

Application of SOUTHERN CALIFORNIA GAS)
COMPANY for authority to update its gas revenue)
requirement and base rates)
effective January 1, 2012 (U 904-G))

Application No. 10-12-____
Exhibit No.: (SCG-09-WP)

WORKPAPERS TO
PREPARED DIRECT TESTIMONY
OF GILLIAN A. WRIGHT
ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

DECEMBER 2010



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**2012 General Rate Case - APP
INDEX OF WORKPAPERS**

Exhibit SCG-09 - CS - INFORMATION

DOCUMENT	PAGE
Overall Summary For Exhibit No. SCG-09	1
<i>Summary of Non-Shared Services Workpapers</i>	2
Category: A. Customer Communications, Research and e-Services	3
..2IN000.000 - COMMUNICATIONS, RESEARCH AND E-SERVICES	4
Category: B. Customer Assistance	71
..2IN003.000 - CUSTOMER ASSISTANCE	72
Category: C. Nonresidential Markets	168
..2IN005.000 - CAPACITY PRODUCTS AND PLANNING	169
..2IN007.000 - COMMERCIAL, INDUSTRIAL, AND GOVERNMENT SEGMENTS	177
Category: D. Research Development & Demonstration (RD&D)	203
..2IN008.000 - TECHNOLOGY DEVELOPMENT SUPPORT	204
..2IN008.001 - RESEARCH DEVELOPMENT AND DEMONSTRATION (RD&D) - REFUNDABLE PRO	209
<i>Summary of Shared Services Workpapers</i>	274
Category: A. NGV Program	275
..2200-0234.000 - NGV PROGRAM	276
Category: B. Capacity Products & Planning	309
..2200-0246.000 - CAPACITY PRODUCTS AND PLANNING DIR	310
..2200-0248.000 - PIPELINE SUPPORT	319
..2200-0328.000 - CAPACITY SUPPORT	328
..2200-0330.000 - PIPELINE AND STORAGE STRATEGY	340
Category: C. BioFuel Market Development	350
..2200-2286.000 - BIO-FUEL MARKET DEVELOPMENT	351
Category: D. Environmental Affairs	359
..2200-2288.000 - ENVIRONMENTAL AFFAIRS	360
Category: E. Emerging Technology	387
..2200-2190.000 - EMERGING TECHNOLOGY	388
Category: F. VP Customer Solutions	396
..2200-2282.000 - VP CUSTOMER SOLUTIONS	397
Category: G. USS Billed-in from SDG&E	407
..2200-8910.000 - BILLED-IN COST CENTER FOR CUSTOMER INFORMATION	408

2012 General Rate Case - APP
INDEX OF WORKPAPERS

Exhibit SCG-09 - CS - INFORMATION

DOCUMENT	PAGE
<i>Appendix A: List of Non-Shared Cost Centers</i>	416

Overall Summary For Exhibit No. SCG-09

Area: CS - INFORMATION

Witness: Wright, Gillian Alice

Description	In 2009 \$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
<i>Non-Shared Services</i>	24,769	29,616	30,195	34,806
<i>Shared Services</i>	4,517	5,809	6,233	6,730
Total	29,286	35,425	36,428	41,536

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice

Summary of Non-Shared Services Workpapers:

Description	In 2009 \$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
A. Customer Communications, Research and e-Servi	5,817	6,854	7,433	7,919
B. Customer Assistance	2,159	4,524	4,524	5,199
C. Nonresidential Markets	7,337	8,052	8,052	8,502
D. Research Development & Demonstration (RD&D)	9,456	10,186	10,186	13,186
Total	24,769	29,616	30,195	34,806

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: A. Customer Communications, Research and e-Services
 Workpaper: 2IN000.000

Summary for Category: A. Customer Communications, Research and e-Services

	In 2009\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	1,757	1,876	2,239	2,321
Non-Labor	4,060	4,978	5,194	5,598
NSE	0	0	0	0
Total	5,817	6,854	7,433	7,919
FTE	19.4	21.1	25.1	26.1

Workpapers belonging to this Category:

2IN000.000 Communications, Research and e-Services

Labor	1,757	1,876	2,239	2,321
Non-Labor	4,060	4,978	5,194	5,598
NSE	0	0	0	0
Total	5,817	6,854	7,433	7,919
FTE	19.4	21.1	25.1	26.1

Beginning of Workpaper
2IN000.000 - Communications, Research and e-Services

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Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: A. Customer Communications, Research and e-Service
Category-Sub: 1. Customer Communications, Research and e-Services
Workpaper: 2IN000.000 - Communications, Research and e-Services

Activity Description:

The Customer Communications, Research and e-Services organization manages four primary areas:

1, Customer Communications

Customer Communications develops, implements, manages and oversees all paid communications to SCG customers. Communications are delivered to customers through a variety of channels, including print advertisements, broadcast media, website content, e-mails and e-newsletters, social and interactive media, direct mail, point-of-sale and event displays, brochures, flyers, and bill enclosures.

2, Design and Print Production

Design and Print Production manages day-to-day activities associated with the graphic design, scheduling and production for bill enclosures, as well as for various printed and electronic materials, such as brochures, flyers, posters and newsletters.

3, Customer Research and Analysis

The Customer Research and Analysis area conducts and facilitates research using qualitative, quantitative and secondary methods to guide SCG customer program and service offerings and report on customer satisfaction performance.

4, Website and other electronic channels-based services (e-Channels) and information delivery SCG website and e-Channel support staffs develop, implement, maintain and support internet, intranet, e-mail, mobile web, and other electronic customer communications and service-delivery channels.

Forecast Methodology:

Labor - 5-YR Average

Labor costs in this organization trended up from the lowest in 2006 to the highest in 2009 during the recorded 5-year period in support of various program activities. For consistency with the Customer Service forecasting methodologies for other accounts, 5 year average is used as the basis for TY2012 forecast plus adjustments to account for specific program growth.

Non-Labor - 5-YR Average

Nonlabor costs in this organization fluctuated significantly during the recorded 5-year period from the low in 2006 to the high in 2005. For consistency with the Customer Service forecasting methodologies for other accounts, 5 year average is used as the basis for TY2012 forecast plus adjustments to account for specific program growth.

NSE - 5-YR Average

Not applicable

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: A. Customer Communications, Research and e-Service
 Category-Sub: 1. Customer Communications, Research and e-Services
 Workpaper: 2IN000.000 - Communications, Research and e-Services

Summary of Results:

	In 2009\$ (000)							
	Adjusted-Recorded					Adjusted-Forecast		
	2005	2006	2007	2008	2009	2010	2011	2012
Years								
Labor	1,264	1,242	1,387	1,510	1,757	1,876	2,239	2,321
Non-Labor	6,135	3,085	4,075	3,764	4,060	4,978	5,194	5,598
NSE	0	0	0	0	0	0	0	0
Total	7,399	4,327	5,462	5,274	5,817	6,854	7,433	7,919
FTE	14.6	14.6	16.1	17.1	19.4	21.1	25.1	26.1

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: A. Customer Communications, Research and e-Service
Category-Sub: 1. Customer Communications, Research and e-Services
Workpaper: 2IN000.000 - Communications, Research and e-Services

Forecast Summary:

Forecast Method		In 2009 \$(000)								
		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		2010	2011	2012	2010	2011	2012	2010	2011	2012
Labor	5-YR Average	1,432	1,432	1,432	444	807	889	1,876	2,239	2,321
Non-Labor	5-YR Average	4,223	4,223	4,223	755	971	1,375	4,978	5,194	5,598
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		5,655	5,655	5,655	1,199	1,778	2,264	6,854	7,433	7,919
FTE	5-YR Average	16.4	16.4	16.4	4.7	8.7	9.7	21.1	25.1	26.1

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010	0	100	0	100	0.0	1-Sided Adj

Incremental nonlabor costs for expanded social media and electronic messaging e-Communications (e-mail, text/SMS, etc.), includes vendor fees for electronic messaging set-up, delivery and reporting, and interactive agency fees.

2010	0	0	0	0	4.7	1-Sided Adj
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Incremental FTEs needed to support Expanded e-Channel communications and services (1 manager, 2 project managers, 1 research analyst, and 0.67 FTE adjustment to annualize labor cost of a new hire employee reflecting only partial cost in 2009.

2010	0	300	0	300	0.0	1-Sided Adj
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Incremental nonlabor costs to enhance Safety communications campaign from 3 weeks to 6 weeks, in multiple languages. Includes purchase of media (radio, newspaper, etc.) and translation services.

2010	0	18	0	18	0.0	1-Sided Adj
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Employee expense costs associated with incremental FTEs

2010	0	165	0	165	0.0	1-Sided Adj
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Incremental nonlabor costs associated with maintenance and improvement of My Account user experience and electronic messaging, including external consulting associated with accessibility, usability and mobile offerings.

2010	0	172	0	172	0.0	1-Sided Adj
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Incremental vendor fees and external consulting services for customer research online community panel service, data collection, search engine analysis and optimization, web analytics, and customer research-related costs.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: A. Customer Communications, Research and e-Service
 Category-Sub: 1. Customer Communications, Research and e-Services
 Workpaper: 2IN000.000 - Communications, Research and e-Services

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2010	444	0	0	444	0.0	1-Sided Adj

Incremental labor costs needed to support Expanded e-Channel communications and services (1 manager = \$120k, 2 project managers = \$187k, 1 research analyst = \$87k, and 0.67 FTE adjustment to annualize labor cost of a new hire employee reflecting only partial cost in 2009.

