

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Application of San Diego Gas & Electric
Company (U-902-M) for Approval of
Electric and Natural Gas Energy Efficiency
Programs and Budgets for Years 2006
through 2008.

Application 05-06-____

APPLICATION OF SAN DIEGO GAS & ELECTRIC COMPANY (U-902-M)

VICKI L. THOMPSON
Senior Counsel
Sempra Energy
101 Ash Street
San Diego, California 92101
(619) 699-5130 Phone
(619) 699-5027 Fax
vthompson@sempra.com

Attorney for:
San Diego Gas & Electric Company

June 1, 2005

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APPLICATION OF SAN DIEGO GAS & ELECTRIC COMPANY (U-902-M)

In accordance with Rules 23 and 24 of the California Public Utilities' Commission's ("Commission or CPUC") Rules of Practice and Procedure and Ordering Paragraph 3 of Commission Decision ("D.") 05-01-056, San Diego Gas & Electric Company ("SDG&E") submits this Application for approval of a portfolio of energy efficiency ("EE") programs and related budgets for years 2006 through 2008 (the "Application").

As discussed in greater detail below and in the testimony attached hereto, the Application seeks Commission authority to: 1) implement a variety of gas and electric energy efficiency programs; 2) expend the associated program budgets necessary to implement those programs; and, 3) revise how SDG&E allocates its gas and electric EE costs between customer classes.

**I.
BACKGROUND**

The Energy Action Plan ("EAP"), adopted by the Commission, California Energy Commission ("CEC") and the California Consumer Power and Conservation Financing authority ("CPA"), identifies six actions that are of critical importance in managing California's growing

energy consumption. The EAP put energy efficiency at the forefront of energy policy and resource procurement in California. The Commission, in Decisions 04-09-060 and 05-01-055, translates EAP's strong support for energy efficiency into concrete steps for utilities to implement in order to achieve the EAP's energy policies. D.04-09-060 mandated specific energy savings and demand reduction goals for the years 2006 through 2013, which will be updated every three years for use in subsequent program cycles.

On January 27, 2005, the Commission issued D.05-01-055, the Interim Opinion on the Administrative Structure for Energy Efficiency: Threshold Issues. Of special significance to this application, D.05-01-055 returned Investor Owned Utilities ("IOUs") to the lead role for post-2005 energy efficiency program choice and portfolio management. The decision directed IOUs to file applications on June 1, 2005 for Commission approval of energy efficiency program plans and funding levels for a three-year program implementation and funding cycle beginning January 1, 2006.

SDG&E's 2006-2008 portfolio proposed in this Application is the product of a coordinated and collaborative effort between SDG&E, its Program Advisory Group ("PAG"), regional energy planning groups and members of the public with one main focus: achieving the aggressive energy savings and demand reductions mandated in D.04-09-060.

II. SUMMARY OF APPLICATION

The Application is supported by five SDG&E witnesses: Patricia Wagner, Director, Customer Programs; Athena Besa, Energy Efficiency Administration and Policy Manager; Frank Spasaro, Marketing Strategy Manager; Lisa Davidson, Principal Regulatory Economic Advisor; and, Yu Kai Chen, Economic Advisor. The witnesses' prepared direct testimony are attached

hereto, incorporated in the Application by reference, and summarized below. Also attached to the Application (at Appendix E) is the Peer Review Group's ("PRG") assessment of SDG&E's overall portfolio plans including its competitive bidding process.

A. Policy (Chapter I)

SDG&E witness Patricia Wagner describes SDG&E's underlying policy behind the company's proposed Energy Efficiency programs. Ms. Wagner emphasizes SDG&E's strong support of the EAP and belief that an integrated approach toward planning for the future energy needs of its customers will best meet the EAP's aggressive goals.

B. EE Proposals and Budgets (Chapter II)

The testimony of witness Athena Besa describes SDG&E's proposed EE initiatives in detail including the budgets necessary to accomplish the programs' goals. Ms. Besa also provides the technical basis and explanation in support of the energy savings and demand reduction estimates presented in the portfolio.

C. On-Bill Financing (Chapter III)

SDG&E witness Frank Spasaro addresses SDG&E's proposal to institute an on-bill financing option for purchasing and installing energy efficiency measures.

D. Electric Cost Allocation (Chapter IV)

The testimony of witness Lisa Davidson proposes a new cost allocation methodology for SDG&E to recover electric EE program costs and an updated rate design for the Procurement Energy Efficiency Surcharge rate.

E. Gas Cost Allocation (Chapter V)

This Chapter, sponsored by witness Yu Kai Chen proposes a new cost allocation methodology for SDG&E to recover EE gas program costs.

III. RATE AND REVENUE IMPACTS

The proposed electric energy efficiency program budgets in 2006-08 will increase from the current budget of \$57.7 million to \$75.5 million; \$85.0 million; and \$98.2 million, respectively. The proposed gas energy efficiency program budgets in 2006-08 will increase from the current budget of \$5.5 million to \$5.7 million; \$6.4 million; and \$7.4 million, respectively. The gas and electric program budgets and funding proposal for years 2006-2008 are described in further detail in the testimony of witness Athena Besa. Residential gas rates will decrease by approximately one cent per therm and commercial/industrial rates will increase by 2-3 cents per therm over the three year program period as rates are set to reflect the targeted program expenditures by customer class. Class average electric rates will increase from between 0.1 and 0.4 cents per kWh over the same period.

Electric and gas rate impacts resulting from the proposed energy efficiency program budgets and new cost allocation methodology are presented in Section IV(E) below, as well as in the testimonies of witnesses Lisa Davidson and Yu Kai Chen.

IV. STATUTORY AND PROCEDURAL REQUIREMENTS

A. Scoping Issues – Rule 6

Commission rule 6(a)(1) requires SDG&E to state in this application “the proposed category for the proceeding, the need for hearing, the issues to be considered, proposed

schedule.” SDG&E proposes to categorize this application as a rate-setting. The issues to be considered are described in this Application and the accompanying testimony.

SDG&E does not believe hearings will be necessary and supports the schedule set forth in the ALJ ruling, dated May 23, 2005.¹

B. Legal Name and Correspondence - Rules 15(a) and 15(b)

San Diego Gas & Electric Company is a public utility organized and existing under the laws of the State of California. It is a gas and electric corporation organized and existing under the laws of the State of California and is engaged in the business of providing public utility electric service to portions of southern Orange County and gas and electric service throughout San Diego County. SDG&E’s principal place of business and mailing address is 8330 Century Park Court, San Diego, CA 92123.

Correspondence or communications regarding this application should be addressed to:

Joy C. Yamagata
Regulatory Manager For:
San Diego Gas & Electric Company
8330 Century Park Court
San Diego, California 92123
Telephone: (858) 654-1755
Facsimile: (858) 654-1788
E-Mail: jyamagata@semprautilities.com

With a copy to:

Vicki L. Thompson
Attorney For:
San Diego Gas & Electric Company
101 Ash Street
San Diego CA 92101
Telephone: (619) 699-5130

¹“Administrative Law Judge’s Ruling Regarding Scheduling Issues for June 1, 2005 Energy Efficiency Applications.

Facsimile: (619) 699-5027
E-Mail: vthompson@Sempra.com

C. Articles of Incorporation – Rule 16

A certified copy of SDG&E's Restated Articles of Incorporation was filed with the Commission on December 4, 1997, in connection with SDG&E's Application No. 97-12-012 and is incorporated herein by reference.

D. Financial Statement, Balance Sheet, and Income Statement - Rule 23(a)

SDG&E's Financial Statement and Balance Sheet as of March 31, 2005, and Income Statement for the period ended March 31, 2005, are attached to this application as Appendix A.

E. Present and Proposed Rates - Rule 23(b) and 23(c)

Present and proposed electric Procurement Energy Efficiency Surcharge rates by customer class for years 2006-2008 are included in the Tables below. In addition, SDG&E has attached class average total electric rates by year. Present and proposed gas PPP Surcharge Rates are also included in Tables below.

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TABLE 1

**San Diego Gas & Electric
Electric Energy Efficiency
Proposed Class Average Total Rates**

2006

Customer Class	6/1/05 Total Rate (¢/KWhr)	Proposed Total Rate (¢/KWhr)	Change (¢/KWhr)	Change %
Residential	14.956	15.015	0.058	0.4%
Small Commercial	16.929	17.010	0.082	0.5%
Medium and Large C&I	11.657	11.624	(0.033)	-0.3%
Agricultural	15.273	15.343	0.070	0.5%
Lighting	16.169	16.059	(0.110)	-0.7%
System Total	13.575	13.595	0.020	0.1%

2007

Customer Class	6/1/05 Total Rate (¢/KWhr)	Proposed Total Rate (¢/KWhr)	Change (¢/KWhr)	Change %
Residential	14.956	15.129	0.172	1.2%
Small Commercial	16.929	17.181	0.252	1.5%
Medium and Large C&I	11.657	11.733	0.076	0.7%
Agricultural	15.273	15.514	0.240	1.6%
Lighting	16.169	16.167	(0.002)	0.0%
System Total	13.575	13.712	0.137	1.0%

2008

Customer Class	6/1/05 Total Rate (¢/KWhr)	Proposed Total Rate (¢/KWhr)	Change (¢/KWhr)	Change %
Residential	14.956	15.209	0.253	1.7%
Small Commercial	16.929	17.302	0.374	2.2%
Medium and Large C&I	11.657	11.811	0.154	1.3%
Agricultural	15.273	15.635	0.361	2.4%
Lighting	16.169	16.243	0.074	0.5%
System Total	13.575	13.796	0.221	1.6%

TABLE 2

**San Diego Gas & Electric
Electric Energy Efficiency
Proposed Class Average Procurement EE Surcharge Rates for 2006-2008**

Customer Class	2006		Change (\$/KWhr)	Change %
	Present Procurement EE Surcharge Rate (\$/KWhr)	Proposed Procurement EE Surcharge Rate (\$/KWhr)		
Residential **				
Up to 130% of Baseline	0.158	0.000	(0.158)	-100.0%
Over 130% of Baseline	0.158	0.353	0.195	123.1%
Small Commercial	0.158	0.240	0.082	51.7%
Medium and Large C&I	0.158	0.125	(0.033)	-21.1%
Agricultural	0.158	0.228	0.070	44.2%
Lighting	0.158	0.048	(0.110)	-69.8%
System Total	0.158	0.130	(0.028)	-17.7%
	2007			
Customer Class	Present Procurement EE Surcharge Rate (\$/KWhr)	Proposed Procurement EE Surcharge Rate (\$/KWhr)	Change (\$/KWhr)	Change %
Residential **				
Up to 130% of Baseline	0.158	0.000	(0.158)	-100.0%
Over 130% of Baseline	0.158	0.732	0.574	363.3%
Small Commercial	0.158	0.410	0.252	159.7%
Medium and Large C&I	0.158	0.234	0.076	48.2%
Agricultural	0.158	0.398	0.240	152.1%
Lighting	0.158	0.156	(0.002)	-1.5%
System Total	0.158	0.248	0.090	56.8%

2008					
Customer Class	Present Procurement EE Surcharge Rate (¢/KWhr)	Proposed Procurement EE Surcharge Rate (¢/KWhr)	Change (¢/KWhr)	Change %	
Residential **					
Up to 130% of Baseline	0.158	0.000	(0.158)	-100.0%	
Over 130% of Baseline	0.158	1.000	0.842	533.1%	
Small Commercial	0.158	0.532	0.374	236.4%	
Medium and Large C&I	0.158	0.312	0.154	97.3%	
Agricultural	0.158	0.519	0.361	228.6%	
Lighting	0.158	0.232	0.074	46.5%	
System Total	0.158	0.331	0.173	109.6%	

** Residential Procurement EE Surcharge revenues are proposed to be recovered from the upper tiers of usage in order to allow for full cost recovery.

Under the new gas cost allocation methodology, the resulting PPP surcharge rate impacts are shown in the tables below.

2006 PPP Surcharge Rate Impact

Customer Class	Non-CARE Customers			CARE Customers		
	Current	2006	% Δ	Current	2006	% Δ
	¢/th	¢/th		¢/th	¢/th	
Core						
Residential	4.35	3.52	-19%	3.03	2.20	-27%
Core C&I	2.17	3.82	76%	0.85	2.51	195%
Natural Gas Vehicle	1.92	1.66	-13%	n/a	n/a	n/a
Non-core						
Non-core C&I	2.33	4.28	83%	n/a	n/a	n/a
Electric Generation	n/a	n/a	n/a	n/a	n/a	n/a

2007 PPP Surcharge Rate Impact

Customer Class	Non-CARE Customers			CARE Customers		
	Current	2007	% Δ	Current	2007	% Δ
	¢/th	¢/th		¢/th	¢/th	
Core						

Residential	4.35	3.58	-18%	3.03	2.26	-25%
Core C&I	2.17	4.08	88%	0.85	2.76	225%
Natural Gas Vehicle	1.92	1.66	-13%	n/a	n/a	n/a
Non-core						
Non-core C&I	2.33	4.58	96%	n/a	n/a	n/a
Electric Generation	n/a	n/a	n/a	n/a	n/a	n/a

2008 PPP Surcharge Rate Impact

Customer Class	Non-CARE Customers			CARE Customers		
	Current	2008	% Δ	Current	2008	% Δ
	¢/th	¢/th		¢/th	¢/th	
Core						
Residential	4.35	3.66	-16%	3.03	2.34	-23%
Core C&I	2.17	4.43	104%	0.85	3.11	266%
Natural Gas Vehicle	1.92	1.66	-13%	n/a	n/a	n/a
Non-core						
Non-core C&I	2.33	5.00	114%	n/a	n/a	n/a
Electric Generation	n/a	n/a	n/a	n/a	n/a	n/a

F. Description of Property and Equipment - Rule 23(d)

A general description of SDG&E's property and equipment was previously filed with the Commission on October 5, 2001, in connection with SDG&E's Application No. 01-10-005 and is incorporated herein by reference. A statement of account of the original cost and depreciation reserve attributable thereto is attached to this Application as Appendix B.

G. Summary of Earnings – Rules 23 (e and f)

A summary of earnings is attached to this application as Appendix C.

H. Depreciation - Rule 23(h)

For financial statement purposes, depreciation of utility plant has been computed on a straight-line remaining life basis at rates based on the estimated useful lives of plant properties. For federal income tax accrual purposes, the Company generally computes depreciation using the

straight-line method for tax property additions prior to 1954, and liberalized depreciation, which includes Class Life, and Asset Depreciation Range Systems on tax property additions after 1954 and prior to 1981. For financial reporting and rate-fixing purposes, "flow through accounting" has been adopted for such properties. For tax property additions in years 1981 through 1986, the Company has computed its tax depreciation using the Accelerated Cost Recovery System. For years after 1986, the Company has computed its tax depreciation using the Modified Accelerated Cost Recovery Systems and since 1982, has normalized the effects of the depreciation differences in accordance with the Economic Recovery Tax Act of 1981 and the Tax Reform Act of 1986.

I. Proxy Statement - Rule 23(i)

A copy of SDG&E's latest Proxy Statement was filed with the Commission on May 2, 2005, in connection with SDG&E's Application 05-05-003 and is incorporated herein by reference.

J. Statement Pursuant to Rule 23(l)

The increase sought in this application does not reflect and pass through to customers only increased costs to SDG&E for the services or commodities furnished by it.

K. Service of Notice - Rule 24

SDG&E will electronically serve a Notice of Availability of this application and related exhibits to all parties of record in the Commission's Rulemaking, R. 01-08-028 and Government

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agencies listed in Appendix D of this Application.

**V.
CONCLUSION**

SDG&E respectfully requests that the Commission issue an order:

1. Finding that SDG&E's Energy Efficiency Gas and Electric programs and related budgets and rates are reasonable.
2. Finding that SDG&E's cost recovery mechanism is appropriate; and
3. Granting such additional relief as the Commission may deem proper.

Dated this 1st day of June, 2005.

Respectfully submitted,

SAN DIEGO GAS & ELECTRIC COMPANY



Lee Schavrien

Vice President, Regulatory Affairs



Vicki L. Thompson

Attorney for

SAN DIEGO GAS & ELECTRIC COMPANY

VERIFICATION

I am an officer of the applicant corporation herein and am authorized to make this verification on its behalf. The content of this document is true, except as to matters that are stated on information and belief. As to those matters, I believe them to be true. I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 1, 2005 at San Diego, California.

A handwritten signature in black ink, appearing to read "Lee Schavrien", written over a horizontal line.

Lee Schavrien
Vice President, Regulatory Affairs

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**NOTICE OF AVAILABILITY OF APPLICATION
OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902-M)**

**Vicki L. Thompson
Attorney
Sempra Energy
101 Ash Street
San Diego, California 92101
(619) 699-5130 Phone
(619) 699-5027 Fax
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**NOTICE OF AVAILABILITY OF APPLICATION
OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902-M)**

The Application of San Diego Gas & Electric Company (“SDG&E”) for Approval of Electric and Natural Gas Energy Efficiency Programs and Budgets for Years 2006 through 2008 (“Application”) filed with the California Public Utilities Commission (the “Commission”) on June 1, 2005, is available to all interested parties and to the public. Consistent with Rule 2.3(c) of the Commission’s Rules of Practice and Procedure, SDG&E is issuing this Notice of Availability of the above-referenced application. Because the **APPLICATION OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902-M)** and its related attachments exceed 75 pages in length, this Notice of Availability is being served on all parties in R.01-08-028. Any recipient of this Notice of Availability may request a copy of the above document.

- A copy of the above document will be provided immediately upon the request of the party receiving this notice. All requests should be directed to:

Central Files
E-mail: Centralfiles@semprautilities.com
Facsimile: 858-654-1789
Phone: 858-654-1766

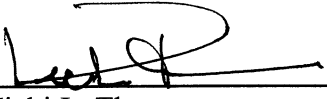
Vicki L. Thompson
Attorney for San Diego Gas & Electric Company
101 Ash Street
San Diego, CA 92101
Phone: (619) 699-5130
Facsimile: (619) 699-5027

An electronic version of the above document can also be found at URL:

http://www.sdge.com/regulatory/tariff/cpuc_openProceedings.shtml

Dated at San Diego, California this 1st day of June, 2005.

Respectfully Submitted,

By: 
Vicki L. Thompson

Attorney for
SAN DIEGO GAS & ELECTRIC COMPANY
101 Ash Street
San Diego, California 92101-3017
Telephone: (619) 699-5130
Facsimile: (619) 699-5027
vthompson@sempra.com

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a **NOTICE OF AVAILABILITY** of the **APPLICATION OF SDG&E (U-902-M)**, to all interested parties of record in Rulemaking 01-08-028 electronically.

Dated at San Diego, California, this 2nd day of June 2005.

By:


Lisa Fucci-Ortiz

CALIFORNIA PUBLIC UTILITIES COMMISSION

Service Lists

Proceeding: R0108028 - PUC - RULEMAKING POL

Filer: CPUC - ENERGY

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Appearance

EMRE SCHVEIGHOFFER
NATIONAL RESOURCE MANAGEMENT
61 ENDICOTT STREET, BLDG. 32
NORWOOD, MA 02062

DONALD GILLIGAN
PREDICATE LLC
1 POST OFFICE SQUARE
SHARON, MA 02067

STEVE FAUST
ENSAVE ENERGY PERFORMANCE, INC.
65 MILLET STREET, SUITE 105
RICHMOND, VT 05477

MICHAEL J. WICKENDEN
CONTACT ADMINISTRATOR
VERMONT ENERGY EFFICIENCY UTILITY
446 TENNEY HILL ROAD
HYDE PARK, VT 05655

BRUCE J. WALL
VP-RESOURCE EFFICIENCY PROGRAMS
ARCA, INC.
489 JOBS ROAD
WALLINGFORD, CT 06492

RICHARD ESTEVES
SESCO, INC.
77 YACHT CLUB DRIVE, SUITE 1000
LAKE HOPATCONG, NJ 07849-1313

STEVE HASTIE
NAVIGANT CONSULTING, INC.
1717 ARCH STREET
PHILADELPHIA, PA 19103

MERRILEE HARRIGAN
ALLIANCE TO SAVE ENERGY
SUITE 900
1200 18TH STREET, NW
WASHINGTON, DC 20036

WENDELL SEAY
SEAY LIGHTING ASSOCIATERS
2511 FARRIER LANE

WAEEL EL-SHARIF
EXECUTIVE DIRECTOR
GEOTHERMAL HEAT PUMP CONSORTIUM, INC.

RESTON, VA 20191

6700 ALEXANDER BELL DRIVE, SUITE 120
COLUMBIA, MD 21046

JULIE WHITE
WHIRLPOOL CORPORATION
2000 M63 MD 3005
BENTON HARBOR, MI 49022

JAMES STAPLES
STAPLES MARKETING COMMUNICATIONS, INC.
14665 W. LISBON ROAD
BROOKFIELD, WI 53005

RACHEL HOLMES
ARCA, INC.
7400 EXCELSIOR BLVD.
MINNEAPOLIS, MN 55426

JACK CAMERON
PRESIDENT
ARCA, INC
7400 EXCELSIOR BLVD
MINNEAPOLIS, MN 55426-4517

JAMES ROSS
RCS, INC.
500 CHESTERFIELD CENTER, SUITE 320
CHESTERFIELD, MO 63017

PATTY MILLS
TEDCO ENERGY SERVICE
1830 N WESTERN ST UNIT B
AMARILLO, TX 79124-1754

LISA A. SKUMATZ
SKUMTZ ECONOMICS (SERA)
762 ELDORADO DRIVE
SUPERIOR, CO 80027

PETER C. JACOBS P.E.
SENIOR ENGINEER
ARCHITECTURAL ENERGY CORPORATION
2540 FONTIER AVENUE, SUITE 201
BOULDER, CO 80301

DAVE MUNK
PROGRAM MANAGER
RESOURCE ACTION PROGRAM
2724 UPPER CATTLE CREEK ROAD
CARBONDALE, CO 81623

CYNTHIA MITCHELL
ECONOMIC CONSULTING INC.
530 COLGATE COURT
RENO, NV 89503

PATRICIA WATTS
FCI MANAGEMENT CONSULTANTS
5900 S EASTERN AVE., SUITE 152
COMMERCE, CA 90040

DAVID L. HUARD
ATTORNEY AT LAW
MANATT, PHELPS & PHILLIPS, LLP
11355 WEST OLYMPIC BOULEVARD
LOS ANGELES, CA 90064

RANDALL W. KEEN
ATTORNEY AT LAW
MANATT PHELPS & PHILLIPS, LLP
11355 WEST OLYMPIC BLVD.
LOS ANGELES, CA 90064

MAUREEN ERBEZNIK
PROGRAM MANAGER
CALIF. URBAN WATER CONSERVATION COUNCIL
4246 MICHAEL AVENUE
LOS ANGELES, CA 90066

SAM HITZ
MIKE MCCORMICK
CALIFORNIA CLIMATE ACTION REGISTRY
515 S. FLOWER STREET, STE 1305
LOS ANGELES, CA 90071

DINA LANE
CA MANUFACTURING TECHNOLOGY CENTER
1149 WEST 190TH STREET, STE.2014
GARDENA, CA 90248-4334

ED BERLEN
ENERGY INNOVATION GROUP, LLC
4267 MARINA CITY DRIVE, SUITE 104
MARINA DEL REY, CA 90292

SUSAN MUNVES
CITY OF SANTA MONICA
1918 MAIN STREET
SANTA MONICA, CA 90405

TIM KRAUSE
ENERGX CONTROLS INC.
PO BOX 519
CYPRESS, CA 90630

JOHN FIELDS
ORGANIZATIONAL SUPPORT SERVICES
1850 REDONDO AVE., SUITE 102
SIGNAL HILL, CA 90755-1254

WALLIS J. WINEGAR
WINEGARD ENERGY, INC
1818 FLOWER AVE
DUARTE, CA 91010

TOM HAMILTON
CHEERS
9400 TOPANGA CANYON BLVD., SUITE 220
CHATSWORTH, CA 91311

LESLIE NARDONI
ICF CONSULTING
14724 VENTURA BLVD. STE 1001
SHERMAN OAKS, CA 91403

MICHAEL GIBBS
ICF CONSULTING
14724 VENTURA BLVD.
SHERMAN OAKS, CA 91403

ALLAN RAGO
QUALITY CONSERVATION SERVICES, INC.
415 W FOOTHILL BLVD STE 202
CLAREMONT, CA 91711-2780

BASU MUKHERJEE, P.E.
GLOBAL ENERGY SERVICES, INC.
1774 CLIFFBRANCH DRIVE
DIAMOND BAR, CA 91765

DON ARAMBULA
SOUTHERN CALIFORNIA EDISON
2131 WALNUT GROVE, 3/F, MS B10
ROSEMEAD, CA 91770

GENE RODRIGUES
ATTORNEY AT LAW
SOUTHERN CALIFORNIA EDISON COMPANY
2244 WALNUT GROVE AVENUE
ROSEMEAD, CA 91770

LAURA A. LARKS
ATTORNEY AT LAW
SOUTHERN CALIFORNIA EDISON COMPANY

MICHAEL D. MONTOYA
ATTORNEY AT LAW
SOUTHERN CALIFORNIA EDISON COMPANY

2244 WALNUT GROVE AVENUE, ROOM 345
ROSEMEAD, CA 91770

2244 WALNUT GROVE AVENUE
ROSEMEAD, CA 91770

KEITH SWITZER
SOUTHERN CALIFORNIA WATER COMPANY
630 EAST FOOTHILL BOULEVARD
SAN DIMAS, CA 91773

A. Y. AHMED
OCCIDENTAL ANALYTICAL GROUP
1313 N GRAND AVENUE, STE 392
WALNUT, CA 91789

JOY C. YAMAGATA
SOUTHERN CALIFORNIA GAS
SAN DIEGO GAS & ELECTRIC COMPANY
8330 CENTURY PARK COURT
SAN DIEGO, CA 91910

RICHARD SPERBERG
PRESIDENT
ONSITE ENERGY CORPORATION
2701 LOKER AVE W 107
CARLSBAD, CA 92008-6637

DALE R. FOSTER
TETRA TECH EM INC.
1230 COLUMBIA STREET, SUITE 1000
SAN DIEGO, CA 92101

GEORGETTA J. BAKER
ATTORNEY AT LAW
SAN DIEGO GAS & ELECTRIC COMPANY
101 ASH STREET, HQ13
SAN DIEGO, CA 92101

GEORGETTA J. BAKER
SEMPRA ENERGY
101 ASH STREET, HQ 13
SAN DIEGO, CA 92101

VICKI L. THOMPSON
ATTORNEY AT LAW
SAN DIEGO GAS & ELECTRIC COMPANY
101 ASH STREET, HQ-13
SAN DIEGO, CA 92101

VICKI L. THOMPSON
ATTORNEY AT LAW
SEMPRA ENERGY
101 ASH STREET HQ13
SAN DIEGO, CA 92101

JOHN LAUN
APOGEE INTERACTIVE, INC.
1220 ROSECRANS ST., SUITE 308
SAN DIEGO, CA 92106

KEN MOSS
POWER LOGIC
4558 BRIGHTON AVENUE
SAN DIEGO, CA 92107

SHERRI PETRO
PRINCIPAL
VPI STRATEFIES
8305 VICKERS ST., SUITE 100
SAN DIEGO, CA 92111

FRED HOYER
SOUTHWEST ENVIRONMENTAL INC.
9665 CHESAPEAKE DRIVE, SUITE 435A
SAN DIEGO, CA 92123

IRENE M. STILLINGS
SAN DIEGO REGIONAL ENERGY OFFICE
8520 TECH WAY, SUITE 110
SAN DIEGO, CA 92123

SCOTT J. ANDERS
DIRECTOR OF POLICY AND PLANNING
SAN DIEGO REGIONAL ENERGY OFFICE
8520 TECH WAY - SUITE 110
SAN DIEGO, CA 92123

JOSE C. CERVANTES
CITY OF SAN DIEGO
9601 RIDGEHAVEN CT., SUITE 120
SAN DIEGO, CA 92123-1636

MARY VALERIO
ENERGY CONSERVATION AND MANAGEMENT
CITY OF SAN DIEGO
9601 RIDGEHAVEN CT., STE. 120, MS 1101B
SAN DIEGO, CA 92123-1636

NEIL MILLER
CEO
AMERICAN LIGHTING
7754 ARJONS DRIVE
SAN DIEGO, CA 92126

KURT J. KAMMERER
K. J. KAMMERER & ASSOCIATES
PO BOX 60738
SAN DIEGO, CA 92166-8738

KIM SIMPSON
VICE PRESIDENT
ENERGY ANALYSIS TECHNOLOGIES
12905 GORHAM STREET
MORENO VALLEY, CA 92553

MIKE MILLER
PRESIDENT
BOTTOM LINE UTILITY SOLUTIONS, INC.
3972 BARRANCA PARKWAY, SUITE J
IRVINE, CA 92606

STEVE DORMAN
BOTTOM LINE UTILITY SOLUTIONS, INC.
3972 BARRANCA PARKWAY, SUITE J
IRVINE, CA 92606

JAMES CRAFT
RESOURCE MANAGEMENT CORPORATION
4581 GREEN TREE LANE
IRVINE, CA 92612

ROBERT BELHUMEUR
CORPORATE SYSTEMS ENGINEERING
24946 DANA FIR
DANA POINT, CA 92629

TED FLANIGAN
MANAGING DIRECTOR
THE ENERGY COALITION
1540 SOUTH COAST HIGHWAY, SUITE 204
LAGUNA BEACH, CA 92651

CHARLES R. TOCA
UTILITY SAVINGS AND REFUND, LLC
1100 QUAIL STREET, SUITE 217
NEWPORT BEACH, CA 92660

DALE A. GUSTAVSON
GENERAL MANAGER
BETTER BUILDINGS INTERACTIVE, LLC.
31 E MACARTHUR CRES APT B314
SANTA ANA, CA 92707-5936

DAVID M. WYLIE, PE
ASW ENGINEERING
2512 CHAMBERS ROAD, SUITE 103
TUSTIN, CA 92780

DARRYL MENDIVIL
CALIFORNIA INFRARED INSPECTION COMPANY
1346 ALDER ST.,

PETER CANESSA
CALIFORNIA STATE UNIVERSITY
FRESNO FOUNDATION

SAN LUIS OBISPO, CA 93401

665 ASILO
ARROYO GRANDE, CA 93420

ART BRICE
RICHARD HEATH AND ASSOCIATES, INC.
590 W. LOCUST AVENUE, SUITE 103
FRESNO, CA 93650

JOE WILLIAMS
CEO
RICHARD HEATH AND ASSOCIATES, INC.
590 W. LOCUST AVENUE, STE 103
FRESNO, CA 93650

KRISTINE LUCERO
RICHARD HEATH AND ASSOCIATES, INC.
590 W. LOCUST AVENUE, SUITE 103
FRESNO, CA 93650

LAUREN CASENTINI
D & R INTERNATIONAL
711 MAIN STREET
HALF MOON BAY, CA 94019

DIANE I. FELLMAN
ATTORNEY AT LAW
LAW OFFICES OF DIANE I. FELLMAN
234 VAN NESS AVENUE
SAN FRANCISCO, CA 94102

HAYLEY GOODSON
ATTORNEY AT LAW
THE UTILITY REFORM NETWORK
711 VAN NESS AVENUE, SUITE 350
SAN FRANCISCO, CA 94102

JEANNE SOLE
DEPUTY CITY ATTORNEY
CITY AND COUNTY OF SAN FRANCISCO
1 DR. CARLTON B. GOODLETT PLACE, RM. 234
SAN FRANCISCO, CA 94102

MARCEL HAWIGER
ATTORNEY AT LAW
THE UTILITY REFORM NETWORK
711 VAN NESS AVENUE, SUITE 350
SAN FRANCISCO, CA 94102

BRIAN C PRUSNEK
CALIF PUBLIC UTILITIES COMMISSION
EXECUTIVE DIVISION
ROOM 5141
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

JAMES E. SCARFF
CALIF PUBLIC UTILITIES COMMISSION
LEGAL DIVISION
ROOM 5121
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

CLARE BRESSANI TANKO
ENERGY EFFICIENCY PROGRAM MANAGER
ENERGY ACTION/LOCAL INITIATIVES SUPPORT
369 PINE STREET, SUITE 350
SAN FRANCISCO, CA 94104

DEVRA BACHRACH
STAFF SCIENTIST
NATURAL RESOURCES DEFENSE COUNCIL
111 SUTTER STREET, 20TH FLOOR
SAN FRANCISCO, CA 94104

EVELYN KAHL
ATTORNEY AT LAW
ALCANTAR & KAHL, LLP
120 MONTGOMERY STREET, SUITE 2200
SAN FRANCISCO, CA 94104

KAREN TERRANOVA
ALCANTAR & KAHL, LLP
120 MONTGOMERY STREET, STE 2200
SAN FRANCISCO, CA 94104

NORA SHERIFF
ATTORNEY AT LAW
ALCANTAR & KAHL LLP
120 MONTGOMERY STREET, SUITE 2200
SAN FRANCISCO, CA 94104

SHERYL CARTER
NATURAL RESOURCES DEFENSE COUNCIL
111 SUTTER STREET, 20/F
SAN FRANCISCO, CA 94104

PACIFIC GAS & ELECTRIC COMPANY
77 BEALE STREET, MAILCODE 30B
SAN FRANCISCO, CA 94105

CHRIS ANN DICKERSON, PHD.
FREEMAN, SULLIVAN & CO.
100 SPEAR ST., 17/F
SAN FRANCISCO, CA 94105

JAY LUO
PACIFIC GAS & ELECTRIC COMPANY
77 BEALE STREET, MAILCODE 30B
SAN FRANCISCO, CA 94105

ROB SHELTON
1 MARKET STREET
SPEAR ST. TRW., STE. 1200
SAN FRANCISCO, CA 94105

EVELYN C. LEE
ATTORNEY AT LAW
PACIFIC GAS AND ELECTRIC COMPANY
77 BEALE STREET, RM 3135
SAN FRANCISCO, CA 94105-1814

TERRY M. FRY
PRINCIPAL
NEXANT, INC.
101 SECOND STREET, 11TH FLOOR
SAN FRANCISCO, CA 94105-3672

JEN MCGRAW
CENTER FOR NEIGHBORHOOD TECHNOLOGY
PO BOX 14322
SAN FRANCISCO, CA 94114

LULU WEINZIMER
CALIFORNIA ENERGY CIRCUIT
695 9TH AVE. NO.2
SAN FRANCISCO, CA 94118

MARGARET D. BROWN
ATTORNEY AT LAW
PACIFIC GAS AND ELECTRIC COMPANY
PO BOX 7442
SAN FRANCISCO, CA 94120-7442

NICOLE NASSER
EFFICIENCY PARTNERSHIP
2962 FILLMORE STREET
SAN FRANCISCO, CA 94123

MAURICE CAMPBELL
COMMUNITY FIRST COALITION
C/O EJ ADVOCATES
4909 THIRD STREET
SAN FRANCISCO, CA 94124

CHRIS CHOUTEAU
38 DARRELL PL.
SAN FRANCISCO, CA 94133

BARBARA GEORGE
WOMEN'S ENERGY MATTERS
PO BOX 883723

RICHARD S. RIDGE
RIDGE & ASSOCIATES
3022 THOMPSON AVE.

