
PALM DESERT PARTNERSHIP & DEMONSTRATION PROGRAM IMPLEMENTATION ASSESSMENT

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EXECUTIVE SUMMARY

This report provides an evaluation of the implementation of the Southern California Edison Company's (SCE) and Southern California Gas Company's (SoCalGas) 2007-2008 Palm Desert Partnership and Demonstration (PDP&D) program, a pilot program designed to support the City of Palm Desert's efforts to reduce 30% of the city's 2005 energy consumption within five years. The PDP&D program is a local government partnership (LGP) program and represents a combined effort on the part of SCE, SoCalGas, the City of Palm Desert, and the Energy Coalition. Funding for the SCE and SoCalGas PDP&D program is provided from the California Ratepayers' Public Good Charge Fund under the auspice of the California Public Utilities Commission (CPUC)¹.

This evaluation focused on three research topics;

- What measures were installed and what were the energy and demand accomplishments of the program relative to objectives stated in the program planning documents?
- What were the costs of the program and how did this compare to other programs?
- What was innovative about the program and what can be replicated elsewhere?

This executive summary provides both an overall evaluation conclusion about the program, followed by an expanded discussion of conclusions from each of the three research topics. More extensive findings and conclusions appear at the end of each chapter.

Overall Evaluation Conclusions

Overall, the SCE program performed on a par with other SCE LGP resource programs, achieving utility reported ex-ante savings of 87% of the goal established in the Program Implementation Plan (PIP). The SCE program performed many of the activities stated in the PIP, such as focusing on measures that target peak demand reduction and achieving incremental savings beyond those reported by SCE territory-wide (core) programs also operating in Palm Desert area. The SCE PDP&D had the highest approved budget and final reported cost of all LGP programs, statewide, and the per capita budget for the PDP&D program was \$320 compared to the average per capita funding of \$14 for 38 other LGP programs reviewed statewide. The SCE PDP&D program cost of \$0.403 per ex-ante reported kWh saved was in line with the average SCE LGP resource program cost of \$0.388 per ex-ante reported kWh.

The evaluation of the SoCalGas PDP&D program is limited primarily to reviewing the programs expenditures because SoCalGas did not report savings accomplishments within the CPUC Energy Divisions (ED) deadline. A particular cost concern is that nearly all of SoCalGas PDP&D program costs of \$990,000 were spent on operating and administrative activities, with less than \$6,000 paid in incentives.

When considering the PDP&D program status as a 'demonstration' or pilot program, and the level of total and per-capita funding provided for the entire program, there should be an expectation that a greater level of rigor would be applied to program design, documentation, and evaluation of demonstration activities, but this did not occur. For example, the programs logic model in no way defined the program, data on

¹ The CPUC in Decision 05-09-043 on December 14, 2006 approved a budget of \$14.0M for SCE, and in Advice letter 3713 submitted on February 14, 2007 approved a budget of \$2.2M for SoCalGas for a total budget of \$16.24. By the end of 2008 program, SCE had spent \$9.98M, or 71% of the approved budget, and SoCalGas spent \$0.99M, or 44% of the approved budget.

measures installed through the SoCalGas component of the program was not submitted, and poor documentation of one of the SCE programs key measures, refrigerant charge adjustment, largely contributed to a low 4% gross realization rate on this measure. Although this is a utility program, there did not appear to be a single entity responsible for the entire program, and this may have contributed to some of the program's deficiencies such as poorly defined program design, inconsistent documentation of activities, or missing data. The PDP&D is a complex program and correcting these issues may require an organizational structure that is different from the current matrix management approach. There is anecdotal information that the program is "more than the sum of its parts", however as it is currently operated it is unlikely that the \$48.8 million in requested funding between 2007 and 2012² will be cost effective or yield program design innovations that can be clearly defined, measured, and replicated elsewhere.

Conclusions on the Research Topics

Measures Installed and Energy and Demand Savings Accomplished

We conclude that the SCE program did install "a suite of comprehensive" DSM measures as stated in the approved PIP. The PDP&D installed measures from 22 residential and non-residential measure categories in 14 market sectors. Approved in December 2006, the SCE PDP&D program operated for two years and reported ex-ante net savings of 23,618 MWh, or 87% of the goal of 26,866 MWh, mostly through the installation of high impact measures (HIMs). It is notable, however, that CFL bulbs played a much less important role in PDP&D savings than for the broader 2006–2008 SCE portfolio. For the SCE PDP&D program, CFLs accounted for 34% of program ex-post gross savings versus 51% of the total SCE portfolio ex-post gross savings. One of the programs proposed innovations, Thermal Energy Storage (TES), was allowed as a non-precedential pilot program as part of the Decision approving the program, however subsequent engineering analysis by SCE concluded that the technology being considered was not feasible; therefore the program had no TES installations.

We also conclude that the program showed appropriate heightened focus on demand reductions achievable through HVAC measure installations as stated in the PIP. Specifically, HVAC activity accounted for 45% of total program kW savings, versus 30% for the broader 2006-2008 SCE portfolio. Select HVAC measures installed by the SCE PDP&D program received a rigorous evaluation, and the results of that evaluation vary greatly from measure to measure. For example, poor documentation on commercial refrigerant charge adjustment (RCA) installations resulted in the evaluator being able to verify only 4% of utility reported gross kWh. On the other hand, the early retirement of residential HVAC systems was implemented as reported and the evaluator completed field measurements that revised energy savings estimates on this measure to 173% of the utility reported gross kWh.

Consistent with goals stated in the PIP, the SCE PDP&D program also achieved savings beyond those reported by SCE core programs operating in Palm Desert area at the same time. For example, during the 2006-2008 program cycle Palm Desert residents saved approximately 981 utility reported kWh per capita, compared to an average savings of 119 kWh per capita for climate zone 15 residents overall (excluding PDP&D), and 386 kWh per capita for residents of cities near Palm Desert that were not part of the PDP&D program and were served only by other SCE core programs.

² The PDP&D was originally planned as a 5 year pilot program, operating from 2007 through 2011. The shift in the portfolio funding schedule to a 2010 – 2012 implies a 6 year pilot program when 2009 bridge funding activity is included.

The SoCalGas program did not provide details on the savings accomplishments in the time required by ED for evaluation, and so our evaluation of the SoCalGas component of the PDP&D partnership is limited to a review of spending.

Program Costs

The combined SCE and SoCalGas PDP&D program had the highest approved budget and reported cost of all LGP programs, statewide. Per capita funding for the combined utility PDP&D program was \$320, which is about 22 times larger than the average per capita funding of \$14 for 38 non-institutional³ LGP programs reviewed statewide.

Incentives that are higher than those offered by other SCE programs were one of the main program innovations. SCE PDP&D incentive levels tended to be higher for all measure categories, averaging \$0.24 per kWh saved compared to an average of \$0.16/kWh and \$0.11/kWh for other SCE LGP and SCE core programs, respectively. An IOU sponsored process evaluation acknowledged these incentives; however the PDP&D program management conducted no research on the impact of these incentives even though it is one of the main pilot objectives of the program.

Of the \$990,000 spent by the SoCalGas PDP&D program, only 1% was spent on incentives, while total operating costs, including administrative costs, accounted for 99% of spending. Administrative costs comprised 45% of total SoCalGas PDP&D program spending, which is excessive. The combined cost of the SCE and SoCalGas PDP&D program is \$0.450 / kWh, or about 16% higher than the average SCE LGP program⁴.

Innovation and Replicability

The effort to evaluate what was innovative about the program and what can be replicated elsewhere was significantly hampered by two factors:

1. The absence of a clear explanation of the program logic that linked program actions to intended outcomes.
2. The absence of detailed quantitative and qualitative data to support the direct linking of program actions with outcomes.

There is substantial anecdotal information suggesting the program piloted strategies and delivery mechanisms that are innovative, and that there was some effect from these strategies, however our ability to assess the innovations and evaluate their unique impacts in an objective and quantifiable sense is very limited based on the data received. We can therefore not conclude whether or not many of these strategies are successful or replicable.

³ The Local Government Program (LGP) sector includes only programs that focus on local governments, and excludes other governmental and quasi-governmental programs, such as the UC/CSU partnership, or the California Department of Corrections partnership.

⁴ As noted previously, when only the SCE PDP&D program costs are considered, the PDP&D program cost \$0.405 per ex-ante reported kWh saved. As no therm savings were reported, it is valid to include SoCalGas costs in calculating total SCE program cost per kWh saved

EVALUATION OVERVIEW AND OBJECTIVES

This report provides an implementation assessment of the Southern California Edison Company's (SCE) and Southern California Gas Company's (SoCalGas) 2007-2008 Palm Desert Partnership and Demonstration (PDP&D) Program, a pilot program designed with the intent to use innovative delivery methods and measures to support the City of Palm Desert to reduce 30% of the city's 2005 energy consumption within five years.

The PDP&D program represents a combined effort on the part of SCE, SoCalGas, the City of Palm Desert, and the Energy Coalition. Funding for the SCE and SoCalGas PDP&D program is provided from the California Ratepayers' Public Good Charge Fund under the auspices of the California Public Utilities Commission (CPUC). This evaluation was designed to address the following research topics:

- What measures were installed and what were the energy and demand accomplishments of the program relative to objectives stated in the program planning documents?
- What were the costs of the program and how did this compare to other programs?
- What was innovative about the program and what can be replicated elsewhere?

Since the PDP&D program is operated within the SCE and SoCalGas service territories, a focus of the evaluation has been upon the *incremental* benefits accruing from the PDP&D program. In other words, what are the benefits resulting from this program that are *above and beyond* those that would have otherwise been attained without the program. The methodology used to conduct this research is described below. Our ability to evaluate this aspect of the SoCalGas PDP&D partnership is limited, however, to a review of spending because the SoCalGas program did not provide details on the savings accomplishments in the time required by ED for this evaluation,

Evaluation Methodology

The methodology for this evaluation consisted of the following tasks:

- Program document review;
- Program staff workshop and in-depth interview with a representative of Palm Desert;
- Analysis of program-specific data and portfolio reporting databases; and
- Analysis of Palm Desert data from high impact measure evaluation⁵.

Program Document Review

To begin the implementation assessment, the evaluation team first reviewed all available program documentation in order to (1) provide the evaluation team with a complete understanding of the program and its history, (2) assess the completeness of program documentation, and (3) document changes in the program design. Items we reviewed included:

⁵ Government Partnerships Programs Direct Impact Evaluation Report, Prepared for the California Public Utilities Commission Energy Division, Summit Blue Consulting, February 8, 2010

- Decision 06-12-013, Order Approving Southern California Edison Company Petition for Modification of Decision 05-09-043, with Modifications, Public Utilities Commission of the State of California, December 14, 2006
- Advice No. 3713 Public Utilities Commission of the State of California, Request for Approval of the Palm Desert Partnership Demonstration Project Implementation Plan, Sempra Utilities, February 14, 2007
- 2006-2008 PDP&D Program Implementation Plan (SCE and SoCalGas)
- 2009-2011 PDP&D Program Implementation Plan (SCE and SoCalGas)
- PDP&D 2007-2008 Process Evaluation by Opinion Dynamics Corporation (SCE)
- Quarterly status reports (SCE and SoCalGas)
- PDP&D marketing materials
- PDP&D monthly and yearly reports
- PDP&D Strategic Plan
- The ED Standard Program Tracking Database (SPTdb)

From this information, the team was able to develop much of the comprehensive program description that is included in this evaluation.

Program Staff Workshop and In-Depth Interview with a Representative from Palm Desert

After developing a basic understanding of the program, the evaluation team met with utility program staff in order to gather additional information that was not included in program documents. The team met with program managers from SCE, SoCalGas, and the Energy Coalition, as well as managers from the SCE LGP program. At this meeting, program representatives identified what were considered to be successful program elements and measures, and also highlighted the elements of the program that they considered to be particularly innovative. The group also developed an organizational table showing each participating entity, key individuals, and the roles of these participants within the PDP&D.

Following this meeting, the evaluation team met with a representative from the City of Palm Desert who was one of the various parties involved in managing the program. During this interview, the evaluation team was able to gain insight into the role the utility played in supporting the City's goals. In addition, the evaluation team was able to visit Palm Desert and informally assess the presence of program elements.

Analysis of Program-Specific Data and Portfolio Reporting Databases

The evaluation team conducted a detailed analysis of program data in order to estimate how much of the reported *ex-ante* energy savings could be attributed to particular program *elements*, identifiable in the program's measure-level database, and to compare these energy savings achievements with energy savings and demand reduction achieved in other regions of the SCE service territory. The evaluation team initially evaluated SoCalGas data; however, SoCalGas reported that a significant amount of therm savings were missing from the reported program database that was submitted to Energy Division by the Energy Division deadline, and thus with agreement from Energy Division, the evaluators did not include the SoCalGas analysis in this report.⁶ The primary sources of information for this analysis were the program tracking databases. Specifically, we obtained copies of the 2006-2008 measure-level data for the PDP&D from the utilities. Data from these databases were used to construct a series of tables characterizing program activity by element and by program delivery mechanism. This important step, an in-depth

examination of trends in program participation by program element, is one that is not included within the current statewide impact evaluation approach. Such an analysis is necessary in the case of a pilot program such as this as it provides a more quantitative understanding of the results obtained from the *design* of the overall program as opposed to simply focusing on specific measures. Additionally, the evaluation team extracted project data from the tracking data for all SCE programs active in the PDP&D operating area, surrounding communities, Climate Zone 15, and the cities involved with the South Bay Government Partnership. This data was used to for various comparisons to the PDP&D program.

Analysis of Palm Desert Data from High Impact Measure Evaluation

At the same time this implementation assessment was conducted, the evaluation team also conducted an analysis of high impact measures⁷ (HIM) associated with the PDP&D program. These results were included in the 2006-2008 government partnerships programs direct impact evaluation report submitted to ED in February of 2010⁸. A summary of this report is included to provide a relative understanding of the ex-post savings associated the high impact measures of this program. A complete impact evaluation for the PDP&D program, including HIM and other measures, will be released in April, of 2010.

Report Organization

This report includes the following sections:

Program Background and Description - including the role of the PDP&D within the City's initiative to reduce 30% of its energy consumption as well as a description of the ratepayer-funded PDP&D program;

Program Measures Installed and Energy Savings - including a more detailed analysis of program-wide results and also results within key program elements;

Program Budget and Cost Analysis – includes various analysis of the programs budget and costs.

Analysis of Program Innovation and Replicability – includes a review of the policies developed that have been transferred to other cities.

⁸ Government Partnerships Programs Direct Impact Evaluation Report, Prepared for the California Public Utilities Commission Energy Division, Summit Blue Consulting, February 8, 2010

PROGRAM BACKGROUND AND DESCRIPTION

Historical Context

The City of Palm Desert is located in Riverside County, California, roughly 125 miles east of the city of Los Angeles. The City claims to be the cultural and retail center for the nearby desert communities.⁹ The city is known as a resort community, featuring many golf courses and private communities. The city is located within California's high desert climate zone, with a mean temperature of 73 degrees and summertime high temperatures over 100 degrees. With such temperatures, a significant amount of energy is used for cooling purposes. According to SCE, overall residential electricity use in the City of Palm Desert is on average 50% higher than typical SCE customers, specifically with higher use of air conditioning and pool pumps in the city compared to the average SCE customer.¹⁰

The U.S. Census Bureau estimates that, in 2007, the City of Palm Desert's population was 47,388.¹¹ Out of the estimated 22,563 households within the City of Palm Desert, the mean household income was estimated to be \$76,975 (2007 dollars)¹² and a median income of \$48,316¹³. SCE reports that the percentage of residents in the City of Palm Desert making over \$200,000 or more a year is double that reported for customers within the SCE territory.¹⁴ In addition to these year-round residents, the city has a large seasonal population. The city reports 32,000 seasonal residents.¹⁵ Together, that means that during the high season, winter months, the city's population is roughly 80,000. With 40% of the maximum population being seasonal, energy efficiency strategies must factor in the unique energy-use needs associated with the on- and off-seasons.

During the summer of 2005, officials from the City of Palm Desert met with a variety of other cities, utilities, and regulators at the Aspen Accord. The Aspen Accord, organized by The Energy Coalition, is an energy policy forum where cities work together to share ideas on how to address regional energy reduction. A number of forums have been held and, at this particular meeting, the City of Palm Desert proposed reducing the city's energy consumption by 30% by the year 2011.¹⁶

According to a city representative, the city was interested in pursuing an energy savings goal because the city wanted to be a leader in the field. The representative mentioned that the town council considers the city as a model for sustainability and wanted to expand its sustainability efforts by increasing the efficiency with which energy was used by its citizens and businesses. The City discussed this proposal with three other members of the Aspen Accord, SCE, SoCalGas, and The Energy Coalition. Together, they agreed to partner with the City to reduce the City's 2005 energy use and demand reduction by 30% over a five-year period (January 2007 to December 2011).

⁹ City of Palm Desert (viewed on October 13, 2009). About Palm Desert. <http://www.cityofpalmdesert.org/Index.aspx?page=155>.

¹⁰ Southern California Edison (2007). Palm Desert Partnership Demonstration Project Program Implementation Plan (Revised).

¹¹ US Census Bureau (viewed on October 13, 2009). 2005-2007 American Household Community Survey 3-Year Estimates. <http://factfinder.census.gov>.

¹² US Census Bureau (viewed on October 13, 2009).

¹³ For some types of analysis, the US Census recommends using the median, as more representative of the spread of income in a community than the mean <http://www.census.gov/prod/2003pubs/p70-88.pdf>. The evaluation did not study the spread of incomes in Palm Desert to determine which figure was most appropriate.

¹⁴ Southern California Edison (2007).

