the first year process evaluation, including the following:

- Applicant company name,
- Host customer company name, address, and SIC code,
- Incentives requested and granted,
- Basic system details (including prime mover technology, size, and eligible installed costs),
- Project status, and
- Major project milestone dates.

Other tracking data variables requested in the first year process evaluation included the following:

- Applicant contact name and phone number,
- Host customer contact name and phone number,
- Facility address (i.e., address for site at which system would be installed),
- Latest project stage/milestone reached,
- Basis of incentive,
- Withdrawal/rejection/suspension date for inactive projects,
- Annual peak demand, and
- Other incentive program rebate amounts and sources.

In 2002, all Program Administrators provided data from the monthly CPUC report, as well as the majority of the additional tracking data variables requested from the first year process evaluation. Between 2001 and 2002, a high degree of standardization of tracking data variables was achieved across Program Administrators. The Program Administrators expended considerable time and effort to supply the information requested for the second year process evaluation, which has greatly enhanced the quality of the analyses that can be performed upon the tracking data.

When questions arose regarding the content of the tracking databases, the project team contacted the Program Administrators to ensure that variables were defined consistently across administrators. After reviewing and verifying the electronic tracking data provided by each Program Administrator, the data was standardized to create a detailed statewide tracking database that contained relevant information on all applications submitted to the Self-Generation Incentive Program through May 2003.

For this evaluation, the tracking data were used to measure certain criteria of administrative effectiveness that were presented in Section 2 of this report. The summary statistics

presented in Section 5 of this report are based upon the contents of this statewide tracking database, as well as the results of the participant interviews.

### ***First and Second-Year Process and Impact Evaluations***

Results from the first-year and second-year Process and Impact Evaluations were used to measure certain criteria of administrative effectiveness presented in Section 2. Results for PG&E, SoCalGas, and SCE were combined into the category of utility administrator, and results for SDREO/SDG&E were categorized as non-utility administrator. For example, these results were used to measure the following:

- Customer awareness of self generation opportunities,
- Customer satisfaction with the Program Administrators, and
- Third-party supplier satisfaction with the Program Administrators,

Summary statistics based on these results are presented in Section 5 of this report.

### ***Utility Market Research***

Customer awareness and satisfaction research for SoCalGas and SDG&E customers was reviewed for this study. These reports provided supporting information on customer perceptions of utility programs and outreach efforts. Similar research for the remaining program areas was either not available or not released for use in this study.

### ***CPUC Documents***

The following documents were reviewed:

- CPUC Decision 01-03-073,
- CPUC Ruling MEG/eap 4/24/2002, and
- Relevant comments filed on CPUC proceeding 98-07-037.

These documents provided background information on the formation and initiation of the Self Generation Incentive Program and the issues that surrounded the choice of administrators for the program. They did not provide a detailed scope for this study; however, a general directive was provided in the CPUC Decision 01-03-073.

### ***ORA's Review of Self-Generation***

In January 2001 the CPUC's Office of the Ratepayers Advocate (ORA) produced a summary of costs and benefits for self-generation technologies. The report also addressed options for administration of a self-generation program and discussed some of the issues surrounding the choice of an administrator. The report was reviewed for this study and the information was



used to help develop interview questions and provide an understanding of some of the key issues related to this topic.

### **Industry Papers on Program Administration**

A number of recent papers on administrative alternatives for energy efficiency programs were reviewed for this analysis. A listing of these documents is presented in the References at the end of this report.

These papers provided valuable information for this work such as background information on administrative models and the history of the administration of energy efficiency programs in California and other states. In addition, they suggested criteria for choosing an effective administrator, provided pros and cons of various administrative choices, and described details of models of administrative approaches found throughout the country.

### **3.3 Interview Sample and Protocols**

In-depth interviews were conducted with the following groups:

- Self Generation Incentive Program Administrators and staff,
- SDG&E Program Manager and support staff,
- CPUC Energy Division Working Group representative,
- CPUC ORA representative,
- The Utility Reform Network (TURN) representative,
- Other Program Administrators in California,<sup>5</sup> and
- Other Program Administrators in other states.<sup>6</sup>

In-depth interviews were conducted with each Program Administrator and staff in person at the Program Administrator's place of business. Three senior Itron staff conducted each interview, which lasted approximately two hours. The main topics of the interviews were as follows:

- Organizational structure,
- Performance incentives,
- Administrative budget,
- Interaction with utility interconnection departments,
- Administrative resources available,
- Goals and vision of organization,

---

<sup>5</sup> For example, representatives from LADWP, SMUD, Sempra, Quantum, the CEC, and the City of Davis.

<sup>6</sup> For example, representatives from Nysesda, National Grid, Vermont Energy, and Wisconsin Department of Administration.

- Marketing and outreach activities,
- Perceptions of conflict of interest, and
- Strengths and weaknesses of administrative approach.

Other respondents were interviewed for their opinions on issues relevant to this study. In particular, respondents were asked about their opinions on the relative advantages and disadvantages of utility and non-utility administrative approaches, key issues surrounding the topic such as conflict of interest and cost effectiveness, and recommendations regarding other data sources.

# 4

## Comparison of Organizational Structure

---

This section presents a discussion of various organizational and operational characteristics of utility and non-utility administrators. The following areas are included: general organizational structure, compatibility of program and policy goals, attributes of fiscal responsibility, administrative and technical expertise, marketing support, administrative support for program monitoring and verification activities, and other organizational characteristics. In much of the discussion below, hard data was not available to support the discussion. Rather, a summary is presented based on a review of current literature, interviews with key market players, and the evaluators' judgment.

### 4.1 General Organizational Structure

In comparing the organizational structure of the utilities and the non-utility in this program, it is important to remember that the evaluation does not include the consideration of other entities or other administrative models. Rather, the discussion is limited to the entities and the program structure currently in place for the Self Generation Incentive Program.

#### ***Organizational Structure Overview***

In general, electric and natural gas utilities are large, multi-purpose organizations with numerous divisions. The three IOUs that administer the Self Generation Incentive Program directly accommodate the program in the following divisions: Commercial and Industrial Markets, Energy Program Services, and Customer Programs and Services. Two administrators have three primary staff and the other has two primary staff on the program, along with support staff. Furthermore, there are three different types of utilities administering the program, i.e. electric-only, gas-only, and combined gas and electric.

The fourth administrator of the Self-Generation Incentive Program is a combination of a non-utility, San Diego Regional Energy Office (SDREO) and a utility, San Diego Gas and Electric (SDG&E). This approach involves the utility assuming responsibility for the program funding while contracting other administration and implementation functions to the non-utility. The non-utility organization is a single-purpose not for profit organization. Two non-utility primary staff members work on the Self-Generation Incentive Program along with support staff. In addition, one primary staff person at the utility coordinates utility support

for the program. It is important to note that with the current program funding mechanism, some of the prudence-related administrative tasks are performed by both SDREO and SDG&E. For example, both entities review the incentive claims and issue individual rebate checks, attend and participate in the working group activities, answer customer questions regarding interconnection and rates, and accompany the verification contractor on on-site visits. In addition, both are involved with operational monitoring and verification data collection efforts.

### ***Related Issues***

A number of issues related to the makeup and size of the organization are relevant to this discussion. Addressed herein are an organization's ability to attract qualified personnel, to provide public forums for information exchange, to take advantage of economies of scale, to provide flexible and timely responses to market changes, and to provide legitimacy and accountability to the program.<sup>1</sup>

An organization's ability to attract needed qualified personnel is important to effectively administer the program. This would include experienced administrative and support staff, as well as engineers or personnel with related technical expertise. The utility administrators in the program reported being able to consult with staff in other departments on various issues related to the program (e.g. marketing, interconnection, engineering and legal issues). In some cases, administrative program staff were transferred from other departments. The ability to pull resources from other departments when needed is a valuable asset for program administration, as increases in market demand may necessitate acquiring additional resources in a short time period.

A smaller organization might not have similar resources at hand to respond to sudden increases in demand or changes in administrative needs. Moreover, hiring new personnel could conceivably be time consuming when a particular expertise is needed. During the course of the program to date, SDREO hired personnel to replace their program manager and marketing support staff, and they reported that no "major delays" were encountered during the process. It should be noted, however, that the number of projects they administered during this time was considerably less than that of the other administrators.<sup>2</sup>

Another issue related to the makeup of the organization is its ability to solicit input from stakeholders, customers, and other market players. Ongoing administration of a publicly funded program necessitates that opportunities be provided to exchange information with market players and other interested parties in order to address problems, concerns and barriers that might otherwise hinder the success of the program. Utilities regularly comment

---

<sup>1</sup> For a further discussion of some of these issues, see Eto et. al., May 1998.

<sup>2</sup> See, for example, Table 5-1 in Section 5.

on energy policy and program issues via public workshops, email service lists, regulatory filings, etc. SDREO has also participated in these proceedings. Therefore, it is not clear that either type of administrator has a specific advantage in this area relative to the administration of the Self Generation Incentive Program.

Another valuable quality of an administrative organization is its ability to take advantage of economies of scale. This ability is related more to the size of the organization than to its utility / non-utility nature. Larger organizations can take advantage of economies of scale in providing many support and outreach services to the program, while a smaller organization may need to charge the full cost of setting up those services to the program. For example, some utility administrators reported consulting with a utility marketing staff person or a senior engineer for marketing or technical expertise respectively. A smaller organization might need to employ additional program staff or outsource their consulting needs.

Additionally, an administrative organization should be able to respond in a flexible and timely manner to changes in the market that directly affect the program. For large, multi-purpose organizations like utilities, this could be problematic if other business interests maintain priority over resources or if established procedures are time consuming and complex. On the other hand, a large utility will be more likely to have a larger pool of resources to draw upon in a time of need. If effectively managed, they may therefore be in a better position to respond to changes than would a smaller single-purpose organization with fewer overall resources.

Finally, the administrative organization should be an established entity that can provide fiscal accountability and legitimacy to the program. Customers and applicants to the Self-Generation Incentive Program want to know that if they commit to a project, their rebate check will be there once they have met the requirements of the program. A single incentive paid out from the program can be millions of dollars; thus, applicants want an entity they believe will remain in business to manage the rebate process for them. This requires an organization that has exhibited stability over time and is expected to continue for some time. For the Self Generation Incentive Program, all the administrators provide this quality.