SAN FRANCISCO, CA 94188-3723

ALAMEDA, CA 94501

MICHAEL ROCHMAN
SCHOOL PROJECT UTILITY RATE REDUCTION
1430 WILLOW PASS ROAD, SUITE 240
CONCORD, CA 94520

STEVEN R. SHALLENBERGER
AMERICAN SYNERGY CORPORATION
28436 SATTELITE STREET
HAYWARD, CA 94545

JOHN KOTOWSKI
GLOBAL ENERGY PARTNERS
3569 MT. DIABLO BLVD., STE 200
LAFAYETTE, CA 94549

JANET L. OPPIO
SHELL OIL PRODUCTS U.S.
3485 PACHECO BLVD.
MARTINEZ, CA 94553

JAY BHALLA
INTERGY CORPORATION
221 AZALEA LANE, SUITE F
SAN RAMON, CA 94583

JUDY NICKEL
FISHER-NICKEL, INC.
FOOD SERVICE TECHNOLOGY CENTER
12949 ALCOSTA BLVD., SUITE 101
SAN RAMON, CA 94583

GREG TRAYNOR
PROJECT MANAGER
T. MARSHALL ASSOCIATES, LTD.
7074 COMMERCE CIRCLE, UNIT D
PLEASANTON, CA 94588

MARY SUTTER
EQUIPOISE CONSULTING INC.
4309 WHITTLE AVE.
OAKLAND, CA 94602

TED POPE
DIRECTOR
COHEN VENTURES, INC./ENERGY SOLUTIONS
1738 EXCELSIOR AVENUE
OAKLAND, CA 94602

ERIC C. WOYCHIK
STRATEGY INTEGRATION LLC
9901 CALODEN LANE
OAKLAND, CA 94605

JULIA K. LARKIN
KEMA-XENERGY
492 NINTH STREET, SUITE 220
OAKLAND, CA 94607

RICHARD S. BARNES
SR. VICE PRESIDENT
KEMA-XENERGY
492 NINTH STREET, SUITE 220
OAKLAND, CA 94607

ROBERT L. KNIGHT
BEVILACQUA-KNIGHT INC
1000 BROADWAY, SUITE 410
OAKLAND, CA 94607

KARIN CORFEE
SENIOR CONSULTANT
KEMA-XENERGY
492 NINTH STREET, SUITE 220
OAKLAND, CA 94607-4048

PAUL FENN
LOCAL POWER
4281 PIEDMONT AVE.
OAKLAND, CA 94611

STEVE SCHILLER
NEXANT, INC.
111 HILLSIDE
PIEDMONT, CA 94611

BRUCE MAST
FRONTIER ASSOCIATES LLC
610 16TH ST., SUITE 412
OAKLAND, CA 94612

EBEN TWOMBLY
KW ENGINEERING
360 - 17TH STREET, SUITE 100
OAKLAND, CA 94612

ROBERT B. WEISENMILLER
MRW & ASSOCIATES, INC.
1999 HARRISON STREET, STE 1440
OAKLAND, CA 94612-3517

SCOTT WENTWORTH
ENERGY ENGINEER
PUBLIC WORKS DEPARTMENT, CITY OF OAKLAND
7101 EDGEWATER DRIVE
OAKLAND, CA 94621-3001

CYNTHIA WOOTEN
NAVIGANT CONSULTING, INC.
1126 DELAWARE STREET
BERKELEY, CA 94702

REED V. SCHMIDT
BARTLE WELLS ASSOCIATES
1889 ALCATRAZ AVENUE
BERKELEY, CA 94703

RYAN BELL
CITIES FOR CLIMATE PROTECTION
15 SHATTUCK SQUARE, SUITE 215
BERKELEY, CA 94703

EILEEN PARKER
QUANTUM CONSULTING
2030 ADDISON STREET
BERKELEY, CA 94704

NEAL DE SNOO
CITY OF BERKELEY
2180 MILVIA STREET, 2ND FLOOR
BERKELEY, CA 94704

PHIL KAMLARZ
CITY OF BERKELEY
2180 MILVIA STREET
BERKELEY, CA 94704

CHRIS KING
EXECUTIVE DIRECTOR
AMERICAN ENERGY INSTITUTE
842 OXFORD ST.
BERKELEY, CA 94707

BILL F. ROBERTS
ECONOMIC SCIENCES CORPORATION
1516 LEROY AVENUE
BERKELEY, CA 94708

CRAIG TYLER
TYLER & ASSOCIATES
2760 SHASTA ROAD

EDWARD VINE
LAWRENCE BERKELEY NATIONAL LAB
BUILDING 90-4000

BERKELEY, CA 94708

MARCIA W. BECK
LAWRENCE BERKELEY NATIONAL LABORATORY
MS 90-3026
1 CYCLOTRON ROAD
BERKELEY, CA 94720

PHILIP SISSON
SISSON AND ASSOCIATES
42 MOODY COURT
SAN RAFAEL, CA 94901

SAM RUARK
COUNTY OF MARIN CDA
3501 CIVIC CENTER DRIVE, ROOM 308
SAN RAFAEL, CA 94903

TIM ROSENFELD
HMW INTERNATIONAL, INC.
359 MOLINO AVENUE
MILL VALLEY, CA 94941

RITA NORTON
RITA NORTON AND ASSOCIATES, LLC
18700 BLYTHSWOOD DRIVE,
LOS GATOS, CA 95030

GENE THOMAS
ECOLOGY ACTION
333 FRONT STREET, SUITE 103
SANTA CRUZ, CA 95060

HANK RYAN
N. CALIFORNIA DIRECTOR
CENTER FOR SMALL BUSINESS
4315 BAIN AVENUE
SANTA ROSA, CA 95062

BERKELEY, CA 94720

JOHN PROCTOR
PROCTOR ENGINEERING GROUP
418 MISSION AVE
SAN RAFAEL, CA 94901

ANDEE CHAMBERLAIN
STRATEGIC ENERGY INNOVATIONS
185 N REDWOOD DRIVE, SUITE 188
SAN RAFAEL, CA 94903

JOHN NIMMONS
PRESIDENT
JOHN NIMMONS & ASSOCIATES, INC.
175 ELINOR AVE., SUITE G
MILL VALLEY, CA 94941

THOMAS P. CONLON
PRINCIPAL
GEOPRAXIS, INC.
205 KELLER STREET, SUITE 202
PETALUMA, CA 94952-2886

PETER HOFMANN
BO ENTERPRISES
43 E MAIN ST B
LOS GATOS, CA 95030-6907

MAHLON ALDRIDGE
ECOLOGY ACTION, INC.
PO BOX 1188
SANTA CRUZ, CA 95061

JENNIFER HOLMES
ITRON INC.
153 WOODCREST PLACE
SANTA CRUZ, CA 95065

JOSEPH P. LEUNG, P.E.
CAPITAL PROJECTS MANAGER, III
CAPITAL PROGRAMS, GSA
701 MILLER STREET, 2ND FLOOR
SAN JOSE, CA 95110-2121

MIKE HODGSON
CONSOL
7407 TAM OSHANTER DRIVE, SUITE 200
STOCKTON, CA 95210

TERRY HUGHES
CALIFORNIA LIVING & ENERGY
3649 MITCHELL ROAD, SUITE C
CERES, CA 95307

JIM STONE
CITY OF MANTECA DEPARTMENT OF PUBLIC WOR
1001 WEST CENTER STREET
MANTECA, CA 95337

JOSEPH THRASHER
PROGRAM DIRECTOR
RESOURCE ACTION PROGRAMS
2351 TENAYA DRIVE
MODESTO, CA 95354

JP BATMALE
RENEWABLE ENERGY PROGRAM MANAGER
GREAT VALLEY CENTER
201 NEEDHAM ST.
MODESTO, CA 95354

GLYNNIS JONES
APPLIANCE RECYCLING CENTERS OF AMERICA
PO BOX 1045
BOONVILLE, CA 95415

MATT BROST
RLW ANALYTICS, INC
1055 BROADWAY, SUITE G
SONOMA, CA 95476

MAUREEN HART
EXECUTIVE DIRECTOR
REDWOOD COAST ENERGY AUTHORITY
C/O HUMBOLDT COUNTY BOARD OF SUPERVISORS
825 FIFTH STREET, ROOM 111
EUREKA, CA 95501

BILL KNOX
CITY OF DAVIS
509 4TH STREET, SUITE A
DAVIS, CA 95616

MARK J. BERMAN
DIRECTOR OF BUSINESS DEVELOPMENT
DAVIS ENERGY GROUP
123 C STREET
DAVIS, CA 95616

MIKE GOODISON
CITY OF DAVIS, PUBLIC WORKS
23 RUSSELL BLVD
DAVIS, CA 95616

BRIAN HEARD
EXECUTIVE DIRECTOR
AEEES
PO BOX 598
DAVIS, CA 95617

CAROLYN M. KEHREIN
ENERGY MANAGEMENT SERVICES
1505 DUNLAP COURT
DIXON, CA 95620-4208

DOUGLAS E. MAHONE
HESCHONG MAHONE GROUP
11626 FAIR OAKS BLVD., 302

NEHEMIAH STONE
HESCHONG MAHONE GROUP
11626 FAIR OAKS BLVD. 302

FAIR OAKS, CA 95628

FAIR OAKS, CA 95628

LAURIE PARK
NAVIGANT CONSULTING, INC.
3100 ZINFANDEL DRIVE, SUITE 600
RANCHO CORDOVA, CA 95670-6078

TOM CROOKS
NAVIGANT CONSULTING, INC.
3100 ZINFANDEL DRIVE, SUITE 600
RANCHO CORDOVA, CA 95670-6078

VICTORIA P. FLEMING
NAVIGANT CONSULTING, INC.
3100 ZINFANDEL DRIVE, SUITE 600
RANCHO CORDOVA, CA 95670-6078

ROBERT K. WEATHERWAX
SIERRA ENERGY & RISK ASSESSMENT, INC
8170 CHRISTIAN LANE
GRANITE BAY, CA 95746-8118

DAVID REYNOLDS
ASPEN SYSTEMS CORPORATION
5802 BALFOR ROAD
ROCKLIN, CA 95765

ANDREW B. BROWN
ELLISON, SCHNEIDER & HARRIS, LLP
2015 H STREET
SACRAMENTO, CA 95814

ANN L. TROWBRIDGE
ATTORNEY AT LAW
DOWNEY BRAND LLP
555 CAPITOL MALL, STE. 1050
SACRAMENTO, CA 95814

G. PATRICK STONER
LOCAL GOVERNMENT COMMISSION
1414 K STREET, SUITE 600
SACRAMENTO, CA 95814

JAN MCFARLAND
CAL SEIA
1100, 11TH STREET, STE. 322
SACRAMENTO, CA 95814

JENNIFER CASTLEBERRY
RUNYON SALTZMAN & EINHORN
ONE CAPITOL MALL, SUITE 400
SACRAMENTO, CA 95814

LYNN HAUG
ATTORNEY AT LAW
ELLISON, SCHNEIDER & HARRIS, LLP
2015 H STREET
SACRAMENTO, CA 95814-3109

BRUCE MATULICH
EXECUTIVE DIRECTOR
ELECTRIC & GAS INDUSTRIES ASSOCIATION
3800 WATT AVE, SUITE 105
SACRAMENTO, CA 95821

KIRK UHLER
CHIEF OPERATING OFFICER
ELECTRIC & GAS INDUSTRIES ASSOCIATION
3800 WATT AVE., 105
SACRAMENTO, CA 95821

DONALD DOHRMANN
ADM ASSOCIATES, INC.
3239 RAMOS CIRCLE
SACRAMENTO, CA 95827-2501

KAREN NORENE MILLS
ATTORNEY AT LAW
CALIFORNIA FARM BUREAU FEDERATION
2300 RIVER PLAZA DRIVE
SACRAMENTO, CA 95833

ROBERT E. BURT
4153 NORTHGATE BLVD., NO. 6
SACRAMENTO, CA 95834

KAREN LINDH
LINDH & ASSOCIATES
7909 WALERGA ROAD, NO. 112, PMB 119
ANTELOPE, CA 95843

JIM PARKS
SACRAMENTO MUNICIPAL UTILITY DIST.
6301 S STREET
SACRAMENTO, CA 95852-1830

ROBERT MOWRIS
ROBERT MOWRIS & ASSOCIATES
PO BOX 2141
OLYMPIC VALLEY, CA 96146-2141

BETTINA FOSTER
SENIOR ASSOCIATE
GLOBAL ENERGY PARTNERS, LLC
77-350 AINANANI STREET
KAILA-KONA, HI 96740

MICHAEL ALCANTAR
ATTORNEY AT LAW
ALCANTAR & KAHL LLP
1300 SW FIFTH AVENUE, SUITE 1750
PORTLAND, OR 97201

PHIL WELKER
PORTLAND ENERGY CONSERVATION INC.
1400 SW 5TH AVENUE, SUITE 700
PORTLAND, OR 97201

LOREN LUTZENHISER
LUTZENHISER ASSOCIATES
7010 SE 36TH AVENUE
PORTLAND, OR 97202

JOHN GRAHAM
SENIOR PROGRAM MANAGER
ECOS CONSULTING
309 SW 6TH AVENUE, STE 1000
PORTLAND, OR 97204

SAM SIRKIN
PROGRAM DEVELOPMENT DIRECTOR
ECOS CONSULTING
309 SW 6TH AVENUE, STE 1000
PORTLAND, OR 97204

BRIAN HEDMAN
VICE PRESIDENT
QUANTEC
720 SW WASHINGTON STREET, STE 400
PORTLAND, OR 97205

DANIEL W. MEEK
ATTORNEY AT LAW
RESCUE
10949 S.W. 4TH AVENUE
PORTLAND, OR 97219

JOHN MCLAIN
EARTH ADVANTAGE NATIONAL CENTER
PORTLAND GENERAL ELECTRIC
16280 SW BOONES FERRY ROAD
PORTLAND, OR 97224

BEN WILDMAN
SBW CONSULTING, INC.
2820 NORTHUP WAY, SUITE 230

THOMAS ECKHART
CAL-UCONS
10612 NE 46TH STREET

BELLEVUE, WA 98004-1419

KIRKLAND, WA 98033

MICHAEL SHEEHAN
MICROPLANET LTD
100 SOUTH KING STREET, SUITE 240
SEATTLE, WA 98104

ROBERT D. BORDNER
PRESIDENT
ENERGY MARKET INNOVATIONS, INC.
83 COLUMBIA STREET, SUITE 303
SEATTLE, WA 98104

STEPHEN HALL
11-5651 LACKNER CRESCENT
RICHMOND, BC V7E 6E8
CANADA

Information Only

AMELIA GULKIS
ENSAVE ENERGY PERFORMANCE, INC.
65 MILLER STREET, SUITE 105
RICHMOND, VT 05477

TAFF TSCHAMLER
KEMA, INC.
OFFICE PLAZA ONE
10333 EAST DRY CREEK, SUITE 200
ENGLEWOOD, CO 80112

MIKE MCCORMICK
CALIFORNIA CLIMATE ACTION REGISTRY
515 S FLOWER ST. 1305
LOS ANGELES, CA 90071

MAGGIE HEALY
CITY OF REDONDO BEACH
415 DIAMOND ST.
REDONDO BEACH, CA 90277

SIDNEY PELSTON
ENERGY INNOVATION GROUP, LLC
4267 MARINA CITY DRIVE, SUITE 104
MARINA DEL REY, CA 90292

MARILYN LYON
PROJECT COORDINATOR
3858 CARSON STREET, SUITE 110
TORRANCE, CA 90503

FEIT ELECTRIC
4901 GREGG ROAD
PICO RIVERA, CA 90660

MONTE WINEGAR
PROJECT DIRECTOR
WINEGARD ENERGY
1818 FLOWER AVENUE
DUARTE, CA 91010

JEANETTE MEYER
MARKETING MANAGER
BURBANK WATER AND POWER

TORY S. WEBER
SOUTHERN CALIFORNIA EDISON COMPANY
2131 WALNUT GROVE AVENUE

164 W. MAGNOLIA BLVD.
BURBANK, CA 91502

ROSEMEAD, CA 91770

ELIZABETH HULL
DEPUTY CITY ATTORNEY
CITY OF CHULA VISTA
276 FOURTH AVENUE
CHULA VISTA, CA 91910

DON WOOD
PACIFIC ENERGY POLICY CENTER
4539 LEE AVENUE
LA MESA, CA 91941

MARK MCNULTY
5150 RANDLETT DRIVE
LA MESA, CA 91941

DONALD C. LIDDELL P. C.
DOUGLASS & LIDDELL
2928 2ND AVENUE
SAN DIEGO, CA 92103

ALAN BALL
QUALCOMM INCORPORATED
5775 MOREHOUSE DR
SAN DIEGO, CA 92121

CENTRAL FILES
SAN DIEGO GAS & ELECTRIC
CP31-E
8330 CENTURY PARK COURT
SAN DIEGO, CA 92123-1530

MARK SHIRILAU
ALOHA SYSTEMS, INC.
14801 COMET STREET
IRVINE, CA 92604-2464

JAMES L. MATARESE
PROJECT ASSISTANT
THE ENERGY COALITION
15615 ALTON PKWY. STE. 245
IRVINE, CA 92618

KENT G. ANDERSEN
INYO MONO ADVOCATES FOR COMMUNITY ACTION
224 S. MAIN ST.
BISHOP, CA 93545

RICHARD KEYES
PRINCIPAL
KEYES SOLUTIONS
6572 N. LEAD AVE
FRESNO, CA 93711

CAL BROOMHEAD
DEPT OF ENVIRONMENT, ENERGY SECTION
CITY AND COUNTY OF SAN FRANCISCO
11 GROVE STREET
SAN FRANCISCO, CA 94102

JOE COMO
ATTORNEY AT LAW
CITY AND COUNTY OF SAN FRANCISCO
ONE DR. CARLTON B. GOODLETT PLACE
SAN FRANCISCO, CA 94102

DANIELLE DOWERS
S. F. PUBLIC UTILITIES COMMISSION
1155 MARKET STREET 4TH FLOOR
SAN FRANCISCO, CA 94103

MICHAEL HYAMS
SAN FRANCISCO PUBLIC UTILITIES COMM
1155 MARKET ST., 4/F
SAN FRANCISCO, CA 94103

PETER MILLER
CONSULTANT
NATURAL RESOURCES DEFENSE COUNCIL
111 SUTTER STREET 20/F
SAN FRANCISCO, CA 94104

ANNETTE S. BEITEL
PACIFIC GAS AND ELECTRIC COMPANY
245 MARKET STREET, MAIL CODE N6G
SAN FRANCISCO, CA 94105

CHONDA NWAMU
ATTORNEY AT LAW
PACIFIC GAS AND ELECTRIC COMPANY
77 BEALE STREET, B30A
SAN FRANCISCO, CA 94105

LUO JAY
PACIFIC GAS AND ELECTRIC COMPANY
77 BEALE STREET, MAIL CODE B9A
SAN FRANCISCO, CA 94105

MIKE WAN
PACIFIC GAS AND ELECTRIC COMPANY
245 MARKET STREET, MAIL CODE N6G
SAN FRANCISCO, CA 94105

CALIFORNIA ENERGY MARKETS
517-B POTRERO AVENUE
SAN FRANCISCO, CA 94110

SUSAN E. BROWN
LATINO ISSUES FORUM
160 PINE STREET, SUITE 700
SAN FRANCISCO, CA 94111

JUDY PAU
DAVIS, WRIGHT TREMAINE LLP
ONE EMBARCADERO CENTER, SUITE 600
SAN FRANCISCO, CA 94111-3834

LAW DEPARTMENT FILE ROOM
PACIFIC GAS AND ELECTRIC COMPANY
PO BOX 7442
SAN FRANCISCO, CA 94120-7442

JENNIFER BARNES
PACIFIC GAS AND ELECTRIC COMPANY
MAIL STOP N6G
PO BOX 770000
SAN FRANCISCO, CA 94177

JOSEPHINE WU
PACIFIC GAS AND ELECTRIC COMPANY
77 BEALE STREET, MAIL CODE B9A
SAN FRANCISCO, CA 94177

FLOYD KENEIPP
SUMMIT BLUE CONSULTING
5433 CLAYTON ROAD SUITE K-342
CLAYTON, CA 94517

MARK REEDY
GLOBAL ENERGY PARTNERS, LLC
3569 MT. DIABLO BLVD., SUITE 200
LAFAYETTE, CA 94549

JODY S. LONDON
PO BOX 3629
OAKLAND, CA 94609

JOHN CAVALLI
QUANTUM CONSULTING, INC.
2001 ADDISON ST., STE, 300

DANIEL C. GLASER
2727 STUART ST.
BERKELEY, CA 94705

BERKELEY, CA 94704

MARIA SANDERS
COMMUNITY ENERGY SERVICES CORPORATION
1013 PARDEE ST.
BERKELEY, CA 94710

RYAN WISER
BERKELEY LAB
MS-90-4000
ONE CYCLOTRON ROAD
BERKELEY, CA 94720

IRINA KRISHPINOVICH
HEMSTREET ASSOCIATES
5760 CLINTON AVENUE
RICHMOND, CA 94805

PATTY AVERY
GENERAL MANAGER
PROCTOR ENGINEERING GROUP
418 MISSION AVENUE
SAN RAFAEL, CA 94901

ELIZABETH I. EELLS
52 LOVEJOY WAY
NOVATO, CA 94949-6240

KEN MOORE
PROGRAM MANAGER
SMALL BUSINESS ENERGY ALLIANCE
1055 BROADWAY, SUITE G
SONOMA, CA 95476

SAM PIERCE
RLW ANALYTICS, INC.
1055 BROADWAY, SUITE G
SONOMA, CA 95476

MARSHALL B. HUNT
VALLEY ENERGY EFFICEINCY CORP
509 4TH STREET, SUITE A
DAVIS, CA 95616

SARAH SPURR
YOLO ENERGY EFFICIENCY PROJECT
509 4TH STREET, SUITE A
DAVIS, CA 95616

VIKKI WOOD
PRINCIPAL DEMAND-SIDE SPECIALIST
SACRAMENTO MUNICIPAL UTILITY DISTRICT
6301 S STREET, MS A103
SACRAMENTO, CA 95618-1899

LEGAL AND REGULATORY DEPARTMENT
CALIFORNIA ISO
151 BLUE RAVINE ROAD
FOLSOM, CA 95630

KRYSTY EMERY
NAVIGANT CONSULTING, INC.
3100 ZINFANDEL DRIVE, SUITE 600
RANCHO CORDOVA, CA 95670-6078

JOHN BERLIN
NORTHERN CALIFORNIA POWER AGENCY
180 CIRBY WAY
ROSEVILLE, CA 95678

KARI DOHN
GCC ROSE&KINDEL (ON BEHALF OF CONSOL)
915 L STREET, SUITE 1210
SACRAMENTO, CA 95814

LAURA LANGERWERF
RUNYON SALTZMAN & EINHORN, INC.
ONE CAPITOL MALL, SUITE 400
SACRAMENTO, CA 95814

MATTHEW GILFILLAN
RUNYON, SALTZMAN & EINHORN, INC.
1 CAPITOL MALL, SUITE 400
SACRAMENTO, CA 95814

MOLLY HARCOS
RUNYON, SALTZMAN & EINHORN, INC.
1 CAPITOL MALL, SUITE 400
SACRAMENTO, CA 95814

WILLIAM W. WESTERFIELD, III
ATTORNEY AT LAW
STOEL RIVES LLP
770 L STREET, SUITE 800
SACRAMENTO, CA 95814

TONY MODDESETTE
UCDAVIS MEDICAL CENTER
4800 2ND AVE. SUITE 1500
SACRAMENTO, CA 95817

WILLIAM D. BOYCE
SACRAMENTO MUNICIPAL UTILITY DISTRICT
PO BOX 15830
SACRAMENTO, CA 95852-1830

JONATHAN DUBE
ECOS CONSULTING
309 SW 6TH AVENUE, STE 1000
PORTLAND, OR 97204

STEVE GROVER
ECONORTHWEST
888 SW FIFTH AVENUE, SUITE 1460
PORTLAND, OR 97204

State Service

MAXINE HARRISON
CALIF PUBLIC UTILITIES COMMISSION
EXECUTIVE DIVISION
320 WEST 4TH STREET SUITE 500
LOS ANGELES, CA 90013

PETER LAI
CALIF PUBLIC UTILITIES COMMISSION
NATURAL GAS, ENERGY EFFICIENCY AND RESOU
320 WEST 4TH STREET SUITE 500
LOS ANGELES, CA 90013

ARIANA MERLINO
CALIF PUBLIC UTILITIES COMMISSION
NATURAL GAS, ENERGY EFFICIENCY AND RESOU
1350 FRONT ST., STATE BLDG. ROOM 4006
SAN DIEGO, CA 92101

FUNDA EMINE SAYGIN
CALIF PUBLIC UTILITIES COMMISSION
ELECTRICITY RESOURCES & PRICING BRANCH
1350 FRONT ST., STATE BLDG. ROOM 4006
SAN DIEGO, CA 92101

AARON J JOHNSON
CALIF PUBLIC UTILITIES COMMISSION
EXECUTIVE DIVISION
ROOM 5210
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

BRIAN D. SCHUMACHER
CALIF PUBLIC UTILITIES COMMISSION
ENGINEERING, ENVIRONMENTAL STUDIES, CUST
AREA 4-A
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

CHERYL COX
CALIF PUBLIC UTILITIES COMMISSION
RATEPAYER REPRESENTATION BRANCH
ROOM 3-B
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

CHRISTINE S TAM
CALIF PUBLIC UTILITIES COMMISSION
ELECTRICITY RESOURCES & PRICING BRANCH
ROOM 4209
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

DAN ADLER
CALIF PUBLIC UTILITIES COMMISSION
DIVISION OF STRATEGIC PLANNING
ROOM 5119
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

DIANA L. LEE
CALIF PUBLIC UTILITIES COMMISSION
LEGAL DIVISION
ROOM 4300
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

DONALD R SMITH
CALIF PUBLIC UTILITIES COMMISSION
ELECTRICITY RESOURCES & PRICING BRANCH
ROOM 4209
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

DONNA L. WAGONER
CALIF PUBLIC UTILITIES COMMISSION
ENGINEERING, ENVIRONMENTAL STUDIES, CUST
AREA 4-A
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

JAN REID
CALIF PUBLIC UTILITIES COMMISSION
ELECTRICITY RESOURCES & PRICING BRANCH
ROOM 4209
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

GEORGE S TAGNIPES
CALIF PUBLIC UTILITIES COMMISSION
ENGINEERING, ENVIRONMENTAL STUDIES, CUST
AREA 4-A
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

JULIE A FITCH
CALIF PUBLIC UTILITIES COMMISSION
EXECUTIVE DIVISION
ROOM 5203
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

LAINIE MOTAMEDI
CALIF PUBLIC UTILITIES COMMISSION
DIVISION OF STRATEGIC PLANNING
ROOM 5119
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

MARYAM EBKE
CALIF PUBLIC UTILITIES COMMISSION
DIVISION OF STRATEGIC PLANNING
ROOM 5119
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

MEG GOTTSTEIN
CALIF PUBLIC UTILITIES COMMISSION
DIVISION OF ADMINISTRATIVE LAW JUDGES
ROOM 5044
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

NORA Y. GATCHALIAN
CALIF PUBLIC UTILITIES COMMISSION
NATURAL GAS, ENERGY EFFICIENCY AND RESOU
AREA 4-A
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

PHILIPPE AUCLAIR
CALIF PUBLIC UTILITIES COMMISSION
EXECUTIVE DIVISION
ROOM 5218
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

ROBERT A. BARNETT
CALIF PUBLIC UTILITIES COMMISSION
DIVISION OF ADMINISTRATIVE LAW JUDGES

SHANNON EDDY
CALIF PUBLIC UTILITIES COMMISSION
EXECUTIVE DIVISION

ROOM 5008
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

ROOM 4102
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

STEVEN A. WEISSMAN
CALIF PUBLIC UTILITIES COMMISSION
DIVISION OF ADMINISTRATIVE LAW JUDGES
ROOM 5125
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

TIM G DREW
CALIF PUBLIC UTILITIES COMMISSION
NATURAL GAS, ENERGY EFFICIENCY AND RESOU
AREA 4-A
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

ZENAIDA G. TAPAWAN-CONWAY
CALIF PUBLIC UTILITIES COMMISSION
NATURAL GAS, ENERGY EFFICIENCY AND RESOU
AREA 4-A
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3214

GERALD LAHR
ASSOCIATION OF BAY AREA GOVERNMENTS
PO BOX 2050
OAKLAND, CA 94604-2050

MARY TUCKER
SUPERVISING SPECIALIST
ENVIRONMENTAL SERVICES DEPARTMENT
777 N. 1ST STREET, SUITE 300
SAN JOSE, CA 95112-6351

MEG GOTTSTEIN
ADMINISTRATIVE LAW JUDGE
PO BOX 210/21496 NATIONAL STREET
VOLCANO, CA 95689

JOANNE VORHIES
CA INTEGRATED WASTE MANAGEMENT BOARD
1001 I STREET MS 14A
SACRAMENTO, CA 95812

AL GARCIA
CALIFORNIA ENERGY COMMISSION
1516 9TH STREET
SACRAMENTO, CA 95814

ALAN LOFASO
CALIF PUBLIC UTILITIES COMMISSION
EXECUTIVE DIVISION
770 L STREET, SUITE 1050
SACRAMENTO, CA 95814

DON SCHULTZ
CALIF PUBLIC UTILITIES COMMISSION
ELECTRICITY RESOURCES & PRICING BRANCH
770 L STREET, SUITE 1050
SACRAMENTO, CA 95814

JENNIFER TACHERA
ATTORNEY AT LAW
CALIFORNIA ENERGY COMMISSION
1516 - 9TH STREET
SACRAMENTO, CA 95814

MICHAEL MESSENGER
CALIFORNIA ENERGY COMMISSION
1516 9TH STREET
SACRAMENTO, CA 95814

NANCY JENKINS
PIER BUILDINGS PROGRAM MANAGER
CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET MS43
SACRAMENTO, CA 95814

SYLVIA BENDER
CALIFORNIA ENERGY COMMISSION
1516 9TH STREET, MS22
SACRAMENTO, CA 95814

STAN PRICE
NORTHWEST ENERGY EFFICIENCY COUNCIL
157 YESLER WAY, SUITE 409
SEATTLE, WA 98104

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Appendix A

**SDG&E's Financial Statement, Balance Sheet and
Income Statement**

**SAN DIEGO GAS & ELECTRIC COMPANY
FINANCIAL STATEMENT
MARCH 31, 2005**

(a) Amounts and Kinds of Stock Authorized:

Preferred Stock	1,375,000 shares	Par Value \$27,500,000
Preferred Stock	10,000,000 shares	Without Par Value
Preferred Stock	Amount of shares not specified	\$80,000,000
Common Stock	255,000,000 shares	Without Par Value

Amounts and Kinds of Stock Outstanding:

PREFERRED STOCK

5.0%	375,000 shares	\$7,500,000
4.50%	300,000 shares	6,000,000
4.40%	325,000 shares	6,500,000
4.60%	373,770 shares	7,475,400
\$1.7625	850,000 shares	18,750,000
\$1.70	1,400,000 shares	35,000,000
\$1.82	640,000 shares	16,000,000

COMMON STOCK

116,583,358 shares	291,458,395
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(b) Terms of Preferred Stock:

Full information as to this item is given in connection with Application Nos. 93-09-069 and 04-01-009, to which references are hereby made.

(c) Brief Description of Mortgage:

Full information as to this item is given in Application Nos. 93-09-069, 96-05-066, 00-01-016 and 04-01-009 to which references are hereby made.

(d) Number and Amount of Bonds Authorized and Issued:

	Nominal Date of Issue	Par Value		Interest Paid in 2004
		Authorized and Issued	Outstanding	
<u>First Mortgage Bonds:</u>				
6.8% Series KK, due 2015	12-01-91	14,400,000	14,400,000	979,200
Var% Series NN, due 2018 & 2019	09-01-92	118,615,000	0	6,445,565
Var% Series OO, due 2027	12-01-92	250,000,000	150,000,000	12,705,737
5.9% Series PP, due 2018	04-29-93	70,795,000	68,295,000	4,029,405
5.85% Series RR, due 2021	06-29-93	60,000,000	60,000,000	3,510,000
5.9% Series SS, due 2018	07-29-93	92,945,000	92,945,000	5,483,755
Var% Series TT, due 2020	06-06-95	57,650,000	0	338,451
2.539% Series VV, due 2034	06-17-04	43,615,000	43,615,000	0
2.539% Series WW, due 2034	06-17-04	40,000,000	40,000,000	0
2.516% Series XX, due 2034	06-17-04	35,000,000	35,000,000	0
2.832% Series YY, due 2034	06-17-04	24,000,000	24,000,000	0
2.832% Series ZZ, due 2034	06-17-04	33,650,000	33,650,000	0
2.8275% Series AAA, due 2039	06-17-04	75,000,000	75,000,000	0
<u>Unsecured Bonds:</u>				
5.9% CPCFA96A, due 2014	06-01-96	129,820,000	129,820,000	7,659,380
Var% CV96A, due 2021	08-02-96	38,900,000	38,900,000	1,249,650
Var% CV96B, due 2021	11-21-96	60,000,000	60,000,000	1,966,072
Var% CV97A, due 2023	10-31-97	25,000,000	25,000,000	1,456,250

**SAN DIEGO GAS & ELECTRIC COMPANY
FINANCIAL STATEMENT
MARCH 31, 2005**

<u>Other Indebtedness:</u>	<u>Date of Issue</u>	<u>Date of Maturity</u>	<u>Interest Rate</u>	<u>Outstanding</u>	<u>Interest Paid 2004</u>
Commercial Paper & ST Bank Loans	Various	Various	Various	67,000,000	\$0

Amounts and Rates of Dividends Declared:

The amounts and rates of dividends during the past five fiscal years are as follows:

<u>Preferred Stock</u>	<u>Shares Outstanding</u>	<u>Dividends Declared</u>				
	<u>12-31-04</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>
5.0%	375,000	\$375,000	\$375,000	\$375,000	\$375,000	\$375,000
4.50%	300,000	270,000	270,000	270,000	270,000	270,000
4.40%	325,000	286,000	286,000	286,000	286,000	286,000
4.60%	373,770	343,868	343,868	343,868	343,868	343,868
\$ 1.7625	850,000	1,762,500	1,762,500	1,762,500	1,674,375	1,498,125
\$ 1.70	1,400,000	2,380,000	2,380,000	2,380,000	2,380,000	2,380,000
\$ 1.82	640,000	1,164,800	1,164,800	1,164,800	1,164,800	1,164,800
	<u>4,263,770</u>	<u>\$6,582,168</u>	<u>\$6,582,168</u>	<u>\$6,582,168</u>	<u>\$6,494,043</u>	<u>\$6,317,793</u> [2]

Common Stock

Amount	\$400,000,000	\$150,000,000	\$200,000,000	\$200,000,000	\$205,000,000	[1]
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A balance sheet and a statement of income and retained earnings of Applicant for the three months ended March 31, 2005, are attached hereto.

[1] San Diego Gas & Electric Company dividend to parent.

[2] Includes \$1,498,125 of interest expense related to redeemable preferred stock.

**SAN DIEGO GAS & ELECTRIC COMPANY
BALANCE SHEET
ASSETS AND OTHER DEBITS
MARCH 31, 2005**

1. UTILITY PLANT		<u>2005</u>
101	UTILITY PLANT IN SERVICE	\$6,704,590,145
102	UTILITY PLANT PURCHASED OR SOLD	-
105	PLANT HELD FOR FUTURE USE	57,456
106	COMPLETED CONSTRUCTION NOT CLASSIFIED	-
107	CONSTRUCTION WORK IN PROGRESS	114,420,007
108	ACCUMULATED PROVISION FOR DEPRECIATION OF UTILITY PLANT	(3,668,879,318)
111	ACCUMULATED PROVISION FOR AMORTIZATION OF UTILITY PLANT	(155,565,867)
118	OTHER UTILITY PLANT	463,012,699
119	ACCUMULATED PROVISION FOR DEPRECIATION AND AMORTIZATION OF OTHER UTILITY PLANT	(114,824,609)
120	NUCLEAR FUEL - NET	<u>25,200,765</u>
TOTAL NET UTILITY PLANT		<u>3,368,011,278</u>
 2. OTHER PROPERTY AND INVESTMENTS		
121	NONUTILITY PROPERTY	14,471,867
122	ACCUMULATED PROVISION FOR DEPRECIATION AND AMORTIZATION OF NONUTILITY PROPERTY	(1,421,186)
123	INVESTMENTS IN SUBSIDIARY COMPANIES	3,290,000
124	OTHER INVESTMENTS	-
125	SINKING FUNDS	-
128	OTHER SPECIAL FUNDS	<u>613,419,757</u>
TOTAL OTHER PROPERTY AND INVESTMENTS		<u>629,760,438</u>

**SAN DIEGO GAS & ELECTRIC COMPANY
BALANCE SHEET
ASSETS AND OTHER DEBITS
MARCH 31, 2005**

3. CURRENT AND ACCRUED ASSETS

		<u>2005</u>
131	CASH	\$7,064,387
132	INTEREST SPECIAL DEPOSITS	-
134	OTHER SPECIAL DEPOSITS	-
135	WORKING FUNDS	83,744
136	TEMPORARY CASH INVESTMENTS	-
141	NOTES RECEIVABLE	-
142	CUSTOMER ACCOUNTS RECEIVABLE	133,822,417
143	OTHER ACCOUNTS RECEIVABLE	27,388,605
144	ACCUMULATED PROVISION FOR UNCOLLECTIBLE ACCOUNTS	(2,121,726)
145	NOTES RECEIVABLE FROM ASSOCIATED COMPANIES	63,489
146	ACCOUNTS RECEIVABLE FROM ASSOCIATED COMPANIES	20,001,242
151	FUEL STOCK	-
152	FUEL STOCK EXPENSE UNDISTRIBUTED	-
154	PLANT MATERIALS AND OPERATING SUPPLIES	36,398,151
156	OTHER MATERIALS AND SUPPLIES	(1,416)
163	STORES EXPENSE UNDISTRIBUTED	(154,047)
164	GAS STORED	9,344,104
165	PREPAYMENTS	5,841,057
171	INTEREST AND DIVIDENDS RECEIVABLE	9,564,000
173	ACCRUED UTILITY REVENUES	43,664,000
174	MISCELLANEOUS CURRENT AND ACCRUED ASSETS	12,730,971
175	DERIVATIVE INSTRUMENT ASSETS	-
	TOTAL CURRENT AND ACCRUED ASSETS	<u>303,688,978</u>

4. DEFERRED DEBITS

181	UNAMORTIZED DEBT EXPENSE	12,203,075
182	UNRECOVERED PLANT AND OTHER REGULATORY ASSETS	1,297,863,785
183	PRELIMINARY SURVEY & INVESTIGATION CHARGES	8,595,590
184	CLEARING ACCOUNTS	308,799
185	TEMPORARY FACILITIES	(252,415)
186	MISCELLANEOUS DEFERRED DEBITS	356,052,482
188	RESEARCH AND DEVELOPMENT	-
189	UNAMORTIZED LOSS ON REACQUIRED DEBT	45,128,016
190	ACCUMULATED DEFERRED INCOME TAXES	111,330,273
	TOTAL DEFERRED DEBITS	<u>1,831,229,605</u>

	<u><u>\$6,132,690,299</u></u>
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SAN DIEGO GAS & ELECTRIC COMPANY
BALANCE SHEET
LIABILITIES AND OTHER CREDITS
MARCH 31, 2005

5. PROPRIETARY CAPITAL

	<u>2005</u>
201 COMMON STOCK ISSUED	291,458,395
204 PREFERRED STOCK ISSUED	78,475,400
207 PREMIUM ON CAPITAL STOCK	592,222,753
210 GAIN ON RETIRED CAPITAL STOCK	-
211 MISCELLANEOUS PAID-IN CAPITAL	79,618,042
214 CAPITAL STOCK EXPENSE	(25,990,045)
216 UNAPPROPRIATED RETAINED EARNINGS	356,822,479
219 ACCUMULATED OTHER COMPREHENSIVE INCOME	<u>(12,291,227)</u>
TOTAL PROPRIETARY CAPITAL	<u>1,360,315,797</u>

6. LONG-TERM DEBT

221 BONDS	636,905,000
223 ADVANCES FROM ASSOCIATED COMPANIES	424,158,678
224 OTHER LONG-TERM DEBT	272,470,000
225 UNAMORTIZED PREMIUM ON LONG-TERM DEBT	-
226 UNAMORTIZED DISCOUNT ON LONG-TERM DEBT	<u>(522,599)</u>
TOTAL LONG-TERM DEBT	<u>1,333,011,079</u>

7. OTHER NONCURRENT LIABILITIES

227 OBLIGATIONS UNDER CAPITAL LEASES - NONCURRENT	-
228.2 ACCUMULATED PROVISION FOR INJURIES AND DAMAGES	29,201,547
228.3 ACCUMULATED PROVISION FOR PENSIONS AND BENEFITS	1,860,371
228.4 ACCUMULATED MISCELLANEOUS OPERATING PROVISIONS	(554,183)
230 ASSET RETIREMENT OBLIGATIONS	<u>342,417,610</u>
TOTAL OTHER NONCURRENT LIABILITIES	<u>372,925,345</u>

SAN DIEGO GAS & ELECTRIC COMPANY
BALANCE SHEET
LIABILITIES AND OTHER CREDITS
MARCH 31, 2005

8. CURRENT AND ACCRUED LIABILITES

	<u>2005</u>
231 NOTES PAYABLE	67,000,000
232 ACCOUNTS PAYABLE	199,959,591
233 NOTES PAYABLE TO ASSOCIATED COMPANIES	65,800,000
234 ACCOUNTS PAYABLE TO ASSOCIATED COMPANIES	7,941,054
235 CUSTOMER DEPOSITS	47,823,324
236 TAXES ACCRUED	171,396,682
237 INTEREST ACCRUED	10,081,723
238 DIVIDENDS DECLARED	1,204,917
241 TAX COLLECTIONS PAYABLE	1,287,088
242 MISCELLANEOUS CURRENT AND ACCRUED LIABILITIES	134,272,430
243 OBLIGATIONS UNDER CAPITAL LEASES - CURRENT	-
244 DERIVATIVE INSTRUMENT LIABILITIES	490,610,571
245 DERIVATIVE INSTRUMENT LIABILITIES - HEDGES	-
	<hr/>
TOTAL CURRENT AND ACCRUED LIABILITIES	<u>1,197,377,380</u>

9. DEFERRED CREDITS

252 CUSTOMER ADVANCES FOR CONSTRUCTION	29,726,271
253 OTHER DEFERRED CREDITS	311,216,197
254 OTHER REGULATORY LIABILITIES	840,340,302
255 ACCUMULATED DEFERRED INVESTMENT TAX CREDITS	36,273,658
257 UNAMORTIZED GAIN ON REACQUIRED DEBT	-
281 ACCUMULATED DEFERRED INCOME TAXES - ACCELERATED	5,201,256
282 ACCUMULATED DEFERRED INCOME TAXES - PROPERTY	454,986,394
283 ACCUMULATED DEFERRED INCOME TAXES - OTHER	191,316,620
	<hr/>
TOTAL DEFERRED CREDITS	<u>1,869,060,698</u>

TOTAL LIABILITIES AND OTHER CREDITS \$6,132,690,299

**SAN DIEGO GAS & ELECTRIC COMPANY
STATEMENT OF INCOME AND RETAINED EARNINGS
THREE MONTHS ENDED MARCH 31, 2005.**

1. UTILITY OPERATING INCOME

400	OPERATING REVENUES		\$616,925,785
401	OPERATING EXPENSES	\$417,713,183	
402	MAINTENANCE EXPENSES	27,195,932	
403-7	DEPRECIATION AND AMORTIZATION EXPENSES	64,875,901	
408.1	TAXES OTHER THAN INCOME TAXES	12,814,754	
409.1	INCOME TAXES	29,412,055	
410.1	PROVISION FOR DEFERRED INCOME TAXES	18,150,071	
411.1	PROVISION FOR DEFERRED INCOME TAXES - CREDIT	(19,893,310)	
411.4	INVESTMENT TAX CREDIT ADJUSTMENTS	(608,851)	
411.6	GAIN FROM DISPOSITION OF UTILITY PLANT	-	
	TOTAL OPERATING REVENUE DEDUCTIONS		549,659,735
	NET OPERATING INCOME		67,266,050

2. OTHER INCOME AND DEDUCTIONS

415	REVENUE FROM MERCHANDISING, JOBBING AND CONTRACT WORK	-	
417.1	EXPENSES OF NONUTILITY OPERATIONS	(38,301)	
418	NONOPERATING RENTAL INCOME	315,834	
418.1	EQUITY IN EARNINGS OF SUBSIDIARIES	-	
419	INTEREST AND DIVIDEND INCOME	5,877,117	
419.1	ALLOWANCE FOR OTHER FUNDS USED DURING CONSTRUCTION	2,122,243	
421	MISCELLANEOUS NONOPERATING INCOME	3,734,837	
421.1	GAIN ON DISPOSITION OF PROPERTY	-	
	TOTAL OTHER INCOME	12,011,730	
426	MISCELLANEOUS OTHER INCOME DEDUCTIONS	(197,645)	
408.2	TAXES OTHER THAN INCOME TAXES	96,653	
409.2	INCOME TAXES	(494,003)	
410.2	PROVISION FOR DEFERRED INCOME TAXES	554,049	
411.2	PROVISION FOR DEFERRED INCOME TAXES - CREDIT	(39,069)	
	TOTAL TAXES ON OTHER INCOME AND DEDUCTIONS	117,630	
	TOTAL OTHER INCOME AND DEDUCTIONS		12,091,745
	INCOME BEFORE INTEREST CHARGES		79,357,795
	NET INTEREST CHARGES*		19,035,439
	NET INCOME		\$60,322,356

*NET OF ALLOWANCE FOR BORROWED FUNDS USED DURING CONSTRUCTION, (\$717,508)

**SAN DIEGO GAS & ELECTRIC COMPANY
STATEMENT OF INCOME AND RETAINED EARNINGS
THREE MONTHS ENDED MARCH 31, 2005.**

3. RETAINED EARNINGS

RETAINED EARNINGS AT BEGINNING OF PERIOD, AS PREVIOUSLY REPORTED	\$372,705,041
NET INCOME (FROM PRECEDING PAGE)	60,322,356
DIVIDEND TO PARENT COMPANY	(75,000,000)
DIVIDENDS DECLARED - PREFERRED STOCK	(1,204,918)
OTHER RETAINED EARNINGS ADJUSTMENTS	<u>0</u>
RETAINED EARNINGS AT END OF PERIOD	<u><u>\$356,822,479</u></u>

