ENERGY EFFICIENCY PROGRAMS
ANNUAL SUMMARY AND
TECHNICAL APPENDIX

2003 Results
May 2004

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Executive Summary

Overview

SoCalGas submitted its 2003 program proposals on November 4, 2002, requesting approval of its 2003 Energy Efficiency program plans and budgets as directed by the Administrative Law Judge's Ruling ("Ruling") Regarding 2003 Energy Efficiency Programs issued on October 28, 2002. On January 16, 2003, the Commission issued D.03-01-038 authorizing bridge funding for the utility programs expiring at the end of 2002 to continue them through March 31, 2003, using electric and gas PGC collections from that period (at pages 9 to 10). This authorized bridge funding was to expire upon issuance of a decision approving the 2003 energy efficiency programs. In addition, the decision authorized the utilities to include the program accomplishments achieved during the bridge funding period toward the cumulative program goals of the 2003 energy efficiency programs (at pages 10 to 11). D.03-04-055 provided the final approval of the utilities' 2003 energy efficiency program budgets and goals. In addition, the statewide Market Assessment and Evaluation ("MA&E") and local Evaluation, Measurement and Evaluation ("EM&V") activities were also approved.

On September 11, 2003, SoCalGas filed a motion for authorization to increase its PY 2003 Statewide Single Family Rebate program incentive budget by reallocating $1,200,000 million from the SoCalGas' Pilot Bidding funds. Additionally, SoCalGas also requested a reallocation of $585,071 from SoCalGas' Pilot Bidding funds to replace the PY 2003 MA&E funding removed in error by D.03-04-055 from SoCalGas' PY 2003 program funds. On October 10, 2003, an Administrative Law Judge's Ruling Granting Motion of Southern California Gas Company to Reallocate Certain Energy Efficiency Program Funds approved both of SoCalGas' requests.

In 2003, SoCalGas's expenditures (actual and commitments) for its 2003 Energy Efficiency programs totaled $26.5 million and achieved a total of 25,864 megawatthours (MWh) in energy savings, 6.6 megawatts (MW) in demand savings and 10,158,008 therms in gas savings.

Residential Energy Efficiency Programs

The 2003 energy efficiency Residential Program Area included both statewide and local efforts that were designed to encourage customers to improve energy efficiency behaviors and to increase the installation of energy efficient products and appliances. These programs, which were designed to provide more energy efficiency options to residential customers, also coordinated efforts with other key market players to offer customers the largest selection of energy efficiency options.

The Single Family Energy Efficiency Rebate (SFEER) program is designed to help SoCalGas residential customers reduce their energy usage and save money on their utility bills by replacing inefficient appliances with new energy-efficient ones and weatherizing their homes. The program contains three core components: (1) customer incentives; (2) customer information and education; and (3) marketing and outreach to trade allies including manufacturers, retailers and distributors. During 2003 the program worked with over 350 retailers, placing point-of-purchase materials in stores, and in some instances, implementing a point-of-purchase discount program with the help of several major home improvement centers. As a result of this effort, over 6,000

programmable thermostats were rebated at the register. The program also distributed well over 100,000 applications through its Customer Call Center and its webpage. To expand hard-to-reach efforts, Southern California created a page on its Spanish readers website to promote the program.

The Statewide Multi-family Energy Efficiency Rebate program is offered in the service areas of Pacific Gas and Electric Company (PG&E), Southern California Edison (SCE), San Diego Gas and Electric (SDG&E), and SoCalGas. The program promotes energy savings by providing cash rebates for the installation of qualified energy efficiency products in apartment dwelling units and in the common areas of apartment and condominium complexes and mobile home parks. Property owners and property managers of existing residential multifamily complexes with five or more dwelling units may qualify for rebates for installing a wide variety of energy efficiency measures. In 2003, SoCalGas was able to exceed $1 million dollars in rebate payments to customers, and meet its key hard-to-reach goals. In 2003, statewide IOUs teamed to advertise in a statewide publication, Multifamily Trend, which proved to be a valuable tool for targeting the multifamily market.

The Statewide Home Energy Efficiency Survey (HEES) program is a comprehensive multi-lingual program designed to reach a wide range of customers by offering three types of energy survey options: Mail-In, On-Line, and In-Home. HEES provides practical information that customers can use to better understand energy use in their homes and to empower them to make educated decisions related to energy efficiency and equipment upgrades. This multifaceted approach recognizes that customers have distinct needs that may make one type of delivery channel more appealing than another. In 2003 SCG exceeded all of its survey goals, to include mailed surveys and hard to reach. SCG mailed out 50,000 Home Energy Efficiency Surveys to Hard-to-Reach customers resulting in a total response of 7,809 completed surveys, or 30% over goal. A new Spanish on line interactive survey was implemented and promoted through a coordinated statewide Univision campaign. In 2003, the English on line Interactive survey was also upgraded to complement the Spanish on line interactive survey.

Nonresidential Energy Efficiency Programs

SoCalGas' Nonresidential Program Area continued to provide energy education, promote energy efficiency improvements, offered rebates and incentives, and offered training seminars and participated in numerous trade show and community events.

In 2003, SoCalGas continued to offer the statewide nonresidential Energy Audit program. This program offers free energy audits to nonresidential customers. The types of audits include on-line, on-site, phone, CD-ROM and mail-in audits. The audit provides customer assistance in the form of information on the benefits of installing measures or adopting practices that can reduce the customer's utility bills. A total of 4,283 audits were completed including 475 audits of hard-to-reach nonresidential customers. The program goals were achieved.

The statewide nonresidential Express Efficiency program at SoCalGas offers prescriptive rebates on selected gas measures. These measures include clothes washers, greenhouse curtains, boilers, water and space heaters, pipe and tank insulation and various cooking equipment. The program is limited to small and medium customers with an emphasis on the hard-to reach sector. Fifty-five percent of the applications were from hard-to-reach customers. Both the hard-to-reach and energy savings goals were achieved. .

The Nonresidential Financial Incentives program (NRFIP) is a local program focusing on small to medium nonresidential (commercial and industrial) gas customers. The program includes technical support, education, training, outreach, contractor referral, bulk procurement, prescriptive rebates and incentives. The 2003 energy savings goals were achieved.

The Building Operator Certification program is a seven-module course designed to train and certify facility managers of their professional competence in energy efficient building operations and maintenance. In 2003, the program started classes in July and will continue into 2004.

New Construction Energy Efficiency Programs

SoCalGas' New Construction Program Area provides design assistance services aimed at identifying and capturing energy savings opportunities in new construction projects. New construction programs also offered incentives to encourage the installation of energy efficient design and equipment that exceed Title 24 energy standards.

The statewide California Energy Star New Homes Program (CESNHP) is designed to encourage single family and multifamily (including rental apartments, condominiums, town homes; and low rise and high rise residential buildings) builders to construct homes that exceed compliance with the California Energy Code through a combination of an education program, design assistance and financial incentives. The program is performance based and designed to encourage construction that is 15% more energy efficient than required by the Energy Code. 27 projects totaling 5,707 single family and multifamily dwelling units were accepted into the program in 2003. Hard to reach customers (low income and seniors) were targeted with 69% of direct implementation funds being committed to these market segments this program year. The U.S. Environmental Protection Agency acknowledged the program's success through an Energy Star award for "Regional, State and Community Leadership in Energy Efficiency" presented in March 2004.

The statewide Savings By Design (SBD) program influences nonresidential building owners, tenants, and design teams to exceed current Title 24 standards (or industry standards for processes) by 10 percent or more for their new construction or renovation/remodel projects. SBD provides energy design education, design and technical assistance, and cash incentives for all project types and sizes that meet the program's eligibility criteria. SBD exceeded all CPUC electric energy savings goals and delivered 23 design assistance/training sessions to the market. The redesigned Energy Design Resources website was recognized with several awards in 2003.

Cross Cutting Program

The statewide Education and Training program promotes energy efficiency through energy centers and informational programs that cover a broad spectrum of market actors including consumers, midstream actors such as design, engineering and contracting communities, and upstream market actors. The motivations to make use of energy center services and informational programs encompass: 1) reducing operational costs, 2) increasing productivity and profitability, and 3) designing more efficient new buildings. SoCalGas conducted 179 seminars/workshops during 2003; 115 of these seminars reached the hard to reach market segments. Several of these seminars/workshops were joint curricula offered by all of the IOUs.

The statewide Emerging Technologies program seeks to accelerate the introduction and commercialization of energy efficiency technologies, applications and analytical tools in

California. Eight new customer site demonstration projects were initiated in 2003. The program also promoted emerging technologies by participating in the Emerging Technologies Coordinating Council (ETCC) with the other California utilities and the California Energy Commission's PIER program.

The statewide Codes and Standards Advocacy program promotes upgrades and enhancements in energy efficiency codes and standards through participation in standards and code-setting bodies and the preparation of Codes and Standards Enhancement (CASE) studies. During 2003, the program participated in numerous workshops and prepared and reported one CASE study.

The Diverse Market Outreach Program is a crosscutting marketing and outreach information program that provided multi lingual and multi cultural outreach to residential and business customers with valuable information regarding the breadth of resources available that can be accessed to improve the energy efficiency of their homes and businesses. The program promotes the full range of SoCalGas energy efficiency programs as well as other investor owned utilities and municipal utility programs, third party energy efficiency programs and energy efficiency financing and funding resources.

2000 Summer Initiative Programs

SoCalGas completed all projects related to the 2000 Summer Initiative programs in 2002.

Statewide Marketing

The Commission also selected the Department of Consumer Affairs, Flex Your Power Campaign, and the Univision Television Group to implement the statewide marketing efforts in D. 03-04-055. PG&E and the other IOUs worked closely with these organizations to ensure coordinated, statewide energy efficiency messages in support of the statewide programs.

Non-IOU Programs

The Commission awarded non-utility local programs to be implemented by third parties for 2002 and 2003 and designated the IOUs to administer each program in D. 02-05-046, D. 02-06-026, and D. 02-08-076. SoCalGas was designated to administer 5 of the 14 local non-utility programs operating in SoCalGas's service area. Contracts for the programs were signed in the third quarter of 2002. Program implementation started after contract signing and continues through mid--2004.

Utility Administration of Non-IOU Programs

In D. 01-11-066 the Commission stated that the IOUs were eligible for up to 5% of program budgets to cover contract administration expenses. SoCalGas continues to work closely with third party implementers and the Commission's Energy Division to monitor program progress, resolve contract issues and facilitate third party requests for program or implementation plan changes.

Market Assessment & Evaluation

The PY2003 MA&E Studies were designed primarily to support energy savings estimates of various technologies. The studies were begun and funded in 2002 & 2003. The complete studies can be downloaded from the CALMAC website at www.calmac.org.