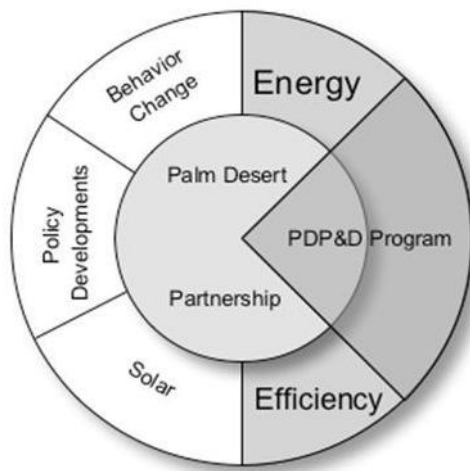
¹⁵ City of Palm Desert (viewed on October 13, 2009). Demographic Information. <http://www.cityofpalmdesert.org/Index.aspx?page=155>.

¹⁶ Palm Desert Partnership (October 22, 2008). "Set to Save Palm Desert Strategic Plan."

The SCE and SoCalGas PDP&D program is one piece of a larger initiative within the City of Palm Desert to reduce the city's 2005 energy consumption and demand levels by 30% within five years. Since this energy savings target is considered to be very aggressive, the City partnered with SCE, SoCalGas, and the Energy Coalition.¹⁷ The Energy Coalition helped the City develop its 30% energy savings goal. Together, these partners refer to themselves as the Palm Desert Partnership. As shown in Figure 1 the PDP&D program, therefore, specifically funds the utilities' role in the Palm Desert Partnership, and serves to:

- Provide strategic support to Palm Desert Partnership initiatives on energy efficiency.
- Manage the energy efficiency implementation activities, including marketing and outreach of traditional SCE and SoCalGas efficiency programs and overseeing the development of new delivery strategies for energy efficiency and new energy efficient technologies.

Figure 1: PDP&D Role in Palm Desert Partnership



Overview of the City of Palm Desert 30% Energy Savings and Demand Reduction Goal

The City of Palm Desert desired to include specific energy efficiency and demand reduction goals – kilowatt hour (kWh), kilowatt (kW), and gas (therms) – to meet the overall 30% energy goal measured against a 2005 baseline. The City also identified a two-year energy savings and demand reduction goal. Table 1 provides an overview of the City of Palm Desert's 30% energy savings and demand reduction targets.

¹⁷ The Energy Coalition is a non-profit organization that works with communities to develop energy reduction plans. The Energy Coalition played a role in working with City of Palm Desert to develop its 30% energy reduction target and plays a strategic role in the Palm Desert Partnership.

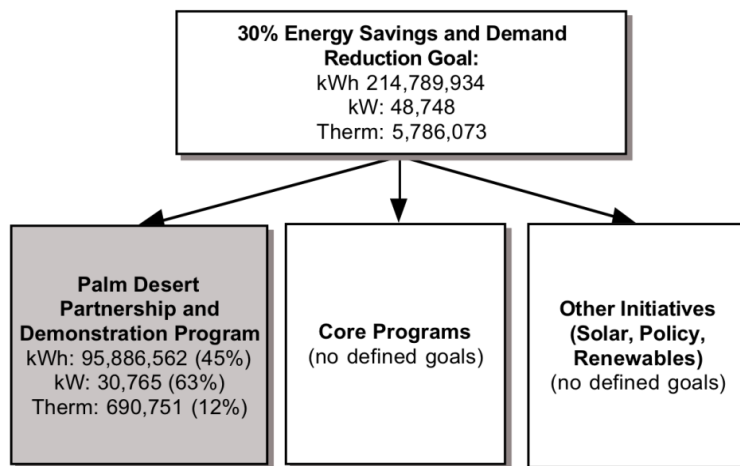
Table 1. City of Palm Desert 30% Energy Savings and Demand Reduction Targets

	2005 Baseline Energy Use	30% Interim Goal (to reach within 2 years)	30% Final Goal (to reach within 5 years)
Electric (kWh)	715,966,447	59,787,452	214,789,934
Peak Electric (kW)	162,493	19,755	48,748
Natural Gas (Therms)	19,286,910	2,800,000	5,786,073

(Source: Palm Desert Partnership (October 22, 2008). “Set to Save Strategic Plan.”)

The PDP&D program proposed specific program goals to assist the City to achieve the overall City 30% goal. While the City’s 30% goal is met by energy savings and demand reduction from the PDP&D program, SCE and SoCalGas core programs, and other initiatives (solar, policy, behavior), only the PDP&D program has specific goals attributed to meeting the City’s 30% goal.

Figure 2 identifies the PDP&D program goals and shows the program’s percentage of the overall 30% goal. As described above, the SCE and SoCalGas core energy efficiency programs and other solar and behavioral initiatives account for the remaining amount of energy savings needed to meet the City’s 30% goal.

Figure 2. Breakdown of Palm Desert’s 30% Energy Savings and Demand Reduction Goal¹⁸

¹⁸ Source: Palm Desert Partnership (October 22, 2008). “Set to Save Strategic Plan”; Discussion with SCE and SCG PDP Program Staff (September 18, 2009); Southern California Edison (2009) 2009-2011 PDP Program Implementation Plan; Southern California Gas (2009) 2009-2011 PDP Program Implementation Plan.)

PROGRAM MEASURES INSTALLED AND ENERGY SAVINGS

The following section provides an analysis of program measures installed and energy savings, and includes the following sections:

- **Ex-Ante Gross Savings Comparative Analysis** - An analysis that compares energy savings in Palm Desert with energy savings in nearby communities, climate zone 15, and other SCE local government partnership programs.
- **Summary of Ex-Post Measure Level Impact Evaluation Findings** - A summary of the PDP&D impact evaluation completed in the 1st quarter of 2010¹⁹ that provides an in-depth analysis of select measures installed by the program.
- **Summary of Preliminary Ex-Post Program Impact Evaluation Results** – Summary of the preliminary data from the full program impact evaluation conducted by ED.

Throughout this section, numerous references are made to energy savings reported by the program. The energy savings referenced throughout this section are both utility reported *ex-ante* values for the 2006 through 2008 program cycle, and also *ex-post* evaluation reported values that are derived from either the Palm Desert impact evaluation, finalized in February of 2010, or being reported from the ED standard program tracking database (SPTdb). As of the issue of this report, this ED database has not yet been finalized and the values being reported are for comparative purposes.

Of special note is the absence of SoCalGas results from this evaluation. Because the complete results for the SoCalGas PDP&D were not provided to ED by the March 2009 deadline established by the Energy Division for IOUs to submit their final 2006-2008 program tracking databases, the SoCalGas component of the pilot program is excluded from this evaluation. Essentially there was nothing presented by SoCalGas to evaluate.

***Ex-Ante* Gross Savings Comparative Analysis**

This section compares energy savings in Palm Desert with that being seen in other regions. To conduct the comparative analysis, the evaluation team used data from the SPTdb to look at ex-ante reported energy savings across three types of comparative regions:

- **Comparative Cities:** Three nearby cities within the High Desert climate zone Indian Wells, Rancho Mirage, and Cathedral City.
- **Climate Zone:** The entire climate zone 15, High Desert, in which Palm Desert lies.
- **Comparative Programs:** The South Bay Partnership, a non-resource program that serves to encourage residents in the South Bay to participate in SCE and SoCalGas energy efficiency programs.

The evaluation team identified energy savings in Palm Desert by examining savings claimed within the PDP&D Program database and energy savings claimed by other SCE energy efficiency programs ('SCE core programs') within Palm Desert zip codes. The evaluation team then compared these savings to those savings obtained within the selected comparative regions.

¹⁹ Government Partnerships Programs Direct Impact Evaluation Report, California Public Utilities Commission Energy Division, Summit Blue Consulting, December 8, 2009.

Program Savings by Region

As shown in the values highlighted in grey in Table 2, in 2007-2008, the PDP&D Program saved 508 kWh per capita. When combined with the additional 474 kWh saved per capita by participants in SCE core program operating in the PDP&D program area, Palm Desert residents saved approximately 981 kWh per capita. This compares to 386 kWh per capita saved for residents in surrounding cities who were supported only by SCE core programs²⁰. These comparison cities show per capita kWh savings that are higher than the overall Climate zone 15 savings of 119 kWh per capita (excluding Palm Desert), but slightly lower than the 474 kWh saved per capita by SCE core programs operating within the Palm Desert operations area. All comparison cities are small neighboring communities to Palm Desert, so it is possible that the advertising program in Palm Desert might have spilled over and influenced them to take advantage of existing SCE programs. SCE core programs operating in areas covered by the South Bay Partnership reported 169 kWh saved per capita. As stated previously, all savings estimates are ex-ante gross IOU reported values.

Table 2. Comparative Ex-Ante Gross kWh Savings (kWh), 2006-2008²¹

Location	Total kWh Saved	Overall kWh per Capita	Non-Residential kWh Saved	kWh / # of businesses	Residential kWh	kWh / # of households
PDP&D	27,001,014	508	16,589,009	6,788	10,412,005	286
SCE Core Programs	25,206,080	474	16,304,128	6,671	8,901,951	244
Palm Desert Total	52,207,094	981	32,893,137	13,459	19,313,956	530
Selected Nearby Cities						
Indian Wells	5,984,445	1,429	5,257,934	22,185	726,511	167
Rancho Mirage	8,745,659	647	5,993,391	7,625	2,752,267	242
Cathedral City	10,153,946	217	5,502,782	9,423	4,651,164	227
Population weighted average savings		386				
Climate Zone 15						
Climate Zone 15 -with Palm Desert	112,350,207	201	71,619,254	7,366	40,730,953	179
Climate Zone 15 - without Palm Desert	60,143,114	119	38,726,117	5,320	21,416,997	112
Other Partnerships						
South Bay Cities	185,304,722	169	141,548,872	5,471	43,755,850	120

²⁰ The per capita savings value is weighted by population for each city included in the study. The 2007 population estimates are Indian Wells, 4,187, Rancho Mirage, 13,517, Cathedral City, 46,792.

²¹ Source: SPTdb 10/08/09; US Census (2005-2007) American Household Community Survey 3-Year Estimate, US Census (2007), County Business Patterns

As shown in the values highlighted in grey in Table 3, demand impacts are also higher in Palm Desert compared to nearby cities, the broader climate zone 15 area, and the South Bay Partnership Program. The PDP&D Program delivered 0.13 of the 0.23 kW per capita saved, including reported SCE core program accomplishments. The weighted average for nearby cities is 0.09 kW per capita and 0.03 kW per capita for both Climate Zone (CZ) 15²² and South Bay Cities, respectively. Similar to energy savings estimates, all demand savings estimates are ex-ante gross IOU reported values.

Table 3. Comparative *Ex-Ante* Gross kW Demand Reduction, 2006-2008²³

Location	Total kW Saved	Overall kW per Capita	Non-Residential kW Saved	kW / # of businesses	Residential kW	kW / # of households
PDP&D	6,808	0.13	3,665	1.50	3,143	0.09
SCE Core Programs	5,635	0.11	3,251	1.33	2,383	0.07
Palm Desert Total	12,443	0.23	6,916	2.83	5,526	0.15
Selected Nearby Cities						
Indian Wells	1,150	0.27	903	3.81	247	0.06
Rancho Mirage	2,546	0.19	1,686	2.15	860	0.08
Cathedral City	2,450	0.05	1,277	2.19	1,173	0.06
Population weighted average savings		0.09				
Climate Zone 15						
Climate Zone 15 - with Palm Desert	27,437	0.05	15,388	1.58	12,048	0.05
Climate Zone 15 - without Palm Desert	14,994	0.03	8,472	1.16	6,522	0.03
Other Partnerships						
South Bay Cities	33,966	0.03	25,082	0.97	8,884	0.02

²² Excluding PDP&D accomplishments in CZ 15

²³ Source: SPTdb 10/08/09; US Census (2005-2007) American Household Community Survey 3-Year Estimate, US Census (2007), County Business Patterns

Summary of Ex-post Measure Level Impact Evaluation Findings

An impact evaluation of SCE's portion of the PDP&D program (SCE2566) was completed in the first quarter of 2010. In order to supplement the analysis of the *ex-ante* program accomplishments discussed previously and provide a more robust investigation of the PDP&D energy savings, the evaluation team provides a brief overview of key findings from that report. The following sections address:

- Residential Early Retirement
- Refrigerant Charge and Airflow
- Net-to-Gross Estimates

A full discussion of the impact evaluation, including a detailed discussion of the evaluation methodology, can be found in Government Partnerships Programs Direct Impact Evaluation Report.²⁴

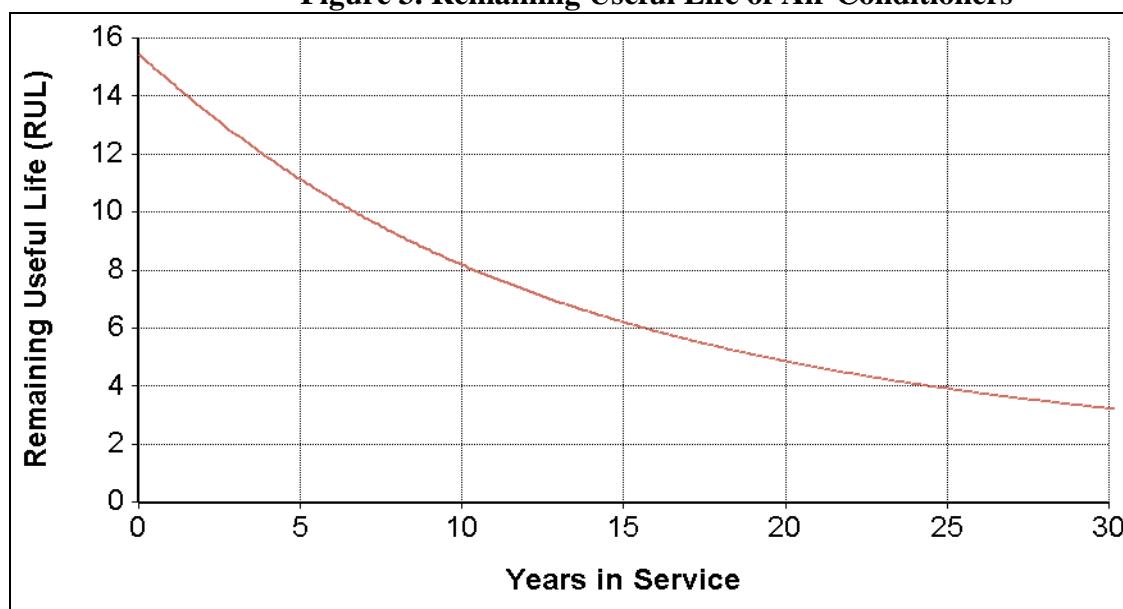
Residential Early Retirement

This section provides an overview of the methodology used to determine the ex-post savings for the early retirement of residential HVAC units. Thirty-four sites were visited for verification and post-only logging. All 34 sites had new equipment installed and each piece of new equipment indicated in the database was found on-site, giving a verification rate of 100%. The PDP&D program tracking database did present problems because the units installed and corresponding unit energy savings did not add up. The units were indicated to be in tons, but the quantity field showed either a one or two for the number of systems installed. Total savings appeared to be quantity times two times unit savings. As a result of this confusion in the database, a quantity/size verification rate would be difficult to calculate explicitly, so none is being reported.

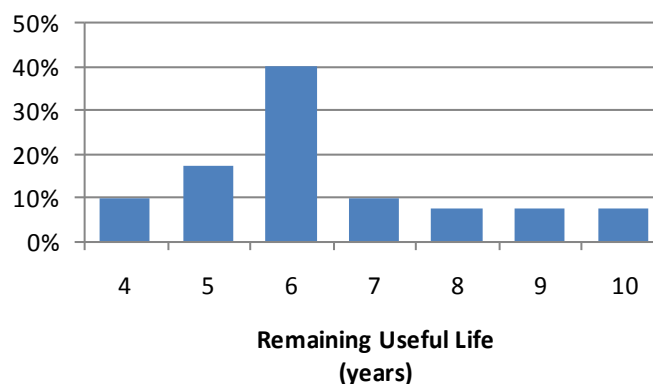
To establish the age of the unit being replaced, the pre-installation inspection forms provided by the program were reviewed for manufacturer and model number. Forty of these forms had legible combinations of manufacturer and model number. These units were looked up in the Preston's Guide, and nameplate efficiency and years of manufacture were recorded. The average nameplate SEER rating observed in the SCE inspection was 9.74, and the average unit retired was 18.7 years old.

The remaining useful life (RUL) curve was estimated from appliance mortality curves fit by a Weibull distribution. The shape factor for the Weibull distribution was chosen based on the tight range of shape factors for other types of appliances. The mean life (and scale factor) was estimated based on a system dynamic model that simulates the active stock of air conditioner units, unit shipments and unit retirements. The resulting Weibull parameters were consistent with parameters of other appliances and the resulting RUL curve when applying a Weibull shape factor of 2.34 and a mean life of 15.5 years is shown in Figure 3. In the instance that an air conditioner unit has not been retired by its mean life (15.5 years), it should be expected to continue running for an additional six years.

²⁴ Government Partnerships Programs Direct Impact Evaluation Report, California Public Utilities Commission Energy Division, Summit Blue Consulting, February 8, 2009.

Figure 3. Remaining Useful Life of Air Conditioners

The estimated air conditioner RUL curve was applied to a sample of units that were retired early. The distribution of the remaining useful life of this sample is shown in Figure 4 below. The mean RUL of this sample is 5.9 years.

Figure 4. Distribution of RUL of Early-Retired AC Units from the Palm Desert Partnership Program

The results of the modeling exercise presented in Table 4 show the verified gross unit savings for improvement from an early retirement of existing equipment and replacement with high efficiency equipment. Of the total of 394 kWh saved per unit, 83% (326 kWh) are the result of the existing equipment being replaced and brought up to code, and the remaining 17% (68 kWh) are the result of the new installed equipment exceeding code requirements for energy efficiency. The gross realization rates for energy and demand savings were found to be 173% and 169%, respectively.