Appendix B

Statement of Original Cost & Depreciation Reserve

SAN DIEGO GAS & ELECTRIC COMPANY
COST OF PROPERTY AND
DEPRECIATION RESERVE APPLICABLE THERETO
AS OF MARCH 31, 2005

<u>No.</u>	<u>Account</u>	<u>Original Cost</u>	<u>Reserve for Depreciation and Amortization</u>
ELECTRIC DEPARTMENT			
302	Franchises and Consents	\$ 222,841.36	\$ 202,900
303	Misc. Intangible Plant	22,933,194.00	14,159,535
	TOTAL INTANGIBLE PLANT	23,156,035	14,362,436
310.1	Land	46,518.29	46,518
310.2	Land Rights	0.00	0
311	Structures and Improvements	8,125,342.14	8,125,342
312	Boiler Plant Equipment	10,633,963.11	19,669,057
314	Turbogenerator Units	7,484,308.48	7,484,308
315	Accessory Electric Equipment	2,172,933.64	2,172,934
316	Miscellaneous Power Plant Equipment Steam Production Decommissioning	239,053.49 0.00	239,053 0
	TOTAL STEAM PRODUCTION	28,702,119.15	37,737,213
320.1	Land	0	0
320.2	Land Rights	283,677.11	283,677
321	Structures and Improvements	265,761,537.56	265,002,260
322	Boiler Plant Equipment	393,558,507.87	393,558,508
323	Turbogenerator Units	135,444,115.35	135,444,115
324	Accessory Electric Equipment	166,711,549.80	166,711,550
325	Miscellaneous Power Plant Equipment	220,784,114.42	194,922,688
107	ICIP CWIP	0.00	6,389,184
	TOTAL NUCLEAR PRODUCTION	1,182,543,502.11	1,162,311,982
340.1	Land	143,475.87	0
340.2	Land Rights	2,427.96	2,428
341	Structures and Improvements	0.00	0
342	Fuel Holders, Producers & Accessories	0.00	0
343	Prime Movers	0.00	0
344	Generators	432,471.37	10,377
345	Accessory Electric Equipment Other Production Decommissioning	0.00 0.00	0 0
	TOTAL OTHER PRODUCTION	578,375.20	12,805
	TOTAL ELECTRIC PRODUCTION	1,211,823,996.46	1,200,062,000

<u>No.</u>	<u>Account</u>	<u>Original Cost</u>	<u>Reserve for Depreciation and Amortization</u>
350.1	Land	\$ 17,352,556	\$ 0
350.2	Land Rights	48,793,903	7,837,764
352	Structures and Improvements	65,771,418	22,816,837
353	Station Equipment	436,919,373	112,039,631
354	Towers and Fixtures	93,845,638	68,755,104
355	Poles and Fixtures	75,210,372	36,812,809
356	Overhead Conductors and Devices	162,321,637	125,524,136
357	Underground Conduit	38,468,696	5,971,712
358	Underground Conductors and Devices	26,832,572	8,680,643
359	Roads and Trails	13,008,470	4,206,223
	TOTAL TRANSMISSION	978,524,634	392,644,859
360.1	Land	13,660,354	0
360.2	Land Rights	61,615,756	22,578,917
361	Structures and Improvements	3,304,308	1,860,519
362	Station Equipment	263,654,474	66,695,756
364	Poles, Towers and Fixtures	319,686,362	172,614,937
365	Overhead Conductors and Devices	259,367,057	82,685,372
366	Underground Conduit	676,809,622	259,330,017
367	Underground Conductors and Devices	859,303,477	440,624,697
368.1	Line Transformers	310,922,599	58,153,971
368.2	Protective Devices and Capacitors	24,449,735	5,160,860
369.1	Services Overhead	85,035,156	110,812,929
369.2	Services Underground	229,498,054	126,224,435
370.1	Meters	79,880,315	29,418,149
370.2	Meter Installations	37,818,328	9,826,458
371	Installations on Customers' Premises	5,772,753	7,520,618
373.1	St. Lighting & Signal Sys.-Transformers	0	0
373.2	Street Lighting & Signal Systems	23,393,888	16,449,504
	TOTAL DISTRIBUTION PLANT	3,254,172,238	1,409,957,140
389.1	Land	1,572,703	0
389.2	Land Rights	0	0
390	Structures and Improvements	24,498,434	8,154,080
392.1	Transportation Equipment - Autos	0	49,884
392.2	Transportation Equipment - Trailers	175,979	114,776
393	Stores Equipment	54,331	42,597
394.1	Portable Tools	10,040,292	3,345,692
394.2	Shop Equipment	579,577	270,010
395	Laboratory Equipment	505,742	148,488
396	Power Operated Equipment	92,162	149,134
397	Communication Equipment	87,532,827	36,448,674
398	Miscellaneous Equipment	281,076	(137,889)
	TOTAL GENERAL PLANT	125,333,122	48,585,448
101	TOTAL ELECTRIC PLANT	5,593,010,026	3,065,611,883

<u>No.</u>	<u>Account</u>	<u>Original Cost</u>	<u>Reserve for Depreciation and Amortization</u>
GAS PLANT			
302	Franchises and Consents	\$ 86,104	\$ 86,104
303	Miscellaneous Intangible Plant	713,559	526,646
	TOTAL INTANGIBLE PLANT	799,663	612,751
360.1	Land	10,205	0
361	Structures and Improvements	412,998	554,836
362.1	Gas Holders	989,283	1,012,573
362.2	Liquefied Natural Gas Holders	0	0
363	Purification Equipment	0	0
363.1	Liquefaction Equipment	0	0
363.2	Vaporizing Equipment	0	0
363.3	Compressor Equipment	558,651	612,455
363.4	Measuring and Regulating Equipment	0	0
363.5	Other Equipment	0	0
363.6	LNG Distribution Storage Equipment	407,546	316,244
	TOTAL STORAGE PLANT	2,378,682	2,496,108
365.1	Land	4,649,144	0
365.2	Land Rights	2,217,185	901,388
366	Structures and Improvements	10,680,725	6,521,000
367	Mains	119,277,525	40,500,501
368	Compressor Station Equipment	59,995,879	30,902,515
369	Measuring and Regulating Equipment	14,488,100	8,171,401
371	Other Equipment	0	0
	TOTAL TRANSMISSION PLANT	211,308,557	86,996,804
374.1	Land	102,187	0
374.2	Land Rights	7,664,372	4,359,537
375	Structures and Improvements	43,447	61,253
376	Mains	455,726,096	237,310,563
378	Measuring & Regulating Station Equipment	7,586,184	5,113,521
380	Distribution Services	217,909,501	222,751,348
381	Meters and Regulators	65,702,736	30,165,411
382	Meter and Regulator Installations	55,214,612	21,825,448
385	Ind. Measuring & Regulating Station Equipment	1,516,811	623,588
386	Other Property On Customers' Premises	0	0
387	Other Equipment	4,446,936	3,580,563
	TOTAL DISTRIBUTION PLANT	815,912,882	525,791,232

<u>No.</u>	<u>Account</u>	<u>Original Cost</u>	<u>Reserve for Depreciation and Amortization</u>
392.1	Transportation Equipment - Autos	\$ 0	\$ 25,503
392.2	Transportation Equipment - Trailers	76,210	76,210
394.1	Portable Tools	5,821,743	1,454,542
394.2	Shop Equipment	84,597	(11,139)
395	Laboratory Equipment	421,222	(166,161)
396	Power Operated Equipment	246,939	9,257
397	Communication Equipment	3,303,291	1,353,853
398	Miscellaneous Equipment	198,414	25,681
	TOTAL GENERAL PLANT	<u>10,152,417</u>	<u>2,767,746</u>
101	TOTAL GAS PLANT	<u>1,040,552,202</u>	<u>618,664,641</u>
COMMON PLANT			
303	Miscellaneous Intangible Plant	155,446,179	104,553,177
350.1	Land	0	0
360.1	Land	0	0
389.1	Land	4,980,210	0
389.2	Land Rights	2,026,582	27,275
390	Structures and Improvements	116,466,570	38,394,247
391.1	Office Furniture and Equipment - Other	21,828,937	8,058,491
391.2	Office Furniture and Equipment - Computer Equipm	63,273,171	23,492,558
392.1	Transportation Equipment - Autos	33,942	(338,930)
392.2	Transportation Equipment - Trailers	41,567	(109,545)
393	Stores Equipment	169,246	(209,071)
394.1	Portable Tools	68,328	(18,994)
394.2	Shop Equipment	319,947	117,233
394.3	Garage Equipment	2,516,104	261,491
395	Laboratory Equipment	2,129,346	848,748
396	Power Operated Equipment	0	(192,979)
397	Communication Equipment	81,697,872	43,814,198
398	Miscellaneous Equipment	3,102,219	707,163
418.1	TOTAL COMMON PLANT	<u>454,100,219</u>	<u>219,405,061</u>
	TOTAL ELECTRIC PLANT	5,593,010,026	3,065,611,883
	TOTAL GAS PLANT	1,040,552,202	618,664,641
	TOTAL COMMON PLANT	<u>454,100,219</u>	<u>219,405,061</u>
101 & 118.1	TOTAL	<u>7,087,662,447</u>	<u>3,903,681,585</u>
101	PLANT IN SERV-SONGS FULLY RECOVERED	<u>\$ (1,167,689,397)</u>	<u>\$ (1,167,689,397)</u>

<u>No.</u>	<u>Account</u>	<u>Original Cost</u>	<u>Reserve for Depreciation and Amortization</u>
102	Plant Purchased or Sold		
	Electric	\$ 0	\$ 0
	Gas	0	0
	TOTAL PLANT PURCHASED OR SOLD	<u>0</u>	<u>0</u>
105	Plant Held for Future Use		
	Electric	57,456	0
	Gas	0	0
	TOTAL PLANT HELD FOR FUTURE USE	<u>57,456</u>	<u>0</u>
107	Construction Work in Progress		
	Electric	427,860,787	
	Gas	3,172,568	
	Common	30,262,480	
	TOTAL CONSTRUCTION WORK IN PROGRESS	<u>461,295,835</u>	<u>0</u>
108.5	Accumulated Nuclear Decommissioning		
	Electric	0	513,108,308
	TOTAL ACCUMULATED NUCLEAR DECOMMISSIONING	<u>0</u>	<u>513,108,308</u>
111.3	Capitalized Leases		
	Electric	0	0
	Gas	0	0
	Common	0	0
	TOTAL CAPITALIZED LEASES	<u>0</u>	<u>0</u>
114	ELECTRIC PLANT ACQUISITION ADJUSTMENT	0	0
120	NUCLEAR FUEL FABRICATION	<u>42,534,955</u>	<u>17,334,190</u>
143	FAS 143 ASSETS - Legal Obligation	71,027,918	(477,520,099)
143	FAS 143 ASSETS - Non-legal Obligation	0	(925,896,000)
	TOTAL FAS 143	71,027,918	(1,403,416,099)
	UTILITY PLANT TOTAL	<u>\$ 6,494,889,213</u>	<u>\$ 1,863,018,587</u>

Book cost is calculated by taking Original Cost less Reserve for Depreciation and Amortization.

Appendix C

Summary of Earnings

**SAN DIEGO GAS & ELECTRIC COMPANY
SUMMARY OF EARNINGS
THREE MONTHS ENDED MARCH 31, 2005.
(DOLLARS IN MILLIONS)**

<u>Line No.</u>	<u>Item</u>	<u>Amount</u>
1	Operating Revenue	617
2	Operating Expenses	<u>550</u>
3	Net Operating Income	<u><u>67</u></u>
4	Weighted Average Rate Base	2,783
5	Rate of Return*	8.18%

*Authorized Cost of Capital

Appendix D

State/Government Service List

State of California
Attorney General's Office
P.O. Box 944255
Sacramento, CA 94244-2550

City of Chula Vista
Attn. City Attorney
276 Fourth Ave
Chula Vista, Ca 91910-2631

United States Government
General Services Administration
300 N. Los Angeles
Los Angeles, CA 90012

State of California
Attn. Director Dept of General Services
PO Box 989052
West Sacramento, CA 95798-9052

City of Coronado
Attn. City Attorney
1825 Strand Way
Coronado, CA 92118

City of Carlsbad
Attn. City Clerk
1200 Carlsbad Village Drive
Carlsbad, CA 92008-1949

City of Carlsbad
Attn. City Attorney
1200 Carlsbad Village Drive
Carlsbad, CA 92008-19589

City of Dana Point
Attn. City Attorney
33282 Golden Lantern
Dana Point, CA 92629

City of Encinitas
Attn. City Attorney
505 S. Vulcan Ave.
Encinitas, CA 92024

City of Del Mar
Attn. City Attorney
1050 Camino Del Mar
Del Mar, CA 92014

City of Escondido
Attn. City Attorney
201 N. Broadway
Escondido, CA 92025

City of Solana Beach
Attn. City Attorney
635 S. Highway 101
Solana Beach, CA 92075

City of Imperial Beach
Attn. City Clerk
825 Imperial Beach Blvd
Imperial Beach, CA 92032

City of Laguna Beach
Attn. City Clerk
505 Forest Ave
Laguna Beach, CA 92651

City of Imperial Beach
Attn. City Attorney
825 Imperial Beach Blvd
Imperial Beach, CA 92032

City of Laguna Niguel
Attn. City Attorney
22781 La Paz Ste. B
Laguna Niguel, CA 92656

City of La Mesa
Attn. City Attorney
8130 Allison Avenue
La Mesa, CA 91941

City of Lemon Grove
Attn. City Attorney
3232 Main St.
Lemon Grove, CA 92045

City of Laguna Beach
Attn. Attorney
505 Forest Ave
Laguna Beach, CA 92651

City of Lemon Grove
Attn. City Clerk
3232 Main St.
Lemon Grove, CA 92045

City of Mission Viejo
Attn City Attorney
200 Civic Center
Mission Viejo, CA 92691

City of Mission Viejo
Attn City Clerk
200 Civic Center
Mission Viejo, CA 92691

City of Oceanside
Attn. City Clerk
300 N. Coast Highway
Oceanside, CA 92054-2885

County of Orange
Attn. County Clerk
P.O. Box 838
Santa Ana, CA 92702

City of National City
Attn. City Attorney
1243 National City Blvd
National City, CA 92050

County of Orange
Attn. County Counsel
P.O. Box 1379
Santa Ana, CA 92702

City of National City
Attn. City Clerk
1243 National City Blvd
National City, CA 92050

City of Poway
Attn. City Attorney
P.O. Box 789
Poway, CA 92064

Naval Facilities Engineering Command
Navy Rate Intervention
1314 Harwood Street SE
Washing Navy Yard, DC 20374-5018

City of Poway
Attn. City Clerk
P.O. Box 789
Poway, CA 92064

City of San Clemente
Attn. City Attorney
100 Avenida Presidio
San Clemente, CA 92672

City of San Diego
Attn. Mayor
202 C St.
San Diego, CA 92010

City of San Clemente
Attn. City Clerk
100 Avenida Presidio
San Clemente, CA 92672

County of San Diego
Attn. County Clerk
P.O. Box 121750
San Diego, CA 92101

City of San Diego
Attn. City Attorney
202 C Street.
San Diego, CA 92101

County of San Diego
Attn. County Counsel
1600 Pacific Hwy
San Diego, CA 92101

City of San Diego
Attn. City Clerk
202 C St.
San Diego, CA 92010

City of San Marcos
Attn. City Attorney
1 Civic Center Dr.
San Marcos, CA 92069

City of San Diego
Attn. City Manager
202 C St.
San Diego, CA 92101

City of San Marcos
Attn. City Clerk
1 Civic Center Dr.
San Marcos, CA 92069

City of Santee
Attn. City Attorney
10601 Magnolia Avenue
Santee, CA 92071

City of Santee
Attn. City Clerk
10601 Magnolia Avenue
Santee, CA 92071

City of Vista
Attn. City Attorney
PO Box 1988
Vista, CA 92083

City of Vista
Attn. City Clerk
PO Box 1988
Vista, CA 92083

Appendix E

PRG Assessment

**Peer Review Group Assessment of SDG&E's
Proposed
2006 – 2008 Energy Efficiency Portfolio**

Prepared for Attachment to SDG&E's June 1, 2005 Energy Efficiency
Portfolio Filing under the Auspice of CPUC Rulemaking 01-08-028

May 31, 2005

***Authors: Mark Thayer
Sylvia Bender
Ariana Merlino
Christine Tam
Devra Bachrach
Michael Shames
(Rachel Harcharik participated as a PRG member, but was
unable to significantly contribute to the writing of this
assessment.)***

**PRG Assessment of SDG&E's 2006 – 2008
Energy Efficiency Portfolio**

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Attachments:

- A. Attendance Rosters for PAG and PRG Meetings prepared by Kathy Nutt***
- B. The California 2006-2008 Energy Efficiency Portfolio, A Review of Early IOU Planning Documents, May 27th, 2005 as prepared by the TecMarket Works Team acting as consultants to the CPUC's Energy Division – See pp. 31-52 for SDG&E related discussion***

PRG Assessment of SDG&E's 2006 – 2008 Energy Efficiency Portfolio

Executive Summary

The SDG&E Peer Review Group (PRG) was tasked with assessment of the overall portfolio, the third party solicitation process and evaluation criteria, and the application of those criteria in selecting third-party programs. Our assessment is based on sequential drafts of SDG&E's 2006-08 portfolio plan; the latest version received May 9, 2005. Since SDG&E has continued to revise its portfolio, some of the observations or recommendations included in this assessment may no longer be accurate relative to the portfolio that SDG&E files on June 1, 2005.

Over period of several meetings, the SDG&E PRG defined the assessment tasks, developed assessment criteria balancing cost effectiveness with other potential objectives, applied the criteria to the SDG&E proposal, identified strengths and weaknesses, and crafted a set of recommendations to enhance the proposed programs, portfolio, and third party process.

In general, we found the portfolio to be comprehensive, cost-effective, customer friendly, and innovative. In addition, we found that SDG&E was responsive to our comments regarding structuring the competitive solicitation process to encourage innovation and to improve the portfolio. Finally, The PRG expects that SDG&E will be able to meet the Commission's near-term savings targets, although we are less confident at this time (pending the outcome of the competitive solicitations) in SDG&E's ability to meet the Commission's long-term savings targets.

The PRG members also identified a significant number of potential concerns that are organized according to our assessment criteria, which include comprehensiveness, cost-effectiveness, customer relations, innovation/ market transformation, and program design/ portfolio management. In response to these concerns the PRG offers the following overarching recommendations.

- Greater effort/ funding should be expended for programs that are specifically designed to minimize lost opportunities, push the envelope and create longer-term benefits.
- Less reliance on prescriptive measures and greater reliance on the performance approach in order to encourage the installation of more comprehensive measures is needed.
- Continuous post-June 1 monitoring and input by the PRG and oversight by the Commission will help ensure portfolio success. In addition, future filings for the IOU-administered energy efficiency portfolio should contain complete details.
- The competitive solicitation process should be transparent and required to comprise 20% of the portfolio funding with EM&V included.

PRG Assessment of SDG&E's 2006 – 2008 Energy Efficiency Portfolio

- The utility must ensure that the portfolio components related to partnerships and third party programs perform in accordance with the expectations.

Introduction

D.04-05-051 defines the Peer Review Group (PRG) task as reviewing the IOU's program submittals and assessing their (1) overall portfolio plans, (2) their plans for bidding out pieces of the portfolio per the minimum bidding requirement, (3) the bid evaluation criteria utilized by the IOUs, and (4) their application of that criteria in selecting third-party programs. This report provides assessments of the first three elements listed above. The selection of the third-party bids will not take place until after the June 1 program filing.

The SDG&E PRG met seven times on March 10, April 4, 19, and 26, and May 10, 17 and 24 in the process of completing the first three of these tasks. Members of the PRG are:

- Devra Bachrach, Natural Resources Defense Council (NRDC)
 - Sylvia Bender, California Energy Commission
 - Rachel Harcharik*, ITRON
 - Ariana Merlino, Energy Division, California Public Utilities Commission
 - Michael Shames, Utility Consumers' Action Network (UCAN)
 - Christine Tam, Office of Ratepayer Advocates
 - Mark Thayer, San Diego State University
- *Rachel Harcharik attended most PRG meetings, however for personal reasons she had to stop participating at the same time we began our actual assessment and so did not have a chance to contribute significantly to this written assessment.

Our assessment is based on sequential drafts of SDG&E's 2006-08 portfolio plan, the latest one being May 9. Since SDG&E appropriately continued to revise its portfolio after the PRG completed its assessment, some of the observations or recommendations included in this assessment may no longer be accurate relative to the portfolio that SDG&E files on June 1, 2005. Wherever possible, we have included language in this assessment that reflects a consensus opinion. However, those PRG members who are procedurally permitted may submit individual comments to the Commission, or provide recommendations to the Commission that are either outside of the scope of this assessment, or that differ from certain items or recommendations included herein.

Two themes that the PRG considered critical for portfolio success guided our portfolio assessment process: avoiding lost opportunities and achieving long-term energy savings through innovation. Our first task centered on developing review criteria that we developed through group brainstorming and discussion. We reached consensus on five priority criteria appropriate for an assessment of nascent program plans. Given the

PRG Assessment of SDG&E's 2006 – 2008 Energy Efficiency Portfolio

compressed time frame, our assessment efforts were high-level rather than in-depth by necessity.

Several constraints contributed to the qualitative rather than quantitative nature of our assessment. Program proposals and measure mixes evolved throughout the review period. Some critical information, such as a comparison of proposed program savings to remaining potential and third-party performance data, arrived late in the review process or incomplete. Savings related assumptions were undergoing revision throughout our review.

In addition, the time and process that SDG&E needed for customization of the new avoided costs calculator added to the delay and uncertainty associated with some of the proposed savings numbers. Our efforts centered on reviewing the appropriateness of market sector and end-use funding allocations, the logic of proposed program designs and their associated measures, costs, projected annual savings, and cost-effectiveness ratios over the proposed three-year program cycle. No comparisons to previous evaluations of similar SDG&E programs have been made. We have not reviewed the measure detail in each program for accuracy, but have relied on a more general review of reasonableness and a search for obvious anomalies. We expect that for deep and detailed analysis, the Commission will rely upon its staff and their consultants. We recommend that the Commission consider the attached observations offered by the Tec Market Team. An excerpt of their draft report relating to SDG&E is included in Attachment "A" of this report.

The body of this report is divided into six sections. The criteria which guided the assessment are described first and then in section two are used to discuss the PRG's observations and findings related to the proposed portfolio. The likelihood of achieving the near-term savings targets and the long-term savings targets are discussed in section three. The fourth section reviews the third-party bid process and the bid evaluation criteria. In the penultimate section we cover three additional items to include a fund shifting proposal, recommendations for enhanced statewide coordination and a commentary on the PRG-PAG-utility process including commendations for SDG&E's openness and contributions to the process. Finally, in section six, we provide a summary of our overarching recommendations to SDG&E and the Commission.

As will be discussed below, the PRG believes that SDG&E should be able to achieve its short-term goals. It is not as clear that the long-term objectives will be met. We offer a number of recommendations by which the Commission and SDG&E can improve the likelihood that the long-term objectives are met and that energy efficiency funds are optimally expended.

PRG Assessment of SDG&E's 2006 – 2008 Energy Efficiency Portfolio

I. Description of Primary Assessment Criteria

Over the period of several meetings, the SDG&E PRG established a set of criteria for use in evaluating the portfolio. The PRG attempted to balance cost effectiveness with other potential objectives, including equity and innovation. The criteria are specific to the evaluation of SDG&E's portfolio and are generally consistent with those proposed by the two other PRGs. We confirmed this by mapping our set to that proposed by the SCG/SCE PRG and following the development of the PG&E set of criteria. Our criteria, listed below, represent the PRGs' top priority criteria for assessing SDG&E's portfolio, and are not intended to be a comprehensive list of criteria for the Commission's evaluation.

Comprehensiveness of Programs

- Avoids lost opportunities
- Includes equity for customers and market sectors
- Comprehensive approach (i.e. whole house)
- Consistency with remaining potential

Cost Effectiveness of Programs and the Overall Portfolio

- Cost-effectiveness ratios
- Reasonable administrative costs for each program type, and across the portfolio of programs

Customer Interface

- Simplifying the customer participation process
- Simplifying customer application for rebates
- Unifying available program options to qualifying customers
- Providing simplified and consistent packaging
- Transparency of program offerings and participation requirements

Innovation and Market Transformation

- Pushing technical envelope and pioneering new approaches toward DSM
- Includes visionary elements from Amory Lovins and other commentators
- Combine with use of competitive bid to spur innovation and improvements

Program Design and Portfolio Management

- Basis for knowing how and why expanded/new programs should be successful
- Ensuring savings assumptions are consistent and reasonable
- Coordination of program implementation to ensure there is no overlap
- Possibility / Ease of verification through protocol development
- Quality assurance
- Plan for improving the portfolio over time
- Responsiveness to PAG recommendations

Given these criteria the PRG members evaluated the entire portfolio and each individual program. In general, we found the portfolio to be comprehensive, cost-effective,

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customer friendly, and innovative. In addition, we found that SDG&E had done a good job of structuring a competitive solicitation process to encourage innovation and improvements in the portfolio in accordance with the Commission's direction. Based upon a review of the information available to the PRG at the time of our assessment, we expect that SDG&E will be able to meet the Commission's near-term savings targets, although we are less confident at this time (pending the outcome of the competitive solicitations) in SDG&E's ability to meet the Commission's long-term savings targets.

The PRG members also identified a significant number of potential problems. Our specific findings are presented below. *We focus our discussion primarily on those areas we have identified for improvement in order to provide insight into our recommendations to the Commission.*

II. Application of Primary Assessment Criteria

Comprehensiveness of Programs

The overall mix of programs seems appropriate in that most markets and measures are addressed. The PRG strongly supports SDG&E's plans to integrate the energy efficiency programs with demand response, distributed generation, and water efficiency efforts. We also support SDG&E's intention to include renewable technologies in residential information efforts and the advanced new construction programs.

The PRG identified several concerns and has developed recommendations to mitigate some of them as provided below:

- The annual program penetration (in square feet) in the non-residential new construction market has been estimated by SDG&E personnel to be approximately 30 percent. This seems too low, especially in comparison to new construction programs elsewhere (although we acknowledge the challenges for this program that California's more stringent codes represent). We suggest greater effort should be expended here in order to minimize lost opportunities.
- SDG&E has not fully explained how it plans to present integrated demand response and energy efficiency program options to the customer. This merits continued discussion, in parallel with the May 25th filing on the Advanced Metering Infrastructure.
- The PRG has conducted a preliminary assessment of the programs relative to the potential (Kema-Xenergy study) and has concluded that there are no obvious problems. However, our review was incomplete since the data was not provided until after we had nearly finished our assessment. Our assessment may have benefited had the more up-to-date and utility specific Itron Potential study been complete in time for our consideration. It also seems that additional market research would help inform the process.

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- Many programs rely on prescriptive approaches that on the one hand facilitate customer participation, but on the other hand may lack the necessary attention to the interactive effects of individual measures. For example, changes in lighting often affect both space cooling and heating demand.
- The SDG&E portfolio summary table indicates that 46 percent of KWh savings will come from lighting and the potential study conducted by Kema-Xenergy, filed as part of SDG&E's work papers in R.01-10-024, suggests that between 40 and 50 percent of the economic potential is in lighting. Although our preliminary analysis suggests that SDG&E may not have overemphasized lighting, the PRG supports a greater focus on other end-uses in order to build the capability to tap into the potential in these other markets. In addition, there is significant uncertainty about the relative contribution of lighting to the portfolio savings due to the portfolio's over reliance on two large non-residential programs (Energy Savings Bid, Small Business Super Saver) and the partnerships/third party programs to achieve these savings.
- Program incentives should be tiered appropriately to ensure both comprehensiveness (i.e. to encourage customers to adopt multiple measures) and innovation (i.e. to encourage customers to adopt the most efficient measures). SDG&E has incorporated this element in some of their programs (e.g., the multi-family program offers a bonus for installations of 3 or more measures, and both the residential and non-residential new construction programs are tiered), but it should be considered for all their programs.
- As of the date of this PRG assessment, SDG&E was planning to rely primarily on a prescriptive approach for the component of the residential new construction program that encourages projects to take a modest step beyond the state's minimum building efficiency standard. In this context, a prescriptive approach runs the danger of limiting the creativity of the marketplace to respond to the desired challenge of exceeding code and may not be the most effective use of already limited new construction funds. There should be a performance component in the residential new construction program that is designed in such a way as to ensure that the whole house approach is utilized, and that results in participating projects exceeding code by a minimum of 10-15%.
- A comprehensive portfolio should be able to adapt to changes in the marketplace as well as new opportunities to capture energy efficiency. It is not clear what process SDG&E would use to bring into their portfolio new and/or innovative initiatives within the current three-year program cycle.

We note that SDG&E's program funding appears to be heavily weighted to measures directed at commercial customers, while SDG&E's residential customers would receive an historically low percentage of funding. This is of particular note given that residential customers represent the preponderance of energy demanded in the SDG&E service territory.

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- However, we are unable to draw a definitive conclusion regarding the share of funding to be directed toward residential customers in comparison to non-residential customers for the following reason: The funding split for SDGE presented in their Attachment II summary table provides incomplete information, with 46% of the 2006 funding, and 54% of the 2006 GWh savings allocated to the category "Other". We recommend that in a future filing, and in the regularly required reports that the Commission require SDG&E to define the "Other" category and distinguish which share is residential and which non-residential.

Cost Effectiveness of Programs and the Overall Portfolio

The overall portfolio TRC ratio of 1.6 and PAC ratio of 1.4 indicate that the portfolio meets the Commission's cost-effectiveness requirement. In addition, the programmatic cost-effectiveness values seem to be roughly consistent with comparable values from previous years. The target cost-effectiveness values for the Third Party Bid solicitation are also consistent with the overall portfolio values (\$/kWh, \$/kW). This provides an important benchmark for evaluating these bids. Finally, the individual programs that have TRC values below 1.0, or that do not claim savings at all, serve important market sectors and contribute to the overall comprehensiveness and diversification needed for a successful portfolio. We recommend that these programs remain in the portfolio.

The PRG identified several concerns and has developed recommendations to mitigate some of them as provided below:

- The initial draft detailed cost/benefit spreadsheet provided by the utility contained several errors. The spreadsheet should be reviewed for quality control/assurance when filed on June 1.
- There are significant unknowns that make definitive evaluation of the portfolio more difficult. For example, some of the Partnerships do not have meaningful savings values attached. In addition, while SDG&E has assumed reasonable savings for the programs that will be competitively bid. However, the expected savings cannot be known until the programs have been selected this fall. The utility must ensure that these portfolio components perform or the cost-effectiveness of the portfolio could be in jeopardy.
- The population weighted funding mechanism for the statewide partnerships seems to unfairly punish SDG&E in that its service territory receives a less than proportionate share of the statewide savings. An allocation mechanism based on expected savings would seem to be more appropriate.
- The expectation of the PRG is that *administrative* costs should diminish over time and as programs mature. Administrative costs should be monitored at regular

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intervals throughout the three year program cycle. We recommend that administrative costs be monitored at the program and portfolio level both for reasonableness and to determine whether SDG&E is making efforts to reduce their administrative costs. This oversight would be in addition to any financial audits conducted by the CPUC staff or their consultants.

- SDG&E has not provided adequate explanation for their programs' funding trajectories. Some are steady across the 3-year cycle, while others ramp up to double the initial funding. This point is especially relevant when comparing the Standard Performance Contract and the Energy Savings Bid programs. The program statements indicate that these programs address the same barriers, are directed at the same customers, and utilize incentives in the project planning phase. Yet the funding trajectories are markedly different. Additional explanation would be useful in guiding the CPUC's assessment of potential risk associated with these differences
- The PRG is largely uncertain about the individual components of the cost-effectiveness estimates provided. For example, updates to measure cost and effective useful life values in the Database for Energy Efficient Resources (DEER) are being updated as the programs are being planned. In addition, the CPUC recently adopted new avoided costs. As these values change both the program and portfolio cost-effectiveness figures could potentially be affected in a negative manner. This requires continuous monitoring so that the portfolio remains cost-effective.
- Any changes in funding of programs may have an impact on cost-effectiveness. Thus, whenever SDG&E shifts monies into or out of programs, or from one budget category to another, it should be required to calculate the cost-effectiveness impact of that funding shift and include those calculations in their regular reporting to the CPUC.

Customer Interface

SDG&E has made a concerted effort to package its programs in a customer friendly manner. It has reduced the number of individual programs to reduce customer confusion, while maintaining the ability to address individual customer needs. For example, combining several initiatives into the Energy Savings Bid program allows individualized marketing and outreach areas but does not overly constrain the utility to specific spending patterns. In addition, by integrating the efficiency programs with demand response, distributed generation and water efficiency, the planned portfolio has the opportunity to greatly simplify customers' decisions about controlling their energy bills and reducing their environmental impact. While SDG&E focused more of its attention in this pre-June planning period on the details of the programs and less on how the programs will be presented to customers, the PRG supports SDG&E's plan to continue working with the PAG after June 1 to ensure that customers can easily access energy efficiency offerings.

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The PRG identified several concerns and has developed recommendations to mitigate some of them as provided below:

- The various non-residential programs may provide a potential for gaming, both within a program and across programs. For example, the Small Business Super Saver program is projected to allow a range of incentives and on-bill financing on a sliding scale. The scale is unknown at present. If the scale remains undefined, individual customers could receive excessive incentives, relative to the contribution to savings. This is also a potential problem across the larger non-residential programs, especially with respect to the Standard Performance Contract program and the Energy Savings Bid program. Specifically, customers might forum shop in search of the largest incentives, thereby potentially undermining the cost-effectiveness of the programs.
- There was inadequate discussion of marketing and outreach coordination with the statewide programs and how SDG&E plans to use the Internet and other media outlets to market their programs.
- As discussed in more detail in the Program Design and Portfolio section below, the PRG notes that the success of the newly proposed customer interface approach will be contingent upon the manner in which SDG&E reorganizes itself internally (e.g. resources dedicated to expanding and training customer representatives, interaction between program staff and customer service staff.) The utility has provided no detail regarding its internal organization, but should be required to, and is expected to do so as part of its June filing.

Innovation and Market Transformation

Similar to our assessment of the customer interface criterion, our conclusion is that SDG&E has made a concerted effort to include innovative programs in the portfolio. For example, Advanced Home, Home Energy Consumption Tool, On-Bill Financing, Sustainable Communities, Advanced Home Renovation, and Expedited Building Processing are all innovative programs. In addition, the partnership with the San Diego County Water Authority provides important synergies between energy and water efficiency. The PAG/PRG process was quite effective in both identifying innovative paths and in encouraging the utility to focus on multiple objectives. We recommend that this process continue indefinitely so that ideas have a forum and the utilities' decision process is transparent.

Finally, the increased level of innovation has not reduced SDG&E's ability to meet its short-term and long-term savings targets. Thus, the portfolio is balanced in the area of concurrently providing for innovation and meeting savings objectives.

The PRG identified several concerns and has developed recommendations to mitigate some of them as provided below:

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- To effectively reach the savings targets and satisfy other related objectives, innovation should be directed at overcoming market barriers, such as performance reliability or split incentives. There is inadequate detail in the information provided for the rationale, strategies and implementation related to the innovative programs that would provide a link to specific market constraints or conditions.
- The Small Business Super Saver and Energy Savings Bid programs have the potential to be innovative in the types of facilities served or the types of measures installed. However, we lack confidence in these two programs reaching their savings targets, particularly since the targeted markets have had diminishing levels of participation over the last several years.

Program Design and Portfolio Management

The overall program design and portfolio management elements seem generally well designed, in that there is balance between energy savings and innovation. In addition, SDG&E had designated a number of staff to lead the portfolio development process, enabling the PAG and PRG to address relevant issues at the portfolio level (this is crucial instead of only discussing program-level issues with program managers). The PRG also supports SDG&E's plan to continue working with the PAG to improve the programs and the overall portfolio over time.

The PRG identified several concerns and has developed recommendations to mitigate some of them as provided below:

- In many instances, the program concept papers are vague in explaining how and why the program should succeed, and the rationale for and the measures of success are ill defined. For example, the Advanced Home Initiative program, while laudable, is currently a broad and speculative listing of potential avenues of exploration. The Energy Savings Bid program relies almost entirely upon the marketplace to shape the savings with little or no direction or guidance from the utility. The Small Business Super Saver provides another example. The program implementation and strategies are not linked to any market research evidence that explains how and why the redesign will overcome declining participation among 20-100kW customers.
- During the PAG and PRG process, SDG&E provided little information on portfolio level data such as the residential versus non-residential funding split, the coordination of the statewide activities, savings by end-use, and the role that the statewide partnerships will ultimately play in achieving the program goals. While some of this information is available to the PRG in SDG&E's draft portfolio application, there should be an increased emphasis on these portfolio-level issues at PAG and PRG meetings.

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- It is premature for the PRG to address the issue of program overlap since the competitive solicitation is not complete. In addition, the PRG supports SDG&E's plan (discussed at several PAG meetings) to consider replacing a program within the portfolio filed on June 1st if a competitively bid program can improve upon it. Based on the written material the PRG has to date, however, it is unclear how SDG&E will evaluate third party proposals that duplicate programs, offered by either the IOU or non-IOU entities, already in their June 1st portfolio.
- The Partnerships seem to have some duplicative elements (e.g., education and outreach, interaction with the San Diego Regional Energy Office, etc.) that would benefit from larger scale cooperation and coordination.
- The manner in which the portfolio is to change over time remains undefined. The criterion for implementing program/portfolio and corresponding funding changes should be more explicitly discussed. We also suggest that the PAG/PRG advisory processes remain active for the foreseeable future, so that those groups might provide feedback for continuous improvement of the portfolio.
- The program concept papers contain insufficient discussion of either long-term goals or of exit strategies for successful programs, where market transformation or a specific saturation level defines success. Long-term goals are important for focusing efforts and gauging progress while exit strategies are important for market stability.
- It remains difficult to adequately address the validity of the savings estimates due to incomplete information at the time of this PRG assessment. In addition, as indicated above, there is uncertainty regarding individual components of the savings estimates provided. For example, there is no description of why the therm savings are markedly lower in the first year of the Single Family Rebate program than in subsequent years, especially since other aspects of the program are relatively stable. A thorough investigation would be required before the PRG would be able to unreservedly endorse approval of the portfolio.
- Upstream Lighting, and other programs that will rely upon point-of-purchase rebates and other mid or upstream incentives, should incorporate design elements that will minimize free-ridership, and allow for customer tracking such that savings can be verified and evaluated (e.g. in store mail-in rebates.) This will become particularly important as greater savings are derived through point-of-purchase activities.
- Organizational structure and organizational development are aspects of SDG&E's plan which we consider critical factors in providing for portfolio success. The utility has provided little in the way of describing how it will organize itself internally to ensure the following: 1) Meet their robust energy savings targets; 2) Increase responsiveness to customers and program participants; 3) Minimize administrative costs while maximizing value to the program participants; 4)

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Ensure a timely and fair competitive solicitation and a balanced contractual relationship that includes strong and fair oversight and 5) Manage their programs as a portfolio, rather than as individual programs. We recommend that the Commission require SDG&E to define and describe how their internal structure will be developed and enhanced in order to meet these objectives.

III. Conclusions Regarding Ability of Portfolio to Meet Near and Long-Term Savings Targets

Near-Term Savings Targets

The PRG has concluded that, in the near-term, the portfolio proposed by SDG&E will likely be successful in meeting the targeted savings. This conclusion is based on the following considerations. First, the savings estimates are constructed using established procedures. Second, a majority of the funding and corresponding savings is associated with programs that have a proven track record (e.g., upstream lighting, large non-residential projects using either the standard performance contracting or the customer bid programs). Third, even before accounting for savings from third-party and partnership programs, SDG&E's proposed portfolio would exceed the CPUC goals by approximately 5 – 28 percent. This finding applies to kWh, kW, and therm targets. This buffer should allow the SDG&E portfolio to be successful, even if unforeseen circumstances arise.

However, the success of the overall portfolio is clearly dependent on three specific programs (Upstream Lighting, Small Business Super Saver, and Energy Savings Bid). While we are confident that the Upstream Lighting program will perform as expected, so long as the program is designed in such a way as to minimize free-ridership and allow for customer tracking in such a way that savings can be evaluated and verified, we lack the detailed information required to evaluate the latter two programs. The Small Business Super Saver program seems particularly problematic given that history indicates this is a difficult market to serve, there has been limited attention to the vendors (quantity and quality remain questionable) that are supposed to serve the market, and the magnitude of savings expected from this market segment. (SDG&E and other implementers have successfully reached this market segment during the 04-05 program cycle, but the proposed program will attempt to capture nearly five times the savings of the current set of programs.)

Long-Term Savings Targets

The PRG has concluded that, in the longer-term, the portfolio proposed by SDG&E will have some difficulty meeting the targeted savings goals. This conclusion rests primarily on the finding that only 11 – 15 percent of the funding is associated with programs that create mid-term or long-term savings (e.g., new construction, codes and standards, emerging technology, innovative programs such as Advanced Home and Sustainable Communities). SDG&E's saving targets will be about 30% higher in the next cycle than in this cycle.