TABLE 1.1
SUMMARY OF COSTS

	Natural Gas				
	2003		2004 Planned [3]		
			PGC	Procurement	Total
	Budgeted	Recorded [2]	Budgeted	Budgeted	Budgeted
Residential	$ 6,010,000	$ 5,818,316	$ 4,914,000	$ -	$ 4,914,000
Nonresidential	$ 7,243,000	$ 6,163,038	$ 6,964,625	$ -	$ 6,964,625
New Construction	$ 3,914,000	$ 3,903,341	$ 3,914,000	$ -	$ 3,914,000
Crosscutting	$ 4,060,000	$ 3,779,656	$ 2,694,657	$ -	$ 2,694,657
IOU Partnership Programs	$ -	$ -	$ 2,487,601	$ -	$ 2,487,601
Total IOU Programs	$ 21,227,000	$ 19,664,350	$ 20,974,883	$ -	$ 20,974,883
Statewide Marketing	$ 1,708,276	$ 1,708,276	$ 2,013,043	$ -	$ 2,013,043
Non-IOU Programs [1]	$ -	$ 4,436,071	$ 3,797,513	$ -	$ 3,797,513
Total Non-IOU Programs	$ 1,708,276	$ 6,144,347	$ 5,810,556	$ -	$ 5,810,556
Utility Adm. Of Non-IOU Programs [1]	$ -	$ 20,786	$ 189,868	$ -	$ 189,868
MA&E & Reg Oversight	$ 1,085,591	$ 1,085,591	$ 962,807	$ -	$ 962,807
Shareholder Incentives	$ -	$ -	$ -	$ -	$ -
EE Total	$ 25,729,143	$ 28,623,350	$ 29,951,157	$ -	$ 29,951,157
Summer Initiative	$ -	$ -	$ -	$ -	$ -
Total EE, and SI	$ 25,729,143	$ 28,623,350	$ 29,951,157	$ -	$ 29,951,157

Notes:
1. The Commission approved a two-year budget for Non-IOU Programs of $9,767,719 and a budget for Utility Admin Of Non-IOU Programs of $335,204.
2. All Recorded amounts include payments in 2003 and amounts committed to projects in 2003. Committed amounts may not be fully realized.
3. Planned 2004 reflects annualized budgets from proposals submitted to the CPUC on 9/23/03 and revised per Decisions D.03-12-060 and D.04-02-059.

TABLE 1.2
SUMMARY OF ENERGY EFFICIENCY PROGRAM EFFECTS

Annual and Lifecycle Energy Reductions, Electric, MWH

	2003 Recorded	2003 Recorded	2004 Planned*					
			PGC		Procurement		Total	
	Annual	Life Cycle	Annual	Life Cycle	Annual	Life Cycle	Annual	Life Cycle
Residential	9,634	124,183	7,571	97,013	N/A	N/A	7,571	97,013
Nonresidential	4,390	48,287	216	2,377	N/A	N/A	216	2,377
New Construction	11,881	182,848	12,690	194,476	N/A	N/A	12,690	194,476
Crosscutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IOU Partnership Programs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total EE	25,905	355,317	20,477	293,866	N/A	N/A	20,477	293,866
Summer Initiative	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total EE and SI	25,905	355,317	20,477	293,866	N/A	N/A	20,477	293,866

Annual Demand Reductions, Electric, MW

	2003 Recorded	2004 Planned		
		PGC	Procurement	Total
Residential	1.07	1.12	N/A	1.12
Nonresidential	-	-	N/A	-
New Construction	5.57	4.08	N/A	4.08
Crosscutting	N/A	N/A	N/A	N/A
IOU Partnership Programs	N/A	N/A	N/A	N/A
Total EE	6.64	5.20	N/A	5.20
Summer Initiative	N/A	NA	N/A	N/A
Total EE and SI	6.64	5.20	N/A	5.20

Annual and Lifecycle Energy Reductions, Natural Gas, Therms, 000's

	2003 Recorded	2003 Recorded	2004 Planned*					
			PGC		Procurement		Total	
	Annual	Life Cycle	Annual	Life Cycle	Annual	Life Cycle	Annual	Life Cycle
Residential	2,494	34,623	1,874	22,861	N/A	N/A	1,874	22,861
Nonresidential	7,426	93,603	3,756	57,074	N/A	N/A	3,756	57,074
New Construction	244	4,139	254	4,131	N/A	N/A	254	4,131
Crosscutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IOU Partnership Programs	N/A	N/A	828	18,400	N/A	N/A	828	18,400
Total EE	10,164	132,364	5,884	84,066	N/A	N/A	5,884	84,066
Summer Initiative	-	n/a	n/a	n/a	N/A	N/A	N/A	N/A
Total EE and SI	10,164	132,364	5,884	84,066	N/A	N/A	5,884	84,066

* Note: Planned 2004 reflects proposals submitted to the CPUC on 9/23/03 and revised per Decisions D.03-12-060 and D.04-02-059.

TABLE 1.3
SUMMARY OF COST-EFFECTIVENESS
Benefit-Cost Ratios

	2003 Recorded				2004 Planned*			
					PGC		Procurement	
	Program Administration Cost Test	Total Resource Cost Test	Levelized Cost ¢(/kWh)[1]	Levelized Cost ¢(/Therm)[1]	Program Administration Cost Test	Total Resource Cost Test	Program Administration Cost Test	Total Resource Cost Test
Residential	2.92	1.30	3.67	24.64	2.40	1.66	N/A	N/A
Nonresidential	5.13	3.11	1.31	10.18	2.38	1.92	N/A	N/A
New Construction	2.48	2.92	1.48	14.80	2.48	2.07	N/A	N/A
Crosscutting	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IOU Partnership Programs	N/A	N/A	N/A	N/A	2.41	1.48	N/A	N/A
Total EE Portfolio	3.67	2.19	2.22	14.10	1.98	1.55	N/A	N/A

[1] Levelized Cost: Per unit of the total cost of the resource (see California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects, July 2002).

* Note: Planned 2004 reflects proposals submitted to the CPUC on 9/23/03 and revised per Decisions D.03-12-060 and D.04-02-059.

TABLE 1.4
SUMMARY OF COST-EFFECTIVENESS

Net Benefits; $ Mil

	2003 TRC Recorded	2004 TRC Planned*	
		PGC	Procurement
Residential	$ 3.90	$ 4.81	N/A
Nonresidential	$ 23.64	$ 8.37	N/A
New Construction	$ 6.37	$ 5.20	N/A
Crosscutting	N/A	N/A	N/A
IOU Partnership Programs	N/A	$ 1.95	N/A
Total EE	$ 33.90	$ 20.32	N/A

Net Benefits = RBn - Net Costs

* Note: Planned 2004 reflects proposals submitted to the CPUC on 9/23/03 and revised per Decisions D.03-12-060 and D.04-02-059.

Residential Programs

Energy Management Services

Statewide Residential Home Energy Efficiency Survey Program

Program Description:

The Home Energy Efficiency Survey program provides customer specific energy efficiency information for single-family residential customers. The program employs two delivery channels: Mail-In Surveys, which include targeted direct mailings, and the interactive online survey in English, and Spanish, which offers convenient results online to provide customers with valuable information to assist them with understanding, controlling and reducing energy use in their homes.

2003 SCG Results and Achievements:

In 2003 SCG exceeded all of its survey goals, to include mailed surveys and hard to reach. SCG mailed out 50,000 Home Energy Efficiency Surveys to Hard-to-Reach customers resulting in a total response of 7,809 completed surveys, or 30% over goal. A new Spanish on line interactive survey was implemented and promoted through a coordinated statewide Univision campaign. In 2003, the English on line Interactive survey was also upgraded to complement the Spanish on line interactive survey.

Energy Efficient Incentives

Statewide Residential Single Family Energy Efficiency Rebates Program

Program Description:

The Single Family Energy Efficiency Rebates program is a statewide program, administered by the four California investor owned utilities, which provides rebates on various home improvement products, heating and cooling equipment, appliances, and residential pool equipment.

2003 SCG Results and Achievements:

During 2003 the program worked with over 350 retailers, placing point-of-purchase materials in the store, and in some instances, implementing a point-of –purchase discount program with the help of several major retailers. Several home improvement stores were instrumental in helping Southern California Gas rebate over 6,000 programmable thermostats at the register.

The program distributed well over its printed 100,000 applications through its Customer Call Center and its webpage. Other marketing efforts included extensive communication with contractors and retailers, as well as distribution of information materials at community affairs events such as the L. A. City Marathon. Southern California Gas used available space in its bill inserts and newsletters to keep customers informed about the program. It has been a practice of the Program to take advantage of publicity opportunities to also spread news about the program. To expand our hard-to-reach efforts, Southern California created a page on its Spanish readers

website to promote the program. Increased in-house resources will provide better service to non-English speaking customers as its program application is expanded to a Spanish version in 2004.

Statewide Residential Multi-Family Energy Efficiency Rebates Program

Program Description:

The Multifamily Energy Efficiency Rebate program is a statewide consistent program, which provides a broad list of qualifying energy efficiency measures with prescribed rebates for the installation of qualifying energy-efficient improvements in apartment dwelling units and in the common areas of apartment and condominium complexes, and common areas of mobile home parks. Property owners and property managers of existing residential multifamily complexes with 5 or more dwelling units may qualify. The program is uniform throughout all the IOU's service areas, with consistent terms and requirements and implementation characteristics, including rebate levels and application procedures.

2003 SCG Results and Achievements:

In 2003, Southern California Gas Company was able to exceed $1 million dollars in rebate payments to customers, and meet its key hard-to-reach goals. The statewide Multifamily Energy Efficiency rebate program was very successful in 2003 in that each of the IOUs achieved most of their spending and energy savings targets. Much of the success can be attributed to leveraging of customer promotional ideas and a regular exchange of program ideas resulting from bi-weekly meetings between the Program Managers. In addition, Southern California used a combination of customer relations and marketing to increase awareness and participation in the program during 2003. The statewide IOUs teamed to advertise in a statewide publication, Multifamily Trend. The statewide IOUs did an effective job of improving consistency among the utilities in application presentation, statewide letters and participation requirements. Each of the IOUs participated in trade fair events and continues meetings with major participating entities of the program to discuss implementation of the program. Finally, the statewide IOUs implemented a reservation system in June for the purpose of monitoring funding activity with the intent of extended the program to a greater number of participants and the availability of funds.

TABLE 2.1
SUMMARY OF COSTS:
RESIDENTIAL PROGRAM AREA

Natural Gas

	2003		2004 Planned [1]		
	Budgeted	Recorded	PGC	Procurement	Total
Information					
EMS	$ 320,000	$ 316,962	$ 274,000	$ -	$ 274,000
EEI					
SPCs					
Rebates	$ 5,690,000	$ 5,501,354	$ 4,640,000	$ -	$ 4,640,000
Loans					
Other					
Upstream					
Information					
Financial Assistance					
Total	$ 6,010,000	$ 5,818,316	$ 4,914,000	$ -	$ 4,914,000

Note:
1. Planned 2004 reflects proposals submitted to the CPUC on 9/23/03 and revised per Decisions D.03-12-060 and D.04-02-059.

TABLE 2.2
SUMMARY OF ENERGY EFFICIENCY PROGRAM EFFECTS:
RESIDENTIAL PROGRAM AREA

Annual and Lifecycle Energy Reductions, Electric, MWH

	2003 Annual Recorded	2003 Life Cycle Recorded
Information	N/A	N/A
EMS	N/A	N/A
EEI		
SPC	N/A	N/A
Rebates	9,634	124,183
Loans	N/A	N/A
Other	N/A	N/A
Upstream Programs		
Information	N/A	N/A
Financial Assistance	0	0
Total	9,634	124,183

Demand Reductions, Electric, MW

	2003 Annual Recorded
Information	N/A
EMS	N/A
EEI	
SPC	N/A
Rebates	1.07
Loans	N/A
Other	N/A
Upstream Programs	
Information	N/A
Financial Assistance	0.00
Total	1.07

Annual and Lifecycle Energy Reductions, Natural Gas, Therms, 000's

	2003 Annual Recorded	2003 Life Cycle Recorded
Information	N/A	N/A
EMS	N/A	N/A
EEI		
SPC	N/A	N/A
Rebates	2,494	34,623
Loans	N/A	N/A
Other	N/A	N/A
Upstream Programs		
Information	N/A	N/A
Financial Assistance	0	0
Total	2,494	34,623

TABLE 2.3
SUMMARY OF COST-EFFECTIVENESS:
RESIDENTIAL PROGRAM AREA

Benefit-Cost Ratios

	2003 Recorded			
	Program Administration Cost Test	Total Resource Cost Test	Levelized Cost ¢(/kWh)[1]	Levelized Cost ¢(/Therm)[1]
Information	N/A	N/A	N/A	N/A
EMS	N/A	N/A	N/A	N/A
EEI				
SPCs	N/A	N/A	N/A	N/A
Rebates	3.09	1.33	3.67	23.72
Loans	N/A	N/A	N/A	N/A
Other	N/A	N/A	N/A	N/A
Upstream Programs				
Information	N/A	N/A	N/A	N/A
Financial Assistance	N/A	N/A	N/A	N/A

[1] Levelized Cost: Per unit of the total cost of the resource (see California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects, July 2002).