## **4.2 Compatibility of Program and Policy Goals**

In order to work effectively, the goals of a program administrator should be compatible with the goals of the program they manage, the goals of their organization, and the overall energy policies of the state. In addition, administrative organization goals ideally should be aligned with their financial and economic development interests.

### **Policy and Program Goals**

The policy goals of the Self-Generation Incentive Program were previously presented in Section 2 of this report. These goals include, among others, deploying on-site distributed generation to reduce peak load; giving preference to technology utilizing new renewable and/or “super clean” fuels; and supporting the market development of the distributed generation energy services industry, using the existing network of service providers to provide quick access to self-generation technologies.

### **Administrator Goals**

The overall mission of a utility is to deliver reliable electricity and/or gas service to their customers. In addition, being a large, multi-purpose organization, a utility has multiple business interests, goals, and regulatory responsibilities with various parties. In interviewing the utility program administrators for this evaluation, it was reported that the administration of the Self-Generation Incentive Program fits into their organization’s overall mission in two ways. First, it helps to reduce peak load on the system, which assists in their efforts to provide a reliable source of energy. Second, it is another way to assist their customers with their energy service needs. Providing high quality customer service is seen as an important aspect of their overall customer service portfolio.

The overall mission of SDREO is to provide information on energy issues for the greater San Diego region. In addition, they administer a number of energy programs and participate in long-term energy planning for the San Diego area. SDREO staff reported that the Self-Generation Incentive Program fits well with their agency’s overall mission. Furthermore, SDREO staff reported that they provide objective information to the customer about the technologies, as they have no reason to project any predisposition concerning the impact of the project on any particular customer or on the local electric grid.

### **Conflict of Interest**

Concerns surrounding electric utility conflict of interest with the state policy and program goals were a major issue raised by several parties in comments to the CPUC during the proceedings prior to the issuance of Decision 01-03-073, and by some third-party suppliers and project developers during the first and second year process evaluations. This conflict issue is discussed below.

There are three different types of utilities administering the program, i.e. electric-only, gas-only, and combined gas and electric. Each category involves different considerations with respect to the promotion of self-generation equipment among their customers. For example, gas and combined service utilities may benefit from increased gas load related to the installation of cogeneration equipment, while electric-only utilities do not. Furthermore,

electric-only utilities may experience overall reduced revenue as the result of customers implementing self-generation technologies.

When asked about the conflict of interest involved with promoting self-generation, however, all the program administrators reported it was a misperception and that there was no conflict of interest. These discussions included the following arguments.

- The utilities want to administer energy efficiency programs as a service to their customers. Customer satisfaction ratings are often tied to their ratemaking returns. If self generation leads to lower customer bills over the long term, then customers will be more satisfied.
- During the energy crisis, some customers had to move their businesses outside of California. If self-generation will help customers to stay in California, it becomes part of a load retention strategy.
- The utility earns a return on the its installed rate base and not the volume throughput.
- When distributed generation goes in, the cost impacts are generally shifted to other rate components like standby fees.
- For those utilities that also sell gas, they may gain additional gas sales so the loss of electric is not a big issue.

In contrast, comments reported during the design phase of the program included statements that a conflict of interest does exist. In particular, the following comments were filed in early 2001.

- The Utility Reform Network (TURN) recommended that an entity other than the utilities administer the program, since another entity's interest would be "more aligned with program success," and the utilities view the program as "inimical to their self-interest." They further explained that in a related proceeding a utility "argued for the imposition of exit fees and the collection of all 'lost revenues' due to DG installation."<sup>3</sup>
- Initial comments from The Office of Ratepayer Advocates (ORA) in 2001 stated, "the UDCs have an inherent and serious conflict of interest in terms of the UDC's interest in increasing consumption/sales/purchases of energy, whereas consumers would prefer (all other things being equal) lower bills associated with reduced consumption/payments for energy ... A similar conflict of interest attends a Self-Generation Program. In this case, however, the worst of these conflicts can be

---

<sup>3</sup> Comments of the Utility Reform Network on the Energy Division AB 970 Report. Rulemaking 98-07-037. February 14, 2001.

avoided/minimized by designating PG&E, SCG, and the SDREO as program administrators.”<sup>4</sup>

- ORA later modified their position on this issue, as evidenced by comments issued in 2003 wherein they stated, “The Commission could in fact consider allocating increasing portions PGC funds to non-utility entities while leaving utilities in control of *incremental* (beyond PGC-funded) energy efficiency programs and funds as identified through their short- and long-term procurement plans ... Incremental UDC programs would be controlled and administered by UDCs who could perform the optimizing integration function of examining the tradeoffs with supply-side resources.”<sup>5</sup>

A non-utility organization may be perceived as having a more objective viewpoint of the benefits and costs of distributed generation. For example, a customer who perceives it is in the utility’s disinterest to promote distributed generation may not trust them to adequately represent a system’s benefits and costs. On the other hand, many customers often report they rely on their utility as their primary source of energy information.<sup>6</sup> Furthermore, suppliers and third-party providers in the industry also have an incentive to overstate distributed generation system benefits and costs since they want to make a sale. In any event, customers that are purchasing generation systems still have the ultimate responsibility to consider information from all stakeholder perspectives and be discriminating buyers.

In summary, it is not clear from the evidence that there is an actual conflict of interest in having a utility administer the Self-Generation Incentive Program. There indeed may be a perceived conflict among some customers and suppliers; however, it does not seem to be hindering participation in the program.

### **4.3 Fiscal Responsibility**

A benefit of utility management stated repeatedly in interviews for this comparative study is the issue of ensuring that ratepayer money is spent appropriately per the CPUC Decisions/Rulings and the Program’s guidelines. In particular, utility administrators reported that they tend to be conservative in spending ratepayer money. Furthermore, it was

---

<sup>4</sup> ORA. Public Financing for Self-Generation: Costs and Benefits of Onsite Photovoltaic, Fuel Cell, and Micro-turbine Systems. January 2001.

<sup>5</sup> Comments of the Office of Ratepayer Advocates on Administrative Law Judge Malcolm’s Ruling Proposing Changes to Energy Efficiency Manual to Implement Certain Provisions of Assembly Bill 117 (Community Aggregation & Administration of Energy Efficiency Public Purpose Program Funds). Rulemaking 01-08-028. May 16, 2003.

<sup>6</sup> This result has been reported in numerous customer surveys done for the utilities. See, for example, small commercial and industrial customer surveys done for SoCalGas and SDG&E analyzed by Strategic Decisions, Inc. in January 2003.



suggested by one commenter that a third party might not be as risk averse as a utility and thus tend to “push the envelope” more with certain expenditures.

With the current program funding mechanism, however, SDREO has little ability to administer the program payments on its own. Invoices for administrative expenses and participants’ incentive claims are submitted to SDG&E for approval and payment. Moreover, they are well below the limits for this program. For the incentive payments, the payment process involves SDREO submitting project-specific invoice documentation to SDG&E for approval. Upon approval, the incentive is then paid to SDREO from an SDG&E memorandum account. SDREO then deposits the money received from SDG&E and issues a rebate check to the program applicant. As stated above, an incentive payment can amount to millions of dollars, and SDG&E carries the ultimate financial risk and responsibility for the program funds.

With such a hybrid administrative approach, the issue of whether or not a third party would be able to take on this risk and responsibility is not relevant. However, if the program funding structure were to change and a non-utility organization considered as the sole administrator of the program for their region, the issues of fiscal management and accountability are critical to the success of the program’s implementation.

#### **4.4 Technical and Administrative Expertise**

An effective administrator would be expected to have staff with experience in key areas, including technical, marketing and administrative expertise. Areas in which this is needed include the following:

- Program planning,
- Program outreach,
- Name recognition and reliability with customers,
- Relationships with manufacturers and energy service providers,
- Coordination of four regional areas into one statewide effort,
- Participation in public forums for information exchange,
- Reporting, tracking and documentation,
- Measurement, evaluation and verification,
- Performance standards,
- Core of technical expertise, and
- Access to and use of detailed customer energy use data.

All administrators of the Self Generation Incentive Program provide experience in these areas. Furthermore, they work together to resolve problems in the statewide working group. Therefore, in this area of program administration both types of administrative approaches have proven effective.<sup>7</sup>

## **4.5 Marketing Support**

This section discusses differences in the way a utility and non-utility organization might manage the marketing aspects of the program. The discussion includes the areas of program promotional activities and providing support for the distributed generation industry.

### ***Promotional Activities***

Marketing activities for the Self-Generation Incentive Program have included promotional materials, program information on websites, workshops, and attendance or presentations at industry conferences. In addition, radio and print advertising, direct mail, press releases and other efforts have been made. Any of these promotional activities can be performed by a utility or non-utility organization. Possible differences regarding the ways in which either organization might carry them out include the following:

- ***Outsourcing versus In-house Expertise.*** The utility administrators reported using both in-house staff and outsourcing for their marketing needs. SDREO reported using their staff marketing manager.
- ***Economies of scale.*** Utilities, being large organizations, have resources for large-scale outreach efforts. For example, they are able to include program material in utility bills and utilize utility account representatives to promote the program. SDREO does not provide these same outreach advantages. They have, however, developed an extensive mailing list of industry contacts that is used to reach a high proportion of eligible customers in their area<sup>8</sup> and an informative energy center. In addition, SDG&E has provided use of its resources for the program; for example, account representatives help to promote the program and program information is provided on the SDG&E website.

### ***Industry Support***

One of the goals of the Self-Generation Incentive Program is to help support the market development of the energy services industry. Some of the efforts Self-Generation Incentive Program administrators have made in this area include: 1) providing marketing materials and

---

<sup>7</sup> On the issue of ratepayer accountability, SDREO does not accomplish this task directly but rather works with SDG&E to satisfy this program requirement. Note the non-utility administrator being compared in this evaluation is the joint administrative effort of SDREO and SDG&E working together.

<sup>8</sup> See in Section 5 “Market Outreach and Support.”

opportunities for suppliers, 2) providing information for customers on the benefits of distributed generation and on the program, and 3) attending industry conferences and informing suppliers of the program. Both administrative approaches have made the above efforts. It is not clear that either has an advantage in this area.

#### **4.6 Support of Program M&V Activities**

The program monitoring and verification (M&V) process includes collection of data necessary to develop measures of the technical and economic impacts of rebated systems. M&V activities include site visits, development of monitoring and data collection system plans, equipment installation, and ongoing communications with participants. This process requires the M&V contractor to establish a working relationship with program participants midway through their program participation experience.

