

Following California's Public Goods Charge:

Tracking Contributions and Expenditures
of the Renewable Energy Program and the PIER Program

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Following California's Public Goods Charge

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Table of Contents

1	Executive Summary.....	1
1.1	Overall Findings for SDG&E.....	2
1.2	Renewable Energy Program Findings.....	2
1.2.1	Public Interest Energy Research Program Findings	4
1.3	Factors Accounting for the Difference in Contributions and Distributions	5
1.4	Other Considerations	7
2	Introduction.....	8
2.1	Organization of the Report	9
3	Background.....	10
3.1	Public Goods Charge Programs.....	10
3.1.1	California Alternate Rates for Energy (CARE)	10
3.1.2	Renewable Energy Program	11
3.1.3	Energy Efficiency Programs	12
3.1.4	Public Interest Energy Research Program	12
3.2	Administration of the Public Goods Charge Funds	13
3.3	SDG&E Rates and Public Goods Charge Funds	13
3.4	Municipal Utilities and PCG funds	15
4	Renewable Energy Program.....	16
4.1	Customer Contributions to the Renewable Energy Program	17
4.2	Methods: Calculating Distributions from the Renewable Energy Program.....	17
4.2.1	Differences between EPIC Analysis and California Energy Commission Accounting 18	
4.2.2	Omitting the Customer Credit and Consumer Education Programs.....	19
4.2.3	Renewable Energy Program Distributions: PPA Method v. Plant Location Method 19	
4.3	Distributions from the Renewable Energy Program	19
4.3.1	Distributions to Projects in the SDG&E Service Territory	21
4.3.2	Existing Renewables Program	22
4.3.3	Emerging Renewables Program	23
4.3.4	New Renewables Program.....	24
4.3.5	Total Distributions from the New Renewables Program.....	26
5	Public Interest energy research	29

Following California's Public Goods Charge

- 5.1 Categories of PIER Program Spending.....29
- 5.2 PIER Contributions and Distributions30
- 5.3 Overall PIER Findings31
- 5.4 PIER Findings for San Diego32
- 5.5 The Energy Innovation Small Grants Program.....33
- 6 Conclusion 35
 - 6.1 Overall Findings35
 - 6.2 Findings for SDG&E36
 - 6.3 Factors Accounting for the Difference in Contributions and Distributions36
 - 6.3.1 Loans, Fund Balances, and Administrative Costs.....36
 - 6.3.2 Number of Renewable Generation Facilities.....37
 - 6.3.3 PIER Spending Requirements37
 - 6.4 Other Considerations38

List of Tables

Table 1: Contributions to the PGC Fund from 1998 to 2005 (\$ million) 1

Table 2: Comparison of Total Contributions and Distributions for each IOU (\$million).....2

Table 3: Comparison of PGC Contributions and Distributions for the SDG&E Service Territory (\$million)2

Table 4: Contributions to Renewable Energy Program (\$million)3

Table 5: Distributions from the Renewable Energy Program Using PPA Method (1998-2005) (\$million)3

Table 6: Distributions from the Renewable Energy Program to SDG&E Territory Using PPA Method (\$million) 4

Table 7: IOU Customer Contributions to PIER Fund (\$million).....4

Table 8: Comparison of PIER Contributions and Distributions (\$million).....5

Table 9: Top 10 San Diego PIER Fund Recipients (1998-2005) (\$million).....5

Table 10: Contributions to the PGC Fund by IOUs (1998-2005) (\$ million).....8

Table 11: CARE Income Eligibility Limits* 11

Table 12: AB 1890 Required Annual PGC Funding Levels 14

Table 13: Customer Contributions to Renewable Energy Program by IOU (\$million) 17

Table 14: CEC Accounting of the Renewable Energy Program as of 9-30-05 (\$million)..... 18

Table 15: Distributions from the Renewable Energy Program using the PPA Method (\$million)20

Table 16: Renewable Energy Program Contributions and Distributions using the PPA Method (\$million)20

Table 17: Distributions from the Renewable Energy Program using the Plant Location Method (\$million)21

Table 18: Distributions from the Renewable Energy Program using the PPA Method (1998-2005) (\$million)21

Table 19: Total Payments from the Renewable Energy Program using the Location Method (1998-2005) (\$million).....21

Table 20: Renewable Energy Program Distributions to SDG&E Service Territory using the PPA Method (\$million)22

Table 21: Renewable Energy Program Distributions to SDG&E Service Territory using the Plant Location (\$million).....22

Table 22: Existing Renewables Program Account Balance (\$million)22

Table 23: Distributions from the Existing Renewables (\$million)23

Table 24: Emerging Renewables Account Balance (\$million)24

Table 25: Distributions from the Emerging Renewables Fund (\$million)24

Following California's Public Goods Charge

Table 26: New Renewables Fund Account Balance (\$million)25

Table 27: Distributions from New Renewables Program using the PPA Method (\$million)26

Table 28: Distributions from New Renewables Program using the Location Method (\$million)..27

Table 29: IOU Contributions to the PIER Program (\$million).....30

Table 30: Contributions to and Distributions from PIER Program (\$million)31

Table 31: San Diego Companies and Organizations Receiving PIER Funds between 1998-2005 (\$million)33

Table 32: Out-of-State Distributions from the Energy Innovations Small Grants Program (\$million)34

Table 33: Contributions to the PGC Fund by IOU Customers from 1998 to 2005 (\$ millions)....35

Table 34: Comparison of Total Contributions and Distributions for each IOU (\$millions)36

List of Figures

Figure 1: Organizational Structure of the REP 12

Figure 2: Breakdown of SDG&E's Customer Contributions to the Public Goods Charge (2005) 14

Figure 3: Components of SDG&E's 2006 Electric Revenue 14

Figure 4: Distributions from the New Renewables Program by Utility Service Territory 27

Figure 5: shows New Renewable Program distributions based on the PPA method. 28

Figure 6: PIER Program Funding by Utility 32

Figure 7: Distributions from the Energy Innovations Small Grants Program 34

1 EXECUTIVE SUMMARY

The purpose of this paper is (1) to track contributions to a subset of the Public Goods Charge (PGC) by customers in the San Diego Gas & Electric (SDG&E), Southern California Edison (SCE), and Pacific Gas and Electric (PG&E) service territories, and (2) to compare those contributions to the amount of PGC funds returned to those service territories for research and development activity and renewable energy development. The subset of the PGC that we analyzed includes the two programs that are administered at the state level by the California Energy Commission: the Renewable Energy Program and the Public Interest Energy Research Program (PIER Program).¹ While we tracked contributions and distributions from these programs for all California investor-owned utilities (IOU), we paid particular attention to the SDG&E service territory.

From 1998 to 2005, customers of SDG&E, SCE, and PG&E contributed at least \$6.4 billion to the PCG through surcharges placed on electric and gas utility bills.² Table 1 shows the total amount contributed by customers of California IOUs from 1998-2005.

Table 1: Contributions to the PGC Fund from 1998 to 2005³ (\$ million)

IOU	REP	PIER	Energy Efficiency	CARE	Total
SDG&E	\$104.70	\$38.20	\$258.90	\$181.56	\$583.36
SCE	\$487.40	\$218.68	\$687.98	\$1,489.00	\$2,883.06
PG&E	\$496.18	\$246.70	\$852.61	\$1,366.00	\$2,961.49
Total	\$1,088.28	\$503.58	\$1,799.49	\$3,036.56	\$6,427.90

Source: SDG&E, SCE, PG&E

Of the total funds contributed to the Renewable Energy Program and the PIER Program, between 32%-70% of the funds were returned to the IOU service territories for projects located there. Table 2 shows the total amount of customer contributions to these programs and the amount distributed to each service territory for relevant projects. PG&E had the highest percentage of funds returning to its service territory, receiving 70% of the funds its customers contributed. SCE received the least in percentage terms, receiving 32% of what it contributed for these two programs. SDG&E received 50% of its contributions.

¹ The Renewable Resources Trust Fund is the mechanism to fund the Renewable Energy Program. Similarly, the Research, Development and Demonstration Fund is the mechanism to fund the PIER Program. For simplicity, we refer only to the Renewable Energy Program and the PIER Program.

² For the purposes of this paper, we only included PGC funds dealing with electricity, unless otherwise noted.

³ Each utility has recorded its CARE contributions differently. SDG&E's CARE numbers do not include administrative costs related to SBX15 funds, which are state funds used to augment base program costs, SCE and PG&E numbers do include these funds. SDG&E and PG&E did not include 1998 contributions while SCE did. SDG&E and SCE numbers only represent the CARE programs subsidizing electricity consumption, while PG&E costs for 1999 and 2000 include both gas and electric CARE programs. Renewable Energy Program numbers are calculated using the PPA method.

**Table 2: Comparison of Total Contributions and Distributions for each IOU (\$million)
Renewable Energy Program and PIER Program**

	SDG&E	SCE	PG&E
Contributions	\$142.90	\$706.09	\$742.88
Distributions	\$71.93	\$229.18	\$517.32
% of Contributions	50%	32%	70%

1.1 OVERALL FINDINGS FOR SDG&E

From 1998 to 2005, SDG&E customers contributed \$142.9 million to the Renewable Energy Program and PIER Program: \$104.7 million and \$38.2 million, respectively. Of the total money contributed to both funds, approximately \$72 million – or 50% of the contributions – were distributed to projects located in or selling power to SDG&E's service territory. Table 3 shows the amount of money contributed yearly by customers in SDG&E's service territory and the amount of money that has been returned to the service territory through project funding.

Table 3: Comparison of PGC Contributions and Distributions for the SDG&E Service Territory⁴ (\$million)

Year	\$ to REP	\$ from REP*	\$ to PIER	\$ from PIER
1998	\$12.00	\$0.98	\$3.90	\$0.43 *
1999	\$12.00	\$4.81	\$3.90	\$0.00
2000	\$12.00	\$0.32	\$3.90	\$1.55
2001	\$19.70	\$3.41	\$3.90	\$3.03
2002	\$12.00	\$4.99	\$5.50	\$1.10
2003	\$12.10	\$6.81	\$5.60	\$0.00
2004	\$12.30	\$8.75	\$5.70	\$8.88
2005	\$12.60	\$15.22	\$5.80	\$11.65 **
Total	\$104.70	\$45.29	\$38.20	\$26.64

* Includes projects that pre-date 1998

** Includes projects that end after 2005

Source: SDG&E , SCE, PG&E

1.2 RENEWABLE ENERGY PROGRAM FINDINGS

By the end of 2005, customers from SDG&E, SCE, and PG&E service territories had contributed \$1.09 billion to the Renewable Energy Program. Table 4 shows the amount of money that has been contributed by customers of each IOU to the Renewable Energy Program.

⁴ Renewable Energy Program numbers shown are determined using the PPA method. The New Renewables Fund and Existing Renewable Fund provide incentives for renewable generators. For the Existing Renewables Fund, calculations were based upon location of the generation. For the New Renewables Fund, totals were calculated based on two methods: (1) the total received by each IOU by the location of the generator and (2) by the location to which the power was sent via power purchase agreement (PPA), called the PPA Method herein. See Section 4.2.3.

Table 4: Contributions to Renewable Energy Program (\$million)

Year	SDG&E	SCE	PG&E	Total
1998	\$12.00	\$49.50	\$48.00	\$109.50
1999	\$12.00	\$49.50	\$48.00	\$109.50
2000	\$12.00	\$49.50	\$48.00	\$109.50
2001	\$19.70	\$112.80	\$79.00	\$211.50
2002	\$12.00	\$55.30	\$67.70	\$135.00
2003	\$12.10	\$55.92	\$67.70	\$135.72
2004	\$12.30	\$56.85	\$68.17	\$137.32
2005	\$12.60	\$58.04	\$69.61	\$140.25
IOU Total	\$104.70	\$487.41	\$496.18	\$1,088.28
% of Total	9.6%	44.8%	45.6%	

Source: California Energy Commission

Table 5 shows the total amount of money distributed from 1998 to 2005 from the Renewable Energy Program to projects in the IOU service territories. This amount excludes funds from the Customer Credit and Consumer Education subprograms, which were not included in our analysis.⁵ For the New Renewables Program, we calculated the total amount that each IOU received by the location of the generator and by the location of electricity contracted through Power Purchase Agreements (PPA). Table 5 shows calculations based upon the PPA method.⁶

Table 5: Distributions from the Renewable Energy Program Using PPA Method (1998-2005) (\$million)

	SDG&E	SCE	PG&E	Other*	Total
Emerging Renewables Program	\$30.42	\$58.36	\$143.94	\$0.00	\$233
Existing Renewables Program	\$0.03	\$73.61	\$150.96	\$0.00	\$225
New Renewables Program	\$14.83	\$61.89	\$15.77	\$117.78	\$210
Total	\$45.29	\$193.86	\$310.66	\$117.78	\$667
% of Total	6.8%	29.1%	46.6%	17.7%	

*Other includes CA municipal utilities, out-of-state utilities, and the spot market.