2010 Total	444	755	0	1,199	4.7	
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2011	807	0	0	807	0.0	1-Sided Adj
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Incremental labor costs needed to support Expanded e-Channel communications and services (2 managers = \$240k, 2 project managers = \$187k, 2 communications advisors = \$156k, 2 research analysts = \$174k, and 0.67 FTE (\$50k) adjustment to annualize labor cost of a new hire employee reflecting only partial cost in 2009.

2011	0	300	0	300	0.0	1-Sided Adj
------	---	-----	---	-----	-----	-------------

Incremental nonlabor costs to enhance Safety communications campaign from 3 weeks to 6 weeks, in multiple languages. Includes purchase of media (radio, newspaper, etc.) and translation services.

2011	0	100	0	100	0.0	1-Sided Adj
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Incremental nonlabor costs for expanded social media and electronic messaging e-Communications (e-mail, text/SMS, etc.), includes vendor fees for electronic messaging set-up, delivery and reporting, and interactive agency fees.

2011	0	34	0	34	0.0	1-Sided Adj
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Incremental employee expenses associated with incremental FTEs

2011	0	0	0	0	8.7	1-Sided Adj
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Incremental FTEs needed to support Expanded e-Channel communications and services (2 managers, 2 project managers, 2 communications advisors, 2 research analysts, and 0.67 FTE adjustment to annualize labor cost of a new hire employee reflecting only partial cost in 2009.

2011	0	200	0	200	0.0	1-Sided Adj
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Incremental nonlabor costs for translation software/services, ongoing external vendor and agency support to implement a more comprehensive Spanish language version of www.socalgas.com. Additional language version may also be added in future years.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
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 Category: A. Customer Communications, Research and e-Service
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<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2011	0	165	0	165	0.0	1-Sided Adj

Incremental nonlabor costs associated with maintenance and improvement of My Account user experience and electronic messaging, including external consulting associated with accessibility, usability and mobile offerings.

2011	0	172	0	172	0.0	1-Sided Adj
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Incremental vendor fees and external consulting services for customer research online community panel service, data collection, search engine analysis and optimization, web analytics, and customer research-related costs.

2011 Total	807	971	0	1,778	8.7	
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2012	889	0	0	889	0.0	1-Sided Adj
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Incremental labor costs needed to support Expanded e-Channel communications and services (2 managers = \$240k, 2 project managers = \$187k, 2 research analysts = \$174k, 3 communications advisors = \$238k, and 0.67 FTE (\$50k) adjustment for a new hire employee reflecting only partial cost in 2009.

2012	0	0	0	0	9.7	1-Sided Adj
------	---	---	---	---	-----	-------------

Incremental FTEs needed to support Expanded e-Channel communications and services (2 managers, 2 project managers, 2 research analysts, 3 communications advisors, and 0.67 FTE adjustment to annualize labor cost of a new hire employee reflecting only partial cost in 2009.

2012	0	300	0	300	0.0	1-Sided Adj
------	---	-----	---	-----	-----	-------------

Incremental nonlabor costs to enhance Safety communications campaign from 3 weeks to 6 weeks, in multiple languages. Includes purchase of media (radio, newspaper, etc.) and translation services.

2012	0	100	0	100	0.0	1-Sided Adj
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Incremental nonlabor costs for expanded social media and electronic messaging e-Communications (e-mail, text/SMS, etc.), includes vendor fees for electronic messaging set-up, delivery and reporting, and interactive agency fees.

2012	0	38	0	38	0.0	1-Sided Adj
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Employee expense costs associated with incremental FTEs

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
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<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2012	0	200	0	200	0.0	1-Sided Adj

Incremental nonlabor costs for translation software/services, ongoing external vendor and agency support to implement a more comprehensive Spanish language version of www.socalgas.com. Additional language version may also be added in future years.

2012	0	165	0	165	0.0	1-Sided Adj
------	---	-----	---	-----	-----	-------------

Incremental nonlabor costs associated with maintenance and improvement of My Account user experience and electronic messaging, including external consulting associated with accessibility, usability and mobile offerings.

2012	0	172	0	172	0.0	1-Sided Adj
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Incremental vendor fees and external consulting services for customer research online community panel service, data collection, search engine analysis and optimization, web analytics, and customer research-related costs.

2012	0	400	0	400	0.0	1-Sided Adj
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Incremental nonlabor costs for external consulting expertise and evaluation services, and interactive agency fees, to support major and continuous upgrading of the web user experience and accessibility for SoCalGas.com and associated internally-developed or vendor-supported online tools and applications.

2012 Total	889	1,375	0	2,264	9.7	
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Southern California Gas Company
Test Year 2012 GRC - APP
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Workpaper: 2IN000.000 - Communications, Research and e-Services

Determination of Adjusted-Recorded:

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	1,103	1,079	1,099	1,094	1,263
Non-Labor	5,715	3,097	4,142	3,910	4,218
NSE	0	0	0	0	0
Total	6,818	4,176	5,241	5,003	5,481
FTE	13.9	13.4	13.2	12.6	13.8
Adjustments (Nominal \$) **					
Labor	-138	-110	15	141	225
Non-Labor	-251	-249	-253	-136	-158
NSE	0	0	0	0	0
Total	-389	-359	-238	5	67
FTE	-1.5	-1.1	0.4	1.7	2.5
Recorded-Adjusted (Nominal \$)					
Labor	964	969	1,114	1,234	1,488
Non-Labor	5,464	2,848	3,888	3,774	4,060
NSE	0	0	0	0	0
Total	6,429	3,817	5,003	5,008	5,548
FTE	12.4	12.3	13.6	14.3	16.3
Vacation & Sick (Nominal \$)					
Labor	164	173	194	238	269
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	164	173	194	238	269
FTE	2.2	2.3	2.5	2.8	3.1
Escalation to 2009\$					
Labor	135	101	78	37	0
Non-Labor	671	237	187	-9	0
NSE	0	0	0	0	0
Total	805	338	265	28	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	1,264	1,242	1,387	1,510	1,757
Non-Labor	6,135	3,085	4,075	3,764	4,060
NSE	0	0	0	0	0
Total	7,398	4,328	5,462	5,274	5,817
FTE	14.6	14.6	16.1	17.1	19.4

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Area: CS - INFORMATION
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Category: A. Customer Communications, Research and e-Service
Category-Sub: 1. Customer Communications, Research and e-Services
Workpaper: 2IN000.000 - Communications, Research and e-Services

Summary of Adjustments to Recorded:

In Nominal \$ (000)					
Year	2005	2006	2007	2008	2009
Labor	-138	-110	15	141	225
Non-Labor	-251	-249	-253	-136	-158
NSE	0	0	0	0	0
Total	-389	-359	-238	5	67
FTE	-1.5	-1.1	0.4	1.7	2.5

Detail of Adjustments to Recorded:

Year/Expl.	Labor	NLbr	NSE	FTE	Adj Type	From CCtr	RefID
2005	0	100	0	0.0	CCTR Transf	From 2200-0426.000	TTRAN20090911 152823083
Cost center correction - Transfer costs related to FYI and Prop 65 bill inserts from CC 2200-0426 to CC 2200-2076. These charges should be in CC 2200-2076.							
2005	-51	0	0	0.0	CCTR Transf	To 2200-2201.000	TTRAN20100419 074215050
Cost alignment adjustment - Transfer Customer Service Strategies labor from CC 2200-0422 to CC 2200-2201 due to reorganization.							
2005	0	0	0	-0.6	CCTR Transf	To 2200-2201.000	TTRAN20100419 074443597
Cost alignment adjustment - Transfer Customer Service Strategies FTE from CC 2200-0422 to CC 2200-2201 due to reorganization.							
2005	0	-324	0	0.0	1-Sided Adj	N/A	TTRAN20100419 082622143
Cost alignment adjustment - One-sided adjustment to realign costs to new organization for non-labor expenses related to SDGE Market Research. Reference SDGE NSS CCTR 2100-3168, Wk Gp 1IN000.							
2005	-216	0	0	0.0	CCTR Transf	To 2200-0177.000	TTRAN20100419 110037970
Cost alignment adjustment - Transfer labor costs associated with Codes & Standards and Customer Program Director activities from CC2200-0422 to CC 2200-0177 due to reorganization.							
2005	0	0	0	-2.6	CCTR Transf	To 2200-0177.000	TTRAN20100419 110128563
Cost alignment adjustment - Transfer FTE associated with Codes & Standards and Customer Program Director activities from CC2200-0422 to CC 2200-0177 due to reorganization.							