To ensure this experience is a positive one, the M&V contractor's activities must be coordinated with those of the Program Administrator. In the absence of effective coordination and communication, program participants may not understand the role of M&V activities in their project or their role in making them successful. Such a circumstance can make the M&V contractor's task more difficult and thus lead to lower program participant satisfaction. During the program tenure to date, the evaluators worked with each administrator to receive project updates, assist with notification letters, coordinate customer contact and support for the M&V process, and review monitoring plans. No significant differences among administrative approaches were experienced by the M&V evaluators.

#### **4.7 Other Organizational Characteristics**

Other areas that were reported as potentially demonstrating strengths or weaknesses for the two administrative approaches analyzed in this comparative assessment include: 1) the use of account representatives, 2) customer energy use information, 3) proximity to interconnection, metering and other utility functions, 4) host customer perceptions, 5) regulation, 6) risk aversion, and 7) ability to fund the incentives program. Each area is discussed below.

##### ***Customer Account Representatives***

Program Administrators reported utility account representatives are an important resource for informing customers about the program. One utility reported incentivizing their account representatives for the successfully completed customer applications they bring to the program. Results from the Second-Year Process Evaluation indicated that approximately 16% of customers come to the program through their utility representative. Moreover, roughly 24% of nonparticipant host customers reported hearing about the program from their utility representative. A reported benefit of using account representatives to recruit program

participants is that they are already meeting with customers on other energy issues and they may already know which customers would benefit from self-generation. Some parties interviewed, however, reported that utility account representatives do not adequately represent the benefits and costs of self-generation to their customers.

SDREO does not have a comparable sales force; however, SDG&E account representatives are educated about the program and are encouraged to promote it. Furthermore, given that the program is mainly marketed through third party suppliers, and SDG&E representatives are currently promoting the program anyway, it is not clear how much of a difference it would make on participation rates for SDREO or another non-utility organization to have an active recruiting sales force.

### ***Host Customer Information***

Utilities have access to their customer energy use data, and this would seem to be a valuable resource for them in targeting potential self-generation customers. Interestingly however, only one utility reported using this customer data for this purpose. Again, as marketing efforts have been focused on third party suppliers, direct customer recruiting is not a primary outreach strategy for this program.

### ***Proximity to Utility Functions***

Certain utility functions such as interconnection, net metering, and tariffs are important to the Self-Generation Incentive Program. While the program administrator clearly cannot be responsible for everything involved with these other project implementation functions, they are the key contact point for the program applicant. Therefore, having access to information regarding these other utility functions is critical to the success of the program, and utilities are able to access these functions more readily than a non-utility. Results from the process evaluation indicated that problems with interconnection and metering, as well as uncertainty related to exit fees or standby charges are a major source of confusion and frustration for customers and program applicants. Therefore, an administrator who is able and willing to facilitate good information flow and alleviate some of this tension will be more effective.

In the case of the Self Generation Incentive Program non-utility administrator, SDG&E facilitated the interconnection process for their customers by setting up one person for all customers or program applicants to contact for information regarding interconnection and metering, allowing customers to receive information, forms, and clear directions from a single point of contact.

### ***Host Customer Perceptions***

Many customers reportedly view their utility as the entity they rely on for their overall energy needs and information. Moreover, they perceive the utility is a long-lived

organization with the resources to provide rebates. Furthermore, they may trust that if something does go wrong, the Commission will intervene on their behalf.

The other side of this coin is that certain customers may not want to deal with a utility for self-generation because they perceive the greater utility organization itself does not embrace self-generation as a resource to meet its system needs. They reportedly fear that the utility will raise the ir rates or impose fees on them in order to overcome the “lost revenues” resulting from self-generation. For these reasons, they may be more amenable to the idea of an objective third party administering the program.

Results from the process evaluation, however, showed that many customers allowed their third party equipment supplier to intervene for them with the administrator. In these cases, it was irrelevant to the customer what type of organization administered the program.

### ***Regulation***

An area in which utility and non-utility organizations differ considerably is the extent to which they are subject to regulation. Utility regulation could be considered an advantage or a disadvantage for a program administrator. For example, several administrators interviewed for this study reported that customers may be more comfortable receiving the rebate from a utility because they are regulated, and therefore the customer can complain to the Commission regarding any misconduct. Further, a regulated utility might be more diligent in following policies and documenting expenditures, and, being accustomed to accountability practices with ratepayer money, they might be more likely to be conservative with spending program funds. Others reported that regulation could be considered a disadvantage, as non-regulated organizations would react more quickly and have more flexibility in how they choose to respond to various situations or changes in the marketplace.

### ***Risk Aversion***

Utility administrators reported having more risk aversion than they expected a non-utility administrator would have. In particular, they reported that they might not employ certain strategies due to fear of legal implications or causing a perception of favoritism among customers. For example, utility administrators reportedly did not think they had the freedom to develop all the marketing and outreach tools that a non-utility administrator might have, such as endorsing particular suppliers or providing a list of approved suppliers for new applicants.

### ***Program Funding***

Each of the four investor-owned utilities are funding this program by collecting costs in their balancing and memorandum accounts until a formal ratemaking proceeding allows the costs to be recovered from ratepayers. Given this funding structure, it is not clear that any non-

utility organization would be able or willing to act as a true program administrator and take on this fiscal management function. Rather, with the current structure, the utilities will always need to provide fiscal accountability for each project and related program oversight.

## **4.8 Summary**

This Section summarized some of the key organizational differences between a utility and a non-utility entity. For the role of administrator of the Self-Generation Incentive Program, it is clear that with the current funding structure, utility involvement and fiscal management is necessary. Thus, under the current structure, the Commission's only alternative to a utility administrator would be a hybrid administration approach involving a utility and non-utility as is the case now with SDG&E and SDREO. A further modification could be made on this current situation, however, by allowing the utility to retain more of the administrative functions themselves (omitting many of the duplication of efforts inherent in the current situation) and contract out some or all of the implementation functions for the program.

The relationship between SDREO and SDG&E is not necessarily representative of the non-utility / utility relationship in general. That is, in the program's current situation, SDREO has been given access to SDG&E staff (e.g., interconnect, financial review staff, etc.) that another entity might not receive. Therefore, as long as the program is operated through the utility (as it must with financial payments and, to a lesser extent, interconnection), the non-utility, either by program design or existing relationships, must have a good relationship with the local utility. Again, given the unique relationship of SDREO and SDG&E, the situation in this pilot "experiment" is not representative in general of a utility / non-utility hybrid administrative effort.

Given the limitation that this funding mechanism is not likely to change in the near future, it is not clear from the discussion in this Section that any significant benefit is gained by a hybrid administration of the program, other than to free up certain resources for the utility. A utility administrator exhibits a number of desired characteristics of an administrator, namely size, stability, legitimacy, accountability, experience and expertise. These characteristics might also be found in a non-utility organization. However, given that the utility will need to retain management of the funding and will therefore want to perform verification and accountability functions, they will need to remain involved in the administration of the program. One possible modification on the current model would be to retain administration functions with the utility while contracting out implementation and outreach functions. This may prove to be a more effective strategy for a utility/non-utility hybrid administrative approach as it would reduce or eliminate much of the overlap of responsibility inherent in the current model.

This organizational review does not present the entire story, however. The next section examines additional criteria of an effective administrator using results from the two years of administration of the program with the current situation. In effect, the non-utility approach (SDREO / SDG&E) is compared with the utility approach (PG&E, SCE, and SoCalGas) and differences in program results and administrative effectiveness are examined. Furthermore, Section 6 presents a summary and conclusive statements regarding the results.

# 5

## Comparison of Administrator Effectiveness

---

### 5.1 Overview

This section presents a comparison of the effectiveness of the differing administrator approaches using the criteria identified in Section 2 and the available data collected for this analysis. First, the assessed criteria are presented and discussed in Section 5.2. Second, the criteria were used to guide an analysis of the available program data that is presented in Section 5.3. Third, a summary of the major findings and implications for the comparative administrator effectiveness analysis is presented in Section 5.4. Although this effectiveness analysis provides many interesting insights into the relative performance of these two groups, it does not by itself represent the sole basis for drawing the conclusions of this comparative assessment.

### 5.2 Criteria

Criteria used in examination of the effectiveness of the differing approaches to program administration were defined and sources of data for these criteria were identified. Each of the criteria used in this analysis is listed below and organized by assessment topical area. Note that, as discussed in Section 2, there are some additional criteria identified that are not necessarily applicable to a defined program goal, but instead provide insights into the administrative effectiveness of the two administrator approaches.

- **Program participation**
  - *Fully subscribed participation in the program (i.e., total installed capacity and number of participants)*
  - *Self-Generation Incentive Program penetration rate*
- **Administrative cost-effectiveness**
  - *Administrative cost per application*
  - *Administrative cost per unit of installed capacity*
  - *Administrative costs as a percent of overall program budget*
- **Administrative efficiency**
  - *Average project completion times incorporating response times to program submittals and inquiries*



- **Emphasis on clean power**
  - *A high percentage of Level 1 and Level 2 projects are successfully installed with sufficient performance*
- **Demand reduction**
  - *Participants' demand for grid power during peak demand periods is reduced*
- **Market outreach and support**
  - *Quantifiable program impact on market development needs of the energy services industry*
  - *Demonstrated consumer education and program marketing support as needed*
  - *Growth in number of applications over time*
- **Customer awareness**
  - *Increased customer awareness of available distributed generation technology and incentive programs*
- **Customer and supplier satisfaction ratings**

### **5.3 Comparison**

A comparison of the relative effectiveness of the administrator approaches was evaluated based on the criteria identified above. These comparisons by criteria are discussed below. Note that the data used in this evaluation are from the program start in 2001 through May of 2003 unless otherwise noted.

#### ***Program Participation***

The evaluation criteria entail measuring the participation in the program by total installed generation capacity and number of applications. The total number of applications, including active, inactive and complete projects, and the associated estimated generation capacity is summarized by program administrator and by category in Table 5-1.