Source: California Energy Commission, EPIC analysis

Of the total monies contributed to the Renewable Energy Program, \$45.29 million has been distributed to projects that are located in SDG&E's service territory or have sold renewable energy to SDG&E. The \$45.29 million distributed to SDG&E-related projects represented 43% of the money SDG&E customers contributed to the Renewable Energy Program and 7% of the program's total distributions of \$667 million.⁷ By comparison, SCE received \$193 million, which represents 40% of the funds contributed and 29% of total Renewable Energy Program distributions. PG&E received \$310 million, which represents 62% of the funds contributed and 47% of Renewable Energy Program distributions. Table 6 shows monies distributed annually by

⁵ See Section 4.2.2.

⁶ *Supra* note 4.

⁷ Funds allocated from the Customer Credit and Customer Education Programs were not included in the total amount distributed to SDG&E but were included in the total amount distributed from the Renewable Energy Program. This resulted in a slightly lower percentage of funds received. See Section 4.2.2.

program to projects located in SDG&E's service territory or selling electricity to SDG&E.

Table 6: Distributions from the Renewable Energy Program to SDG&E Territory Using PPA Method (\$million)

	1998	1999	2000	2001	2002	2003	2004	2005*	Total
Emerging Renewables Program	\$0.00	\$0.03	\$0.32	\$3.41	\$4.57	\$6.81	\$8.75	\$6.54	\$30.42
Existing Renewables Program	\$0.01	\$0.01	\$0.01	\$0.01	\$0.00	\$0.00	\$0.00	\$0.00	\$0.03
New Renewables Program	\$0.98	\$4.77	\$0.00	\$0.00	\$0.42	\$0.00	\$0.00	\$8.68	\$14.84
Total	\$0.98	\$4.81	\$0.32	\$3.41	\$4.99	\$6.81	\$8.75	\$15.22	\$45.30

*2005 numbers from the New Renewables Fund included an aggregate of projects coming on-line from 2005 to 2008

Source: California Energy Commission, EPIC analysis

1.2.1 Public Interest Energy Research Program Findings

By the end of 2005, IOU customers paid \$503.5 million into the PIER Program. The PIER Program funds energy research, development, and demonstration projects in California, nationally, and internationally, aimed at producing environmentally safe, affordable, and reliable energy services and products. Table 7 shows the amount of money IOU customers contributed to the PIER Fund.

Table 7: IOU Customer Contributions to PIER Fund (\$million)

Year	SDG&E	SCE	PG&E	Total
1998	\$3.90	\$28.50	\$30.00	\$62.40
1999	\$3.90	\$28.50	\$30.00	\$62.40
2000	\$3.90	\$28.50	\$30.00	\$62.40
2001	\$3.90	\$28.50	\$30.00	\$62.40
2002	\$5.50	\$25.60	\$31.40	\$62.50
2003	\$5.60	\$25.89	\$31.40	\$62.89
2004	\$5.70	\$26.32	\$31.62	\$63.64
2005	\$5.80	\$26.87	\$32.28	\$64.95
Total	\$38.20	\$218.68	\$246.70	\$503.58
% Total	7.6%	43.4%	49.0%	

Source: California Energy Commission

Between 1998 and 2005, the PIER Program distributed \$430.5 million to eligible projects. Sixty-two percent of that money was distributed within the service territories of SDG&E, SCE, and PG&E: \$26.64 million to projects in SDG&E's service territory, \$35.33 million to projects in SCE's service territory, and \$205 million to projects in PG&E's service territory. Table 8 shows the amount of money contributed by IOU customers and the amount returned, by our calculations, to each IOU territory through project funding.

Table 8: Comparison of PIER Contributions and Distributions (\$million)

	SDG&E		SCE		PG&E	
	\$ to PIER	\$ from PIER Program	\$ to PIER	\$ from PIER Program	\$ to PIER	\$ from PIER Program
1998*	\$3.90	\$0.43	\$28.50	\$16.64	\$30.00	\$28.12
1999	\$3.90	\$0.00	\$28.50	\$0.86	\$30.00	\$16.26
2000	\$3.90	\$1.55	\$28.50	\$2.09	\$30.00	\$33.61
2001	\$3.90	\$3.03	\$28.50	\$6.35	\$30.00	\$6.88
2002	\$5.50	\$1.10	\$25.60	\$2.14	\$31.40	\$65.71
2003	\$5.60	\$0.00	\$25.89	\$4.26	\$31.40	\$7.34
2004	\$5.70	\$8.88	\$26.32	\$0.03	\$31.62	\$29.90
2005**	\$5.80	\$11.65	\$26.87	\$2.96	\$32.28	\$18.84
Total	\$38.20	\$26.64	\$218.68	\$35.33	\$246.70	\$206.66

* Includes projects that pre-date 1998.

** For projects without known start dates, completion date was used to sort data.

Source: California Energy Commission, EPIC analysis

SDG&E received \$26.64 million from the PIER Program or roughly 70% of its contributions to the PIER Fund. San Diego-based contractor Science Applications International Corporation (SAIC) received the largest amount of this funding – almost \$8 million. Table 9 shows the top ten San Diego-based recipients of PIER Funds.

Table 9: Top 10 San Diego PIER Fund Recipients (1998-2005) (\$million)

1) SAIC	\$ 7.99
2) UCSD Scripps Institution of Oceanography	\$ 5.08
3) Solar Turbines Inc.	\$ 3.81
4) Reflective Energies	\$ 2.21
5) Alternative Energy Systems Consulting, Inc.	\$ 1.40
6) SDG&E	\$ 1.18
7) D. E. Solutions	\$ 1.17
8) FlexEnergy, Inc.	\$ 0.98
9) California Climate Change Center	\$ 0.91
10) OptiSwitch Technology, Inc.	\$ 0.57
Total	\$ 25.31

Source: California Energy Commission

1.3 FACTORS ACCOUNTING FOR THE DIFFERENCE IN CONTRIBUTIONS AND DISTRIBUTIONS

A number of factors account for difference between monies contributed to the Renewable Energy and PIER Programs by customers of IOUs and monies distributed back to their service territory. The following factors may apply generally to all IOUs but we indicate specifically how they apply to the SDG&E service territory.

- General Fund Loan - A portion of the funds was transferred for use in the general fund. \$150 million was redistributed from the Renewable Energy Program to the General Fund as a loan and has not yet been returned.
- Program Funding Balance - A portion of monies collected is held in the programs'

funding balance. The fund balance for the Renewable Energy Program as of September 30, 2005 was \$281 million, which includes the amount loaned to the General Fund. While it is unclear if any of the funds held in the balance will be applied to SDG&E's service territory, this could also account for a portion of the gap in funds contributed and received. Based on the overall contribution rate to the Public Good Charge from the SDG&E service territory (9%), the balance of funds could account for \$27 million – or 38% -- of the funds not allocated to the SDG&E service territory. Detailed information on the fund balance for the PIER Program was not available.

- Program Funding Encumbrances - A portion of the funds were encumbered and not yet available for distribution to projects in the SDG&E territory. The Renewable Energy Program had \$222 million in encumbrances as of September 30, 2005. While it is unclear how much of those funds are allocated to the SDG&E service territory, this could also account for a portion of the difference in funds contributed and received. Estimating the portion that could be allocated to the SDG&E service territory, using the 9% contribution rate from above, would yield \$21 million – or 30% of the difference between funds contributed and received. Detailed information on the encumbered funds for the PIER Program was not available.
- Administration Funds - A portion of the monies funded the costs of the CEC to administer the Renewable Energy Program and PIER Program. Data were not available to estimate the total administration costs for these programs.
- Number of Existing Renewables - The number of existing renewable energy generation facilities in a given service territory determined the opportunity to receive funds from the Existing Renewables Program. SDG&E had a limited number of existing facilities and therefore received relatively limited funds from this program.
- Number of New Renewables - The number of new renewable energy generation facilities located in or contracted to a service territory determined the opportunity to receive funds from the New Renewables Program. SDG&E had a limited number of new renewables facilities or contracts and therefore received relatively limited funds from this program.
- Customer Credit and Consumer Education Program Funding - A portion of the monies can be accounted for because we omitted the Customer Credit and Consumer Education Programs from our analysis. These two programs have distributed \$70 million from these two programs. Given a lack of data, it is unclear how much of these monies were distributed to each service territory.
- PIER Spending Requirements – The PIER Program has certain requirements on how it can spend its funding, which in part determine the distribution of its funds. For example, PIER funds certain California state agencies and other organizations such as the Electric Power Research Institute (EPRI). Also, the concentration of research facilities in certain areas also accounts for some of the difference in PIER funding levels among the IOUs.
- Statewide and Other Projects - A portion of monies spent for education, research, and development was not necessarily region specific. For example, the PIER program funds research entities outside of the IOU service territories and outside of California.
- Projects in Other Service Territories - A portion of the monies was used to fund projects outside of the service territory of origin, including projects in other IOU and municipal utility territories.

1.4 OTHER CONSIDERATIONS

Tracing the flow of the Public Good Charge monies is a necessary step to understand where the money was spent, but it is not sufficient to determine how the benefits of PGC expenditures are distributed throughout California. Tracing expenditures and assessing benefits are quite different tasks. While assessing benefits was beyond the purview of this paper, it is an important question that should be considered in addition to simply tracking contributions and distributions as we did here. The following considerations help to further interpret the findings of this report.

- Money Administered at the State Level May Benefit Local Regions. Implicit within the task of tracking the contributions and expenditures is a premise that money collected locally should be administered and to the extent possible spent locally. Nearly 75% of the PGC funds remain in the IOU service territory of origin. The 25% we analyzed in this paper are administered at the state level and allocated to projects throughout California and the United States. Given the nature of certain programs, it is reasonable to allocate funds that were collected in a specific region to another region or to a project outside California. For example, in the PIER program, which does research and development, it is reasonable to think that the funding should be allocated to the best researchers in a given field. Further, there seems to be a benefit in managing all the research and development activities centrally rather than having multiple parties pursuing and coordinating separate research agendas. In the end, the local region may in fact benefit by research conducted on a statewide level.
- Money Contributed to the Region May not Benefit the Region. In our analysis of the PIER program, we traced the flow of monies to the location of the recipient headquarters. It is conceivable that the actual work was done by a subcontractor or another office of the recipient, both of which could be out of the SDG&E service territory. The opposite could also be true. Funding that is allocated to another IOU service territory could ultimately benefit the San Diego region if the project work is conducted by a firm in San Diego.
- Market Transformation and Development. One argument for spending PGC funds outside of the IOU service territory from which it was collected is that such expenditures can transform the marketplace. Money that is spent to promote renewable energy technologies helps to develop the market for these technologies, for example. Similarly, efficiency technologies that are identified through the PIER Program can be incorporated into statewide building efficiency standards. The benefits of more efficient buildings are distributed throughout the state regardless of where the research was conducted.

While the level of funds contributed by customers in the IOU service territories is lower than the amount they received back for research and development and renewable energy projects, several factors could account for a portion of the gap identified. However, tracking the contributions and distributions is insufficient to determine whether each IOU service territory is receiving a proportionate benefit of the activities funded with PGC monies. Further research would be necessary to determine such a distribution of benefits from the PGC programs.

2 INTRODUCTION

In 1996 the California legislature partially restructured (or deregulated) its electric power industry by passing Assembly Bill 1890.⁸ Signed into law by former Governor Pete Wilson, the legislation, among other things, established a “Public Goods Charge” (PGC) on the purchase of retail electricity. Customers of California’s three largest investor-owned utility (IOU) companies, San Diego Gas & Electric (SDG&E), Southern California Edison (SCE), and Pacific Gas & Electric (PG&E) pay the PGC through their electric utility bills. Money raised by the PGC are spent on services and programs deemed to be in the public interest, including energy research, development, and demonstration projects, energy efficiency initiatives, renewable energy (or “green power”) technologies, and low-income energy programs.

Before the electric power industry was restructured, California’s three IOUs funded public interest programs within their operational budgets. Legislators feared that after restructuring the benefits obtained from these programs would be lost in the newly deregulated environment. In response, AB 1890 established a system to collect money from IOU customers to fund costs that the IOUs themselves had previously paid.

From 1998 to 2005, customers of SDG&E, SCE, and PG&E contributed at least \$6.4 billion to the PCG through surcharges placed on electric utility bills.⁹ Table 10 shows the total amount of money contributed to the PGC fund by each IOU from 1998 to 2005.