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Test Year 2012 GRC - APP
Non-Shared Service Workpapers

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Category-Sub: 1. Customer Communications, Research and e-Services
Workpaper: 2IN000.000 - Communications, Research and e-Services

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005	0	-27	0	0.0	CCTR Transf	To 2200-0177.000	TTRAN20100419 131039577
Cost alignment adjustment - Transfer Customer Program Director and Codes & Standards non-labor expenses from CC 2200-0422 to CC 2200-0177 due to reorganization.							
2005	129	0	0	0.0	CCTR Transf	From 2200-2060.000	TTRAN20100422 143146873
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2005	0	0	0	1.7	CCTR Transf	From 2200-2060.000	TTRAN20100422 143310343
Cost alignment adjustment - Transfer FTE for 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2005 Total	-138	-251	0	-1.5			
2006	-156	0	0	0.0	CCTR Transf	To 2200-2201.000	TTRAN20100419 074647567
Cost alignment adjustment - Transfer Customer Service Strategies labor from CC 2200-0422 to CC 2200-2201 due to reorganization.							
2006	0	0	0	-1.8	CCTR Transf	To 2200-2201.000	TTRAN20100419 074741330
Cost alignment adjustment - Transfer Customer Service Strategies FTE from CC 2200-0422 to CC 2200-2201 due to reorganization.							
2006	0	-229	0	0.0	1-Sided Adj	N/A	TTRAN20100419 082754987
Cost alignment adjustment - One-sided adjustment to realign costs to new organization for non-labor expenses related to SDGE Market Research. Reference SDGE NSS CCTR 2100-3168, Wk Gp 1IN000.							
2006	-87	0	0	0.0	CCTR Transf	To 2200-0177.000	TTRAN20100419 125532813
Cost alignment adjustment - Transfer labor costs associated with Codes & Standards activities from CC 2200-0422 to CC 2200-0177 due to reorganization.							
2006	0	0	0	-1.0	CCTR Transf	To 2200-0177.000	TTRAN20100419 125559720
Cost alignment adjustment - Transfer FTE associated with Codes & Standards activities from CC 2200-0422 to CC 2200-0177 due to reorganization.							
2006	0	-20	0	0.0	CCTR Transf	To 2200-0177.000	TTRAN20100419 130637983
Cost alignment adjustment - Transfer nonlabor expenses related to Codes & Standards activities from 2200-0422 to 2200-0177 due to reorganization.							

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
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 Category: A. Customer Communications, Research and e-Service
 Category-Sub: 1. Customer Communications, Research and e-Services
 Workpaper: 2IN000.000 - Communications, Research and e-Services

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2006	133	0	0	0.0	CCTR Transf	From 2200-2060.000	TTRAN20100422 143535123
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2006	0	0	0	1.7	CCTR Transf	From 2200-2060.000	TTRAN20100422 143615577
Cost alignment adjustment - Transfer FTE for 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2006 Total	-110	-249	0	-1.1			
2007	-121	0	0	0.0	CCTR Transf	To 2200-2201.000	TTRAN20100419 074929050
Cost alignment adjustment - Transfer Customer Service Strategies labor from CC 2200-0422 to CC 2200-2201 due to reorganization.							
2007	0	0	0	-1.3	CCTR Transf	To 2200-2201.000	TTRAN20100419 075018440
Cost alignment adjustment - Transfer Customer Service Strategies FTE from CC 2200-0422 to CC 2200-2201 due to reorganization.							
2007	0	-253	0	0.0	1-Sided Adj	N/A	TTRAN20100419 082901160
Cost alignment adjustment - One-sided adjustment to realign costs to new organization for non-labor expenses related to SDGE Market Research. Reference SDGE NSS CCTR 2100-3168, Wk Gp 1IN000.							
2007	136	0	0	0.0	CCTR Transf	From 2200-2060.000	TTRAN20100422 143745233
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2007	0	0	0	1.7	CCTR Transf	From 2200-2060.000	TTRAN20100422 143833827
Cost alignment adjustment - Transfer FTE for 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2007 Total	15	-253	0	0.4			
2008	0	-136	0	0.0	1-Sided Adj	N/A	TTRAN20100419 083053567
Cost alignment adjustment - One-sided adjustment to realign costs to new organization for non-labor expenses related to SDGE Market Research. Reference SDGE NSS CCTR 2100-3168, Wk Gp 1IN000.							

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Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: A. Customer Communications, Research and e-Service
 Category-Sub: 1. Customer Communications, Research and e-Services
 Workpaper: 2IN000.000 - Communications, Research and e-Services

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2008	141	0	0	0.0	CCTR Transf	From 2200-2060.000	TTRAN20100422 143951187
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2008	0	0	0	1.7	CCTR Transf	From 2200-2060.000	TTRAN20100422 144048437
Cost alignment adjustment - Transfer FTE for 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2008 Total	141	-136	0	1.7			
2009	0	9	0	0.0	CCTR Transf	From 2200-0340.000	SDALEY2010030 2124011230
Cost center correction - Transfer nonlabor costs related to Communications and Strategy from CC 2200-0340 to CC 2200-2188.							
2009	0	-167	0	0.0	1-Sided Adj	N/A	TTRAN20100419 083209173
Cost alignment adjustment - One-sided adjustment to realign costs to new organization for non-labor expenses related to SDGE Market Research. Reference SDGE NSS CCTR 2100-3168, Wk Gp 1IN000.							
2009	80	0	0	0.0	CCTR Transf	From 2200-2060.000	TTRAN20100419 140226640
Cost alignment adjustment - Transfer labor cost associated with 1 project manager from 2200-2060 to 2200-0422 due to reorganization.							
2009	0	0	0	0.8	CCTR Transf	From 2200-2060.000	TTRAN20100419 140511873
Cost alignment adjustment - Transfer FTE for 1 project manager from 2200-2060 to 2200-0422 due to reorganization.							
2009	145	0	0	0.0	CCTR Transf	From 2200-2060.000	TTRAN20100422 144530233
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2009	0	0	0	1.7	CCTR Transf	From 2200-2060.000	TTRAN20100422 144601420
Cost alignment adjustment - Transfer FTE for 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2009 Total	225	-158	0	2.5			

Supplemental Workpapers for Workpaper 2IN000.000

January 28, 2010

The Future Of Online Customer Experience

by Moira Dorsey
for Customer Experience Professionals



FORRESTER

Making Leaders Successful Every Day

For Customer Experience Professionals



January 28, 2010

The Future Of Online Customer Experience

It Looks Customized, Aggregated, Relevant, And Social

by **Moira Dorsey**

with Harley Manning, Angela Beckers, and Shelby Catino

EXECUTIVE SUMMARY

Forrester believes that four attributes will characterize the next phase of development of the Web. Online experiences will be: customized by the end user, aggregated at the point of use, relevant to the moment, and social as a rule, not an exception. In this report, we highlight companies that are providing online experiences that already exhibit one or more of these characteristics. To prepare for the future, customer experience professionals should develop multichannel personas, include social media behaviors in ethnographic research, prepare atomized content, establish an environment for testing new experiences, and seek out highly skilled interaction designers.

TABLE OF CONTENTS

2 New Technologies Follow A Pattern: Imitation Followed By Evolution

4 Three Types Of Trends Will Shape Online Customer Experience

Capabilities: Changing Technology Platforms

Consumers: Evolving Online Behavior

Competition: Millions Of New Entrants

11 Four Attributes Will Characterize The Next Phase Of Online Experiences

The Future Is Already Here — You Just Have To Know Where To Look

RECOMMENDATIONS

20 Get Ready Now

WHAT IT MEANS

21 The Explosion Of "Online Experience" Beyond The PC Will Have A Ripple Effect

21 Supplemental Material

NOTES & RESOURCES

Forrester interviewed 15 vendor and user companies, including Adobe, Critical Mass, Fidelity Investments, Google, Microsoft, Razorfish, Roundarch, and Yahoo!.

Related Research Documents

"Tracking Augmented Reality"

October 30, 2009

"Emotional Experience Design"

October 26, 2009

"Case Study: Nationwide Insurance Uses Mobile To Offer Customers Self Service On The Road"

September 11, 2009



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10 The Future Of Online Customer Experience
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Figure 7 Consumers Embrace New Technologies

34%	Are interested in a Netbook as a second or third PC to use while on the go
45%	Are Interested In a touchscreen PC*
69%	Prefer rich interactions

Base: US online consumers
 *Base: North American online consumers

Source: Forrester's NACTAS Q2 2006 Automotive, Customer Experience, And Government Online Survey
 Source: North American Technographics® Media, Marketing, Consumer Technology, Healthcare, And Automotive Benchmark Survey, Q3 2008
 *Source: North American Technographics PC And Gaming Online Survey, Q4 2008

55309

Source: Forrester Research, Inc.

Figure 8 Gen Y Is Even More Interested In New Technology

	US online consumers	Gen Y
Read updates from friends when they visit social networking sites	40%	61%
Are interested in accessing the Internet on a TV set in the future*	49%	55%
Have used desktop widgets	26%	38%

Base: US online consumers

Source: North American Technographics® Interactive Marketing Online Survey, Q2 2009 (US)
 Source: North American Technographics Digital Home Online Survey, Q4 2009 (US)
 *Those interested in this activity in the next 12 months or "in the future"

55309

Source: Forrester Research, Inc.