TABLE 2.4
SUMMARY OF COST-EFFECTIVENESS:
RESIDENTIAL PROGRAM AREA

Net Benefits, $Mill

	2003 Recorded
Information	$ -
EMS	$ (0.32)
EEI	
SPCs	$ -
Rebates	$ 4.22
Loans	N/A
Other	N/A
Upstream Programs	
Information	N/A
Financial Assistance	N/A
Total	$ 3.90

Nonresidential Programs

Nonresidential Information

Statewide Nonresidential Building Operator Certification Program

Program Description

This is a statewide training and certification program for operators of medium and large commercial buildings (including governmental and institutional buildings and complexes) that seeks to establish and support a professional credential for building operators in California. Certified operators will have the training and background to identify and implement energy savings opportunities as an integral part of their operations and maintenance activities. The BOC training course consists of eight days of training classes offered once per month over a seven-month period

2003 Results & Achievements

The BOC classes, which began in October and November 2002 in all four IOU service territories, continued in 2003. SoCalGas offered five class sessions during the first half of 2003.

The 2003 BOC training courses began in July 2003 at SoCalGas. During the third quarter, six Level I, and two Level II BOC course series began statewide. At SoCalGas, one Level I BOC course series began in July. At yearend, SoCalGas had held six BOC classes of the Level I BOC course.

Energy Management Services

Statewide Nonresidential Energy Audit Program

Program Description

This statewide program offers free energy audits to nonresidential customers. The audit provides customer assistance in the form of information on the benefits of installing measures or adopting practices that can reduce the customer's utility bills. The energy audit recommendations are based on the customer's recent billing history and/or customer-specific information regarding equipment and building characteristics.

2003 Results & Achievements

In 2003, the IOUs continued to offer audit services to all nonresidential customers. Each IOU rolled out their program, designed and printed marketing materials, and updated their web tools.

SoCalGas used various marketing efforts to promote this program. These efforts included a Multilingual Phone Audit campaign, a bill insert promoting the on-line audits, field distribution of the mail-in and CD ROM audits, a "How to do An Audit " seminar, Spanish on-line audits plus a promotional campaign targeting Spanish-speaking business customers, and a partnership with the Small Business Administration (SBA) and La Opinion.

Energy Efficiency Incentives

Statewide Nonresidential Express Efficiency Program

Program Description

This statewide program offers nonresidential prescriptive rebates for specific, proven energy efficient measures including lighting, HVAC, refrigeration, agriculture, gas, LED lighting technology and motor retrofit measures. The program is limited to small and medium customers with an emphasis on the hard-to reach sector.

The Express Efficiency program at SoCalGas only offers rebates on selected gas measures. These measures include clothes washers, greenhouse curtains, boilers, water and space heaters, pipe and tank insulation and various cooking equipment.

2003 Results & Achievements

At the beginning of 2003, the IOUs implemented an Express Efficiency Winter Sale by offering customers enhanced incentives for installing selected energy-efficient lighting, LED, air conditioning, refrigeration, agricultural, and motor equipment. Because there were no incentives for gas measures offered, Southern California Gas did not participate in this Winter Sale.

The IOUs completed the 2003 Express Efficiency Program applications and translated applications into Spanish, Chinese, Korean and Vietnamese. SoCalGas also offered on-line applications in Chinese and Korean.

SoCalGas promoted the Express Efficiency program in various ways. SoCalGas participated in several trade shows, Chamber of Commerce events, and a non-profit workshop. SoCalGas also partnered with numerous vendors, distributors and associations. A sprint campaign was used to contact manufacturers, vendors, distributors and key sales personnel to inform them about the program and encourage them to promote the program to their customers.

The IOUs, after an independent study on Express Efficiency measures, rebate levels, and customer participation, jointly requested CPUC approval to increase rebates on selected measures. The Energy Division, in late September, authorized the IOUs to increase rebate levels up to 60 percent. The IOUs immediately announced the new rebate levels via emails to customers and vendors, customer contacts and the distribution of updated printed materials.

In December 2003, the Express Efficiency program received recognition from the American Council for an Energy-Efficient Economy (ACEEE) as an “exemplary program”. Programs selected for this honor were deemed to be especially noteworthy for their effectiveness and innovation in helping customers achieve greater levels of energy efficiency.

Local Nonresidential Financial Incentive Program

Program Description

The Nonresidential Financial Incentives program (NRFIP) is a local program focusing on small to medium nonresidential (commercial and industrial) gas customers. The program includes technical support, education, training, outreach, contractor referral, bulk procurement, prescriptive rebates and incentives.

The Nonresidential Financial Incentives program comprises three program elements:

- The "Purchase-Apply-Receive Rebate" (PARR) prescriptive rebate element is targeted to the very small, small and medium nonresidential core schedule market segments. The primary focus is prescriptive measures for foodservice type equipment.
- The "Nonresidential Equipment Replacement " (NRER) incentive element is also targeted to the small and medium nonresidential core schedule market segments. This element is limited to "kind-for-kind" replacement of old, inefficient commercial or industrial end-use gas-fired technology with higher efficiency alternatives.
- The "Nonresidential Energy Conservation" (NREC) incentive element is also targeted to the small and medium nonresidential core schedule market segments. This element provides qualified customers with a financial incentive to implement comprehensive energy saving commercial building envelope or industrial process changes on a unique, site specific, "case-by-case" basis.

2003 Results & Achievements

SoCalGas relied on the SoCalGas Account Executives to promote this program to nonresidential customers. Other promotional and delivery vehicles included participation in trade shows, seminars, community based organization (CBO) outreach and program information on the SoCalGas website. A sprint campaign was used to contact manufacturers, vendors, distributors and key sales personnel to inform them about the program and encourage them to promote the program to their customers. SoCalGas' NRFIP and Nonresidential Audit programs continued to closely coordinate activities to increase customer participation in both programs.

SoCalGas had a very successful kick-off "Barbeque Vendor Mixer" at the Energy Resource Center and also participated in another vendor mixer with the Association of Facilities Engineers. SoCalGas conducted an Energy Efficiency Seminar for the food service manufacturer vendors. In addition, the SoCalGas Account Executives held approximately 225 one-on-one meetings in person and by phone with their customers.

TABLE 3.1
SUMMARY OF COSTS:
NONRESIDENTIAL PROGRAM AREA

Natural Gas

	2003		2004 Planned [1]		
	Budgeted	Recorded	PGC	Procurement	Total
Information	$ 2,867,000	$ 2,201,903	$ 1,098,093	$ -	$ 1,098,093
EMS					
Large					
Small/Medium					
EEI: Custom Rebates					
Large					
Small/Medium					
EEI: Pres Rebates					
Large					
Small/Medium	$ 4,376,000	$ 3,961,136	$ 5,866,532	$ -	$ 5,866,532
EEI: SPCs					
Large					
Small/Medium					
Upstream Programs					
Financial					
Total	$ 7,243,000	$ 6,163,038	$ 6,964,625	$ -	$ 6,964,625

Note:
1. Planned 2004 reflects proposals submitted to the CPUC on 9/23/03 and revised per Decisions D.03-12-060 and D.04-02-059.

TABLE 3.2
SUMMARY OF ENERGY EFFICIENCY PROGRAM EFFECTS:
NONRESIDENTIAL PROGRAM AREA

Annual and Lifecycle Energy Reductions, Electric, MWH

	2003 Annual Recorded	2003 Life Cycle Recorded
Information	N/A	N/A
EMS		
Large	N/A	N/A
Small/Medium	N/A	N/A
EEI: Customized Rebates		
Large	N/A	N/A
Small/Medium	N/A	N/A
EEI: Prescriptive Rebates		
Large	N/A	N/A
Small/Medium	4,390	48,287
EEI: SPCs		
Large	0	0
Small/Medium	N/A	N/A
Upstream Programs		
Information	N/A	N/A
Financial Assistance	N/A	N/A
Total	4,390	48,287

Demand Reductions, Electric, MW

	2003 Annual Recorded
Information	N/A
EMS	
Large	N/A
Small/Medium	N/A
EEI: Customized Rebates	
Large	N/A
Small/Medium	N/A
EEI: Prescriptive Rebates	
Large	N/A
Small/Medium	0.00
EEI: SPCs	
Large	0.00
Small/Medium	N/A
Upstream Programs	
Information	N/A
Financial Assistance	N/A
Total	0.00

Annual and Lifecycle Energy Reductions, Natural Gas, Therms, 000's

	2003 Annual Recorded	2003 Life Cycle Recorded
Information	N/A	N/A
EMS		
Large	N/A	N/A
Small/Medium	N/A	N/A
EEI: Customized Rebates		
Large	N/A	N/A
Small/Medium	N/A	N/A
EEI: Prescriptive Rebates		
Large	N/A	N/A
Small/Medium	7,426	93,603
EEI: SPCs		
Large	0	0
Small/Medium	N/A	N/A
Upstream Programs		
Information	N/A	N/A
Financial Assistance	N/A	N/A
Total	7,426	93,603

TABLE 3.3
SUMMARY OF COST-EFFECTIVENESS:
NONRESIDENTIAL PROGRAM AREA

Benefit-Cost Ratios

	2003 Recorded			
	Program Administration Cost Test	Total Resource Cost Test	Levelized Cost ¢(/kWh)[1]	Levelized Cost ¢(/Therm)[1]
Information	N/A	N/A	N/A	N/A
EMS				
Large	N/A	N/A	N/A	N/A
Small/Medium	N/A	N/A	N/A	N/A
EEI: Customized Rebates				
Large	N/A	N/A	N/A	N/A
Small/Medium	N/A	N/A	N/A	N/A
EEI: Prescriptive Rebates				
Large	N/A	N/A	N/A	N/A
Small/Medium	7.98	3.97	1.31	7.83
EEI: SPCs				
Large	N/A	N/A	N/A	N/A
Small/Medium	N/A	N/A	N/A	N/A
Upstream Programs				
Information	N/A	N/A	N/A	N/A
Financial Assistance	N/A	N/A	N/A	N/A

TABLE 3.4
SUMMARY OF COST-EFFECTIVENESS:
NONRESIDENTIAL PROGRAM AREA

Net Benefits, $MILL

	2003 Recorded
Information	N/A
EMS	
Large	N/A
Small/Medium	N/A
EEI: Customized Rebates	
Large	N/A
Small/Medium	N/A
EEI: Prescriptive Rebates	
Large	N/A
Small/Medium	$ 23.64
EEI: SPCs	
Large	$ -
Small/Medium	N/A
Upstream Programs	
Information	N/A
Financial Assistance	N/A
Total	$ 23.64

New Construction Programs

Residential

California Energy Star New Homes Program

Program Description:

The California Energy Star New Homes Program (CESNHP) is designed to encourage single family and multifamily builders to construct homes that exceed compliance with the California Energy Code through a combination of an education program, design assistance and financial incentives. The program is open to single family residential new construction including custom homes and production housing. The program is also open to multifamily residential new construction including condominiums, town homes and rental apartments. The multifamily program is open to both low rise and high rise construction.