**Table 5-1: Number of Program Applications and Estimated Installed Capacity**

Program Year	Project Status	Utility 1		Utility 2		Utility 3		Utility Total		Non-Utility	
		Projects	kW	Projects	kW	Projects	kW	Projects	kW	Projects	kW
PY2001	Active	10	4,351	3	1,038	10	3,980	23	9,369	8	2,156
	Inactive	76	30,752	43	16,037	52	22,933	171	69,722	17	5,920
	Complete	15	2,276	5	2,164	10	4,081	30	8,521	12	3,009
	<b>Total</b>	<b>101</b>	<b>37,378</b>	<b>51</b>	<b>19,239</b>	<b>72</b>	<b>30,994</b>	<b>224</b>	<b>87,611</b>	<b>37</b>	<b>11,085</b>
PY2002	Active	99	27,557	36	11,516	65	22,801	200	61,874	9	2,528
	Inactive	75	26,025	33	10,817	41	13,376	149	50,218	6	1,894
	Complete	17	4,007	11	2,416	7	600	35	7,023	3	142
	<b>Total</b>	<b>191</b>	<b>57,588</b>	<b>80</b>	<b>24,749</b>	<b>113</b>	<b>36,777</b>	<b>384</b>	<b>119,114</b>	<b>18</b>	<b>4,564</b>
PY2003 Through May	Active	66	18,389	18	8,994	43	21,303	127	48,685	16	4,298
	Inactive	7	1,747	2	1,700	6	3,780	15	7,227	1	120
	Complete	0	0	0	0	0	0	0	0	0	0
	<b>Total</b>	<b>73</b>	<b>20,135</b>	<b>20</b>	<b>10,694</b>	<b>49</b>	<b>25,083</b>	<b>142</b>	<b>55,912</b>	<b>17</b>	<b>4,418</b>
Program To Date	Active	175	50,297	57	21,548	118	48,084	350	119,928	33	8,982
	Inactive	158	58,523	78	28,554	99	40,089	335	127,166	24	7,934
	Complete	32	6,282	16	4,580	17	4,681	65	15,543	15	3,150
	<b>Total</b>	<b>365</b>	<b>115,102</b>	<b>151</b>	<b>54,682</b>	<b>234</b>	<b>92,854</b>	<b>750</b>	<b>262,638</b>	<b>72</b>	<b>20,067</b>

The size of the distributed generation market, or pool of potential program participants, faced by the utility administrators is much larger than that faced by the non-utility administrator. Consequently, it is not surprising that the total number of applicants and total installed capacity is significantly greater for the utility administrators. As such, in order to evaluate these criteria on a normalized basis, the administrative cost per program applications and per installed system capacity were developed. These criteria are addressed below under the subheading “Administrative Cost Effectiveness.”

**Program Penetration Rates**

Table 5-2 presents a comparison of application penetration rates for the utility and non-utility approaches. The penetration rate is calculated as the total number of applications as a percent of all eligible customers. Eligible customers were estimated using the number of nonresidential accounts per service area (in thousands).<sup>1</sup>

---

<sup>1</sup> From “California 2001 Electric Utility Retail Deliveries,” California Energy Commission website, [http://www.energy.ca.gov/electricity/utility\\_sales.html](http://www.energy.ca.gov/electricity/utility_sales.html). LADWP area used as proxy for SoCalGas.

**Table 5-2: Program Penetration Rates**

	Utility 1	Utility 2	Utility 3	Utility Average	Non-Utility
No. Applications per 1,000 Nonresidential Accounts (all applications)	0.62	0.28	1.20	0.57	0.55
No. Applications per 1,000 Nonresidential Accounts (excluding inactive applications)	0.35	0.14	0.69	0.31	0.36

As shown, when considering all applications, a slightly higher penetration rate is observed for the utility average than for the non-utility. However, when considering just active and complete applications, a slightly higher penetration rate is observed for the non-utility as compared to the average utility result. When comparing results by individual administrator, the range of results for active and complete applications is from 0.14 to 0.69 with the non-utility falling roughly in the middle of this range at 0.36 applications per thousand nonresidential accounts.

***Administrative Cost Effectiveness***

The measure of the cost-effectiveness of Program Administration is assessed from several perspectives. These include: 1) administrative costs as a percent of overall program budget, 2) administrative cost per application, and 3) administrative cost per kW of system rated generation capacity.

The use of administrative costs in this analysis is based on costs reported by each administrator. It is recognized that not every entity accounts for all costs in exactly the same manner; for example, how an organization allocates certain overhead costs to the program may differ among administrators. It is expected, however, that overall the program budgets and expenditures are roughly comparable. In addition, it should be noted that, by program design, the administrative costs for the non-utility do not include the cost of the SDG&E program manager.<sup>2</sup>

***Administrative Costs as a Percent of Overall Program Budget***

Table 5-3 presents administration and marketing costs as a percent of the overall program budget for both the utility and non-utility approach. Administrative costs are defined here as net of M&V expenditures.

---

<sup>2</sup> Throughout this analysis the additional program administrative costs expended by SDG&E are not represented in the non-utility approach. These omitted expenditures are part of the true cost of administering the program via the SDREO/SDG&E approach; however, they are not charged to the program and were not available for this analysis.

**Table 5-3: Administration Costs as a Percent of Overall Program Budget**

Period	Utility 1	Utility 2	Utility 3	Utility Average	Non-Utility
PY2001	0.50%	0.74%	2.94%	1.40%	1.42%
PY2002	2.00%	2.99%	2.12%	2.37%	2.97%
PY2003 through May	0.83%	0.79%	1.06%	0.89%	1.61%
<b>Program to date</b>	<b>1.11%</b>	<b>1.51%</b>	<b>2.04%</b>	<b>1.55%</b>	<b>2.00%</b>

Note: Total budget represents total incentive budget plus administrative, marketing, and M&V costs allocated by Program Year.

As shown, the percentage of administrative costs for the non-utility was roughly equal to the percentage for the utility average in the first year. In addition, the non-utility percentage was about 25% higher than the utility average percentage in the second year and about 80% higher in the first five months of the third year. Overall, the non-utility result was approximately one third higher than the average utility result. Furthermore, in the first year, results ranged from 0.5% to 2.9% with the non-utility result being roughly in the middle of this range. For the following periods, the range was not as broad, and the non-utility result was nearly the highest or the highest result in the distribution.

**Administrative Cost per Application**

To normalize administrative costs to the number of applications presented in Table 5-1, the average administrative cost per application was calculated for each program year. Table 5-4 presents a summary of the cost per application by utility and non-utility administrator. In order to recognize the differences in time spent for each type of application, it is assumed that inactive accounts required on average one-half the administrative time that an active account requires. Therefore, for comparison purposes, inactive accounts were given one-half the weight of active accounts. Furthermore, the administrator costs are net of program M&V expenditures.

**Table 5-4: Administrative Cost per Application**

Program Year	Utility 1	Utility 2	Utility 3	Utility Average	Non-Utility
PY2001	\$ 4,762	\$ 8,204	\$ 10,870	\$ 7,945	\$ 7,712
PY2002	\$ 7,818	\$ 15,320	\$ 3,903	\$ 9,013	\$ 30,656
PY2003 through May	\$ 7,151	\$ 13,518	\$ 3,935	\$ 8,201	\$ 15,154
<b>Program to date</b>	<b>\$ 6,983</b>	<b>\$ 13,140</b>	<b>\$ 5,648</b>	<b>\$ 8,590</b>	<b>\$ 15,494</b>

As shown, administrative dollars per application for the non-utility administrator were slightly less than the utility average for the first year. In addition, they were less than two of the three individual utility results for that year. In the second year, however, the non-utility result was 3.4 times higher than the utility average and significantly higher than any of the individual utility results. In the first five months of the third year, the non-utility results were about 85% higher than the utility average as well as being higher for all the individual utility results. Overall, the non-utility result is approximately 80% higher than the average utility result.

Non-utility administrator costs exhibited a high spike in the second year coupled with a significant decrease in new program applications relative to the utility results. This is believed to be due to a number of factors including:

- A high level of activity during PY 2001 due to the much higher electric prices in the San Diego region at that time -- coupled with the energy crisis, which in effect led to a reduction in applications for PY2002 as energy prices dropped and the power supply crisis subsided, and
- San Diego Regional Energy Office (SDREO) increased staff support to the program during 2002 in response to the initial high level of program activity that required much of its administrative support during PY2002 and early 2003 as these first year projects advanced to post-PPA stages.

**Administrative Cost per kW of System Capacity**

Table 5-5 presents a comparison of the administrative cost per unit of generation system capacity between utility administrators and the non-utility administrator. The distributed generation system capacity is calculated based on all active and completed accounts.

**Table 5-5: Administrative Cost per kW of System Capacity (\$/kW)**

<b>Program Year</b>	<b>Utility 1</b>	<b>Utility 2</b>	<b>Utility 3</b>	<b>Utility Average</b>	<b>Non-Utility</b>
PY2001	\$45	\$76	\$62	\$61	\$43
PY2002	\$38	\$70	\$15	\$41	\$172
PY2003 through May	\$27	\$29	\$8	\$21	\$58
<b>Program to Date</b>	<b>\$35</b>	<b>\$56</b>	<b>\$20</b>	<b>\$37</b>	<b>\$77</b>

As shown, the per-unit administrative cost started out lower for the non-utility approach in the first year of the program. During the second year, however, the cost per kW greatly increased for the non-utility approach for the reasons mentioned above, and during the third

year it came down significantly for both administrator groups. Overall, administrative cost per kW for the non-utility approach is roughly twice that of the average utility approach.

***Administrative Efficiency***

This subsection looks at the length of time for project completion, which includes the response times of administrators to various program submittals and inquiries. This information is presented in an effort to compare the administrative efficiency of the two approaches in dealing with applications, documentation and program milestones. It should be noted, however, that time periods are dependent on a number of factors which are not under the administrator's control, e.g. applicant response time. Therefore, an occasionally long time period may reflect an unresponsive customer rather than an inefficient administrator.

Table 5-6 presents the number of days from the time the applicant satisfied the proof of project advancement until the incentive check was issued for the utility approach.