Competition: Millions Of New Entrants

Information providers ranging from large companies to prolific individuals flood the Internet with a tsunami of online information targeted at increasingly wired consumers. For example:

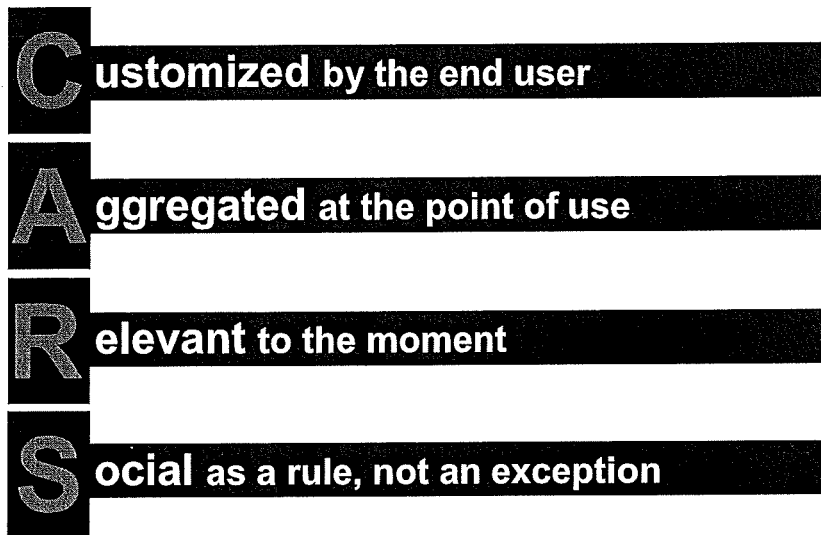
- **Proliferating Web sites vie for attention.** In the last three years, the number of active sites has almost doubled.⁸ Literally tens of millions of additional sites divide consumer attention, making it less likely that any one site can both attract and retain mind share.
- **Falling barriers to entry accelerate content growth.** Incumbent firms will have to be more concerned about challenges from beyond their traditional competitive set. Why? Technology capabilities like cloud computing help startups like Mint.com, recently purchased by Intuit, put great ideas into action without major infrastructure investments.

FOUR ATTRIBUTES WILL CHARACTERIZE THE NEXT PHASE OF ONLINE EXPERIENCES

What are the implications of these trends? We conclude that the resulting online customer experiences of the future will be (see Figure 9):

- **Customized by the end user.** Consumers will not only control what they get online, they'll control the form that they get it in to a much greater degree than they do today.
- **Aggregated at the point of use.** Content, function, and data will be pulled from different sources and combined at a common destination to create a unique experience.
- **Relevant to the moment.** This customized, aggregated content will appear on the device that's best suited to the customer's context at a given point in time.
- **Social as a rule, not an exception.** Social content will be integrated into most online experiences, not segregated into today's blogs, micro blogs, and wikis.

Figure 9 Future Online Experiences Will Be All About CARS



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Source: Forrester Research, Inc.

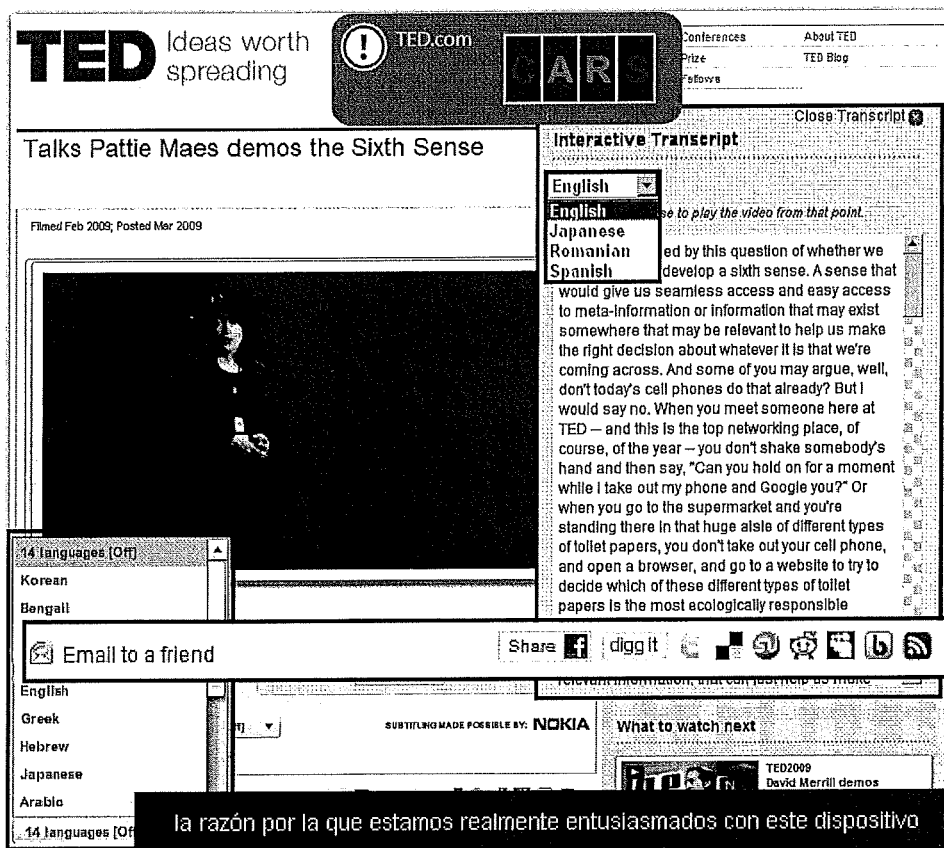
12 The Future Of Online Customer Experience
For Customer Experience Professionals

The Future Is Already Here — You Just Have To Know Where To Look

Experiences that already incorporate two or more of the attributes in the CARS model provide a glimpse at the online future:

- **TED.com: customized and social.** Today's online video experience offers no easy way to find the most interesting sections of a lengthy piece of content. In contrast, TED.com provides a customized video-viewing experience by letting users click on text in a transcript, which jumps them to the corresponding part of the video (see Figure 10). Users can also customize the transcript language and/or video subtitles and can share videos via email and sites like Facebook.

Figure 10 TED.com Provides Online Video Viewing That Is Customized And Social



Source: TED Conferences Web site
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Source: Forrester Research, Inc.

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13

- **InsideTrip: customized and aggregated.** InsideTrip allows users to conduct a custom search for information from different carriers. For example, a woman traveling on business can search for flights based on priorities like "On-time stats" and "Lost bags rank" (see Figure 11). The same woman traveling with her 18-month-old son can instead search for the shortest trip, the shortest security wait time, the best connection time, and convenient gate locations.

Figure 11 InsideTrip Provides Flight Search That Is Customized And Aggregated

The screenshot shows the InsideTrip website interface. At the top, there's a navigation bar with the InsideTrip logo and a search bar. Below that, a "TripQuality Dashboard" is visible, which allows users to filter search results based on various criteria. The dashboard includes sections for "SPEED", "COMFORT", and "EASE", each with several checkboxes. The "SPEED" section includes "Number of stops", "Travel duration", and "Security wait time". The "COMFORT" section includes "Legroom", "Aircraft type", "Aircraft age", and "Historical load factor". The "EASE" section includes "Connect time", "Routing quality", "Lost bags rank", and "Gate location".

Below the dashboard, there are search results for a roundtrip from Boston, MA (BOS) to Dallas/Fort Worth, TX (DFW) on Wed, 7/15/09 - Wed, 7/29/09. The results are displayed in a table format with columns for "Price", "DEPARTURE TRIP", "RETURN TRIP", and "Overall TripQuality".

Price	DEPARTURE TRIP	RETURN TRIP	Overall TripQuality				
	Depart	Arrive	Duration	Depart	Arrive	Duration	
\$210	BOS 6:00a	DFW 10:48a	4h 48m	DFW 11:30a	BOS 5:58p	5h 20m	100
\$240	BOS 7:35p	DFW 12:37a	4h 2m	DFW 11:27a	BOS 5:31p	5h 23m	86
\$298	BOS 6:00a	DFW 10:53a	4h 52m	DFW 6:15a	BOS 12:38p	5h 23m	93

The interface also includes various filters on the left side, such as "Stops", "Flight Times", "Connection Time", "Airports", and "Connecting Airports".

Source: InsideTrip Web site

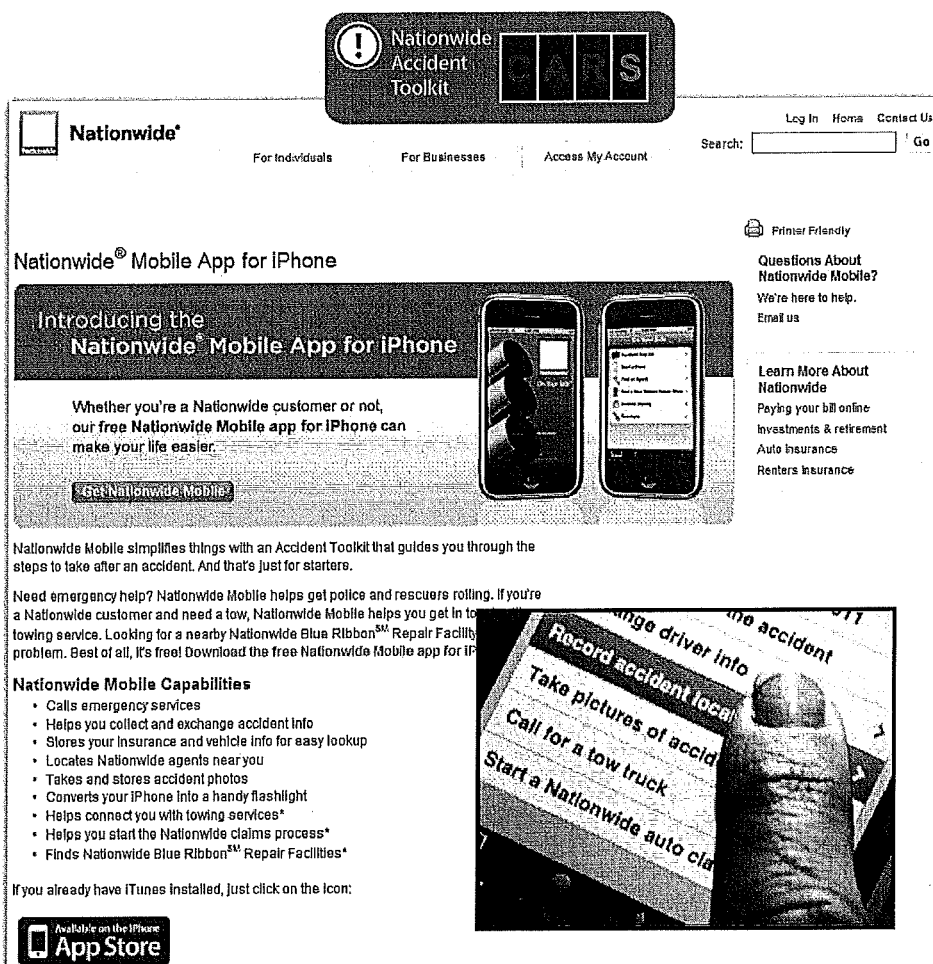
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Source: Forrester Research, Inc.