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The long-term performance of the portfolio can be enhanced if the utility undertakes the following efforts. First, SDG&E should require that a significant portion of the Third Party Bid program be focused on longer-term initiatives (note that this can be accomplished through appropriate weighting of the relative components in the bid applications). Second, SDG&E should consider increasing the funding for programs such as Advanced Home, Sustainable Communities, Savings by Design, etc. that are specifically designed to push the envelope and create longer term benefits. A potential source for this increased funding would be some of the statewide partnerships that at present have questionable cost-effectiveness. Third, SDG&E should provide an explicit description of how the portfolio realizes the twin SDG&E objectives of "hard savings now" and "future savings stream". Program designs should clearly describe how a program contributes to this continuum of current and future savings.

IV. Conclusions and Recommendations on Third Party Bid Solicitation Process

The PRG reviewed SDG&E's proposed areas for targeted solicitations, the proposed process for soliciting third party bids, and the amount of portfolio funding allocated to the competitive solicitations. In general, we found the proposed process to be fair to potential bidders and to allow for both traditional and innovative approaches to saving energy. In addition, we generally support SDG&E's selected areas for targeted solicitations and believe that these will contribute to improvements and innovation within the portfolio. Further, as we discussed above, we support SDG&E's stated plan to consider replacing a program within the portfolio filed on June 1st if a competitively bid program can improve upon it. The following concerns remain.

- The funding allocated for the competitive solicitations is equal to 19% of the portfolio funding, when the EM&V funding is included in the total portfolio funding. Excluding the EM&V funding from the total, the funding for competitive bids equals 20% of the portfolio. We recommend that SDG&E begin the solicitation process with 20% of total portfolio funds (including EM&V funding) allocated to the competitive solicitations.
- The targeted solicitation should be expanded to include several other elements. Specifically, we recommend that building operator certification, retro- or continuous-commissioning, and real estate related time-of-sale (e.g., inspections, mortgages) programs be included in the targeted solicitations. These areas hold the potential to provide substantial long-term savings. The first stage screening process described in the draft portfolio application provided to the PRG seems to be too subjective. We recommend that SDG&E define the criteria that the utility will use in screening Stage I submissions.
- Registration should not be a pre-requisite for the right to bid into the competitive solicitation.

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- There is no established time line for the bid solicitation process. The absence of a time line could prevent the third party programs from being implemented at the beginning of the program year. This could have potentially negative consequences for portfolio cost-effectiveness in both the short and long-term.
- SDG&E's proposed bid evaluation criteria provides a detailed breakdown of the criteria it proposes to use in evaluating individual bids, and states that the utility's portfolio managers will ensure that all programs and technologies fit into SDG&E's overall portfolio. This proposed bid selection process provides inadequate detail on the portfolio-level criteria SDG&E will use to evaluate bids and assemble the final portfolio. We suggest that SDG&E further clarify these portfolio-level criteria, such as ensuring that the portfolio is cost-effective, comprehensive, reaches a diversity of target markets, does not result in overlapping or competing programs, adequately lays the groundwork for reaching the Commission's long-term savings targets, etc.
- We are concerned that the weighting of the draft selection criteria presented to the PRG will not achieve the stated objectives of providing for innovation and long-term savings that the utility might not achieve in the absence of a competitive solicitation. In particular, the PRG proposes to place more emphasis on innovation, since one of the primary purposes of the competitive solicitation process is to spur innovation. As such, the PRG recommends the weighting presented in the tables below.

PRG Proposed Bid Evaluation Criteria

Targeted Program Solicitation: Resource Programs

Criteria	Weights
Proposal Responsiveness Includes financial stability, proof of applicable licenses	pass/fail
kWh and kW Savings	30%
Cost Effectiveness (Levelized Costs, TRC/PAC Tests) Budgets: administration, direct implementation, marketing, and outreach	25%
Program Implementation Description of program strategy, description on how it fits into the portfolio, address final PRG priorities, includes skills and experience, qualifications, delivery track record, etc.	25%
Program Innovation Sound program logic/theory demonstrating how program design and objectives are innovative consistent with CPUC objectives	15%
Minimizing Lost Opportunities	5%

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Targeted Program Solicitation: Non-Resource Programs

Criteria	Weights
Proposal Responsiveness Includes financial stability, proof of applicable licenses	pass/fail
Budgets Administration, direct implementation, marketing and outreach	30%
Program Implementation Description of program strategy, description on how it fits into the portfolio, address final PRG priorities, includes skills and experience, qualifications, delivery track record, etc.	35%
Program Innovation Sound program logic/theory demonstrating how program design and objectives are innovative consistent with CPUC objectives	25%
Minimizing Lost Opportunities	10%

Innovative Program Solicitation: Resource Programs

Criteria	Weights
Proposal Responsiveness Includes financial stability, proof of applicable licenses	pass/fail
kWh and kW Savings	20%
Cost Effectiveness (Levelized Costs, TRC/PAC Tests) Budgets: administration, direct implementation, marketing & outreach	20%
Program Implementation Description of program strategy, description on how it fits into the portfolio, address final PRG priorities, includes skills and experience, qualifications, delivery track record, etc.	20%
Program Innovation Sound program logic/theory demonstrating how program design and objectives are innovative and consistent with CPUC objectives; potential for long-term savings	35%
Minimizing Lost Opportunities	5%

Innovative Program Solicitation: Non-Resource Programs

Criteria	Weights
Proposal Responsiveness Includes financial stability, proof of applicable licenses	pass/fail

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Criteria	Weights
Budgets Administration, direct implementation, marketing and outreach	25%
Program Implementation Description of program strategy, description on how it fits into the portfolio, address final PRG priorities, includes skills and experience, qualifications, delivery track record, etc.	25%
Program Innovation Sound program logic/theory demonstrating how program design and objectives are innovative and consistent with CPUC objectives; potential for long-term savings	45%
Minimizing Lost Opportunities	5%

Emerging Technology Commercialization Solicitation: Resource Programs

Criteria	Weights
Proposal Responsiveness Includes financial stability, proof of applicable licenses	pass/fail
kWh and kW Savings	20%
Cost Effectiveness (Levelized Costs, TRC/PAC Tests) Budgets: administration, direct implementation, marketing & outreach	20%
Program Implementation Description of program strategy, description on how it fits into the portfolio, address final PRG priorities, includes skills and experience, qualifications, delivery track record, etc.	20%
Program Innovation Sound program logic/theory demonstrating how program design and objectives are innovative consistent with CPUC objectives	35%
Minimizing Lost Opportunities	5%

V. Additional Items for Commission Consideration

We considered three additional items that were outside the scope of the primary criteria that we used to evaluate the SDG&E portfolio. Those items include 1) fund shifting, 2) statewide coordination and 3) the process and working relationship that encompassed

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PRG-PAG-SDG&E interactions. We offer recommendations for items one and two, and observations for the third.

Fund Shifting

With a few exceptions (notably Codes and Standards, Emerging Technologies, EM&V, relative IOU versus non-IOU funding), SDG&E has proposed unlimited fund shifting - within programs, across budget categories (e.g. direct implementation to administration) across programs, across time, etc. In general, the PRG members conceptually support fund-shifting flexibility that will enable SDG&E to meet the Commission's savings targets. However, we consider limits on fund-shifting flexibility are necessary. In part, we consider such limits to be necessary because some of the program details, including cost-effectiveness information, remain vague, and in particular, we wish to ensure that SDG&E maintains an appropriate balance between programs that will provide near-term and long-term savings. We are also concerned that the utilities' administrative costs not exceed what is necessary to effectively run their programs, even if they can pass the cost-effectiveness tests.

The reader will please note that although the other PRG members support the following recommendation, it is not endorsed by Energy Division, although ED staff support the principle of placing limits on the utilities' fund shifting flexibility.¹

The SDG&E PRG members seek a role expanded from what the Commission has thus far indicated. We feel that a continued and somewhat expanded role will allow for continued interaction between the utility and a non-financially interested group who have a demonstrated ability to work cooperatively with one another. The PRG members and SDG&E staff have in a short period established a strong and responsive relationship that we believe will allow us to positively influence the direction that SDG&E sets for its energy efficiency portfolio as the utility embarks upon implementation over the next three years.

We believe that the PRG should meet at least quarterly, and more often if necessary, to review and consult with the utility regarding their program implementation, redesign, and portfolio adjustment. We further believe that the PRG could assist the utility in making decisions about fund-shifting, and serve as a filter for SDG&E's proposed fund shifting in

¹ Energy Division does not wish to impinge upon the PRG's freedom to request an expanded role, or to request that it be vested with the following responsibility. However, Energy Division may deem it as part of its responsibility to advise the Commission to make a recommendation on a fund-shifting request and approval process that differs from that suggested below. Energy Division has not yet determined what the staff position will be as it has not yet reviewed the filings or yet consulted with Commission decision makers on their desired level of staff oversight of utility portfolio administration and expenditures. ED, however, has concerns about the feasibility and propriety of the recommended process. Energy Division does not wish to either undermine the PRG process by seeming obstructionist or appear duplicitous. For those reasons, Energy Division chooses not to take a position in this assessment on the fund-shifting flexibility that should be granted, or the process that should be undertaken to grant exceptions to any restrictions the Commission decides to place upon fund-shifting.

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those areas that the Commission determines it does not need to reserve for its own direct intervention and resolution.

To that end, we recommend the following changes to SDG&E's fund shifting proposal -

If any of the thresholds listed below are reached, SDG&E should consult with the PRG at least 15 days prior to its proposed action. If the PRG reaches consensus (without objection from any member) in support of the utility's proposed action, then no formal PUC process is needed (other than complying with the Commission's reporting requirements). If such consensus is not reached by the PRG, then the utility should be required to file an Advice Letter. We discussed, and were unable to conclude how the Commission would be notified that the utility had proposed and obtained consensus approval from the PRG on any given fund-shift request. However, we recognize that such a process would be important.

We recommend that the above process would be triggered if SDG&E's proposed action exceeds the following thresholds:

- Administrative costs exceed 105% of the approved costs at the portfolio level.²
- Fund shifting from any one program into or from other programs will exceed 25% OR \$3 million, whichever is less, on an annual basis.
- Fund shifting from any one program into or from other programs will exceed 50% on a cumulative basis over the three year program cycle.
- Funding for codes and standards, emerging technologies, statewide marketing and outreach, or EM&V is reduced by any amount.
- The percent of portfolio funding allocated to non-utility implementers falls below 20% of the approved annual portfolio budget.
- A new program is implemented outside of the competitive solicitation process.

As much as possible, the utility's consultations with the PRG should occur at quarterly meetings, but SDG&E would not be precluded from bringing items to the PRG at other times using means of communication such as e-mail, conference calls, or meetings. At the quarterly PRG meetings, SDG&E should review the status of the programs and the portfolio with the advisory group, and discuss any funds shifted within that period.

Other than the guidelines outlined above, and so long as the Commission is confident that the utility's portfolio is likely to achieve the stated objectives, the PRG encourages the Commission to grant SDG&E adequate flexibility to the utility so that they will be able to respond to changing circumstances while administering a portfolio of programs that

² By "administrative costs" we refer to administrative costs as defined by the Commission approved budget break down, rather than the definition of administrative costs used in the TRC test.

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meets or exceeds the Commission's energy saving targets. We believe that a continued and active role of the PRG will provide needed oversight of SDG&E's efforts to recalibrate its portfolio such that energy savings and other defined objectives are attained.

Statewide Coordination Between the Four Utilities

One area that was shortchanged in this past round of PAG meetings is statewide coordination. In D.0501055, the Commission directed the IOUs to form subgroups of their PAG members to closely collaborate and coordinate on statewide programs that cut across the IOU service territories. As part of statewide coordination, the Commission has instructed PAGs and IOUs to collaborate on statewide program designs and implementation strategies that increasingly integrate energy efficiency with demand response and distributed generation offerings to end-users. We believe that at a minimum the following benefits could be realized if the utilities were to follow the direction provided by the Commission regarding statewide coordination: 1) improved program design and 2) shared procurement strategies and qualification criteria between the four IOU administrators that lead to reduced costs or increased program effectiveness. In specific terms: Program savings can be achieved by pooling resources to achieve common objectives or increase statewide buying power for certain items. Program effectiveness can be achieved by making it easier for program participants who function in multiple utility territories to participate in programs if the utilities were to agree upon and provide for similar or identical eligibility requirements, installation specifications, financial incentives, contractual obligations, participation agreements and incentive application. While the IOUs have begun the process of addressing statewide coordination issues (two statewide PAG meetings have been held to date on April 7 and April 29th), the PRG believes that the process is far from complete. The proposed SDG&E portfolio is largely the product of regional planning and is lacking details on statewide coordination. One such example is SDG&E's plan to competitively bid out the Upstream HVAC/Motor Distributor Rebate program. It remains unclear how SDG&E will coordinate such an upstream program targeting manufacturers and distributors with the other IOUs to best leverage their market power. Given the lack of discussion in coordinating statewide program designs, the PRG is unable to provide meaningful assessment at this point. We recommend that the Commission direct the IOUs to continue the discussion with their PAG members and provide more details in their subsequent filing to the Commission. and cover, at a minimum, the following items:

1. Statewide Marketing and Outreach

This would consist of a joint plan on statewide marketing and outreach initiatives. The plan should address the following: co-branding with third party programs, coordination with both IOU and non-IOU program-specific marketing activities (particularly for non-resource programs), and marketing targeted at hard-to-reach and in particular multi-lingual program participants.

SDG&E has only stated in very broad terms that the utility will participate in a statewide marketing and outreach effort, and that it intends to sole source the work to the current

PRG Assessment of SDG&E's 2006 – 2008 Energy Efficiency Portfolio

providers. The utilities have all allocated large budgets with little or no detail to demonstrate how this funding will be used to support their portfolio goals. We recommend that SDG&E negotiate beneficial terms with their intended providers and know what they will be getting before committing to any budgets or contracts. The developed plans should be made part of a future filing, and the implementation part of the SDG&E's regular reports to the Commission.

2. Upstream Initiatives

The IOUs should coordinate upstream programs targeting manufacturers, distributors and retailers to leverage their combined market power. SDG&E currently plans to solicit bids for an Upstream HVAC/Motor Distributor Rebate program. SDG&E has not specified how they will coordinate their efforts, including interaction and negotiations with upstream participants and customer tracking methods, with those of the other utilities. We suggest that the utilities jointly pursue any upstream efforts, or designate a single third-party to represent all of the utilities in the negotiation and implementation process.

3. Customer Incentives and Implementation Contracts

Historically, contractors and service providers have been able to hold utilities' feet to the fire and demand increasingly higher incentives and payment for their work. The utilities should coordinate their incentives on a continual basis, and offer comparable incentives across service territories. Incentives should only differ if the benefits they provide vary across utility territories - e.g. climate differences, higher grid vulnerability. Utilities should develop a process within which they will regularly meet and agree upon those instances where their incentives will differ across utility territories, and by how much.

Similarly, varying contracting rules across utilities have created circumstances wherein some service providers and contractors have been subject to various degrees of stringency in contract terms and contract management. This divergence in contract terms and implementation standards has served to undermine the viability of some programs in certain services territories, has resulted in confusion and frustration among contractors and service providers, and has led to cases of abuse and misuse of ratepayer funds. We recommend that the Commission require the utilities to work together to develop a set of standard contracts that will be used across utility territories.

SDG&E's service territory, being the smallest, is particularly vulnerable to the difficulties that arise from competing incentive levels and varying contractor and service provider terms.

During the Statewide PAG meeting, the utilities have already committed to take on the above coordination approaches and we strongly support those efforts be continued. We recommend that the utilities use these and other methods to protect against the scenario of any utility's success with achieving their energy savings targets being compromised by

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the actions of another utility. SDG&E should report on the results of these efforts in an upcoming filing and in their regular reports to the Commission.

4. Integration of Energy Efficiency, Demand Response and Distributed Generation

Integration of demand-side programs is a new concept that could affect all market sectors. In exchanging ideas and soliciting comments from PAG members, we expect that the IOUs will be able to produce a more concrete strategy that delivers demand-side programs at the most cost effective manner while providing clear and effective customer guidance.

5. Emerging Technology

A detailed plan for the 2006-08 Emerging Technology program that includes a target list of technologies/software/services to be explored over the next three years. The target list should include the trajectory, or number of years, to commercialization of each item along with estimated potential savings ranges that are anticipated to result from each technology.

6. Codes & Standards

The IOUs should jointly develop a detailed plan for the 2006-08 Codes & Standards program. The plan should include a target list of case studies, projected timeline for adoption by the CEC, and the estimated aggregate savings.

Comments on the Process and the Working Relationship

SDG&E surpassed the expectations of many PRG members with their willingness and ability to be as responsive as they were to the questions and information requests that came from both the PRG and PAG, which we particularly appreciated given the constrained timeframe that was available to all involved. SDG&E assembled a diverse group of stakeholders that fairly and comprehensively addressed varying interests and perspectives. SDG&E welcomed the PAG members' and the public's input, and did not become defensive in the face of sometimes tough questions and criticism. The utility made a good faith effort to ensure that all voices were heard, and responded to PAG requests including scheduling sub-group meetings and additional PAG meetings to make sure that members and the public had ample opportunity to provide input. In addition, SDG&E was very responsive to recommendations offered by PAG or PRG members. SDG&E responded positively to approximately three-fourths of the recommendations and was still considering the other one-quarter by last count. So far, in only one case was a recommendation rejected.

SDG&E provided nearly all of the responses and data requested by Energy Division on behalf of the PRG and PAG, and directly by those groups. Of particular help, program

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staff, in addition to high level management, were available to the PAG and the PRG at any meetings where their presence was requested by the groups or thought useful by SDG&E management. In addition, the utility was gracious in providing a wonderful note taker for both the PRG and PAG meetings. The utility was asked, and agreed to provide its plans in all stages of development. This assisted the PAG and PRG in seeing how they were influencing the refinement of the utility's portfolio.

For the PRG's and PAG's part, the members showed dedication and for the most part a great deal of mutual respect. The groups' participants were assertive, asked intelligent questions, and provided many and diverse positive and thoughtful recommendations. It also became clear through these meetings how critical the distinction between the PAG and the PRG became in terms of how recommendations were made. The strength of the PAG was clearly in the area of program design and portfolio enhancement and re-calibration. The smaller, more focused PAG meetings were especially productive. On the other hand, the PRG was essential in terms of providing a more critical view of how the portfolio was developed, and was able to present a more objective inquiry into and analysis of the utility objectives. Though some PRG members entered the process thinking that it was impossible, we seem to be ending on a positive note of mutual respect and with a feeling that we have done good work, particularly given the constrained resources and time at our disposal.

There were some areas that caused a degree of stress for at least some participants. The most critical of those would likely be the compressed time schedule that we were under, and the numerous meetings we needed to attend. Participants have expressed concern that some variables continued to change even after our work as a group was done, such as energy savings assumptions, partnership negotiations and utility organizational development. The group also would have liked to better advantage itself of the Energy Division consultant's work which would have been possible given a more relaxed schedule. In addition, we are left feeling uncertain as to how meaningful our efforts will become once the utility begins to implement its programs.

VI. Summary of High-Level Recommendations to SDG&E and the Commission

Given our assessment of SDG&E's portfolio proposal we have the following overarching recommendations:

- Expend greater effort on non-residential new construction in order to minimize lost opportunities
- Consider increasing the funding for programs such as Advanced Home, Sustainable Communities, Savings by Design, etc. that are specifically designed to push the envelope and create longer term benefits

PRG Assessment of SDG&E's 2006 – 2008 Energy Efficiency Portfolio

- In the New Construction sector, decrease reliance on prescriptive measures and expand reliance on the performance approach in such a manner as to encourage the installation of more comprehensive measures
- Implement continuous post-June 1 monitoring and input by the PRG and oversight by the Commission to ensure the following:
 - Balanced programs across customer classes, market sectors and end uses
 - Review of fund shifting proposals
 - Prudent expenditures
 - Continued improvement of program design and implementation that reflect market research results and updates to planning assumptions
 - Appropriate use of alternative incentive designs – that ensure associated savings can be verified and that free-ridership is minimized
 - Transparent decision processes
 - On-going creativity/innovation
 - Innovative programs focused on relevant market barriers
 - Accurate tracking of program costs, including administrative costs
 - Feedback on and consequent improvement of the utility's customer-interface
 - Close coordination on statewide initiatives, particularly for upstream rebate programs, as well as the integration of energy efficiency with demand response and distributed generation program offerings to end-users.
- Ensure that at least 20% of the portfolio funding is available through the competitive solicitations, and that the timeline, the criteria for the first stage screening, and the portfolio-level criteria are clear to potential bidders.
- The utility must ensure that the portfolio components related to partnerships and third party programs perform in accordance with the expectations
- Alternative funding schemes for statewide partnerships should be considered, given that the importance of statewide coordination is well established [CT: not sure what this means]
- Future filings for IOU-administered energy efficiency portfolio should contain a complete description of the following items:
 - Program objectives versus market potential
 - Program funding trajectories across time
 - Program theory, design, and rationale
 - Sufficient discussion of long-term goals and exit strategies
 - An explicit description of the connection between hard savings now and the future savings stream
 - Organizational structure and staff resources – and how those have been enhanced and changed from current practice

**PRG Assessment of SDG&E's 2006 – 2008
Energy Efficiency Portfolio**

- Statewide coordination of customer interface , program offerings and marketing

2005 SDG&E PRG Members and Attendance

Members	PAG #1	Supp PAG	PAG #2	PubWkshp	PAG #3	PubWkshp	SubComm	PRG #1	PAG #4	PRG #2	PA Getto	PA Getto	PA Getto	PA Getto	PA Getto	PA Getto	PA Getto	PA Getto	PA Getto			
	Feb 10	Feb 24	March 1	March 3	March 21	March 28	March 29	April 4	April 14	April 19	April 21	April 21	April 21	April 21	April 21	April 21	April 26	April 26	April 26	May 10	May 17	
Devra Bachrach, Environmental/NRDC	X							X	X												X	X
Sylvia Bender, California Energy Commission	X	X	X		X			X	X	X											X	X
Rachel Harcharik, ITRON		X	X		X			X	X	X											X	X
Ariana Merlino, CPUC Energy Division (CHAIR)	X		X		X			X	X	X											X	X
Michael Shames, Utility Consumers' Action Network		X	X	X	X		X	X	X	X											X	X
Christine Tam, Office of Ratepayer Advocates	X	X	X		X		X	Phone	X	Phone											Phone	Phone
Dr. Mark Thayer, Academia/San Diego State Univ.	X	X	X		X			X	X	X											X	X

Others	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	
Tim Drew, CPUC Energy Division																						
Nick Hall, TechMarket Works																						
Zenaida Tapawan-Conway, CPUC Energy Division																						

SDG&E Staff	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone	Phone
Chuck Angyal, SBD/Normes New Construction Mgr.																						
Athena Besa, EE Admin & Policy Mgr./Mass Markets																						
Gerry Foote, Residential New Construction Mgr.																						
Michael Guin, Customer Assistance Mgr.																						
Alex Kim, Sustainable Communities Mgr.																						
Patti Wagner, Director of Mass Markets																						
Sandra Williams, Res/Normes/C&I EE Mgr.																						
Joy Yannagata, Energy Efficiency & Regulatory Mgr.																						

Draft Report For the CPUC-ED and the PRG's

**The California 2006-2008
Energy Efficiency Portfolio**

A Review of Early IOU Planning Documents

May 27, 2005

Prepared for

CPUC Energy Division
505 Van Ness Avenue
San Francisco, CA 94102

Prepared by:

Nick Hall, TecMarket Works
Sharyn Barata, Opinion Dynamics
Ken Keating, PhD
Lori Megdal, Megdal & Associates
Rick Morgan, Morgan Marketing Partners
Ed Vine, PhD



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Introduction

This document presents the results of a preliminary review of California's statewide and IOU energy efficiency portfolios submitted to the TecMarket Works Portfolio Review Team. The documents reviewed were provided to the review Team between May 10 and May 20, 2005, prior to the June 1, 2005 formal portfolio filing. The TecMarket Works Team is under contract to the CPUC to review and provide advice to the California Public Utilities Commission - Division of Energy (CPUC-ED) regarding the ability of the portfolios to meet the energy savings targets provided to the IOUs in decision D0409060/R0108028. The review also consists of the identification and discussion of a number of issues of importance to the CPUC-ED staff.

Through the review of the portfolio and program materials by the TecMarket Team (Team) and by other groups examining the portfolios (PAGs and PRGs), the CPUC is able to conduct a more informed or expanded assessment of the IOU portfolio and portfolio construction process. In addition, this review provides the IOU-Program Review Groups (PRGs) with information they can use to assess the IOU portfolios. The PRGs may use portions of this report in their PRG report to be provided on or about June 1, 2005.

This process provided the Team a very limited amount of time to conduct the review. As a result, this review is not an exhaustive review, but does present and discuss many of the issues and concerns identified by the CPUC-ED staff during project planning meetings. The primary issues and concerns identified by the CPUC-ED staff include:

- ✓ The portfolio's ability to reach energy goals,
- ✓ The reasonableness of the savings projections,
- ✓ The coverage of the programs in the portfolios,
- ✓ The range and magnitude of administrative costs,
- ✓ Lost opportunities that can be identified during the review,
- ✓ The various risks associated with the programs and the portfolios,
- ✓ The relative balance between the budgets and the programs offered,
- ✓ Other issues that can be identified by the Team during the review process.

These review objectives focused the Team's efforts and allowed the Team to assess the portfolio and the mix of programs offered in time to meet the CPUC's review timelines.

Methodology

This assessment was conducted under a compressed review period and covered a wide range of IOU-provided documents. The review approach consisted of 5 sequenced steps:

1. Participation in key PRG and PAG meetings in California, including IOU PAG and PRG and statewide PAG and PRG meetings.
2. Participation in discussions and presentations of the portfolios by IOU portfolio managers.
3. Discussions with CPUC-ED managers concerning components of the material provided for review between May 10 and May 20, 2005.
4. Team reviews and discussions of portfolio documents, including descriptive documents in addition to energy and cost projections (spreadsheets and EZ-Calculators).
5. Development and review of draft sections of this report and Team agreements on the report's contents.

The contents of this report are presented in three levels. These are:

1. Statewide Portfolio Assessment level
2. IOU Portfolio Assessment level
3. IOU Programs-Level Assessment.

The following sections of this report convey the results of the assessment to the CPUC-ED staff and to the members of the PRGs.

Statewide Portfolio Assessment

Goals Attainment

Comparison with CPUC Goals, Potentials and Utility Plans

Table 1 summarizes a comparison of the four IOU's CPUC energy goals, their savings potentials and their utility plans. Due to inconsistencies found in the reporting of demand savings, these goals have not been included in this table. In all cases, the utilities forecast of kWh and therm savings exceed not only the 100 percent achievable potential estimates, but also the CPUC goals.

Table 1 Statewide - CPUC Energy Goals, Potentials and Utility Plans

Mth	Residential	Non-Residential	Industrial	All Sectors		
	100% Ach	100% Ach	100% Ach Proxy	100% Ach Proxy	CPUC Goal	Utility Plan
SDG&E	2.82	2.47	1.44	6.73	9.50	10.51
SCG	15.38	8.88	11.46	35.72	57.30	57.73
SCE						0.00
PGE	14.53	11.04	11.51	37.08	44.90	50.35
Total	32.73	22.39	24.41	79.53	111.70	118.59
GWh	Residential	Non-Residential	Industrial	All Sectors		
	100% Ach	100% Ach	100% Ach Proxy*	100% Ach Proxy	CPUC Goal	Utility Plan
SDG&E	209.81	192.68	46.54	449.03	850.00	970.00
SCG						6.00
SCE	814.62	889.46	424.40	2128.48	3135.00	4071.00
PGE	873.64	751.39	354.42	1979.45	2826.00	3007.00
Total	1898.07	1833.53	825.36	4556.96	6811.00	7387.00

*Proxy numbers were developed by the TecMarket Team using estimated values based on IOU-specific potentials presented in the KEMA potentials reports¹.

Energy Savings Overview

Looking across the four IOU's budgets and program impacts for 2006, Table 5 shows significant variance in budgeted items such as administrative costs. We are unsure if these variances are the result of differences in accounting definitions, or truly are an

¹ The KEMA potentials reports referenced for this study included:

California Statewide Commercial Sector Energy Efficiency Potential Study, July 2002

California Statewide Commercial Sector Natural Gas Energy Efficiency Potential Study, May 2003 (Revised July, 2003)

California Statewide Residential Sector Energy Efficiency Potential Study, April 2003

For the industrials potential, we used preliminary estimates from the yet to be published 2005 industrial potentials study.

indication of differing costs across the utilities. The issue of administrative costs is discussed in detail later in this report.

Table 2 Statewide - IOU Portfolio Comparison Budgets (2006)

	SCE ^a	PG&E	SDG&E	SCG	TOTAL
BUDGET					
Administrative Costs	\$ 25,255,940	\$ 16,025,149	\$ 13,572,657	\$ 12,064,420	\$ 66,918,166
Marketing/Outreach	\$ 16,090,042	\$ 17,101,353	\$ 6,100,553	\$ 5,065,041	\$ 44,356,989
Direct Implementation	\$ 187,861,699	\$ 205,216,047	\$ 55,462,280	\$ 27,193,485	\$ 475,733,511
EM&V Costs	18,010,000	\$ 20,725,392	\$ 6,010,839	\$ 3,545,836	\$ 30,282,067
BUDGET	\$ 247,217,681	\$ 259,067,941	\$ 81,146,329	\$ 47,868,782	\$ 635,300,733
Costs recovered from other sources		\$ 10,425,151			
BUDGET (plus other costs)	\$ 247,217,681	\$ 269,493,092	\$ 81,146,329	\$ 47,868,782	\$ 645,725,884
PROGRAM IMPACTS					
Net Smr Pk (kW)	240,366	152,722	45,103	7,299	445,490
Annual Net kWh	1,171,996,189	857,125,872	230,448,659	8,483,462	2,268,054,181
Annual Net Therms	420,343	14,503,247	1,400,178	11,626,091	27,949,859
COST EFFECTIVENESS					
TRC test	3.1	2.09	1.61	1.14	

^a For SCE these data were provided for the aggregated portfolio from 2006 to 2008. To allow for a comparison across utilities, the aggregate values provided by SCE were divided by three to estimate an annual expenditure.

TRC Range-of-Estimate Issues

The utilities provided cost effectiveness analyses based on the E3 calculator and provided summaries within their portfolio spreadsheets. As can be seen in Table 2, TRC values for the utility portfolios ranged from 1.1 to 3.1. There was an even broader range of TRC values for specific programs across the portfolios. For example, at SCE the TRC for individual programs ranged from well below 1.0 to over 7.0. Given this range, the reviewers are concerned that there may not be consistent application of the TRC analyses across the utilities, but the reviewers did not have time to review the individual analyses to verify this hypothesis.

TRC and PAC Issues

The reviewers also saw variation in the relative values of the TRC and PAC numbers: sometimes the TRC was less than the PAC, sometimes the TRC was greater than the PAC, and sometimes they were nearly the same. Assuming that "cost" is the only input parameter that changes, one would expect the PAC to be greater than the TRC all of the time (since the TRC includes ALL costs). But this was not the case. Again this could indicate some problems within the utility analyses, at least in these drafts.

Issues Addressed

Administrative Costs

The administrative budgets of the four utilities showed significant differences, ranging from 7 percent to 25 percent across their total portfolio:

SCE	11%
PG&E	7%
SDG&E	17%
SCG	25%

While some variation is expected, it appears that there may be a difference in the definition of “administration costs” among the utilities. In a private communication with PG&E, they indicated that their operating definition for administration was based on a CPUC decision limiting administration costs to 7 percent. A private communication with SCG/SDG&E indicated that they tried to follow the direction and definitions provided to them by the CPUC-ED staff. This issue was not directly discussed with SCE.

This variation, while not impacting the TRC test, does not allow the reviewers or the Commission to determine if the programs are operating efficiently (e.g., Too much administration? Not enough administration?). The Commission should further clarify the definition of administration costs among utilities for consistency and to establish a basis of comparison. Clearly utility administrative costs are lower when they contract with a third party to run and administer a program, but the total administrative burden may, in fact, be higher.

Net To Gross

Each utility provided net-to-gross (NTG) numbers for each measure. However, the NTG numbers were generally the same across all the measures within a program. As presumably instructed, the utilities used default NTG numbers based on the CPUC Policy Manual. For example, PG&E’s Mass Markets Program utilized a NTG of 0.96 for all C&I measures from LED exit signs to NEMA premium motors. PG&E did change the NTG to 0.80 for residential customers. However, using these numbers increases the risk that the portfolio will not produce the savings indicated by the program planners and may be inconsistent with some evaluation findings that report different NTG values. Certainly, when the program description indicates that a particular measure has a 40-50 percent market share, the default NTG assumption of 0.80 or 0.96 may not be reasonable. This can be further seen when industrial program participants are given the prescriptive rebates with the attendant NTG more appropriate for a hard-to-reach sector than large industrial customers. While these standard NTG levels make it easier for planning and analysis, they usually, but not always, increase the risk of overstating savings forecasts within the portfolio.

Flagship Programs vs. Other Programs

Two utilities combined multiple past programs into “Flagship” programs that represent the majority of their savings. PG&E created a Mass Market Program covering both residential and non-residential customers. The savings from this program represents 51 percent of the kWh and 70 percent of the kW while using 44 percent of the budget in 2006. SCE’s approach was similar but split residential and commercial applications into the Residential Energy Efficiency Program and a Business Incentive Program. While the reviewers believe that the market strategies used for these programs are often sound, with some exceptions, there are some complexities and risks from this approach. The primary complexities and risks are operational, tracking and accounting. Operationally, it will take a very disciplined approach to make sure that the consumers get a comprehensive suite of measures from multiple programs.

To understand the source of the savings and application to sectors, each customer must be tracked with cross-program indicators of participation and measures. This customer specific tracking will be needed to avoid double counting and to assure savings are properly reported. For example, customized activity and account management are being provided for certain target segments such as schools. Lighting measures were listed as both a customized measure under the Schools Program and as a standard measure under the Mass Market Program. In other cases large commercial and industrial customers would be referred to prescriptive rebate programs for some of their measures, and provided custom incentives for others. This leads to the potential for tracking and evaluation problems with respect to energy savings. If these programs are to proceed, careful tracking systems will need to be established early, and the accounting needs to be transparent.

Given this tracking challenge and the combining of the sectors, the reviewers were not able to determine definitively if individual programs have achievable savings estimates and goals. It was also difficult to compare these data to the KEMA potential studies, which are sector specific. To better understand whether these programs can achieve their potential, additional sector specific estimates will be required within the program projections.

Substantial Funding For “Other” Sector

In reviewing the portfolio budgets, we noticed that there were substantial funds listed as going to a sector or set of services called “Other”. PG&E has 10 percent of the budget allocated to this sector or set of services, SCE has 20 percent of the budget in this area, SDG&E has 46 percent and SCG has 47 percent. The SCG budget has no savings allocated to this budget (See budget sheets, Attachment II, Project Funding by Sector). We would like a description and listing of the types of services/technologies that are going into the “Other” sector so that we can assess the appropriateness of this cost category.

Risk Issues

It is important to consider risk in assessing the achievable savings of each utility portfolio. The review team tried to assess risk on several levels:

- Does the program design have inherent risks?
- Are the energy savings from the measures reasonable, compared to DEER and non-DEER estimates?
- Is the scope of the program reasonable, compared to market potential?

Program Design Perspective

There is a mix of programs. Some were continuations of tried and true programs with long histories of results and corresponding evaluations for assessing impacts. There are also combinations of programs into new, larger “Flagship” programs that sought to improve performance through integration of old and new program activities. Finally, there are some totally new programs, market partners, and approaches that will be tested. Within each utility program assessment included in this report, comments are provided that will describe some examples of portfolio and program design risk. Overall, the reviewers found that the program designs were built on historically proven foundations. However, there were some new programs that have new implementers / partners that are unproven. For these programs, the risk of goal attainment is higher and ramp-up risk will be larger.

DEER and Non-DEER

The majority of the savings projected for the statewide portfolio are not tied to estimates found in the DEER database, but are based on estimates of savings generated by each of the IOUs. At this time we are unable to assess the accuracy of all of the non-DEER estimates because of a lack of information on how these measures were estimated during the short review period. While we were able to review a significant portion of the SDG&E, PG&E, and SCG non-DEER estimates, we were unable to review the SCE estimates in time for this report. During this review, the TecMarket Works Team found measures that are unsupported by estimation approaches across all three IOUs that provided estimation information. In addition, the Team found that several measures were estimated in the documents reviewed, but were not documented to the extent that the Team could replicate the required calculations. We are not suggesting that these estimates are in error. In fact, for all of the measures that we could review in enough detail to replicate the calculations, we agreed with the estimates provided. The Team will continue to review these estimates as the information is collected. However, we suggest that the CPUC require all IOUs to maintain a measure estimation directory for all measures that are not DEER based, so that the CPUC can, from time to time, review the estimation approaches used to confirm their accuracy. Table 3 provides the distribution of measures that are DEER based and the proportion of each IOU’s savings that is covered by these estimates. This issue is further discussed under the assessments of each IOU’s portfolios.

Table 3 Statewide - Savings Estimates Developed Using DEER Data

IOU	Number of Measures	% of Measures	Percent of IOU Savings		
			kWh	Therms	kW
PGE	112	23%	41%	10%	35%
SCG	6	7%	40%	5%	29%
SDGE	95	28%	54%	10%	52%
SCE	130	9%	19%	-	16%

Third-Party Implementers

There is also some level of inherent risk in moving significant additional program efforts into the third party implementation arena over such a short timeline. The third-party industry will need time to ramp up and to build the capacity to effectively use the dollars being placed into the market at this single point in time. The California experience in the 2002-2003 period demonstrated that several of the third-party program providers had trouble meeting staffing needs to implement contracted programs, and many were slow to move into the field. The 2006 increase will likely experience similar conditions.

Partnerships

The portfolio is heavily relying on partnership programs to capture energy savings. This means that these programs will have to be effective at gaining participants, especially during the first year. However, partnership programs place direct program management responsibilities outside of the organizations directly responsible for reaching the energy goals. In the past there have been partnership programs that were slow to develop program services and slow to capture energy savings. For such a significant increase in partnership spending, the CPUC and the IOUs will want to make sure these programs are expertly managed and that goals are reached early in the program lifecycle.

High TRC Scores

Several of the programs have very high TRC test scores, higher than we typically see from similar programs elsewhere. We question if the TRC tests are being conducted accurately for several programs (see program discussions later in this report). However, assuming the TRC results are accurate, we notice that the test results are not being used to establish appropriate levels of program funding. Several high TRC programs are receiving low budgets compared to other programs with low TRC scores that are receiving higher budgets. The TRC results and the program budget distributions do not line-up so that the programs that are most cost-effective are given the largest proportion of program budgets.

Non-IOU Efforts and NTG

There is also some concern that there are portfolios with marginal TRC scores. These programs will depend on third-party and partnership programs to be cost effective at the portfolio basis. If these programs are slow to start or are not cost-effective, the portfolio as a whole runs the risk of not being cost effective. This same line of reason applies to utilizing the Policy Manual's NTG numbers to rate the cost effectiveness of these programs. The Policy Manual's NTG scores may be high for several key measures. If the

ex-post evaluation verified NTG numbers do not support the Policy Manual's numbers, these portfolios may not be cost effective.

Large Budgets for Questionable Programs

Some programs that have no energy acquisition goals, are receiving very substantial budgets. The Flex-Your-Power program, for example, appears to be receiving over \$40 million dollars. Yet we cannot find any evidence that this program is effective at causing market changes that result in energy saved. The utilities have not provided any analysis to explain the large budgets being provided. We are not suggesting that Flex-Your-Power and similar programs are not effective, but we are suggesting that the CPUC needs to know if these programs are effective at changing behavior that directly or indirectly results in short or longer term energy impacts before large amounts of public goods charge funding is approved for these programs.

Heavily Dependant on Lighting

From a measure perspective, the portfolios are heavily dependent on lighting. The PG&E portfolio has a 58 percent MW and 62 percent GWh dependence on lighting while the other two electric utilities are in the low 40 percent range for both energy and demand savings from lighting. This is particularly troublesome when we consider that the residential lighting measures respond to a need to acquire inexpensive energy savings, and uses up a lot of the budget without providing a lot of coincident peak benefits. The PG&E portfolio may want to be more comprehensive, by trying to find ways to lower that dependence on lighting savings and broaden its goals for other technologies. The SCE residential portfolio also over-emphasizes lighting, while under-utilizing HVAC, which can contribute to demand reductions.

Ramping-up May Take More Time than Planned

From a program scope perspective, some programs tripled their size in spending and goal achievement in the first year of operation from current activity. While some of these programs have existed for a while, the ramp-up time for tripling the budget for these programs may take more than a year. Other programs are forecast to double their savings every year in order to help meet the utility goals. There may be risk in these uncharted growth forecasts. Thus, the review team believes that some of the programs may be optimistic as to their achievements in that first year. Again, specific program analyses are described in each utility program assessment in this report.

Comprehensiveness and Lost Opportunities

The IOUs have provided a fairly comprehensive set of programs providing services across most all market sections (with some exceptions noted later in this report). The following table (Table 4) presents the IOU portfolios and their associated budgets as well as the distribution of savings across the targeted sectors.