Table 10: Contributions to the PGC Fund by IOUs (1998-2005)¹⁰ (\$ million)

IOU	REP	PIER	Energy Efficiency	CARE	Total
SDG&E	\$104.70	\$38.20	\$258.90	\$181.56	\$583.36
SCE	\$487.40	\$218.68	\$687.98	\$1,489.00	\$2,883.06
PG&E	\$496.18	\$246.70	\$852.61	\$1,366.00	\$2,961.49
Total	\$1,088.28	\$503.58	\$1,799.49	\$3,036.56	\$6,427.90

Source: SDG&E, SCE, PG&E

Of the four components of the PGC, CARE, and energy efficiency programs are administered locally by the utilities under the supervision of the California Public Utility Commission (CPUC). The California Energy Commission (CEC) administers two of the PGC programs: the Renewable Energy Program and the PIER Program. Funds administered by the California Energy Commission represent 24% of the total public purpose program funds collected from

⁸ AB1890 (Sher) was codified in California Statutes of 1996, Chapter 854.

⁹ For the purposes of this paper, we only included PGC funds dealing with electricity, unless otherwise noted.

¹⁰ Each utility has recorded its CARE contributions differently. SDG&E's CARE numbers do not include administrative costs related to SBX15 funds, which are state funds used to augment base program costs, SCE and PG&E numbers do include these funds. SDG&E and PG&E did not include 1998 contributions while SCE did. SDG&E and SCE numbers only represent the CARE programs subsidizing electricity consumption, while PG&E costs for 1999 and 2000 include both gas and electric CARE programs.

IOUs in California. This paper focuses on the expenditures of these funds.

The purpose of this paper is twofold: (1) to track contributions to a subset of the PGC by customers in the San Diego Gas & Electric (SDG&E), Southern California Edison (SCE), and Pacific Gas and Electric (PG&E) service territories and (2) to compare those contributions to the amount of PGC funds returned to those service territories for research and development and renewable energy development. The subset of the PGC that we analyzed includes the two programs that are administered at the state level by the California Energy Commission: the Renewable Energy Program and the Public Interest Energy Research Program (PIER Program).¹¹ While we tracked contributions and distributions from these programs for the three major California investor-owned utilities (IOU), we paid particular attention to the SDG&E service territory.

2.1 ORGANIZATION OF THE REPORT

The report is organized into the following sections.

- Section 3 provides background on the Public Goods Charge.
- Section 4 offers analysis and detailed findings of our research of the Renewable Energy Program.
- Section 5 offers analysis and detailed findings of our research of the PIER Program.
- Section 6 provides a brief conclusion of the analysis.

¹¹ The Renewable Resources Trust Fund is the mechanism to fund the Renewable Energy Program. Similarly, the Research, Development and Demonstration Fund is the mechanism to fund the PIER Program. For simplicity, we refer only to the Renewable Energy Program and the PIER Program.

3 BACKGROUND

AB 1890 directed IOUs to establish a non-bypassable surcharge to fund “public purpose programs” in the areas of energy efficiency, research and development, renewable energy, and low-income assistance.¹² The rationale for such a “Public Goods Charge” (PGC), sometimes called a systems benefit charge, is to direct funding to programs that have a positive effect on the entire electricity or natural gas system or the public at large, therefore creating a public benefit.

California's IOU customers – electric and natural gas – contribute to the PGC.¹³ The surcharge is collected on a volumetric basis, that is, customers pay a surcharge per unit of consumption – kilowatt-hours (kWh) in the case of electricity and therms in the case of natural gas. Therefore, the more a customer consumes the higher the contribution to the public goods fund. Funds collected from the surcharge on electricity consumption primarily fund programs related to electricity, while funds from the natural gas surcharge primarily fund programs related to natural gas.

3.1 PUBLIC GOODS CHARGE PROGRAMS

Monies collected through the PGC fund support four program areas: low income assistance through the California Alternate Rates for Energy Program (CARE), research development and demonstration through the PIER Program, energy efficiency programs including those for low-income households, and renewable energy through the Renewable Energy Program.¹⁴ Each of these program areas is briefly described below.

3.1.1 California Alternate Rates for Energy (CARE)

The CARE Program provides a 20% discount on monthly gas and electricity billings for qualified low or fixed income households and housing facilities. Eligibility for the CARE Program is based on the number of people living in the home and the total annual household income. Table 11

¹² Voluntary contributions to the Public Goods Charge from other publicly-owned utilities or individuals were also allowed. According to data from the California Energy Commission, Bear Valley Electric, a publicly-owned utility, elected to voluntarily participate in the Renewable Energy Program and collected \$406,000 from its customers from 1998 to March 2006. S.B. 1038, passed in 2002, directed electrical corporations to allow their customers to make voluntary contributions in support of renewable resource technologies. From that date to March 2006, contributions have totaled \$20,097.

¹³ In 2000, legislation was enacted to extend the PCG to gas customers throughout the state of California. AB 1002 created a gas public purpose program designated to fund low income assistance, energy efficiency and public interest research and development programs “not adequately provided by the competitive and regulated markets.” The money from the surcharge would be deposited in the Gas Consumption Surcharge Fund, which would then be administered by the California Energy Commission. In addition to SDG&E, SCE and PG&E customers, the bill calls for a statewide surcharge. The surcharge began as a separate line item effective July 1, 2001 and totals roughly \$50 million in funds annually. We did not include these funds in our analysis unless otherwise noted.

¹⁴ The Renewable Resources Trust Fund is the mechanism to fund the Renewable Energy Program. Similarly, the Research, Development and Demonstration Fund is the mechanism to fund the PIER Program. For simplicity, we refer to the Renewable Energy Program and the PIER Program.

provides the current income eligibility limits for the CARE Program.¹⁵

Table 11: CARE Income Eligibility Limits*

Household Size	Care Income Limit
1 to 2	\$27,700
3	\$32,500
4	\$39,200
5	\$45,900
6	\$52,600
Each additional	\$6,700

Effective June 1, 2005, through May 31, 2006.

Source: California Public Utilities Commission

3.1.2 Renewable Energy Program

The Renewable Energy Program provides financial incentives to increase the supply of renewable energy in California, including wind, solar, geothermal, biomass, landfill gas, and small hydro-electricity.¹⁶ It provides funds to renewable energy generators and end-use customers who install renewable energy generators on their homes or business.

The Renewable Energy Program has five separate subprograms: the Existing Renewables Program¹⁷, the New Renewables Program, the Emerging Renewables Program, the Customer Credit Program, and the Consumer Education Program.¹⁸ These programs are discussed in greater detail in Section 6.1.

Figure 1 depicts the organizational relationship between the Renewable Energy Program and its subprograms.

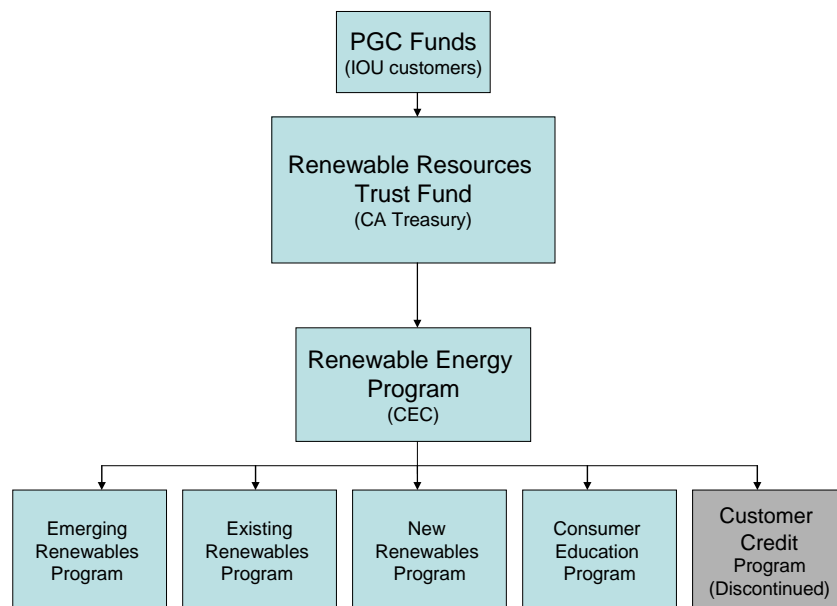
¹⁵ See the California Public Utilities Commission Website for an overview description of the CARE program at <http://www.cpuc.ca.gov/static/energy/care.html>

¹⁶ The Renewable Resources Trust Fund is the mechanism to fund the Renewable Energy Program. For simplicity, in this paper we refer only to the Renewable Energy Program.

¹⁷ Formerly called the Existing Renewable Resource Account.

¹⁸ See the California Energy Commission Website for an overview description of the consumer education program at http://www.energy.ca.gov/renewables/consumer_education/index.html.

Figure 1: Organizational Structure of the REP



3.1.3 Energy Efficiency Programs

About 25% of the public goods fund collected from customers is used to support energy efficiency programs. These programs provide customers financial rebates and incentives to adopt energy-efficient technologies, give information on the costs and benefits of energy efficiency measures, reduce market barriers to investments in energy efficient products and services, and seek to create a sustainable and competitive energy efficiency services market.

California has been a national leader in energy efficiency programs. In September 2005, the CPUC approved over \$2 billion in public goods expenditures for energy efficiency.¹⁹ While energy efficiency is an important part of the PGC, we did not assess these expenditures in this paper.²⁰

3.1.4 Public Interest Energy Research Program

The Public Interest Energy Research (PIER) Program provides funding for research, development, and demonstration in a number of program areas. The PIER Program is divided into seven research areas.

1. Buildings End-Use Energy Efficiency

¹⁹ Cal. Pub. Util. Comm'n Decision 05-09-043 (September 22, 2005) (to Proceeding on Rulemaking 04-04-025 which approved over \$2 billion in public goods expenditures for energy efficiency).

²⁰ See the California Public Utilities Commission Website for an overview description of various energy efficiency programs at <http://www.cpuc.ca.gov/static/energy/electric/energy+efficiency/>.

2. Energy Innovations Small Grant Program
3. Energy-Related Environmental Research
4. Energy Systems Integration
5. Environmentally-Preferred Advanced Generation
6. Industrial/Agricultural/Water End-Use Energy Efficiency
7. Renewable Energy Technologies

Through its research, development, and demonstration projects the PIER Program seeks, among other things, to reduce the cost of electricity; increase the reliability of the electric system; reduce the environmental impacts of electricity generation, distribution and use; enhance California's economy; and advance science and technology not provided by competitive and regulated markets.²¹

3.2 ADMINISTRATION OF THE PUBLIC GOODS CHARGE FUNDS

Administration of the PGC funds varies by program area. The IOU whose customers contributed to the PGC administers energy efficiency programs and CARE. The CPUC provides regulatory oversight for the administration of these funds.²² These two programs represent the vast majority of the total PGC monies collected. For example, in SDG&E's service territory, energy efficiency and CARE account for approximately 79% of the total PGC monies collected.²³

The California Energy Commission administers funds collected to support the Renewable Energy Program and the PIER Program. These funds represent 21% of the total public purpose program funds collected in SDG&E's service territory.

3.3 SDG&E RATES AND PUBLIC GOODS CHARGE FUNDS

AB 1890 directed each IOU to contribute to the PIER, Renewable Energy Program, and energy efficiency programs based upon the funding each IOU had provided to these public purpose programs prior to California's attempt to restructure the electric power industry in 1996.²⁴ Table 12 shows the levels that each utility was required to contribute annually as directed by AB 1890.²⁵

²¹ See the California Energy Commission's Website for an overview of its goals in developing the PIER Program at <http://www.energy.ca.gov/pier/about.html>.

²² Cal. Pub. Util. Comm'n Decision 05-01-055 (January 27, 2005) (to authorize investor-owned utilities to administer energy efficiency funds with CPUC oversight).

²³ SDG&E's service territory encompasses all of San Diego County and a small portion of southern Orange County.

²⁴ CARE funding depended on the IOU's pre-1998 level of funding as well as the percentage of low-income customers located in the utility's service territory. These two factors can make an IOU's funding for the program vary widely. For example, SDG&E's contributions to the CARE fund in 1999 totaled \$13.7 million; by 2005 that number had grown to \$35.4 million. Data provided by SDG&E.

²⁵ AB 995 (AB 995, R. Wright, Chapter 1051, Statutes of 2000) and Senate Bill 1194 (SB 1194, Sher, Chapter 1050, Statutes of 2000) extended the funding from 2002 through December 31, 2011 and adjusted the collected amount for the lessor of sales growth or inflation. Funding was set at a minimum of \$62.5 million per year.