14 The Future Of Online Customer Experience
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- **Nationwide iPhone app: customized, aggregated, and relevant.** Nationwide's mobile app for the iPhone is available to anyone — Nationwide customer or not (see Figure 12).⁹ It includes an Accident Toolkit for the iPhone which, in the unfortunate event of a car accident, guides the user through the post-accident process. The app aggregates location-based information, finding nearby repair shops and Nationwide agents. It also stores data like the other parties' insurance information and photos of the damage and then integrates everything into an accident report template. Nationwide customers can begin the claims process immediately, right from the app.

Figure 12 Nationwide Provides Customized, Aggregated, Relevant Help For Drivers



Source: Nationwide Mutual Insurance Web site

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Source: Forrester Research, Inc.

January 28, 2010

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- **Zillow.com's iPhone app: customized, aggregated, and relevant.** Zillow.com's iPhone app pulls location-based data from the company's database of real estate information (see Figure 13).¹⁰ As users move down the street, the app shows prices and other details about nearby homes. The app also allows users to customize their experience by filtering homes based on preferences, save searches, save favorites, and receive updates about new homes for sale that meet preset criteria.

Figure 13 Zillow.com Provides A Customized, Aggregated, Relevant Real Estate Search Experience



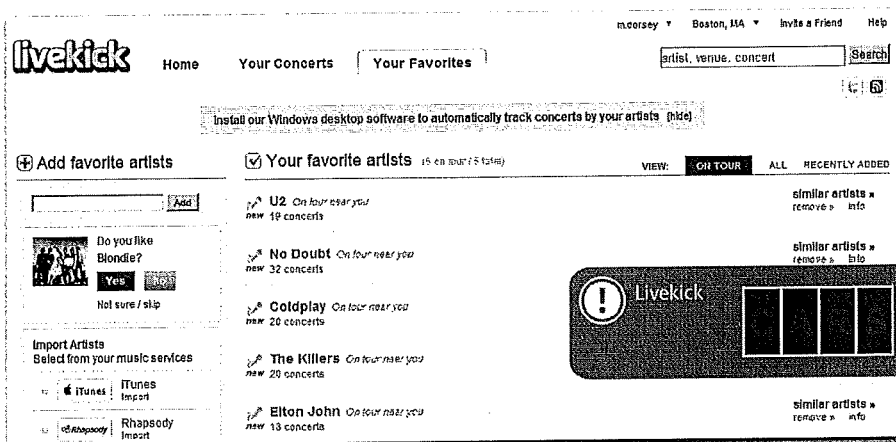
Source: Zillow.com Web site
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Source: Forrester Research, Inc.

16 The Future Of Online Customer Experience
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- **Livekick: customized, aggregated, relevant, and social.** Livekick helps music enthusiasts find local concerts by their favorite artists, buy tickets, and share concert information with friends. Users can either enter their favorite artists or ask Livekick to import a list of their favorite artists from music services like Pandora (see Figure 14). Livekick will then alert fans to a band's tour dates in the local area via the Web, Twitter, or email. For concert dates and locations of interest, Livekick will search across different ticketing services and provide an aggregated list of results. Users can also save and share concert information via relevant calendaring and social apps.

Figure 14 Livekick Provides Customized, Aggregated, Relevant, And Social Ticket Search




Source: Livekick Web site
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Source: Forrester Research, Inc.


Figure 14 Livekick Provides Customized, Aggregated, Relevant, And Social Ticket Search (Cont.)

Welcome, m.dorsey Boston, MA


Your artists on tour Sort by: Concert date




Elton John
18 concerts
Tickets: \$54 - \$10,000
Next concert near you:
July 18, Foxboro, MA
Fans: 816



U2
19 concerts
Tickets: \$32 - \$7,600
Next concert near you:
September 20, Foxboro, MA
Fans: 1347




Goldplay
20 concerts
Next concert near you:
August 3, Mansfield, MA
Fans: 1580



No Doubt
32 concerts
Next concert near you:
June 20, Mansfield, MA
Fans: 759

< Prev Next >

Livekick suggests




Do you like **Blondie**?


What's happening

- Sika announced a new concert in Minneapolis, MN on 7/3/09 11:00 pm
- Dan announced a new concert in St. Paul, MN on 7/3/09 7:00 pm
- Andy announced a new concert in Minneapolis, MN on 7/2/09 8:00 pm
- Watson announced a new concert in Minneapolis, MN on 7/2/09 7:00 pm
- Sharp & Harkins announced a new concert in Minneapolis, MN on 7/1/09 10:00 pm
- Rocky announced a new concert in St. Paul, MN on 7/1/09 7:00 pm


Recommended tours Sort by: Concert date




Blondie
28 concerts
Next concert near you:
August 8, Boston, MA
Fans: 463



Chicago
79 concerts
Tickets: \$33 - \$448
Next concert near you:
June 16, Boston, MA
Fans: 289







Steely Dan
30 concerts
Tickets: \$168 - \$730
Next concert near you:
July 22, Boston, MA
Fans: 340



The English Beat
35 concerts
Next concert near you:
July 7, Boston, MA
Fans: 102




Concert

U2 360° Tour @ Gillette Stadium Share    Add to calendar

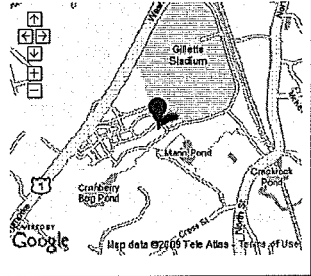
 Sunday 09/20/09, 7:00 PM
Performer: U2

Searching for tickets on eBay

Showing 1 - 20 of 498 1 2 3 4 5 6 7 8 9 10 Next >

Merchant	Section	Row	Quantity	Price	
ticketmaster				\$32	<input type="button" value="Get tickets"/> 
etix	327	4	12	\$9	<input type="button" value="Get tickets"/> 
etix	335	7	2	\$15	<input type="button" value="Get tickets"/> 

Gillette Stadium
1 Patriot Place, Foxboro, MA 02035



Map data ©2009 Tele Atlas

Source: Livekick Web site
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Source: Forrester Research, Inc.

18 The Future Of Online Customer Experience
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- **ShopSavvy: customized, aggregated, relevant, and social.** ShopSavvy searches for bar codes that users photograph with the camera on their mobile phone (see Figure 15). The location-aware app draws pricing information from online stores and aggregates it with prices from local stores that carry the item of interest. The app provides stores' phone numbers so shoppers can check inventory as well as get directions from their current location to a different store. ShopSavvy also provides customer reviews for products, allows users to set price alerts, and will save a list of scanned products to a wish list to share with friends and family.

Figure 15 ShopSavvy Provides Customized, Aggregated, Relevant, And Social Shopping



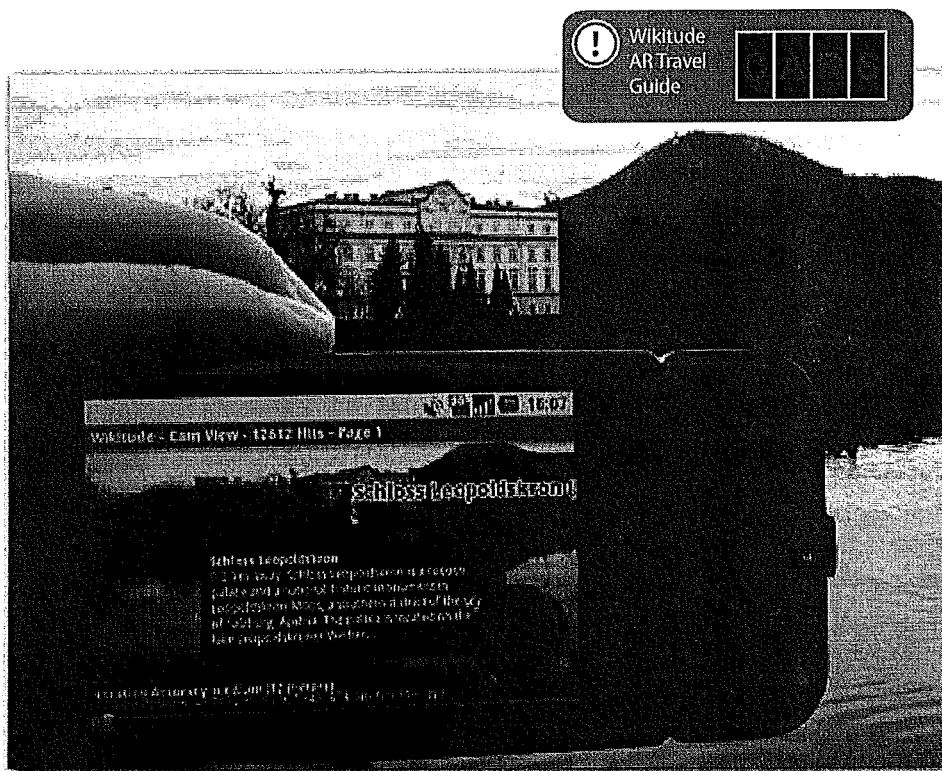
Source: Big in Japan Web site

55309

Source: Forrester Research, Inc.