Table 4 Statewide - Projected Funding and Energy Savings by Sector

PGE	Funding	% of 2006 Total	Savings (Net kWh)	% of 2006 Total
Residential	\$ 67,456,404	26%	230,703,135	27%
Residential New Construction	\$ 10,444,239	4%	5,407,584	1%
Non-Residential	\$121,489,566	47%	485,944,357	57%
Non-Residential New Construction	\$ 33,775,839	13%	135,070,796	16%
Other	\$ 25,901,892	10%	0	0%
Total Funding	\$ 259,067,940		857,125,872	

SCG	Funding	% of 2006 Total	Savings (Net kWh)	% of 2006 Total
Residential	\$ 7,600,000	16%	0	0%
Residential New Construction	\$ 2,250,000	5%	1,842,839	100%
Non-Residential	\$ 12,695,314	27%	0	0%
Non-Residential New Construction	\$ 2,800,000	6%	0	0%
Other	\$ 22,321,328	47%	0	0%
Total Funding	\$ 47,666,642		1,842,839	

SDG&E	Funding	% of 2006 Total	Savings (Net kWh)	% of 2006 Total
Residential	\$ 7,003,878	9%	17,071,294	6%
Residential New Construction	\$ 2,607,250	3%	2,230,152	1%
Non-Residential	\$ 31,027,266	38%	110,297,490	38%
Non-Residential New Construction	\$ 3,323,540	4%	2,947,189	1%
Other	\$ 37,183,486	46%	154,717,086	54%
Total Funding	\$ 81,145,420		287,263,211	

SCE	Funding	% of Total	Savings (Net kWh)	% of Total
Residential	\$213,046,117	31%	1,163,451,673	33%
Residential New Construction	\$ 18,886,000	3%	10,603,337	0%
Non-Residential	\$286,778,317	42%	1,937,804,944	55%
Non-Residential New Construction	\$ 31,920,123	5%	119,074,000	3%
Other	\$136,992,485	20%	285,054,612	8%
Total Funding	\$ 687,623,042		3,515,988,566	

The review team carefully reviewed all the measures listed within the spreadsheets provided by the utilities. The team found that the utilities incorporated most of the measures and markets that should be covered by programs. In the following list, the principal lost opportunities identified through the review process are presented.

Agriculture Programs

Some utilities pay more attention to the agricultural sector than others. Agriculture represents a major industry in California and as noted in a recent report on energy efficiency savings in the agriculture sector by ACEEE,² potential electricity savings in California for the entire agriculture sector is 13 percent (and 1 percent for natural gas), resulting in a savings of 1.58 trillion BTU and \$53 million a year. If these savings are to be captured, there will need to be a statewide emphasis and approach.

Important areas of concern in this sector include: greenhouse/nurseries, cattle feedlots, oilseed and grain farming, and fruit and tree production. Important end uses include: motors (pumps, fans and blowers, compressors, material handlers, material processors, and refrigeration), drying and curing, water heating, HVAC, lighting (farm buildings, residential), and machinery (grain and bean combines, cotton pickers, forage harvesters and planters, and hay balers).

Accordingly, while it is too late to include “agricultural programs” as a stand-alone program for the June 1 filings, we strongly recommend that CPUC staff do the following:

- Conduct a study on the potential energy savings in the agricultural sector in California.
- Conduct a workshop on the agricultural energy savings potential study

The CPUC may also want to require utilities to develop a stand-alone or statewide agricultural focus as part of their portfolio to capture this potential.

Manufactured Housing

There was inconsistent consideration of manufactured housing as a retrofit program target among the utilities:

- SCE included this market as part of their multi-family program
- SCG included this market in its potential bid process
- PG&E included this market in its Mass Market program as a qualified customer group for rebates, and
- SDG&E included this market in its residential rebate program.

Without a comprehensive analysis of fully implemented programs, it is unclear whether this, often lower income, market is being adequately served and providing the potential savings in several of the utilities.

New Manufactured Housing Programs

Although there were some questions raised in the public review meetings about it, no utility has adopted a manufactured home new construction program, when there are large savings to be gained beyond national HUD standards. Programs in the Pacific Northwest

² Elizabeth Brown and R. Neal Elliott, “Potential energy efficiency savings in the agriculture sector,” Report IE053, American Council for an Energy Efficient Economy, Washington, DC, 2005.

have been very successful in this sector for 15 years, with more than 65 percent of the homes being built nearly as efficiently as site built code homes.

Program Consistency

Another lost opportunity can be found when program offerings are not consistent between utility programs. SCE does not run an Energy Star Clothes Washer program, although there are electric savings at no incremental costs, arguing that it is mainly a gas program due to water heating savings. However, the SCG proposal only includes rebates for 19,000 Energy Star Clothes Washers (2007 standard expected to be 1.72 MEF or higher), which is a small fraction of all the clothes washers that will be bought in the populous Southern California market.

Replacements of HID Lights

There is no evidence that the utilities are taking advantage of the large efficiency opportunity to replace high intensity discharge (HID) lighting with high performance T-8s and T-5s in grocery, warehouse, large retail, and other places where a wattage reduction can be almost half of the installed wattage and the related additional benefits of dimming and the ability to work with occupancy sensors open up a lot of other savings opportunities. In fact, the program measure lists contain multiple measures that will install HID as the efficient alternative, when an often a more appropriate and efficient option is already available. In many places with lower avoided costs than CA, it is often cost-effective to replace 5-year-old T-8s with the new ones if the fixtures can be moved around.

Bidding and Third-Party Issues

As instructed by the Commission, a minimum of 20 percent of the portfolio is to be bid to third parties (generally referred to as Third-Party Programs). This bid portion of the portfolio is to include programs that are either not defined or that have the flexibility to bring innovation to the market. Given that this information is intentionally not well defined, the team did not review these concepts.

Partnership Program

Partnership programs were included in most of the portfolios, with some utilities having larger efforts than others. Partnerships were primarily with local governments. While this strategy has benefits, there was inadequate information provided to determine if the savings estimates were realistic and achievable. SCE had the largest number of partnerships and had savings attributed to them. SDG&E and SCG had partnerships but did not attribute savings. The review team feels it cannot comment at this time as to the potential effectiveness of these programs or their potential to achieve the goals.

Policy Issues

Residential New Construction

The four utilities have taken different approaches to Residential New Construction. As described, none of the Residential New Construction programs were cost effective. A few of the utilities tried to focus their efforts on “Advanced” energy technologies with the goal of promoting the adoption of these new technologies that could potentially be cost effective in the future. Others established programs with substantial budgets. There was also a difference in total investment across the utility portfolios, ranging from 2.7 percent to 4.7 percent.

From observing the Public Advisory Group (PAG) process, it appears that there is a strong interest in having Residential New Construction programs at the utilities. Given that the Residential New Construction programs are not cost effective, at least within this three-year period, the Commission should consider providing policy guidance as to the continuation or focus of this effort and the level of funding within the portfolio that is appropriate. Otherwise, from a purely cost effectiveness and savings standpoint, these programs should be eliminated. Alternatively, these programs could be integrated with other programs, such as the Emerging Technologies Program, Codes and Standards Program, Sustainability programs and the Advanced Building Program, in order to establish a strategic initiative that is specifically designed to provide cost effective long-term savings through adding innovations to a large dissemination program, and eventually to code changes. In that way the efforts are strategically designed and would meet the criteria of actually being run to produce long-term cost-effective savings.

This approach does require that codes and standards be recognized as being actively influenced by utilities and credited with large and cost effective portfolio savings.

Non-Residential New Construction

The natural corollary of this would be the Savings by Design, Emerging Technologies, Sustainable Communities, and Codes and Standards package in the non-residential new construction market. As with the residential new construction program, there is a need for a “carrier” program to bring innovation into the market, so that it can be shown to be cost-effective and become improved code. Because all of these programs address the same market actors and are targeted to the same goal of improved building energy efficiency, they should be designed, implemented, evaluated, and rewarded as a unified program. With all due deference to the segmentation of program sectors by PG&E, the alternative to keep a unified non-residential new construction market as a target may be an overlooked opportunity.

Policies that Emphasize the Lowest Energy Cost

Over-emphasizing the cheapest kWh costs will direct utilities toward certain technologies and program strategies. Programs that emphasize residential lighting do so at the expense of not achieving impacts from the measures that have the highest kW impact, such as residential HVAC. This balance needs to be considered not only at the technology level, but at the sector level as well. For example, commercial and industrial lighting provide both kW and kWh savings because they are typically used during peak periods. This a portfolio policy balancing issue that requires policy guidance from the CPUC-ED.

Implications for Long-Term Savings

The information provided describes programs that meet the 2006-2008 CPUC goals. While some measure savings were carried out in further years to 2013, none of the utilities provided comprehensive plans to meet that long-term goal. The reviewers agree that plans further out than 2008 would be speculative, and thus, we cannot adequately determine whether the utilities are on track to meet the long-term 2013 goals. However, the reviewers do believe that continued innovation and adaptation of existing programs will be required over time and that the utilities should continue to get new ideas from outside sources on innovative programs and approaches. This could be through bid programs, Emerging Technology programs, the newly formed PAGs or the Peer Review Groups (PRGs), CALMAC, or other processes.

Conclusion

Overall, the utilities have provided a robust set of program portfolios that have a good chance of meeting their near-term goals for energy savings, demand reduction and therms based on the CPUC's Policy Manual Net to Gross estimates. The measures for which sufficient data were provided reflected reasonable savings assumptions, and with some noted exceptions, most program goals were realistic, if difficult. The utilities should be commended for the level of effort and due diligence that is reflected in these draft review documents. We hope that the suggestions and issues we provide in this report will further strengthen these critical efficiency programs. The following sections of this report discuss the IOU-specific portfolios and programs.

PG&E Portfolio Overview

PG&E's New Portfolio Model called "*Market Integrated Demand Side Management (MI DSM)*" structures their programs around market segments. Programs are tailored to specific markets rather than to technology grouping. The goal of this integrated approach is higher penetration resulting from being able to better serve the needs of their customers, vendors and industry experts. Our team would like to commend PG&E on moving to this market-based approach for providing energy efficiency services. It is our contention, that this concept has the potential to substantially reduce lost opportunities and provide resources more cost effectively.

The following market segments are in PG&E program portfolio and report energy and demand savings. The percent of program budget has been included in Table 5 for each program. The total funding for PG&E's programs is \$281,182,988.³

- Mass Market includes residential, multi-family residential and small commercial. These customers have similar purchasing patterns and strategies, use the same vendors, and have similar approaches to energy efficiency. A common approach to these customers, historically viewed as separate segments, will provide greater penetration into the small commercial market while eliminating the artificial boundary between them and providing for program delivery economies;
- Agricultural and Food Processing includes food processors, wineries, dairies, greenhouses, and refrigerated warehouses;
- Schools, Colleges, and Universities includes K-12 schools, community colleges, universities, and campus housing;
- Retail includes general retail, big box retail, supermarkets, restaurants and food services;
- Industrial includes fabrication industries, process industries (including waste water and water treatment), and heavy industrial manufacturing;
- Medical includes hospitals, assisted living facilities, skilled nursing facilities, and medical specialty facilities;
- Commercial includes office buildings, governmental facilities, and large institutional facilities;
- Hospitality Facilities include lodging, resort, and hotel facilities; and
- High Technology includes laboratories, clean-rooms, and data centers;
- Residential New Construction targets market actors involved in residential construction.

³ These budget numbers were updated by PG&E on May 19th - file from Bill Miller <<2005 05 18 Annual Budget Summary.xls>>

Programs classified as Information-Only include:

- Education and Training
- Codes and Standards
- Emerging Technologies
- Statewide Marketing and Information Program ⁴

The following table provides a presentation of PG&E's portfolio and the budgets allocated to each program.

Table 5 PG&E - Overview of Programs

Programs with Reported Savings	Budget	Percent of Annual Budget
Mass Market	\$140,591,494	50%
Agricultural and Food Processing	\$16,870,979	6%
Schools, Colleges, and Universities	\$5,623,660	2%
Retail	\$5,623,660	2%
Industrial	\$44,989,278	16%
Medical	\$8,435,490	3%
Commercial	\$14,059,149	5%
Hospitality	\$2,811,830	1%
High Technology	\$5,623,660	2%
Residential New Construction	\$11,247,320	4%
Programs w/o Reported Savings		
Education and Training	\$16,870,979	6%
Codes and Standards	\$2,811,830	1%
Emerging Technologies	\$5,623,660	2%
Statewide Marketing and Information Program		-

Goal Attainment – PG&E

PG&E's portfolio of utility programs for the period 2006 –are estimated to save 3,007 GWh's and 50,350 M therms. Demand savings are estimated to be 584 MW in 2008. This will be funded with a budget of \$866 million. This effort is forecast to be cost effective: a TRC of 1.92 and a PAC of 2.70.

PG&E's budget for 2005 was approximately \$131 million. The increases in the portfolio years are substantial. PG&E plans to significantly ramp up its budget in the next few

⁴ In new budget provided on 5/19 - Funding level not indicated for Statewide marketing and Information programs

years: going from \$240 million in 2006 to \$281 million in 2007 (a 17 percent increase) and \$345 million in 2008 (a 44 percent increase, compared to 2006).⁵

Comparison with CPUC Goals

According to the information available to the TecMarket Works Team during the review period, PG&E expects to meet the CPUC's gas and energy savings goals in each of the program years 2006, 2007 and 2008. However, the demand savings as depicted by PG&E in Table 6 indicates that PG&E will meet less than a third of CPUC's demand savings goal.

Table 6 shows PG&E's projected program impacts for their three-year goal (2006-2008). The table shows PG&E plans to achieve 50.3 M therm, 564 MW's, and 3,007 GWh's. The CPUC has set a demand savings goal of 2,147 MW, an energy savings goal of 2,826 GWh's and a gas goal of 9.5 M therms.

Table 6 PG&E – Energy Goal Accomplishment (2006-2008)

	2006		2007		2008	
	Total	% of 2006 Goal	Total	% of 2007 Goal	Total	% of 2008 Goal
Energy Savings – Electricity						
Annual Net Electricity Savings (GWh/yr)	857	103%	978	104%	1,172	111%
LIEE (GWh/yr)	N/A		N/A		N/A	
EE (GWh/yr)	857		978		1,172	
<i>Annual Net Electricity Goal (GWh/yr)</i>	829		944		1,053	
Cumulative Net Peak Savings (MW)						
	163	32%	348	29%	564	26%
LIEE (MW)	N/A		N/A		N/A	
EE (MW)	163		348		564	
<i>Cumulative Net Peak Goal (MW)</i>	180		385		613	
Energy Savings – Natural Gas						
Annual Net Therm Savings (MTh/yr)	14,503	115%	16,458	110%	19,389	111%
LIEE (MTh/yr)	N/A		N/A		N/A	
EE (MTh/yr)	14,503		16,458		19,389	
<i>Annual Net Therm Goal (MTh/yr)</i>	12,600		14,900		17,400	

⁵ These budget numbers were updated by PG&E on May 19th - file from Bill Miller <<2005 05 18 Annual Budget Summary.xls>>

Except for the demand savings projections, the TecMarket Team's opinion of PG&E's goal projection is that the goals are reasonable given the portfolio being developed and programs being offered. There appears to be some sort of an accounting problem with the demand accomplishment estimates. The demand savings issue could be related to the fact that:

1. PG&E is using summer peak MW's rather than average megawatts or
2. PG&E is not calculating MW the same way that the other IOUs are calculating these savings.

The team also has some concerns about the partnership programs being able to cost-effectively support PG&E's energy goals, and there is limited information on how the goals will be supported by the third-party providers. A question arose during our review as to whether the portfolio of programs detailed in this filing by PG&E will remain constant – no matter who delivers the services (i.e. third -party). PG&E was asked to clarify this issue. They responded that they do not know what the mix of programs and services would be, however they felt that any changes would be "Improvements over current filings..." and would only enhance their portfolio.

Comparison with Potential

In order to conduct the comparison of PG&E's portfolio goals with the CPUC energy potentials, we used KEMA's "100% achievable potentials" (potential amount of energy savings that could be achieved if the program funding was increased by 100 percent). This allowed for a comparison of an expanded program portfolio that more closely matched the spending levels of the current portfolio. However, the current portfolio budget may be greater than the 100 percent increase reported in KEMA's potential reports for residential and non-residential programs. This will need to be assessed in the post June 1, 2005 portfolio review. At this time, there is no published report for industrial potentials, however, there is an industrial potentials study currently being finalized by KEMA. For the PG&E industrials potential, we used preliminary estimates from the yet to be published 2005 industrial potentials study being completed by KEMA. The industrial potentials should be considered proxy estimates that will need to be adjusted once the KEMA study is released in 2005.

KEMA's published potential reports provide 10-year estimates of program potential, or the amount of energy impacts that can be achieved over a 10-year period. In order to adjust the KEMA potentials to the 3-year program cycle, we multiplied the KEMA potentials by 0.3. We use 3-year potentials in this assessment because the current program planning cycle is three years in length.

We were unable to segregate the programs into residential, non-residential and industrial sectors using the portfolio data, as several programs cut across sector lines. As a result, we summed the potential estimates for the 100 percent increase in funding levels across the residential, non-residential and industrial sectors (note: the non-residential sector does not include industrial potentials) and compared these potential estimates with PG&E's portfolio estimates. Table 7 provides the results of this comparison.

Table 7 indicates that if PG&E is successful in meeting its three-year goals for energy and gas savings, then it will easily meet the 100 percent Achievable Potential estimates.

Table 7 PG&E - Potential and Portfolio Savings Projections (2006 – 2008)

Energy	Residential	Non-Residential	Industrial*	All Sectors		
	100% Ach	100% Ach	100% Ach Proxy	100% Ach Proxy	CPUC Goal	Utility Plan
Mth	14.53	11.04	11.51	37.08	9.50	50.35
GWh	873.64	751.39	354.42	1979.45	2826.00	3007.00

*Preliminary data for industrial, not yet published or finalized

Budgets and Service Offerings Balance

PG&E's portfolio is distributed among several sectors in terms of funding and expected energy savings (Table 8). Sixty percent of the funding, and almost ¾ of the savings (73 percent) are being obtained in non-residential sectors. The "Other" sector appears to be composed of information-only programs that are not included in the energy savings goals. One area of possible concern is the residential new construction sector, which has a 4 to 1 ratio of spending to energy savings.

Table 8 PG&E - Projected Funding and Energy Savings by Sector (2006)

PGE	Funding	% of 2006 Total	Savings (Net kWh)	% of 2006 Total
Residential	\$ 67,456,404	26%	230,703,135	27%
Residential New Construction	\$ 10,444,239	4%	5,407,584	1%
Non-Residential	\$121,489,566	47%	485,944,357	57%
Non-Residential New Construction	\$ 33,775,839	13%	135,070,796	16%
Other	\$ 25,901,892	10%	0	0%
Total Funding	\$ 259,067,940		857,125,872	

Energy Savings Issues

To assess if the portfolio energy savings are reasonable for the measures used, we conducted a review of the measures included in the PG&E portfolio. First we sorted out all the measures that used DEER values to predict energy savings. These savings were judged to be reasonable because they were based on the DEER database. We did not review these measures beyond confirming that they are based on DEER database estimates. We then examined all measures that did not use DEER for estimating impacts.

DEER Measures Estimates

The majority of measures included in PG&E's programs are not using DEER estimates of energy savings. Estimated energy savings that are not based on DEER represent 59

percent of kWh, 90 percent of therms, and 65 percent of the kW savings in PG&E's portfolio.

Table 9 PG&E - Savings Estimates Developed Using DEER Data

	Number of Measures	Percent of IOU Savings		
		kWh	Therms	kW
No Relationship to DEER	378	59%	90%	65%
Relationship to DEER	112	41%	10%	35%

Non-DEER Measures Estimates

Among the energy savings estimates that were not developed using DEER, it was difficult to discern how the energy savings estimates were developed. Note in Table 10, that after reviewing the documentation for non-DEER measures about 37 percent of the kWh savings and almost 77 percent of the total therm savings could not be clearly defined by the TecMarket Team. While the utilities generally have a solid basis in our opinion, for the estimates we can understand, it would be a leap of faith to say that we are comfortable with so much being unclear.

Table 10 PG&E - Non-DEER Measure Energy Savings Assessment

Calculation Approach Provided by IOU	Measure As Described by IOU	% of IOU kWh Savings	% of IOU Therm Savings
Not Clear	Bldg Envelope-NC-E	1.2%	0.0%
	Bldg Envelope-RETRO-E	1.3%	0.0%
	Lighting (SPC- Standard Performance Contract)	0.0%	1.3%
	HVAC/AC-NC-E	3.6%	0.0%
	HVAC/AC-NC-G	0.0%	6.3%
	HVAC/AC-RETRO-E	3.5%	0.0%
	HVAC/AC-RETRO-G	0.0%	17.3%
	Lighting Controls-NC-E	1.3%	0.0%
	Lighting Controls-RETRO-E	1.7%	0.0%
	Lighting-NC-E	3.0%	0.0%
	Lighting-RETRO-E	3.4%	0.0%
	Process-NC-E	2.6%	0.0%
	Process-NC-G	0.0%	5.8%
	Process-RETRO-E	7.8%	0.0%
	Process-RETRO-G	0.0%	18.1%
	Refrigeration/ Appliances-NC-E	1.2%	0.0%
	Refrigeration/ Appliances-RETRO-E	3.1%	0.0%
	T8-25 Watt Lamp-Replacement of T8-32 Watt Lamp (4 ft)	3.5%	0.0%
	Water Ht/Furnace/Boiler-NC-G	0.0%	7.5%
	Water Ht/Furnace/Boiler-RETRO-G	0.0%	20.5%
Not Clear Total		37.0%	76.7%
Reasonable	Duct Test and Sealing CZs 2, 4, 11, 12 & 13	0.0%	2.1%
	Gas Furnace - 90 AFUE	0.0%	1.9%
	High Output (HO) T-5 Fixtures-4-Lamp-Conversion from 400 watt Metal Halide<244 watts	4.6%	0.0%
	LED OPEN SIGN Replacement of Neon-Large Oblong Dot Pattern (LED inc Model 01588-2600)	0.8%	0.0%
	PREMIUM T8/T5 Lamp & Electronic Ballast/New Fixture- Replacement of T-12 Lamps & EnergySaver Ballast-4 ft	2.1%	0.0%
	Strip Curtains for Walk-ins	1.1%	0.0%
	VSDs for HVAC Fans - 100 hp maximum	4.6%	0.0%
Reasonable Total		13.2%	4.1%

Cost Effectiveness – PG&E

TRC and PAC Issues

With the exception of the Residential New Construction, PG&E's programs are all forecast to be cost effective. Our review did not find any variation in the relative differences between TRC and PAC numbers: the TRC was always less than the PAC, which is what one would expect if one assumes that the only variation between the two indices is cost (the TRC includes ALL costs).

TRC Range-of-Estimate Issues

PG&E's Residential New Construction program is the only program not forecasted to be cost effective (TRC<1). In 2006, this program has an estimated TRC of .56. The other nine programs - with cost effectiveness tests - have estimates ranging from a low TRC of 1.19 for the Schools and Colleges program to a high TRC of 3.7 for the Industrial program. The average TRC across all ten programs was 2.09 for 2006 and a slightly lower TRC of 1.92 across the three-year portfolio.

Table 11 PG&E - Program TRC Test Results

PG&E Program	TRC Test
Mass Market	1.67
Agricultural and Food Processing	3.36
Schools, Colleges, and Universities	1.19
Retail	3.35
Industrial	3.70
Medical	2.75
Commercial	3.10
Hospitality	1.95
High Technology	2.07
Residential New Construction	0.56
TOTAL	2.09

Issues Addressed – PG&E

Administrative Costs

In our review, the team noticed that PG&E's budget for administration seemed extremely low (5 percent of total) and that the administrative "other" category was inconsistent across the years, and appeared to result in fluctuations in the TRC across program years. Upon review, PG&E provided the team with new budget numbers that increased the overall administration costs to 7 percent and smoothed out the 'other' administration budget issue. In this new budget, administrative costs, as a percent of portfolio budget, range from around 5 percent for Mass Market, Industrial and Emerging Technologies to over 14 percent for Hospitality and Codes and Standards Programs. Estimates shown in Table 12 reflect this new budget.

Table 12 PG&E - Administrative Costs as a Percentage of Program Budgets

PG&E Program	% of Budget
Mass Market	5.5 %
Agricultural and Food Processing	7.0 %
Schools, Colleges, and Universities	11.1 %
Retail	9.5 %
Industrial	5.1 %
Medical	10.1 %
Commercial	9.4 %
Hospitality	14.1 %
High Technology	10.7 %
Residential New Construction	11.0 %

Education and Training	13.5 %
Codes and Standards	14.4 %
Emerging Technologies	5.7 %
Statewide Marketing and Information Program	-

Net To Gross

As mentioned in the overall assessment of the utility portfolios, the spreadsheets for each utility have net-to-gross (NTG) numbers for each measure. However, the NTG numbers were generally the same across all the measures within a program. As instructed, the utilities used default NTG numbers based on the CPUC Policy Manual. However, using these numbers increases the risk of the portfolio not producing the savings indicated by the program and may be inconsistent with some evaluation findings that report different NTG values. While these standard NTG levels make it easier for planning and analysis, they increase the risk of by overstating savings goals from the portfolio.

Flagship Programs vs. Other Program

We feel that the one market approach to serving all areas may, at times, be too encompassing. Specifically, the team has concerns about the mix of new nonresidential construction activities spread across several markets. Looking at the activities in this important sector across programs may not be the most efficient way to look at nonresidential new construction. We are also concerned that PG&E may not be using the relationships and experience foundation that they have built up over the past ten years.

Energy Accounting Issues

While we feel that this portfolio will provide PG&E customers enhanced delivery of program services, our review team had a great deal of trouble trying to identify measures by program and general accounting issues related to these measures. Our team contacted PG&E about this concern and was told that they had a tracking number for each measure and that they would be able to keep track of measures and to ensure that double counting of savings did not occur. While this may be the case, from a reviewer's standpoint it is not very transparent. In light of this issue, we remain uncertain as to the energy and demand savings at the program level.

Risk Issues

While PG&E's new Market Integrated approach to delivering programs and services has the potential to be very successful, there will be an increased risk in undertaking a change of this magnitude. It will require significant management and utility supervision to oversee this change, and to successfully implement these larger comprehensive programs.

We also want to point out several categories of risk associated with PG&E's programs:

Significant Size Increase

The Mass Market program has an inherent risk associated with the fact that 2/3 of PG&E's budget and 50 percent of savings are concentrated in this one program.

Delivery Risk

The channeling of customers from programs into the mass market has risk associated with the tracking of customers and the possibility of double counting of savings.

New Implementers

PG&E will be relying on new organizations to implement some of their programs, and it is unclear how reliable and effective they will be, compared to past implementers. For example, Energy Efficiency Collaborations (Partnerships) cannot be assessed at this time, since they will be designed after the third-party competitive bid programs are implemented. Similarly, the Third-Party Programs cannot be assessed at this time, until the bids are in and accepted.

Comprehensiveness and Lost Opportunities – PG&E

The overall program descriptions provide very knowledgeable and comprehensive market analyses of the programs within PG&E's portfolio. However, a few issues and possible lost opportunities were uncovered during the TecMarket Team's review.

Gas Measures

One area of concern relates to the lack of any gas savings in the majority of PG&E's programs. While we understand that the measures are going to be promoted mainly in the Mass Market and Industrial sectors, programs such as Schools and Colleges, and Medical also have gas savings opportunities. We are unsure if these opportunities are going to be addressed in the portfolio.

Program Measure Possible Lost Opportunities

In our review of PG&E's program plans, we have found some of the potential lost opportunities. Some examples of possible lost opportunities are included in Table 13

Table 13 PG&E - Possible Lost Opportunities

Sector	Lost Opportunity
Commercial Lighting	Replacement of HID lighting with HO T-8s & T-5s
Schools and Colleges	Energy Management Systems
Agriculture	Pumping Measures and motors that are not channeled through the Market Program?
Industrial	Process Changes
Hospitality	Guest room energy management systems
Residential New Construction	Renewables

Bidding and Third-Party Issues – PG&E

As instructed by the Commission, a minimum of 20 percent of the portfolio is to be bid to third parties (generally referred to as Third-Party Programs). Given that this information is not yet due, the team did not review these concepts

Partnership Program – PG&E

Additional information is needed to assess these programs, however the assumption of partnership programs having neutral impact with a TRC of 1.0 is not realistic. This will act to drive the portfolio's overall TRC down.

Policy Issues – PG&E

Although the market-based concept pursued by PG&E is conceptually attractive, it is possible that the market segments may not be optimal as proposed. In fact neglecting the specialized needs of new non-residential construction, which can get lost across the various market segments proposed, may be a big risk for future construction practices. Just as with the new home construction program, there are compelling arguments for maintaining a discrete market segment for Non-Residential New Construction. The target market actors are different from commercial retrofit, the timing of intervention is much more important, and the utility has extensive experience with an identifiable program – Savings by Design – and specialized relationships built up.

A natural grouping of programs exists within this market segment that target the same actors and allies with the same goals in mind would be the Savings by Design, Emerging Technologies, Education and Training, and Codes and Standards. As with the residential new construction program, there is a need for a “carrier” program to bring innovation into the market, so that it can be shown to be cost-effective and become improved code. Because all of these programs address the same market actors and are targeted to the same goal of improved building energy efficiency, they should be designed, implemented, evaluated, and rewarded as a unified program. With all due deference to the segmentation planning by PG&E, the alternative to keep a unified non-residential new construction market as a target may be an overlooked opportunity

Conclusion

In conclusion, PG&E's portfolio is projected to meet the goals set out by the CPUC. Individual programs, except in a few cases, look very cost effective, the risk in not meeting the portfolio is rather inherent in how well PG&E can incorporate the overall new market integrated strategy. If done well, the new approach should provide a comprehensive and cost effective way of providing energy services to serving their customers.

Program-Level Assessment – PG&E

This section of the report presents the program-specific assessment information and issue discussions that were identified during the portfolio review effort. The issues reviewed are presented in the left-most column of Table 14 and each subsequent column represents a specific program, allowing the reader to see if the review team determined there to be an issue associated with a specific program, and to understand the review team's perspectives associated with each issue.

Table 14 PG&E - Program-Level Assessment

PG&E	Mass Markets	Agricultural and Food Processing	Schools and Colleges
Short Description	This program is a new integrated approach to serve residential and small commercial customers with similar purchasing patterns, vendors and approaches to energy use. Large commercial and industrial customers will be channeled through this program for some measures.	This new program will allow specialists in these areas to provide targeted services to agricultural customers.	This program will serve public and private k-12 schools, colleges, universities and campus student housing. It will provide support for deemed savings measures promoted through rebate activities, and provide assistance with new construction.
% of IOU Budget	50%	6%	2%
MWh	575,000	49,000	7,000
MW (summer)	101.64	10.73	1.56
Mtherms	2.95	1.92	-
TRC	1.67	3.36	1.19
Assessment of Cost Effectiveness	PG&E hopes that their approach of integrating customers with similar purchasing patterns will provide easier program delivery, greater EE penetration and elimination of artificial boundaries		The program becomes even more cost effective over time. We are assuming that this higher cost effectiveness is a reflection of the longer length of time to get things accomplished in these sectors..
Results Reasonable & Achievable	The concept of the Mass Market is new, but the program components are all tried and successful elements. It is hard to determine exactly what is going to be accounted for under this program, but the budget ratios and energy savings appear to be in line with historical figures prior to program consolidation.	Very large energy savings potentials in this sector -	
Design & Delivery	This unique approach to serving the residential and commercial mass market customers (over 60% of kWh sales) is very logical and will likely result in better delivery of measures and services. We applaud PG&E's effort to try new design and delivery approaches.	The program will use specialists from PG&E and third parties to facilitate a delivery of a portfolio of energy services. It will include statewide elements along with specific components tailored to PG&E's customers.	While this appears to be a sound approach to serving these sectors, there is some concern with the overall way that the market is being attacked. K-12 schools operate quite differently than colleges. It is unclear how PG&E plans to differentiate the services provided with decision makers which is so varied across the different school segments.
Markets Targeted	While the main markets targeted by the program are residential and small commercial, PG&E's other offerings also use this category for accounting of various measures and technologies with deemed savings. An industrial customer, with a small item or limited number of items to replace (for example, a motor) could participate in the Mass Market program, but mid- and large-sized projects at industrial sites are not the main targets for the Mass Market program.	Targets new and existing agricultural and food processing facilities. The rationale for grouping agricultural and food processing customers into a single program is sound. Both have high energy intensities where energy bills are a large component in profit margins and both sectors have unique measures and systems that require experienced utility representatives.	This program will target existing and new construction for public and private k-12 schools, colleges, universities and campus student housing. The full spectrum of uses will be targeted including: classes, offices, gymnasiums, pools, and student housing.
Lost Opportunities	On page 6 of the Mass Market program write-up, it states that thermostats will be dropped as a measure. However, programmable thermostats are included on the measure list and have savings associated with this measure in the commercial targeted sector. More details are also needed on the steps which will be taken in order to provide direct install measures to small commercial customers.	Additional clarification is needed related to the accounting of Pumping and Irrigation measures. These are mentioned in the write-up as important (90% of the potential energy savings lie in pumping applications) – however in the measure list pumping measures such as motors, pumps, controls are not mentioned. It is unclear why these measures are included in Mass Market and not in agricultural.	There are quite a few measures that are not being implemented as part of this program and it appears that the program is not being very aggressive. While previous evaluations have shown this to be a tough sector, the program should not limit itself to these four opportunities only. New construction water heater, appliances, process measures, and Energy Management Systems have been mentioned in the program description but are not listed in the measures.
Risks	An increased risk I likely, due to the fact that 2/3 of PG&E's budget and 50% of savings are concentrated in this one program.	From the numbers provided in the program documentation, the program looks fairly aggressive - looking at historical information on the budgets and savings for agricultural and food processing programs would help ascertain the risk level	TRC is very low and long lead times to get projects going could make this program not cost effective. The slow process could also jeopardize the savings obtained.
Other Issues	There are a large number of very high net to gross ratios, even in the residential sector. These customers may be considered hard to reach. For some measures, lower NTG ratio will likely result in marginal measures not passing the PAC test and could affect the inclusion of some measures. The NTG estimates by measure are more varied than those appearing the ED workbook values spreadsheet. There is confusion regarding how customers from other programs are channeled into the Mass Market program. A table that shows this process would be helpful.	Regarding potential estimates: The plan indicates that the potential energy efficiency savings in food processing over the next 10 years is 265 GWh – with 130 GWh of agricultural energy savings potential also mentioned. The source of these estimates is unclear.	There didn't appear to be any gas measures and savings for this program in the available documentation.
Past Experience/ Evaluations	While most of the measures have been included in past programs and program evaluations, the integrated approach that PG&E is taking is new. Across the country, this approach to delivery of programs and services has occurred in Vermont and to some extent, New York. Although the territories and program offerings are quite different, it could prove useful to review program results and evaluations from these efforts.		

PG&E	Retail Stores	Fabrication, Process and Heavy Industrial Manufacturing	Hi-Tech Facilities
Short Description	This program will integrate diverse retail markets such as supermarkets, restaurants, and general retail stores.	This program serves the heavy industrial market including fabrication and process industries and water treatment plants. The program will support project development through on-site facility audits, facility benchmarking and customized design assistance and engineering support	This program serves hi-tech facilities using energy specialists to facilitate a wide range of energy efficiency services
% of IOU Budget	2%	16%	2%
MWh	23,000	97,000	14,000
MW (summer)	5.51	21.01	2.99
Mtherms	-	9.24	-
TRC	3.35	3.70	2.07
Assessment of Cost Effectiveness		Very high TRC -	
Results Reasonable & Achievable		Demand savings appear to be low. While 15% of historical peak load occurs in these sectors, the program is targeting only 13%. Industrial sector is historically a market where there is a large opportunity for peak demand savings. Are there other demand reduction programs (such as curtailment, or demand response programs) that will be targeting this opportunity?	PG&E appears to know this market well.
Design & Delivery	This program will address the energy needs of the big box retail, chain supermarkets and restaurants. While PG&E's Mass Market effort will support the smaller retail chains and restaurants. For chains and big box retailers the program will use energy experts that will be able to provide a package of services to centralized decision makers.	The program will have statewide elements and customized support.	The program will incorporate statewide rebate elements as well as elements specifically targeted to and customized for PG&E's hi-tech customers.
Markets Targeted	Diverse markets will be targeted under this program; including supermarkets, restaurants, and general retail	Markets targeted include: manufacturing, and process industries such as printing plants, plastic injection molding facilities, lumber and paper mills, metals processing, petroleum refineries, chemical industries assembly plants and water treatment plants	Markets targeted include existing facility operations, facility renovations, and new construction
Lost Opportunities	There are many measures which have been included in the measure list, but do not appear to be included as part of the program.	There appears to be a good balance of technologies covered; however, we would like to see more activities related to process change - as there may be lost opportunities.	
Risks	The delivery method seems sound - only going after large customers - sending the rest of the customers to the Mass Markets program.		
Other Issues	There didn't appear to be any gas measures and savings for this program in the available documentation. Perhaps they incorporated as part of the Mass Markets program.	This program channels incentives for premium motors and other industrial measures into the Mass Market program. The MM program shows a very high NTG ratios for these industrial measures. For example there is a .96 NTG ratio- 125 horsepower motor. The concern is that for many of these industrial applications - such as motors - channeling them through the mass market rebate structure providing with NTG of .96 may not be appropriate.	There didn't appear to be any gas measures and savings for this program in the available documentation.
Past Experience/ Evaluations			

PG&E	Medical Facilities	Large Commercial (Office Buildings, Government, Large Institutions)	Hospitality (Lodging) Facilities
Short Description	This program targets existing and new medical facilities. The new market integrated effort addresses the hospital segment while the Mass Market program will be used to serve the medical office and smaller nursing homes	This program provides services to large commercial customers using PG&E and third party specialists. It will also include statewide components and Mass Market Rebates as well as elements targeted to the large commercial facilities customers	This program targets new and existing lodging using PG&E and third party specialists
% of IOU Budget	3%	5%	1%
MWh	31,000	47,000	5,000
MW (summer)	6.69	10.30	1.14
Mtherms	-	-	-
TRC	2.75	3.10	1.95
Assessment of Cost Effectiveness			
Results Reasonable & Achievable	PG&E appears to know this market well.		
Design & Delivery	Hospitals account for 450 out of 20,000 medical industry accounts. PG&E experts will focus on reducing the barriers such as lengthy design and capital constraints that hinder the introduction of higher energy efficiency equipment. Targeted third party proposals will be sought to address the medical office and small nursing home segments through direct install efforts.	Services offered will include: life cycle costing and finance education; case studies; financial incentives for construction; commissioning and retrocommissioning services and upstream activities targeting HVAC, lighting, and plug load devices.	The program will include statewide elements as well as those targeted to PG&E's customers. The market integrated program will address the energy needs of larger hotels, convention centers, and chains. While the Mass Market program will be the primary delivery channel for smaller hotels/motels. Services provided include promotion of efficiency services for their operations, education and training of customers and market actors on new energy efficiency equipment and practices in their industry. The program will also promote all energy options applicable to this segment.
Markets Targeted	Markets targeted include: hospitals, medical offices and nursing homes.	Markets targeted include: new and existing large commercial and institutional office facilities	Markets targeted include : new and existing hotels, resorts, convention centers and hotel chains as well as the architects, engineers, contractors, and vendors who specialize in this segment
Lost Opportunities			Have Guest room energy management systems been considered –might be a lost opportunity.
Risks			
Other Issues	There didn't appear to be any gas measures and savings for this program in the available documentation.	There didn't appear to be any gas measures and savings for this program in the available documentation.	There didn't appear to be any gas measures and savings for this program in the available documentation.
Past Experience/ Evaluations			

PG&E	Residential New Construction Programs	Education and Training	Statewide Marketing and Information Program
Short Description	This program targets new residential housing using specialists from PG&E and third parties to facilitate delivery of a portfolio of energy efficiency services	Information only program at this time with two physical training facilities in use. Residential audits are also part of this program	Includes activities providing general messaging of energy efficiency to wide audiences
% of IOU Budget	4%	6%	-
MWh	5,000	-	-
MW (summer)	1.17	-	-
Mtherms	0.40	-	-
TRC	0.56	-	-
Assessment of Cost Effectiveness	The restarting of new construction accounting means that year one may not be cost effective, but should get more cost effective as time goes on. It is unclear why the TRC not improving.		
Results Reasonable & Achievable			
Design & Delivery	The program will include statewide elements as well as those targeted specifically to residential construction developers and contractors in PG&E's territory. The program is changing and adding a prescriptive based program, along with the performance based program historically offered. The performance based program will be based on 15% improvement over Title 24 inland and 25% improvement in coastal areas. The prescriptive portion of the program will provide rebates for deemed savings measures.	The Energy Training Center and the Pacific Energy Center were created as the main delivery channels for education and training efforts.	Mass market outreach - television and radio advertising
Markets Targeted	The program will include statewide elements as well as those targeted specifically to residential construction developers and contractors in PG&E's territory.	Cross cutting	
Lost Opportunities	Will renewable measures (or renewable ready homes) be considered as part of this program?		
Risks	Program is not cost effective - and due to more stringent Title 24 - it is unlikely to become cost effective		
Other Issues	If only ten (small) builders are being targeted per year, we are assuming that the largest builders are already in the program. If not, then the largest builders should be targeted for inclusion. Also has PG&E considered zero energy homes as part of promoting new homes? Also the number of homes and builders that will be targeted for inclusion in this program is not known.		
Past Experience/ Evaluations			

PG&E	Codes and Standards	Emerging Technologies
Short Description	This is an existing statewide program	This program is similar to existing program. It is an information only program with a goal of accelerating the introduction of innovative energy efficiency technologies, applications and tools
% of IOU Budget		
MWh	-	-
MW (summer)	-	-
Mtherms	-	-
TRC	-	-
Assessment of Cost Effectiveness	PG&E did not provide savings - but stated that they would be determined by June 1 2005	
Results Reasonable & Achievable	PGE estimates savings of 50 GWh by 2009	
Design & Delivery		
Markets Targeted		
Lost Opportunities		
Risks	Without saving information we are not able to evaluate this program at this time	This is a program inherent with risk. The key here will be to capitalize on the technologies with the greatest promise and incorporate them into other program offerings.
Other Issues		
Past Experience/ Evaluations	This program appears to be building on PG&E's past successful efforts. Recent white paper (SCE0240.01) on Codes and Standards Methods for Estimating Savings posted 04/05 on CALMAC	NYSERDA recently developed/conducted value/cost methodology for assessing R&D investments.