The program is performance based and is designed to encourage construction that is 15% more energy efficient than required by the Energy Code by reducing the source energy usage of the proposed design from the standard design by a minimum of 15%. This energy savings level is recognized by the Environmental Protection Agency (EPA) as the standard for Energy Star Homes in California. As a result, buyers of single family homes, and renters of multifamily dwellings have energy-efficient, money-saving, comfort and quality alternatives when compared to minimally compliant housing.

The education program provides targeted training to builders, developers, contractors, planners, architects, engineers, sales agents, and other building industry professionals. The curriculum under this program consists of six different modules that cover education of new Energy Code requirements, energy efficiency measure installation training, code and new construction software training, and energy-efficient new construction sales training.

2003 SoCalGas Results and Achievements:

Building on the momentum and interest generated during the first year of the program, SoCalGas continues an aggressive marketing and design assistance program to the building industry to promote the California Energy Star New Homes Program. Through the field contact team and program management team, the design assistance offered by the utility has been very effective in educating the builder, design and mechanical community in methods that will increase the energy efficiency of residential new construction. This has been especially effective in the multifamily market where SoCalGas has had its primary focus. This market segment has been an area of increased activity in residential new construction. Through the design assistance offered, numerous projects have been able to qualify for the California Energy Star New Homes Program. This success is reflected in the 27 projects accepted into the program totaling 5,707 dwelling units for both single and multifamily.

Specific attention has been given to the Hard to Reach customers. Project such as the Los Adobes de Maria in Santa Maria built by People's Self-Help and Oak Creek Commons, a co-housing project in Paso Robles and numerous senior housing projects demonstrates SoCalGas' commitment to assisting this market segment in increasing energy efficiency. This success is reflected in the 69% of direct implementation funds being committed to this market segment.

Throughout the year, CESNHP program staff participated in state, regional and local business industry associations' meetings, conferences and trade shows, promoting the program and related training opportunities. An electronic mailbox was created to support CESNHP, allowing interested parties to request CESNHP applications, seek design assistance and allow program participants to submit their documents electronically.

Program and training information was available not only at SoCalGas' internet site but also at the internet sites of the Institute of Heating and Air-Conditioning Industries, California Energy Commission and California Building Energy Consultants.

Topics covered by the 2003 education program were:

- ACCA Manual J Residential Load Calculation and Equipment
- ACCA Manual D Residential Duct Design
- Advanced ACCA Manual D Residential Duct Design
- High Performance Duct Systems and 2001 Residential Energy Standard Overview
- HVAC System Air Flow and Static Pressure Diagnostics
- Combined Hydronic Systems Sizing Guidelines

A calendar of class dates and locations was made available at the SoCalGas internet site and distributed through direct mail. Multiple convenient locations throughout the SoCalGas service territory were selected to maximize attendance. By the end of the year, 49 classes were conducted with 760 attendees representing 627 firms in attendance. Participant feedback ratings for all classes were excellent, averaging 4.9 on a 5.0 point scale.

The success of the 2003 California Energy Star New Homes program's accomplishments have been recognized by the Environmental Protection Agency and acknowledged through the Energy Star Award for "Regional, State and Community Leadership in Energy Efficiency" presented to the statewide team in March 2004.

Nonresidential

Savings By Design

Program Description:

During 2003, Savings By Design (SBD) encouraged high performance building design and construction in both nonresidential new construction and those nonresidential buildings undergoing major remodeling or renovation. SBD provided an integrated package of design tools and information resources, analysis and recommendations, as well as building owner and design team financial incentives, all dedicated to encouraging energy efficiency in nonresidential new construction.

The SBD program influences nonresidential building owners, tenants, and design teams to exceed current Title 24 standards (or industry standards for processes) by 10 percent or more for their new construction or renovation/remodel projects. SBD provides energy design education, design and technical assistance, and cash incentives for all project types and sizes that meet the program's eligibility criteria. SBD also leverages resources from industry relationships, strategic

alliances, and other public purpose programs to accomplish the goals of energy savings, peak demand reductions, and long-term market change.

The program has three elements: the Whole Building Approach, the Systems Approach, and education and outreach. The core strategy centers on an integrated design approach to optimize energy efficiency, known as the Whole Building Approach. To include participants who would not normally consider a fully integrated design approach, the Systems Approach provides a simplified, performance-based method, which moves owners and design teams far beyond prescriptive approaches. Finally, program education and outreach strategies, focused on the successful Energy Design Resources model developed in recent years, address market barriers by providing owners and designers with the information, education, and tools to help them make the best possible energy efficiency choices. All three elements support the California Energy Commission's goals for market transition to the 2005 Title 24 code revision cycle.

2003 SCG Results and Achievements:

With the approval for program roll-out in April, and with the allowance for all accomplishments since January 2003 to be applied to PY2003, the program began offering on-site training and project-specific design assistance to the nonresidential new construction market. 23 design assistance/training sessions were presented to the market. SBD also co-sponsored the SBD Energy Efficiency Integration Awards with the AIACC and presented awards to the winners at the national convention held in San Diego. The program also supports the Collaborative for High Performance Schools (CHPS) and other trade organizations - such as the local chapters of The American Institute of Architects (AIA), The American Society of Heating, Refrigeration, and Air-conditioning (ASHRAE), and the U S Green Building Council (USGBC) – who share an interest in promoting energy efficiency in nonresidential new construction. The SBD team at SCG exceeded CPUC electric energy savings goals and outperformed their personal goals in 2003.

The Energy Design Resources component was recognized with several awards in 2003 after the EDR Web site was redesigned. An Honor Award in the Corporate Web Site-Energy category was presented by the Academy of Communications Arts & Sciences at the annual International iNova Awards 2003. A Silver Award in the eMedia category of the Beacon Awards was presented to EDR by the Business Marketing Association of Northern California. The statewide SBD website had over 682,900 hits during the year while the EDR website had more than 1,600,000 hits.

TABLE 4.1
SUMMARY OF COSTS:
NEW CONSTRUCTION PROGRAM AREA

Natural Gas

	2003		2004 Planned [1]		
	Budgeted	Recorded	PGC	Procurement	Total
Residential	$ 1,680,000	$ 1,675,530	$ 1,680,000	$ -	$ 1,680,000
Nonresidential	$ 2,234,000	$ 2,227,810	$ 2,234,000	$ -	$ 2,234,000
Other					
Total	$ 3,914,000	$ 3,903,341	$ 3,914,000	$ -	$ 3,914,000

Note:
1. Planned 2004 reflects proposals submitted to the CPUC on 9/23/03 and revised per Decisions D.03-12-060 and D.04-02-059.

TABLE 4.2
SUMMARY OF ENERGY EFFICIENCY PROGRAM EFFECTS:
NEW CONSTRUCTION PROGRAM AREA

Annual and Lifecycle Energy Reductions, Electric, MWH

	2003 Recorded	2003 Life Cycle Recorded
Residential	1,670	29,679
Nonresidential	10,211	153,169
Total	11,881	182,848

Demand Reductions, Electric, MW

	2003 Recorded
Residential	3.87
Nonresidential	1.70
Total	5.57

Annual and Lifecycle Energy Reductions, Natural Gas, Therms, 000's

	2003 Recorded	2003 Life Cycle Recorded
Residential	180	3,175
Nonresidential	64	964
Total	244	4,139

TABLE 4.3
SUMMARY OF COST-EFFECTIVENESS:
NEW CONSTRUCTION PROGRAM AREA

Benefit-Cost Ratios

	2003 Recorded			
	Program Administration Cost Test	Total Resource Cost Test	Levelized Cost ¢(/kWh)[1]	Levelized Cost ¢(/Therm)[1]
Residential	1.33	1.75	2.51	16.72
Nonresidential	3.34	3.66	1.28	8.48

TABLE 4.4
SUMMARY OF COST-EFFECTIVENESS:
NEW CONSTRUCTION PROGRAM AREA

Net Benefits, $MILL

		2003 Recorded
Residential		$ 0.95
Nonresidential		$ 5.41
	Total	$ 6.37

Crosscutting Programs

Information

Energy Efficiency Education and Training Program

Program Description:

The statewide Education and Training program continues to be offered in the service areas of Pacific Gas & Electric (PG&E), Southern California Edison (SCE), San Diego Gas & Electric (SDG&E), and Southern California Gas (SoCalGas). Overall, the program promotes energy efficiency to a variety of customer segments through energy centers (physical and virtual) and other informational programs.

The educational and information efforts of the energy centers and of SDG&E cover a broad spectrum of market actors including customers, midstream actors such as the design, engineering and contracting communities, and upstream market actors. The motivations to make use of energy centers and education and training services include reducing operational costs, increasing productivity and profitability, and designing more efficient new buildings.

2003 SoCalGas Results and Achievements:

SoCalGas planned to deliver 137 seminars/workshops during 2003. 179 seminars/workshops were conducted during 2003. Several of these seminars/workshops were joint curricula offered by all of the IOUs.

SoCalGas planned to target 40 energy efficiency seminar/workshops to hard-to-reach customers during the year. 115 of the 179 seminars/workshops were provided for the hard-to-reach markets.

A statewide energy center website (www.energyefficiencycenter.com) was designed and made available to the public in April 2000, and updated in 2003 to include a listing of energy efficiency seminars available statewide through the IOUs.

Emerging Technologies Program

Program Description:

Southern California Gas Company's (SoCalGas) Statewide Emerging Technologies (ET) program is an information-only program that seeks to accelerate the introduction of energy efficient technologies, applications, and analytical tools that are not widely adopted in California. The program addresses all market segments, and is composed of two parts: Demonstration & Information Transfer, and the Emerging Technologies Coordinating Council (ETCC). The program's assessment activities focus on near commercial and commercial energy efficient applications with low market penetration. The projects help to measure, verify, analyze, and document the potential energy savings and demand reduction of specific applications in different market segments. Information Transfer efforts disseminate project results, and are often quite customized to the targeted markets. The ETCC is a statewide information exchange and coordination effort between the investor owned utilities (IOUs) and the California Energy Commission's (CEC) Public Interest Energy Research (PIER) program. Program efforts to

select technology applications for assessment projects include working with PIER as well as, but not limited to, members of the research and design communities, manufacturers, energy efficiency advocates, customer groups, universities, professional societies, national laboratories, government agencies, engineering firms, and industry and trade groups.

A major program goal was to initiate a limited number of customer site demonstration projects in 2003. Not all emerging technology assessments require customer site testing and multiple assessments may be performed at a single customer site. As a target, we anticipated six new customer site demonstrations would be initiated by year-end.

A second goal of the Program was a commitment to frequent and regular collaboration among the IOU's and the CEC to ensure a thorough exploration of all new technology opportunities emerging from the PIER Program as well as other R&D pipelines; to prevent unnecessary and wasteful duplication of efforts and to broaden some activities across service territories to foster a state-wide applicability of results and information flow to customers. The ETCC was formed to serve as that vehicle and quarterly meetings face-to-face are often supplemented with phone conference calls and meetings of subsets of the 5 organizations on particular projects.