**Table 5-6: Days Active Prior to Completion for Active and Complete Projects**

Incentive Level	Technology	Utility 1			Utility 2			Utility 3			Utility Average			Non-Utility		
		N	Mean	Std. Error	N	Mean	Std. Error	N	Mean	Std. Error	N	Mean	Std. Error	N	Mean	Std. Error
Level 1	Photovoltaic	27	321	27.26	9	205	15.55	7	237	28.10	43	283	19.41	4	378	92.21
	Wind Turbine	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Level 1 Hybrid	Photovoltaic, Hybrid	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Level 2	Fuel Cell, Nonren.	1	482	0.00	0	0	0.00	0	0	0.00	1	482	0.00	0	0	0.00
Level 3R	IC Engine, Ren.	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
	Microturbine, Ren.	0	0	0.00	1	203	0.00	0	0	0.00	1	203	0.00	0	0	0.00
Level 3N	IC Engine, Nonren.	4	452	76.27	4	273	59.04	6	441	28.50	14	396	34.86	4	569	43.87
	Microturbine, Nonren.	0	0	0.00	1	363	0.00	3	487	57.45	4	456	51.10	7	495	37.80
Level 3 Hybrid	Microturbine, Hybrid	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00

For one of the technologies, internal combustion engines using nonrenewable fuel, the difference shown of 396 days for the average utility result and 569 days<sup>3</sup> for the non-utility result is statistically significant. The differences in results between the average utility and the non-utility shown for the other two comparable technologies (photovoltaics and microturbines with nonrenewable fuel) are not significant. Thus, for applications involving internal combustion engines, a shorter completion period is observed for the utility approach. However, the small sample sizes could allow for factors other than administrative efficiency (e.g., experience of the applicant, air permitting issues, etc.) that drive the results.

### ***Emphasis on Clean Power***

As discussed in Section 2, a goal of the Self Generation Incentive Program is to ensure deployment of clean self-generation technologies. A criterion developed to measure attainment of this goal is the successful installation and performance of a high percentage of Level 1 and Level 2 projects. In addition, since this criterion was developed before the split of Level 3 into renewable (Level 3R) and nonrenewable (Level 3N) technologies, it was expanded for this evaluation to include Level 3R as well.

Table 5-7 presents the number and capacity of completed projects (as of May 31, 2003) for the clean power technologies. As shown, the utilities as a whole produced 46 completed projects with clean technologies, representing 71% of their total completed projects. In comparison, the non-utility produced four completed projects with clean technologies, representing 27% of their completed projects. Moreover, a statistical test of a difference of proportions confirms there is a significant difference between these two results.<sup>4</sup> Weighting the results by rated system capacity, there is a less dramatic, although still significantly greater, proportion produced by the utilities of 34% compared to 29% produced by the non-utility.

Table 5-8 presents similar information for projects active as of the end of May 2003. As shown, 53% of the utilities' active projects represent clean technologies, compared to 55% of the non-utility's active projects. However, statistically there is no difference between these results. When weighting them by rated system capacity, however, the difference between the result of 29% of clean active projects produced by the utilities compared to 26% of clean active projects produced by the non-utility is statistically significant.

---

<sup>3</sup> The mean of 569 days to completion for SDREO ICN projects was not caused by an outlier - the time required to complete each of the four internal combustion engine projects was actually fairly long (470, 521, 633 and 652 days, respectively).

<sup>4</sup> This result is significant at the 95% level of confidence using a test of differences of proportions. See, for example, Richard Larsen and Morris Marx. *An Introduction to Mathematical Statistics and its Applications*. Prentice-Hall, Inc., 1981, p. 335.



**Table 5-7: Clean Power Completed Projects**

Incentive Level	Technology	Utility 1				Utility 2				Utility 3				Utility Total				Non-Utility			
		Apps	% of Complete	kW	% of Complete	Apps	% of Complete	kW	% of Complete	Apps	% of Complete	kW	% of Complete	Apps	% of Complete	kW	% of Complete	Apps	% of Complete	kW	% of Complete
Level 1	Photovoltaics	27	84%	2,969	47%	10	63%	1,098	24%	7	41%	600	13%	44	68%	4,667	30%	4	27%	913	29%
	Fuel Cell, Ren. Fuel	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	Wind Turbine	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Level 2	Fuel Cell, Nonren. Fuel	1	3%	200	3%	0	0%	0	0%	0	0%	0	0%	1	2%	200	1%	0	0%	0	0%
Level 3R	IC Engine, Ren. Fuel	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	Microturbine, Ren. Fuel	0	0%	0	0%	1	6%	420	9%	0	0%	0	0%	1	2%	420	3%	0	0%	0	0%
<b>Total Level 1, Level 2, and Level 3R Projects</b>		<b>28</b>	<b>88%</b>	<b>3,169</b>	<b>50%</b>	<b>11</b>	<b>69%</b>	<b>1,518</b>	<b>33%</b>	<b>7</b>	<b>41%</b>	<b>600</b>	<b>13%</b>	<b>46</b>	<b>71%</b>	<b>5,287</b>	<b>34%</b>	<b>4</b>	<b>27%</b>	<b>913</b>	<b>29%</b>

**Table 5-8: Clean Power Active Projects**

Incentive Level	Technology	Utility 1				Utility 2				Utility 3				Utility Total				Non-Utility			
		Apps	% of Active	kW	% of Active	Apps	% of Active	kW	% of Active	Apps	% of Active	kW	% of Active	Apps	% of Active	kW	% of Active	Apps	% of Active	kW	% of Active
Level 1	Photovoltaics	89	51%	14,190	28%	29	51%	6,228	29%	52	44%	8,556	18%	170	49%	28,973	24%	18	55%	2,291	26%
	Fuel Cell, Ren. Fuel	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	Wind Turbine	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Level 2	Fuel Cell, Nonren. Fuel	1	1%	600	1%	0	0%	0	0%	1	1%	1,000	2%	2	1%	1,600	1%	0	0%	0	0%
Level 3R	IC Engine, Ren. Fuel	2	1%	1,350	3%	2	4%	1,755	8%	0	0%	0	0%	4	1%	3,105	3%	0	0%	0	0%
	Microturbine, Ren. Fuel	6	3%	960	2%	2	4%	370	2%	0	0%	0	0%	8	2%	1,330	1%	0	0%	0	0%
<b>Total Level 1, Level 2, and Level 3R Projects</b>		<b>98</b>	<b>56%</b>	<b>17,100</b>	<b>34%</b>	<b>33</b>	<b>58%</b>	<b>8,353</b>	<b>39%</b>	<b>53</b>	<b>45%</b>	<b>9,556</b>	<b>20%</b>	<b>184</b>	<b>53%</b>	<b>35,008</b>	<b>29%</b>	<b>18</b>	<b>55%</b>	<b>2,291</b>	<b>26%</b>

### ***Demand Reduction***

A key criterion of the success of the Self-Generation Incentive Program is that the program participants' demand for grid power during peak demand periods is reduced. The Second-Year Impact Evaluation measured the demand impacts. Impacts for the three utility areas were added and normalized using administrative costs through mid-2002 (since this is the time period when the demand impacts were measured) in order to be able to compare the results on an administrative approach basis.

The results are presented by administrative approach in Table 5-9. As shown, the administrative cost per kW was lower for the non-utility approach than it was for the average utility approach for both on-line capacity and peak demand impact.

It should be noted that the period from program start until measurement of demand impacts (July 2002) did not allow a sufficient time for many projects to come on line. Therefore, sample sizes for the impact estimations were small. Moreover, projects that did come on line by the peak date were mostly from PY2001 applications due to project development lag time.

The results suggest that the non-utility administrator performed more effectively in this area as compared to the utility average for the beginning period of the program (i.e. first year projects and administrative costs through mid-2002). The non-utility administrator was thus successful in getting projects on line early to impact peak demand, which is a major goal of the program. This result is likely related to a high level of awareness of energy costs due to high rates and demand for self-generation experienced in 2001 in the San Diego area.

**Table 5-9: Summary of Demand Impacts on 2002 ISO System Peak Demand**

Technology	Utility 1			Utility 2			Utility 3			Utility Average			Non-Utility		
	On-Line Systems (n)	On-Line Capacity (kW)	Peak Demand Impact (kWp)	On-Line Systems (n)	On-Line Capacity (kW)	Peak Demand Impact (kWp)	On-Line Systems (n)	On-Line Capacity (kW)	Peak Demand Impact (kWp)	On-Line Systems (n)	On-Line Capacity (kW)	Peak Demand Impact (kWp)	On-Line System s (n)	On-Line Capacity (kW)	Peak Demand Impact (kWp)
Level 1 Photovoltaic	8	1,019	724	2	77	54	0	0	0	3	365	259	1	34	12
Level 2 Fuel Cell	1	200	200	1	200	200	0	0	0	1	133	133	0	0	0
Level 3 IC Engines and Microturbines	1	300	243	6	2,780	2,252	4	2,295	1,859	4	1,792	1,451	6	1,377	1,118
<b>Total Estimated Impact</b>	<b>10</b>	<b>1,519</b>	<b>1,167</b>	<b>9</b>	<b>3,057</b>	<b>2,506</b>	<b>4</b>	<b>2,295</b>	<b>1,859</b>	<b>8</b>	<b>2,290</b>	<b>1,844</b>	<b>7</b>	<b>1,411</b>	<b>1,130</b>
Admin. Dollar per kW through mid-2002		\$592	\$771		\$238	\$291		\$297	\$366		\$376	\$476		\$319	\$398

## **Market Outreach and Support**

### **Workshops**

Informational workshops are a primary means of marketing the Self-Generation Incentive Program. All administrators hold workshops in their area. Information on workshops held by program administrators was collected for program year 2002 and a summary of that data relevant to this evaluation is presented in Table 5-10. The following should be noted:

- Counts are presented on the registrant level rather than the firm level,
- It is possible that some of the registrants did not attend the workshop,
- These counts exclude parties that participated in the program, and
- Parties who attended workshops held by multiple administrators were assigned a primary administrator for evaluation purposes based on the number of workshops in which they were registered.

To provide a comparative basis, counts for potential host customers were normalized using the number of nonresidential accounts in each utility area.

**Table 5-10: Administrator Workshops**

	Utility 1		Utility 2		Utility 3		Utility Average		Non-Utility	
	Count	Per 1,000 Eligible Accounts	Count	Per 1,000 Eligible Accounts	Count	Per 1,000 Eligible Accounts	Count	Per 1,000 Eligible Accounts	Count	Per 1,000 Eligible Accounts
Number of Workshops Held	2		7		3		4		5	
Number of Potential Host Customers Reached	52	0.09	236	0.44	270	1.39	186	0.42	130	0.99
Number of Potential Third-Party Applicants Reached	49		143		59		84		37	
Number of Potential Manufacturers Reached	22		38		26		29		35	

As shown, the non-utility approach resulted in a larger proportion of potential host customers reached by workshops relative to the number of eligible accounts than did the average utility approach. However, results for one of the utilities were higher than the non-utility result.