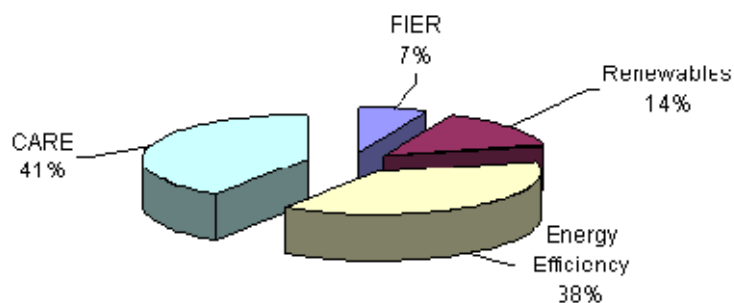
Table 12: AB 1890 Required Annual PGC Funding Levels²⁶

IOU	PIER	REP	Energy Efficiency	Total
SDG&E	\$3.9	\$12.0	\$32.0	\$47.9
SCE	\$28.5	\$49.5	\$90.0	\$168.0
PG&E	\$30.0	\$48.0	\$106.0	\$184.0
Total	\$62.4	\$109.5	\$228.0	\$399.9

Source: AB 1890

Figure 2 depicts the breakdown by program of SDG&E customer contributions to the PGC for 2005.

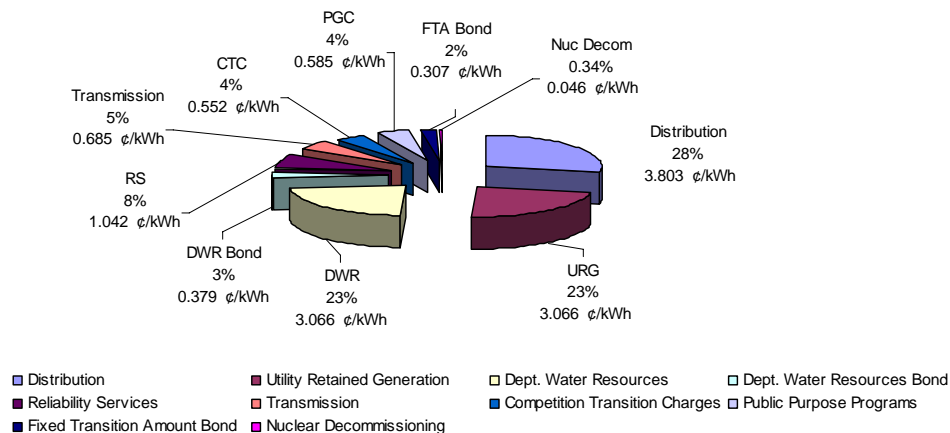
Figure 2: Breakdown of SDG&E's Customer Contributions to the Public Goods Charge (2005)



Source: SDG&E

The PGC in Figure 3 accounts for about 4% of the typical energy cost for a SDG&E customer, or 0.585 cents per kilowatt-hour.

Figure 3: Components of SDG&E's 2006 Electric Revenue



²⁶ CARE numbers were excluded because set contributions were not mandated by AB 1890; contributions were allocated by need.

3.4 MUNICIPAL UTILITIES AND PCG FUNDS

AB 1890 also required municipal utilities to support public purpose programs. In some cases the municipal utilities reserved funding for the program in their operational budgets; in other cases, they collected money from their customers to pay for these programs.

If money was collected from customers, then collection rates were set at "not less than the lowest expenditure level of the three largest electrical corporations in California on a percent of revenue basis, calculated from each utility's total revenue requirement for the year ended December 31, 1994."²⁷ At 2.85% SCE had the lowest level of contributions among California's IOUs, and its level of PGC collections became the standard for municipal utilities.²⁸ However, the specific percentage of 2.85% was not written into AB 1890 and therefore the actual amount of funds allocated to public benefit programs may vary for each municipal utility.²⁹

AB 1890 required municipal utilities collecting PGC monies to spend those funds within four categories: energy-efficiency and conservation; new investment in renewable energy resources and technologies; research, development and demonstration programs; and services provided for low-income electricity customers. The board of directors of the municipal utility had the discretion to determine how PGC monies should be allocated in terms of supporting the four purposes. While municipal utilities were allowed to collect public purpose program funds from their customers, many municipal utilities chose to forgo collecting money from customers and made such costs part of their operating budgets.³⁰

In general, since they have their own public purpose programs, customers of municipal utilities were not allowed to receive CARE and energy efficiency monies collected by the IOUs.³¹ However, municipal utilities did receive PGC monies through the PIER Program and the New Renewables Program, a subprogram of the Renewable Energy Program. In some cases, projects to develop renewable resource generation located in municipal utility territories or even owned by municipal utilities – were funded in part by the New Renewables Program. The resultant power was contracted to parties other than IOUs.

²⁷ Evaluation of the Green Power and Public Benefits Programs of the Los Angeles Department of Water and Power, For the City of Los Angeles City Controller FINAL REPORT, Barrington-Wellesley Group, Inc. Aug. 2002 at <http://www.lacity.org/ctr/audits/03-07-Report.pdf>.

²⁸ *Id.*

²⁹ California Energy Commission Survey of Public Benefit Programs of Publicly-Owned Utilities in California, 1999, Researched and Written by Michelle Raynor, Electricity Analysis Office at http://www.energy.ca.gov/papers/1999-06-22_RAYNOR_PAPER.PDF.

³⁰ Telephone interview with Brett Barrow, legislative director of the California Municipal Utilities Association in San Diego, Cal. (April 20, 2006).

³¹ *Id.*

4 RENEWABLE ENERGY PROGRAM

The mission of the Renewable Energy Program is to pursue investments in renewable resources to achieve a self-sustaining renewable energy supply for California.³² To expand California's development of renewable electricity, the Renewable Energy Program uses the following five subprograms:

- **The Existing Renewables Facilities Program** (Existing Renewables Program) was designed to help support in-state existing renewable technologies during the initial years of the electric industry restructuring.³³
- The **New Renewables Resource Account** (New Renewables Program) supports the development of new renewable power facilities in California. Funds are distributed through a production incentive based on competitive auctions.
- The **Emerging Renewables Resource Program** provides cash rebates to end-use customers to purchase eligible renewable energy electric-generating systems, such as photovoltaics, wind, and fuel cells running on renewable fuels.
- **The Customer Credit Program** provided credits to customers who purchase eligible renewable electricity products from registered renewable energy providers. This program has been discontinued.
- **The Consumer Education Program** seeks to develop a consumer market for renewable energy in California through customer information, marketing materials, and other outreach campaigns.³⁴

Like the PIER Program the Renewable Energy Program was created by AB 1890 to preserve public interest programs that were funded internally by IOUs prior to the restructuring. Senate Bill 90, passed in 1997, mandated how the funds would be spent. The bill appropriated the money to the California Energy Commission and dictated expenditure purposes, effectively creating the Renewable Energy Program.³⁵

In September 2000, Assembly Bill 995³⁶ and Senate Bill 1194³⁷ were enacted to extend collection of the PGC monies established under AB 1890. Together, the bills directed California's IOUs to collect \$135 million annually through 2011 to support the Renewable Energy Program.

³² The Renewable Resources Trust Fund is the mechanism to fund the Renewable Energy Program. For simplicity, we refer to the Renewable Energy Program.

³³ The Existing Renewables Facilities Program was formerly called the Existing Renewable Resource Account.

³⁴ See the California Energy Commission's Website for an overview of the California Energy Commission's consumer education program at http://www.energy.ca.gov/renewables/consumer_education/index.html.

³⁵ See the California Energy Commission's Website for an overview of the Commission's renewable energy programs at <http://www.energy.ca.gov/renewables/history.html>.

³⁶ Assembly Bill 995 (AB 995, R. Wright, Chapter 1051, Statutes of 2000).

³⁷ Senate Bill 1194 (SB 1194, Sher, Chapter 1050, Statutes of 2000).

This section presents overall findings for the Renewable Energy Program, and then analyzes the Existing, New, and Emerging Renewables subprograms to determine how much of each program's funding was distributed to projects in the service territories of SDG&E, SCE, and PG&E.

4.1 CUSTOMER CONTRIBUTIONS TO THE RENEWABLE ENERGY PROGRAM

From 1998 to 2005, IOU customers contributed \$1.09 billion to the Renewable Energy Program. Table 13 shows customer contributions to the Renewable Energy Program by IOU from its inception in 1998 through 2005.

Table 13: Customer Contributions to Renewable Energy Program by IOU (\$million)

Year	SDG&E	SCE	PG&E	Total
1998	\$12.00	\$49.50	\$48.00	\$109.50
1999	\$12.00	\$49.50	\$48.00	\$109.50
2000	\$12.00	\$49.50	\$48.00	\$109.50
2001	\$19.70	\$112.80	\$79.00	\$211.50
2002	\$12.00	\$55.30	\$67.70	\$135.00
2003	\$12.10	\$55.92	\$67.70	\$135.72
2004	\$12.30	\$56.85	\$68.17	\$137.32
2005	\$12.60	\$58.04	\$69.61	\$140.25
Total	\$104.70	\$487.41	\$496.18	\$1,088.29
% of Total	9.6%	44.8%	45.6%	

Source: California Energy Commission

4.2 METHODS: CALCULATING DISTRIBUTIONS FROM THE RENEWABLE ENERGY PROGRAM

Of the \$1.09 billion contributed to the Renewable Energy Program, \$222 million were held as encumbered funds and \$570 million were disbursed on a cumulative basis through the Renewable Energy Program through September 30, 2005, according to data released by the California Energy Commission in September 2005. These numbers include money distributed from the Customer Credit and the Consumer Education Programs.³⁸ Our analysis does not include money distributed from these two programs.

Table 14 represents an accounting by the California Energy Commission of the Renewable Energy Program as of September 30, 2005.³⁹

³⁸ Cumulative as of September 30, 2005. California Energy Commission, Renewable Energy Program Areas Quarterly Update, September 30, 2005 at http://www.energy.ca.gov/renewables/quarterly_updates/updates/july2004-present/2005-3Q_FINANCIAL_SUMMARY.PDF

³⁹ This table shows collected utility payments through September 2005. It shows collected funds of \$1.072 billion through Sept. 2005, but at the end of 2005, the Renewable Energy Program had collected \$1.09 billion. The difference in the two numbers is three months worth of payments. We have used the \$1.09 billion number to commonly represent the amount of money paid into the program.

Table 14: CEC Accounting of the Renewable Energy Program as of 9-30-05 (\$million)

	Existing Renewable Facilities	New Renewable Facilities	Emerging Renewables	Customer Credit	Consumer Education	Total
Collected Funds	\$346	\$427	\$190	\$76	\$16	\$1,054
Intrafund Reallocations	(\$83)	\$34	\$78	(\$10)		\$19
Subtotal	\$263	\$461	\$268	\$66	\$16	\$1,073
Disbursements	(\$222)	(\$54)	(\$223)	(\$65)	(\$5)	(\$570)
Encumbrances		(\$136)	(\$78)		(\$8)	(\$222)
Intrafund Transfers		(\$60)	\$60			
Account Balance	\$40	\$211	\$27	\$0	\$2	\$281
Loan Balance*						(\$150)
Fund Balance						\$131

*Loan to the CA General Fund
Source: California Energy Commission

By the end of 2005, the New Renewables Program, the Emerging Renewables Program, and the Existing Renewables Program had distributed \$667 million in project funding, according to our analysis.⁴⁰ Of the \$667 million, \$209 million came from the New Renewables Program, \$232 million from the Emerging Renewables Program, and \$224 million from the Existing Renewables Program. The \$667 million total is the amount we will use throughout the paper to denote distributions from the entire Renewable Energy Program. The \$667 million total does not include distributions from the Customer Credit and Consumer Education Programs.

4.2.1 Differences between EPIC Analysis and California Energy Commission Accounting

Table 14 represents an accounting by the California Energy Commission of the Renewable Resource Energy Program. We provided this table as a reference to show that the California Energy Commission's official accounting of this program.

There are differences between some of the data shown in this report and those shown in Table 14. This is due in part to using data that represented different time periods. Our analysis includes most the most current and complete data available during the study. Table 14 uses data calculated through September 30, 2005, while we used data that represents totals using several different end dates. In the case of the New Renewables Program, monies were calculated until May 2005, for the Existing Renewables Program, we calculated project disbursements until November 2005 and, for the Emerging Renewables Program, disbursements were calculated until March 2006. Also, our analysis of the overall Renewable Energy Program did not include the Customer Credit and Consumer Education Programs, which are included in Table 14.

⁴⁰ Data provided by the California Energy Commission.

4.2.2 Omitting the Customer Credit and Consumer Education Programs

We eliminated the data from the Customer Credit and Consumer Education Programs because (1) there were no data available to allow us to attribute payments from these funds to IOU service territories, (2) because distributed monies from both funds totaled roughly \$70 million or about 9% of the total renewable money distributed, we contend that omitting the funds would not materially affect the results, (3) the Customer Credit Program was discontinued in 2003, and (4) in some cases monies from these funds were directed to other funds and could not be adequately tracked.