Table 4. Ex-Post Unit Energy and Demand Savings and Tons/Unit²⁵

Measure Category	Unit Energy Savings (kWh/ton)	Peak Demand Savings (kW/ton)	Quantity of Tons Installed per Claimed Units
Early Retirement (Existing up to Code)	326	0.21	4.32
High Efficiency Equipment (Code up to High Efficiency) ²⁶	68	0.03	4.32
Total	394	0.24	4.32

Refrigerant Charge and Airflow

This section presents the results and findings of the residential and commercial RCA measurement and verification work. In order to verify ex-ante savings, the evaluation team conducted an analysis of the program documentation and field data that involved four major steps:

1. **Documentation review.** Analyze program installation forms to determine if a significant change in refrigerant charge occurred. This gives an installation rate.
2. **Field installation verification.** Verify on-site that the unit is still in use and did not receive significant repair, including refrigerant charge, after the initial installation.
3. **On-site RCA test.** Verify on-site that the unit has the correct refrigerant charge.
4. **Calculate the realization rate.** Calculate the overall verification rate as the fraction of claimed tons passing all three of the above criteria.

These criteria were applied to both the residential and commercial RCA samples.

Based on the three screening tests described above, the evaluation team estimates that of the total tonnage of units in the verification sample (92.5 tons), only 10% (nine tons) passed steps 1, 2, and 3 defined above and could be included in the calculation of ex-post verified savings results. Table 5 summarizes the findings for the residential RCA verification analysis.

²⁵ The savings database for Palm Desert contains numerous apparent errors in association with these measures. The quantity field is supposed to be tons, but it actually indicates the number of units installed in conjunction with the measure. Multiplying the claimed units times the claimed unit savings does not give the claimed savings. It appears that different constant deemed savings values were used instead. For this reason, a comparison between *ex-ante* and *ex-post* unit savings would create significant confusion, so it is being left out of this report.

²⁶ The savings in this row should only be applied to high efficiency equipment installations that happened in conjunction with an early retirement. The field sample provides sufficient precision at the total level, but not when disaggregated into the high efficiency equipment portion.

Table 5. Residential RCA Verification Results

	Tons	Tested Units Passing²⁷
Total sampled tons	92.5	100%
Pass documentation review test	28.5	30%
Field installation verified	71.5	77%
Pass on-site RCA test	23.5	32%
Pass all three tests	9	10%

This very low verification rate for residential refrigerant charge and airflow can be traced to problems in four different areas:

1. Refrigerant charging was not documented on the majority of units. An attempt was made to use a change in refrigerant pressures on the installation forms as an indication that a charge was made.
2. Multiple units in the sample (3/22) had been replaced within a year of the program RCA visit.
3. Multiple units in the sample (2/22) had received significant repairs, including a refrigerant charge adjustment, within a year of the program RCA visit.
4. 75% of tons tested on-site did not have proper charge, for a variety of reasons.

Table 6 summarizes the findings for the residential RCA verification analysis.

Table 6. Residential RCA Verification Rates

Sampled <i>ex-ante</i> quantity (tons)	Sampled <i>ex-post</i> quantity (tons)	Quantity-based Verification Rate
92.5	9	10%

Commercial RCA Results

The three screening tests described above were applied to sample of 138 tons of commercial RCA. Table 7 summarizes the findings for the commercial RCA verification analysis.

²⁷ In some cases, the results of a single test metric were inconclusive. However, in every case of this type, the unit failed a different test metric and failed overall. This explains why the total sampled tons times the percentage of tested units passing does not equal the number of tons passing.

Table 7. Commercial RCA Verification Results

	Tons	Tested Units Passing ²⁸
Total sampled tons	138	100%
Field installation verified	138	100%
Pass documentation review test	15	18%
Pass on-site RCA test	11	16%
Passes all three tests	6	4%

Based on the three screening tests described above, the evaluation team estimates that of the total tonnage of units in the verification sample (138 tons), only 4% (six tons) passed all three tests and could be included in the calculation of ex-post verified savings results. This low verification rate is the result of insufficient documentation of refrigerant charging having occurred and a low percentage of units passing having the correct refrigerant charge when tested on-site. Table 8 summarizes the findings for the commercial RCA verification analysis.

Table 8. Commercial RCA Verification Rates

Sampled <i>ex-ante</i> quantity (tons)	Sampled <i>ex-post</i> quantity (tons)	Quantity-based Verification Rate
138.4	6	4%

Measure-Specific Net-to-Gross Results

This section reveals the NTG results for the following measures for the Palm Desert Program (SCE 2566):

- The RCA (Refrigerant Charge and Airflow Adjustment) Measure; and
- The Early Retirement Measure.

The RCA (Refrigerant Charge and Airflow Adjustment) measure was of special interest to the evaluation team and to CPUC because of the assumed large potential for savings in the Palm Desert climate and uncertainty about measure savings. To facilitate on-site recruitment, an oversample of RCA participants was planned as a subset of the population survey for both residential and commercial program participants. Fifty-one residential customers and fifty commercial customers participating in the RCA sub-program were surveyed.²⁹ The residential RCA NTGR is 0.76, and the commercial value is slightly lower, at 0.70.

Also of special interest in the Program measure offerings was the HVAC Early Retirement measure. Residential HVAC Early Retirement participants were excluded from the population survey and sampled separately to ensure a sufficient sample size for a separate NTGR analysis. There were 610 participating residential customers of the Central AC Early Retirement Program. From this population sixty-one

²⁸ In some cases, the results of a single test metric were inconclusive. However, in every case of this type, the unit failed a different test metric and failed overall. This explains why the total sampled tons times the percentage of tested units passing does not equal the number of tons passing.

²⁹ 38 residential and 19 commercial surveys gave valid NTG results. The confidence/precision of the NTG numbers calculated were 90% / 14% and 90% / 11% ,respectively.

completed NTGR surveys were planned, and sixty-nine surveys were completed. Table 9 shows that the NTG ratios for Early Retirement residential measures were slightly lower (0.74) than that for RCA.

Table 9. Measure-Specific NTG Ratios for the Palm Desert Program³⁰

Measure	Residential	Commercial
RCA	0.76 (sample size 38)	0.70 (sample size 19)
Early Retirement/HVAC	0.74 (sample size 69)	NA

Summary of Preliminary Ex-Post Program Level Impact Evaluation Results

In the 2nd quarter of 2010 EM&V contractors provided ED with a report that combined 2006 – 2008 program evaluations³¹. This report included the ex-post savings values for installed by the program, including the RCA and early retirement measures that were PDP&D program impact evaluation discussed previously.

Table 10 shows a summary of ex-post gross energy and demand savings from this report, by ED measure group for the total program, and by non-residential and residential market sectors. This data indicates that HVAC activity accounted for 45% of total program kW savings and supports statements made in the Commission Decision approving the program³² that the PDP&D program would target HVAC measures. The focus on HVAC demand savings was even more apparent in the residential market sector, where HVAC activity accounted for 65% of demand savings. A detailed review of the HVAC savings indicates that early retirement of HVAC equipment accounted for 48% of residential demand savings. This supports the programs stated intent of focusing on early retirement activity, while also indicating that the program achieved a reasonable distribution of demand savings from various measures. For example, it was also observed that a total of 23 residential and non-residential HVAC measure contributed to overall program demand savings, with early retirement accounting for 20% of total program demand savings.

Table 10 also shows that 70% of non-residential activity is lighting, with the majority of the remaining savings coming from measures classified as ‘Other’. When the 2.36 MWh of savings reported as ‘Other’ is further disaggregated, approximately 55% are savings from irrigation and pumping measures, with the remaining 45% originating from refrigeration and various controls measures.

³⁰ Sample size includes only those interviews that were completed to get a valid NTG number.

³¹ Government Partnerships Programs Direct Impact Evaluation Report, Prepared for the California Public Utilities Commission Energy Division, Summit Blue Consulting, February 8, 2010

³² Order Approving Southern California Edison Company Petition for Modification of Decision 05-09-043, with Modifications. Decision 06-12-013 December 14, 2006, page 6.

This observation also discounts concerns raised by TURN/DRA³³ that the program “depends largely upon the early retirement of equipment” at the expense of other measures. This analysis concludes that the program focused on an appropriate level of early retirement activity in a viable market, while also accomplishing a broad range of HVAC, refrigeration, pumping/irrigations, and controls measure installations.

Table 10. Summary of Preliminary Ex-post Gross Energy and Demand Savings

ED Measure Group	Ex-post kWh		Ex-post kW	
	Total Program			
Lighting	7,463,338	54%	1,068	36%
HVAC	1,980,670	14%	1,342	45%
Informational Survey	1,725,549	12%	371	13%
Other	2,724,879	20%	177	6%
Total	13,894,435	100%	2,959	100%
	Non-Residential			
Lighting	5,773,376	70%	850	80%
HVAC	163,300	2%	110	10%
Informational Survey	0	0%	0	0%
Other	2,361,386	28%	109	10%
Total	8,298,062	100%	1,069	100%
	Residential			
Lighting	1,689,962	30%	218	12%
HVAC	1,817,369	32%	1,232	65%
Informational Survey	1,725,549	31%	371	20%
Other	363,493	6%	68	4%
Total	5,596,373	100%	1,889	100%

Table 11 shows that the program installed measures across a broad range of ED Market Sectors, including 13 commercial sectors. The diversity of measures installed across a broad range of market sectors supports the programs stated intent of installing “a suite of comprehensive” DSM measures³⁴.

³³ Order Approving Southern California Edison Company Petition for Modification of Decision 05-09-043, with Modifications. Decision 06-12-013 December 14, 2006, page 9.

³⁴ Order Approving Southern California Edison Company Petition for Modification of Decision 05-09-043, with Modifications. Decision 06-12-013 December 14, 2006, page 6.

Table 11. Summary of Preliminary Ex-post Energy Savings by Market Sector

ED Market Sector	Ex-Post Gross kWh
AGRICULTURAL	1,642,392
FAST_FOOD_RESTAURANT	39,712
FOOD_STORE	239
GROCERY_STORE	3,944
HOTEL_MOTEL	1,154,320
K_THRU_12_SCHOOL	358,409
LARGE_OFFICE	4,695
MEDICAL_CLINIC	152,717
MISC_COMMERCIAL	4,090,369
RESIDENTIAL	5,372,924
RESTAURANT	10,647
SCHOOL	32,029
SIT_DOWN_RESTAURANT	100,924
SMALL_OFFICE	400,804
Grand Total	13,364,126

Findings and Conclusions about Measures Installed and Program Savings

Findings

- Of special note is the absence of SoCalGas results from this evaluation. Because the complete results for the SoCalGas PDP&D were not provided to ED by the March 2009 deadline established by the Energy Division for IOUs to submit their final 2006-2008 program tracking databases, the SoCalGas component of the pilot program is excluded from this evaluation. Essentially there was nothing presented by SoCalGas to evaluate.
- Approved in December 2006, the SCE program operated for 2 years and reported ex-ante net savings of 23,618 MWh, or 87% of the goal of 26,866 MWh stated in the SCE program PIP

An analysis to better understand how measure installations and energy savings through the PDP&D Program compared with other SCE LGP and core programs concluded that:

- An analysis of *ex-ante* utility reported savings indicates that in 2007-2008, the Program saved 508 kWh per capita. When combined with the additional 474 kWh saved per capita by participants in SCE core program operating in the PDP&D program area, Palm Desert residents saved approximately 981 kWh per capita. This compares to 386 kWh per capita saved for residents in surrounding cities who were supported only by SCE core programs. (see Table 2).
- An analysis of the SCE December 2008 monthly report³⁵ for 18 local government partnership programs shows that the PDP&D Program achieved the largest *ex-ante* reported savings of the programs studied, accounting for 20% of reported *ex-ante* kWh and 30% of *ex-ante* kW reported savings³⁶.

³⁵ Southern California Edison, 2006-2008 Monthly Energy Efficiency Program Data Report, Report Month: December 2008, Table 1.1 - Monthly Summary Table.

³⁶ Community Energy Partnership (Resource), California Department of Corrections and Rehabilitation, California Community Colleges, LGEAR, Bakersfield and Kern County Partnership, SCE-SCG County of Los Angeles Partnership, UC-CSU-PG&E-SCE-SCG-SDG&E Partnership, Ventura County Partnership, Palm Desert

An impact evaluation of the SCE Palm Desert Program, (SCE2566) was completed in the first quarter of 2010³⁷. This report focused on two measures: refrigerant charge and airflow adjustment (RCA), and early retirement of residential A/C units (ER). Observations from this evaluation include;

- The evaluation team estimates that 10% of reported residential RCA kWh savings could be included in the calculation of ex-post verified savings. Similarly, only 4% of reported commercial RCA kWh savings could be included in the calculation of ex-post verified savings. The RCA analysis encountered several challenges, including:
 - From the available documentation, there was little evidence that substantial improvements were made for most sites.
 - A significant fraction of the units in the sample had either been replaced or had had significant repairs made, including refrigerant charge adjustments *after* participation in the program.
 - For sites where the documentation indicated some measure implementation, the evaluation field tests revealed that many of the units did not exhibit accurate refrigerant charge when checked on-site.
 - Overall, the documentation of on-site actions and measure implementations did not provide sufficient information to provide for a robust technical analysis of savings.
 - The implementer did not appear to exercise adequate quality control over the installation contractors or oversee adequate documentation of actions taken and/or measures implemented on-site.
 - In some cases, the evaluation field tests showed that the units were not properly charged. Such a finding indicates that the field testing by contractors, measure implementation activities, or subsequent events in the field outside of the control of the program did not result in units with properly adjusted refrigerant charge.
- Gross savings of the early retirement program were significantly higher than *ex-ante* projections with gross realization rates at 173% for energy and 169% for demand.

A review of measures installed by the program concludes that:

- The program installed a broad range of measures with 11 general residential measure categories and 11 general non-residential measure categories across 13 non-residential and residential market sectors. These included installations accomplished through several delivery methods, including direct installation and downstream rebate delivery mechanisms.
- When considering the uniqueness of measures installed, approximately 70% of reported PDP&D *ex-ante* gross program savings were derived from measures that are common across IOU programs and defined as high impact measures (HIM). For example, lighting accounted for 54% of program savings, and approximately 34% of program savings came from residential and commercial interior CFL installations. By comparison, an analysis of HIMs compared to the full set of program tracking records assembled in the Standard Program Tracking database (SPTdb) indicates that HIMs accounted for about 84% of SCE portfolio savings, with lighting accounting for approximately 78% of the total and CFLs contributing about 51% of total savings.

Partnership, State of California/IOU Partnership, San Gabriel Valley EE Partnership Program, County of Riverside Partnership. (LGEAR includes the following programs: Ridgecrest Partnership, Mammoth Lakes Partnership, San Bernardino County Partnership, Santa Ana Partnership, Federal Direct Install Initiative.)

³⁷ Government Partnerships Programs Direct Impact Evaluation Report, California Public Utilities Commission Energy Division, Summit Blue Consulting, December 8, 2009

- Nearly 30% of *ex-ante* gross savings were derived from measures that were indicated as unique to the PDP&D. While the evaluators did not review all programs in the SCE portfolio to assess how unique these measures are, several of the devices, such as LED pool lights, appear to be unique to the PDP&D, while other measures, such as low flow showerheads, are common and not unique to this program.

Conclusions

This evaluation was only able to review SCE's share of the program measures savings. SoCalGas did not provide to Energy Division at the reporting deadline its year-end program measures savings report.

SCE's portion of program saved a utility reported ex ante net of 23.6 MWh, 87% of program goals, and 6.9 MW (summer peak), 73% of program goals. The following are conclusions about measures installed and energy savings achieved by the PDP&D program;

- Consistent with the Decision approving the program³⁸, the SCE component of the program did install "A suite of comprehensive and cost-effective packages of DSM measures..". This included the installation of measures from 22 residential and non-residential general ED measure categories in 14 ED market sectors. Cost effectiveness of these installations is not addressed in this report, but will be addressed by ED in their final report on the 2006-2008 portfolio where cost effectiveness will be a specific research item.
- The analysis supports the statement in the Decision approving the program that "SCE believes this [Program] will encourage penetration beyond historic participation levels"³⁹. This analysis demonstrates that Palm Desert residents saved approximately 981 utility reported ex-ante kWh per capita, with 508 kWh (52%) originating through the PDP&D Program and 474 kWh (48%) saved per capita by participants through SCE core programs. This compares to an average savings of 201 kWh per capita for climate zone 15 overall, and 386 kWh per capita for cities near Palm Desert that were not part of the PDP&D program.
- The evaluation supports statements made by SCE in the Commission Decision approving the program that the program would target HVAC measures⁴⁰, especially measures targeting system peak usage periods. The ex-post evaluation indicates that HVAC activity accounted for 45% of total program kW savings. The focus on HVAC demand savings was even more prevalent in the residential market sector, where HVAC activity accounted for 65% of demand savings. A review of energy savings claims for the full 2006-2008 program cycle indicates that, overall, HVAC measures contributed less than 30% of SCE total portfolio demand savings.
- Concerns raised by TURN/DRA as discussed in the Decision approving the program that the PDP&D "depends largely upon the early retirement of equipment" at the expense of other HVAC measures are not supported⁴¹. The program installed a total of 23 residential and non-residential HVAC measures, and also a range of refrigeration, pumping/irrigations, and controls measure measures. Early-retirement accounted roughly 20% of total program ex-post demand savings and is not excessive. It is worth noting that the impact analysis indicates that the gross realization rates of early retirement energy and demand savings were found to be 173% and 169%, respectively, and were higher than

³⁸ Order Approving Southern California Edison Company Petition for Modification of Decision 05-09-043, with Modifications. Decision 06-12-013 December 14, 2006, page 6.

³⁹ Order Approving Southern California Edison Company Petition for Modification of Decision 05-09-043, with Modifications. Decision 06-12-013 December 14, 2006, page 4.

⁴⁰ Order Approving Southern California Edison Company Petition for Modification of Decision 05-09-043, with Modifications. Decision 06-12-013 December 14, 2006, page 6.

⁴¹ Order Approving Southern California Edison Company Petition for Modification of Decision 05-09-043, with Modifications. Decision 06-12-013 December 14, 2006, page 9.

other measures evaluated. For example, the gross realization rate for interior CFL measures is approximately 37%.