2003 SoCalGas Results and Achievements:

SoCalGas initiated eight Emerging Technology Application Assessments during PY2003. They cover a wide range of technologies and market segments:

- **Bowman Microturbine – Combined Heat and Power (CHP) Application**. This project will investigate the gain in overall system energy efficiency where heat is recovered from 3 Bowman 80KW microturbines that provide a fraction of plant power needs and the heat is used to preheat combustion air for the gas burner group of a production brick kiln.
- **Forced Internal Recirculation (FIR) Burner Demo 350 HP Boiler**. A customer application of a new Johnston Boiler featuring this new burner is one of several anticipated projects related to advanced, low NO_x burner technology. This particular evaluation is expected to begin providing data by early 2004. Emissions levels are expected to be the lowest ever seen for a simple burner system approach that maintains high boiler efficiency. The CEC contributed to the development of the technology by GTI.
- **Performance and Continuous Recommissioning Analysis Tool (PACRAT) Demonstration**s. Three separate agreements have evolved with USC Campus Facility management, Cedars Sinai Hospital, and UC Santa Barbara. The objective of these projects is an evaluation of the effectiveness of PACRAT in identifying and diagnosing failures and inefficient performance of chiller/heater system elements in multiple buildings on each campus. Results are expected by the end of 2004.
- **Miele Aqueous Cleaning System**. This project supports our collaboration with Occidental College and SCE to investigate the energy impacts of change over to alternatives to 'dry' professional garment care systems. This is an advanced water-based system from Germany that merits investigation as the highest efficiency alternative. Several other stores will be evaluated in PY2004-05 to confirm very encouraging initial results.
- **Nishiyodo Adsorption Chiller – CHP heat recovery**. This project resulted from the customer's choice of a novel heat recovery option for their power cogeneration system.

SoCalGas is evaluating the performance of the 185 RT silica gel-based chiller from heat recovered from a 3-engine power generation system producing ~ 1 MW. The system seems reliable, but has yet to be tested at capacity. Additional tests are planned for 2004.

- **Advanced Thermal Oxidizer – Printer VOC Destruction**. Printers typically capture the fugitive VOC emissions from the drying inks used in press-specific thermal oxidizers. This project at a printer in Los Alamitos is designed to centralize and optimize the regenerative thermal oxidizer system to achieve maximum overall natural gas savings compared with the old system. The system was commissioned in late 2003. Tests will be run throughout 2004.
- **Lean Burn Engine (Westport/Cummins) Demonstration**. This collaboration of Westport Innovations and Cummins Engine has resulted in a 1.5 MW lean burn engine, sited at the Anaheim Convention Center and managed by the city of Anaheim, fired with 90-95% natural gas and co-fired with diesel fuel. It is controlled in a way to produce very low emissions and high overall efficiency. This project is one of several emerging lean burn engine technologies we expect to test in the coming years that take shaft hp efficiency from 30-34% to 42%+. We hope to learn with Anaheim how stable and durable this particular system is.
- **Bio-fuel / natural gas blend for Microturbine-CHP**. SoCalGas is collaborating with Cal Poly SLO investigating the effectiveness of blending natural gas produced by lagooning dairy cow waste with commercial natural gas fuel to optimize bio-gas use, but also stabilize power output and system performance. We expect preliminary results by mid-2004.

Several technology assessments and other activities and studies begun in prior years are on-going and include:

- Capstone Microturbine performance (single and clusters)
- Engines with heat recovery in various applications
- Infrared gas burners for powder coating curing and plastic shaping
- Ventilation Lab for Commercial Kitchen ‘Make-up’ Air design workshops
- Solar Photovoltaic Panel Demonstration at the ERC
- Energy efficiency gains due to ‘Recommissioning’ a LEED Building

SoCalGas ET staff continues to work to identify and initiate additional assessment projects moving into PY 2004 in the following emerging technologies areas:

- Infrared burners for various applications,
- Advanced engine controls for pollution control and efficiency improvements,
- New ‘lean burn’ engines demonstrating 40% shaft efficiency,
- New prime movers coming to market such as stirling engines,
- Additional low NOx, high efficiency boiler burner alternatives,
- Opportunities to study new software and sensors to accomplish continuous building energy monitoring and diagnostics,

- Energy impacts of changing from perchloro-ethylene 'dry' cleaner technology to aqueous, *Green Earth*$_{TM}$, CO_2 or petroleum solvent based alternatives, and
- Assessments of the performance of heat recovered engines in air compression and refrigeration applications.

The ETCC functioned extraordinarily well as intended to help the CEC begin to bridge the chasm to the market in several emerging products. Face-to-face meetings were held quarterly (though, due to scheduling problems at the end of the year, the 4th Q meeting was postponed until early January of this year).

Codes & Standards Advocacy Program

Program Description:

In PY 2003, Southern California Gas Company's (SoCalGas) Statewide Codes and Standards(C&S) Advocacy program promoted enhancements to, and enforcements of, energy efficiency standards and codes. Codes and Standards Enhancement (CASE) studies are performed for promising design practices and technologies. The study results are presented to standards and code-setting bodies during the public rulemaking process to encourage adoption of energy efficiency measures. Expert witness testimony and additional analysis are provided throughout the rulemaking process as needed. Enforcement activities include participation in development of standards documents and strategic education efforts.

2003 SoCalGas Results and Achievements:

During PY 2003, SoCalGas participated in a number of various workshops, meetings, code adoptions and CASE studies. Workshops included 2005 Title 24 Building Efficiency Standards and AB 549. CEC Business Meetings were attended on a regular basis in addition to meetings on residential and non-residential building standards. The formal adoption of the 2005 Title 24 standard in November 2003 included a CASE study conducted by SoCalGas, "Gas Cooling Compliance Options for Residential and Non-Residential Buildings."

Local Diverse Market Outreach Program (DMOP)

Program Description

The Diverse Market Outreach Program is a crosscutting marketing and outreach information program that provided multi lingual and multi cultural outreach to residential and business customers with valuable information regarding the breadth of resources available that can be accessed to improve the energy efficiency of their homes and businesses. The program promotes the full range of SoCalGas energy efficiency programs as well as other investor owned utilities and municipal utility programs, third party energy efficiency programs and energy efficiency financing and funding resources. This program also supports the SoCalGas residential Call Center staff and Commercial/Industrial Support Center by providing information they can relay to customers seeking energy efficiency advice. Information can be provided to customers in a variety of languages, including Spanish, Chinese, Mandarin, Vietnamese and Korean.

2003 Results and Achievements

The DMOP program successfully leveraged the existing infrastructure of SoCalGas and developed and mobilized additional energy efficiency marketing and outreach strategies especially targeted to the hard-to-reach customer. The multi lingual Call Center staff was trained to respond to energy efficiency information needs of the non-English speaking customers in SoCalGas' service territory. In order to raise awareness of energy efficiency programs and services, a multi-lingual communication campaign was launched in English, Spanish, Korean, Chinese and Vietnamese. Collateral material was developed and translated directly into the aforementioned languages. Information packets were prepared and distributed reaching over 52,000 commercial customers and 5,717 residential customers. Through a combination of print, electronic (email and website banner ads), radio and one to one communications, approximately 1,500,000 residential customers were reached. Approximately 850,000 of these customers had one or more hard to reach characteristics.

The DMOP program was very effective and successful in bringing its message directly to the customer.

- The *Mobile Energy Workshop* provided convenient on-site energy efficiency training to the business customer reaching more than 2,000 businesses.
- SoCalGas also sponsored and staffed booths at 47 community events. The bi-lingual booth staffers distributed Spanish, Chinese, Korean Vietnamese, and English program materials and answered questions about energy efficiency programs.
- Spanish and English presentations were given to 58 small community groups, chambers of commerce, and participants in new home buyers' clubs and were especially effective in communicating the energy efficiency messages to this active and concerned constituency.

TABLE 5.1
SUMMARY OF COSTS:
CROSSCUTTING PROGRAM AREA

Natural Gas

	2003		2004 Planned [1]		
	Budgeted	Recorded	PGC	Procurement	Total
Information	$ 4,060,000	$ 3,779,656	$ 2,694,657	$ -	$ 2,694,657
EMS					
EEI					
SPCs					
Rebates					
Loans					
Other					
Upstream					
Information					
Financial Assistance					
Total	$ 4,060,000	$ 3,779,656	$ 2,694,657	$ -	$ 2,694,657

Note:
1. Planned 2004 reflects proposals submitted to the CPUC on 9/23/03 and revised per Decisions D.03-12-060 and D.04-02-059.

TABLE 5.2
SUMMARY OF ENERGY EFFICIENCY PROGRAM EFFECTS:
CROSSCUTTING PROGRAM AREA

Annual and Lifecycle Energy Reductions, Electric, MWH

	2003 Annual Recorded	2003 Life Cycle Recorded
Information	N/A	N/A
EMS	N/A	N/A
EEI		
SPCs	N/A	N/A
Rebates	N/A	N/A
Loans	N/A	N/A
Other	N/A	N/A
Upstream Programs		
Information	N/A	N/A
Financial Assistance	N/A	N/A
Total	N/A	N/A

Demand Reductions, Electric, MW

	2003 Annual Recorded
Information	N/A
EMS	N/A
EEI	
SPCs	N/A
Rebates	N/A
Loans	N/A
Other	N/A
Upstream Programs	
Information	N/A
Financial Assistance	N/A
Total	N/A

Annual and Lifecycle Energy Reductions, Natural Gas, Therms, 000's

	2003 Annual Recorded	2003 Life Cycle Recorded
Information	N/A	N/A
EMS	N/A	N/A
EEI		
SPCs	N/A	N/A
Rebates	N/A	N/A
Loans	N/A	N/A
Other	N/A	N/A
Upstream Programs		
Information	N/A	N/A
Financial Assistance	N/A	N/A
Total	N/A	N/A

TABLE 5.3
SUMMARY OF COST-EFFECTIVENESS:
CROSSCUTTING PROGRAM AREA

Benefit-Cost Ratios

	2003 Recorded			
	Program Administration Cost Test	Total Resource Cost Test	Levelized Cost ¢(/kWh)[1]	Levelized Cost ¢(/Therm)[1]
Information	N/A	N/A	N/A	N/A
EMS				
EEI	N/A	N/A	N/A	N/A
SPCs	N/A	N/A	N/A	N/A
Rebates				
Loans	N/A	N/A	N/A	N/A
Other	N/A	N/A	N/A	N/A
Upstream Programs				
Information	N/A	N/A	N/A	N/A
Financial Assistance	N/A	N/A	N/A	N/A

[1] Levelized Cost: Per unit of the total cost of the resource (see California Standard Practice Manual:

TABLE 5.4
SUMMARY OF COST-EFFECTIVENESS:
CROSSCUTTING PROGRAM AREA

Net Benefits, $MILL

	2003 Recorded
Information	N/A
EMS	
EEI	N/A
SPCs	N/A
Rebates	
Loans	N/A
Other	N/A
Upstream Programs	
Information	N/A
Financial Assistance	N/A
Total	N/A

Market Assessment & Evaluation and Regulatory Oversight

The primary purposes and contents of the Market Assessment &Evaluation (MA&E) section are to: (1) record costs (previous calendar year and current calendar year) associated with MA&E activities; and, (2) highlight the status of various market assessment and evaluation studies. These studies are used to demonstrate performance per an adopted shareholder performance incentive, to measure the status and or changes in the energy efficiency industry and/or energy efficiency products, and to measure other effects of identified programs.