Because there was no way to attribute distributions from these two programs to each IOU territory, we used total disbursements of the Renewable Energy Program, including data from Customer Credit and Consumer Education Programs, in certain calculations. For example, we found that the Renewable Energy Program distributed \$45.29 million to SDG&E-related projects, which represents 43% of all the monies allocated from the Renewable Energy Program (including the Customer Credit and Consumer Education Programs). In this example, the \$45.29 does not include any funds distributed from the Consumer Credit and Customer Education Programs. However, in determining the percentage that SDG&E had received (43%), we used the total distributions from the Renewable Energy Program, including funds from the Consumer Credit and Customer Education Programs. The result is a slightly lower percentage than would otherwise be used, depending on how much funding was distributed to each IOU service territory.

4.2.3 Renewable Energy Program Distributions: PPA Method v. Plant Location Method

We calculated the amount of renewable program funding that was allocated to projects located in each IOU service territory since the inception of the program. Because of the nature of the subprograms, we calculated the total funds allocated to projects in two different ways: by location of the generator and by power purchase agreement (PPA).

The New Renewables and Existing Renewables Programs provide incentives for renewable generators. For the Existing Renewables Program, calculations were based upon location of the generation. For the New Renewables Fund, totals were calculated based on two methods: (1) the total received by each IOU by the location of the generator and (2) by the location to which the power was sent via PPA – or the “PPA method.”

For example, if a program provided funding to a geothermal plant that is located in the Imperial Irrigation District but is selling its energy to SDG&E, then questions arise as to whether such funding should be attributed to Imperial Irrigation District or to SDG&E. We calculated it both ways, i.e., attributing the funding in one case to Imperial Irrigation District (plant location method) and in the other to SDG&E (PPA method).

We argue that allocating the funds to the service territory into which the energy was sold is a more accurate method, since in the example above, SDG&E customers ultimately received the energy and arguably the ‘benefit’ of the program funding.

4.3 DISTRIBUTIONS FROM THE RENEWABLE ENERGY PROGRAM

In this section we present the results of our analysis of distributions from the Renewable Energy Program to IOU service territories. We present the following results (1) the total distributions from the Renewable Energy Program for each IOU service territory, (2) total distributions by subprogram, and (3) detailed information for distributions of each of the subprograms.

Using the PPA method, \$45.29 million from the Renewable Energy Program funded projects selling power in SDG&E's service territory. This amount represents 43% of the total amount that SDG&E customers contributed to the Renewable Energy Program.⁴¹ Using this same method, SCE received \$193 million or 40% it contributed to the Renewable Energy Program, and PG&E received \$310.67 million from the Renewable Energy Program or 63% of the money it contributed to the Renewable Energy Program.⁴² Table 15 shows the level of funding allocated to projects in SDG&E, SCE, and PG&E by year, using the PPA method.

Table 15: Distributions from the Renewable Energy Program using the PPA Method (\$million)

	1998	1999	2000	2001	2002	2003	2004	2005*	Total	% of total
SDG&E	\$0.98	\$4.81	\$0.32	\$3.41	\$4.99	\$6.81	\$8.75	\$15.21	\$45.3	6.78%
SCE	\$16.63	\$22.21	\$15.67	\$26.32	\$23.19	\$19.43	\$34.01	\$36.40	\$193.9	29.04%
PG&E	\$23.77	\$24.71	\$25.07	\$33.87	\$35.88	\$44.94	\$57.54	\$64.86	\$310.7	46.54%
Other**	\$0.00	\$0.00	\$31.59	\$6.62	\$1.36	\$13.26	\$3.49	\$61.46	\$117.8	17.64%
Total	\$41.39	\$51.73	\$72.65	\$70.23	\$65.43	\$84.45	\$103.78	\$177.93	\$667.0	

*Includes funds for project with expected on-line dates after 2005.

**Other includes CA municipal utilities, out-of-state utilities, and the spot market.

Source: EPIC analysis, California Energy Commission

Table 16 shows the total contributions to and distributions from the Renewable Energy Program for each IOU.

Table 16: Renewable Energy Program Contributions and Distributions using the PPA Method (\$million)

	SDG&E	SCE	PG&E
REP Contributions	\$104.70	\$487.41	\$496.18
REP Distributions	\$45.29	\$193.86	\$310.66
% of Contributions	43%	40%	63%

When calculating total Renewable Energy Program payments based on the location of power plants, SDG&E received \$34.40 million, which represents 31% of the money its customers paid into the Renewable Energy Program. Using the plant location method, projects in SCE's service territory received \$221 million (45% of contributions), and PG&E received \$329 million (66% of contributions). Also, \$83 million was allocated to non-IOU projects, including some in municipal utility service territories.

Table 17 shows the level of funding given to projects in each of the three IOUs' service territories by year, using the plant location method.

⁴¹ Funds allocated from the Consumer Credit and Customer Education Programs were not included in the total amount distributed to SDG&E but were included in the total amount distributed from the Renewable Energy Program. This resulted in a slightly lower percentage of funds received. See Section 4.2.2.

⁴² Funds distributed do not include the Customer Credit and Consumer Education funds, but total Renewable Energy Program fund do. See Section 4.2.2.

Table 17: Distributions from the Renewable Energy Program using the Plant Location Method (\$million)

	1998	1999	2000	2001	2002	2003	2004	2005*	Total	% of Total
SDG&E	\$0.99	\$2.59	\$0.32	\$3.41	\$4.99	\$6.81	\$8.75	\$6.54	\$34	5.16%
SCE	\$15.60	\$21.50	\$15.96	\$29.92	\$23.19	\$21.31	\$37.49	\$55.75	\$221	33.09%
PG&E	\$24.81	\$24.71	\$25.07	\$36.89	\$37.24	\$56.33	\$57.54	\$66.13	\$329	49.28%
Other**	\$0.00	\$2.94	\$31.30	\$0.00	\$0.00	\$0.00	\$0.00	\$49.03	\$83	12.48%
Total	\$41.39	\$51.73	\$72.65	\$70.23	\$65.43	\$84.45	\$103.78	\$177.45	\$667	

*Includes funds for projects with expected on-line dates after 2005.

**Other includes CA municipal utilities.

Source: EPIC analysis, California Energy Commission

We also calculated the distributions from the Renewable Energy Program for each sub program, excluding the Customer Credit and Consumer Education Programs. Tables 18 and 19 include these totals for both the PPA and plant location methods.

Table 18: Distributions from the Renewable Energy Program using the PPA Method (1998-2005) (\$million)

	SDG&E	SCE	PG&E	Other*	Total	% of Total
Emerging	\$30.42	\$58.36	\$143.94	\$0.00	\$233	35%
Existing	\$0.03	\$73.61	\$150.96	\$0.00	\$225	34%
New	\$14.83	\$61.89	\$15.77	\$117.78	\$210	31%
Total	\$45.29	\$193.86	\$310.66	\$117.78	\$668	
% of Total	6.8%	29.0%	46.5%	17.6%		

*Other includes CA municipal utilities, out-of-state utilities, and the spot market.

Source: EPIC analysis, California Energy Commission

Table 19: Total Payments from the Renewable Energy Program using the Location Method (1998-2005) (\$million)

	SDG&E	SCE	PG&E	Other*	Total	% of Total
<i>Emerging</i>	\$30.42	\$58.36	\$143.94	\$0.00	\$233	35%
<i>Existing</i>	\$0.03	\$73.61	\$150.96	\$0.00	\$225	34%
<i>New</i>	\$3.94	\$88.76	\$33.83	\$83.27	\$210	31%
Total	\$34.39	\$220.73	\$328.73	\$83.27	\$667	
% of Total	5.2%	33.1%	49.3%	12.5%		

*Other includes CA municipal utilities, out-of-state utilities, and the spot market.

Source: EPIC analysis, California Energy Commission

4.3.1 Distributions to Projects in the SDG&E Service Territory

Project located in the SDG&E territory received \$45.39 million and \$34.4 million, using the PPA method and plant location method, respectively. Tables 20 and 21 provide a breakdown of payments to projects located in SDG&E's service territory by year for each of the subprograms

we included in our analysis.⁴³

Table 20: Renewable Energy Program Distributions to SDG&E Service Territory using the PPA Method (\$million)

	1998	1999	2000	2001	2002	2003	2004	2005	Total
Emerging	\$0.00	\$0.03	\$0.32	\$3.41	\$4.57	\$6.81	\$8.75	\$6.54	\$30.42
Existing*	\$0.01	\$0.01	\$0.01	\$0.01	\$0.00	\$0.00	\$0.00	\$0.00	\$0.03
New	\$0.98	\$4.77	\$0.00	\$0.00	\$0.42	\$0.00	\$0.00	\$8.68	\$14.84
Total	\$0.98	\$4.81	\$0.32	\$3.41	\$4.99	\$6.81	\$8.75	\$15.22	\$45.29

*Total distributions of \$30,000 divided into equally from 1998 to 2001

Source: EPIC analysis, California Energy Commission

Table 21: Renewable Energy Program Distributions to SDG&E Service Territory using the Plant Location (\$million)

	1998	1999	2000	2001	2002	2003	2004	2005	Total
Emerging	\$0.00	\$0.03	\$0.32	\$3.41	\$4.57	\$6.81	\$8.75	\$6.54	\$30.42
Existing*	\$0.01	\$0.01	\$0.01	\$0.01	\$0.00	\$0.00	\$0.00	\$0.00	\$0.03
New	\$0.98	\$2.55	\$0.00	\$0.00	\$0.42	\$0.00	\$0.00	\$0.00	\$3.94
Total	\$0.98	\$2.59	\$0.32	\$3.41	\$4.99	\$6.81	\$8.75	\$6.54	\$34.40

*Total distributions of \$30,000 divided equally from 1998 to 2001

Source: EPIC analysis, California Energy Commission

4.3.2 Existing Renewables Program

The Existing Renewables Program provides production incentives to eligible renewable facilities already in place. On a cumulative basis, approximately \$345.9 million have been collected from IOU customers for this program as of mid-2005, and \$222.5 million have been distributed according to California Energy Commission's accounting as of September 2005. In addition, \$83 million have been transferred from the Existing Renewables Program to other program accounts. As of September 2005, this program had a balance of \$40.4 million. Table 22 shows the current accounting of the Existing Renewables Program as of September 30, 2005.

Table 22: Existing Renewables Program Account Balance (\$million)

Collected Funds	\$345.91
Intrafund Reallocations	-\$83.00
Subtotal	\$262.91
Disbursements	-\$222.50
Encumbrances	\$0.00
Intrafund Transfers	\$0.00
Account Balance	\$40.41

Source: California Energy Commission

⁴³ California Energy Commission data do not break out Existing Renewables Program distributions by year, rather data were grouped by years 1998-2001 and 2002 to 2005. Any amounts distributed within those time periods were allocated on an average per year basis.

Under the initial program, funding for the Existing Renewables Program was divided into three tiers intended to reflect the degrees of competitiveness of various renewable energy technologies. With the passage of Senate Bill (SB) 1038 in 2002, the California Energy Commission modified the program affecting eligibility, funding levels, target prices, and caps. The current program is divided into two tiers according to type of technology, with Tier 1 receiving the larger proportion of funding.

Tier 1 includes solid-fuel biomass and solar thermal facilities while Tier 2 consists of wind facilities. Tier 3 technologies, along with one technology formerly from Tier 1 (waste tire), have not been eligible for Existing Renewables Fund funding since January 1, 2002. Tier 3 technologies included geothermal, small hydro, digester gas, landfill gas, and municipal solid waste.

Over the last seven years, SDG&E has received \$30,000 from the Existing Renewables Program. SCE and PG&E have received \$73 million and \$150 million, respectively. SDG&E's receipts are notably lower than the other IOU's because a limited number of renewable facilities existed during 1998-2005 that would have qualified to receive incentives. Table 23 shows Existing Renewables Program disbursements by IOU service territory by year.⁴⁴

Table 23: Distributions from the Existing Renewables⁴⁵ (\$million)

	1998	1999	2000	2001	2002	2003	2004	2005	Total	% Total
SDG&E*	\$0.01	\$0.01	\$0.01	\$0.01	\$0.00	\$0.00	\$0.00	\$0.00	\$0.03	0.13%
SCE	\$14.33	\$14.33	\$14.33	\$14.33	\$4.07	\$4.07	\$4.07	\$4.07	\$73.61	32.73%
PG&E	\$23.60	\$23.60	\$23.60	\$23.60	\$14.14	\$14.14	\$14.14	\$14.14	\$150.96	67.13%
Total	\$37.94	\$37.94	\$37.94	\$37.94	\$18.21	\$18.21	\$18.21	\$18.21	\$224.59	

*Funds received between 1998 -2001 and 2002-2005 allocated evenly by year.