- When considering the uniqueness of measures installed, approximately 70% of ex-post reported PDP&D program savings were derived from measures that are common across IOU programs and defined as high impact measures (HIM). Of specific note, however, is that CFL bulbs played a much less important role in PDP&D savings than for the 2006–2008 SCE portfolio. For the PDP&D program, CFLs accounted for 34% of program ex-post gross savings versus an estimated 51% of the total SCE portfolio ex-post gross savings.

PROGRAM BUDGET AND COST ANALYSIS

The following section provides an analysis of the PDP&D program budget and costs and includes the following sections:

- **Program Budgets and Expenditures** – An overview of how the 2006 – 2008 program budget is distributed.
- **Comparison of Program Costs with other SCE Programs** - An analysis that compares the costs of the Palm Desert with other SCE core programs and SCE local government partnership programs.
- **Comparison of Costs per Unit Energy Saved** – A comparison of the incentive and operating costs per unit energy savings (kWh) between the PDP&D program to other SCE LGP programs.
- **Per Capita Expenditure Comparison to Other LGPs** – compares the PDP&D program to the budgets for 38 other LGP programs in the context of the estimated population and median household income for each partnership area.

Program Budgets and Expenditures

In 2007 and 2008, SCE and SoCalGas only used 68% of their combined budget, with SCE using 71% of its budget and SoCalGas using 44% of its budget. Table 12 shows the distribution of expenditures, while Appendix A provides a summary of the utility proposed IOU PDP&D Program budget of \$48.8M for the proposed 6⁴² year operating period from 2007 through 2012. 71% of SCE funds spent were used on incentives (which includes direct install services and measures) while SoCalGas reported that it spent 1% of its budget on incentives.⁴³ The evaluation team did not identify how costs were distributed among the various partner members. Total operating costs for the combined SCE and SoCalGas program costs was 36% of spending, with incentives accounting for the remaining 64%.

Of particular note is that roughly 10% of total combined SCE / SoCalGas program expenditures were contributed by SoCalGas, though virtually no incentives were paid and savings were reported. As such, virtually 100% of these funds went to cover operating costs. In total, SoCalGas funds accounted for roughly 25% of total program operating costs.

⁴² The PDP&D was originally planned as a 5 year pilot program, operating from 2007 through 2011. The shift in the portfolio funding schedule to a 2010 – 2012 implies a 6 year pilot program when 2009 bridge funding activity is included.

⁴³ Since some SCG data was not reported to the CPUC, it is likely that SCG spent additional money on incentives.

Table 12. SCE and SoCalGas PDP&D Program Expenditures⁴⁴, 2007-2008

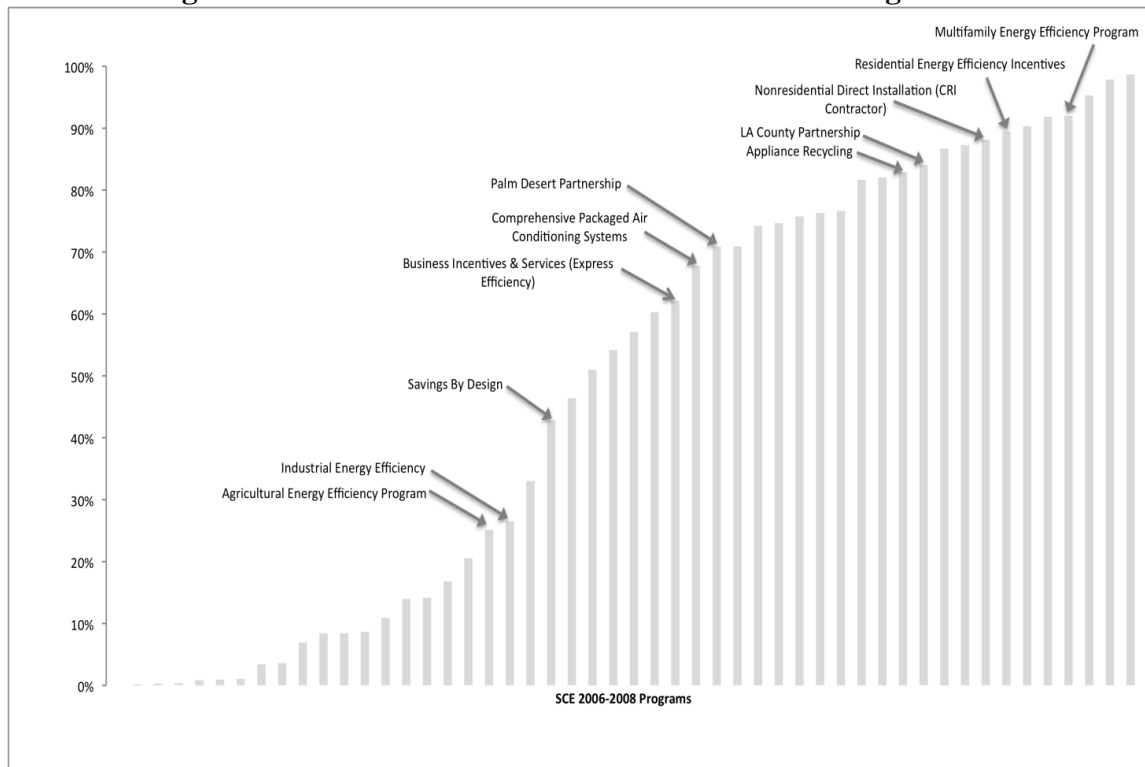
Budget Category	Item	SCE		SoCalGas		Total	
		Expenditures (\$)	% of Total	Expenditures (\$)	% of Total	Expenditures (\$)	% of Total
Operating Costs	Administrative	867,136	9%	452,342	45%	1,319,478	12%
	Marketing and Outreach	524,398	5%	93,889	9%	618,288	6%
	Direct Implementation (Non – incentive costs)	1,391,535	14%	546,231 ⁴⁵	55%	1,937,766	18%
	Total Operating Costs	2,905,902	29%	989,778	99%	3,895,680	36%
Incentive Costs	Rebates	3,155,746	32%	5,903	1%	3,161,648	29%
	Direct Install Labor	2,341,186	23%	0	0%	2,341,186	21%
	Direct Install Materials	1,573,357	16%	0	0%	1,573,357	14%
Total		9,976,191	100%	995,681	100%	10,971,872	100%

Comparison of Program Costs with other SCE Programs

The evaluation team compared the two primary types of program costs (operating costs and incentive costs) to other SCE programs in order to show the relative amount of money spent on these two types of costs across a number of different programs. Figure 5 compares the percentage of program costs spent on incentives between the SCE PDP&D Program with other SCE and SoCalGas programs. Overall, a higher proportion of the PDP&D Program costs are used for incentives than the average among SCE programs (which is split almost evenly with 48% spent on incentives and 52% on operating costs), though it has been previously demonstrated that 99% of SoCalGas funds spent were used for operating costs. When all SCE and SoCalGas funds are considered, the PDP&D Program still maintained a of 64% to 36% incentives to operating costs.

⁴⁴ Source: Southern California Edison and Southern California Gas. 2006-2008 E3 Calculator.

⁴⁵ In reviewing the draft of this report, SoCalGas indicated that \$461,176 was used to complete residential and commercial energy surveys and installation of energy savings measures through the Energy Efficiency Upgrade Program with SCE. The evaluation did not verify the level or timing of this expenditure.

Figure 5. SCE Incentive Costs as Percent of Total Program Costs⁴⁶

An analysis of SCE December 2008 monthly report⁴⁷ for partnership programs shows that the PDP&D had the highest reported program expenditures among 14 SCE local government partnership resource programs, as shown in Table 13. The PDP&D program spent 68% of the adopted program budget compared to 75% of adopted budget spent on average for all SCE LGP programs but it should be noted that the PDP&D was not funded until 2007 and so operated for two years, where the majority of partnership programs in this comparison operated for three years. As shown in Figure 6, total PDP&D program costs of \$0.403 per ex-ante kWh were slightly higher than the average SCE partnership program cost of \$0.388 per ex-ante kWh for the programs shown in Figure 6, when weighted for ex-ante reported kWh savings, excluding the PDP.

An analysis of SCE December 2008 monthly report for partnership programs shows that the PDP&D achieved the largest *ex-ante* savings of all 17 local government partnership programs reporting savings, accounting for 21% of reported kWh and 30% of kW reported savings.

⁴⁶ This table looks at incentive costs as a percentage of program costs for all programs at SCE. Source: Southern California Edison. 2006-2008 E3 Calculator.

⁴⁷ Southern California Edison, 2006-2008 Monthly Energy Efficiency Program Data Report, Report Month: December 2008, Table 1.1 - Monthly Summary Table

Table 13. Summary of 2006 – 2008 SCE LGP Program Reporting

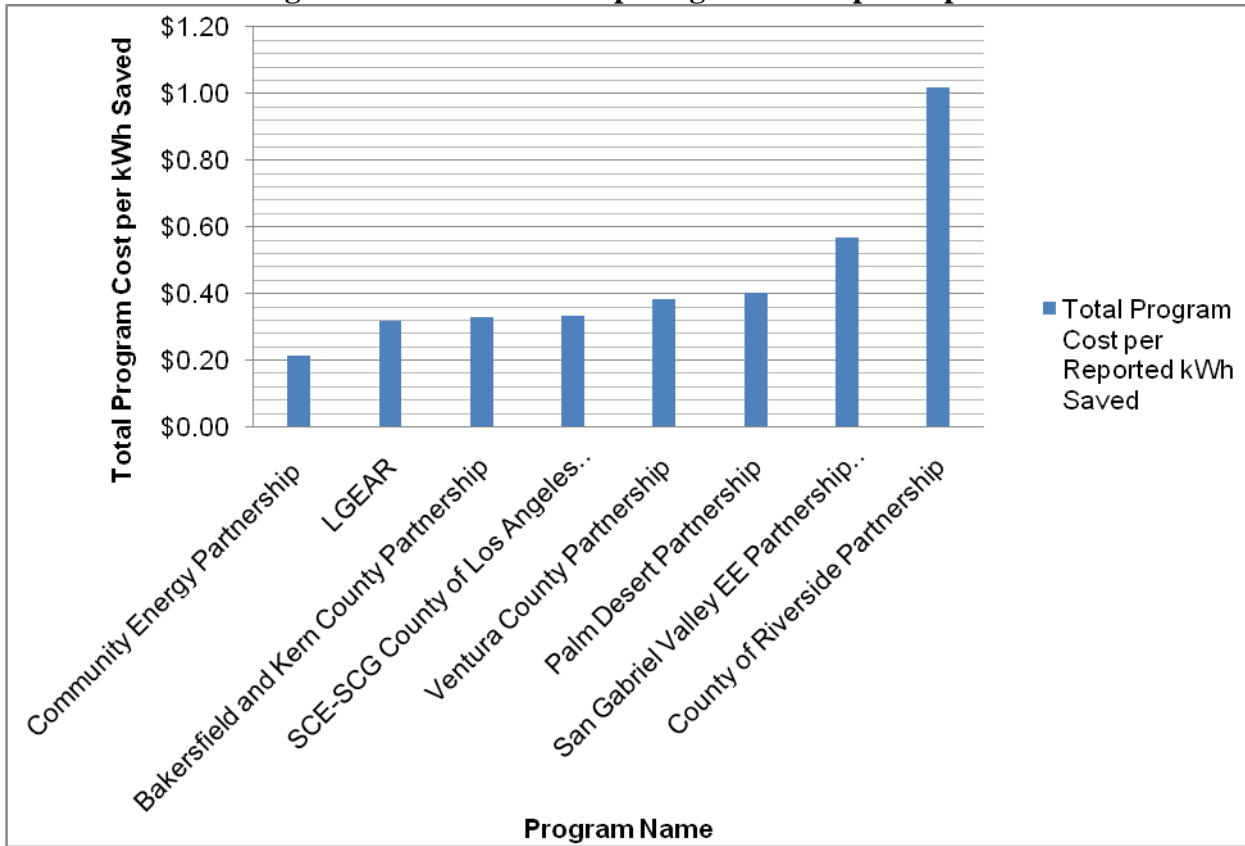
Program ID	Partnership Program Name	Notes	Budget & Expenditures (\$)		Demand Reduction (Summer Peak kW)		Energy Savings (Net Annual kWh)	
			Adopted Program Budget (3 - Yr)	Program Expenditures (Inception-To-Date)	Program Projected (Compliance Filing)	Installed Savings (Inception-To-Date)	Program Projected (Compliance Filing)	Installed Savings (Inception-To-Date)
SCE2518	Local Government Energy Action Resources		\$5,420,032	\$139,536	1,767	0	8,385,475	0
SCE2567	Mammoth Lakes Partnership	2	\$0	\$396,212	0	2	0	18,434
SCE2568	Ridgecrest Partnership	2	\$0	\$191,316	0	3	0	26,558
SCE2519	Ventura County Partnership		\$2,201,099	\$2,601,652	1,236	1,318	5,700,000	6,800,856
SCE2520	South Bay Partnership		\$1,390,167	\$1,353,748	0	58	0	658,038
SCE2521	Bakersfield and Kern County Partnership		\$1,737,709	\$1,588,193	457	716	3,507,868	4,826,577
SCE2522	Santa Barbara Partnership		\$347,543	\$404,068	0	35	0	271742
SCE2524	Community Energy Partnership (Resource)		\$2,316,943	\$1,701,960	697	824	6604854	7,981,941
SCE2525	San Gabriel Valley EE Partnership Program		\$1,737,709	\$1,664,397	840	611	2701362	2,937,669
SCE2528	SCE-SoCalGas County of Los Angeles Partnership		\$4,743,598	\$4,562,303	2,599	456	12,337,280	13,665,242
SCE2529	County of Riverside Partnership		\$995,550	\$562,630	547	91	2596400	552,827
SCE2566	Palm Desert Partnership	4	\$14,000,000	\$9,508,732	0	6865	0	23,618,934
SCE2571	Santa Ana Partnership	2	\$0	\$649,136	0	298	0	3,041,284
SCE2573	San Bernardino County Partnership	2	\$0	\$2,189	0	0	0	14,213
Total Partnership Program			\$34,890,350	\$25,326,072	8,143	11,277	41,833,239	64,414,315

Notes

2 Programs have been created and funded out of the LGEAR umbrella partnership program.

3 Program was added to the SCE portfolio.

4 The Palm Desert Partnership was approved in D.06-12-013.

Figure 6. Total Partnership Program Costs per Reported kWh Saved

Comparison of Incentive Costs per Unit Energy Saved

An analysis was also performed that compared the incentive and total program costs of the PDP&D Program to other SCE government partnerships,⁴⁸ and also with other SCE core programs with similar measure offerings operating in PDP&D territory.⁴⁹ As shown in Table 14, in general PDP&D incentive levels tended to be higher for all measure categories, averaging \$0.24 per kWh saved compared to \$0.16 and \$0.11 for other LGP and SCE programs.

⁴⁸ SCE2519 Ventura County Partnership and SCE2521 Bakersfield and Kern County Partnership. Only non-institutional LGP program were considered for this exercise.

⁴⁹ SCE2503 Home Energy Efficiency Survey, SCE2501 Residential Energy Efficiency Incentive Program, SCE2502 Multifamily Energy Efficiency Program, SCE2507 Comprehensive HVAC Program, SCE2511 Nonresidential Direct Installation, SCE2517 Business Incentives & Services, SCE2559 The Lighting Energy Efficiency PAR 38/30 CFL (LEEP38/30 CFL) Program.

Table 14. Comparison of Program kWh Savings and Incentive Levels

Program Type	Measure	Ex-ante Reported kWh Saved	% of kWh Saved	Total Incentive (\$)	% of Total Incentive	Incentive / kWh Saved (\$/kWh)
SCE Palm Desert Partnership Program	Audit	110,542	0%	29,889	0%	0.27
	HVAC	7,525,273	25%	2,447,986	35%	0.33
	Lighting	17,060,765	58%	3,133,877	44%	0.18
	Other	4,827,087	16%	1,460,463	21%	0.30
	Total	29,523,667	100%	7,072,215	100%	0.24
Sample of SCE Government Partnership Programs	Audit	196,221	1%	11,900	1%	0.06
	HVAC	0	0%	0	0%	NA
	Lighting	8,888,936	61%	1,553,620	67%	0.17
	Other	5,449,134	37%	767,529	33%	0.14
	Total	14,534,291	100%	2,333,049	100%	0.16
Other SCE Programs Operating in PDP&D Territory (PDP&D&E Area Only)	Audit	0	0%	0	0%	NA
	HVAC	9,218,797	49%	1,015,559	51%	0.11
	Lighting	6,965,498	37%	642,317	32%	0.09
	Other	2,517,832	13%	324,677	16%	0.13
	Total	18,702,127	100%	1,982,553	100%	0.11

Per Capita Expenditure Comparison to Other LGPs

This analysis compares the budgets for the local government partnership (LGP) programs in the context of the estimated population⁵⁰ and median household income for each partnership area. Figure 7 shows the LGP budgets against the median household income for each partnership. Two partnerships have extremely high budgets per capita: Palm Desert (\$320/capita⁵¹) and the city of San Joaquin (\$154/capita). In order to clearly show the other partnership areas, Figure 8 excludes these two partnerships. Figure 8 creates a four quadrant view of the programs by crossing each axis at the average value. For example, the median income axis crosses near \$26.0/capita- the average value for the LGP budget axis. The four resulting quadrants are high budget, high income; high budget, low income; low budget, high income; and low budget, low income. The chart reveals that this program is in the high budget high income quadrant.

⁵⁰ As noted in the section on Program Background and Description, the city has a large seasonal fluctuation and the population in the winter months is estimated to be approximately 80,000. This evaluation uses 2007 census data which estimates Palm Deserts population to be 50,729. The census data was used as it represents the average year-round population and is the population most likely to benefit from several of the program's core HVAC offerings, such as early retirement of AC units and refrigerant charge adjustment.

⁵¹ Based on program data, the final per capita costs for the SCE PDP&D program was approximately \$187 based on the census population estimate of 50,729 residents, and total spent of \$9,508,732 shown in Table 13. Using the estimated winter population of 80,000 residents and the total spent shown in Table 13, per capita spending is \$118.