PY2002 & PY2003 MA&E Studies

These studies are designed primarily to support energy savings estimates of various technologies. The studies were begun and funded in 2002 & 2003. The complete studies can be downloaded from the CALMAC website at www.calmac.org.

CPUC Overarching and Utility Statewide Studies

The California IOUs are project managing various statewide Market Assessment and Evaluation studies. These studies can be broken down into 2 subcategories, CPUC Overarching Studies and Utility Statewide Studies.

CPUC Overarching Studies

CALMAC WEBSITE MAINTENANCE AND WORKSHOPS

The proposed project will maintain the current CALMAC Web site and will enhance its current capabilities to supply more valuable information on CALMAC activities and PGC funded project reports to the industry via the Internet. Project objectives include:

(1) Keep Web site information current; (2) maintain upload and listserv systems; (3) identify Web site issues and repair software to keep site operational; and (4) identify and implement, as requested by Website Committee, enhancements to the design, structure and operation of the CAMLAC Web site.

MASTER CONTRACT FOR COORDINATION

The master contract for coordination is a 2002-funded project that involves monitoring, providing advice, and reviewing all of the evaluation, measurement and verification studies of 2002 energy efficiency programs, both local and statewide. An early step in the project was to develop a database that could be used to efficiently track and review all of the studies. Energy Division staff saw that with a modest expansion in scope, this database could be enhanced and provided to them to use in tracking the programs themselves, as well as their evaluations.

This 2003 supplement to the coordination project will add data fields, data import capability, and report generation capabilities to the project's evaluation tracking database, to make it a program tracking and reporting database. Such a database will significantly reduce the labor time required for Energy Division personnel to monitor and analyze the progress of the 2002 programs and to provide reports and recommendations for CPUC policymakers.

HARD-TO-REACH MARKET UPDATE

In 2001 a statewide Residential Needs Assessment (RNA) study was completed at the directive of the CPUC. It focused on the five hard-to-reach (HTR) groups: primary language other than English, renter, rural, moderate income, and multifamily. A similar study was conducted for small commercial customers in 2001. These studies have proved to be a good starting place for program implementers to target their programs to the hard-to-reach markets. Since then, a number of new information sources and needs have surfaced. The study will build on experiences of the program implementers and evaluators in 2001 and 2002 with HTR groups and provide a new set of information and data for serving HTR groups.

STATEWIDE ENERGY SAVINGS POTENTIAL STUDY

The project will be conducted to ensure that policymakers and program planners have up-to-date, state-of-the-art information on the available cost-effective energy efficiency potential for energy efficient goods and services in California. The project will be conducted as one or more separate studies. Results from these studies will facilitate policymakers and program planners in designing the most efficient and effective energy efficiency programs and program portfolios for the state. The purposes of this work are to: 1) extend existing research on energy efficiency as a cost-effective resource in an integrated portfolio; 2) prepare action plans highlighting the implications of these studies for program designers and implementers for capturing the forecast savings; 3) continue enhancement and updating of existing studies in the energy efficiency potential series; and 4) develop energy efficiency potential estimates for emerging technologies to compliment the existing studies which are focused on the retrofit market. This research will assist the California Public Utilities Commission, other policymakers and program implementers make informed decisions on program planning, design and implementation throughout the state.

Collect secondary data to conduct the market potential studies, analyze the data to provide market potential results for different sectors, develop emerging technologies forecasts, prepare action plans, and assess cost-effectiveness issues related to the overall program portfolio and/or its constituent parts. Hold public workshops as appropriate to obtain public input and disseminate results.

1) Updated market potential studies for each sector, including an overarching summary study; 2) inclusion of emerging technologies in the energy efficiency potential models and studies; 3) action plans for program planners and implementers; and 4) updated analyses and reports pertinent to portfolio planning and risk mitigation.

NEW CONSTRUCTION SATURATION AND POTENTIAL

The proposed study aims to provide additional information on cost-effective energy savings for the following new construction markets:

1. Single-Family New Construction;
2. Multifamily Low Rise New Construction;
3. Multifamily High Rise New Construction;
4. Commercial New Construction; and
5. Industrial New Construction.

The Statewide New Construction programs are designed to encourage single family, multifamily, commercial and industrial builders to construct buildings that reduce energy usage through a combination of financial incentives, design assistance and education. The programs are performance based and no specific measures or equipment are required for participation or qualification. Project objectives include:

- Determine market potential analysis for a comprehensive list of technologies for all five new construction markets.
- Fully analyze the interactions of codes and standards and building commissioning on new construction markets
- Determine which technologies have the greatest potential for cost-effective energy savings.

DATA INTEGRATION SCOPING STUDY

Processes for transferring and linking data among several 2002-funded studies are needed. This project will explore and summarize the data and software requirements for making such data transfers and linkages.

The energy savings and demand reduction data developed in some of the evaluation, measurement and verification (EM&V) studies of previous programs need to be used to update the Database for Energy Efficiency Resources (DEER) and its associated Deemed Savings Database. These estimates should also be used to update the Energy Efficiency Potential databases. Periodically, it may also be desirable to update remaining market potential for some measures in the Potential databases by using EM&V results on the additional market penetration of efficient technologies due to the programs. Some of these databases should link to the Groupware database being developed for CPUC Energy Division staff to track and analyze programs. It may also be desirable to link the Best Practices database with some of the other databases. Both the data and potential software requirements of such linkages would need to be defined. The Groupware-related linkages would be for exclusive use by the Energy Division. Data in the Potential, DEER/Deemed Savings, and Best Practices databases would be publicly available on the web for use by program planners and implementers.

STATEWIDE RESIDENTIAL MARKET SHARE TRACKING STUDY

2002 funding is sufficient to keep this ongoing study going until early 2004, so no 2003 funds have been allocated. It is included because it requires coordination with the other new studies, and because it will need more funding in 2004.

The Statewide Residential Market Share Tracking Study (RMST) has completed nearly five years of tracking of market shares of energy-efficient residential appliances in California. Much of the residential data collected thus far dates to as far back as the second half of 1998, establishing a valuable ongoing database and resource by which to track the acceptance and influx of energy efficiency into the residential market sector.

The continuation of this study is important because evaluation of current statewide energy efficiency programs and initiatives requires extensive knowledge of baseline market conditions and of changes relative to that baseline over time. In order to assess the success of market transformation efforts, as well as the success of statewide energy efficiency programs, it is

necessary to develop a reasonably comprehensive system to track a variety of indicators of market changes that are attributable to these efforts (market effects). While many market behaviors (and behavioral changes) cannot be expressed quantitatively, the trend of market shares of energy efficiency appliances and other measures over time is one market effect indicator that is truly measurable and can be quantified.

BEST PRACTICES ENERGY EFFICIENCY PROGRAM

There are many ways to judge the success of energy efficiency programs. For newcomers, bringing an innovative approach to energy efficiency is an important indicator. For some stakeholders, increasing partnership and collaboration is an indicator. From a utility perspective, cost effective integration of programs at a portfolio level might be the single most important indicator. From a regulatory point of view, enhancing the design, implementation, and management of Public Goods Charge (PGC) energy efficiency programs could be the most important indicator of success for Californians.

The 2002 Best Practices Study aimed to employ benchmarking to find some of the best practices from nationally recognized experts and from newcomers and knowledgeable practitioners that designed and implemented energy efficiency programs in California. The implications of this study's finding are that program designers and implementer would be able to reference the Study's outcome and apply the information toward developing more successful energy efficiency programs.

Based on input from Californian practitioners and the study sponsors, the 2003 evaluation, measurement and verification (EM&V) Study for the Best Practices Energy Efficiency Program will build upon the 2002 Study's planning and analysis efforts. The 2003 Study aims to:

- Expand on the 2002 data collection and documentation of practices and lesson-learned in the residential, nonresidential and new construction program design sectors;
- Expand the usability of the best practices database that was planned for in the 2002 study. This will include development of the information technology structure to launch the Best-Practices Database and Web page that will be the most useful as a resource and tool for users of the data and information; and
- The 2003 study will explore what is the best tool to develop and disseminate the Best Practices information, e.g., upload a searchable, relational database including the benchmarking results and program profiles that will incorporate case study write-ups, etc.

Utility Statewide Studies

SINGLE-FAMILY ENERGY EFFICIENCY REBATES

The Single Family Home Energy Efficiency Rebates (HEER) program is a statewide program, administered by the four California investor-owned utilities (IOUs), which provides rebates on various home improvement products including windows, insulation, heating, ventilation and cooling equipment, appliances, and residential pool equipment. The 2003 evaluation will build upon the evaluation of the 2002 program and address program changes from 2002 that include:

- Changes in rebate levels and program measure mix such as the addition of programmable thermostats instant rebates at the point-of purchase (POP) and residential pool pumps;
- Collecting and tracking ongoing program efforts to improve program delivery during 2003 implementation; and
- Enhancements on longitudinal study given lessons learned from the California Energy Commission's (CEC's) Customer Behavior Study and the Customer Behavior and Attitude component of the 2002 Single-Family Study.

The 2003 EM&V Study for the Single Family Energy Efficiency program has the following objectives:

- Assess the HEER program's efforts to provide helpful information, services, financing and prescriptive rebates to help move the market to install energy efficient measures in addition to verifying long-term peak demand and energy savings goals of the program;
- Assess the efficacy of POP instant rebates as a delivery strategy for key program measures;
- Verify achieved levels of energy and peak demand savings; and
- Provide ongoing feedback and corrective guidance regarding program implementation.

MULTIFAMILY ENERGY EFFICIENCY REBATE PROGRAM

The statewide PY2003 Multi-Family Energy Efficient Rebate Program is in its second year and will therefore be able to build upon the evaluation of the PY2002 program. Program changes from 2002 that will be included in the 2003 evaluation include increases and/or decreases in rebate levels and the addition and/or deletion of certain measures. Additionally, the PY2003 Program will incorporate a reservation system to assist in the control and systematic distribution of program funding.

The 2003 EM&V Study for the Multi-Family Energy Efficient Rebate Program will have the following objectives:

- Verify the number of measures installed in program year 2003
- Verify the achievements in the Hard-to-Reach markets
- Measure customer behavior and response for both the HTR and non-HTR customers
- Analyze program efficiency
- Determine the *ex post* energy savings for the measures in the program

STATEWIDE HOME ENERGY EFFICIENCY SURVEY PROGRAM

The Statewide Home Energy Efficiency Survey (HEES) Program involves the use of two energy survey types (mail-in and on-line) to increase homeowner awareness of energy efficiency opportunities in order to achieve energy and cost savings. The fact that the energy surveys differ in their delivery mechanisms reflects the belief that customers vary in what they perceive as credible or find convenient when seeking to assess and reduce their energy use at home. The goals of offering and marketing different types of energy surveys are to insure customer equity

(providing opportunity for an energy survey to any utility customer who might benefit) and to recognize that customers have unique sets of needs that may make one type of survey more appealing or feasible than another. Recently, there has been an interest in moving toward offering a greater number of on-line surveys because of the cost efficiencies inherent to using this format. Limited customer information pertaining to the on-line survey has been collected in terms of satisfaction with the survey, the extent and ease of use, and the effectiveness of this survey type in terms of providing energy efficiency recommendations. Accordingly, it is essential to gather this information. In contrast, previous evaluations have yielded a significant amount of information about the mail-in survey format including adoption rates of energy efficiency recommendations, estimated savings that result from implementing these recommendations, customer satisfaction and use among different customer groups.