SDG&E Portfolio Overview

The SDG&E portfolio uses a standard program-oriented planning approach. While PG&E has moved to a market-sector-based approach, and SCE has moved to an approach that integrates programs with larger primary crosscutting programs, SDG&E remains structured within a program-oriented planning and implementation structure.

Within the SDG&E portfolio there are four programs that are information, education or training-related programs for which energy savings are not counted. These are Flex-Your-Power, On-Bill Financing, Home Energy Consumption Comparison Tool and the Emerging Technology Program.

SDG&E is also planning on fielding nine partnership programs. Because these programs are not fully developed and do not (at this time) have measure-level information or energy savings projections, these programs are not significantly reviewed in this assessment.

Finally, there are nine programs that make up the total projected energy savings for the SDG&E portfolio that are included in the materials reviewed for this analysis.

The programs making up the SDG&E portfolio are presented in Table 15. Table 15 presents the program, the program budget for 2006, the percent of the budget that is allocated to each program and the amount of GWh projected to be saved by each program. As of this review, projected energy savings for the partnership programs and the Third-Party Programs (to be bid) were not available for assessment by the TecMarket Works Team.

Table 15 SDG&E - Overview of Programs

Portfolio Component	Budget (\$M)	Percent of Budget
SDG&E Portfolio	81.15	100%
Programs Not Counting Savings		
Flex Your Power	2.79	3.44%
On-Bill Financing for Energy Efficiency Equipment	1.25	1.54%
Home Energy Consumption Comparison Tool	0.79	0.98%
Emerging Tech Program	1.36	1.68%
Partnership Programs		
Community College Partnership	2.00	2.46%
IQU/UC/CSU Partnership	2.00	2.46%
SDREO Energy Resource Center Partnership	1.35	1.67%
City of San Diego Partnership	0.92	1.13%
City of Chula Vista Partnership	0.73	0.90%
San Diego Co. Water Authority Partnership	0.73	0.89%
Department of Corrections Partnership	0.40	0.49%

Portfolio Component	Budget (\$M)	Percent of Budget
Codes & Standards Program	0.40	0.49%
County of San Diego Partnership	0.31	0.39%
Programs Reporting Energy and Demand Savings		
Third-Party Programs	15.03	18.52%
Energy Savings Bids	11.73	14.46%
Small Business Super Saver	9.58	11.80%
Upstream Lighting Program	5.14	6.34%
Standard Performance Program	3.38	4.17%
New Construction	3.32	4.10%
Express Efficiency Rebate Program	3.08	3.80%
Single Family Rebate Program	2.47	3.04%
Advanced Home Program	2.21	2.73%
Multi-Family Rebate Program	2.16	2.66%
Limited Income Refrigerator Replacement & Lighting	1.09	1.34%
Lighting Exchange and Education	0.50	0.62%
Sustainable Communities Program	0.39	0.49%

Goals Attainment – SDG&E

Comparison with CPUC Goals

According to the information available to the TecMarket Works Team during the review period, SDG&E projects that their portfolio will surpass the energy goals provided by the CPUC in each of the program years 2006, 2007 and 2008. They project that SDG&E's programs will achieve 105 percent of the CPUC's first year GWh and MW goals, and 106 percent of the first year natural gas goals. SDG&E forecasts that by the end of 2008 they will have achieved 124 percent of the GWh goals, 116 percent of their MW goals and 106 percent of their natural gas savings goals. These figures suggest that as the programs wind up they will tend to become more efficient at achieving the electric energy goals. Table 16 presents SDG&E's projections of their portfolio's ability to reach CPUC energy savings goals. The MW achievements presented in this table are the average mega-watts projected to be captured and are not the critical summer peak MW.

Table 16 SDG&E - Energy Goal Accomplishment (2006-2008)

Projected Program Impacts By Year						
	2006		2007		2008	
	Total	% of 2006 Goal	Total	% of 2007 Goal	Total	% of 2008 Goal
Energy Savings – Electricity						
Annual Net Electricity Savings (GWh/yr)	294	105%	323	113%	353	124%
LIEE (GWh/yr)	7		7		0	
EE (GWh/yr)	287		316		353	
Annual Net Electricity Goal (GWh/yr)	281		285		284	
Cumulative Net Peak Savings (MW)						
Cumulative Net Peak Savings (MW)	57	105%	120	110%	189	116%
LIEE (MW)	0		0		0	
EE (MW)	57		120		189	
Cumulative Net Peak Goal (MW)	55		109		163	
Energy Savings – Natural Gas						
Annual Net Therm Savings (MTh/yr)	2,852	106%	3,744	121%	3,912	106%
LIEE (MTh/yr)	155		155			
EE (MTh/yr)	2,697		3,589		3,912	
Annual Net Therm Goal (MTh/yr)	2,700		3,100		3,700	

The TecMarket Works Team's opinions of SDG&E's projections are that they are reasonable given the portfolio being developed and programs being offered. However, we have some concerns about the partnership programs being able to cost-effectively support SDG&E's energy goals and there is limited information on the how the goals will be supported by the third-party providers via the competitively bid programs. We have no information on the expected cost effectiveness or of the projected savings from the partnership programs, and there is limited information on the programs that will be bid to third-party providers.

Comparison with Potential

In order to conduct a comparison of SDG&E's portfolio goals with the SDG&E energy potentials we used KEMA's 100 percent achievable potentials (potential if the program funding was increased by 100 percent). This allowed for a comparison of an expanded program portfolio that more closely matched the spending levels across the portfolio funding stream. However, it should be noted that the SDG&E programs represent approximately a 113 percent increase from 2004-2005 funding rather than a 100 percent increase, as a result, the potentials estimated in this assessment should be considered conservative for the SDG&E programs when compared to the KEMA potentials estimates.

At this time there is no published report for industrial potentials, however, there is an industrial potentials study currently being finalized by KEMA. For the SDG&E industrials potential we used preliminary estimates from the soon-to-be-published 2005 industrial potentials study being completed by KEMA. The industrial potentials should be considered proxy estimates that will need to be adjusted once the KEMA study is released in 2005. The TecMarket Works Team acknowledges that these potential estimates will change over the course of KEMA's efforts to more fully develop the estimates.

KEMA's published potential reports provide 10-year estimates of sector potentials. In order to adjust the KEMA potentials to the 3-year 2006-2007-2008-program cycle we multiplied the KEMA potentials by .3. We use 3-year potentials in this assessment because the current program planning cycle is three years in length.

We were unable to segregate the programs into residential, non-residential and industrial sectors using the portfolio data, because several programs crosscut over sector lines. As a result, we summed the SDG&E territory potential estimates for the 100 percent increase in funding levels presented in the KEMA reports, across the residential, non-residential and industrial sectors and compared these potentials with the SDG&E portfolio estimates.

Natural Gas

As noted in Table 17, the total natural gas potential, as identified by KEMA is 7.73 mega-therms (Mth) for a three-year period. The CPUC's goal for the capture of natural gas by the SDG&E portfolio is 9.5 mega-therms, or about 23 percent higher than the KEMA-identified potential for a 100 percent increase in program funding. A review of the SDG&E portfolio indicates that the IOU will capture 10.51 mega-therms of natural gas over the three-year program period. This is about an eleven percent increase over the CPUC's goal and represents a 56 percent increase over the KEMA's 100 percent potential estimate, with a budget increase of about 13 percent beyond the 100 percent increase level used by KEMA to establish the potential. SDG&E is out-performing the potentials estimate for natural gas savings. However, this projection is based on the use of Policy Manual NTG values, which may be significantly different than ex-post evaluation-confirmed impacts.

Gigawatt Hours

SDG&E's plans (Attachment II-Table 3.2) indicate that the non-bid, non-partnership programs can save about 970 GWh by the end of the third year, or about 120 GWh (19 percent) beyond the CPUC's goal of 850 GWh. The first year's plan indicates that the SDG&E programs will save 230.4 GWh. If this progress is replicated in years two and three, these programs should be saving in the neighborhood of 690 GWh in year three (230 x 3) or more as a result of second and their year efficiencies. If the bid and partnership programs can provide 280 GWh by year three, SDG&E should be able to achieve their projected goal of 970 GWh. This means that the bid and partnership programs will need to get on-board producing significant savings in the first year. This may be a challenge for the bid and partnership programs that typically need time to ramp-up and move to a steady state, cost-effective mode of operation. At this time it looks like SDG&E will out perform the CPUC's GWh goals through SDG&E programs and the addition of partnership and bid programs. We are unable to assess these projections beyond this general assessment because the bid and partnership programs do not have GWh goals or measure listings to assess.

If the bid and partnership programs can ramp-up quickly, SDG&E should have few problems meeting not only the CPUC's lower goals, but also be able to meet or exceed SDG&E GWh goals.

Megawatts

A comparison of the SDG&E portfolio's MW performance is not provided in this assessment because of an inconsistency between the definition of peak MW between KEMA's potentials report and the SDG&E projections. The SDG&E MW goals are expressed in average MW consistent with CPUC-ED instructions. However, the KEMA potentials report uses system summer peak in setting the potentials. The two dissimilar definitions significantly affect the goals and projected impact estimates and renders these metrics non-comparable.

Table 17 provides a summary overview of the potentials for a 100 percent increase in program spending over KEMA's base year, the CPUC's goals for SDG&E and the projected accomplishments of the SDG&E portfolio.

Table 17 SDG&E - Potential and Portfolio Savings Projections (2006-2008)

Energy	Residential	Non-Residential	Industrial*	All Sectors		
	100% Ach	100% Ach	100% Ach Proxy	100% Ach Proxy	CPUC Goal	Utility Plan
Mth	2.82	2.47	1.44	6.73	9.50	10.51
GWh	209.81	192.68	46.54	449.03	850.00	970.00

*Proxy value used because industrial report is unavailable at the time of this report.

Budgets and Service Offerings Balance

The budget and service offerings appear to be reasonably in balance at the sector level, and reflects the need to acquire resources from those sectors that can most cost effectively acquire resources, without under serving residential or hard-to-reach sectors. This is always a balancing act. If programs were required to be most cost effective, they would target only the industrial and large commercial sectors where energy savings are less expensive. The CPUC will want to keep in mind that the more stringent the energy savings goals, the more likely small commercial, residential and hard-to-reach sectors will be abandoned in favor of the more cost effective sectors. The CPUC will want to also keep in mind that different people will have different perspectives on which markets should be served, how the portfolio's balance should be structured, and which measures and initiatives should be incorporated into the portfolio's designs.

The single largest grouping of SDG&E's portfolio funding is going into the "Other" sector, see Table 18. This may reflect the fact that 19 percent of funding is going to third parties and it is premature to calculate which sectors will be targeted by third-party programs. Of the programs that are targeting specific sectors, 38 percent of the savings are expected to be achieved in the non-residential sector, and only 1 percent in the non-residential new construction sector. While 6 percent of the savings are expected in the residential sector, only 1 percent will be achieved in residential new construction. In total, only 2 percent of the savings are coming from residential and non-residential new construction programs, which account for 7 percent of the funding.

Table 18 SDG&E - Projected Funding and Energy Savings by Sector (2006)

Sector	Funding	% of 2006 Total	Savings (Net kWh)	% of 2006 Total
Residential	\$ 7,003,878	9%	17,071,294	6%
Residential New Construction	\$ 2,607,250	3%	2,230,152	1%
Non-Residential	\$ 31,027,266	38%	110,297,490	38%
Non-Residential New Construction	\$ 3,323,540	4%	2,947,189	1%
Other	\$ 37,183,486	46%	154,717,086	54%
Total Funding	\$ 81,145,420		287,263,211	

Energy Savings Issues

To assess if the portfolio energy savings are reasonable for the measures used, we conducted a review of the measures included in the SDG&E portfolio. First we sorted out all the measures that used DEER values to predict energy savings. These savings were judged to be reasonable because they were based on the DEER database. We did not review these measures beyond confirming that they are based on DEER database estimates. We then examined all measures that did not use DEER for estimating impacts.

Table 19 SDG&E - Savings Estimates Developed Using DEER Data

	Number of Measures	Percent of IOU Savings		
		kWh	Therms	kW
No Relationship to DEER	242	46%	90%	48%
Relationship to DEER	95	54%	10%	52%

DEER Measures Estimates

SDG&E used DEER estimates for 54 percent of the kWh savings, 52 percent of the kW impacts and for 10 percent of the natural gas savings included in the portfolio. There were 95 measures in the SDG&E portfolio that were tied to the DEER database. As noted earlier the TecMarket Team conducted no additional assessment of these measures and considers them reasonably reliable because of their DEER-associated estimation process.

Non-DEER Measure Estimates

SDG&E used non-DEER estimation procedures to estimate 46 percent of the projected energy savings (kWh), and 48 percent of the estimated demand impacts. Non-DEER estimation procedures were used for 90 percent of the natural gas saving measures included in the portfolio.

Twenty-three non-DEER measures were reviewed by the TecMarket Team. These measures represented the majority of the energy savings that were not estimated using DEER data. For three of these measures we could not locate an estimation approach to account for the energy savings claimed within the information provided by the IOU. An additional six measures were listed for which we found some estimation support for the energy savings projected, but the information provided was not enough to allow us to

replicate the savings projected, or did not provide enough information for us to understand the estimation approach. The remaining 14 measures were tracking to documents or work papers that allowed us to review the approach and agree with the level of savings projected for these measures. SDG&E will need to provide estimation information for the nine measures that we could not fully review. Table 20 presents the non-DEER measures and the TecMarket Team's assessment of the reasonableness of the estimation approach. In Table 20, "no documentation" means that the Team could not locate an estimation approach within the documents provided. The use of the term "not clear" means the estimation approach was provided, but it was not clear or comprehensive enough to replicate the estimate or did not provide key assumptions or supportive data to assess the approach. The term "reasonable" means that we could understand and replicate the approach and we agree that the resulting estimate is reasonable for that technology.

Table 20 SDG&E - Non-DEER Measure Energy Savings Assessment

Calculation Approach Provided by IOU	Measure As Described by IOU	% of IOU kWh Savings	% of IOU Therm Savings
No Documentation	Gas (SPC - Standard Performance Contract)	0.0%	8.7%
	Lighting - LED Bulbs 3w	1.5%	0.0%
	Lighting (SPC- Standard Performance Contract)	1.2%	0.0%
No Documentation Total		2.7%	8.7%
Not Clear	Energy Savings Bids (Electric)	16.5%	0.0%
	Energy Savings Bids (Gas)	0.0%	1.9%
	Other (SPC-Standard Performance Program)	4.8%	0.0%
	Single Family, Quality Insulation Installation, CZ 10	0.0%	1.0%
	Whole Bldg - Elec	2.9%	0.0%
	Whole Bldg - Th	0.0%	8.8%
Not Clear Total		24.1%	11.8%
Reasonable	Attic Insulation	0.0%	4.8%
	Gas Wtr Htr and/or Boiler Controller (20 units or less)	0.0%	1.3%
	Gas Wtr Htr and/or Boiler Controller (21 units or more - Digital)	0.0%	20.6%
	Gas Wtr Htr and/or Boiler Controller (21 units or more Non-digital)	0.0%	3.6%
	Heating - Greenhouse Heat Curtain	0.0%	21.3%
	Heating - Infrared Film for Greenhouse	0.0%	3.1%
	Pool Pump Timeclock Reset Agreement	1.9%	0.0%
	Refrigeration - Food Service -Auto Closer for Main Cooler Doors	2.1%	0.0%
	Refrigeration - Food Service -Auto Closer for Main Freezer Doors	2.1%	0.0%
	Refrigeration - Glass or Acrylic Doors-Low Temperature Case	2.1%	0.0%
	Software Plug Load Sensors	1.2%	0.0%
	Water Heating - Pre-rinse Spray Valves	0.0%	5.7%
	Whole Bldg - Elec II	0.3%	0.0%
	Whole Bldg - Th	0.0%	0.8%
Reasonable Total		9.6%	61.2%

Cost Effectiveness – SDG&E

SDG&E estimates the TRC cost effectiveness ratio for their portfolio at 1.61 indicating the portfolio is cost effective at acquiring energy resources for California. However, several of SDG&E's programs do not show a cost effectiveness estimate and are excluded from the portfolio cost benefit calculations.

TRC Not Yet Developed

The third-party programs are not yet structured and cannot have a cost benefit ratio until after they are planned in greater detail. In addition, there are nine partnership programs. These also do not have an assigned cost benefit ratio because these programs are not yet formed to the extent that a TRC can be calculated.

TRC Not Applicable

There are four programs for which the TRC test is not applicable. These include three information programs, and the crosscutting On-Bill Financing initiative.

TRC Reported

The remaining programs in the SDG&E portfolio have a cost benefit ratio estimated using the TRC test. Four of these programs are projected not to be cost effective. The remaining eight programs have benefit cost ratios that are positive and when added to the portfolio, bring the cost benefit ratio for the portfolio to 1.61. Table 21 presents the SDG&E portfolio and the results of the TRC tests, where applicable.

Table 21 SDG&E - Program TRC Test Results

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Program Name	TRC Test Results
SDG&E Portfolio	1.61
Programs that are not effective*	
Advanced Home Program	0.71
Limited Income Refrigerator Replacement & Lighting	0.75
NEW-New Construction	0.77
Single Family Rebate Program	0.97
Programs that are cost effective*	
Sustainable Communities Program	1.01
Express Efficiency Rebate Program	1.31
Energy Savings Bids	1.51
Lighting Exchange and Education	1.60
Multi-Family Rebate Program	1.77
Standard Performance Program	1.78
Small Business Super Saver	2.33
Upstream Lighting Program	3.91

*Assumes NTG values used are accurate

TRC and PAC Issues

There are a number of SDG&E programs in which the TRC is greater than the PAC indicating that the PAC may have more costs being counted than the TRC. The TRC, which by design, should include more costs than the PAC. This condition indicates that the SDG&E may not be applying costs and/or benefits the same way across the programs. Therefore, it is likely that the planners are systematically interpreting the B/C tests in a non-intuitive fashion. All costs should be counted in the TRC, but they are not if the TRC is greater than the PAC.

The programs for which the TRC is greater than the PAC include the portfolio as a whole. According to SDG&E the PAC for the portfolio is 1.42 while the TRC is 1.61. Likewise the following programs have TRC ratios that are greater than the PAC.

1. Limited Refrigerator Replacement and Lighting Program
2. New Construction Program
3. Sustainable Communities Program

The remaining programs have TRC that are less than the PAC as would be expected.

Issues Addressed – SDG&E

Administrative Costs

Using SDG&E's revised portfolio workbook of May 16, 2005 we exported the administrative costs as a percent of total programs costs. The results from this effort were surprising in that there is a very wide range of administrative cost depending on the program reported. Administrative costs for the portfolio as a whole average 16.73 percent, however the range runs from a high of 100 percent of costs to a low of 0 percent of costs.

One partnership program has 100 percent of the costs for the program placed in the administrative line of the worksheet. We expect that this is an entry error. Likewise many of the partnership program have administrative costs in the 25 to 4 percent range, this is probably more near to the actual administrative costs once SDG&E's administrative costs are added to the partnership's administrative costs. However, other partnership programs have administrative costs in the 1 to 3 percent range. This may be SDG&E administrative cost without the added partnership's administrative costs. On-Bill Financing has high administrative cost. We suspect that this is because a large part of this initiative will be structuring, monitoring and managing the loans and dealing with customer shut-offs and debt collection efforts. But we are not sure about this suspicion. New construction has administrative costs that seem high, but this may be because much of the effort will be spent trying to encourage new construction techniques before these techniques actually show up in the market. However, we are confident that several of these costs reported are in error and will be revised in the June 1 filing. This table (Table 22) will need to be up-dated following the June 1 submission.

Table 22 SDG&E - Administrative Costs as a Percentage of Program Budgets

Component of the Portfolio	Administrative Costs*
Portfolio as a whole	16.73%
County of San Diego Partnership	100.00%
New Construction	45.25%
On-Bill Financing for Energy Efficiency Equipment	44.27%
Third-Party Programs	40.00%
City of Chula Vista Partnership	40.00%
Home Energy Consumption Comparison Tool	40.00%
SDREO Energy Resource Center Partnership	39.00%
Emerging Technology	37.86%
Codes & Standards Program	36.14%
City of San Diego Partnership	27.25%
Sustainable Communities Program	21.73%
Lighting Exchange and Education	20.55%
Single Family Rebate Program	18.54%
Advanced Home Program	17.99%
Multi-Family Rebate Program	10.86%
Express Efficiency Rebate Program	10.38%
Standard Performance Program	8.15%
Upstream Lighting Program	7.08%
Limited Income Refrigerator Replacement & Lighting	5.56%
Small Business Super Saver	3.69%
Energy Savings Bids	3.47%
Community College Partnership	2.76%
Department of Corrections Partnership	1.20%
IOU/UC/CSU Partnership	1.17%
Flex Your Power	0.00%
San Diego Co. Water Authority Partnership	0.00%

* From SDG&E Revised Workbook of May 16, 2005

Net To Gross

As instructed by the CPUC, SDG&E used NTG estimates from the Policy manual. As a result, the NTG numbers used were either .80 or .96 depending on the measure. This may be unrealistic. For example, in the Team's experience refrigerator pick-up programs can have a NTG ranging from .3 to .8 depending on how the participant screening process is structured or how participants are identified and enrolled. The NTG estimates used in the portfolio are significantly high when examined from a perspective of net-realized and evaluation-verified NTG. This also means that the cost benefit estimates across the portfolio are higher than what will be confirmed via the evaluation process and net energy savings will cost more than what is reflected in the portfolio planning documents. While using standard NTG levels makes it easier for planning and analysis, their use significantly increases the risk of achieving savings by overstating savings goals for the portfolio.

Risk Issues

There are a few general risks that apply to the SDG&E portfolio as a whole and some additional program-related risks that are discussed in this section of the report. In addition, the program-specific review tables presented at the end of this chapter provide additional information that applies to specific programs within the SDG&E portfolio.

Ramp-up

Much of the SDG&E portfolio is the continuation of programs that have performed well over the past years. The use of proven programs helps lower the risks of programs not performing up to their expectations. However, one risk to the portfolio is associated with the significant increase in operating budgets and size of the goals compared to previous programs. According to D04-02-059, SDG&E 2004-2005 program budget was \$38.8M per year, according to the data provided by SDG&E for the 2006 program, the IOU will spend \$81M in 2006. This represents a doubling of the budget in a single year.

There will be increased risk in launching on a wide number of programs all ramping-ups at the same time. This will require significant management and IOU supervision to oversee this ramp-up, and to successfully implement larger and more aggressive programs. There is also a risk that as the programs attempt to ramp-up, the higher administrative and management costs associated with this ramp-up will need to be offset by increased enrollments and installations. SDG&E will need to carefully monitor these programs to see that they are successfully moving in a cost effective direction.

New Implementers

Strongly associated with ramp-up risk, is the risk associated with obtaining new implementers to field energy programs that are also effective. Experience in California has shown that not all service providers are up to this difficult task.

Third-Party Bid Programs

This part of the SDG&E portfolio is significantly unknown at this time. Essentially SDG&E is placing a larger component of the portfolio into the competitive market without guarantees that it will be able to find service providers that can cost effectively deliver services. Past experience has shown that there are effective third-party programs as well as programs that need improvements to be cost effective thus risk increases.

Partnership Programs

SDG&E has a significant number of these types of programs. The success of these programs often hinge on the ability of the partner to acquire cost-effective savings. While partnership programs can look good in the design stage, in practice they often have implementation issues that work to lower the amount of energy that can be acquired through these programs. However, if they are effectively directed, managed and operated, partnership programs can expand the effects of the portfolio. Again, these unknowns increase portfolio risk.

Flex Your Power (FYP) and Other Information Programs

This program, in particular, and similar programs, in general, are a significant risk. FYP is a high-budget program being funded without a solid understanding of what types of messages and promotional events are successful at not just informing, but in causing action to be taken. Past evaluations have not addressed these issues well. This program is a significant unknown in terms of its ability to increase energy savings directly or indirectly. Funding seems to be based on applied trust that it will directly or indirectly accomplish some level of energy savings across all sectors, without supporting documentation that this relationship is real.

Freeriders

Several programs rely on point of purchase approaches. These programs can have significant freeriders that act to erode savings unless there are strong participant filter screens.

On-Bill Financing Initiative

This program component is a significant risk in that we are not sure the market is ready for another financing structure. Past financing programs in other states have not done well, while others have succeeded. SDG&E will need to monitor this effort to determine if it should continue past the first year.

There are several other program-specific issues discussed at the end of this chapter. The issues identified above represent some of the more significant issues within the portfolio.

Comprehensiveness and Lost Opportunities – SDG&E

This review focuses on the comprehensiveness of the portfolio and lost opportunities that are associated with selected programs.

During the review the TecMarket Team identified a number of potential lost opportunities associated with the SDG&E portfolio. These include.

Limited Income Refrigerator Replacement program

It does not seem to include lighting measures that if done well can be as cost effective as refrigerators. The whole portfolio could be strengthened by creating referrals to other programs.

Hard-to-Reach Lighting Turn-In and Education Program

Seems to only focus on one size bulb, yet other size bulbs offer greater savings and better fit on several fixture types.

Home Energy Consumption Tool / HEES

It does not seem to have a strong referral component to get participants into other programs or to refer participants to people who can get the needed work done. HEES does not seem to refer participants to do-it-yourself instruction guides for recommended work.

Multifamily Rebate Program

MFR does not seem to include CEE Tier II dishwashers and clothes washers.

Advanced Home Program

This creative program seems to only focus on ducts, cooling, water heating and insulation. No advanced lighting or heating described. Yet there are a number of new lighting systems that are showing potential.

Clothes Washer Voucher Incentive Program

Focuses only on one point of purchase (POP) measure when there may be other POP interests by exposed shoppers. Huge lost opportunities are created by allowing vouchers for washers with a water factor (WF) of 9.5, when the average WF for washers qualifying for Oregon tax credits is below 6.0.

Bidding and Third-Party Issues – SDG&E

Little information to assess

Partnership Program – SDG&E

Little information to assess

Policy Issues – SDG&E**Residential New Construction**

The four utilities have taken different approaches to Residential New Construction. SDG&E has decided to eliminate its Residential New Construction program – instead, it has its Advanced Home Program, with a budget of \$2,213,250

“The Advanced Home Program promotes residential new construction with a crosscutting focus to sustainable design and construction, green building practices and emerging technologies. Additionally, the program supports efficient heating, cooling, water heating system and building envelope design and installation. Through a combination of education, design assistance and financial support, the program works with the building and related industries to exceed compliance with the California Building Energy Efficiency Standards (Standards), to prepare builders for future changes in the Standards and to create future pathways to go far beyond compliance and traditional energy savings objectives. The program will interact on a statewide basis to share best practices but will be implemented locally by the utility.”

Given the concerns about cost effectiveness of residential new construction programs and the need to focus on cost effective programs this change might be the preferred method for addressing residential new construction, however, the TecMarket Team suggests that this program be evaluated with attention paid to how well these types of programs help develop a growing market for energy efficient homes.

From observing the Public Advisory Group (PAG) process, it appears that there is a strong interest in having Residential New Construction programs at the utilities. An alternative to constantly scrutinizing this program for cost-effectiveness is to combine it with related programs that are designed to attack the same market. New Construction or Advanced Homes programs could be integrated with other programs, such as the Emerging Technologies Program, Codes and Standards Program, and Sustainability programs in order to establish a strategic initiative that is specifically designed to provide cost effective long-term savings through adding innovations to a large dissemination program, and eventually to code changes. In that way the efforts are strategically designed and would meet the criteria of actually being run to produce long-term cost-effective savings. Even then the program that helps disseminate the technological improvements may need to be larger than that supportable by the current budget.

Conclusion

In conclusion, the SDG&E portfolio represents a solid mix of programs and measures that together, as a portfolio, are projected by SDG&E to provide cost effective energy savings. This review covers several issues pertaining to the programs in this portfolio, but also recognizes the complexity and comprehensiveness of the portfolio. The SDG&E portfolio is projected to meet the goal set out by the CPUC as long as the Policy Manual NTG ratios are applied to the covered measures. Achievements that are estimated from ex-post evaluation verified capacity might be significantly smaller for some programs once achieved NTG ratios are applied. This may lower the cost effectiveness of the SDG&E portfolio to be only marginally cost effective.

Many programs are expansions of successful programs that will need to be ramped-up to higher level than in previous years. This can be a challenge for some programs. The portfolio relies on the bid programs, the third-party programs and the partnership programs to be cost effective and to meet the CPUC's energy goals. However, much of these efforts are beyond the direct control of the IOU. It will be critically important for SDG&E to carefully monitor these programs and be ready to move resources away from poor performing programs or programs that are slow to ramp-up, to other programs that are providing cost effective programs if the goals are to be achieved.

Program-Level Assessment – SDG&E

This section of the report presents the program-specific assessment information and issue discussions that were identified during the portfolio review effort. The issues reviewed are presented in the left-most column of Table 23 and each subsequent column represents a specific program, allowing the reader to see if the review team determined there to be an issue associated with a specific program, and to understand the review team's perspectives associated with each issue.

Table 23 SDG&E - Program-Level Assessment

SDGE	Limited Income Refrigerator Replacement Program	Hard-To-Reach Lighting Turn-in and Education Program	Home Energy Consumption Tool / HEES
Short Description	Provides no cost refrigerators to customers just above LIEE funding limits	Customers exchange inefficient lights for efficient lights via neighborhood targeted outreach	Home energy audits provided on-line, via U.S. Mail and by telephone.
% of IOU Budget	1.3%	0.6%	0.6%
MWh	1,998	2,036	-
MW	0.28	0.46	-
Mtherms	-	-	-
TRC	0.75	1.60	-
Assessment of Cost Effectiveness	It is not expected to be cost effective at current TRC of 0.75. It uses a single weighted average energy savings for all units.	Seems reasonable in that it is focused on getting EE bulbs in use.	No energy savings projected from this effort.
Results Reasonable & Achievable	California has high energy saving for this type of measure, and has data to back it up.	Results depend on getting the bulbs installed and into high use fixtures.	It continues past audit program. Should meet goals if it is well promoted.
Design & Delivery	The LIEE participant is screened based on income, then they examine refrigerator, if it is considered old based on date of manufacturer, they will replace it.	Seems sound, and similar programs have worked. It focuses on neighborhood give-away exchange approach and relies on neighborhood and workplace interactions and motivation.	This program beefs up past audits by providing a benchmark against other homes in the neighborhood.
Markets Targeted	Is a tag-along program to the LIEE program. The actual target is LIEE participants, but many do not qualify. This targets those that do not qualify for LIEE, but are below middle income. This is the near poor. It is possible that the market size is much larger than that being targeted.	Hard to reach neighborhoods.	Residential home owners
Lost Opportunities	Lighting is not included in this program, nor are there options for participant referrals to Energy Star or other programs.	The program includes one size bulb, but offering multiple sizes may provide a better fit in some fixtures and provide more savings. Education focuses on telling about other programs, not on where to use the bulbs. It also does not seem to advise of the audit service available to them.	None noted as long as the audits do a good job of referring people to programs that apply to their home situation.
Risks	This is a single measure program. Freeridership will be low as these are people who are not already looking to buy a refrigerator.	Not sure how the customer is being educated about where to put the bulb. Without good education these can go into low use fixtures or sit on the shelf.	Will the education provided be effective at causing actions to be take, thereby providing some savings? Will the referrals be effective at driving customers to other programs?
Other Issues	Program write-up says it is a cost effective program, but the worksheet says it is not. It is unclear why this program is being offered.	Need to examine placement and use of the bulbs in the evaluation.	This type of program has been shown to produce savings if done well and if customers understand what needs to be done. The program also describes education about time of use as a demand response program strategy.
Past Experience /Evaluations	This is really a new program to get refrigerators into the near poor.		There are not a lot of evaluations of the effects for these types of audit programs. Most studies have focused on on-site audits.

SDGE	Residential Education and Outreach	Residential Rebate Program	Multifamily Rebate Program
Short Description	Provides general education and information outreach efforts.	Provides rebates and POP discounts to a limited number of residential equipment.	Provides incentive to get measures installed in both common space and in occupants units.
% of IOU Budget	0.4%	3.0%	2.7%
MWh	-	8,660	4,378
MW	-	5.98	0.74
Mtherms	-	175	371
TRC		0.97	1.77
Assessment of Cost Effectiveness	No energy savings projected from this effort.	Continuation of an on-going program, which appears to be border-line cost effective. The spreadsheet says savings of 9M kWh for 2006, but the write-up says 3M kWh, it is assumed that the spreadsheet is correct as it is measure based.	Appears cost effective with the measure mix and installation assumptions.
Results Reasonable & Achievable	Continues past educational and information outreach efforts.	Results appear to be achievable if they can get the customer to install the measures and ramp up. New POP discount can increase freeriders lowering TRC if not well screened.	Relies on savings from both common space and from occupants.
Design & Delivery	Uses a wide range of information delivery approaches that have become standard in this industry.	Begins an effort to offer discounts at the register (POP)	Expand on multi family designs from previous years by also targeting occupants in addition to common areas. It will also include on-bill financing.
Markets Targeted	Residential owners and renters.	All residential customers in homes of less than 4 units.	Continues effort to go after this very large and largely underserved market via owners, associations, property managers, plumbers and linking to education programs efforts.
Lost Opportunities	Cannot be assessed until after the education and information materials are reviewed.	Seems to focus on the measures that can be the most cost effective. Relies on lighting program to capture lighting savings. The program assumes a 95% furnace which is probably not cost effective.	Tier II dishwashers and tier II clothes washers are not included.
Risks	No energy risk, but there is a relatively high risk that the education and information will not drive customers to programs.	The dishwashers are only for tier II units and customers may be confused about tier I & II. With POP discounts the program may get an increase in freeridership. There are a lot of savings in pool pumps.	Will need to capture strong participation from both owners and occupants. Success depends on capturing participation from both large and small properties. Small properties may increase costs per property served, but added occupant savings may off-set that cost.
Other Issues	Indicates that education is a demand response measure.	Whole house fans spend \$512 to gain 45 kWh. Not sure why this measure is in the program.	The evaluation should address how well occupant savings are being captured. Change in including occupants means that the TRC should be recalculated after first year.
Past Experience /Evaluations			

SDGE	Flex Your Power	Express Efficiency Program	Small Business Super Saver
Short Description	General statewide awareness program to stimulate awareness and energy saving actions.	Continues effective past program but removes cap eliminating large businesses. Simple fast rebate program for prescriptive measures.	Rebate program for businesses under 100kW or 20,800 therms.
% of IOU Budget	3.4%	3.8%	11.8%
MWh	-	14,989	48,461
MW	-	2.28	6.92
Mtherms	-	208	283
TRC	-	1.31	2.33
Assessment of Cost Effectiveness	No energy savings projected from this effort.	Previously cost-effective. It adds large business and eliminates confusion of dual programs offering the same things based on size of business.	Strong TRC. But there appears to be some weird numbers in the measure level spreadsheet. Total incentives, administration and TRC for 2007 must be in error.
Results Reasonable & Achievable	No real effects projected	Looks solid given it is an expansion of a tried and true program.	Seem reasonable for 2006, some issues in 3007 projections.
Design & Delivery	Wide range of marketing and awareness efforts	Long standing program known by larger customers and promoted by vendors. Includes incentive to go to demand response measures. Simple rebate systems.	Uses rebates and direct install to capture savings. Reduces incentives from previous programs. Uses prescribed measures. Uses on-bill financing.
Markets Targeted	All markets	Nonresidential retrofit over 100 kW monthly or 20,800 therms.	Very small and hard to reach businesses with limited capital for EE measures.
Lost Opportunities	Not applicable	Appears solid.	Covers a wide range of measures that provide cost effective savings.
Risks	There is a large risk in the program not providing stimulation in the market to achieve savings through actions taken or program referrals.	Customers can reserve dollars, but may not take actions causing dollars to lapse into next years reducing savings.	The risk is getting the level of participation projected. But services allow direct install and on-bill financing with experienced contractors. This is a significant ramp-up to serve this many customers.
Other Issues	This program needs a rigorous evaluation of effects to determine if resources are being well spent.	It appears that HIDs are not being replaced very much, and we would have thought there was more potential in this high savings measure. Not sure if the install rates take full account of potential now that very large businesses can participate.	NTG for measures 234128, 234129, 234130 may be in error.
Past Experience /Evaluations	Evaluation of the effort did not focus on effects, only on the message delivery and retail participation counts from tracking system.		