Figure 7. LGP Program Budgets Against Median Household Income⁵²- All Programs

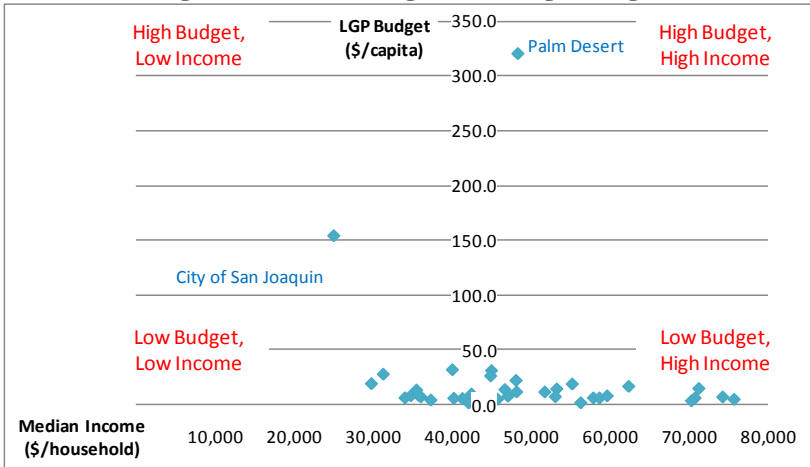


Figure 8. LGP Program Budgets Against Median Household Income⁵³- Programs with a Budget of \$35.0/capita or Lower

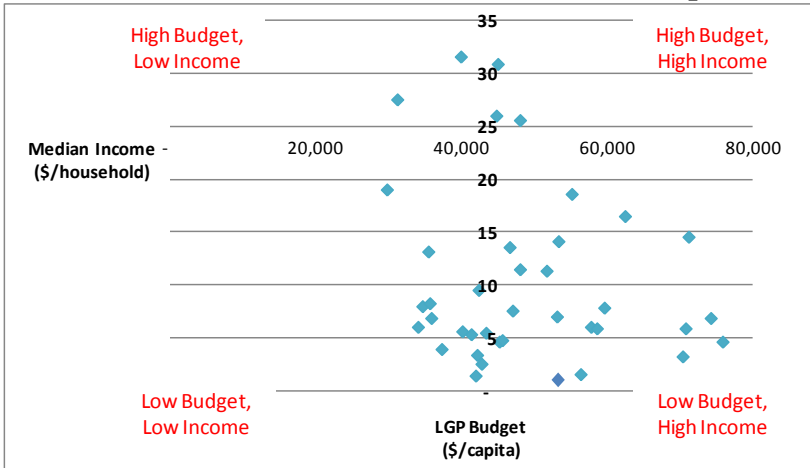


Figure 9 shows the partnership budgets by partnership area for all of the partnerships in California. The majority of partnerships have either a budget less than \$8.0/capita or between \$8.1 and \$19.0/capita. All program budgets per capita can be seen in Appendix B, California Community Populations and LGP Program Budgets⁵⁴. Figure 10 shows similar budget data, but only for the Southern California region due to the fact that many small partnerships are located

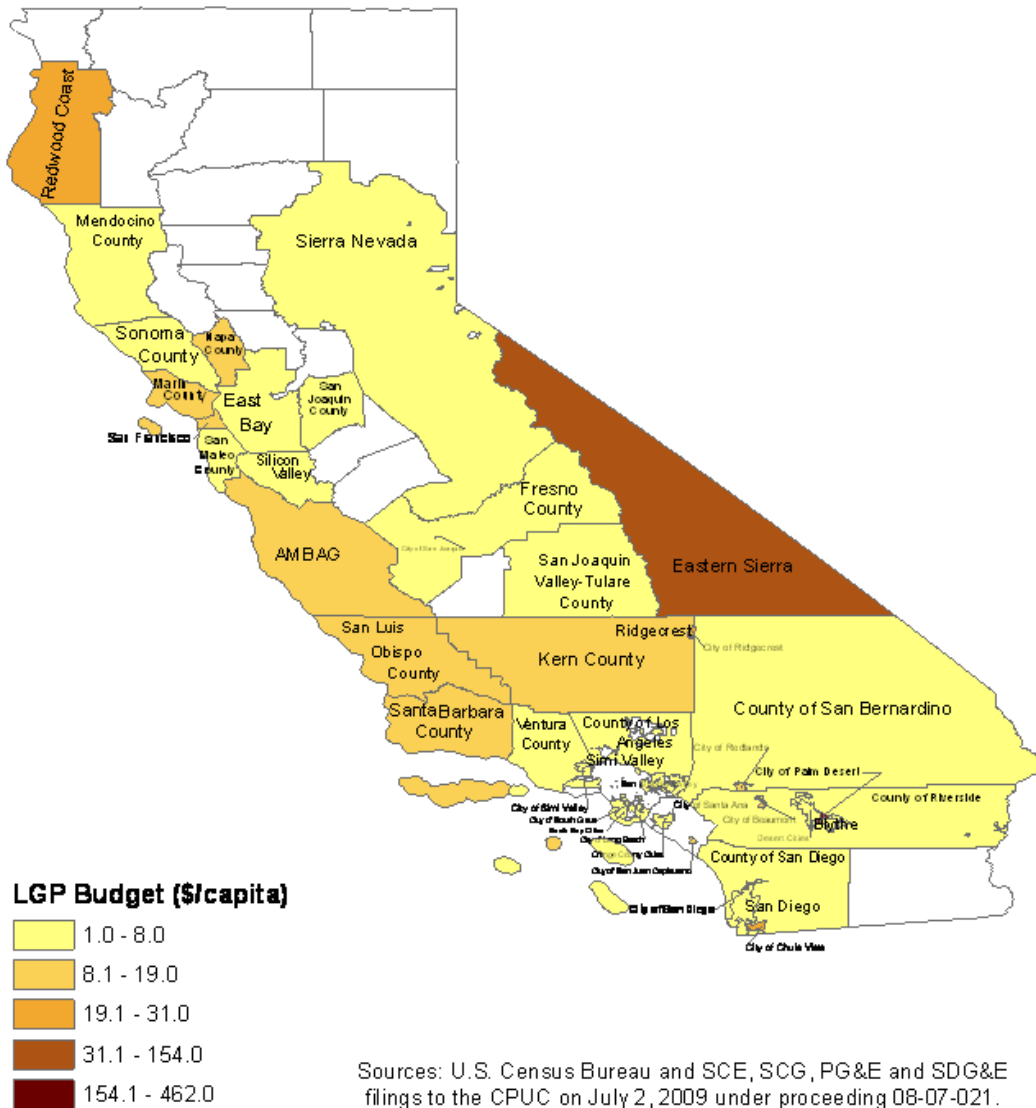
⁵² Median Household Income in 1999: U.S. Census Bureau. American Factfinder. Download Center. Census 2000 Summary File 3 Data Set. Available at http://factfinder.census.gov/servlet/DownloadDatasetServlet?_lang=en. Downloaded in June 2009; LGP Program Budget: SCE, SCG, PG&E and SDG&E filings to the CPUC under proceeding 08-07-021. SDG&E, SCG, and PG&E list their budgets as “projected program budgets.” SCE lists the budget as “proposed program plan budget.” Note: If a local government partnership program is comprised of multiple areas (e.g., multiple counties), the median income is given as the average median income of the multiple areas.

⁵³ Sources: Median Household Income in 1999: U.S. Census Bureau. American Factfinder. Download Center. Census 2000 Summary File 3 Data Set. Available at http://factfinder.census.gov/servlet/DownloadDatasetServlet?_lang=en. Downloaded in June 2009; LGP Program Budget: SCE, SCG, PG&E and SDG&E filings to the CPUC under proceeding 08-07-021. SDG&E, SCG, and PG&E list their budgets as “projected program budgets.” SCE lists the budget as “proposed program plan budget.” Note: If a local government partnership program is comprised of multiple areas (e.g., multiple counties), the median income is given as the average median income of the multiple areas. Average LGP budget is \$26.0/capita; average median income is \$48,087/household.

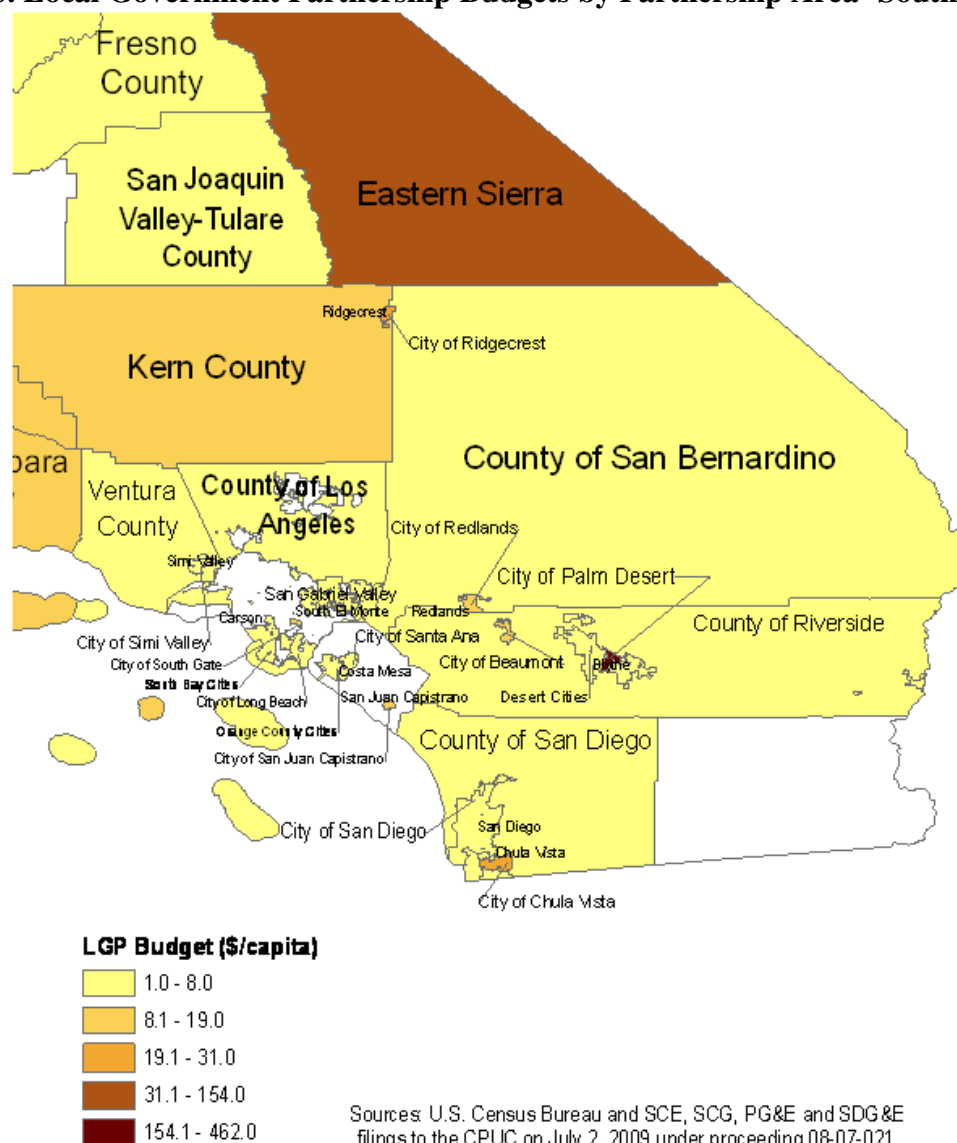
⁵⁴ This appendix is submitted as a separate Microsoft Excel spreadsheet file titled ‘California Community Populations and LGP Program Budgets.xls’

in Southern California. When comparing the median budget per capita by utility service territory, SDG&E has the highest value with \$12.0/capita, SCE only programs have a median budget of \$8.2/capita, PG&E programs have a median budget of \$7.5/capita, and SCE/SoCalGas programs have a median budget of \$4.7/capita.

Figure 9. Local Government Partnership Budgets by Partnership Area- California⁵⁵



⁵⁵ Note: The data breaks in the legend are natural breaks estimated by ArcGIS. These classes are based on natural clusters of data values.

Figure 10. Local Government Partnership Budgets by Partnership Area- Southern California

Note: The data breaks in the legend are natural breaks estimated by ArcGIS. These classes are based on natural clusters of data values.

Findings and Conclusions from the Program Budget and Cost Analysis

Findings

- Total SCE program costs of \$9,508,732 yielded 23,618,934 ex-ante kWh. This works out to about \$0.403 per ex-ante kWh, which is slightly higher than the SCE total partnership program average ex-ante kWh cost of \$0.388. When the cost the SGC program of \$995,680 is added, the PDP&D cost \$10,504,000 or \$0.450 per kWh.
- Roughly 10% of total program expenditures were contributed by SoCalGas, though virtually no incentives were paid nor savings reported by SoCalGas. As such, 100% of these funds went to cover operating costs. In total, SoCalGas funds covered roughly 25% of operating costs.
- The PDP&D had the highest reported program expenditures though the program spent only 68% of the adopted program budget compared to 88% of adopted budget spent on average for all SCE partnership programs. It should be noted that the PDP&D was not funded until 2007 and so operated for two years, where the majority of partnership programs in this comparison operated for three years. The evaluation cannot clearly assess the program's success in "Packaging financial incentive bundles that marry cost-effective utility incentive levels with various financing packages". An analysis compared the incentive costs per unit energy saved of the PDP&D Program to other SCE government partnerships and SCE programs with similar measure offerings operating in PDP&D territory. In general PDP&D incentive levels tended to be higher for all measure categories, averaging \$0.24 per kWh saved compared to \$0.16 and \$0.11 for other SCE LGP and SCE core programs, respectively. The PDP&D program management conducted no research on the impact of these incentives and future program designs should consider researching the impact of elevated incentives in real time, during the program operating cycle.
- The PDP&D program was budgeted at about \$320 per capita while the majority of partnerships have a budget of less than \$19/capita, and an average per capita budget of approximately \$14. Using the same estimate of population and based on program data, the final per capita costs for the SCE PDP&D program was approximately \$187.

Conclusions

The following are conclusions about the program budget and cost analysis;

- In the Commission Decision approving the program, DRA/TURN state that "no other local government partnership program in California approaches the proposed funding level"⁵⁶. This analysis agrees with that assessment noting that the PDP&D had the highest reported budget and cost of all LGP programs, statewide. In addition, this evaluation concludes that the per capita funding for the PDP&D program was 22 times larger than the average per capita funding of 38 other California non-institutional Local Government Partnership (LGP) programs⁵⁷ reviewed.
- Assessing comments raised by DRA/TURN that the program displayed "Inappropriate Administrative cost"⁵⁸ presents several challenges;

⁵⁶ Order Approving Southern California Edison Company Petition for Modification of Decision 05-09-043, with Modifications. Decision 06-12-013 December 14, 2006, page 8.

⁵⁷ Institutional program include the UC/CSU partnership, Community Colleges partnership, and Department of Corrections partnership programs.

⁵⁸ Order Approving Southern California Edison Company Petition for Modification of Decision 05-09-043, with Modifications. Decision 06-12-013 December 14, 2006, page 8.

- For the SCE program, 9% of spending went towards administrative costs, which is not excessive based on the observation that the 2010 – 2012 portfolio targets a 10% cap on IOU administrative costs. Incentives were 71% of SCE program cost, and total operating costs, including administrative costs, was 29%.
- For the SoCalGas program, 45% of spending went towards administrative costs, which is excessive. Incentives were only 1% of SoCalGas program cost, and total operating costs, including administrative costs, was 99% of spending.

The evaluation agrees with the DRA/TURN concern about inappropriate costs because of the high SoCalGas spending on operating (including administrative) costs.

ANALYSIS OF PROGRAM INNOVATION AND REPLICABILITY

The following section provides an analysis of program innovation and replicability and includes the following sections:

- **Evaluability of the PDP&D Program** – An overview of how the program can and cannot be evaluated based the documentation available.
- **Overview of Program Management Responsibilities and Structure**– Provides a summary the roles of the various partners that contribute the PDP&D.
- **Overview of Program Delivery Strategies and Policy Initiatives**– A description of the role the PDP&D plays in various program delivery strategies, and also the role of the PDP&D plays in supporting City policies.
- **Assessment of the Uniqueness of Measures Installed** – A discussion of the technologies offered through the PDP&D program.
- **Interactions with Other Utilities and Jurisdictions** - Describes which piloted efforts have been transferred to other programs and cities and additional communication efforts that PDP&D program staff had with other utilities and jurisdictions.

Evaluability of the PDP&D Program

Program evaluations rely upon a clear understanding of program goals and objectives, program logic, and program achievements. Program goals and objectives provide a target of intended effects against which program achievements may be measured and assessed. A clear understanding of program logic helps to link these two reference points and support an assessment of whether and how the observed effects of a program are caused by and attributable to the actions of the program. The ability to evaluate a program such as the PDP&D program is especially important, since a core objective of the program is to pilot test several unique aspects, including efforts aimed at determining the following:

- Whether or not a community can meet an aggressive goal of shaving its energy use by 30% within a five year period, and how a ratepayer funded program such as the PDP&D can contribute towards that goal;
- If specific new technologies included in the program can provide cost effective savings; and
- If enhanced program participation rates can be achieved by the use of innovative delivery strategies.