Accordingly, this evaluation study entails an assessment of the on-line survey to obtain the necessary customer information needed to evaluate the effectiveness of this survey type, the current formats used to offer the on-line survey, and the resultant implications for evaluability, ease of use, and quality of energy efficiency information provided to customers. The information obtained in this evaluation can then be used in conjunction with information gathered from previous evaluations of the HEES Program (particularly the mail-in survey) to provide an assessment of the different options for offering energy efficiency surveys to varied customer groups.

EXPRESS EFFICIENCY PROGRAM

The Express Efficiency program is a statewide program that provides financial incentives to small and medium sized nonresidential customers for installing specific proven energy efficiency measures including lighting; heating, ventilation and air conditioning (HVAC); refrigeration; agriculture; gas; LED lighting technology; and motor retrofit measures. The primary objective of the Express Efficiency program is to help small and medium businesses achieve long-term annual energy savings and demand reductions through energy efficient retrofits. The program is limited to small and medium customers with an emphasis on the hard-to-reach sector.

The 2003 evaluation will contrast participation rates with those of 2002 to analyze the restrictive impact of the aggregation rule on customer participation. This rule excluded customers whose aggregated demand across all of their accounts exceeded 500 kW. The rule was redefined for 2003. The 2003 evaluation will also analyze customer adoption of new program measures and their energy savings estimates.

The study will include 1) analysis of 2003 program accomplishments; 2) review of energy and demand savings estimates; 3) comparisons between program changes in 2002 versus 2003 regarding a variety of effectiveness of program design, delivery and implementation; 4) an assessment of program targeting and customer satisfaction with special emphasis on statewide coordination and HTR outreach; 5) an analysis of incentive levels and options; and 6) sample on-site verifications of installed measures.

NONRESIDENTIAL RETROFIT ENERGY AUDITS PROGRAM

In 2004, the utilities' Evaluation, Measurement and Verification (EM&V) efforts for the statewide nonresidential energy audits program will expand upon the efforts to evaluate the effectiveness of program implementation and to estimate energy savings for the 2003 program.

IOUs will use results and lessons learned in 2002 evaluations to inform study designs and work plans for 2003 efforts.

In 2003, the Nonresidential Energy Audits Program will offer five distinct audit options to customers (telephone, mail-in, CD, Web-based and on-site). The program will basically have the same elements as in 2002.

Audits are an information program that can move customers to take energy efficiency actions. However, it may take some time before customers take action. Given the waning impact of the energy crisis of 2000-2001, the IOUs wants to continue to examine the ongoing impact audits have over time on customers' behaviors, attitudes and adoption of EEMs. Therefore, the IOUs will conduct surveys for both 2003 audit participants and past participants, to determine how and when audits result in customer adoption of energy efficiency, and better determine the frequency necessary for auditing customer facilities as well as proposes to survey similar nonparticipating customers to contrast the adoption of energy efficiency between both groups. Identifying these actions and how customers tap into other energy efficiency programs allows for continuous enhancement of integration among programs.

The 2004 EM&V Study for the Statewide Nonresidential Energy Audits Program will have the following objectives:

- Document energy efficiency actions taken by audit program participants over time compared to actions taken by non-participants;
- Document participant satisfaction with the various audit options and marketing strategies;
- Assess current and pilot delivery vehicles and marketing mechanisms to ensure ongoing improvement of program delivery; and
- Estimate energy and/or peak load savings accruing from participation in the audit program over time.

BUILDING OPERATOR CERTIFICATION AND TRAINING PROGRAM

In 2004, the utilities' Evaluation, Measurement and Verification (EM&V) efforts for the statewide non-residential Energy Efficiency Training and Certification for Building Operators (Building Operator Certification and Training) program will evaluate the effectiveness of program implementation for the 2003 program. The study descriptions below provide the focus and types of evaluations in support of future program plans.

Building operator certification and training programs educate operators of large and medium commercial buildings, including public buildings, on short-and long-term peak demand and energy savings strategies for their buildings. After participating in training activities, individual building operators are certified in efficient building operation. The program is implemented in a uniform statewide fashion. Participants complete the course curriculum in approximately seven months. Participants who pass the course are certified. Building operators learn to get the most out of their systems by improving their analytical and practical skills on the job. The training includes equipment operations, the latest methods of building operation and maintenance and how to incorporate energy efficiency opportunities. The program remains mostly unchanged from PY 2002, with minor modifications to training content.

The 2003 EM&V Study for the Energy Efficiency Training and Certification for Building Operators (Building Operators Certification and Training Program) will have the following objectives:

- Examine participants satisfaction with program process and content of training;
- Gather participant and non-participant recommendations for enhancements to program process and content;
- Understand how to better market the program to non-participants; and
- Document all participant post-program energy efficiency adoption actions.

NONRESIDENTIAL RETROFIT EMERGING TECHNOLOGIES PROGRAM

The Statewide Emerging Technologies Program (ETP) is an information-only program that seeks to accelerate the introduction of energy efficient technologies, applications, and analytical tools that are not widely adopted in California. The program targets nonresidential customers (primarily) and is composed of two parts: 1) demonstration and information transfer, and 2) the Emerging Technologies Coordinating Council (ETCC).

The demonstration and information transfer portion of the program focuses on near-commercial and commercial energy efficient applications with low market penetration. The objective of the demonstration projects, which are conducted either at customer sites or in controlled environments, is to provide design, performance, and verification of novel energy efficient systems, helping to reduce the market barriers to their wider acceptance. The objective of the information transfer efforts, which are customized to targeted markets, is to disseminate project results and information about promoted technologies. A variety of means are used to disseminate results including: detailed project reports, design documentation, professional and industry forums, technical and non-technical publications, trade journals and shows, site visits and tours, internet web pages, workshops, seminars, conferences, and mainstream energy efficiency programs.

The ETCC is a statewide information exchange and coordination effort between Pacific Gas & Electric Company, San Diego Gas and Electric Company, Southern California Edison Company, Southern California Gas Company, and the California Energy Commission's Public Interest Research Program.

Given that some program activities such as showcases and disseminating information are carried out or have impacts that are realized over multiple years, the effective program period is longer than one year. Therefore, to adequately evaluate the extent to which program objectives have been achieved, the evaluation strategy must follow the same time frame as the effective program period. Given that 2002 was the first year the program was operated at the statewide level and many of the demonstration projects were in the earliest stages of development, it was not possible to measure baseline indicators of awareness amongst the target audience in the PY2002 evaluation. Instead, that evaluation focused on assessing the program dissemination and information transfer efforts of the program. Recommendations were provided to allow for mid-course corrections in 2003 that would improve the information dissemination efforts for the 2003 program. As a follow up to that study, the PY2003 evaluation study will evaluate the effectiveness of different information dissemination efforts that were employed as a result of the recommendations from the PY2002 evaluation and, where possible, conduct a limited number of

in-depth interviews with current program participants to investigate the progress of the projects, awareness of promoted technologies amongst the target audience, and assess satisfaction with and obtain feedback regarding the program process. Subsequent evaluations will be able to use these baseline indicators to evaluate market effects resulting from the program by measuring changes in awareness amongst the target audience that result from ETP activities and the adoption and use of promoted technologies. The study objectives listed below reflect this evaluation strategy.

NRNC BUILDING EFFICIENCY ASSESSMENT (BEA) STUDY

This study will build on the NRNC Building Efficiency Assessment (BEA) Studies from PY2000-2002 and will use a similar reporting format. The Statewide Nonresidential New Construction Building Efficiency Assessment (BEA) Study (MCPAT) is currently in its second round of data collection and reporting. The first round covered Savings By Design program activity from mid-1999 (program roll-out) to 2001. The current study covers program activity in 2002.

Savings By Design program tracking information is available from the IOU partners implementing the program. Additional information will be collected for a sample of program participants as well as comparable non-participants using on site surveys, and these data will be analyzed using DOE-2 simulations.

The non-residential new construction (NRNC) market is different from the retrofit market in that it produces buildings with integrated systems of measures. Retrofits are primarily one-for-one replacements of existing systems or components. While we can track the installation rates of individual measures in new construction, the true target is whole building efficiency. New building energy efficiency is the product of complex design practices, and of the interactions of multiple measures. This makes for interesting challenges in assessing and evaluating changes to the NRNC market. Consequently, the study needs to calculate savings by the end-use of systems improvements, as well as by whole building integrated design. The information developed should help assess the success of NRNC program designs and implementation activities.

This on-going study quantifies the whole-building and end-use energy savings and efficiencies of both participant and non-participant buildings.

The approach to developing these data has been used for evaluating statewide commercial new construction since 1999 and the results can be referenced back to previous data to develop on-going trends. The results provide timely feedback to program managers and policymakers and should facilitate incremental improvements to program process and operations. The results will also identify changes in design practices as a result of program operation. This project tracks program participant attitudes and responses to the program, including information on program design, the application process, the design assistance services provided by the programs, the timing of program events relative to project events, etc.

The 2003 BEA Study will produce gross and net program impacts. The net-to-gross analysis will attempt to estimate the portion of the savings that can be directly credited to the program. The results of the gross and net analysis will be discussed in an interim report. At a minimum, the report will describe the analysis methodologies and summarize the results. An annual report will be prepared that combines the various interim reports and other intermediate deliverables required in the Study, incorporating reviewers' comments on the earlier reports, and rewriting as

necessary to provide continuity and final conclusions. For continuity, the final report will have the same structure as the PY2000-2002 reports.

The on-site surveys collect detailed building operation and equipment characteristics used to develop DOE-2 models to estimate energy and demand use and savings. The on-site survey data is entered into the existing BEA building characteristic Access database. The on-site survey data will be used to develop "as-built" DOE-2 simulation models. The results of the DOE-2 simulations will be extracted from the output reports and compiled in the existing BEA Access database. This database will be published on the CALMAC web site as a resource to program planners and other researchers.

NRNC MARKET CHARACTERIZATION AND PROGRAM ACTIVITY TRACKING (MCPAT) STUDY

The Statewide Nonresidential New Construction Market Characterization and Program Activity Tracking Study (MCPAT) is currently in its second round of data collection and reporting. The first round covered nonresidential new construction market activity in 2000 and 2001. The current study covers activity in 2002. Tracking the changing characteristics of the NRNC market over time provides information for refining program design and for assessing program accomplishments. This on-going project provides bi-annual reports of statewide NRNC market and program activity Savings By Design program tracking information is available from the IOU partners implementing the program. Program and market characteristics, by building type, will be reported at the utility level, the county level and the statewide level. This data will be tracked on an on-going basis, and developed into standardized reports to allow for assessment of the NRNC market over time.

The success of the study is important because evaluation of energy efficiency initiatives requires knowledge of baseline market conditions, and changes relative to that specific baseline over time. The value of this activity will increase over time as time-series data accumulates. Continued and consistent tracking of market characteristics and program activity is important for analyzing program penetration and identifying long and short term trends in the NRNC market.

TECHNICAL SUPPORT FOR THE 2003 NRNC PROGRAM AREA

As part of its NRNC MA&E Program Area duties, Southern California Edison (SCE) will be requiring a consultant to provide technical expertise for the management of nonresidential new construction (NRNC) MA&E studies. This work includes RFP development, proposal review, and review of contractor work and deliverables, as well as planning and participation in the statewide NRNC program and MA&E activities. It is necessary for the thoughtful and responsible administration of the MA&E activity.