SDGE	Standard Performance Contract (SPC)	Energy Savings Bid Program	Savings By Design
Short Description	Incentive program for non-prescriptive measures.	Large projects or aggregated project to bid on energy efficiency savings provided.	Encourages energy savings in design of non-res buildings.
% of IOU Budget	4.2%	14.5%	4.1%
MWh	11,267	41,440	2,947
MW	1.40	6.70	0.65
Mtherms	151	85	50
TRC	1.78	1.51	0.77
Assessment of Cost Effectiveness	Savings are based on estimates not included in the review documents we have at this time. NTG is lower than the bidding program, but bidding will have high freeridership, so how can this program be lower than bidding on the NTG?	Will depend a great deal of market acceptance and the bids that are provided.	TRC is low due to lack of project carryover. TRC grows each year as projects come on line. Moves to be cost effective as projects are completed.
Results Reasonable & Achievable	The potential results of this program are not clear. There is no real data to show what they expect to accomplish. Need a strong ramp up.	Not a lot of information about how the savings estimate is being made. No measures listed, just large electric and gas savings. The results will depend on the bids.	This program will be competing with the new code changes, so there will be an effect. It is not clear how the results are estimated. There are very gross measure categories and no detail on savings methods.
Design & Delivery	Tries to influence project planning to capture energy savings, requires confirmation of savings estimates.	Not a lot of detail on how this will be structured or how bids will be obtained and evaluated.	Seems to be a continued program with good record.
Markets Targeted	Non-residential customers that need custom applications.	Must be non-res customers or aggregated customers who can save 500,000 kWh annually. However, SDREO is incorporated into the design. Not sure why this is unless they have some large projects to go after, but other cities are not included.	Non-res new construction to build more efficient buildings.
Lost Opportunities	There don't appear to be any HVAC measures targeted based on the available information.	Because anything can be bid, there should be no lost opportunities other than what the bid could get if expanded.	Flexible program so that designers can achieve savings in different ways as long as designs are above T-24
Risks	No justification for how savings are estimated.	It appears that incentives are higher for this program for lighting than for other programs, but no reason is given. Maybe incentives are presented as an average. No mix of measures is assumed. Seems "other" savings are so large it is driving the TRC, but it is not clear what "other" is.	The post 2006 market will be working with the new T-24 code and thus new designs may be harmed. New T-24 may be enough to drive designers to the next level to get incentives, it is not clear which will happen yet. This is a risk.
Other Issues	The administrative costs in the write up are different than the spreadsheet.	The administrative costs in the write up are different than the spreadsheet. The difference between this program and the standard performance program is not clear, particularly if larger projects were allowed in the standard performance program. It is not clear if the project will be assessed equally across all bidders.	Admin costs are different in write-up and spreadsheet. Note there is a difference in Savings-By-Design TRCs across the IOUs and they are using very different costs for natural gas (\$1.00 for SDG&E vs \$49 for SCG). It is not clear why there is so wide a cost difference. Also IOU are using different percent improvements above T-24 (5% 10% & 15%).
Past Experience /Evaluations			

SDGE	Sustainable Communities Program	Advanced Home Program	On-Bill Financing Pilot Program
Short Description	Incentivizes green building designs that save energy in buildings	Provides demonstrations and education on advanced energy savings designs to move the market.	Provides easy access to financing and incorporate payments into energy bills.
% of IOU Budget	0.5%	2.7%	1.5%
MWh	387	1,843	-
MW	0.09	2.02	-
Mtherms	5	74	-
TRC	1.01	0.71	-
Assessment of Cost Effectiveness	TRC is positive even during the start-up period. Must have projects ready to go now, but waiting for funds to go forward. No details on how TRC is calculated.	Not projected to be cost effective.	Not a program, but a financing component of other programs. No energy savings as savings are counted in other programs.
Results Reasonable & Achievable	Not sure, no real data to show what they expect to accomplish. Need a strong ramp up that may take more time than they think.	It seems reasonable if they can get the demonstration project up and going.	Don't know, this is a new program. We will have to see how much demand there is for this. It could be rejected by the market as with past financing programs, or could be in demand if seen as advantageous.
Design & Delivery	Notes that a market push is needed in this sector. Will work with a number of organizations and local governments to enroll people in a green approach. Market appears to be governments and private sector that are green sensitive.	Seems okay. Get demonstrations into the market and count savings from the projects.	Seems okay, linked as an option to other programs.
Markets Targeted	Customers who want green buildings in addition to or with the energy savings.	New building contractors/ builders who can benefit from high efficiency designs.	Residential and multifamily and small commercial participants who need financing.
Lost Opportunities	This will be a balancing act to enable green buildings, but focus on energy so that it is cost effective. They can do a wide number of different things to achieve the green savings.	Write up says a wide range of measures will be addressed, but only lists ducting, cooling, water heating and insulation. No advanced lighting, heating unless this is included in other programs via a coordinated effort.	Not applicable
Risks	The program is considered cost effective in year 1, yet this will require a lot of collaboration in year 1 that will delay energy savings. They may be over-optimistic. They must have some projects ready to go as soon as the funding is ready in order to achieve this. Many builders want green if it does not delay project or increase costs. Risk is high.	Not high with the limited measure focus and the small number of projects.	Higher risk as this program depends on making loans and prompt payments from participants. Can increase installs by people with limited credit access. Danger is that people will not want energy supplies tied to payments.
Other Issues	Need a strong evaluation on energy savings as a component of a green approach. We question how much savings will be achieved by so much focus on non-energy items. Need to watch this.	Flat TRC indicating that they will have demonstration homes up and providing savings during 2006. Must have projects in the wings ready to go forward. The real key to this is do they help spread the innovations in the market. This remains to be proven in an evaluation.	Will need a solid evaluation to see how this effect participation and actions taken. Should this program be incorporated into codes and standards or in emerging technologies. Seems this would be a good link for these other programs to demonstrate what can be done.
Past Experience /Evaluations			

SDGE	Codes and Standards Program	Emerging Technologies	Upstream Lighting Program
Short Description	Encourages new codes to improve new construction	Works to move new technologies into the market so they can be used by confirming energy impacts.	Works to expand the availability and use of EE lighting technologies.
% of IOU Budget	0.5%	1.7%	6.3%
MWh	-	-	92,043
MW	-	-	17.58
Mtherms	-	-	-
TRC	-	-	3.91
Assessment of Cost Effectiveness	Not applicable at this time.	Not applicable at this time.	Appears strong, but depends on convincing market actors to use available configurations and to encourage the production of configurations that can be sold in the market and incorporated into program designs.
Results Reasonable & Achievable	Yes, code changes can be expedited.	Yes as long as they can identify new technologies that will save energy and can be verified expedited.	Aggressive goals to expand lighting use, but has cost effectiveness on its side for the customer.
Design & Delivery	Tried and true approach.	Standard approach used in the past for new technologies, but coordinated with CEC, ETCC, PIER and the IOUs.	
Markets Targeted	New construction.	New technology across markets.	
Lost Opportunities	Wide open to considering all new construction techniques, but must be proven in the market, so needs to stay with currently available technologies.	Not applicable because it can focus on new ideas.	
Risks	Risks are that the recommendations will not be incorporated into new codes allowing limited results. Benefits are great if incorporated into code.	Very high risks. Not all technologies developed turn out to be marketable or provide the predicted savings or technology demand relationships in the market.	
Other Issues	This program can have very high impacts, but are not counted at this time because of policy reasons.	The program needs to be able to identify promising new technologies and verify and demonstrate that these technologies can be incorporated into other programs as a standard component. Need a good process and effects evaluation of this one to confirm.	
Past Experience /Evaluations	Studies show very positive impacts, but do not correct for normal adoption. See white paper by Mahone.		

SDGE	Partnership Programs	Clothes Washer Voucher Incentive Program	Competitive Bid Programs / 3rd Party Programs
Short Description	Wide range of partnership programs	POP vouchers for high efficiency cloths washers.	3rd party program to be considered when bid.
% of IOU Budget	10.4%	N/A (not listed in June 1 Filing)	18.5%
MWh	-	N/A	-
MW	-	N/A	-
Mtherms	-	N/A	-
TRC	-	N/A	-
Assessment of Cost Effectiveness	Not enough information to assess	No information provided on cost effectiveness, it could be high if there is a low rate of freeriders.Not	enough information to assess
Results Reasonable & Achievable	Not enough information to assess	Aggressive but reasonable if they can effect the POP decision process for economic minded buyers of residential and commercial units.	Not enough information to assess
Design & Delivery	Not enough information to assess	On-going program that may expand to be a partnership program.	Not enough information to assess
Markets Targeted	Not enough information to assess	Residential and commercial machines.	Not enough information to assess
Lost Opportunities	Not enough information to assess	May be able to effect other appliance purchases for multiple up-grade customers.	Not enough information to assess
Risks	These programs have a high risk of being not cost effective depending on the methods of operation, the commitment of the partners and the technologies targeted.	This program could have very high freeridership if they do not separate those that would have purchased anyway from those who can be convinced to move up to the EE model.	Not enough information to assess
Other Issues	Need to have strong evaluations of the partnership programs including both process and impact.	Need a good freerider evaluation in the impact study.	Not enough information to assess
Past Experience /Evaluations			

SCE Portfolio Overview

SCE's proposed portfolio is based a wide variety of programs for most sectors. Many of the programs are continuations and expansions of well-tested programs with established track records. Some programs will seek out innovative ideas for new opportunities, such as the InDEE and IDEEA, and Emerging Technology initiatives. In addition, SCE has developed three "Flagship" programs that attempt to find efficiencies in implementation by combining multiple previous programs under a few umbrellas. These are the Business Incentive Program, the Residential Energy Efficiency Rebates, and the two Comprehensive HVAC programs. Among them, these three large programs account for about one-third of the overall annual average budget.

Table 24 SCE - Overview of Programs

Programs with Reported Savings	Annual Budget* (\$M)	Percent of Savings
Portfolio Budget	\$229	100.00%
Appliance Recycling	13.3	5.79%
Residential EE Rebates	23.0	10.07%
Multifamily Rebates	17.7	7.72%
Home Energy Efficiency Surveys	2.0	0.87%
Integrated Schools	1.7	0.74%
CA New Homes	6.3	2.75%
Comprehensive HVAC - Residential	13.3	5.79%
Comprehensive HVAC - Nonresidential	6.6	2.89%
Retrocommissioning	5.0	2.19%
Industrial Processes	13.1	5.62%
Agricultural Energy Efficiency	14.4	6.28%
Small Business Direct Install	15.6	6.79%
Savings By Design	9.1	4.00%
Sustainable Communities	0.15	0.65%
Business Incentive Program	41.1	17.93%
Partnerships	14.8	6.44%
IDEEA	10.9	4.77%
InDEE	1.9	0.83%
Programs w/o Reported Savings		
Flex Your Power	5.1	2.22%
Education Training and Outreach	7.2	3.15%
Emerging Technologies	3.9	1.68%
Codes and Standards Advocacy	1.9	0.84%

*Three year budget divided by 3 because no year by year budgets were found.

Goals Attainment – SCE

Southern California Edison will be spending \$687 million dollars over three years to save 3,516 GWh, 739 MW, and no therms that are included in the TRC. The three year portfolio is forecast to have a TRC benefit/cost ratio of 3.10 and a PAC ratio of 3.65. This is a substantial programmatic effort at \$229 million/year, an increase in annual budget of 250 percent from 2004-2005 (\$91.5 million/yr), but is forecast to be very cost-effective in aggregate.

Comparison with CPUC Goals

For the three portfolio years, 2006-2008, the planned SCE energy savings, 4,071 GWh, are about 130 percent of the CPUC energy goals, and 784 MW, or about 108 percent of the peak savings goals. Table 25 from the SCE summary tables reflects these plans.

Table 25 SCE - Energy Goal Accomplishment (2006-2008)

	2006		2007		2008	
	Total	% of 2006 Goal	Total	% of 2007 Goal	Total	% of 2008 Goal
Energy Savings – Electricity						
Annual Net Electricity Savings (GWh/yr)	1,310	142%	1,551	148%	1,210	104%
LIEE (GWh/yr)	25		25		25	
2006 - 2008 EE (GWh/yr)	1,036		1,131		1,163	
Pre - 2006 EE (GWh/yr)	249		395		22	
<i>Annual Net Electricity Goal (GWh/yr)</i>	922		1,046		1,167	
Cumulative Net Peak Savings (MW)	560	103%	834	110%	1,102	110%
LIEE (MW)	5		11		16	
EE (MW)	554		824		1,086	
<i>Cumulative Net Peak Goal (MW)</i>	541		760		1,006	
Annual Net Peak Demand Savings (MW)	252	122%	269	119%	263	104%
LIEE (MW)	5		5		5	
2006 - 2008 EE (MW)	225		245		252	
Pre - 2006 EE (MW)	22		19		5	

Comparison with Potential

As shown in Table 26, the expected savings from this program is forecast to exceed the three-year potential and the CPUC goals.

Table 26 SCE - Potential and Portfolio Savings Projections (2006 – 2008)

Energy	Residential	Non-Residential	Industrial*	All Sectors		
	100% Ach	100% Ach	100% Ach Proxy	100% Ach Proxy	CPUC Goal	Utility Plan
Mth						
GWh	814.62	889.46	424.40	2128.48	3135	4,071

*Preliminary data for industrial, not yet published or finalized

**Comparison to potential studies not applicable as the potential studies use summer coincident peak and the utility and CPUC goals are based on 0.21 times the cumulative GWh achievements.

Budgets and Service Offerings Balance

SCE has a wide variety of program offerings with a reasonable split between residential and all other. There appears to be an effort to serve all customer segments, including manufactured home residents. We note that the cost ineffective Agricultural Program actually has a larger budget than the very cost-effective Industrial Process program. The two largest budgets are the Business Incentive Program at \$123 million and the Residential Energy Efficiency Program with a budget of \$69 million, although the multi-family sector will also be well-served with a budget of \$53 million.

Table 27 SCE - Projected Funding and Energy Savings by Sector

Sector	Funding	% of Total	Savings (Net kWh)	% of Total
Residential	\$ 213,046,117	31%	1,163,451,673	33%
Residential New Construction	\$ 18,886,000	3%	10,603,337	0%
Non-Residential	\$ 286,778,317	42%	1,937,804,944	55%
Non-Residential New Construction	\$ 31,920,123	5%	119,074,000	3%
Other	\$ 136,992,485	20%	285,054,612	8%
Total Funding	\$ 687,623,042		3,515,988,566	

Energy Savings Issues

For all utilities the TecMarket Works Team attempted to determine how reasonable the savings estimates were for each measure in the overall portfolio. For those with a basis in the DEER database, we had to look no further, but when there are many measures that are not linked directly to DEER, we examine the work papers that describe in great detail how the calculations are done and upon what assumptions the estimates are based. For SCE, the vast majority of kWh and kW in the savings estimates were resulting from measures without the direct link to the DEER database.

DEER Measures Estimates

As noted, the DEER based measure estimates were not reviewed. For SCE about 19 percent of the kWh savings and 16 percent of the demand savings of SCE's programs could be traced back to a DEER based energy savings estimate.

Table 28 SCE - Savings Estimates Developed Using DEER Data

	Number of Measures	Percent of IOU Savings		
		kWh	Therms	kW
No Relationship to DEER	1,269	81%		84%
Relationship to DEER	130	19%		16%

Non-DEER Measure Estimates

SCE provided many work papers to support their savings estimates. Unfortunately, they did not provide a clear map of how they used these to derive their savings per unit for each of their measures in time for our review. Without this, we could not provide any verification of the reasonableness of their savings estimates. They will provide the mapping in time for us to work on the understanding of the non-DEER measure calculations after the June 1 filing.

Cost Effectiveness – SCE

TRC and PAC Issues

SCE is forecasting only three programs not to be cost-effective on a TRC basis. Several have unexpectedly high TRCs that may be related to the issues with the PAC discussed below.

Table 29 SCE - Program TRC Test Results

Program	TRC
Cost-Effective Programs (TRC ≥1)	
Appliance Recycling	7.25
Residential EE Rebates	4.69
Multifamily Rebates	2.72
Integrated Schools	1.40
Comprehensive HVAC - Residential	1.42
Comprehensive HVAC - Nonresidential	1.42
Retrocommissioning	1.71
Industrial Processes	3.13
Small Business Direct Install	5.99
Savings By Design	2.66
Business Incentive Program	4.77
Partnerships	3.36
IDEEA	4.67
InDEE	4.57
Sustainable Communities	3.73
Programs with a TRC less than 1.0	
CA New Home Program	0.45
Home Efficiency Surveys	0.66
Agricultural Efficiency	0.95

With a TRC of 0.45, the CA New Homes Program is particularly expensive. We have suggested a way in our Portfolio Overview and in the policy section of this SCE review that the New Homes program could be legitimately combined with Codes and Standards and other programs to create a strategic and cost-effective ensemble. Similarly the Home Efficiency Survey program is treated in some non-California jurisdictions as part of the marketing effort for very cost-effective Residential Energy Efficiency Programs, with a good combined cost-effectiveness. We also have unsuccessfully sought clarification from SCE on the expensive Agricultural Program, where only 25 percent of the cost goes to incentives and less than 50 percent goes for the combination of incentives and delivery.

SCE is one utility where the issue of having lower PACs than TRCs seems inexplicable. A total of 9 programs in the SCE portfolio share this problem. Therefore, it is likely that the planners are systematically interpreting the B/C tests in a non-intuitive fashion. All PAC costs should be counted in the TRC, but they are not. This seriously distorts the TRC for the Appliance Recycling Program where previous evaluations have never shown such a program to approach the TRC of 7.25 forecast by SCE. However, it is fair to say

that the TRC would not be less than 1.0 in any of the cases simply by the inclusion of the extra PAC costs shown. It is probably a technical issue.

TRC Range-of-Estimate Issues

The TRC values range from 0.45 to 7.25. With the exception of the unrealistic TRC value of 7.25 for the Appliance Recycling Program, the only other program where the forecast TRC seems to be out of an expected range is the Small Business Direct Install program, with a TRC forecast to be 5.99 for a program delivery approach that has been much less cost-effective in evaluated programs. These types of programs are generally very expensive, and the evaluated similar programs in CA cost almost 100 percent more per first year kWh than is forecast in this program -- the previous evaluations of the third-party small business direct install programs in CA showed that the programs cost \$0.22/kWh and \$0.25/kWh. This proposal has an expectation of \$0.13/kWh.

Issues Addressed – SCE

Administrative Costs

At 11 percent, the SCE administrative costs are moderate, and probably low for most definitions of administrative costs. If the CPUC-ED staff clarifies the contents and definitions of such costs, a clearer picture will probably emerge when we compare utilities. The administrative costs vary across programs with some of the larger ones, such as the Residential Energy Efficiency Rebates having low costs – presumably due to some economies of scale. It is also possible that some programs that are turn-key, such as the Appliance Recycling program, have low internal utility administrative costs, but higher overall societal administrative costs.

Table 30 SCE - Administrative Costs as a Percentage of Program Budgets

Program Name	% of Budget
SCE Portfolio overall	11.02%
Education, Training and Outreach	47.17%
Codes & Standards Advocacy	41.61%
Emerging Technologies	36.35%
Partnerships	23.57%
Home Energy Efficiency Surveys	17.63%
Agricultural Energy Efficiency	12.16%
Comprehensive HVAC - Residential	11.25%
Comprehensive HVAC - Nonresidential	11.25%
Retrocommissioning	10.86%
Small Business Direct Install	10.32%
CA New Homes	9.43%
Savings By Design	9.30%
InDEE	8.91%
Integrated Schools	8.79%
IDEEA	8.15%
Sustainable Communities	7.47%
Business Incentive Program	7.02%
Residential EE Rebates	6.77%
Flex your power Campaign	5.75%
Industrial Processes	5.61%
Multifamily Rebates	5.10%
Appliance Recycling	4.12%

Net to Gross

The very largest majority of measures as described and allocated to programs appear to have reasonable NTG. While they are all based on the Policy Manual, there are some measures that probably have incorrectly high expectations for NTG (e.g., premium efficiency motors in industrial rebates and commercial lighting measures in the Business Incentive Program – both at 096).

Flagship Programs vs. Other Program

While the BIP and REEP programs are the largest programs, and represent the Flagship Programs for the non-residential and residential programs respectively, there are still many other diverse program offerings that provide services. This diversity lowers the risk associated with concentrating program expectations in a single delivery mechanism.

Energy Accounting Issues

As noted in the Portfolio Overview, sector specific programs are referring consumers to the Flagship rebate programs, often from more than one sector, for some measures while

providing audit and custom incentives at the facilities. The accounting for actual achievements and the ability to match up participants in different programs for evaluation will be a chronic problem without some innovative approaches to tracking built-in up front. Double counting is also a potential issue that cannot even be investigated without an appropriate tracking system.

Transparency of Data Issues

Energy Savings

As noted above, we did not have sufficient information to track the bases for the savings for the measures in this portfolio. This will hopefully be resolved after the June 1 filing.

Risk Issues

Energy Savings

At the utility level, the risk of not accomplishing the savings that are forecast is always there, but it is relatively less with such a diversified portfolio. At the program level, the expansion of the Residential Rebate program with doubled savings, but tripled costs is one program that is large and could get out of control, and the IDEEA and inDEE programs are forecasting a substantial amount of savings (150GWh at a cost of \$37 million) without knowing what new and innovative technologies will be proposed. Clearly there is a risk that the TRC forecasts will not be met, when there are consistent problems with the PAC vs. TRC in several programs, and some TRC seem unrealistically high. The other potential risks are noted in the attached Summary Table.

Delivery Risk

The large expansion of the retro-commissioning program not only involves the risk of actually getting the same level of savings once the program gets beyond the lower hanging fruit, but entails the added risk that the utility will not be able to get the market penetration among building owners to reach the implied square footage needed to make the targets.

New Implementers

Several programs will have new implementers without a record of working in the program designs in which they are involved. For example, installation contractors with turn-key operations in the Small Business Direct Install Program will work through local governments, Community Based Organizations and Faith Based Organizations. This could be a risk and savings issue if CBOs and FBOs are expected to be re-trained to provide services outside of their areas of experience.

New Program Characteristics

Some programs will have some risks associated with completely new ways to approach the market. This may be a problem for the Comprehensive HVAC programs, for example.

Comprehensiveness and Lost Opportunities – SCE

SCE has a very comprehensive and diverse program portfolio. After careful review we only noted a few areas of potentially lost opportunities. These included the potential for Energy Star Clothes Washers to fall through the cracks if SCE expects SCG to take care of the measure and the lack of an efficient manufactured home construction program. As noted in the overall summary across all utilities, there is no evidence that the utilities are taking advantage of the large efficiency opportunity to replace high intensity discharge lighting with high performance T-8s and T-5s in grocery, warehouse, large retail, and other places where a wattage reduction can be almost half of the installed wattage and the related additional benefits of dimming and the ability to work with occupancy sensors open up a lot of other savings opportunities.

Bidding and Third-Party Issues – SCE

There is little information provided, although estimates of the expected savings and aggressive benefit cost ratios are provided for some programs to fill out the goals and the budgets.

Partnership Program – SCE

There is insufficient information to judge the adequacy of the design and the risk of non-attainment of the forecast goals.

Policy Issues – SCE

Residential New Construction

SCE is planning a fairly robust new home construction program to follow the Statewide Energy Star New Homes Program. However, it is also very cost ineffective. From observing the Public Advisory Group (PAG) process, it appears that there is a strong interest in having Residential New Construction programs at the utilities. Given that the Residential New Construction programs are not cost effective, at least within this three year period, the Commission should consider providing policy guidance as to the continuation or focus of this effort and the level of funding within the portfolio that is appropriate. Otherwise, from a purely cost effectiveness and savings standpoint, this program might be eliminated.

Alternatively, these programs could be integrated with other programs, such as the Emerging Technologies Program, Codes and Standards Program, Sustainability programs and the Advanced Building Program, in order to establish a strategic initiative that is specifically designed to provide cost effective long-term savings through adding innovations to a large building practice dissemination program, and eventually to code changes. In that way the ensemble of programs is strategically designed and would meet the criteria of actually being operated to produce, predictable, long-term cost-effective savings.

This approach does require that codes and standards be recognized by the CPUC as being positively influenced by utilities and credited with part of the resulting large and cost effective portfolio savings.

Non Residential New Construction

The natural corollary of this would be that the Savings by Design, Emerging Technologies, Sustainable Communities, and Codes and Standards be packaged in the non-residential new construction market. (The latter three programs may serve both residential and non-residential portfolios, but it is easier to separate costs in an accounting than to divvy up savings as now occurs). As with the new homes program, there is a need for a “carrier” program in non-residential new construction to disseminate innovations into the market, so that it can be shown to be cost-effective and eventually become improved code. Because all of these programs address the same market actors and are targeted to the same goal of improved building energy efficiency, they should be designed, implemented, evaluated, and rewarded as a unified program. The policy alternative to develop a unified non-residential new construction market as a sub-portfolio may be an overlooked opportunity.

Conclusion

Our general conclusion is that SCE has a very strong and diverse portfolio with a limited risk of failing to achieve the projected savings. We also have included some suggestions for improvement in the policies and in the programs. These range in scale from grouping the new construction programs into market based packages of programs to questioning whether the \$11.5 million being spent on refrigerator rebates might better be spent on a more aggressive residential HVAC program or new manufactured home construction program. Nevertheless, our general endorsement of what is being proposed is a “faith based assessment” that cannot be validated until we are better able to trace and understand the derivations of the DEER and non-DEER savings estimates. In addition, the issues with the calculations of the TRC values need to be resolved.

Program-Level Assessment – SCE

This section of the report presents the program-specific assessment information and issue discussions that were identified during the portfolio review effort. The issues reviewed are presented in the left-most column of Table 31 and each subsequent column represents a specific program, allowing the reader to see if the review team determined there to be an issue associated with a specific program, and to understand the review team's perspectives associated with each issue.

Table 31 SCE - Program-Level Assessment

SCE	Appliance Recycling Program	Residential Energy Efficiency Incentive Program	Multifamily Energy Efficiency Rebate Program
Short Description	Continuation and expansion of ARP	Continuation and expansion of statewide (SW) SF rebate program for electric measures.	Continuation and expansion of SW MF rebate program for electric measures.
% of IOU Budget	5.8%	10.1%	7.7%
MWh	177,323	793,890	126,741
MW	34.05	71.06	21.64
Mtherms	-	-	-
TRC	7.25	4.69	2.78
Assessment of Cost Effectiveness	Cost-effective previously and this is an expansion, so it is quite likely to be cost-effective. However, the TRC value seems inflated by leaving out costs that are found in the PAC	Cost-effective previously and this expansion looks likely to be cost-effective.	Cost-effective previously. This expansion still looks quite likely to be cost-effective.
Results Reasonable & Achievable	Most likely given expansion of an old program model by an experienced utility.	Most likely given expansion of tried and true program.	Most likely given expansion of tried and true program.
Design & Delivery	Customers can call for pick-up or schedule via website. Turn-in and pick-up events held with retailers and community groups. Cross promote with appliance efficiency incentive at POS and with MF Incentive effort.	Uses point of sale (POS) rebates (where possible). New on-line ability to apply for rebate.	Indep. Contractors target market this sector for using this program. Property mgr/owner requests have been increasing from program maturation & trade journal mktg. Info sent to mobile home occupants and mgr-follow-up by 3rd party contractor.
Markets Targeted	Removing older refrigerators, freezers and now room ACs from secondary markets. Added same equipment from commercial.	Residential retrofit. (Central HVAC moved to Comp HVAC program.) Residential new construction. Small commercial as they use these equipment.	Multifamily complexes, rented mobile home parks. Changed definition to include 2+ units to address MF issues in smaller MF bldgs. Includes Comp Mobile Home Program which is continuation of most successful 3rd party program. Added targeted 1-on-1 mktg for mega-complexes not served by contractor corps.
Lost Opportunities		Tier II clothes washers and Tier II dishwashers are not in this program, because they are cited as having mostly gas savings. At least Tier II clothes washers should be examined for electric savings potential and if there would be missing opportunities beyond the SCG effort (which is only 19,000 units) if not also done by SCE.	Cost-effectiveness of pursuing Tier II clothes washers and Tier II dishwashers for units should be examined and ensure no gaps with the service of this effort by SCG.
Risks	Free-ridership is a perennial risk for this type of program.	Continuation makes this relatively low risk with the greatest risk being the significant increase in expenditures over prior efforts. High dependence on ES Refrigerators is a non-lighting measure but it has a high current market penetration of 42%. Therefore, ES Refrig could have a very low NTG and is therefore risky. The \$11.5 million being spent here might be better spent elsewhere.	Continuation of successful effort helps to lower risk. Nevertheless, this market is always tough given split incentives. With expansion and incentives at multiple levels, including the expanded residential rebate program, there needs to be monitoring of continued effectiveness and ensure no double-counting of savings.
Other Issues	Important to ensure that NTG is well studied for the free riders, the remaining life issues and purchase of replacements or different sizes in alternative units.	Tripled budget but doubled savings. Perhaps there are diminishing returns, but it should be monitored.	
Past Experience/ Evaluations			

SCE	Home Energy Efficiency Survey	Integrated School-Based Program	CA New Homes Program
Short Description	Cont. of HEES Mail-In, On-Line In-Home and on phone energy usage surveys. Added install of CFLs w/In-Home audits.	Combines 3 school-based efforts on resid use through child education, and integration of school use and student education at middle/high schools and on college campuses.	Resid new constr. For 15% above Title 24. Includes Advanced Home demonstration program with SCG.
% of IOU Budget	0.9%	0.7%	2.7%
MWh	16,324	10,704	10,603
MW	2.15	0.31	8.11
Mtherms	-	1,261	-
TRC	0.66	1.40	0.45
Assessment of Cost Effectiveness	Previously info-only effort. 1st time post-1998 to claim energy savings.	The 3 programs that were combined have been tested over the last few years.	Getting beyond the new Title 24 standard is difficult and currently res. new construction in CA as a stand-alone is not cost-effective. But investment may be necessary to contribute to market change and future C&S improvements. May need assessment for c/e for all contributors to change in this market sector (program, emerging tech, and C&S).
Results Reasonable & Achievable	Prior 1997 evaluation would suggest the savings estimates are high and these pre CA energy crisis.	Continuing successful efforts. Yet, information only oriented in prior environment so should be monitored & assessed given new role in Portfolio.	Possible but they recognize the current difficulties. Demonstration projects in Advanced Home help complement this.
Design & Delivery	Expansion of current effort. Multilingual surveys. Will follow-up for customer adoptions and track these with savings estimates. Will use participants to market other programs (telemarket & e-mail messages). CBOs help in targeting, particularly hard-to-reach.	Three 3rd party programs that work with the schools and colleges.	Work with builders, contractors, CBIA.
Markets Targeted	Residential, hard-to-reach, and customer usage inquiries and complaints. Coordinated with SCG and water utilities for electric, gas & water savings.	Students, home usage in student homes, and school and college usage.	Residential new construction to include multi-family low and high rise construction.
Lost Opportunities			
Risks	Including savings where not included previously.	New role in providing reliable savings. Verification of these savings should be undertaken.	Earlier comments on cost-effectiveness and difficulty in getting above new Title 24.
Other Issues	Added tracking of customer adoption. Claiming savings that will need to be verified, especially important to avoid double-counting with point of purchase rebates being widely available under REIP.	Why do the therms show up in savings but no therm benefits? Consistency with other programs would have them not reporting therms. (Assuming this is due to teaming with SCG and SCG claims the therms.)	See earlier comments on examining market as a whole.
Past Experience/ Evaluations			

SCE	Business Incentive Program	Comprehensive HVAC Program (Residential)	Comprehensive HVAC Program (Non-Residential)
Short Description	Integrates SW nonresid rebates from Express Efficiency program and calculated and custom rebates from the Standard Performance Contract, SW nonres audits, and is connector program for common nonres rebates in other programs.	One comprehensive HVAC for up/mid/and downstream (but analyzed separately for res & non-res to meeting Portfolio filing req.)	One comprehensive HVAC for up/mid/and downstream (but analyzed separately for res & non-res for meeting Portfolio filing req.)
% of IOU Budget	17.9%	5.8%	2.9%
MWh	1,199,001	38,469	110,333
MW	317.35	14.98	60.65
Mtherms	-	-	-
TRC	4.77	1.42	1.42
Assessment of Cost Effectiveness	Contains programs and program elements from several prior successful efforts. As such, quite likely cost-effective.	Possible but little exp in CA with comp effort.	Possible but little exp in CA with comp effort.
Results Reasonable & Achievable	Components are all tried and successful elements. Budget is in line with savings given prior programs consolidated.	Possible but little exp in CA with comp effort.	Possible but little exp in CA with comp effort.
Design & Delivery	Audits, contractors/vendors, and account reps feed into program, wrk with local govt, besides direct customer. Rebates are based upon 1 of 3 methods: itemized (prescriptive), calculated (N-calc software then prescriptive) and custom (with verification & assistance for this). Besides rebates, also provides energy audits, design assistance, project implementation consulting, and measurement and verification assistance.	3rd party contracts to implement effort.	3rd party contracts to implement effort. May include access to On-Bill Financing Pilot.
Markets Targeted	All sizes of commercial and industrial.	Upstream, mid and down-stream efforts for those with and without HVAC maintenance contractors. Desire to affect mfg, distributors, contractors, and customers.	Upstream, mid and down-stream efforts for those with and without HVAC maintenance contractors. Desire to affect mfg, distributors, contractors, and customers.
Lost Opportunities	Appears to have a large mix of measures (e.g., cool roofs, vending machine controller).		
Risks	Some risks with the integration but should help in coordination but size and other things could cause confusion. Large process evaluation to test interworkings after up and operational would seem reasonable. Investment 3 times that of previous efforts that were combined. Could be a challenge to make that growth and integration, people and data systems. Monitoring to ensure this occurs efficiently could prove beneficial.	Seems quite reasonable and more thorough approach. As not yet tried, need monitoring and may need adjustments/refinements as program progresses. Not sure of exact program until bids come in and are accepted.	Seems quite reasonable and more thorough approach. As not yet tried, need monitoring and may need adjustments/refinements as program progresses. Not sure of exact program until bids come in and are accepted.
Other Issues	The audit is being tracked, actions taken, tracked, and savings claimed. Reviewing work papers and conducting impact evaluation in this area should be considered by CPUC Energy Division given newness of this for claimed savings. All measure previously under Express Efficiency get 0.96 NTG and those from SPC get 0.7011 NTG. The 0.96 seems high, especially given the measures are going to all sectors.	Much is being done via 3 rd party bidding. As such, specificity is not complete and some risk involved in how the selection will affect the program design, participation, and cost-effectiveness.	Much is being done via 3 rd party bidding. As such, specificity is not complete and some risk involved in how the selection will affect the program design, participation, and cost-effectiveness.
Past Experience/ Evaluations			

SCE	Retrocommissioning	Industrial Energy Efficiency Program	Agricultural Energy Efficiency Program
Short Description	Full scale commissioning program for existing buildings.	Targeted large industrial effort with focus on process	Targeted effort for agricultural industry, includes prior pump testing and AgTAC
% of IOU Budget	2.2%	5.6%	6.3%
MWh	16,592	194,474	63,121
MW	7.93	37.04	20.15
Mtherms	-	-	-
TRC	1.71	3.13	0.95
Assessment of Cost Effectiveness	1st utility such effort in CA but successful 3rd party efforts and elsewhere.	Possible but much is custom and unknown prior to implementation.	Not described as cost-effective. This should be further explored.
Results Reasonable & Achievable	1st utility such effort in CA but successful 3rd party efforts and elsewhere.	Possible but much is custom and unknown prior to implementation.	Not cost-effective. Much educational efforts within this program. Is this optimal method for short-term and long-term savings goal obtainment?
Design & Delivery	Contract with many commissioning providers. Utilize SCE account rep and SCE networks w customers and local govt. Program review candidate bldgs.	Integrated industrial and process-specific effort. Uses Business Incentive Program for standard measure rebates. Uses account reps, 3rd party contracts by geography & industry-specific.	SCE reps primary outreach, supplemented with 3rd party pump repair
Markets Targeted	Large commercial/industrial/govt market.	Industrial (good to address this part of the market individually to ensure reaching this difficult sector). Specific targets: Oil & gas extraction, food processing, rubber & plastics, elec. Equip., and water and wastewater.	Agriculture and water supply.
Lost Opportunities	Comprehensive and no lost opportunities		Appears comprehensive.
Risks	Large program which means risk. Not only savings may be uncertain, but also penetration into market. Some uncertainty in measurement and measurement life issues. Aggressive market penetration for new effort	Delivery and what will really be done is unknown. Some risk given this. Yet, this risk is common for custom efforts. With other programs providing the same customers prescriptive rebates, it will be a tracking challenge for evaluations.	
Other Issues			Includes pump testing, facility audits, design services, AgTAC, coord with many entities. Are savings being fully captured? Issue with cost-effectiveness.
Past Experience/ Evaluations			

SCE	Nonresidential Direct Install	Savings By Design New Construction Program	Sustainable Communities
Short Description	Small bus. Direct install for very small and On-Bill Financing Pilot for small bus.	Based on prior SBD effort, funds electric measures w gas by SCG, whole building approach	Joint effort for more efficient and sustainable communities that include efficiency, transportation, gray water use etc.
% of IOU Budget	6.8%	4.0%	0.6%
MWh	354,283	110,862	8,212
MW	57.97	8.32	1.03
Mtherms	-	-	-
TRC	5.99	2.66	3.73
Assessment of Cost Effectiveness	The TRC is significantly higher than we normally see for a small business direct install effort. The evaluations of the 3 rd party small business direct install were \$0.22/kWh and \$0.25/kWh. This proposal has \$0.13/kWh. Further documentation of this level of c/e needed.	Based on tried and true program. But tougher with new Title 24.	
Results Reasonable & Achievable	See last statement.	Tougher with new Title 24 and systems approach moved into Business Incentive Program.	
Design & Delivery	Installation contractors with turn-key through local govt, CBOs and FBOs. (Could be a risk and savings issue if CBOs and FBOs are trained to directly provide services outside of their areas of experience. Problems found elsewhere doing this.) Door-to-door delivery.	Program works early with projects, architect, designers, workshops, education to encourage whole bidg approach.	
Markets Targeted	Very small and small sized businesses.	New Nonresidential Construction	
Lost Opportunities	Comprehensive (and uses HVAC and other programs as appropriate).	Comprehensive whole building approach. Opened up certified designers.	
Risks	Installation contractors with turn-key through local govt, CBOs and FBOs. (Could be a risk and savings issue if CBOs and FBOs are trained to directly provide services outside of their areas of experience.	Claims to obtain savings from design assistance but uncertain how much from this and its evidence (i.e., risk). Custom nature also inherently has risk.	Cost-effectiveness of sustainability efforts in terms of only energy savings could be difficult.
Other Issues	The key question with this program is how much net incremental savings are achieved and is this savings large enough to account for the cost of the on-bill financing component? This is a risk as it depends on how it is structured and placed in the market.		
Past Experience/ Evaluations			

SCE	Education and Training	Statewide Emerging Technologies	Statewide Crosscutting Codes and Standards
Short Description	Info only effort SW includes physical & virtual energy centers	Cont. & expand SW Emerging Tech: Assessment and Information Transfer & the ETCC	Support efforts for increasing Codes & Standards in the future.
% of IOU Budget	3.1%	1.7%	0.8%
MWh			
MW			
Mtherms	-	-	-
TRC			
Assessment of Cost Effectiveness			
Results Reasonable & Achievable			
Design & Delivery	Includes CTAC, mobile energy unit, remote facility audits (mail-in Spanish), CLEO, BOC	Joint effort SW & with CEC PIER to test product, demonstrations, work with EPRI, GRI, CIEE, ARI, ASHRAE and others. 18 new technology assessments to be conducted.	
Markets Targeted	Info & education all markets, added focus on emerging tech, demand response, distributed generation	Energy product, equipment, related advanced R&D and beginning commercialization.	
Lost Opportunities			
Risks	Difficulty in finding right level & type of investment to provide leverage and growth for portfolio while not driving down forecast cost-effectiveness.	Inherent risks in emerging tech just like R&D, but then should assess how commercialized so the "winners" more than cover the "losers".	
Other Issues		A key question is if the program or the ETCC have the ties to the industry that are needed to move technologies into production and distribution. Increased investment, difficult to conduct meaningful evaluation of benefit/cost of investment though this needs to be well examined.	This looks like an important component of the portfolio that builds on past success from PG&E efforts to change codes in a way that provides significant savings. If savings are to be counted for this program, this may be a program in which more resources are placed.
Past Experience/ Evaluations		NYSERDA recently developed/conducted value/cost methodology for assessing R&D investments.	

SCE	Local Government Partnerships Program	IDEEA	InDEE
Short Description	Leveraging local gvt for green bldg and efficiency efforts.		
% of IOU Budget	6.4%	4.8%	0.8%
MWh	136,003	127,133	21,919
MW	27.85	26.03	4.49
Mtherms	-	-	-
TRC	3.36	4.67	4.57
Assessment of Cost Effectiveness	Not enough information at this time to properly assess.	Can not assess until after 3rd party bids made and accepted.	Can not assess until after 3rd party bids made and accepted.
Results Reasonable & Achievable	Not enough information at this time to properly assess.		
Design & Delivery			
Markets Targeted			
Lost Opportunities			
Risks	Significant investment and too little information to fully assess savings estimates and cost-effectiveness.	Can not assess until after 3rd party bids made and accepted.	Can not assess until after 3rd party bids made and accepted.
Other Issues			
Past Experience/ Evaluations			

SCG Portfolio Overview

SCG's program portfolio is primarily an expansion of previous utility or statewide programs. SCG plans to significantly increase its budget in the next few years: going from \$48 million to \$61 million in 2007 (a 27 percent increase) and \$73 million in 2008 (a 52 percent increase, compared to 2006). This is a substantial increase, considering that SCG's budget for 2004 and 2005 program years together was \$54 million.⁶ Thus, the key difference from the past is the substantial increase in budgets and partnerships, as well as a bidding program. Table 32 presents information on the programs that will be receiving funding, grouped according to whether they will lead to energy and demand savings or are designed for information purposes only. Almost 30 percent of the funding will go into third-party programs and partnership programs, and there was little information on these programs in the SCG portfolio to review. An analysis of budget and savings by sector (residential, non-residential, etc.) is described later.

Table 32 SCG - Overview of Programs*

Programs Reporting Energy and Demand Savings	2006 Budget (\$M)
Local Business Energy Efficiency Program	6.1
Statewide Nonresidential Express Efficiency Rebate Program	5.3
Single Family Home Energy Efficiency Retrofit Program	4.5
Multifamily Home Energy Efficiency Retrofit Program	2.5
Advanced Home Program	2.2
Energy Efficiency Education and Training Program	1.8
SCG/SCE Joint Savings by Design Energy Efficiency Program	1.5
SCG/Municipal Electric Utility Collaborative Savings by Design Energy Efficiency Program	1.0
Programs without Reported Savings	
Evaluation, Measurement and Verification	3.5
Flex Your Power	2.0
On-Bill Financing	1.2
Statewide Marketing and Information Program	1.0
Emerging Technologies	1.0
Home Energy Efficiency Survey	0.6
Sustainable Communities Demonstration/City of Santa Monica	0.3
Codes and Standards	0.3

*Excludes Third-Party Programs (\$8.9 M) and Partnership Programs (\$4.0 M)

Goals Attainment – SCG

Comparison with CPUC Goals

According to the information available to the TecMarket Works Team during the review period, SCG projects that their portfolio will barely meet the natural gas goals provided by the CPUC in each of the program years 2006, 2007 and 2008. They project that SCG's programs will achieve 96 percent of the CPUC's first-year natural gas goals, and they

⁶ California Public Utilities Commission, Decision 04-02-059 (Feb. 26, 2004), San Francisco, CA.

project that by the end of 2008 they will have achieved 104 percent of the natural gas savings goals. Table 33 presents SCG's projections of their portfolio's ability to reach CPUC energy savings goals.