- **Wikitude: customized, aggregated, relevant, and social.** The Wikitude AR Travel Guide is a mobile travel guide that lets users either enter a location or allow the location-aware app to find landmarks in the area (see Figure 16). The app then superimposes landmark information from Wikipedia into the phone's camera view — an act of real-time aggregation that creates a simple “augmented reality.”¹¹

Figure 16 Wikitude Provides A Customized, Aggregated, Relevant, And Social Online Travel Guide



Source: Mobilizy Web site
55309

Source: Forrester Research, Inc.

RECOMMENDATIONS

GET READY NOW

As online experiences move into their next phase, customer experience professionals should:

- **Develop multichannel personas.** Designing next-generation online experiences will demand the kind of insight that personas provide. Although many firms already have single-channel personas, they'll need new personas that reflect the complexity of users' multichannel behavior. This means developing personas that provide a full picture of each customer's journey through physical and interactive touch points, their information and functionality needs at each stop along the way, and which devices they use to support their current behaviors. Roundarch, an interactive agency, already does this for some of its clients.
- **Probe for social media behavior when conducting ethnographic research.** To develop personas that help designers create CARS experiences, researchers should incorporate observations of users engaged in social media activities like blogging and micro-blogging. By following this approach for one client, LBI IconNicholson discovered that social media mattered more to a particular group of users than more expensive media options that the agency had previously focused on.
- **Create atomized content and functionality.** In response to rising expectations for customized, aggregated interactions, customer experience professionals should begin atomizing online content and functionality so that it's available for re-use across sites and devices. For example, Roundarch designed an online ad for Avis Rent A Car System that can be deployed on any site and allows users to search for and reserve a car right within the ad, with no need to go to Avis.com.
- **Experiment and test.** To mitigate the risk associated with building increasingly sophisticated interactions, customer experience professionals should experiment before rolling out massive changes to the marketplace. But having an incubation environment on the scale of Fidelity Labs or Google Labs isn't in the budgets of most companies. Instead, customer experience professionals should plan to leverage low-cost usability testing techniques to try out their experiments with CARS online experiences. Testing paper prototypes early and often during the design process and leveraging remote testing tools to gather feedback can help evolve leading-edge designs at a price most companies can afford.¹²
- **Find some mad design skills.** Designers who struggle to create usable Web page layouts and menu structures today are ill-equipped to develop the highly interactive CARS sites of the future. To design complex interactions across multiple interfaces and devices in the short term, most firms will turn to agencies for help. But even agencies lack depth when it comes to personnel who can create leading-edge sites. Going forward, customer experience professionals should plan to add more sophisticated design skills to their own teams in order to better hire and guide third-party talent or have the option to differentiate based on internal expertise.

WHAT IT MEANS

THE EXPLOSION OF "ONLINE EXPERIENCE" BEYOND THE PC WILL HAVE A RIPPLE EFFECT


As online experience grows to encompass more and more channels, devices, sites, and apps:

- **Firms with poor online experiences today will fall further behind their competitors.** People prefer rich online experiences — and their interest in new technologies indicates that they will love CARS experiences even more. That means the days of online experiences dominated by the page-and-PC-based paradigm are rapidly nearing their end. But even as online interaction capabilities grow, so too will the complexity of designing those experiences and the number of opportunities for mistakes that will frustrate customers. As a result, the gap between great and poor online experiences will become even more dramatic, and online customer experience leaders will gain even more of an edge over the competition.
- **Multi-touch-point evaluation and analytics will become must-haves.** Measuring customer experience across multiple channels is still a major challenge for most firms.¹³ But consumers will increasingly use multiple apps, devices, and sites to complete a single goal — online and in conjunction with other channels. In response, customer experience professionals will create centralized groups to coordinate metrics and a common framework for measurement. And to make data integration manageable, they will focus on one channel pair at a time.¹⁴


SUPPLEMENTAL MATERIAL

Companies Interviewed For This Document

Adobe	Mint Software
Analog Devices	Razorfish
Bazaarvoice	Resource Interactive
Critical Mass	Roundarch
Fidelity Investments	The Artifact Group
Google	Twist Image
InsideTrip	Yahoo!
Microsoft	



Energy Business Intelligence




E News

- E News Articles
- Calendar of Events
- Latest Research
- E Source on Twitter

JANUARY 2010

If one of your goals for 2010 is to get more customers to your web site, there are several areas where utility offerings are not matching up with consumer expectations.



Utility Web Site Expectations: Keeping an Eye on the Horizon

Published: January 20, 2010
Florence Connally

On-demand, on-the-go, and 3-D are all the rage according to the reports coming out of the 2010 International Consumer Electronics Show that just wrapped up in Las Vegas. Streaming video to TVs and tablet computers may not seem relevant to the utility industry, but the effect the technology has on customers is.


As devices that enable on-demand service and mobile computing become more pervasive, more consumers become accustomed to an on-demand lifestyle. They expect to find information as they need it and when they want it. There is no doubt that customers will seek information, whatever it may be, from their energy service providers. And when they do, you'd better be prepared. Unfortunately, just when you think you know what your residential customers want, they change their minds and want more.

Residential expectations for the utility web site and its offerings are constantly evolving. If one of your goals for 2010 is to get more customers to your web site, there are several areas where utility offerings are not matching up with consumer expectations. Addressing these three areas and still providing the original expectations of billing and payment services will make your web site current and relevant.

Online outage/gas leak updates. When there is no power, the number-one question customers have is: When will my power come back on? And more customers expect to find this information through the utility web site. Based on E Source market research, residential consumers rank outage and gas leak updates as the third most expected information to be found on a utility web site. However, in reality, only 43 percent of utility web sites evaluated in our [2009 Review of North American Electric and Gas Company Web Sites](#) provide this information. With several utilities reporting record web site visits during major outage events, online outage/gas leak updates will not only satisfy customer demand for much-needed information but serve as an introduction to the utility's online service capabilities.

Google sitelinks. Residential customers love the ease of navigating the utility's web site directly from the Google search results page through sitelinks, which are links displayed under the first search result that

About the Author



Florence Connally
RESEARCH MANAGER,
E SOURCE

Florence Connally, a research manager at E Source, investigates and reports on e-business, customer service, and payment and billing topics. Since 2005, she has managed the research for the utility web site review benchmark studies. She has also researched topics in the areas of power quality, distribution company management, metering, and energy information services.

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connect to specific pages within a web site. However, allowing customers to bypass the home page also means that care needs to be taken to ensure that marketing messages normally displayed on the home page are still conveyed to those who now skip directly to the desired page. Also, for customers who navigate through the web site traditionally, clear and direct navigation paths from one page to another still need to be integrated into the web design.

Energy usage information. As billing and payment functions become expected on the utility web site, more consumers also want the utility to help them better understand their energy use and the ways they can save energy and money. Recent studies indicate that consumers who access their usage data online save more energy than those who don't. Currently, only 46 percent of utilities offer this information online. As more utilities deploy smart meters, we expect more personalized energy usage offerings to be available online.

Offering updates about outages, employing Google sitelinks, and providing energy usage information are just three of the new twists and turns utilities must navigate to provide their residential consumers with the online experience they expect. Keeping an eye on these three trends can help you meet your goals for 2010 and beyond.

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US Wireless Quick Facts
 Year-End Figures

Topic	Dec-09	Dec-05	Dec-00	Dec-95
Wireless Subscriber Connections	285.6M	207.9M	109.5M	33.8M
Wireless Penetration % of total U.S. population	91%	69%	38%	13
Wireless-Only Households ¹ % of U.S. Households	22.7%	8.4%	N/A	N/A
Direct Carrier Jobs	249,247	233,000	184,000	68,000
Wireless Carrier Payroll ² Direct Carrier Wages	\$13.8B	\$12.2B	\$1.8B	\$1.7B
Annualized Total Wireless Revenues	\$152.6B	\$113.5B	\$45.3B	\$19B
Annualized Wireless Data Revenues	\$41.5B	\$8.5B	\$211.2M	N/A
Annualized Incremental Capital Investment	\$20.4B	\$25.2B	\$18.4B	\$5.1B
Annualized Minutes of Use	2.3T	1.5T	258.8B	37.8B
Monthly SMS Messages	152.7B	9.8B	14.4M	N/A
Annualized Yearly SMS Messages	1.56T	81B	N/A	N/A
Cell Sites	247,081	183,689	104,288	22,663
E-911 Calls ³ Per Day	>291K	260K	139K	55K

K=Thousand

M=Million

B=Billion

T=Trillion

¹Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, January-July

2009, National Center for Health Statistics, December 2009.

²BLS Series data, 2008.

³CTIA Wireless 9-1-1 and Distress Calls.

http://www.ctia.org/media/industry_info/index.cfm/AID/10323



**2008 BUSINESS IN SOCIAL MEDIA STUDY
 FACT SHEET**

What is social media?

Cone defines social media as *technology facilitated dialogue among individuals or groups, such as blogs/microblogs, forums, wikis, content sharing, social networking, social bookmarking and social gaming.* Here are the results of our study.