In the case of the PDP&D program, the evaluation effort was hampered by two factors: (1) the absence of a clear explanation of the program logic that linked program actions to intended outcomes, and (2) the absence of detailed quantitative data to support the direct linking of program actions with outcomes, including the absence of program implementation data. There is substantial anecdotal information suggesting effects of the program and the relationship of these effects to program activities, but the ability of an evaluation to measure these impacts in an objective and

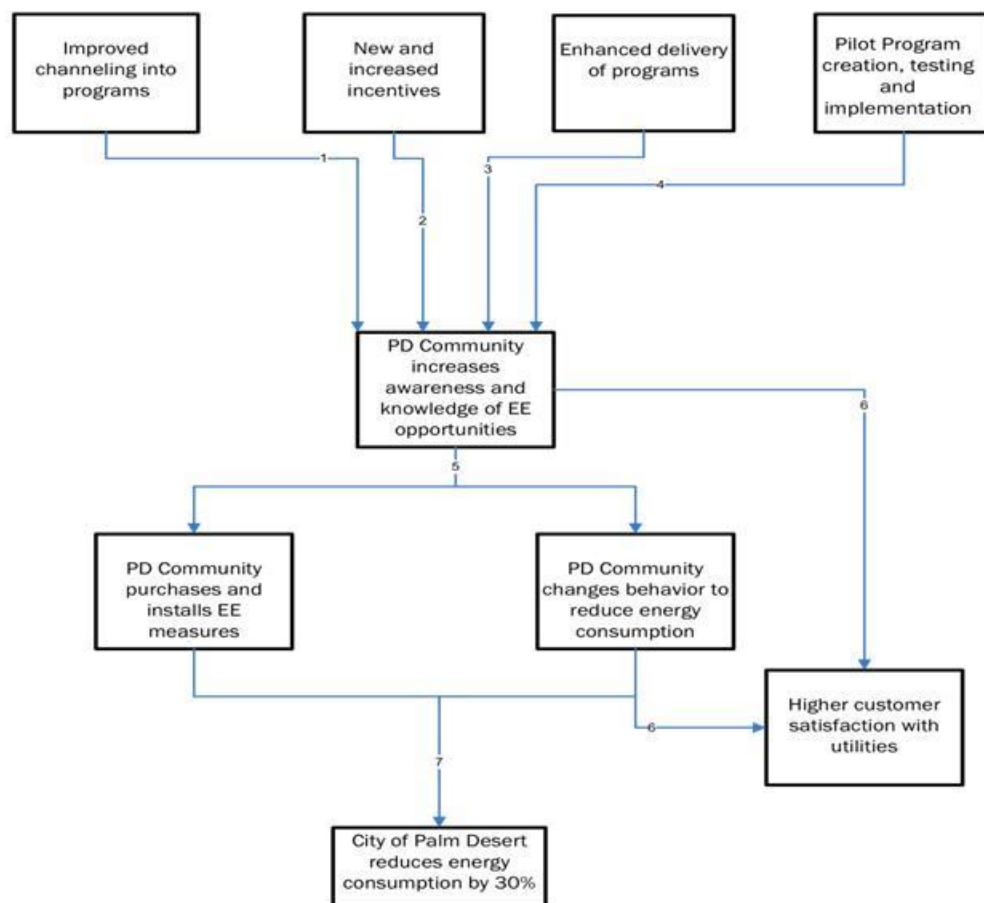
quantifiable sense is very limited at this juncture. In order for the evaluation team to estimate savings associated with program delivery strategies, the team made assumptions to link program activity to some delivery strategies, but this could not be done for all delivery strategies.

The current logic model⁵⁹, as documented by SCE (shown below in Figure 11), is not sufficient to support program evaluation and, in particular, the evaluation of a complicated pilot initiative such as the PDP&D program. SCE reports that the logic model in was designed primarily to show the organizational structure, rather than the program logic, though it does not effectively present this structure either. As shown in this figure, the current logic of the program shows each of the major program elements flowing through a single point, with the result being described as “PD Community increases awareness and knowledge of EE opportunities.” The evaluation team’s understanding of the program is that the intended outcomes of each of the program elements shown in the top row of this diagram are much more complex and deserve a refined delineation. Without indicators that define whether piloted efforts meet their expected outcome, the evaluation team cannot determine whether the pilot effort has been successful. Without agreed upon indicators, it is also uncertain exactly which data points should be included in an analysis of the program. A more detailed explication of the program logic would then support the development of a more refined set of performance indicators to track the effectiveness of specific program elements. While the program currently tracks high-level program achievements, the evaluation team did not find documentation indicating a more detailed tracking that would support the direct assessment of the initiatives being piloted through the program. In addition, while utility staff reported a number of outreach events that they conducted, they did not report the number of people who attended the events or contacted their local office, so it is unclear the exact impact of the effort. Additional planning documents might have helped clarify the program goals and operations, including:

- A more detailed logic model with indicators of success for tracking to provide clarity in the initial program design process as well as subsequent program evaluations.⁶⁰ For example, the program strategies shown in the top row of are very vague and need to be more distinct and developed before each of them can be discretely tied to a goal, outcome, or accomplishment. Program strategies that are complex or new and innovative may also need separate logic models.
- A well defined tracking database that is fully populated and updated on a regular basis.
- A tracking system that can be used to assess delivery strategies piloted through the PDP&D program.
- A business plan that clearly articulates the responsibilities for each partner.
- A budget structure that track expenditures at a level that each of the program activities can be assessed to determine the financial viability of each element, and how replicable each element is. The budget structure used by the SCE program was consistent with other 2006 – 2008 programs, as required by the CPUC, but this structure was not capable of tracking expenditures at a level that each of the program elements can be assessed to determine the financial viability of the element, and how replicable the element would be. Establishing program elements that could be replicated was one of the design goals of the pilot program, and a lack of clear cost allocations hampers the ability to assess how cost effective, transferrable, and scalable an activity would be.
- An organizational structure that clearly defines the responsibilities of each partner, and also provides a single entity that is responsible for all program activities.

⁵⁹ Source: SCE (2008). “Process Evaluation of the Palm Desert Partnership Demonstration Project 2007-2008. Opinion Dynamics Corporation.”

⁶⁰ SCE reports that a second logic model for the program does exist but is in draft format, and therefore was not reviewed by the evaluation team.

Figure 11. PDP&D Program Logic Model

Overview of Program Management Responsibilities and Structure

PDP&D program staff⁶¹ plays the lead roles in managing the incentives for energy efficient technologies and managing program delivery mechanisms. The City of Palm Desert primarily manages the marketing and outreach efforts and developing policies. The Energy Coalition was identified by city and IOU program managers as playing a strategic and coordinating role in facilitating meetings, though this function remains vague. Table 15 provides a summary the roles of the various partners that contribute the PDP&D.

⁶¹ PDP program staff include SCE and SCG utility staff working on the PDP program.

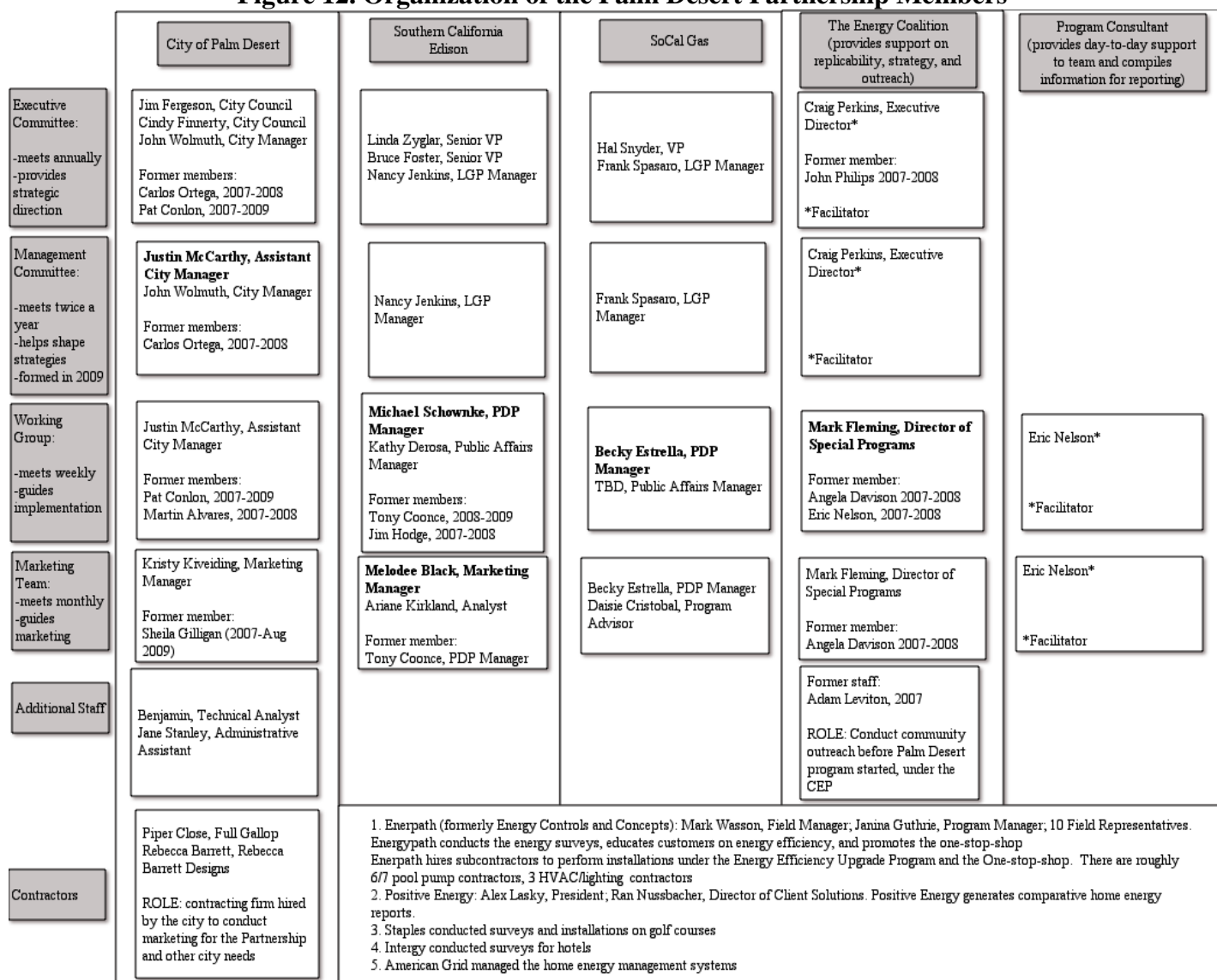
Table 15. Roles of Palm Desert Partners

Palm Desert Partnership Strategies	SCE Role	SoCalGas Role	City of Palm Desert Role	The Energy Coalition Role
Innovative Delivery Services	Co-manages implementation of EE Upgrade and One Stop Shop	Co-manages implementation of EE Upgrade and One Stop Shop	Brand development and outreach	Strategic/Coordination Support
	Developed co-branded SCE application	Developed SoCalGas application		
Innovative Technologies/Incentives	Manages incentives for electric measures	Manages incentives for gas measures	Marketing and Outreach	Strategic/Coordination Support
Innovative Policies	Support policy development	Support policy development	Policy Development	Strategic/Coordination Support
	Align policies with utility efforts	Align policies with utility efforts		

The organization chart for the PDP&D as it was operating during the first half of 2009 is provided in Figure 12. It indicates that there is no one person or title that is responsible for the entire program, including overarching responsibility for the operations of each partner. As such, it is unclear who is responsible and accountable for the overall program, or “where the buck stops”. This could potentially be hampering the program, including:

- A separate process evaluation of this program conducted that “During our depth interviews we found that there is agreement amongst the Partners that having four16 “equal” Partners is challenging, and it was especially so during Project inception and roll-out. When you’ve got four equal Partners each one thinking that they are equal they want to tell you what you ought to be doing. And it just makes the process a lot more time consuming and difficult to get some of the even the simplest things agreed to and done. Whereas, if it was just the City and SCE, we would be much further ahead.” This evaluation does go on to cite, however, that “.. most of the Partners now feel that these initial obstacles have been overcome and that they all work well together”. This evaluation concludes that a matrix management structure may not be the most appropriate organizational approach for a program attempting to achieve aggressive goals through such a broad array of initiatives.
- Over the two years of program operation, staff turnover occurred at several of the partners. For example, at the city of Palm Desert, staff transitions have occurred at four of four key functions.⁶² The Energy Coalition has had staff transitions at three of these four functions.
- Other than the PIP submitted with the original program design, there is no planning document that clearly articulates the responsibilities and goals for each partner. It is likely the lack of planning reflects that no one person was in charge of the entire program.

⁶² Executive committee, management committee, working group, and marketing team.

Figure 12. Organization of the Palm Desert Partnership Members⁶³

Overview of Program Delivery Strategies and Policy Initiatives

The following provides a description of the role the PDP&D Program plays in various program delivery strategies, and also the role of the PDP&D Program plays in supporting City policies. *As discussed previously, in order for the evaluation team to estimate savings associated with program delivery strategies, the team made assumptions to link program activity to some delivery strategies, but this could not be done for all delivery strategies.*

⁶³ As the program was operating during the first half of 2009

Delivery Strategies

The Partnership relies on various delivery methods to maximize the amount of energy saved. Since the utilities have been delivering energy efficiency programs for a number of years, various Program staff serve as the lead partners in managing and implementing the following:

- **Energy Efficiency Upgrade Survey** - This effort, which is implemented by a third-party contractor and managed by Program staff, starts with an in-home survey to identify energy efficiency opportunities. The survey instrument utilized through this effort is basically the same home energy efficiency survey (HEES) conducted through California's utility audit programs. The surveys are all conducted in the home, rather than via the phone or on-line delivery methods that are more often relied upon by traditional residential audit programs. Because the surveys are conducted in-home, contractors are able to install small installations, such as CFLs. After the survey is completed, the contractor identifies and recommends suitable energy efficient measures. If the customer agrees to install the equipment, the contractor returns and installs the measures. For many measures, the Program will pay the contractor directly for the work, rather than requiring the customer to submit an application. However, larger measures require a customer to submit their own application for a financial incentive, in which case the contractor or program staff are available to help the customer fill out the application as needed. All PDP&D program incentive offers and other utility core program incentive offers are marketed through this delivery strategy. As shown in Figure 13, we estimate that approximately 26% reported program MWh savings entered the Program through this delivery mechanism.
- **One Stop Shop Delivery** - This delivery channel offers direct install services for specific energy efficient technologies. In 2007-2008, the One Stop Shop focused on pool pumps. This effort provides customers with a phone number to call if they want to install or replace a pool pump. The phone service directs the customer to a contractor who will then come to the customer's house and install the pool pump. The contractor will then seek a rebate for the work. The theory behind this initiative is that customers do not need to search for a contractor, identify an energy efficient model, or complete an incentive application. According to the Program staff,⁶⁴ the effort has been very successful so they expanded the One Stop Shop to include pool heaters in 2009 and expect to expand the service to HVAC equipment in the future. As shown in Figure 13 we estimate that approximately 3% reported program MWh savings entered the program through this delivery mechanism.
- **Focused Outreach Efforts** - In order to inform customers about the program, the Program held a number of outreach events with targeted audiences. In addition to events, the program provides greater support to customers through the program's on-site office, within the city's municipal building. This on-site office allows utility staff to serve residential customers in the same way Account Representatives serve their business customers. Staff can also help customers with incentive applications as well as respond to additional utility questions. Staffing levels and data on participants for the efforts were not available.
- **Unique Combined Incentive Application** - SCE and SoCalGas offer unique applications for the Program. The utilities created a combined incentive application for SCE and SoCalGas measures specifically for food service customers, and plan to expand the combined application to single-family residences in the next program cycle.
- **Program-Specific Marketing** -- The PDP&D program staff also participated in discussions with other members of the City Partnership to develop a marketing strategy for the Palm Desert 30% goal, although they did not play a lead role. The Partnership communicates the 30% goal via a unique brand, "Set-to-Save." The brand – Set to Save – is designed to communicate convenience and innovative program elements (such as new and different incentives). This brand is perceived by residents to be a city brand, rather than a utility brand. The theory behind developing a city brand is that customers respond well to city marketing efforts. While the brand is seen as being sponsored by the city, the brand provides a unified message to customers, so that customers are not confused by different messages. In addition, homeowner associations and contractors (along with the city and utility) promote

⁶⁴ Utility staff reviewed draft savings results in order to determine the success of the One Stop Shop; however, this data was not submitted to the CPUC and therefore the evaluation team was not able to review it.

the program under this brand. The program has a dedicated website, listed under the same name: www.settosave.com.