### **Marketing Expenditures**

Table 5-11 presents the number of applications and marketing expenditures for each program year for both the utility and non-utility approaches.

**Table 5-11: Number of Applications and Marketing Costs by Program Year**

Program Year	Number of Applications				Marketing Expenses				Marketing Expenses/Application				
	Utility 1	Utility 2	Utility 3	Non-Utility	Utility 1	Utility 2	Utility 3	Non-Utility	Utility 1	Utility 2	Utility 3	Utility Average	Non-Utility
PY2001	101	51	72	37	\$15,000	\$34,757	\$300,000	\$15,714	\$149	\$682	\$4,167	\$1,666	\$425
PY2002	191	80	113	18	\$80,000	\$186,898	\$10,000	\$91,572	\$419	\$2,336	\$88	\$948	\$5,087
PY2003	73	20	49	17	\$40,000	\$13,400	\$27,083	\$30,213	\$548	\$670	\$553	\$590	\$1,777
<b>All</b>	<b>365</b>	<b>151</b>	<b>234</b>	<b>72</b>	<b>\$135,000</b>	<b>\$235,055</b>	<b>\$337,083</b>	<b>\$137,500</b>	<b>\$370</b>	<b>\$1,557</b>	<b>\$1,441</b>	<b>\$1,122</b>	<b>\$1,910</b>

Note: PY2003 expenditures are through May. Prorated PY2003 budgeted marketing expenditures were used rather than actual marketing expenses incurred to date for PY2003 for two of the utility Program Administrators due to lack of available data.

As shown, the marketing cost per application differs across administrative approaches for each year. Since marketing efforts may affect participation rates in later years as well as the year in which the expenditure is made, the result for the total is most indicative of the effectiveness of marketing dollars towards participation rates. Comparing these results, the utility approach resulted in fewer dollars spent per application than did the non-utility approach. In particular, the non-utility approach resulted in roughly 86% more marketing dollars per application than did the utility approach.

**Number of Applications over Time**

Table 5-12 and Table 5-13 present the number of applications by program year and by application status over time for both utility and non-utility approaches.

**Table 5-12: Number of Applications Over Time, Active and Inactive**

Program Year	Active					Inactive				
	Utility 1	Utility 2	Utility 3	Utility Avg	Non-Utility	Utility 1	Utility 2	Utility 3	Utility Avg	Non-Utility
PY2001	10	3	10	8	8	76	43	52	57	17
PY2002	99	36	65	67	9	75	33	41	50	6
PY2003 through May	66	18	43	42	16	7	2	6	5	1
<b>Total</b>	<b>175</b>	<b>57</b>	<b>118</b>	<b>117</b>	<b>33</b>	<b>158</b>	<b>78</b>	<b>99</b>	<b>112</b>	<b>24</b>

**Table 5-13: Number of Applications Over Time, Complete and Total**

Program Year	Complete					Total				
	Utility 1	Utility 2	Utility 3	Utility Avg	Non-Utility	Utility 1	Utility 2	Utility 3	Utility Avg	Non-Utility
PY2001	15	5	10	10	12	101	51	72	75	37
PY2002	17	11	7	12	3	191	80	113	128	18
PY2003 through May	0	0	0	0	0	73	20	49	47	17
<b>Total</b>	<b>32</b>	<b>16</b>	<b>17</b>	<b>22</b>	<b>15</b>	<b>365</b>	<b>151</b>	<b>234</b>	<b>250</b>	<b>72</b>

A review of the results in Table 5-12 and Table 5-13 suggests the following.

- For utility administrators, the number of active and complete applications increased significantly (443%) from 2001 to 2002. During this same period, active and complete applications with the non-utility administrator decreased by 40%.

- For utility administrators, the number of active and complete applications decreased by 46% from 2002 to the first five months of 2003. During this same period, active and complete applications with the non-utility administrator increased by 33%.
- For utility administrators, the number of inactive applications decreased by 13% from 2001 to 2002. During this same period, inactive applications with the non-utility administrator decreased by 65%.
- For utility administrators, the number of inactive applications decreased by 90% from 2002 to the first five months of 2003. During this same period, inactive applications with the non-utility administrator decreased by 83%.

To summarize, utility administrators experienced a large growth in active applications from 2001 to 2002 while at the same time reducing inactive applications by 13%. In contrast, for the non-utility administrator, both types of applications decreased during this period. From 2002 to mid-2003, however, active applications decreased for utility administrators but increased for the non-utility administrator, and inactive applications decreased substantially for both administrative approaches. These results suggest that the utility approach had an strong upward trend in growth rate of applications during the second year that tapered off during the first half of the third year, while the non-utility approach had a significant downward trend in the second year that turned upward in the first half of the third year.

### ***Customer Awareness***

A criterion for the program goal of deployment of distributed generation is to increase customer awareness of available distributed generation technologies and the Self-Generation Incentive Program.

Table 5-14 presents a summary by administrator type of the percentage of nonparticipating customers who reported they were aware that they could generate their own power at their facility. Also shown is the percentage of nonparticipating customers who reported they were aware of the Self-Generation Incentive Program.



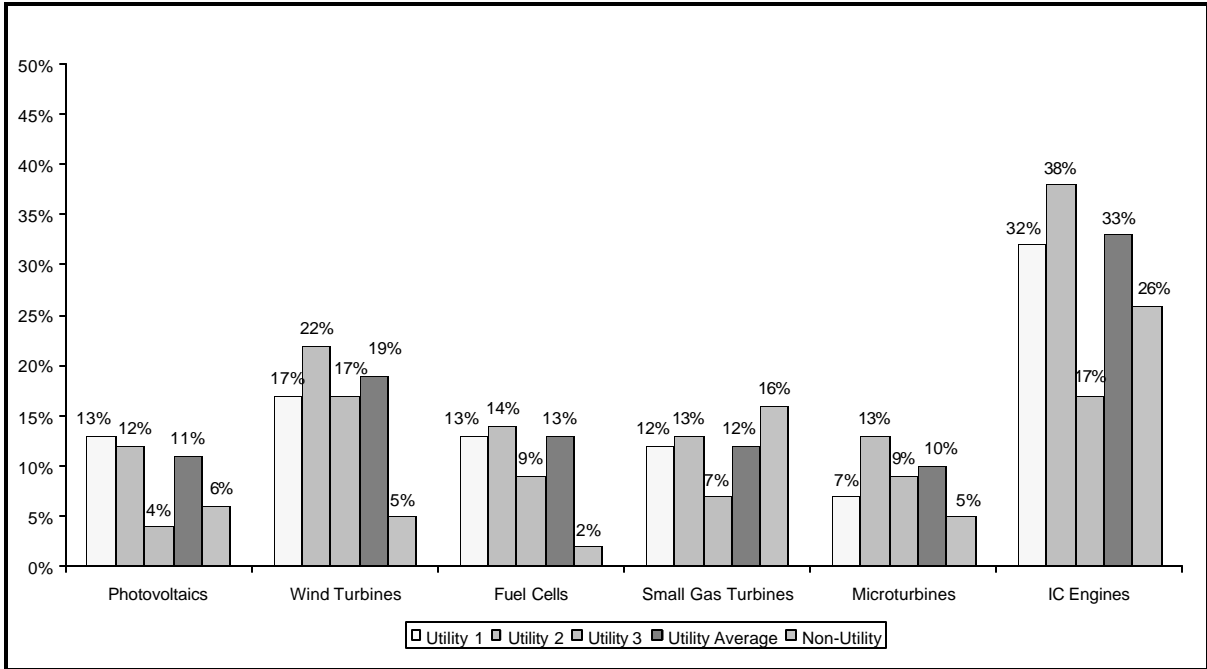
**Table 5-14: Nonparticipant Host Customer Awareness of Self-Generation and the Self-Generation Incentive Program**

Administrator	Total Nonparticipant Host Customers Surveyed	Aware They Can Generate Their Own Power		Aware of the Self-Generation Incentive Program	
		Percent Aware	Standard Error	Percent Aware	Standard Error
Utility 1	113	63%	0.05	17%	0.04
Utility 2	120	64%	0.04	14%	0.03
Utility 3	33	62%	0.09	9%	0.05
<b>Utility Average</b>	<b>266</b>	<b>64%</b>	<b>0.03</b>	<b>15%</b>	<b>0.02</b>
Non-Utility	35	69%	0.08	13%	0.06

As shown in Table 5-14, a slightly lower proportion of nonparticipants in the utility areas reported being aware that they could generate their own power (64% versus 69%), and a slightly higher proportion reported being aware of the Self-Generation Incentive Program (15% versus 13%) as compared to the nonparticipants in the non-utility area. However, a test of differences of proportions showed there is no statistically significant difference across administrator type in these proportions.

Nonparticipants were also asked about their familiarity with particular self-generation technologies. Figure 5-1 presents the percentage of customers reporting they were “very familiar” with distributed generation technologies.

**Figure 5-1: Customers “Very Familiar” with Distributed Generation Technologies**



The figure suggests that, for all technologies but one, customers in the three utility-administered areas on average reported more familiarity than did customers in the non-utility administered area. For small gas turbines, the percentage reporting familiarity was higher for the non-utility area than it was for the utility areas. However, there is no statistically significant difference between these proportions across administrator type for any of the technologies analyzed.