Table 33 SCG - Energy Goal Accomplishment (2006-2008)

	2006		2007		2008	
	Total	% of 2006 Goal	Total	% of 2007 Goal	Total	% of 2008 Goal
Energy Savings – Electricity						
Annual Net Electricity Savings (GWh/yr)	2	N/A	2	N/A	2	N/A
LIEE (GWh/yr)	0		0		0	
EE (GWh/yr)	2		2		2	
Annual Net Electricity Goal (GWh/yr)	0		0		0	
Lifecycle Net Electricity Savings (GWh)						
Lifecycle Net Electricity Savings (GWh)	18		23		15	
LIEE (GWh)	0		0		0	
EE (GWh)	18		23		15	
Cumulative Net Electricity Savings (GWh/yr)						
Cumulative Net Electricity Savings (GWh/yr)	2	N/A	4	N/A	6	N/A
LIEE (GWh/yr)	0		0		0	
EE (GWh/yr)	2		4		6	
Cumulative Net Electricity Goal (GWh/yr)	0		0		0	
Energy Savings – Natural Gas						
Annual Net Therm Savings (MTh/yr)	14,040	96%	19,568	101%	24,126	104%
LIEE (MTh/yr)	0		0		0	
EE (MTh/yr)	14,040		19,568		24,126	
Annual Net Therm Goal (MTh/yr)	14,700		19,300		23,300	
Lifecycle Net Therm Savings (MTh)						
Lifecycle Net Therm Savings (MTh)	210,600		293,520		361,890	
LIEE (MTh)	0		0		0	
EE (MTh)	210,600		293,520		361,890	
Cumulative Net Therm Savings (MTh/yr)						
Cumulative Net Therm Savings (MTh/yr)	14,040	96%	33,608	99%	57,734	101%
LIEE (MTh/yr)	0		0		0	
EE (MTh/yr)	14,040		33,608		57,734	
Cumulative Net Therm Goal (MTh/yr)	14,700		34,000		57,300	

The TecMarket Works Team's opinion of SCG's goal projection is that the goals are reasonable given the portfolio being developed and programs being offered. However, we have some concerns about the partnership programs being able to cost-effectively support SCG's energy goals, and there is limited information on how the goals will be supported by the third-party providers (via the 20 percent of the portfolio that must be competitively bid). We have no information on the expected cost effectiveness or on the projected savings from the third-party programs as well as the partnership programs being planned by SCG.

Comparison with Potential

In order to conduct the comparison of SCG's portfolio goals with the SCG energy potentials, we used KEMA's "100 percent achievable potentials" (potential amount of energy savings that could be achieved if the program funding was increased by 100 percent). This allowed for a comparison of an expanded program portfolio that more

closely matched the spending levels of the current portfolio. However, the current portfolio budget may be greater than the 100 percent increase reported in KEMA's potential reports for residential and non-residential programs. This will need to be assessed in the post June 1, 2005 portfolio review. At this time, there is no published report for industrial potentials, however, there is an industrial potentials study currently being finalized by KEMA. For the SCG industrials potential, we used preliminary estimates from the yet to be published 2005 industrial potentials study being completed by KEMA. The industrial potentials should be considered proxy estimates that will need to be adjusted once the KEMA study is released in 2005.

KEMA's published potential reports provide 10-year estimates of program potential, or the amount of energy impacts that can be achieved over a 10-year period. In order to adjust the KEMA potentials to the 3-year program cycle, we multiplied the KEMA potentials by .3. We use 3-year potentials in this assessment because the current program planning cycle is three years in length.

We were unable to segregate the programs into residential, non-residential and industrial sectors using the portfolio data, as several programs cut across sector lines. As a result, we summed the potential estimates for the 100 percent increase in funding levels across the residential, non-residential and industrial sectors (note: the non-residential sector does not include industrial potentials) and compared these potential estimates with the SCG portfolio estimates. Table 34 provides the results of this comparison.

Table 34 SCG - Potential and Portfolio Savings Projections (2006-2008)

Energy	Residential	Non-Residential	Industrial*	All Sectors		
	100% Ach	100% Ach	100% Ach Proxy	100% Ach Proxy	CPUC Goal	Utility Plan
Mth	15.38	8.88	11.46	35.72	57.30	57.73

*Preliminary data for industrial, not yet published or finalized

As noted in Table 34, the total natural gas potential, as identified by KEMA is 35.7 mega-therms (Mth) for a three-year period (KEMA's 10 year potential x .3). The CPUC's goal for the capture of natural gas by the SCG portfolio is 57.3 mega-therms, or a 160 percent increase above the KEMA-identified potential. A review of the SCG portfolio indicates that SCG will capture 57.7 mega-therms of natural gas over the three-year program period. This is very similar to the CPUC's goal and represents a 162 percent increase over KEMA's 100 percent potential estimate.

This goal seems reasonable and obtainable with the doubling of the portfolio budget each year, and this challenge will require SCG to improve program performance each year of the portfolio. The addition of the bid and partnership programs will significantly help SCG to meet these goals.

Budgets and Service Offerings Balance

SCG's portfolio is distributed among several sectors in terms of funding and expected energy savings (Table 35). Most of the funding is going into the "Other" sector (this may reflect the fact that 23 percent of funding is going to third parties and it is premature to calculate which sectors will be targeted by third-party programs). Of the programs that are targeting specific sectors, 64 percent of the savings is expected to be achieved in the non-residential sector, and another 13 percent in the non-residential new construction sector. While 22 percent of the savings are expected in the residential sector, only 1 percent will be achieved in residential new construction. This last result is not surprising, since SCG does not have a residential new construction program: they have an Advanced Home Program that will explore new technologies.

Table 35 SCG - Projected Funding and Energy Savings by Sector (2006)

Sector	Funding (\$)	% of Funding	Savings (MTh)	% of Total
Residential	\$ 7,600,000	16%	3,151	22%
Residential New Construction	\$ 2,250,000	5%	74	1%
Non-Residential	\$12,695,314	27%	8,927	64%
Non-Residential New Construction	\$ 2,800,000	6%	1,888	13%
Other	\$22,321,328	47%		
Total Funding	\$47,666,642		14,040	

Most (67 percent) of the natural gas savings are in the "Other" category (primarily cooking), 20 percent in water heating, and 13 percent in space cooling/heating. This is quite a contrast to the other utilities where lighting is the predominant end use of savings.

In summary, the budget and service offerings are substantially targeted to certain sectors ("Other" and nonresidential) and specific end uses (cooking and water heating). Because the focus is on natural gas savings, this strategy may be appropriate.

We expect that the programs that are more closely linked to previous programs run by SCG will accomplish their objectives in an efficient and timely fashion. However, the program descriptions for the bid and partnership programs are not clear in their presentations of what will be accomplished in each of the programs. We suspect that the partnership programs will have some organization and development issues similar to the past performance of these programs. That is, some will go more quickly and more smoothly than others. Likewise, we must assume that the bid programs to be implemented by third-party contractors will also have organizational and development issues consistent with the past performance of these programs. That is, some will be developed and fielded quickly and begin to achieve their energy goals, while others will move more slowly. Nevertheless, bid and partnership programs should be closely monitored and evaluated to ensure that these expectations are met.

Energy Savings Issues

To assess if the portfolio energy savings are reasonable for the measures used, we conducted a two-step review of the measures included in the SCG portfolio. First, we sorted for all the measures that used the energy savings from the DEER database. These savings were judged to be reasonable, because they were based on the DEER database. We did not review these measures beyond confirming that they came from the DEER database. Next, we examined all of the measures that did not use DEER in estimating impacts. The energy impacts for these measures were estimated using non-DEER-associated approaches. This section discusses the result of this assessment.

DEER Measures Estimates

Not many measures in the SCG portfolio were tied to the DEER database (Table 36). The TecMarket Team conducted no additional assessment of these measures and considered them reasonably reliable because of their DEER-associated estimation process.

Table 36 SCG - Savings Estimates Developed Using DEER Data

	Number of Measures	Percent of IOU Savings		
		kWh	Therms	kW
No Relationship to DEER	75	60%	95%	71%
Relationship to DEER	6	40%	5%	29%

Non-DEER Measures Estimates

We reviewed the energy savings estimates of the non-DEER measures that made up the largest proportion of energy savings, where possible (Table 37). Of the 34 measures analyzed, we found:

- 14 measures had no documentation and therefore could not be reviewed (representing 46 percent of SCG's therm savings)
- 12 measures had reasonable energy savings based on documentation (representing 23 percent of SCG's therm savings)
- 8 measures had questions regarding energy savings or similar measures not promoted in SCG's portfolio (representing 16 percent of SCG's therm savings)

SCG will need to provide estimation information for the 14 measures that we could not fully review in order for the TecMarket Works team to review, and we need to discuss with SCG the 8 measures where we had questions regarding energy savings or similar measures not promoted in SCG's portfolio.

Table 37 SCG - Non-DEER Measure Energy Savings Assessment

Calculation Approach Provided by IOU	Measure As Described by IOU	% of IOU kWh Savings	% of IOU Therm Savings
No Documentation	Attic Insulation (Multi Family Rebate Prog)	2.5%	0.0%
	Attic Insulation (Multi Family)	0.0%	0.4%
	Lighting (SPC- Standard Performance Contract)	37.2%	0.0%
	Grant (SPC Equivalent Measure)	0.0%	3.3%
	Industrial End User Workshops (SPC Equivalent)	0.0%	2.8%
	Misc (per Therm)	0.0%	9.4%
	NREC Equip. Modernization	0.0%	11.2%
	NREC Heat Recovery	0.0%	2.3%
	NRER Furnace Replacement	0.0%	1.9%
	NRER Misc. Process Equip. Replacement	0.0%	9.8%
	NRER Oven Replacement	0.0%	2.2%
	PARR Convection Oven	0.0%	0.8%
	PARR Rotating Rack Oven	0.0%	0.7%
PARR Under-fired broiler	0.0%	1.3%	
No Documentation Total		39.7%	46.1%
Not Clear	Attic Insulation (Single Family)	0.0%	5.7%
	Central System Gas Boiler: Space and Water Heating	0.0%	0.8%
	Gas Wtr Htr and/or Boiler Controller Digital Graphing (>= 20 units)	0.0%	2.8%
	Gas Wtr Htr and/or Boiler Controller Non-Digital Graphing (>= 20 units)	0.0%	1.7%
	Multi-family, Maximum Cooling Capacity, CZ 10	1.3%	0.0%
	Single Family, Maximum Cooling Capacity, CZ 10	4.1%	0.0%
	Single Family, Maximum Cooling Capacity, CZ 15	3.8%	0.0%
	Whole Bldg (per Therm)	0.0%	5.3%
Not Clear Total		9.1%	16.3%
Reasonable	Central System Gas Boiler: Water Heating Only	0.0%	3.8%
	Commercial Boiler (Non-Space Heat, Non-Process)	0.0%	2.6%
	Greenhouse Heat Curtain	0.0%	6.8%
	Instantaneous Water Heaters (< 200 MBTUH)	0.0%	1.0%
	Multi-family, Verified Ducting System, CZ 10	1.1%	0.0%
	Pipe Insulation - Low Pressure Steam Applic. (LF) 1 in	0.0%	0.9%
	Pipe Insulation - Low Pressure Steam Applic. (LF) 2 in	0.0%	0.7%
	Process Boiler - Steam	0.0%	1.6%
	Single Family, Quality Insulation Installation, CZ 10	1.8%	0.0%
	Single Family, Quality Insulation Installation, CZ 15	2.2%	0.0%
	Single Family, Verified Ducting System, CZ 10	2.4%	0.0%
Water Heating -Commercial Pool Heater	0.0%	6.1%	
Reasonable Total		7.4%	23.4%

Cost Effectiveness – SCG

SCG estimates the TRC cost effectiveness ratio for their portfolio at 1.1, indicating the portfolio is just cost effective in acquiring energy resources for California. (Several of SCG's programs do not show a cost effectiveness estimate and were excluded from the portfolio cost-benefit calculations.) For those programs with TRC data, several were cost effective (TRC greater or equal to 1), particularly in the non-residential sector (Table 38). As expected, programs focusing on demonstrations and information and education were not cost effective.

Table 38 SCG - Program TRC Test Results

Programs	TRC
Cost-Effective Programs (TRC ≥ 1)	
Local Business Energy Efficiency Program	2.3
Statewide Nonresidential Express Efficiency Rebate Program	1.8
SCG/Municipal Electric Utility Collaborative Savings by Design Energy Efficiency Program	1.5
SCG/SCE Joint Savings by Design Energy Efficiency Program	1.2
Single Family Home Energy Efficiency Retrofit Program	1.0
Residential Multifamily Energy Efficiency Retrofit Program	1.0
Not Cost-Effective Programs (TRC < 1)	
Advanced Home Program	0.7
Energy Efficiency Education and Training Program	0.4

TRC and PAC Issues

We did not see any variation in the relative differences between TRC and PAC numbers: the TRC was always less than the PAC, which is what one would expect if one assumes that the only variation between the two indices is cost (the TRC includes all costs, while the PAC excludes customer costs).

We did encounter one TRC-related issue. The SCG/SCE Joint Savings by Design Energy Efficiency Program pays an incentive of \$0.49/therm while SDG&E pays an incentive of \$1/therm for a similar program. However, SCG has a TRC of 1.2, while the TRC for SDG&E/SCE is 0.77 – one would expect an opposite result: a higher TRC with lower incentive levels, all else being equal. This needs to be discussed with SCG staff.

Issues Addressed – SCG

Administrative Costs

Administrative costs represent approximately 25 percent of the portfolio budget: \$12 million, out of \$48 million. This is the highest percentage, when compared to other utilities. However, it is unclear whether all of the utilities are using the same definition and calculation of administrative costs. If the CPUC could clarify the contents and definitions of such costs, a clearer picture will probably emerge when we compare utilities.

Some programs have especially high administration, and the percentages ranged from a high of 56 percent to a low of 5 percent (Table 39).

Table 39 SCG - Administrative Costs as a Percentage of Program Budgets

Program	Budget for Administration
SCG/Municipal Electric Utility Collaborative Savings by Design Energy Efficiency Program	5%
SCG/SCE Joint Savings by Design Energy Efficiency Program	9%
Sustainable Communities Demonstration/City of Santa Monica	9%
Statewide Marketing and Information Program	13%
Advanced Home Program	15%
Local Business Energy Efficiency Program	20%
Multifamily Home Energy Efficiency Retrofit Program	20%
Single Family Home Energy Efficiency Retrofit Program	23%
Statewide Nonresidential Express Efficiency Rebate Program	24%
Home Energy Efficiency Survey	24%
Emerging Technologies	34%
Codes and Standards	38%
Partnership Programs	40%
Third-Party Programs	40%
On-Bill Financing	44%
Energy Efficiency Education and Training Program	56%

Net To Gross

As mentioned in the overall assessment of the utility portfolios, the spreadsheets for each utility have net-to-gross (NTG) numbers for each measure. However, the NTG numbers were generally the same across all the measures within a program, or within groups of measures. As instructed, the utilities used default NTG numbers based on the CPUC Policy Manual. However, using these numbers increases the risk of the portfolio not producing the savings indicated by the program and may be inconsistent with some evaluation findings that report different NTG values. As a result, the cost benefit estimates across the portfolio are higher than what will likely be confirmed via the evaluation process. Accordingly, the net energy savings will cost more than what is reflected in the portfolio planning documents. While these standard NTG levels make it easier for planning and analysis, they increase the risk by overstating savings goals from the portfolio.

Risk Issues

Much of SCG's portfolio is the continuation of programs that have performed well over the past years. The use of proven programs helps lower the risks of programs not performing up to their expectations. However, one risk to the portfolio is associated with the significant increase in operating budgets and size of the goals compared to previous programs. There will be an increased risk in launching many programs with large budgets at the same time. SCG's 2005 portfolio budget was about \$28M, the 2006 budget is about \$47.8M, a 71 percent increase in one year. This will require significant

management and utility supervision to oversee this ramp-up, and to successfully implement larger and more aggressive programs. There is also a risk that as the programs attempt to ramp-up, the higher administrative and management costs that will be associated with this ramp-up will need to be off-set by increased enrollments and installations. SCG will need to carefully monitor these programs to see that they are successfully moving in a cost-effective direction.

We also want to point out several categories of risk associated with SCG's programs:

New program characteristics

Some programs will have some risks associated with completely new ways to approach the market. For example, the Local Business Energy Efficiency Program contains a "Recognition Program" that provides a non-monetary recognition award to nonresidential customers who increase their natural gas efficiency based on energy audit recommendations or knowledge gained through energy efficiency seminars and consultations. Savings are assumed with this effort, and evidence will be needed from monitoring and evaluation. Similarly, the On-Bill Financing Program is innovative and somewhat risky (e.g., defaults), and the costs and benefits need to be monitored, evaluated and assessed for this program (independently from other programs).

New technologies

Some programs will be advancing energy efficiency technologies, to make them ready for the marketplace (e.g., the Advanced Home Program and the Statewide Emerging Technology Program). These programs are inherently risky, since many technologies are unable to cross the chasm from RD&D into the marketplace. In recognition of this risk, a small amount of natural gas savings is at risk in these programs.

Barriers

Many of SCG's programs are directed towards addressing key program barriers by offering rebates, information, training, education, etc. These barriers are expected to remain and, therefore, present a risk to the achievement of SCG's objectives. One barrier in particular is of concern: the split incentives in the multifamily sector (i.e., owners versus tenants) in investing in energy efficiency. Accordingly, there will be greater risk in the multifamily sector (e.g., the Residential Multifamily Energy Efficiency Retrofit Program), compared to other sectors.

Third-Party Bid Programs

This part of the SCG's portfolio is significantly unknown at this time. Essentially SCG is placing a larger component of the portfolio into the competitive market without guarantees that it will be able to find service providers that can cost effectively deliver services. Past experience has shown that there are effective third-party programs as well as programs that need improvements to be cost effective, thus risk increases.

Partnership Programs

SCG has fewer resources in partnership programs than the other IOUs, however, the success of these programs often hinge on the ability of the partner to acquire cost-

effective savings. While partnership programs can look good in the design stage, in practice they often have implementation issues that work to lower the amount of energy that can be acquired through these programs. However, if they are effectively directed, managed and operated, partnership programs can expand the effects of the portfolio. Again, those unknowns increase portfolio risk.

Flex Your Power (FYP) and Other Information Programs

This program in particular and similar programs in general are a significant risk. FYP is a high-budget program being funded without a solid understanding of what types of messages and promotional events are successful at not just informing, but in causing actions to be taken. Past evaluations have not addressed these issues well. This program is a significant unknown in terms of its ability to increase energy savings directly or indirectly. Funding seems to be based on applied trust that it will directly or indirectly accomplish some level of energy savings across all sectors, without supporting documentation that this relationship is real.

Comprehensiveness and Lost Opportunities – SCG

SCG's program portfolio is more limited than other utilities, since SCG's focus is on attaining natural gas savings. After careful review, we only noted a few areas of potentially lost opportunities, mainly related to specific technologies:

1. The Single Family Home Energy Efficiency Retrofit Program includes 90 percent and above AFUE furnaces. It is possible that a lost opportunity exists in not promoting more efficient furnaces. A cost-effectiveness analysis is recommended for determining if it is cost-effective to include more efficient condensing furnaces (92 percent AFUE and above) in this program.
2. The Single Family Home Energy Efficiency Retrofit Program does not include motors (since it is a gas program). However, consideration of motors on furnaces (fans) would be ideal for furnaces. It is possible that a lost opportunity exists in not promoting more efficient furnaces. A cost-effectiveness analysis is recommended for determining if it is cost-effective to include more efficient condensing furnaces (92 percent AFUE and above) in this program.
3. The Residential Multifamily Energy Efficiency Retrofit Program does not include clothes washers. Renters and owners use clothes washers in these buildings (especially if condos and duplexes are included, but also in apartment units and common areas), and studies have shown this measure to be very cost effective (and even more cost effective if one includes water savings and other non-energy benefits).
4. The Residential Multifamily Energy Efficiency Retrofit Program may be missing opportunities in boilers: (a) boiler resets and cutoffs, and (b) new high efficiency modulating boilers for small applications, or chained for larger applications. Although these measures are used throughout the country, a cost-

effectiveness analysis is recommended for determining if these measures should be included in this program for this service territory.

Bidding and Third-Party Issues – SCG

Little information to assess

Partnership Program – SCG

Little information to assess

Policy Issues – SCG

Residential New Construction

The four utilities have taken different approaches to Residential New Construction. SCG has decided to eliminate its Residential New Construction program – instead, it has its Advanced Home Program, with a budget of \$335,000

“The Advanced Home Program promotes residential new construction with a crosscutting focus to sustainable design and construction, green building practices and emerging technologies. Additionally, the program supports efficient heating, cooling, water heating system and building envelope design and installation. Through a combination of education, design assistance and financial support, the program works with the building and related industries to exceed compliance with the California Building Energy Efficiency Standards (Standards), to prepare builders for future changes in the Standards and to create future pathways to go far beyond compliance and traditional energy savings objectives. The program will interact on a statewide basis to share best practices but will be implemented locally by the utility.”

Given the concerns about cost effectiveness of residential new construction programs and the need to focus on cost effective programs this change might be the preferred method for addressing residential new construction, however, the TecMarket Team suggests that this program be evaluated with attention paid to how well these types of programs help develop a growing market for energy efficient homes.

From observing the Public Advisory Group (PAG) process, it appears that there is a strong interest in having Residential New Construction programs at the utilities. An alternative to constantly scrutinizing this program for cost-effectiveness is to combine it with related programs that are designed to attack the same market. New Construction or Advanced Homes programs could be integrated with other programs, such as the Emerging Technologies Program, Codes and Standards Program, and Sustainability programs in order to establish a strategic initiative that is specifically designed to provide cost effective long-term savings through adding innovations to a large dissemination program, and eventually to code changes. In that way the efforts are strategically designed and would meet the criteria of actually being run to produce long-term cost-effective savings. Even then the program that helps disseminate the technological improvements may need to be larger than that supportable by the current budget..

Conclusion

The SCG portfolio will just meet the goals set out by the CPUC. In general, there should be little risk in meeting these savings, since most of the programs will be expansions of previous utility or statewide programs. However, if one significant program is not cost effective, it is possible that the entire portfolio may not be cost effective (i.e., $TRC < 1$). Finally, the substantial increase in budgets, partnerships, and the use of third parties will present a major challenge that this utility will need to overcome.

Program-Level Assessment – SCG

This section of the report presents the program-specific assessment information and issue discussions that were identified during the portfolio review effort. The issues reviewed are presented in the left-most column of Table 40 and each subsequent column represents a specific program, allowing the reader to see if the review team determined there to be an issue associated with a specific program, and to understand the review team's perspectives associated with each issue.

Table 40 SCG - Program-Level Assessment

SCG	Single Family Home Energy Efficiency Retrofit Program	Residential Multifamily Energy Efficiency Program	Home Energy Efficiency Survey
Short Description	Continuation & expansion of statewide (SW) SF rebate program for natural gas measures.	Continuation & expansion of SW MF rebate program for natural gas measures.	Continuation of HEES Mail-In, On-Line and In-Home audits. Added install of low-flow showerheads with In-Home audits.
% of IOU Budget	9.4%	5.2%	1.3%
MWh	6,318.83	321.79	-
MW	4.98	0.30	-
Mtherms	1,319.11	1,035.80	-
TRC	1.01	1.05	-
Assessment of Cost Effectiveness	Cost-effective previously and this is expansion and looks likely to be cost-effective (probably beyond conservative TRC provided here).	Cost-effective previously. Yet, this is expansion but still looks likely to be cost-effective (probably beyond conservative TRC provided here).	
Results Reasonable & Achievable	Most likely given expansion of tried and true program.	Most likely given expansion of tried and true program.	Information only program
Design & Delivery	Uses point of sale (POS) rebates (where possible).	Expansion of current effort. Includes outreach and incentives to distributors, contractors, and others for MF installation. Includes utility program staff outreach liaison with large property managers and other actors in this market to expand program effort.	Continuation of current effort. Multilingual surveys marketed for Mail-In. Marketing of On-Line from web site and others, In-Home available upon request.
Markets Targeted	Residential retrofit and rebates also available for residential new construction.	Multifamily retrofit and new construction.	Residential, hard-to-reach, and customer usage inquiries and complaints.
Lost Opportunities	1. Uses 90% and above AFUE furnaces. Like to see consideration & cost effectiveness analysis of 92% AFUE and above (condensing furnace). 2. Though a gas program, consideration for ECM motor on Furnaces would be ideal to see if cost effective given summer peak savings opportunities.	1. Test whether offering clothes washers cost-effective. Many units may have these and have been found to be a significant opportunity in program in other states. 2. Have they tested whether boiler resets and cut-offs are a cost-effective opportunity? 3. Test opportunity for new high efficiency modulating boilers for small application or chained for larger applications (and take less footprint).	
Risks	Continuation makes this relatively low risk with the greatest risk being the significant increase in expenditures over prior efforts.	Continuation of successful effort helps to lower risk. Nevertheless, this market is always a tough market given split incentives. With expansion and incentives at multiple levels, need to monitor continued effectiveness and ensure no double-counting of savings.	
Other Issues	Glad to see Tier II Clothes Washers and Tier II Dishwashers (assumed given description) included.		Added tracking of customer adoption. Could lead to savings claims which would need review and support from evaluation efforts.
Past Experience/ Evaluations			

SCG	Statewide Nonresidential Express Efficiency Program	Local Business Energy Efficiency Program (BEEP)	SoCalGas/Edison Joint Savings By Design (SBD) Energy Efficiency Program Plan
Short Description	Continuation & expansion of SW Exp. Eff. Program and collapsed SW Nonres Audit into it.	Additional non-residential rebate effort for measures not covered in Express program.	Based on prior SBD effort, funds gas measures with electric measures by SCE, whole building and systems approach
% of IOU Budget	11.1%	12.8%	3.1%
MWh	-	-	-
MW	-	-	-
Mtherms	2,728.77	4,320.62	883.54
TRC	1.76	2.28	1.24
Assessment of Cost Effectiveness	Cost-effective previously. Yet, this is expansion and including audit lowers cost effectiveness, but still looks likely to be cost-effective.	Probable.	Based on tried and true program. But tougher with new Title 24. (Note SCG paying \$0.49/therm while SDG&E paying \$1/therm but SCG has 1.24 TRC and SDG&E TRC only 0.77.)
Results Reasonable & Achievable	Looks solid given expansion of tried and true program.	Probable. Industrial process is not really known what will be done but reach is conservative in this area.	The evaluation of the SBD program only examined electricity savings. Hopefully, the results will be achievable.
Design & Delivery	Long standing program known by larger customers and promoted by vendors. Outreach for promotion by vendors, contractors, distributors, and mfg. Added more outreach, use of CBOs and FBOs, incentives for bldg owners, ability for On-Bill Financing pilot, and small grass-roots outreach in rural areas. Includes bulk purchase initiative.	Direct promotion by utility reps. Rebate effort based on outreach for promotion by vendors, mfg, distributors, contractors. Includes new Grant effort to encourage innovative projects from largest customers.	Program works early with projects, architect, designers, workshops, education to encourage whole bldg approach.
Markets Targeted	Nonresidential retrofit.	Nonresidential retrofit.	New Nonresidential Construction
Lost Opportunities	Appears solid.		
Risks		Greatest risk is with savings assumed from new award recognition effort. Need evidence for this through monitoring and evaluation.	
Other Issues	Added \$25,000 cap for Green House Curtains as this measure has been known to deplete budget previously and savings may still be gained. On-line reservations of rebate funds in multiple languages offered.	Mostly includes gas cooking measures and some industrial (kiln and processing misc). Do not understand that if these are cost-effective, why are they not in the SW Express Efficiency.	
Past Experience/ Evaluations			

SCG	SoCalGas/Municipal Electric Utility Collaborative Savings By Design Energy Efficiency Program Plan	Sustainable Communities-Santa Monica Demonstration Program	Advanced Home Program
Short Description	Based on prior SBD effort, funds gas measures with elect by munis, whole building and systems approach	Joint effort for more efficient and sustainable communities that include efficiency, transportation, gray water use etc.	Demonstration projects of new homes with sustainable design, green building, and emerging technologies.
% of IOU Budget	2.1%	0.6%	4.7%
MWh	-	-	1,842.84
MW	-	-	2.02
Mtherms	1,004.08	-	74.17
TRC	1.53	-	0.70
Assessment of Cost Effectiveness	Based on tried and true program. But tougher with new Title 24.		Demonstration projects - passing TRC not required.
Results Reasonable & Achievable	The evaluation of the SBD program only examined electricity savings. Hopefully, the results will be achievable.		
Design & Delivery	Program works early with projects, architect, designers, workshops, education to encourage whole building approach.	SCG funding includes a 250 kW fuel cell.	Joint effort with SCE, working with builders, mechanical engineers, and other market actors
Markets Targeted	New Nonresidential Construction		Residential new construction and proving alternative systems for future code compliance.
Lost Opportunities			
Risks		Cost-effectiveness of sustainability efforts in terms of only energy savings could be difficult.	Not cost-effective energy gains - but with reasonable investment, a logical part of advancing technologies to make market ready and move market-ready technologies. Could help gain efficiency notice with ability to sell sustainability - need to test cost effectiveness doing so for energy gains.
Other Issues		No savings listed in Portfolio table but Program Concept papers lists 5.5 Mtherm.	
Past Experience/ Evaluations			

SCG	Statewide Crosscutting Codes and Standards	Statewide Emerging Technologies	Energy Efficiency Education & Training Program
Short Description	Support efforts for increasing Codes & Standards in the future.	Continuation and expansion of Statewide Emerging Technology; Assessment and Information Transfer & the Emerging Technology Coordinating Committee	Info only effort Statewide - includes physical & virtual energy centers
% of IOU Budget	0.6%	2.1%	3.8%
MWh	-	-	-
MW	-	-	-
Mtherms	-	-	260.00
TRC	-	-	0.44
Assessment of Cost Effectiveness			
Results Reasonable & Achievable			
Design & Delivery	Includes development of 12 Case Studies	Joint effort SW & with CEC PIER to test product, demonstrations, work with EPRI, GRI, CIEE, ARI, ASHRAE and others. 18 new technology assessments to be conducted.	Includes: food service kitchen design, mobile industrial education, BOC, NATE cert.
Markets Targeted	New construction, replacement equipment	Energy product, equipment, related advanced R&D and beginning commercialization.	Commercial and industrial, restaurants, bakeries, office bldgs
Lost Opportunities			
Risks		Inherent risks in emerging tech just like R&D, but then should assess how commercialized so the "winners" more than cover the "losers".	Difficulty in finding right level & type of investment to provide leverage and growth for portfolio while not driving down current cost-effectiveness.
Other Issues	This looks like an important component of the portfolio that builds on past success from PG&E efforts to change codes in a way that provides significant savings. If savings are to be counted for this program, this may be a program in which more resources are placed.	A key question is if the program or the ETCC have the ties to the industry that are needed to move technologies into production and distribution. Increased investment, difficult to conduct meaningful evaluation of benefit/cost of investment though this needs to be well examined.	Savings associated with Industrial User Workshops (represents 2% of portfolio goal). We are unable to verify if savings are reasonable at this time. More information is necessary.
Past Experience/ Evaluations		NYSERDA recently developed/conducted value/cost methodology for assessing R&D investments.	

SCG	On-Bill Financing Program	SoCalGas Energy Efficiency Portfolio Marketing & Outreach Program	SoCalGas Energy Efficiency Collaborations
Short Description	Pilot test of on-bill financing for efficiency investments to compliment other programs.	Additional marketing effort but also appears to include program processing costs.	The Collaborations are not yet being defined for SCG. These will be designed and negotiated after the third party competitive bid programs.
% of IOU Budget	2.6%	2.1%	8.4%
MWh	-	-	-
MW	-	-	-
Mtherms	-	-	-
TRC	-	-	-
Assessment of Cost Effectiveness			
Results Reasonable & Achievable	Could assist in greater adoption through other programs. Yet, needs to be monitored, evaluated and assessment separately and with other efforts to ensure proper investment.	Additional marketing is fine as long as proven helpful to Portfolio and doesn't drag down overall TRC too much.	
Design & Delivery		On-Line Outreach, Umbrella Advertising, Grass Roots Outreach. Includes many Peer Review Group (PRG) recommendations for new homebuyer "Welcome" packet, purchasing plan for residential & small businesses, CBO/FBO use, and advertising. The whole is bigger than parts.	
Markets Targeted		Residential, small business, rural communities.	
Lost Opportunities			
Risks	The costs and benefits need to be monitored, evaluated and assessed for this program (independently from other programs).		Not enough information to assess until final plans included.
Other Issues		Appears to include program processing costs which may mean program TRCs are inflated but not included these program expenses.	
Past Experience/ Evaluations			

SCG	Third Party Programs	LIEE
Short Description	13 Topic areas for 3rd party RFPs	Low Income Energy Efficiency
% of IOU Budget		18.5% Not part of PGC or procurement funding.
MWh		-
MW		-
Mtherms		950.00
TRC		-
Assessment of Cost Effectiveness		Not part of portfolio but count towards energy savings goals.
Results Reasonable & Achievable		
Design & Delivery	1. Affordable Housing 2. Mfg/Mobile Home 3. Mid & Upstream central furnace & duct test/repair 4. Advanced Home Remodeling 5. Res School-Based Efficiency 6. Foodservice Equip replace for small with older but more effic. 7. Small/med Industrial process	
Markets Targeted	8. Comp Coin-Op Laundry 9. Comp up/mid/down water heater replace 10. Future ee and produc 11. EE Finance Kiosk 12. EE Equip Exchange 13. Ethnic Outreach	
Lost Opportunities		
Risks	Not enough information to assess until bids are in and accepted.	
Other Issues		Contributes 6.5% to energy savings goals in 2006.
Past Experience/ Evaluations		

Appendix

Table A1. Utility savings by end-use categories

PGE	MW	% of Total	GWh	% of Total	MTh	% of Total
Total	163	100%	857	100%	14503	100%
Space Cooling/Heating	30.31	19%	140.11	16%	5796.35	40%
Lighting	94.06	58%	530.60	62%	0.00	0%
Refrigeration	12.76	8%	68.44	8%	0.00	0%
Water Heating	0.45	0%	2.07	0%	4834.56	33%
Other	25.17	15%	116.00	14%	3872.33	27%
Residential	49.57	30%	230.70	27%	1477.43	10%
Space Cooling/Heating	2.63	2%	12.45	1%	686.71	5%
Lighting	42.73	26%	198.85	23%	0.00	0%
Refrigeration	3.23	2%	14.88	2%	0.00	0%
Water Heating	0.11	0%	0.49	0%	619.43	4%
Other	0.87	1%	4.03	0%	171.30	1%
Non-residential	87.64	54%	485.94	57%	9879.73	68%
Space Cooling/Heating	21.17	13%	97.56	11%	3703.01	26%
Lighting	39.89	25%	258.32	30%	0.00	0%
Refrigeration	7.44	5%	41.84	5%	0.00	0%
Water Heating	0.21	0%	0.97	0%	3295.84	23%
Other	18.93	12%	87.26	10%	2880.88	20%
Residential New Construction	1.17	1%	5.51	1%	399.96	3%
Space Cooling/Heating	0.63	0%	2.99	0%	377.36	3%
Lighting	0.35	0%	1.63	0%	0.00	0%
Refrigeration	0.02	0%	0.09	0%	0.00	0%
Water Heating	0.07	0%	0.34	0%	3.20	0%
Other	0.10	0%	0.46	0%	19.40	0%
Non-residential New Construction	24.36	15%	135.07	16%	2746.12	19%
Space Cooling/Heating	5.88	4%	27.12	3%	1029.27	7%
Lighting	11.09	7%	71.80	8%	0.00	0%
Refrigeration	2.07	1%	11.63	1%	0.00	0%
Water Heating	0.06	0%	0.27	0%	916.10	6%
Other	5.26	3%	24.25	3%	800.76	6%

SCG	MW	% of Total	GWh	% of Total	MTh	% of Total
Total	2.02	100%	18.42	100%	14040.04	100%
Space Cooling/Heating	2.02	100%	18.42	100%	1810.7	13%
Lighting	0	0%	0	0%	0	0%
Refrigeration	0	0%	0	0%	0	0%
Water Heating	0	0%	0	0%	2764.8	20%
Other	0	0%	0	0%	9464.54	67%
Residential	0	0%	0	0%	3151.5	22%
Space Cooling/Heating	0	0%	0	0%	1344.4	10%
Lighting	0	0%	0	0%	0	0%

SCG	MW	% of Total	GWh	% of Total	MTh	% of Total
Refrigeration	0	0%	0	0%	0	0%
Water Heating	0	0%	0	0%	1010.5	7%
Other	0	0%	0	0%	796.6	6%
Non-residential	0	0%	0	0%	8926.74	64%
Space Cooling/Heating	0	0%	0	0%	399.6	3%
Lighting	0	0%	0	0%	0	0%
Refrigeration	0	0%	0	0%	0	0%
Water Heating	0	0%	0	0%	1746.8	12%
Other	0	0%	0	0%	6780.34	48%
Residential New Construction	2.02	100%	18.42	100%	74.2	1%
Space Cooling/Heating	2.02	100%	18.42	100%	66.7	0%
Lighting	0	0%	0	0%	0	0%
Refrigeration	0	0%	0	0%	0	0%
Water Heating	0	0%	0	0%	7.5	0%
Other	0	0%	0	0%	0	0%
Non-residential New Construction	0	0%	0	0%	1887.6	13%
Space Cooling/Heating	0	0%	0	0%	0	0%
Lighting	0	0%	0	0%	0	0%
Refrigeration	0	0%	0	0%	0	0%
Water Heating	0	0%	0	0%	0	0%
Other	0	0%	0	0%	1887.6	13%

SDGE	MW	% of Total	GWh	% of Total	MTh	% of Total
Total	56.694	100%	287	100%	2696.9	100%
Space Cooling/Heating	9.31	16%	10	3%	236.9	9%
Lighting	24.96	44%	132	46%	0	0%
Refrigeration	3.014	5%	30	10%	0	0%
Water Heating	0.61	1%	2	1%	330	12%
Other	18.8	33%	113	39%	2130	79%
Residential	29.424	52%	115	40%	987.7	37%
Space Cooling/Heating	5.2	9%	6	2%	148.3	5%
Lighting	18.8	33%	98	34%	0	0%
Refrigeration	0.034	0%	2	1%	0	0%
Water Heating	0.59	1%	2	1%	141.7	5%
Other	4.8	8%	7	2%	697.7	26%
Non-residential	16.35	29%	131	46%	1500.2	56%
Space Cooling/Heating	0.07	0%	0	0%	75.3	3%
Lighting	6.16	11%	34	12%	0	0%
Refrigeration	2.98	5%	28	10%	0	0%
Water Heating	0.02	0%	0	0%	186.8	7%
Other	7.12	13%	69	24%	1238.1	46%
Residential New Construction	10.2	18%	38	13%	14.8	1%
Space Cooling/Heating	4.04	7%	4	1%	13.3	0%
Lighting	0	0%	0	0%	0	0%
Refrigeration	0	0%	0	0%	0	0%

SDGE	MW	% of Total	GWh	% of Total	MTh	% of Total
Water Heating	0	0%	0	0%	1.5	0%
Other	6.16	11%	34	12%	0	0%
Non-residential New Construction	0.72	1%	3	1%	194.2	7%
Space Cooling/Heating	0	0%	0	0%	0	0%
Lighting	0	0%	0	0%	0	0%
Refrigeration	0	0%	0	0%	0	0%
Water Heating	0	0%	0	0%	0	0%
Other	0.72	1%	3	1%	194.2	7%

SCE ^a	MW	% of Total	GWh	% of Total	MTh	% of Total
Total	255.18	100%	1,257.13	100%	-	N/A
Space Cooling/Heating		21%	253.77	20%		N/A
Lighting	108.57	43%	519.70	41%		N/A
Refrigeration	37.68	15%	184.76	15%		N/A
Water Heating		0%	0.07	0%		N/A
Other	56.55	22%	298.83	24%		N/A
Residential	79.95	31%	387.82	31%		N/A
Space Cooling/Heating	4.49	2%	22.36	2%		N/A
Lighting	60.55	24%	296.71	24%		N/A
Refrigeration	14.26	6%	65.72	5%		N/A
Water Heating	0.01	0%	0.07	0%		N/A
Other	0.64	0%	2.96	0%		N/A
Non-residential	151.42	59%	731.07	58%		N/A
Space Cooling/Heating	47.12	18%	227.90	18%		N/A
Lighting	48.02	19%	222.99	18%		N/A
Refrigeration	22.59	9%	106.20	8%		N/A
Water Heating		0%		0%		N/A
Other	33.70	13%	173.97	14%		N/A
Residential New Construction	0.77	0%	3.53	0%		N/A
Space Cooling/Heating	0.76	0%	3.51	0%		N/A
Lighting		0%		0%		N/A
Refrigeration	0.00	0%	0.02	0%		N/A
Water Heating		0%		0%		N/A
Other	0.00	0%	0.01	0%		N/A
Non residential New Construction	2.41	1%	39.69	3%		N/A
Space Cooling/Heating		0%		0%		N/A
Lighting		0%		0%		N/A
Refrigeration	0.83	0%	12.82	1%		N/A
Water Heating		0%		0%		N/A
Other	1.59	1%	26.87	2%		N/A
Other	20.62	8%	95.02	8%		N/A
Space Cooling/Heating		0%		0%		N/A
Lighting		0%		0%		N/A
Refrigeration		0%		0%		N/A
Water Heating		0%		0%		N/A
Other	20.62	8%	95.02	8%		N/A

^a For SCE this data was only provided for the aggregated portfolio from 2006 to 2008. To allow for a comparison across utilities, the aggregate values provided by SCE were divided by three to reflect annual savings.