Source: California Energy Commission

4.3.3 Emerging Renewables Program

The Emerging Renewables Program was designed to provide rebates for emerging eligible technologies such as photovoltaics (or solar power), wind turbines, solar thermal electric, and fuel cell technologies that use renewable fuels.

IOU customers have contributed approximately \$190.2 million to the Emerging Renewables Program as of September 2005. Of the total, \$222.8 million have been disbursed. The program received intrafund transfers totaling \$77.8 million from other accounts within the Renewable Energy Program, which allowed it to dispense more money than it received from customers. As of September 30, 2005, the account held a balance of \$27.8 million and has a total of \$77.9 million in encumbrances. Table 24 depicts this accounting.

⁴⁴ Data based on where generation plant is located.

⁴⁵ California Energy Commission data did not break out Existing Renewables Fund distributions by year, rather data was grouped by years 1998-2001 and 2002 to 2005. Any amounts distributed within those time periods were allocated on an average per year basis.

Table 24: Emerging Renewables Account Balance (\$million)

Collected Funds	\$190.20
Intrafund Reallocations	\$77.80
Subtotal	\$268.00
Disbursements	-\$222.80
Encumbrances	-\$77.90
Intrafund Transfers	\$60.00
Account Balance	\$27.30

Source: California Energy Commission

Over the last seven years, projects located within SDG&E's service territory have received \$30.4 million or 13% of the total funds from the Emerging Renewables Program. SCE and PG&E received \$58.36 million (25%) and \$143.9 million (62%), respectively. Table 25 shows the annual payments from the Emerging Renewables Program by IOU since its inception in 1998.

Table 25: Distributions from the Emerging Renewables Fund (\$million)⁴⁶

	1998	1999	2000	2001	2002	2003	2004	2005	Total	% total
SDG&E	\$0.00	\$0.03	\$0.32	\$3.41	\$4.57	\$6.81	\$8.75	\$6.54	\$30.42	13%
SCE	\$0.36	\$1.76	\$0.43	\$4.56	\$9.76	\$13.51	\$17.06	\$10.93	\$58.36	25%
PG&E	\$0.18	\$1.12	\$1.48	\$8.88	\$21.74	\$30.80	\$43.40	\$36.35	\$143.94	62%
Total	\$0.54	\$2.91	\$2.22	\$16.84	\$36.07	\$51.12	\$69.20	\$53.81	\$232.72	100%

Source: California Energy Commission

4.3.4 New Renewables Program

The goal of the New Renewables Program is to develop new in-state renewable electric generation facilities by providing financial support. Funds are distributed through a production incentive based on competitive auctions. Municipal utilities and projects located in their service territories, as well as projects located in the three IOUs' service territories, have received funding from the New Renewables Fund.

Prior to the passage of SB 1083 and SB 1078, the New Renewables Program was funded pursuant to AB 1890 and SB 90 with the intent of providing financial support to prospective new renewable projects and bring online as much new renewable electricity generation as possible. The program's guidelines permitted payments to eligible new renewable facilities throughout California; monies were restricted only to those facilities located in the service areas of PG&E, SDG&E, and SCE.

Some projects located in the service territories of municipal utilities are contracted to sell electric power to municipal utilities or sell electric power into the spot market. At the initiation of the program, there was no requirement to sell the energy generated as a result of the financial

⁴⁶ Total numbers in Table 22 do not include 2006 distributions or the \$1.2 million allocated to eligible publicly owned utilities.

incentives in IOU service territories. In 2002, that policy was changed and projects receiving New Renewables Program monies were required to sell electricity to IOUs.

With the passage of SB 1038 and SB 1078, the New Renewables Program began providing production incentives,⁴⁷ referred to as Supplemental Energy Payments (SEP). SEPs are available to cover the difference between the contracted price and the market price referent, as determined by the CPUC for renewable resources selected to fulfill California's Renewables Portfolio Standard (RPS) obligations. To date, no SEPs have been distributed.⁴⁸

As of September 30, 2005, approximately \$426.7 million have been collected for the New Renewables Program. This amount represents the highest amount of money earmarked for any Renewable Energy Program subprogram. According to released California Energy Commission estimates, approximately \$54.3 million have been disbursed with a total of \$135.7 million in encumbrances. The fund temporarily transferred \$60 million to the Emerging Renewables Program, but received \$33.8 million from an intrafund reallocation.⁴⁹ The account holds a balance of \$210.5 million, or roughly 75% of the Renewable Energy Program total balances. Table 26 shows this accounting.

Table 26: New Renewables Fund Account Balance (\$million)

Collected Funds	\$426.77
Intrafund Reallocations	\$33.80
Subtotal	\$460.57
Disbursements	-\$54.30
Encumbrances	-\$135.72
Intrafund Transfers	-\$60.00
Account Balance	\$210.56

Source: California Energy Commission

In calculating monies received from the New Renewables Program, we found that a significant percentage of the distributed monies went to municipal utilities.⁵⁰ For the years 1998 to 2001, the New Renewables Program provided funding for new renewable generating facilities built in municipal utility territories. Once constructed the energy from these clean facilities could be consumed by the municipal utility's own customers, sold to IOUs, or in some cases sold into the spot market.

Some facilities, located in territories not served by PG&E, SCE, and SDG&E, sold power out-of-state. For instance, one California plant located in Pacific Power's service territory has contracted to sell electric power to the Bonneville Power Authority, which is a federal agency,

⁴⁷ Funds distributed through the production incentives are based on competitive auctions.

⁴⁸ Goncalves, *supra* note 8.

⁴⁹ Per Public Resources Code section 25751(f), the California Energy Commission is authorized to transfer funds among program accounts in the Renewable Energy Program for cash flow purposes, provided that the balance due each program account is restored and the transfers do not adversely affect any of the programs.

⁵⁰ As AB 1890 provides, municipal utilities have their own public purpose funds.

headquartered in Portland, Oregon, that serves the Pacific Northwest and parts of California.⁵¹ According to the California Energy Commission, the amount of electricity sold to Bonneville Power Authority and used outside of California could not exceed the load the agency serviced in California.⁵²

After 2002, funding was limited to facilities that sold renewable energy in an IOU's service territories.⁵³

4.3.5 Total Distributions from the New Renewables Program

We calculated money paid out of the fund based on plant location and the power recipient.⁵⁴ Data were provided by the California Energy Commission.⁵⁵ Using the calculations based on the PPA method, we found that 43% of the total amount of New Renewables Program funding was distributed to projects in IOU service territories. By contrast, 60% of the total was distributed to projects in IOU service territories when using calculations based on plant location. In both cases, funding to projects located in the service territories of municipal utilities accounted for the remainder of the distributed funds.

A breakdown of monies distributed from the New Renewables Fund based upon the PPA method and plant location method is shown in Tables 27 and 28.

Table 27: Distributions from New Renewables Program using the PPA Method (\$million)

	1998	1999	2000	2001	2002	2003	2004	2005	Total	% of total
SDG&E	\$0.98	\$4.77	\$0.00	\$0.00	\$0.42	\$0.00	\$0.00	\$8.68	\$14.84	7.08%
SCE	\$1.94	\$6.12	\$0.91	\$7.43	\$9.37	\$1.85	\$12.88	\$21.40	\$61.90	29.50%
PG&E	\$0.00	\$0.00	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$14.37	\$15.77	7.52%
Other*	\$0.00	\$0.00	\$31.59	\$6.62	\$1.36	\$13.26	\$3.49	\$61.46	\$117.78	56.14%
Total	\$2.92	\$10.89	\$32.50	\$15.45	\$11.15	\$15.11	\$16.37	\$105.91	\$209.80	100%

*Other includes CA municipal utilities, out-of-state utilities, and the spot market.

Source: EPIC analysis, California Energy Commission

⁵¹ Pacific Power is the name of a business unit within PacifiCorp, an investor-owned utility serving more than 1.6 million customers in six Western states. Pacific Power delivers electricity to customers in Oregon, Washington, and California. Although Pacific Power serves customers in California, its customers were not required to pay into the California PGC because it is headquartered in Oregon.

⁵² Goncalves, *Supra* note 8.

⁵³ Goncalves, *Supra* note 8.

⁵⁴ California Energy Commission, New Renewable Account Projects Funded Through the Energy Commission's Renewable Energy Program, Updated: May 23, 2005. at http://www.energy.ca.gov/renewables/new_renewables/NEW_RENEWABLE_PROJECTS.PDF.

⁵⁵ The amount distributed to these projects, whose start-dates were tabulated until 2010, totaled \$209.8 million, considerably more than the \$54.2 million that the California Energy Commission has said it distributed from this fund. The difference can be partially attributed to timing and accounting methods. For example, we included all projects listed by the California Energy Commission as receiving "Total conditional Funding Award[s]" from the New Renewables Fund. We did not have enough information to separate funds into those disbursed and those encumbered.

Table 28: Distributions from New Renewables Program using the Location Method⁵⁶ (\$million)

	1998	1999	2000	2001	2002	2003	2004	2005	Total	% of total
SDG&E	\$0.98	\$2.55	\$0.00	\$0.00	\$0.42	\$0.00	\$0.00	\$0.00	\$3.94	1.88%
SCE	\$0.91	\$5.40	\$1.20	\$11.03	\$9.37	\$3.72	\$16.36	\$40.76	\$88.76	42.30%
PG&E	\$1.03	\$0.00	\$0.00	\$4.42	\$1.36	\$11.39	\$0.00	\$15.64	\$33.83	16.13%
Other*	\$0.00	\$2.94	\$31.30	\$0.00	\$0.00	\$0.00	\$0.00	\$49.03	\$83.27	39.69%
Total	\$2.92	\$10.89	\$32.50	\$15.45	\$11.14	\$15.11	\$16.36	\$105.42	\$209.80	100%

*Other includes CA municipal utilities.

Source: EPIC analysis, California Energy Commission

The number of utilities that received money from the New Renewables Program varied in the two analyses. One out-of-state IOUs, Pacific Power, and two California municipal utilities – Los Angeles Department of Water and Power (LADWP) and the Imperial Irrigation District – received 39% of the funding distributed by the New Renewables Program when calculations were based upon plant location. California IOUs received the remaining 61% of the funding. Figure 4 shows the distributions from the New Renewables Program based upon plant location.

Figure 4: Distributions from the New Renewables Program by Utility Service Territory

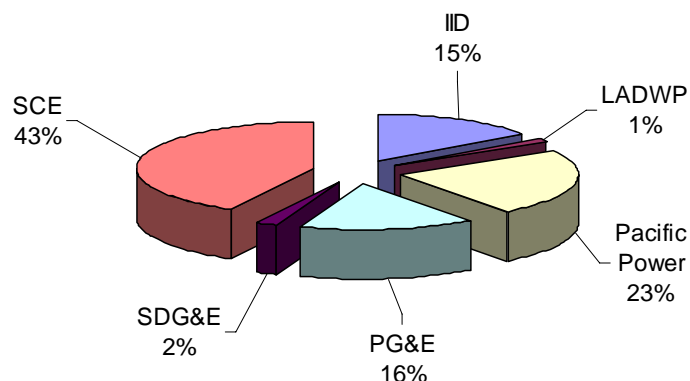
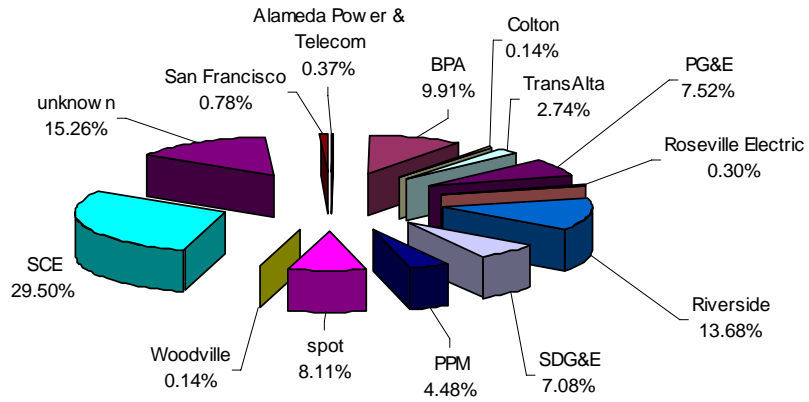


Figure 5 shows New Renewable Program distributions based on the PPA method.⁵⁷

⁵⁶ Locations determined by information contained in Renewable Energy Program 2005 Annual Report to the Legislature, Appendix Committee Report, California Energy Commission (November 2005), Table B-1 at <http://www.energy.ca.gov/2005publications/CEC-300-2005-020/CEC-300-2005-020-APA.PDF>.