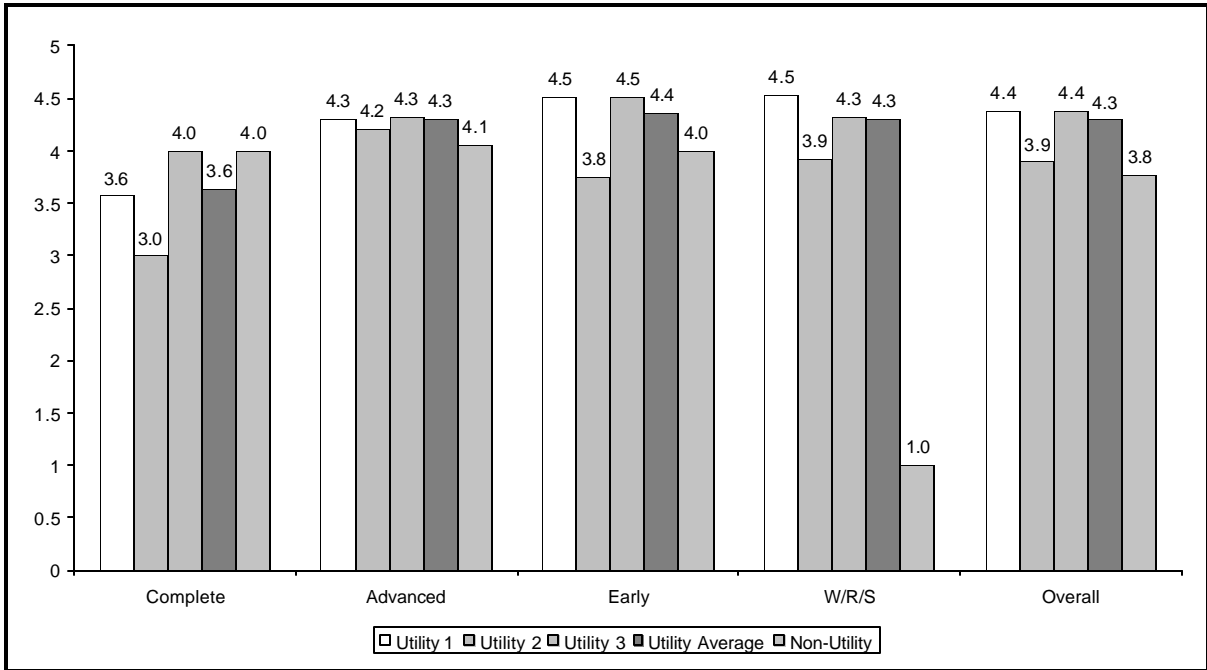
These results suggest that there is no evidence that either administrator approach resulted in a significant difference in “getting the word out” on distributed generation technologies and the Self-Generation Incentive Program. This is not surprising given the statewide cooperative approach across administrators to marketing the program, the use of third party groups to promote the program, and the availability of information on self-generation from non-program related sources. Moreover, no significant differences were found between these results and those from the first-year process evaluation, indicating that levels of customer awareness have remained roughly the same throughout the evaluation period.

**Customer and Supplier Satisfaction Ratings**

Customer satisfaction rates measured during the Second-Year Process Evaluation were averaged by utility approach and application status and are presented in Figure 5-2.

Customers were asked to rate their overall satisfaction with the program on a scale of 1 to 5 where 1 meant “very dissatisfied” and 5 meant “very satisfied.”

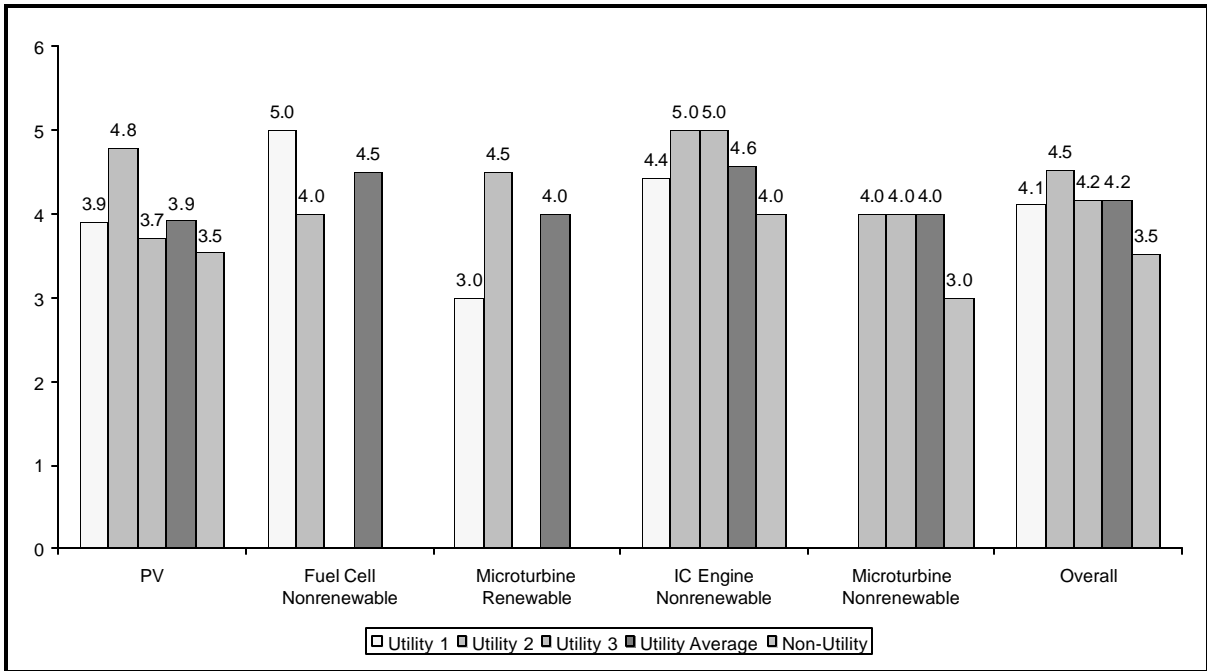
**Figure 5-2: Customer Satisfaction Ratings by Application Status**



As shown, overall ratings for both administrative approaches are high, indicating customers are satisfied with the program. The slight difference in overall satisfaction of 4.3 (for the average utility approach) and 3.8 (for the non-utility approach) is statistically insignificant. Similarly, differences in results for complete and advanced projects are also statistically insignificant. While differences for the categories of early stage and withdrawn/rejected/suspended applications appear to be larger, the sample size for the non-utility approach in each case is only one. Therefore, the results indicate there is no significant difference in customer satisfaction between the non-utility and the average utility approaches.

Satisfaction rates were also measured for suppliers during the Second-Year Process Evaluation and are summarized in Figure 5-3. As with customer satisfaction ratings, the apparent differences are not statistically significant, indicating the administrative approach of non-utility versus average utility did not affect supplier satisfaction of the program.

**Figure 5-3: Supplier Satisfaction Ratings by Technology**



**Comparative Ratings**

During the Second-Year Process Evaluation, suppliers who had worked with both utility administrators and the non-utility administrator were asked to rate how satisfied they were overall with each administrative approach in the following areas:

- Ease of working with administrators,
- Timeliness,
- Responsiveness to information requests,
- Assistance with interconnection coordination,
- Assistance with application materials, and
- Assistance with marketing.

Six suppliers completed the comparison ratings and provided additional comments. Due to the small sample size, the results must be considered with care. Note, however, that these six suppliers were applicants on 62 projects, and thus their comments are worth noting. The unweighted averaged ratings are presented in Table 5-15. Responses were given on a scale of 1 to 5, where 1 meant “very unsatisfactory” and 5 meant “very satisfactory.”

**Table 5-15: Supplier Comparison Ratings of Satisfaction**

Quality	Utility Administrator	Non-utility Administrator
Ease of working with	3.6 (0.33)	4.3 (0.25)
Timeliness	3.4 (0.33)	3.5 (0.37)
Responsiveness to information requests	4.1 (0.20)	3.8 (0.40)
Assistance with interconnection coordination	2.8 (0.75)	2.8 (0.66)
Assistance with application materials	3.5 (0.39)	3.3 (0.37)
Assistance with marketing	2.8 (0.75)	4.2 (0.44)

Standard errors in parentheses

None of the apparent differences shown between the two approaches in Table 5-15 are statistically significant at the 95% level of confidence. However, the first quality, ease of working with, is significantly different at the 90% level of confidence.

The suppliers who provided the responses to this question had further comments. In an effort to provide additional clarity to the situation, the additional comments are provided below.

- “The utility guys are good to work for. SDREO has been slightly better.”
- “We feel more comfortable giving SDREO our data than the IOUs.”
- “(The non-utility approach) is just another layer of bureaucracy with SDG&E having to give approvals.”
- “(SDREO) has done a good job given their constraints.”
- “They are all the same. They can’t make decisions by themselves, they have to get back to the Working Group.”

Some of these comments suggest a slight preference for working with a non-utility administrator while others show no preference between utility and non-utility approaches. The results must be carefully considered due to the small sample size.

## 5.4 Summary

This section presented some quantitative results based on program activity to date for comparing the effectiveness of the two administrative approaches used in the Self-Generation Incentive Program. Criteria were developed based on the original stated goals of the program, feedback from stakeholders and other market players, secondary research, and the evaluators’ judgment. The following is a brief summary of the results.

- **Participation.** A slightly higher penetration rate was found with the average utility result when all applications are considered. When only active and complete applications are considered, the non-utility result is slightly higher.
- **Administrative Costs.** Non-utility administrative costs per application and per kW of installed capacity were higher than the average utility result. For administrative cost per application, the non-utility result was roughly 80% higher than the average utility result overall; however, during first year, the non-utility result was less than two of the utility results. For administrative cost per unit of installed capacity, the non-utility result was roughly twice that of the average utility result; however, during the first year, the non-utility result was less than each utility result. Based on the percentage of overall program budget, the non-utility result was roughly one third higher than the average utility result; however, during the first year one utility result was more than twice the non-utility result.
- **Administrative Efficiency.** The non-utility result was roughly 40% longer than the average utility result for completion times of projects involving internal combustion engines using nonrenewable fuel; other technologies showed no differences. This result may follow from factors other than administrator efficiency such as customer response time.
- **Emphasis on Clean Power.** Utilities produced a greater percentage of completed projects with clean technologies compared to the non-utility. Utilities produced a greater percentage of kW online (completed projects) and a greater percentage of potential kW online (active projects) from clean technologies compared to the non-utility.
- **Demand Reduction.** With the non-utility approach, the administrative cost per kW of demand impact (as of PY2002 ISO peak) and per kW of on-line capacity was found to be roughly 20% lower than that of the average utility cost. However, two utilities were less expensive than the non-utility result. Furthermore, it must be noted that these results represent predominantly project applications from the first year of the program.
- **Market Outreach and Support.** Workshops conducted in 2002 by the non-utility approach were found to reach a higher proportion of potential host customers from the estimated eligible population than did the average utility result. However, marketing expenditures per application were found to be 86% higher for the non-utility approach. Results for the number of applications over time were inconclusive, as the growth trends of both approaches exhibited ups and downs.
- **Customer Awareness.** There were no significant differences in customer awareness found between the two administrative approaches.
- **Customer and Supplier Satisfaction.** There were no significant differences in customer or supplier satisfaction found between the two administrative approaches. Suppliers comparing the two approaches showed either a slight preference for the non-utility approach or were ambiguous between the two.