2003 CALIFORNIA ENERGY STAR® NEW HOMES PROGRAM

In 2004, the utilities' Evaluation, Measurement and Verification (EM&V) efforts for the statewide California ENERGY STAR® New Homes Program will expand upon the 2003 EM&V effort to evaluate the effectiveness of program implementation and to estimate energy savings for the 2003 program. This study will use results and lessons learned in 2003 evaluations to inform study designs and work plans for 2004. This study also will evaluate the 2003 program

refinements. These refinements include changes in rebate levels and increased design and inspection assistance to multifamily builders.

The California ENERGY STAR® New Homes Program is designed to encourage single-family and multifamily (including rental apartments, condominiums and town homes) builders to construct units that reduce energy usage through a combination of financial incentives, design assistance and education. Due to the long-term nature of new construction, these incentives will be available to participants that meet the Programs' requirements and can be verified by December 2005. The Programs are performance based and no specific measures or equipment are required for participation or qualification.

The PY 2003 Program has the same basic program requirement and builder incentives to encourage builders to exceed the new construction energy efficiency codes by 15 percent as the PY 2002 Program. However, the PY 2003 program has either eliminated or reduced incentives to encourage builders to exceed Title 24 by 20 percent. To encourage increased participation by multifamily builders, the PY 2003 program offers a design assistance incentive and help with inspections. The study will:

- Document energy savings and compare energy savings estimates for the PY 2003 program with the energy savings estimates from the PY 2002 program;
- Determine if there have been any changes in the building characteristics of program participants between the PY 2002 and PY 2003 programs;
- Investigate builders' perceptions of the California ENERGY STAR® New Homes Program;
- Evaluate the effectiveness of program modifications made in PY 2003; and
- Recommend additional program modifications if warranted.

EDUCATION AND, TRAINING AND SERVICES PROGRAM

The Statewide Education, Training, and Services Program is offered in the service territories of Pacific Gas & Electric Company (PG&E), San Diego Gas and Electric Company (SDG&E), Southern California Edison Company (SCE), and Southern California Gas Company (SCG). Three of the four utilities, PG&E, SCE, and SCG, have physical energy centers, while SDG&E offers energy efficiency classes to customers using other facilities and non-utility sites.

The educational and informational efforts of the energy centers (physical and virtual) promote energy efficiency to a broad spectrum of market actors including consumers, midstream actors such as design, engineering, and contract communities, and upstream market actors. The centers also support other Public Goods Charge programs by distributing incentive and financing program promotional materials, and providing field support, seminars, displays, equipment demonstrations, and face-to-face contact with customers in a variety of venues, which include trade-shows and community meetings. The centers collect, transfer, research, evaluate, demonstrate, and showcase energy efficiency concepts, technologies, and products for manufacturers, businesses, researchers, educational institutions, and the general public. The centers are a physical "one-stop-shop" or single-source contact for the customer and other market actors, who thereby gain access to an abundance of energy efficiency resources.

This evaluation study entails a needs assessment to determine how best the energy centers can improve current services and expand their reach to serve a larger market. Specifically, the study

will complete a customer segmentation analysis of each energy center's primary target population(s) (e.g., commercial and industrial customers, residential customers, or midstream/upstream market actors), explore barriers to participation in energy center activities (such as distance and time), and develop recommendations for improving the promotion and targeting of existing services as well as new programs and services that focus on the needs and barriers not currently or effectively addressed by the energy centers.

An assessment of customer (market actor) needs and participation and of barriers to participation in energy center activities will enable program managers and planners to improve program course offerings and services. To the extent that the results of this assessment impact the program's ability to overcome barriers to the adoption and implementation of energy efficient technologies and practices, the evaluation will, ultimately, lead to greater achievement of program objectives and an improvement in future program performance.

NRNC CODES AND STANDARDS ADVOCACY STUDY

The statewide Codes and Standards Advocacy program (Codes and Standards) supports upgrades and enhancements in energy efficiency standards and codes. Codes and Standards Enhancement (CASE) studies for energy efficiency improvements are performed for promising design practices and technologies and are presented to standards and code-setting bodies. Pacific Gas & Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), and Southern California Gas Company (SoCalGas) have developed CASE initiatives on various cost effective building and appliance energy efficiency measures. A summary report will be completed for each CASE study active during 2003. The utility program goals are for the utilities, collectively, to report on no fewer than 23 CASE studies (new and existing) in 2003.

The current study summarizes the efforts at improving energy code enforcement and development at both the state and the local level. The study draws on the utilities' individual program reporting on CASE initiatives and develops a consolidated view of the codes and standards efforts statewide.

The 2003 add-on study objectives are to:

- Verify that the CASE initiatives were completed and delivered into the Title 24 revision process.
- Document the CASE initiative process for future evaluation efforts.
- Recommend benchmarking procedures for future CASE initiative evaluations.

2002 & 2003 Local Program MA&E Studies

At the recommendation of the EM&V Master Contractor and under direction from the CPUC's Energy Division, SoCalGas combined 2 local program evaluations (Nonresidential Financial Incentives and Diverse Market Outreach Programs) with 3 local program evaluations (Energy Code Training, Residential Hard-to-Reach Lighting Turn-in, and the In-Home Audit Programs) with SDG&E for both PY02 and PY03.

The PY02 studies are completed and can be downloaded from the CALMAC website at www.calmac.org. The PY03 Studies will be available there upon completion, expected by August 1, 2004.

SoCalGas' Nonresidential Financial Incentives and Diverse Market Outreach Programs and SDG&E's Energy Code Training, Residential Hard-to-Reach Lighting Turn-in, and In-Home Audit

Since energy savings achieved by the program are based on *ex ante* assumptions, this task consists of verifying the number of measure installations. The program's savings will then be determined by IPMVP option A, stipulated energy savings. A telephone survey with a statistically representative sample of program participants to verify the number of measure installations achieved by the program. Since the process evaluation component of the project also utilizes a telephone survey for data collection, there will be one questionnaire for the project with separate sections dedicated to the verification of measure installations and the process evaluation. Respondents will be administered both components of the questionnaire, allowing only one sample design for this project, and therefore, allocate more project resources to data collection than if separate samples were required.

The program tracking data will be used to design a representative sample of program participants. Prior to finalizing the sample, there will be verification that the measures in the sample adequately represent the population of rebated measures.

A questionnaire for the program participants that will obtain information verifying measure installations recorded in the program tracking database including:

- Verification that the measure was installed,
- If not installed, reason why not,
- Verification that the measure is still installed,
- If not, why not,

The survey will include a section of the questionnaire that will obtain a variety of information for the process evaluation including:

- How participants heard of the program,
- The reasons for program participation,
- Customer perceptions on how the program has helped them manage their energy bills, and
- Participant satisfaction and recommended program improvements.

A pretest will be performed to identify any difficulties with the instrument. Any revisions necessary will be reviewed and once approved will be implemented into the instrument.

Upon approval of the final survey instrument the contractor will carry out the surveys. All calls will be tracked and any refusals or incomplete responses will be recorded. Upon completing each survey, the data will be entered into an electronic database designed specifically for this survey. The data will be continuously reviewed by the project manager to ensure quality control. All data will be entered into the evaluation tracking system. Data will be validated automatically using imbedded database functionality.

Using sound statistical techniques, verified measure installations in the sample will estimate the number of measure installations in the program. Reporting for this component of the evaluation will be combined with the process evaluation component to form one report for the project.

The Contractor will analyze the results of the telephone survey. The survey instrument for this project will contain both qualitative and quantitative questions where appropriate. The analyses will address all of the research requirements. The quantitative survey analysis will be carried out using a commonly used statistical software package. Contractor will calculate weighted frequencies, means, and cross tabulations of data, where appropriate, to provide unbiased estimates of population characteristics. All statistical extrapolations will be well documented and will reflect the population where applicable. The qualitative questions will be individually analyzed to identify any trends in the responses. The responses will be used to explain the quantitative results within the context of the report.

Regulatory Oversight

Regulatory Compliance and Reporting

Regulatory Compliance and Reporting is designed to capture activities that are undertaken to meet regulatory reporting oversight, and other obligations that are not included in Market Assessment & Evaluation activities. It consists of those activities needed to verify, collect, and report descriptive and technical information related to the achievements and scope of all authorized energy efficiency programs. Examples are advice letter filings, annual energy efficiency reports, filings for performance incentives, and other energy efficiency proceedings including attendance at Energy Division (ED) meetings, workshop participation, testimony, hearings, and data requests and responses.

ED Oversight Costs

Oversight costs include SoCalGas' allocation for the Energy Division (ED) expenditures and Commission-managed studies. In 2003, SoCalGas paid $114,119 for the ED's expenditures.

TABLE 6.1
MARKET ASSESSMENT & EVALUATION EXPENDITURES (MA&E)
Natural Gas

Project ($000's)	Statewide Budget	SoCalGas Recorded
CPUC OVERARCHING STUDIES		
CALMAC Website Maintenance & Workshops	50	5
Master Contract for Coordination	80	8
Summary Study		
DEER (incremental funding)	35	3
HTR Update	30	3
Energy Saving Potential	400	39
Industrial & Emerging Technologies		
New Construction		
Data Integration		
Res Market Share Tracking		
Best Practices Database	100	10
Overarching Studies Subtotal	**695**	**68**
UTILITY STATEWIDE STUDIES		
Residential Retrofit-SW		
Single Family Rebates	250	25
Multifamily	225	22
Mail-in/On-line Audits	110	11
Ref Recycling	300	
Nonresidential Retrofit-SW		
SPC (large & small)	200	20
Express Efficiency	250	25
Audits (on-site)	200	20
Bldg Operator	40	4
Emerging Tech Demo	40	4
New Construction		
NRNC - BEA	350	34
NRNC - MCPAT	100	10
NRNC - Tech Support	60	6
RNC	200	20
Cross-Cutting-SW		
Res/Nonres Retrofit/New Construction		
Res Lighting	275	
Education & Training Svcs.	115	11
Codes & Standards	90	9
Overarching Studies Subtotal	**2,805**	**219**
STATEWIDE MA&E TOTAL	**3,500**	**287**
STATEWIDE MA&E UTILITY BUDGET	**2,500**	**246**
ENERGY DIVISION STUDIES AND OPERATING COSTS	**4,992**	**553**
TOTAL 2003 MA&E BUDGET	**10,992**	**1,086**

Notes:

[1] All Recorded amounts include payments in 2003 and amounts committed to projects in 2003. Committed amounts may not be fully realized.

Shareholder Performance Incentives

This section is not applicable for the 2003 Energy Efficiency Program Year.

Summer Initiative Programs

SoCalGas completed all projects related to the 2000 Summer Initiative programs in 2002.

TABLE 8.1
SUMMARY OF COSTS:
SUMMER INITIATIVE PROGRAMS

	2003	
	Budgeted	Recorded
Program		
Hard to Reach	$ -	$ -
Totals Summar Initiatives	$ -	$ -

TABLE 8.2
SUMMARY OF ENERGY EFFICIENCY PROGRAM EFFECTS:
SUMMER INITIATIVE PROGRAMS

Annual Energy Reductions, Electric, MWH

	2003 Recorded
Utility Programs	-
Non-Utility Programs	-

Demand Reductions, Electric, MW

	2003 Recorded
Utility Programs	-
Non-Utility Programs	-

Annual Energy Reductions, Natural Gas, Therms, 000's

	2003 Recorded
Utility Programs	-
Non-Utility Programs	-