⁵⁷ PPM is considered to be an “anchor tenant” for FPL Energy's High Winds Energy Center in Solano County, California. PPM Energy purchases all of the output from the 162-megawatt facility under a long-term contract and markets the output to wholesale customers including the cities of Sacramento, Pasadena, Anaheim, Glendale, Azusa, Colton, and others. We allocated all of this power generation to PPM.

Figure 5: shows New Renewable Program distributions based on the PPA method.



5 PUBLIC INTEREST ENERGY RESEARCH

The Public Interest Energy Research Program (PIER) “conduct[s] public interest energy research that seeks to improve the quality of life for California citizens by providing environmentally sound, safe, reliable and affordable energy services and products. PIER includes the full range of research, development, and demonstration activities that will advance science or technology not adequately provided by competitive and regulated markets.”⁵⁸

The PIER Program now awards up to \$62.5 million annually to conduct energy research, and seeks to bring new energy services and products to the marketplace that benefit the customers of California's electric and gas utilities.⁵⁹ PIER funding efforts are focused on the following research, development, and demonstration program areas:

- Buildings End-Use Energy Efficiency;
- Energy Innovations Small Grant Program⁶⁰;
- Energy-Related Environmental Research;
- Energy Systems Integration;
- Environmentally-Preferred Advanced Generation;
- Industrial/Agricultural/Water End-Use Energy Efficiency; and
- Renewable Energy Technologies.

5.1 CATEGORIES OF PIER PROGRAM SPENDING

Money distributed from the PIER Program is divided into a number of categories: monies that are competitively solicited, monies that are paid to other California state agencies, monies that are non-competitively solicited, non-competitive and competitive research contracts, and monies set aside for certain organizations such as the Electric Power Research Institute (EPRI).

The breakdown of distributions from the PIER Fund is approximately as follows:⁶¹

- About 54% of all PIER contracts were competitively bid.
- 15% of funds represent interagency agreements with other California state agencies (including the University of California).
- 11% of the contracts was awarded non-competitively.
- 9% was research contracts, which are awarded on a non-competitive basis to EPRI, E2I,

⁵⁸ See the California Energy Commission Website for description of the PIER Program at <http://www.energy.ca.gov/pier/index.html>.

⁵⁹ AB 995/SB 1194 (September 2000) continued PIER Program for another 10 years through 2011 at \$62.5 million per year.

⁶⁰ Administered by the University of California, San Diego.

⁶¹ PIER Independent Review Panel, *Third Meeting*, September 8 and 9, 2003, at <http://www.ccst.us/ccst/pubs/pier/cpier/minutes/0903.html>.

and GTI⁶²

- 7% was collaborations with federal organizations and laboratories and state agencies in other states.
- The remaining 4% of the contracts was for the Energy Innovations Small Grant (EISG) Program, which is administrated by the San Diego State University Foundation, which awards the research grants competitively.

5.2 PIER CONTRIBUTIONS AND DISTRIBUTIONS

The PIER Program has funded research, development, and demonstration projects within the state of California, in other U.S. states, and internationally. For the purposes of our research, we did not subdivide PIER monies by program area but analyzed aggregate PIER funds.

From 1998 to 2005, California's IOU customers contributed \$503 million to the PIER Program.⁶³ Table 29 shows the amount of money contributed by IOU customers annually to the PIER Program.

Table 29: IOU Contributions to the PIER Program (\$million)

Year	SDG&E	SCE	PG&E	Total
1998	\$3.90	\$28.50	\$30.00	\$62.40
1999	\$3.90	\$28.50	\$30.00	\$62.40
2000	\$3.90	\$28.50	\$30.00	\$62.40
2001	\$3.90	\$28.50	\$30.00	\$62.40
2002	\$5.50	\$25.60	\$31.40	\$62.50
2003	\$5.60	\$25.89	\$31.40	\$62.89
2004	\$5.70	\$26.32	\$31.62	\$63.64
2005	\$5.80	\$26.87	\$32.28	\$64.95
Total	\$38.20	\$218.68	\$246.70	\$503.58

Source: California Energy Commission, SDG&E, SCE, PG&E

Of the total amount of money collected for the PIER Fund, \$430.5-million have been distributed to date.⁶⁴ Table 30 shows annual contributions and distributions for each IOU.

⁶² The PIER Fund pays a membership fee each year at these institutions that allows the California Energy Commission access to on-going research. Some of this money often consists of research projects that are competitively awarded to other research performers by EPRI, E2I, and GTI

⁶³ 2006 funding levels for PIER were SDG&E at \$5.8 million, SCE at \$27.43 million, and PG&E \$32.32 million.

⁶⁴ This total includes money allocated to projects in IOU territories, California municipal utility territories, out-of-state vendors, and overseas. Analysis based upon data from the California Energy Commission.

Table 30: Contributions to and Distributions from PIER Program (\$million)

	SDG&E		SCE		PG&E	
	\$ to PIER	\$ from PIER Program	\$ to PIER	\$ from PIER Program	\$ to PIER	\$ from PIER Program
1998*	\$3.90	\$0.43	\$28.50	\$16.64	\$30.00	\$28.12
1999	\$3.90	\$0.00	\$28.50	\$0.86	\$30.00	\$16.26
2000	\$3.90	\$1.55	\$28.50	\$2.09	\$30.00	\$33.61
2001	\$3.90	\$3.03	\$28.50	\$6.35	\$30.00	\$6.88
2002	\$5.50	\$1.10	\$25.60	\$2.14	\$31.40	\$65.71
2003	\$5.60	\$0.00	\$25.89	\$4.26	\$31.40	\$7.34
2004	\$5.70	\$8.88	\$26.32	\$0.03	\$31.62	\$29.90
2005**	\$5.80	\$11.65	\$26.87	\$2.96	\$32.28	\$18.84
Total	\$38.20	\$26.64	\$218.68	\$35.33	\$246.70	\$206.66
% of Contributions		69.7%		16.2%		83.8%

* Includes projects that pre-date 1998.

** For projects without known start dates, completion date was used to sort data.

Source: California Energy Commission, SDG&E, SCE, PG&E, EPIC analysis

5.3 OVERALL PIER FINDINGS

The PIER Program has funded \$266 million in projects in IOU service territories. Of that total, \$26.64 million (70%) of SDG&E customer contributions were distributed to SDG&E territory, \$35.33 million (16%) to SCE territory, and \$206.66 (84%) million within the PG&E territory.

Of the \$430.5 million distributed from the PIER Program, 20% or \$81.7 million supported projects administered out-of- state. Within California, most of the funding supported projects located in the high-tech Bay Area whose electrical needs are serviced primarily by PG&E and the City of Palo Alto Utilities. PIER provided \$31.9 million in funding for projects located in the City of Palo Alto.

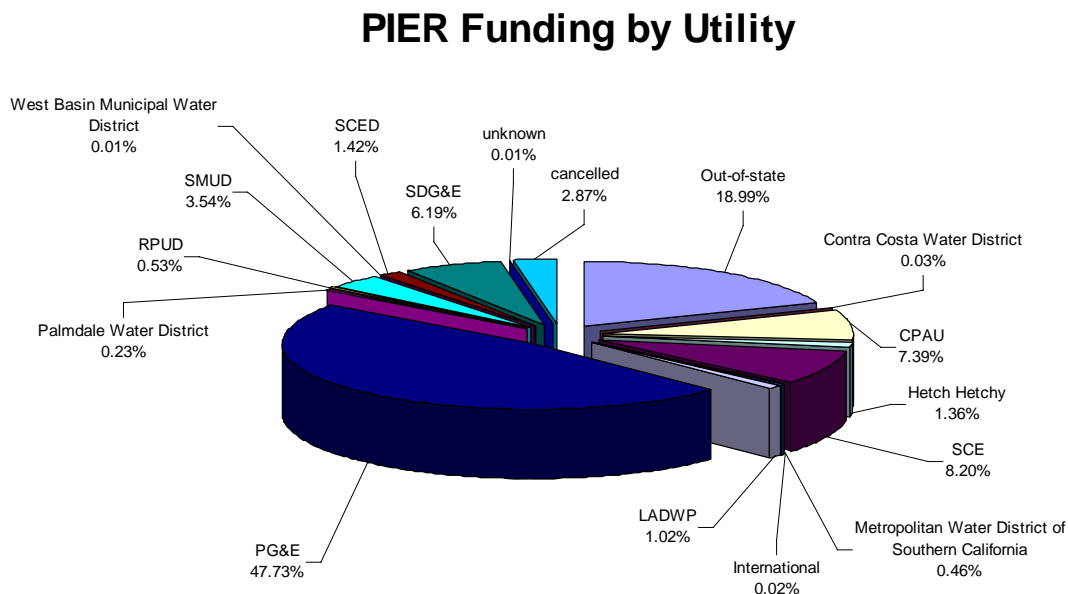
Projects located within the service territories of municipal utilities received substantial PIER funding. Projects in the SMUD received about 4% of total distributions, projects in the LADWP received just over 1%, and projects in the Santa Clara Electric Department received 1.4% of PIER funds.

Because PIER has certain requirements on how it spends program funds, certain IOU service territories received more money by definition. For example, 15% of PIER distributions was designated as interagency agreements with other California state agencies (including the University of California).⁶⁵ Accordingly, money is distributed to research institutions, such as University of California Berkeley, which is located in PG&E territory. Additionally, the PIER Program has contracts with at least three large consulting corporations to provide technical support to the PIER Program. Of these three companies – Navigant, ICF Consulting, and SAIC – SAIC, which is headquartered in SDG&E's service territory, is the only one not located in PG&E's service territory. Figure 6 shows a breakdown of distributions by location of recipient of

⁶⁵ PIER Independent Review Panel, *supra* note 72.

PIER Funding.

Figure 6: PIER Program Funding by Utility



5.4 PIER FINDINGS FOR SAN DIEGO

SDG&E contributed \$38.2 million to the PIER Program between 1998 and 2005. Approximately \$26.64 million or 70% of the amount contributed by SDG&E customers were used to fund research, development, and demonstration activities by companies and organizations located in the San Diego area.⁶⁶ Total PIER funds distributed to the San Diego region represent about 6% of all funds distributed by the PIER Program. On a cumulative basis, SDG&E contributed 7.5% of PIER funds.

PIER funding directed to the San Diego region was distributed among about fifteen organizations. The San Diego-based contractor, SAIC received the largest amount of funding at almost \$8 million. Table 31 lists organizations located in San Diego County that received PIER funds.

⁶⁶ This total amount reflects the location of the prime contractor and does not take into account any subcontracts that might have flowed from the award.

Table 31: San Diego Companies and Organizations Receiving PIER Funds between 1998-2005 ⁶⁷ (\$million)

1) SAIC	\$	7.99
2) UCSD Scripps Institution of Oceanography	\$	5.08
3) Solar Turbines Inc.	\$	3.81
4) Reflective Energies	\$	2.21
5) Alternative Energy Systems Consulting, Inc.	\$	1.40
6) SDG&E	\$	1.18
7) D. E. Solutions	\$	1.17
8) FlexEnergy, Inc.	\$	0.98
9) California Climate Change Center	\$	0.90
10) OptiSwitch Technology, Inc.	\$	0.57
11) Imageair	\$	0.34
12) Hydrologic Research Center (HRC)	\$	0.30
13) Competitive Energy Insight Inc.	\$	0.13
14) Clean Energy Systems, Inc.	\$	0.08
15) Advanced Conservation Technologies, Inc.	\$	0.08
Total	\$	26.22

Source: California Energy Commission

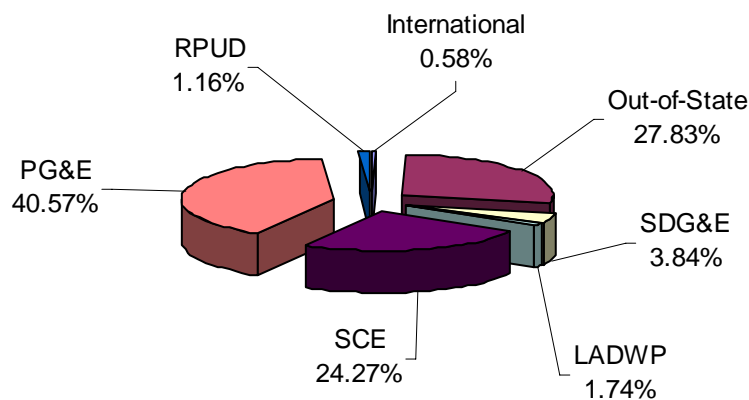
5.5 THE ENERGY INNOVATION SMALL GRANTS PROGRAM

The Energy Innovations Small Grants Program (EISG) is a small subset of the PIER Program that funds basic research for technologies in the proof of concept phase. The EISG Program has distributed \$12.8 million since 1998. This amount represents about 3% of the total amount of money distributed by the PIER Program. While the EISG Program is relatively small, it is administered by San Diego State University. Allocating this \$12.8 million to the San Diego region in our analysis would have skewed the results. To avoid this, we identified the location of all the projects funded under this program and apportioned them to the appropriate utility territories or state.