# 6

## Key Findings

---

This section presents a summary of the key findings and conclusions from this administrator comparative assessment.

In considering the results of this assessment, it is important to remember that the program has performed quite well during its first two years, with 463 active or completed eligible projects, representing a total rated system capacity of roughly 148 MW as of the end of May 2003. Moreover, each administrator has met program objectives and administrative costs have remained well below the program targets stated in Decision 01-03-073. Furthermore, each has contributed to a successful cooperative effort through the Statewide Program Working Group to deliver a consistent high quality program.

This assessment evaluated two administrative approaches to the Self Generation Incentive Program, i.e. a utility administrator approach and a non-utility administrator approach with the utility providing the funding and reasonableness review. Due to the current design and funding mechanism established for the program, which requires utility fiscal oversight, this evaluation could not fully address a true assessment of utility and non-utility administrative approaches.

Furthermore, this required utility fiscal oversight and rate recovery creates an inherent disadvantage in the current non-utility approach, because it necessitates an additional layer of administration required by the utility (SDG&E). Specifically, certain administrative functions involving the final project incentive claim approval are necessarily performed by both entities. Moreover, none of the administrative costs of the utility providing those functions was considered in this assessment because they are not charged to the program. This aspect of the current administrative model should be considered when interpreting the results of this evaluation.

### 6.1 Summary of Key Findings

The key findings of this assessment are discussed below and summarized in Table 6-1.

### **Comparison of Organizational Structure**

The makeup and size of the organization can contribute to administrative effectiveness in a number of ways. In particular, size and structure of the organization might contribute to its ability to attract qualified personnel, to provide public forums for information exchange, to take advantage of economies of scale, to provide flexible and timely responses to market changes, and to provide legitimacy and accountability to the program. In all these areas, a large organization such as one of the California IOUs would be expected to perform more effectively than a smaller organization such as SDREO, mainly due to access to additional resources and use of economies of scale.

In addition, the overall mission and goals of an organization and their alignment with state energy policies and objectives of the program will affect the focus of a program administrator. In this regard, electric and natural gas utilities tend to be multi-purpose, complex organizations with diverse business interests, and not all of these interests are compatible with the promotion of distributed generation other than as an aspect of customer service.<sup>1</sup> In contrast, a non-profit sustainable energy or energy efficiency organization such as SDREO is exclusively in the business of disseminating information and promoting efficient technologies. Therefore, its primary emphasis and business interest is more truly aligned with the goals of the program.

The provision of fiscal management and responsibility is another key issue in publicly funded programs. Clearly, utilities are in a better position to provide that service, as they have decades of experience collecting, managing, and accounting for ratepayer funds. Beyond that, due to the funding structure of the program in which the utilities collect expenditures under existing operations balancing and/or memorandum accounts to be recovered from the ratepayers through California Public Utility Commission (CPUC) approval, it is impractical for a non-utility to fully administer the program without utility oversight -- unless the program fiscal responsibility is completely removed from the utility that is collecting the funds from its ratepayers.

With this current program funding mechanism (e.g., recovery through operations balancing or memorandum accounts), non-utility administration will continue to require utility oversight and fiscal management, thus resulting in a joint administrative effort similar to the current model with SDREO and SDG&E. Given this current situation, the more salient issues are how to minimize administrative costs and duplicative efforts, while taking advantage of the administrative strengths that each organization brings to the partnership.

---

<sup>1</sup> One exception may be increased gas sales for cogeneration projects.



### **Comparison of Administrator Effectiveness**

This report also presented quantitative results based on program activity to date for comparing the effectiveness of the two administrative approaches used in the Self Generation Incentive Program. Criteria were developed based on the original stated goals of the program, feedback from stakeholders and other market players, secondary research, and the evaluation team's judgment.

One area in which the average result of the utility administrative approach was found to be more effective, as compared to the non-utility result, was administrative cost effectiveness, as measured by percentage of administrative costs per total program budget, administrative cost per application, and administrative cost per kW of system capacity. Utilities on the average were able to process applications and bring systems on-line with fewer administrative dollars. However, not every utility administrator performed better than the non-utility administrator. Results for utilities were often in a range, and the non-utility result in many cases fell somewhere within that range. Two major reasons for a lower cost-effectiveness result in the San Diego Gas & Electric service area include: 1) a high level of program activity during 2001 due to the effects of higher retail rates and the energy crisis which then dropped off in 2002, and 2) a ramp-up of SDREO staff in 2002 in response to the strong early program activity.

In addition, the average result for the utility administrative approach showed a higher percentage of completed projects with clean technologies and a higher percentage of kW online from both active and completed projects of clean technologies as compared to the result for the non-utility administrative approach.

When looking at administrative cost per kW of CAISO peak demand impact for the first nine to twelve months of the program, the result for the non-utility administrative approach was roughly 20% less than the average result for the utility administrative approach. Another area in which results suggest the non-utility administrative approach was more effective is marketing outreach and support. Results showed the non-utility approach reached a higher percentage of potential host customers in their service area through workshops, as compared to the average result for the utility approach. Further, comments from some suppliers who had worked with both types of approaches indicated a slight preference for working with a non-utility, while others were ambiguous between the two approaches.<sup>2</sup>

---

<sup>2</sup> Six suppliers representing 62 projects were interviewed for their experience with both utility administrators and the non-utility administrator. Of these, two made statements to the effect that they preferred the non-utility administrator.

Overall, the results suggest that both approaches are able to effectively administer the Self-Generation Incentive Program, although each has demonstrated certain program administration attributes to a greater degree.

**Table 6-1: Key Findings**

<b>Criteria</b>	<b>Result</b>
<i><b>Organizational structure:</b></i>	
Size and makeup of organization	Large organization has access to more resources and ability to utilize economies of scale
Organizational goals aligned with program	SDREO overall goals are more focused and aligned with the program goals
Fiscal responsibility	Not comparable; utilities must provide fiscal oversight under the prescribed program design
Administrative & technical expertise	Both approaches provide necessary expertise
M & V Support	Both approaches provide good support
Marketing Support	Both approaches provide needed support
Other organizational characteristics	Both approaches have strengths in some areas
<i><b>Administrative effectiveness:</b></i>	
Penetration rates	Slightly higher for utility average when considering all applications; slightly higher for non-utility when considering just active & complete applications
Admin cost as percent of budget	Non-utility result is roughly one-third higher than utility average to date; However, during the first year (PY2001), one utility result was more than twice the non-utility result
Admin cost per application	Non-utility result is roughly 80% higher than utility average to date; However, during first year, non-utility result was less than two of the three utility results
Admin cost per kW rated capacity	Non-utility result is roughly twice the utility average to date; However, during the first year, non-utility result was less than each utility result
Project completion time	Project completion times were 40% longer for IC engines with the non-utility approach to date; however, the result is affected by many factors not under the administrator's control
Emphasis on clean power	Utilities produced a higher percentage of completed projects with clean technologies compared to the non-utility. Utilities produced a higher percentage of kW on-line for both active and completed projects of clean technologies compared to the non-utility.
Admin cost per kW of peak demand impact	Non-utility result is roughly 20% lower than the average utility result; however, two utilities' results were lower than the non-utility result. Peak demand results represent primarily first-year projects with admin costs through mid-2002.
Market outreach through workshops	Non-utility result indicated a higher proportion of potential host customers were reached with workshops
Marketing expenditures	Non-utility approach is 86% higher per application than utility average to date
Growth in number of applications	Inconclusive
Customer awareness	Both approaches performed similarly
Customer satisfaction	Both approaches performed similarly
Supplier satisfaction	Both approaches performed similarly
Supplier comparative ratings	Both approaches rated highly; however interview results suggest a slight preference for non-utility administrator on part of some suppliers; others are ambiguous between the two

## References

---

- Blumstein, C., C. Goldman, and G. Barbose. *Who Should Administer Energy-Efficiency Programs?* Review Draft. May 29, 2003.
- California Energy Commission Staff Workshop Paper. *Energy Efficiency and Conservation: Trends and Policy Issues*. May 2003.
- California Public Utilities Commission, Office of Ratepayer Advocates. *Public Financing for Self-Generation: Costs and Benefits of Onsite Photovoltaic, Fuel Cell, and Micro-turbine Systems*. January 2001.
- Eto, J., C. Goldman, and S. Nadel. *Ratepayer-Funded Energy-Efficiency Programs in a Restructured Electricity Industry: Issues and Options for Regulators and Legislators*. May 1998.
- Eto, J., C. Goldman, and S. Kito. *Ratepayer-Funded Energy-Efficiency Programs in a Restructured Electricity Industry: Issues, Options, and Unanswered Questions*. Lawrence Berkeley National Laboratory. August 1996.
- Harrington, C. and C. Murray. *Who Should Deliver Ratepayer Funded Energy Efficiency? The Regulatory Assistance Project*. May 2003.
- Hamilton, B., J. Plunkett, and M. Wickenden. *Gauging Success of the Nation's First Efficiency Utility: Efficiency Vermont's First Two Years*. ACEEE Summer Study on Energy Efficiency in Buildings 2002 Summer Study Proceedings.
- Kuntz, K., B. Samuel, and J. Kurtenbach. *Says Who? Transitioning from Utility to Third-Party Energy Efficiency Information Sources*. ACEEE Summer Study on Energy Efficiency in Buildings 2002 Summer Study Proceedings.
- Research Into Action, Inc., Feldman Management Consulting, Nexus Market Research, Inc., and Quantel, LLC. *Best Practices from Energy Efficiency Organizations and Programs*. Submitted to Energy Trust of Oregon, Inc. August 2002.
- Vine, E., J. Hamrin, N. Eyre, D. Crossley, M. Maloney, and G. Watt. *Energy Efficiency and Load Management under Changing Electricity Market Conditions*. ACEEE Summer Study on Energy Efficiency in Buildings 2002 Summer Study Proceedings.
- Wirtshafter, R., R. Bordner, P. Landry, and M. Rufo. *The Trend Toward Outsourcing of Energy Services: Implications for Recruiting Participants in Utility C&I Programs*. ACEEE Summer Study on Energy Efficiency in Buildings 2002 Summer Study Proceedings.
- York, D., S. Matthews, B. Henderson, B. Hamilton, and P. Meier. *Administration and Implementation of Public Benefits Programs: Experiences from Four States*. ACEEE Summer Study on Energy Efficiency in Buildings 2002 Summer Study Proceedings.