MOST AMERICANS USE SOCIAL MEDIA SITES AND TOOLS:

● TWO OR MORE TIMES A WEEK



● ONCE A WEEK



● 1 - 2 TIMES A MONTH



● A FEW TIMES A YEAR



SOCIAL MEDIA USERS BELIEVE COMPANIES SHOULD HAVE A PRESENCE IN THE SOCIAL MEDIA ENVIRONMENT:

● YES, AND INTERACT WITH CONSUMERS



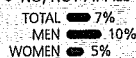
● YES, BUT ONLY INTERACT WITH CONSUMERS AS NEEDED OR BY REQUEST



● YES, BUT SHOULD NOT INTERACT WITH CONSUMERS



● NO, NOT AT ALL

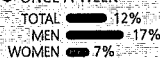


AMERICANS WHO USE SOCIAL MEDIA SITES AND TOOLS ALSO INTERACT WITH COMPANIES VIA SOCIAL MEDIA SITES:

● TWO OR MORE TIMES A WEEK



● ONCE A WEEK



● 1 - 2 TIMES A MONTH



● A FEW TIMES A YEAR



THE ROLE OF COMPANIES WITHIN SOCIAL NETWORKS, ACCORDING TO SOCIAL MEDIA USERS:

● PROBLEM SOLVE (VIRTUAL CUSTOMER SERVICE)



● SOLICIT FEEDBACK (FAN PAGES, BRANDED SITES)



● PROVIDE NEW WAYS TO INTERACT WITH BRAND



AMERICANS WHO USE SOCIAL MEDIA FEEL BETTER ABOUT COMPANIES AND THEIR BRANDS WHEN THEY CAN INTERACT WITH THEM THROUGH SOCIAL MEDIA:

● FEEL STRONGER CONNECTION



● FEEL BETTER SERVED



*Fielded by Opinion Research Corporation on September 11-12, 2008 among 1,092 adults 18+

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July 19, 2010
Ted Humphrey
Southern California Gas Company
P.O. Box 3150
San Dimas, CA 91773

To whom it may concern,

This letter summarizes the assessment work done by the Center for Accessible Technology (CforAT) as part of your ongoing efforts to bring the SDGE and SoCalGas web sites into compliance with current accessibility standards.

CforAT performed accessibility reviews of the following websites:

- The SDGE Fire Prep Web Site (July, 2009)
- SoCalGas.com (November, 2009)
- During this assessment CforAT noted that an assessment of sdge.com would be similar to socalgas.com because of the templates; recommend an assessment of sdge.com/myaccount
- Assessment of sdge.com/myaccount (December, 2009)

During the assessments, pages were reviewed for Section 508 compliance as well as the Web Content Accessibility Guidelines 2.0 and CforAT recommendations for web accessibility. Additional effort was made to provide feedback on changes that might improve overall usability for all users.

Please feel free to contact me if you have any questions.

Sincerely,

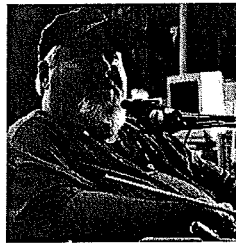
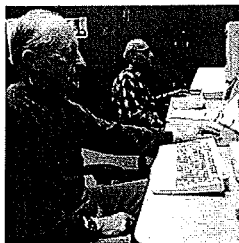
Eric Smith
Associate Director

Accessibility review of
SoCalGas.com

Prepared on behalf of
San Diego Gas & Electric (SDG&E)

The Center for
Accessible Technology

November 2009



Scope of Review

At the request of San Diego Gas & Electric (SDG&E), the Center for Accessible Technology (CforAT) performed an accessibility review of selected pages on the socialgas.com website. Subdomains such as <http://myaccount.socialgas.com/> were not reviewed. We recommend performing a separate review of online account access.

Pages were reviewed for Section 508 compliance as well as the Web Content Accessibility Guidelines 2.0 and CforAT recommendations for web accessibility. Emphasis was placed on evaluating the default template and its significant variations, then focusing on alternate file formats such as .pdf, .doc, .xls, .ppt, and .swf files.

For this review conducted October 15 – November 9 2009, we examined all pages and files listed in Appendix A.

Summary

Many of the pages reviewed share a common template, and so many of the same accessibility features and barriers occur repeatedly throughout the site. In this report, when we use the term “default template” we refer to pages using the basic layout and styling of most socialgas.com pages, including the homepage: <http://www.socialgas.com/index/>.

Detailed findings are available under the headings “Part One - Compliance with Section 508”, “Part Two - Additional Access Barriers”, and “Part Three – Alternate File Formats”. This summary section provides an overview of key findings.

Pages using the default template

The default template is very similar to the template from CforAT’s earlier review of the Fire Prep website, and therefore shares many of the same accessibility barriers and features. Many aspects of pages using the default template are highly accessible. Color contrast, use of headings, use of descriptive links, and well-formed markup are particularly accessible.

Many of the access barriers we encountered can be fixed by altering the code that produces parts of the template, or by adjusting stylesheets. Key high-priority issues include:

- No label markup on forms, making forms inaccessible to screen reader users.
- Use of background images to convey content, making them inaccessible to screen reader users, many low vision users, and non CSS-enabled browsers.
- Reliance on JavaScript for critical page elements, without <noscript> content.

See “Detailed Findings” below for specific instances of these and other barriers, as well as recommendations for addressing them.

Alternate File Formats

In addition to in-depth evaluation of the socialgas.com template and forms, we also reviewed samples of content provided in pdf, doc, xls, swf, and ppt format.

While we provide guidance on making these documents more accessible, our assessment is that most of these (especially doc, xls, and ppt files) are years old and we expect almost never accessed.

Our recommendation is to focus on making Flash and PDF content more accessible to all users, and focus effort on ensuring that documents posted in the future are as accessible as possible. Additionally, we recommend SDG&E evaluate whether it's necessary to include so much content in alternate formats at all.

See "Part Three – Alternate File Formats" below for more information.

Detailed Findings

Part One - Compliance with Section 508

Non-Text Elements: A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).

Individuals Affected

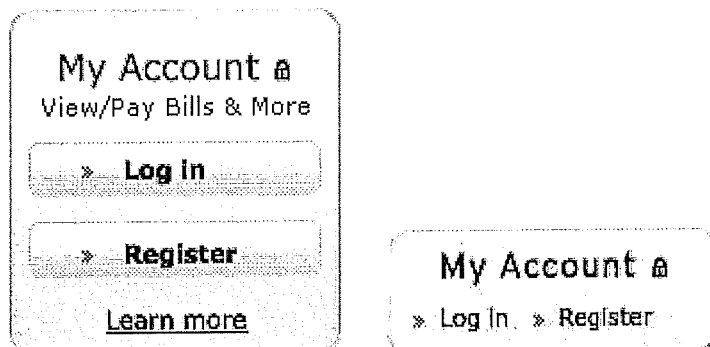
Users with vision disabilities, including blind people, people with limited/low vision, and people who are colorblind.

Default template

Pages using the default template make use of background images for visual enhancement. These are largely implemented in an accessible manner in the default template. The images are inserted via CSS, so users with CSS turned off see either no image or the text equivalent.

An exception is images that convey information. Since background images cannot have alt attributes, there is no way for people who can't see the images (either because they are blind, have images turned off, or have CSS turned off/disabled) to access this content.

The primary example in the default template is the various versions of the "My Account" image:



In the images above, "Log in" and "Register" are normal text links. Everything else is contained in the background images (<http://www.socalgas.com/images/mockups/myAccountSignon.jpg> and <http://sdge.com/images/mockups/myAccountPromo.jpg>). This means that those without access to background images will not be aware of the "My Account" header on those links. Additionally, for low-vision users who use screen magnification software, the text "My Account" will become pixelated and unreadable (because it is an image) at the magnification they would need to read it. A more accessible way to do this would be to use text for "My Account" (preferably a heading such as h2 or h3 to assist with screen reader navigation), use an image for the lock icon (not a background image, since this also conveys information) and give the lock icon an alt attribute of "Lock icon - secure login" or similar. The grey button-like border could remain as a background image.

Additional Instances

<http://www.socalgas.com/rebates/residential/waterheater/>

The "More Rebates" link uses a background image, but the link has no text. Screen reader users and people with CSS turned off will see an empty link:



The main image of the water heater is missing an alt attribute.

Ensure that all form controls use LABEL markup to explicitly associate labels and fields.

Individuals Affected

Screen Reader users, who rely on labels to know which field they are entering data into.

Default template

All pages using the default template have a site search with no label. This will be inaccessible for screen reader users:



We recommend adding a label to the search field with a value of "Site search" or something similarly informative. With the existing code, this would be done by inserting `<label for="gsearchbox">Site search</label>`. Adding a visible label will also help low-vision users, who may have difficulty seeing the magnifying glass image signifying it is a search box.

Additional Instances

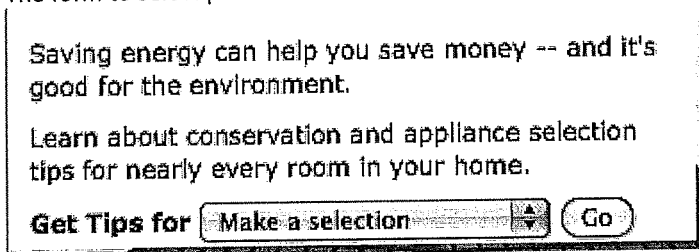
<http://www.socalgas.com/contactUs/form.html>

The contact form is missing label markup on all fields. Note that *each individual field* will need a label in order to be accessible to screen reader users. This means that the multiple text inputs for mailing address and service address would need separate labels:

Service Address	Mailing Address (if different)
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

<http://www.socalgas.com/residential/conservation/>

The form to select products for rebate information is missing label markup:



Repetitive Links: A method shall be provided that permits users to skip repetitive navigation links.