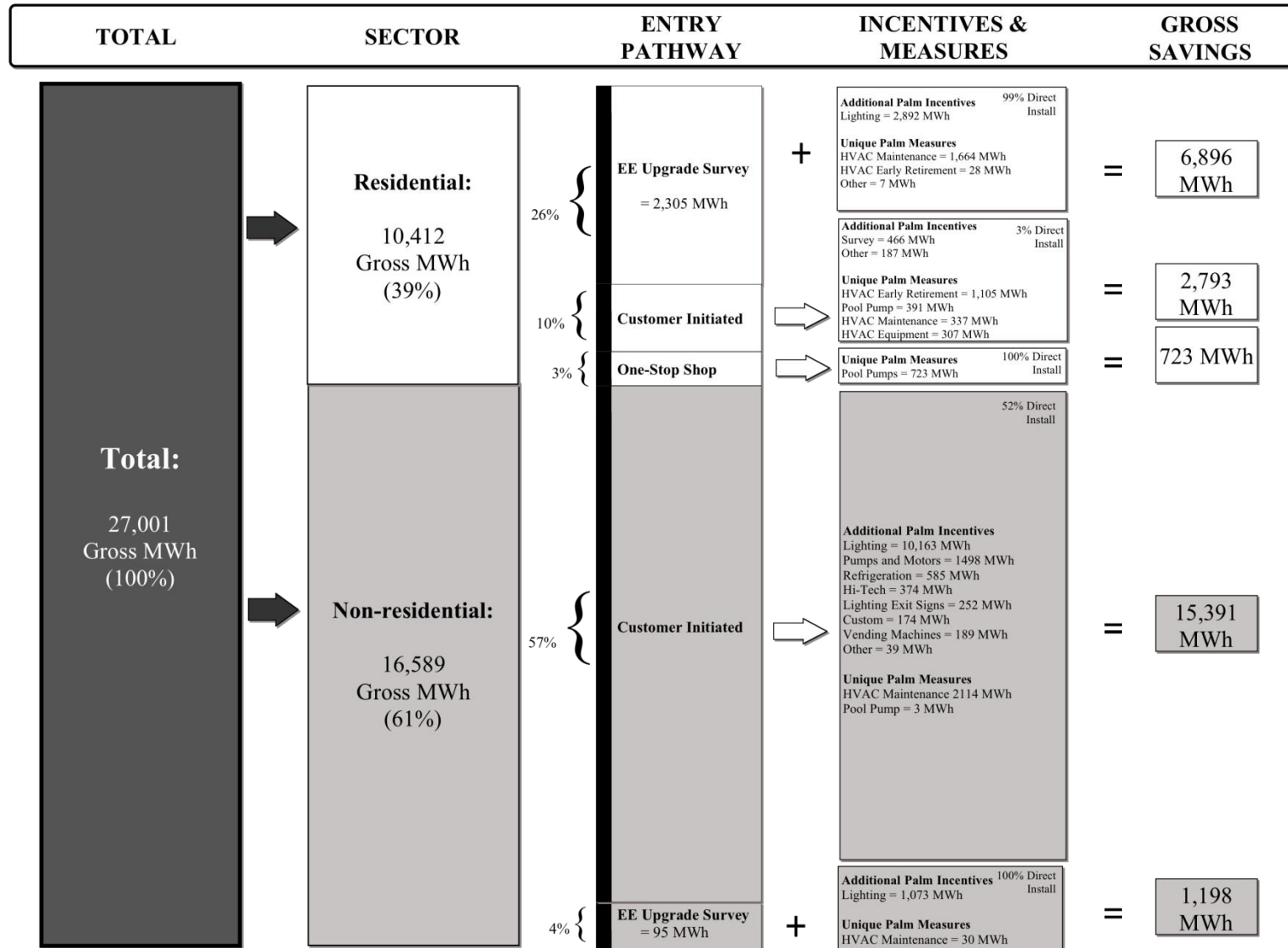
The PDP&D program does not track energy savings according to each of the program delivery elements; however, the evaluation attempted to trace these savings by identifying those measures in the PDP&D program tracking databases that could be associated with a specific program element, as shown in Figure 13. By assessing measure-level program data, the evaluation team was able to estimate savings associated with *some* delivery strategies; however, the evaluation team did not see data that specifically attributed savings to certain program delivery strategies. The evaluation team also did not see budget or expenditure data associated with program deliver strategies.

The evaluation team also identified those measures installed after a direct install audit and attributed those savings to the *Energy Efficiency Upgrade Program*. Any customer who received a direct install pool pump, and not through an audit, was attributed to the *One Stop Shop*. All other PDP&D program activities were described as being customer initiated and could be attributed to marketing and outreach efforts; however, it is not clear what caused these utility customers to participate in the PDP&D program. This analysis was only performed on kWh savings.

As shown in Figure 13, the overall PDP&D program savings⁶⁵ of 27 GWh is broken down into residential (39%) and non-residential (61%) customers. From here, the bulk of residential customers entered the program through an EE Upgrade Survey, while the majority of non-residential customers applied for incentives without the survey.

⁶⁵ Source: SPTdb 10/08/09; SCE (June 2009) PDP Program Data Q1-Q2, 2009.

Figure 13. PDP&D MWh Savings by Program Element, 2007-



2008

Policy Support

In 2007 and 2008, the PDP&D program helped the city develop policies that provide a foundation for meeting the city's 30% goal. While the city played the lead role in developing the policies, a city official interviewed for this evaluation stated that the utilities were instrumental in the policy development. The utilities reportedly worked creatively with the city to review policy ideas, identify policies that would heavily contribute to a 30% energy reduction, and help lobby state legislators on state-wide initiatives to support local actions. Following is a description of the policies implemented by the city and, when available from information collected during interviews, a description of how the PDP&D program funds helped assist in the development of the policy. In general, the PDP&D is referenced as 'soft' resource that participated, though specific contributions are seldom cited or apparent. This may be the result of several shortcomings of the program, such as an unclear logic model.

Assembly Bill 811

Assembly Bill 811 allowed California cities to offer financing opportunities to residential customers. As a result, the City of Palm Desert spent \$7.5 million from its general fund to implement the loan program. Based on lessons learned from the city's first loan effort, the Partnership has been working on improving the program during 2009. Requests for funding of photovoltaic systems swamped the initial round of funding and, based upon this and other lessons learned from the first round of administered loans, the city is contracting with a private bank to run the loan program and now requires 50% of funds be dedicated for efficiency. The Partnership is now proposing new legislation for tax-exempt bond funding to help other cities implement AB-811 initiatives.

PDP&D staff provided input to city officials during the planning process. The Palm Desert Partnership relied on lobbying experts at the utilities to gain legislative support throughout the state. City staff said that while the city might have considered proposing such a measure independently, they would not have had the resources to push the legislation at the state-level. In addition, the PDP&D program staff helped align the loan program with program measures. Since these efforts are not tracked at SCE or SoCalGas, it is unclear if participants in the AB-811 program also received incentive funds. It is also unclear how much energy savings and demand impact are associated with AB-811 efforts. A list of measures installations that received AB811 loans through City of Palm Desert efforts is provided in Appendix C.

Energy Code

The city implemented an energy ordinance for residential and commercial buildings in January 2007, which was above the state's Title 24 by 10-15% (depending on building type). The PDP&D program staff reported that in 2007, the code achieved 364,000 kWh energy savings.⁶⁶ This ordinance will expire once the Title 24 building codes take effect (January 2010). As a result, the city is developing a new ordinance for buildings at time of sale.

When the utilities agreed to carry out the Program, the utilities told the city that it needed to develop an energy efficiency ordinance as a means to meet the 30% goal, which resulted in the city generating this ordinance. The utilities also helped the city develop revisions to the ordinance, but PDP&D program staff did not mention any specific role.

Creation of a Palm Desert Office of Energy Management (OEM)

Palm Desert created an Office of Energy Management (OEM), which is staffed by three full-time employees (Director of OEM, Energy Technician, and an Administrator) paid for by the city. The city's staff market the Partnership program, process the AB-811 loans, and focus on working with other city departments to implement energy initiatives.

⁶⁶ Southern California Edison (2009). 2009-2011 PDP Program Implementation Plan.

While the PDP&D program does not fund the OEM in any way, utility staff often work at the OEM so that Palm Desert community members can ask questions directly to utility staff.

Strategic Development

The Palm Desert Partnership develops an annual strategic energy plan to guide program efforts. Executive members of the Palm Desert Partnership meet annually to provide guidance on the strategy (members include County Council, City Executive, and Utility representatives). The Partnership staff meet weekly with city staff to help guide implementation based on the agreed upon strategies and Program staff play an active role in providing strategic direction to the city.

Technology Savings/ Product Specifications

The Palm Desert Partnership developed product specifications for new pool pump and heating technologies (EE VFD pool pumps/ liquid pool covers). The Palm Desert Partnership also generated work papers in order to provide prescriptive rebates for these new technologies.

PDP&D program staff played a lead role in developing the product specifications and work papers associated with the new technologies.

City-Owned Building Improvements

The city does use IOU incentive dollars for energy efficiency equipment when constructing or renovating buildings. PDP&D program staff manages the rebate application process so that the city can receive incentive dollars for their energy efficiency efforts.

Assessment of the Uniqueness of Measures Installed

As discussed previously in the Program Budget and Cost Analysis section, the Program offers some financial incentives that are higher than incentives offered by traditional SCE and SoCalGas programs. In addition, the PDP&D program offers financial incentives for technologies that are not offered through traditional SCE and SoCalGas programs, or have a limited offering that would not be accessible to Palm Desert residents without the PDP&D program. Table 16 lists technologies in both categories⁶⁷, though several of the measures reported by staff as unique to the PDP&D program are common to many other programs, such as low flow showerheads and pre-rinse spray valves. Where this conflict arose, the unique characteristics of these measures were not confirmed by the evaluator.

⁶⁷ Data found in came from SCE and SCG as a direct response to a data request from the evaluation team

Table 16. PDP&D Technologies

Fuel	Technologies that would not have incentives to Palm Desert residents without the PDP&D Program	Commonly Deployed Technologies with Higher Incentives
Electric	Single-family super high performance central air conditioning	Commercial variable frequency drives, HVAC fans
	Single-family air conditioning, early replacement	Commercial compact fluorescent lamps and cold cathode fluorescent lamps
	Single-family duct testing and sealing	Commercial T-8 or T-5 lamp and electronic ballast, replacement only
	Single-family maintenance contract	Lighting controls
	Commercial variable speed pool pump/motor	Commercial electric fryer, griddle, combination oven, convection oven
	Commercial LED pool light	Commercial Ice machines
	Commercial air conditioning types (owned and leased space)	Commercial refrigeration display cases and doors
		Residential pool pumps
		Residential Energy Star qualified air conditioning
Gas	Commercial pool heater upgrade	Commercial, single-family, multi-family insulation
	Commercial pre-rinse valve, early replacement	Commercial, multi-family storage water heaters
	Single-family/ multi-family pool heater replacement	Commercial, multi-family boilers
	Single-family/ multi-family low flow showerhead	Commercial restaurant equipment
	Single-family gas storage water heater, early replacement	Commercial custom measures
		Multi-family water heat controllers
		Single-family gas furnace, early replacement

Several observations on the types of measures and technologies installed by the Program include;

- Our analysis of the standard tracking database provide by ED in the 1st quarter of 2010 indicates that measures classified as high impact measures (HIMs) accounted for about 70% of total program kWh savings.
- Of specific note is the absence of thermal energy storage (TES) measures that were discussed in the conclusion of law in the order approving the program. According to SCE utility staff, “at the time the Palm Desert 06-08 PIP was filed, TES appeared to be a viable measure for the Palm Desert community. Therefore, SCE included it in the program PIP and E3 calculator as an available program offering. However, after further consideration, energy savings estimates for this measure were inconclusive for this target market. Palm Desert program management opted to keep the TES as an available offering should there be customer demand for this measure. However, the program received no requests from customers, so no TES measures were installed.”

Interactions with Other Utilities and Jurisdictions

Program staff reported that one goal of the PDP&D program is to pilot innovative delivery strategies and technologies so that other utility programs or cities can learn from the Palm Desert initiatives. The following section describes which piloted efforts have been transferred to other programs and cities and additional communication efforts that PDP&D program staff had with other utilities and jurisdictions. It is broken down by:

- **Program Delivery and Technologies Transferred to Other SCE and Sempra Energy Efficiency Programs** – This includes elements known to have been transferred or under consideration for transfer, as reported by PDP&D program staff.
- **Policies Developed in Palm Desert that have Transferred to Other Communities** – Including elements adopted within other jurisdictions and expanded to other communities within the County of Riverside.
- **Communications with Other Communities and Jurisdictions** – Including cities that have been interested in learning from the results of the PDP&D program.

Program Delivery and Technologies Transferred into Other Utility Energy Efficiency Programs

The evaluation team did not find tracking data exploring the lessons learned from various elements or how this information was used in other programs or regions and these are listed below. Appendix D includes a list that PDP&D program staff provided the evaluation team showing measures specific to the PDP program and measures also present in other program or regions.

- PDP&D program staff reported that the One-Stop-Shop delivery strategy, first implemented in the PDP&D program, was then transferred to the Desert Cities Partnership Program. In addition, program staff reported that some program elements or technologies were actively being considered for future SCE and SoCalGas programs territory-wide, including Natural gas pool heaters for the multi-family program
- In addition, PDP&D program staff reported that the following program delivery strategies and technologies were being evaluated for future consideration into other energy efficiency programs, as of October 2009:
 - **Program Delivery Strategies**
 - Teaming with local contractors and trade associations
 - Joint utility rebate applications
 - Energy Efficiency Upgrade Program
 - Specialized commercial integrated audits
 - Set to Save Recognition Program
 - **Innovative Technologies**
 - Liquid pool covers
 - Gas pool heaters
 - LED exterior lighting
 - Early replacement incentives

- PDP&D program staff also reported that they were developing a whole house program element (as of October 2009), and that they were developing a strategy to test the following technologies (as of October 2009): LED retail lights, Eneron cooking pots, advanced dishwashers, low oil fryers
- PDP&D program staff also reported that pilot results from the PDP&D program OPower initiative, launched in 2009, were being used to guide SCE's response to California Senate Bill 488, which requires utilities to provide their customers with individual performance information. In addition, program staff have discussed the "Set to Save" marketing strategy and best practices in reaching home ownership associations with other utility staff and cities.

Communication with Other Communities and Jurisdictions

In addition to the above information that identifies which elements were or are being considered for other programs or jurisdictions, program staff report that they have responded to questions and presented information about the PDP&D and related program activity. Not all of these communications have been tracked, but following is a list of some of these communication efforts. The impact of these outreach efforts are unclear because this information has not been tracked.

Representatives of the PDP&D program have presented information about the program at the following conferences/ meetings:

- Local Government Commission's Annual Ahwahnee Conference
- Behavior, Energy, and Climate Change conference
- ESource webinar with other utilities and municipalities
- Riverside Green Energy Symposium
- UC Berkeley Clean Energy Municipal Financing Seminar
- EcoMotion AB-811 Conference, Palm Desert
- Municipal Management Association of Southern California
- San Gabriel Valley Association of Governments/County of Los Angeles
- U.S. Green Building Counsel Presentation
- CPUC local government workshops
- SCE/SoCalGas All Partners Meeting, EE program staff meetings

In addition to presenting information about the PDP&D program, Partnership staff provide information to interested parties who inquire about the program. Table 17 lists the groups that have asked for and received information about the PDP&D program and AB-811 loans.

Table 17. Recipients of Information About the PDP&D Program and AB-811 Loans

City		County	Other Organizations
City of Santa Barbara	City of Temecula	Alameda County	Desert Cities Partnership
City of Pasadena	Irvine	San Bernardino County	Community Energy Partnership
Monrovia	City of Rialto	Sacramento County	Chartwell Environmental
City of Brea	City of Santa Monica	Sonoma County	Law & Policy Center
Corona	La Quinta	Sonoma County	
Hermosa Beach	City of Canyon Lake	Riverside County	
Moreno Valley	City of Ventura	Orange County	
City of San Bernardino	City of Madera	San Diego County	
City of Santa Clarita	City of Roseville	County of San Francisco	
City of Diamond Bar	San Diego	Marin County	
City of Malibu	City of Huntington Beach	Ventura County	
CVAG	Palm Springs	South Bay	
City of 29 Palms	City of Redlands	San Gabriel Valley	
City of Santa Rosa	Town of Apple Valley		
City of San Francisco	Indian Wells		
City of Oakland	Solana Beach		
City of Sacramento	City of Carlsbad		
Mountain View	City of Encinitas		
Milwaukee, WI	City of Toronto, Canada		

(Note: Data found in Table 17 came from SCE and SoCalGas as a direct response to a data request from the evaluation team.)

Findings and Conclusions from the Analysis of Program Innovations and Replicability

Findings

- The effort to evaluate the innovation and success of these initiatives was significantly hampered by two factors:
 1. The absence of a clear explanation of the program logic that linked program actions to intended outcomes. The program logic model did not provide a detailed and clear picture of the program design and theory, including indicators of success, methods of tracking performance, or provide clarity in the initial program design process. The program strategies shown in the top row of are very vague and need to be more distinct and developed before each of them can be discretely tied to a goal, outcome, or accomplishment. Program strategies that are complex or new and innovative may also need separate logic models.
 2. The absence of detailed quantitative data to support the direct linking of program actions with outcomes. Essentially, there was no detailed quantitative data to support the direct linking of program actions with outcomes. For example, data on participation in outreach activities was not provided. An additional example of the lack of program data would be the absence of any SoCalGas impact data, or the poor quality of data provided in the analysis of RCA mentioned earlier in the report.
- Defining and Designing a ‘Demonstration’ Program: The utilities have characterized that PDP&D program as a ‘demonstration’ or ‘pilot’ program that features aggressive goals and a

commendable scope of activities. The program also had an approved budget that was significantly larger than other local government programs and per capita spending levels much greater than any other LGP program⁶⁸. As such there should be an expectation that a greater level of rigor would be applied to ‘demonstration’ program design and monitoring of activities and expenditures. In contrast to this expectation, it appears that this program was not treated as a ‘demonstration’ or ‘pilot’ platform. Specifically;

- The program offered very little in the way of documentation to define or track the design innovations featured by the PDP&D program. While it is possible that significant resources could be spent to conduct a forensic analysis that reaches conclusions that differ with this evaluation, the program was adequately funded to provide this level of design and monitoring rigor but did not.
 - The utilities did not require planning, documentation, or tracking of program activities that could establish the effectiveness, replicability, and scalability of program activities to other jurisdictions.
 - There is no planning document that clearly articulates the specific responsibilities and goals for each partner. The program implementation plan (PIP) submitted with the original program design covered this in general, but was a high level document.
 - The PDP&D staff supported the development of many City policies, such as AB811 or the cities energy code. It is unclear whether, or to what extent, program funding was used to implement policy.
 - The budget structure used by the SCE program was consistent with other 2006 – 2008 programs, as required by the CPUC, but did not track expenditures at a level that allows for a cost-benefit analysis of the program elements. It is therefore difficult to conclude what can be replicated elsewhere.
- Our analysis of the standard tracking database provide by ED in the 1st quarter of 2010 indicates that measures classified as high impact measures (HIMs) accounted for about 70% of total program ex-ante reported kWh savings.
 - Of specific note is the absence of thermal energy storage (TES) measures that were discussed in the conclusion of law in the order approving the program. According to SCE utility staff, “at the time the Palm Desert 06-08 PIP was filed, TES appeared to be a viable measure for the Palm Desert community. Therefore, SCE included it in the program PIP and E3 (benefit-cost) calculator as an available program offering. However, after further consideration, energy savings estimates for this measure were inconclusive for this target market. Palm Desert program management opted to keep the TES as an available offering should there be customer demand for this measure. However, the program received no requests from customers, so no TES measures were installed.”
 - The organization chart for the PDP&D is provided in Figure 12. It indicates that there is no one person or title that is responsible for the entire program, including overarching responsibility for the operations of each partner. As such, it is unclear who is responsible and accountable for the overall program, or “where the buck stops”.