Of the \$12.8 million distributed by EISG, 4% or \$494,662 funded project whose prime contractor was located within SDG&E's service territory. More than 40% of the total – \$5.2 million – funded projects located in PG&E's service territory, with \$1.2 million distributed to the University of California, Berkeley. More than 24% percent of the money allocated by EISG was allocated to SCE's service territory. Figure 7 shows EISG the distributions of funds allocated to projects within California, throughout other U.S. states, and internationally.

⁶⁷ In 2003, the California Energy Commission, through its PIER Program, established the California Climate Change Center. This center has sites at both the UC Berkeley campus and the Scripps Institute of Oceanography (UCSD campus). All project monies for the Center were attributed to SDG&E's service territory as funding was designated for positions reporting to or projects administered from the Climate Change Center in San Diego.

Figure 7: Distributions from the Energy Innovations Small Grants Program



Of the \$12.8 million distributed by EISG Program, 72% funded projects located in California. The remainder was sent to 25 other states and one international project, located in Bermuda. Table 32 shows the distribution of the EISG monies that funded out-of-state projects.

Table 32: Out-of-State Distributions from the Energy Innovations Small Grants Program (\$million)

State	Funding Received	% of Total	State	Funding Received	% of Total
New York	\$445,796.00	18%	Virginia	\$149,544.00	6%
Massachusetts	\$297,674.00	12%	Pennsylvania	\$149,290.00	6%
Illinois	\$294,393.00	12%	Indiana	\$75,000.00	3%
South Carolina	\$150,000.00	6%	International	\$75,000.00	3%
Washington	\$150,000.00	6%	Michigan	\$75,000.00	3%
Maryland	\$149,992.00	6%	North Dakota	\$75,000.00	3%
Florida	\$149,986.00	6%	Nevada	\$75,000.00	3%
New Jersey	\$149,953.00	6%	New Hampshire	\$75,000.00	3%
Arizona	\$149,936.00	6%	Oregon	\$75,000.00	3%
Connecticut	\$149,913.00	6%	Texas	\$75,000.00	3%
Nebraska	\$149,805.00	6%	Wisconsin	\$75,000.00	3%
Colorado	\$149,695.00	6%	Idaho	\$74,977.00	3%
Ohio	\$149,627.00	6%	Kansas	\$74,596.00	3%
			Total	\$2,536,770.00	100%

Source: California Energy Commission, EPIC analysis

6 CONCLUSION

The purpose of this paper is twofold: (1) to track contributions to a subset of the PGC by customers in the SDG&E, SCE, and PG&E service territories and (2) to compare those contributions to the amount of PGC funds returned to those service territories for research and development and renewable energy development. The subset of the PGC that we analyzed includes the two programs that are administered at the state level by the California Energy Commission: the Renewable Energy Program and the PIER Program.⁶⁸ While we tracked contributions and distributions from these programs for all California IOU, we paid particular attention to the SDG&E service territory.

6.1 OVERALL FINDINGS

From 1998 to 2005, customers of SDG&E, SCE, and PG&E contributed at least \$6.4 billion to the PCG through surcharges placed on electric and gas utility bills. Table 33 shows the total amount contributed by customers of California IOUs from 1998-2005.

Table 33: Contributions to the PGC Fund by IOU Customers from 1998 to 2005⁶⁹ (\$ millions)

IOU	REP	PIER	Energy Efficiency	CARE	Total
SDG&E	\$104.70	\$38.20	\$258.90	\$181.56	\$583.36
SCE	\$487.40	\$218.68	\$687.98	\$1,489.00	\$2,883.06
PG&E	\$496.18	\$246.70	\$852.61	\$1,366.00	\$2,961.49
Total	\$1,088.28	\$503.58	\$1,799.49	\$3,036.56	\$6,427.90

Source: SDG&E, SCE, PG&E

Of the total funds contributed to the Renewable Energy Program and the PIER Program, between 32%-70% of the funds were returned to the IOU service territories for projects located in there. Table 34 shows the total amount of customer contributions to these programs and the amount distributed to each service territory for relevant projects. PG&E had the highest percentage of funds returning to its service territory, receiving 70% of the funds its customers contributed. The SCE service territory received the least in percentage terms, receiving only 32% of what it contributed for these two programs. SDG&E 's territory received 50% of its contributions.

⁶⁸ The Renewable Resources Trust Fund is the mechanism to fund the Renewable Energy Program. Similarly, the Research, Development and Demonstration Fund is the mechanism to fund the PIER Program. For simplicity, we refer only to the Renewable Energy Program and the PIER Program.

⁶⁹ Each utility has recorded its CARE contributions differently. SDG&E's CARE numbers do not include administrative costs related to SBX15 funds, which are state funds used to augment base program costs, SCE and PG&E numbers do include these funds. SDG&E and PG&E did not include 1998 contributions while SCE did. SDG&E and SCE numbers only represent the CARE programs subsidizing electricity consumption, while PG&E costs for 1999 and 2000 include both gas and electric CARE programs. Renewable Energy Program numbers are calculated using the PPA method.

Table 34: Comparison of Total Contributions and Distributions for each IOU (\$millions)

	SDG&E	SCE	PG&E
Contributions	\$142.90	\$706.09	\$742.88
Distributions	\$71.93	\$229.18	\$517.32
% of Contributions	50%	32%	70%

6.2 FINDINGS FOR SDG&E

Based on our analysis, we found that customers in the SDG&E service territory contributed \$142.9 million to the Renewable Energy and the Public Interest Energy Programs. Of this total, approximately \$72 million – or 50% of the total contributed – have been returned to SDG&E's service territory to fund research, development, and demonstration projects or renewable power development.

The percentage of funds returned to SDG&E's service territory varies by program. SDG&E received \$45.29 million in funding from the Renewable Energy Program for projects located in or providing power to SDG&E's service territory. This amount of money represents 43% of the total SDG&E customers contributed to the Renewable Energy Program.⁷⁰

SDG&E's customers contributed \$38.2 million to the PIER Fund between 1998 and 2005. Approximately \$26.64 million or roughly 70% of the amount contributed by SDG&E customers were used to fund research, development, and demonstration activities by organizations located in the San Diego area.⁷¹

6.3 FACTORS ACCOUNTING FOR THE DIFFERENCE IN CONTRIBUTIONS AND DISTRIBUTIONS

Customers in California's IOU service territories contributed more funding than they received through the Renewable Energy and PIER Programs. For example, customers in the SDG&E service territory contributed about \$72 million more than they received back to the region to fund projects. Based solely on a comparison of money contributed to the PGC fund and the amount returning to the IOU service territories, it could appear that each is not getting their "fair share" of disbursements from the Renewable Energy Program and the PIER Program. However, it is difficult to reach a definitive conclusion based solely on an accounting of the funds, as we did here. Several factors account for and help to interpret the difference between the funds contributed from and those distributed to California's IOU service territories.

6.3.1 Loans, Fund Balances, and Administrative Costs

While detailed data was not available in all cases to determine precise amounts for each of the following areas, estimates help account for some of the difference in funds contributed and received by the SDG&E service territory. And in cases where no data was available, identifying potential reasons for the difference in funding identified is helpful to put the results of our study into some context.

- Loan to General Fund – A portion of the funds was transferred for use in the general fund. As noted above, \$150 million was redistributed from the Renewable Energy Program to the General Fund as a loan and has not yet been returned.

⁷⁰ Percentage includes Customer Credit and Consumer Education funds.

⁷¹ This amount reflects the location of the prime contractor and does not take into account any subcontracts that might have flowed from the award.

- Program Funding Balance - A portion of monies collected is held in the programs' funding balance. The fund balance for the Renewable Energy Program as of September 30, 2005 was \$281 million, which includes the amount loaned to the General Fund. While it is unclear if any of the funds held in the balance will be applied to SDG&E's service territory, this could also account for a portion of the gap in funds contributed and received. Based on the overall contribution rate to the Public Good Charge from the SDG&E service territory (9%), the balance of funds could account for \$27 million – or 38% -- of the funds not allocated to the SDG&E service territory. Detailed information on the fund balance for the PIER Program was not available.
- Program Funding Encumbrances – A portion of the funds were encumbered and not yet available for distribution to projects in the SDG&E territory. The Renewable Energy Program had \$222 million in encumbrances as of September 30, 2005. While it is unclear how much of those funds are allocated to the SDG&E service territory, this could also account for a portion of the difference in funds contributed and received. Estimating the portion that could be allocated to the SDG&E service territory, using the 9% contribution rate from above, would yield \$21 million – or 30% of the difference between funds contributed and received. Detailed information on the encumbered funds for the PIER Program was not available.
- Administration Costs – A portion of the monies funded the costs of the CEC to administer the Renewable Energy Program and PIER Program. Data was not available to estimate the total administration costs for these programs.
- Statewide Projects – A portion of monies spent for education, research, and development was not necessarily specific to a particular region or IOU service territory. Certain expenditures for education, for example, were statewide efforts.
- Consumer Education and Customer Credit Programs – A portion of the monies can be accounted for because we omitted the Consumer Credit and Customer Education Programs from our analysis. These two programs have distributed \$70 million from these two programs. Given a lack of data, it is unclear how much of these monies were distributed to the each IOU service territory.

6.3.2 Number of Renewable Generation Facilities

The Renewable Energy Program was developed to increase the amount of renewable energy produced statewide. Accordingly, the distribution of renewable resources (e.g., wind, geothermal, etc.) and the proportion of existing versus new facilities are important considerations in determining how to distribute customer funds for renewable programs. Based solely on these factors, funding may be allocated in a way that is disproportionate to how much

The SDG&E service territory received significantly less funding than it contributed during the period covered by this paper. The main reason for this was that SDG&E had a limited number of existing or new renewable energy generation facilities located within its territory or from which it purchased energy. This therefore limited the opportunity to receive funds from the New and Existing Renewables Programs.

6.3.3 PIER Spending Requirements

The PIER Program has certain requirements on how it can spend its funding, which in part determine the distribution of its funds. For example, PIER funds certain California state agencies and other organizations such as the Electric Power Research Institute (EPRI). Also, the concentration of research facilities in certain areas also accounts for some of the difference in PIER funding levels among the IOUs.

6.4 OTHER CONSIDERATIONS

Tracing the flow of the Public Good Charge monies is a necessary step to understand where the money was spent, but it is not sufficient to determine how the benefits of PGC expenditures are distributed throughout California. Tracing expenditures and assessing benefits are quite different tasks. While assessing benefits was beyond the purview of this paper, it is an important question that should be considered in addition to simply tracking contributions and distributions as we did here. The following considerations help to further interpret the findings of this report.

- Money Administered at the State Level May Benefit Local Regions. Implicit within the task of tracking the contributions and expenditures is a premise that money collected locally should be administered and to the extent possible spent locally. Nearly 75% of the PGC funds remain in the IOU service territory of origin. The 25% we analyzed in this paper are administered at the state level and allocated to projects throughout California and the United States. Given the nature of certain programs, it is reasonable to allocate funds that were collected in a specific region to another region or to a project outside California. For example, in the PIER program, which does research and development, it is reasonable to think that the funding should be allocated to the best researchers in a given field. Further, there seems to be a benefit in managing all the research and development activities centrally rather than having multiple parties pursuing and coordinating separate research agendas. In the end, the local region may in fact benefit by research conducted on a statewide level.
- Money Contributed to the Region May not Benefit the Region. In our analysis of the PIER program, we traced the flow of monies to the location of the recipient headquarters. It is conceivable that the actual work was done by a subcontractor or another office of the recipient, both of which could be out of the SDG&E service territory. The opposite could also be true. Funding that is allocated to another IOU service territory could ultimately benefit the San Diego region if the project work is conducted by a firm in San Diego.
- Market Transformation and Development. One argument for spending PGC funds outside of the IOU service territory from which it was collected is that such expenditures can transform the marketplace. Money that is spent to promote renewable energy technologies helps to develop the market for these technologies, for example. Similarly, efficiency technologies that are identified through the PIER Program can be incorporated into statewide building efficiency standards. The benefits of more efficient buildings are distributed throughout the state regardless of where the research was conducted.

While the level of funds contributed by customers in the IOU service territories is lower than the amount they received back for research and development and renewable energy projects, several factors could account for a portion of the gap identified. However, tracking the contributions and distributions is insufficient to determine whether each IOU service territory is receiving a proportionate benefit of the activities funded with PGC monies. Further research would be necessary to determine such a distribution of benefits from the PGC programs.