⁶⁸ Institutional programs include the UC/CSU, California Community Colleges, and Department of Corrections partnership programs.

Conclusions

- This evaluation concludes that there is substantial anecdotal information suggesting the program piloted strategies are innovative, and that there was some effect from these strategies, however our ability to measure these impacts in an objective and quantifiable sense is very limited at this juncture. While the program currently tracks high-level program achievements, the evaluation team did not find reported documentation indicating a more detailed tracking that would support the direct assessment of the initiatives being piloted through the program. We can therefore not conclude whether or not these strategies are successful or not. The effort to evaluate the innovation and success of these initiatives was significantly hampered by two factors:
 1. The absence of a clear explanation of the program logic that linked program actions to intended outcomes.
 2. The absence of detailed quantitative (qualitative data is missing, too) data to support the direct linking of program actions with outcomes.
- TURN/DRA raised concerns in the order approving the program that the PDP&D is “not a unique program”⁶⁹ and further that “DRA/TURN contend the uniqueness of the Project is not substantiated by its typical energy efficiency measures”. While this is essentially true when considering the types of delivery mechanism used and measures for which energy savings were reported (e.g. that interior and exterior CFLs account for about 44% of total program ex-ante kWh savings), though it is not correct when considering the broad range and scope of activities undertaken by the program. We conclude, rather that the PDP&D program is unique in its scope, and that the sum is likely more than the parts, but the full potential, and achievements of the program, and the scalability of these actions, cannot be accounted for as the program is currently designed, tracked, and operated.
- Given the programs status as a ‘demonstration’ program, and level of financing provided, there should be an expectation that a greater level of rigor would be applied to program design and IOU evaluation of activities and expenditures but this did not occur.

⁶⁹ Order Approving Southern California Edison Company Petition for Modification of Decision 05-09-043, with Modifications. Decision 06-12-013 December 14, 2006, page 11.

APPENDICES

Appendix A: Requested 2007 – 2012 PDP program budget

The PDP&D program itself is solely funded by California ratepayer funds and its budget is shown in Table 18.

Table 18. PDP Program Budget

Utility	2007-2008 Budget (\$) ⁷⁰	2009 Bridge Budget (\$)	2010-2012 ⁷¹ Proposed Budget (\$)	Total Budget (\$)
SCE	14,000,000	8,067,399	20,815,000	42,882,399
SCG	2,243,000	1,320,000 ⁷²	2,381,454	5,944,454
Total	16,243,000	9,387,399	23,196,454	48,826,853

In addition to funding from the Program, the Palm Desert Partnership (“the Partnership”) is also supported by funding from the city. Based on the Program budgets (2007-2008, 2009, and funding requested for the 2010-2012 program cycle ⁷³) and funding from the City of Palm Desert, the total City Partnership budget for the initiative is \$64.2 Million, including \$48.8M from the PDP, \$4.5M from IOU core program incentive funds, and \$7.7 from AB811 funding, and \$3.2 from the City of Palm Desert. Figure 14 provides a high-level view of how the Program and City combine money to fund the Partnership ⁷⁴.

SCE and SoCalGas earmark roughly \$4.38 million in their core programs for incentives in the City of Palm Desert, representing 7% of the costs associated with the Palm Desert effort (see Figure 14). In addition, the utilities provide funding for incentives, marketing, direct install services, and administrative

⁷⁰ Sources

- Southern California Edison (2007) 2006-2008 PDP Program Implementation Plan
- Southern California Gas (2007) 2006-2008 PDP Program Implementation Plan

⁷¹ 2010-2012 PDP funds are proposed budgets and need to be approved by the California Public Utilities Commission.

- Southern California Edison (2009) 2009-2011 PDP Program Implementation Plan
- Southern California Gas (2009) 2009-2011 PDP Program Implementation Plan
- California Public Utilities Commission (September 24, 2009), “Final Decision to the 2009-2011 Energy Efficiency Program Plans and Associated Public Goods Charge and Procurement Funding Request.”)

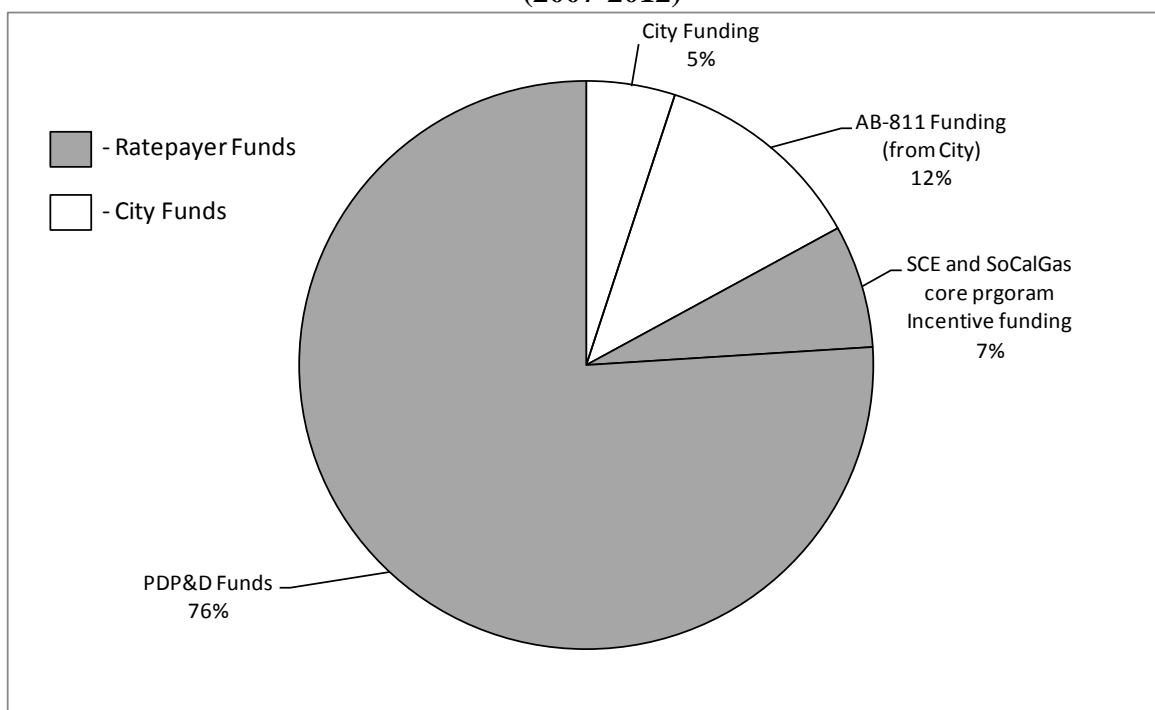
⁷² SoCalGas Response to EEGA Data Request 1277 Regarding the Palm Desert Budget and Expenditures for 2009, dated April 16, 2010.

⁷³ As of the publication of this document, only one-sixth of the funding requested for the 2010 – 2012 program had been approved.

⁷⁴ Note: Funding includes money from ratepayers as well as the City of Palm Desert. Also, the figure includes 2010-2012 PDP funds, which are proposed budgets and need to be approved by the California Public Utilities Commission. Source: Palm Desert Partnership (October 22, 2008). “Set to Save Strategic Plan”; Interview with city Staff (October 21, 2009); Southern California Edison (2007) 2006-2008 PDP Program Implementation Plan; Southern California Gas (2007) 2006-2008 PDP Program Implementation Plan; Southern California Edison (2009) 2009-2011 PDP Program Implementation Plan; Southern California Gas (2009) 2009-2011 PDP Program Implementation Plan; California Public Utilities Commission (September 24, 2009), “Final Decision to the 2009-2011 Energy Efficiency Program Plans and Associated Public Goods Charge and Procurement Funding Request”); email from Southern California PDP program manager (November 9, 2009).

costs specific to the PDP&D program. While the city has an identified budget for the 30% goal of \$11 million (which includes funds on city buildings for solar initiatives, AB-811, and funds to staff the Office of Energy Management), the city spends additional money on the 30% effort that is not tracked. For example, the city reports that all departments are addressing the 30% goal by their own means (low-income housing construction uses energy efficiency equipment). This money is not tracked and is therefore not included in Figure 14.

Figure 14. Relative Contribution of Funding for Palm Desert's 30% Energy Initiative (2007-2012)⁷⁵



⁷⁵ PDP&D and SCE and SCG Traditional Incentive (core program) funds are ratepayer funds

Appendix B: California community populations and LGP program budgets

Table 19 provides demographic and budget data used to create various per capita funding statements. Additional data is also submitted as a separate Microsoft Excel spreadsheet file titled 'California Community Populations and LGP Program Budes.xls'. This file contains data and information used to complete an analysis of the Local Government Partnership programs with regard to budgets, partnership area populations, and median household incomes in partnership areas. This workbook was compiled by Summit Blue Consulting, July 2009.

Table 19. Local Government Partnership Supporting Data

Local Government Partnership Name	Utility Service Territory	Total Population for 2007 ¹	Median Household Income in 1999	LGP Program Budget	Program Budget Per Capita (2007)
AMBAG	PG&E	714,051	53,257	\$ 10,071,888	14.1
City of San Joaquin	PG&E	3,845	24,934	\$ 591,899	153.9
East Bay	PG&E	2,892,441	57,907	\$ 17,165,082	5.9
Fresno County	PG&E	895,503	34,725	\$ 7,102,792	7.9
Kern County	PG&E, SCE, SCG	765,240	35,446	\$ 10,001,298	13.1
Marin County	PG&E	248,096	71,306	\$ 3,601,135	14.5
Mendocino County	PG&E	86,273	35,996	\$ 595,431	6.9
Napa County	PG&E	132,565	51,738	\$ 1,500,000	11.3
Redwood Coast	PG&E	128,864	31,226	\$ 3,551,396	27.6
San Joaquin County	PG&E	670,990	41,282	\$ 3,551,396	5.3
San Luis Obispo County	PG&E, SCG	262,436	42,428	\$ 2,479,664	9.4
San Mateo County	PG&E	706,984	70,819	\$ 4,143,296	5.9
Santa Barbara County	PG&E, SCE, SCG	404,197	46,677	\$ 5,459,759	13.5
Sierra Nevada County	PG&E	1,148,666	40,188	\$ 6,442,233	5.6
Silicon Valley	PG&E	1,748,976	74,335	\$ 11,837,987	6.8
San Francisco	PG&E	764,976	55,221	\$ 14,205,585	18.6
Sonoma County	PG&E	464,435	53,076	\$ 3,256,488	7.0
City of Beaumont	SCE	30,220	29,721	\$ 573,000	19.0
City of Long Beach	SCE	466,520	37,270	\$ 1,851,000	4.0
City of Redlands	SCE	69,941	48,155	\$ 798,000	11.4
City of Ridgecrest	SCE	25,470	44,971	\$ 786,000	30.9
City of Santa Ana	SCE	339,555	43,412	\$ 1,858,000	5.5
City of Simi Valley	SCE	120,464	70,370	\$ 391,000	3.2
City of South Gate	SCE	97,110	35,695	\$ 798,000	8.2
Desert Cities	SCE*/SCG; * only some cities	334,913	45,305	\$ 1,561,899	4.7

Local Government Partnership Name	Utility Service Territory	Total Population for 2007 ¹	Median Household Income in 1999	LGP Program Budget	Program Budget Per Capita (2007)
	are in SCE's program				
Eastern Sierra	SCE	30,250	39,999	\$ 956,000	31.6
Orange County Cities	SCE/SCG	446,012	58,685	\$ 2,620,465	5.9
Palm Desert	SCE/SCG	50,729	48,316	\$ 16,200,000	319.3
San Gabriel Valley	SCE	1,341,791	56,306	\$ 1,996,000	1.5
San Joaquin Valley/Tulare	SCE/SCG	421,553	33,983	\$ 2,516,434	6.0
South Bay Cities	SCE/SCG	746,587	75,780	\$ 3,430,898	4.6
Ventura County	SCE/SCG	677,900	59,666	\$ 5,269,241	7.8
County of Los Angeles	SCE/SCG	1,020,524	42,189	\$ 3,387,920	3.3
County of Riverside	SCE/SCG	1,657,709	42,887	\$ 4,168,178	2.5
County of San Bernardino	SCE/SCG	1,937,859	42,066	\$ 2,620,576	1.4
City of Chula Vista	SDG&E	217,478	44,861	\$ 5,654,309	26.0
City of San Diego	SDG&E	1,266,731	45,733	\$ 6,018,788	4.8
City of San Juan Capistrano	SDG&E	34,621	62,392	\$ 570,018	16.5
County of San Diego	SDG&E	2,974,859	47,067	\$ 22,253,977	7.5

¹The population data for Sierra Nevada Partnership includes data from the Census 2000 for three cities that were removed from the Sierra Nevada partnership: Tahoe Vista, Sunnyside-Tahoe City, and Markleeville.

Sources: Total Population for 2007: U.S. Census Bureau. American Factfinder. Download Center. Population Estimates and Projections Data Set. Available at

http://factfinder.census.gov/servlet/DownloadDatasetServlet?_lang=en. Downloaded in June 2009; Median Household Income in 1999: U.S. Census Bureau. American Factfinder. Download Center. Census 2000 Summary File 3 Data Set. Available at http://factfinder.census.gov/servlet/DownloadDatasetServlet?_lang=en. Downloaded in June 2009; LGP Program Budget: SCE, SCG, PG&E and SDG&E filings to the CPUC under proceeding 08-07-021. SDG&E, SCG, and PG&E list their budgets as “projected program budgets.” SCE lists the budget as “proposed program plan budget.”

Notes: Total population for 2007 is an estimate by the U.S. Census Bureau based on data from the Census 2000. In partnership areas where more than one utility is operating, the program budgets were combined. Madera County was its own partnership, but is part of the Sierra Nevada Partnership in 09-11; therefore, the Sierra Nevada partnership includes the Madera budget and the Madera County population.

This appendix is submitted as a separate Microsoft Excel spreadsheet file titled ‘California Community Populations and LGP Program Budgets.xls’. This file contains data and information used to complete an analysis of the Local Government Partnership programs with regard to budgets, partnership area populations, and median household incomes in partnership areas. This workbook was compiled by Summit Blue Consulting, July 2009.

Appendix C: Measures installations supported through AB-811

While the PDP&D program was not primarily responsible for the AB-811 loan program, the City of Palm Desert did loan money for energy efficient and renewable technologies to its residents and businesses through the AB-811 initiative. Since these efforts are not tracked at SCE or SCG, it is unclear if participants in the AB-811 program also received incentive funds. It is also unclear how much energy savings and demand impact are associated with AB-811 efforts. Table 20 lists the number and types of measures for which AB-811 participants received loans.

Table 20. The Quantity and Types of Measures for which AB-811 Participants Received Loans

Measure Type	Quantity	Measure Type	Quantity
Total A/C Systems	147	Roofing	4
Total Solar Systems	87	Fuel Cells	2
Total Solar kW	709	Insulation	2
Windows	36	Awnings/Shade Covers	2
Pool Pumps	25	Swamp Coolers	2
Pool Heaters	6	Skylights	1
Water Heater	6	Thermal Solar	1
Roof Coating	6	Window Tinting	0
Tankless Water Heater	4	Attic Fans	0

(Source: Palm Desert Energy Partnership. "AB-811 Program Participants, as of September 2009.")

Appendix D: Technologies available through the PDP&D Program

In addition, program staff reported that the PDP&D program offers financial incentives for technologies that are not offered through traditional SCE and SCG programs, such as early replacement measures. Table 0-21 lists technologies in both categories, though several of the measures reported by staff as unique to the PDP&D program are common to many other programs, such as low flow showerheads and pre-rinse spray valves. Where this conflict arose, the unique characteristics of these measures was not confirmed by the evaluator.

Table 0-21. PDP&D Technologies

Fuel	Technologies available for incentives through PDP&D Program	Commonly Deployed Technologies with Higher Incentives
Electric	Single-family super high performance central air conditioning	Commercial variable frequency drives, HVAC fans
	Single-family air conditioning, early replacement	Commercial compact fluorescent lamps and cold cathode fluorescent lamps
	Single-family duct testing and sealing	Commercial T-8 or T-5 lamp and electronic ballast, replacement only
	Single-family maintenance contract	Lighting controls
	Commercial variable speed pool pump/motor	Commercial electric fryer, griddle, combination oven, convection oven
	Commercial LED pool light	Commercial Ice machines
	Commercial air conditioning types (owned and leased space)	Commercial refrigeration display cases and doors
		Residential pool pumps
		Residential Energy Star qualified air conditioning
Gas	Commercial pool heater upgrade	Commercial, single-family, multi-family insulation
	Commercial pre-rinse valve, early replacement	Commercial, multi-family storage water heaters
	Single-family/ multi-family pool heater replacement	Commercial, multi-family boilers
	Single-family/ multi-family low flow showerhead	Commercial restaurant equipment
	Single-family gas storage water heater, early replacement	Commercial custom measures
		Multi-family water heat controllers
		Single-family gas furnace, early replacement

(Note: Data found in Table 0-21 came from SCE and SCG as a direct response to a data request from the evaluation team.)

Appendix E: PDP&D Interview Guide

Palm Desert- interview questions

Martin Alvarez, Redevelopment Manager

(Pat Conlan; Justin McCarthy, Assistant City Manager; John Wolmuth, City Manager)

-History of the 30% goal

-Status of goal

- where are you at meeting goal?
- relative importance
 - what elements help to achieve the goal? (map the program elements)
 - where is the funding coming from?
- interpretation of timeline (5 year/ 6 year)

-Leadership:

- Seems like leadership is important, in this situation- who is carrying that leadership and what are potential impacts if that person leaves?
- How important is the leadership role if one was to transfer the program to other city.

-Contribution of the utility in creating/meeting the 30% goal

- What did the utility do in helping the city develop policies that support 30% goal? How important was it? And if important, can you explain how?
- Would city have done this without the support from the utility?

-Scalability/transferability of program to other cities

- Is this something that a city could do, but if CPUC couldn't provide same level of money- what would you recommend the city do in order for them to be most effective?