Individuals Affected

Primarily screen reader users, but "skip to content" links can be helpful for other users as well, including sighted keyboard-only users.

Default template

Pages using the default template have a "Skip to Content". However, this link appears as the second item in the source order (following the link to the homepage) and should be the first item in the source order so that screen reader users can find it. Additionally, on some pages (including the home page), the corresponding anchor is missing, making the skip link inoperable.

The existing skip links are also not visible to keyboard-only, sighted users. Using CSS rules to make the skip link visible on :focus (and :active for Internet Explorer, which treats :active as :focus) will solve this problem. They are currently visible on :hover, which may be unnecessary as:

1. Mouse users will not need the functionality of a skip link
2. Mouse users would only be able to locate the skip link by accidentally moving their mouse over it, which may be more confusing than not seeing it at all.

Additional Instances

<http://www.socalgas.com/contactUs/form.html>

The Contact Form is missing a skip link.

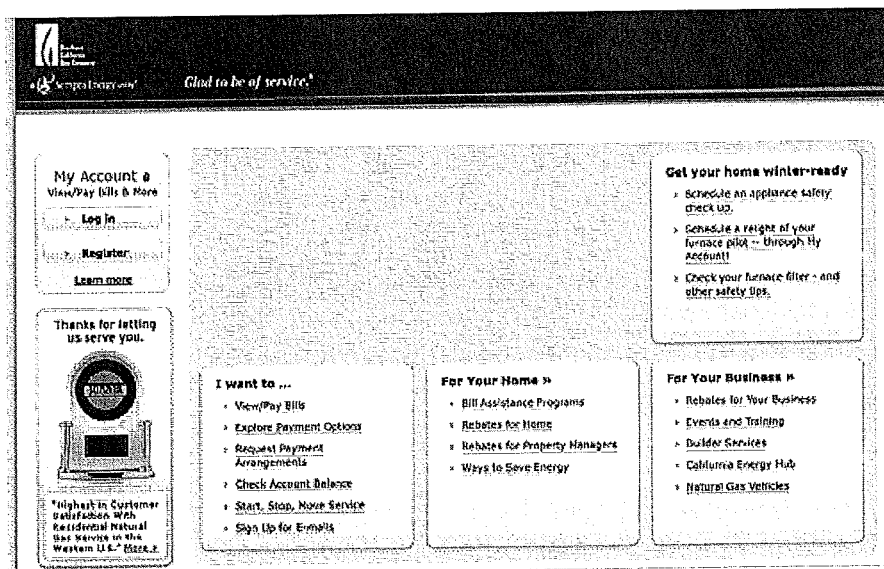
When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.

Default template

All content in the header (aside from the banner background image), the top main menu, the left sidebar, and the footer is inaccessible to anyone with JavaScript disabled. This includes all 3 menus (main navigation, sidebar navigation, and footer navigation) on the default template. We recommend implementing these with a server-side solution rather than using JavaScript to create them.

Additionally, <noscript> tags should be used to alert users to missing or diminished functionality of pages that rely on JavaScript.

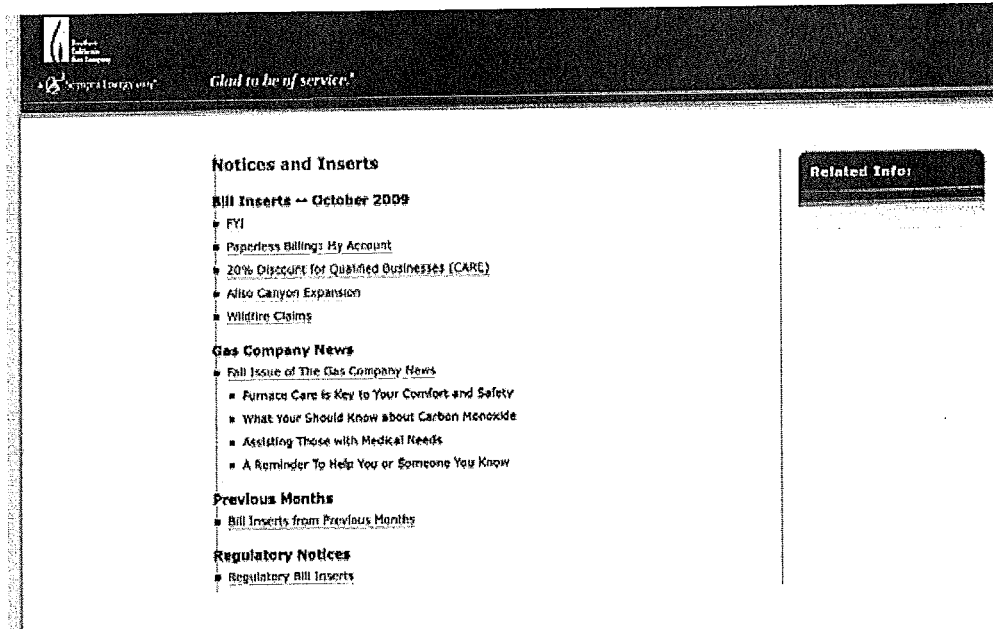
Below is a screenshot of the homepage with JavaScript disabled, showing missing menus and header content:



Note also that the Flash object does not display with JavaScript disabled / unavailable.

Here also is the "Notices and Inserts" page with JavaScript disabled. Notice that all content is missing except the main content area:

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Additional Instances

<http://www.socalgas.com/rebates/residential/>

The Flash element that renders the various products for rebates does not load with JavaScript disabled:

Rebates for Your Home

Making improvements around your home or apartment?

About SoCalGas Rebates

Save money, energy and help the environment by improving the energy efficiency of your home. Take advantage of available cash rebates for qualifying energy efficiency upgrades.

- [Download Rebates Brochure](#)
- [Submit Your Mail-In Rebate Application](#)
- [View Rebates \(text version\)](#)
- [Explore Available Financing and Tax Credits](#)

This program is funded by California utility customers and administered by Southern California Gas Company under the auspices of the California Public Utilities Commission. Rebates are available on a first-come, first-served basis, until program funds are depleted. Other terms and conditions apply.

- [Read Terms and Conditions](#)

Already Applied For a Rebate?



Last Updated 9/2009

<http://www.socalgas.com/residential/conservation/>

The form submission to get rebate information does not function with JavaScript disabled:

Saving energy can help you save money -- and it's good for the environment.

Learn about conservation and appliance selection tips for nearly every room in your home.

Get Tips for

Row and column headers shall be identified for data tables.

Individuals Affected

Screen reader users, who use row and column headers to determine how the current cell they are in relates to the rest of the data.

Default template

No data tables are used in any reviewed pages using the default template.

Additional Instances

<http://sdge.com/safety/fireprep/weatherStatusFrame.shtml>

The data table showing the status of various weather stations and their respective weather triggers does not make use of table headers:

Web pages shall be designed so that all information conveyed with color is also available without color

Individuals affected

Screen reader users, color blind individuals, and low vision users.

Default template

Overall, information is conveyed through multiple channels. One exception is the light grey color (#B4B4B4) used as an underline to signify link text. The color contrast between this and the white background is very low, meaning some users will not see the underline. This effectively makes the link text distinguished only through the use of color (blue text):

- » [Bill Assistance Programs](#)
- » [Rebates for Home](#)
- » [Rebates for Property Managers](#)
- » [Ways to Save Energy](#)

Providing a blue or darker grey/black underline for link text would address this issue.

A good resource for assessing color contrast during design/development is available at <http://webaim.org/resources/contrastchecker/>

Not Applicable:

The following elements cited in Section 508 were not applicable to the reviewed pages:

- Required timed responses
- Situations requiring separate page versions to accomplish accessibility
- Multimedia
- Image maps
- Frames
- Flickering images

Part Two - Additional Access Barriers (based on WCAG 2.0 and CforAT recommendations)

Ensure that foreground and background color combinations provide sufficient contrast (particularly for images).

Individuals Affected

People with impaired vision; some people with learning disabilities or other cognitive issues may have difficulty as well.

Default template

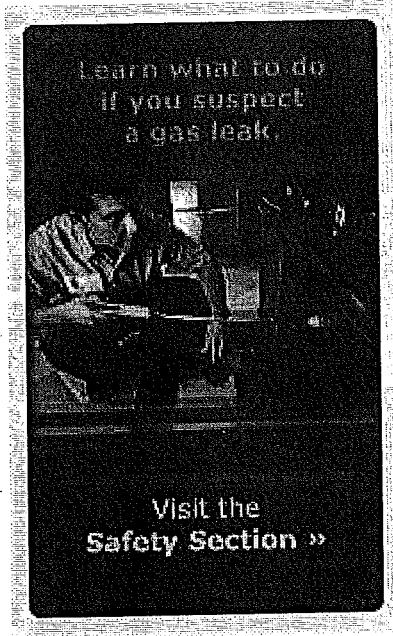
Default templates have excellent color contrast, with all color combinations meeting WCAG 2.0 AA guidelines, and most meeting WCAG 2.0 AAA compliance.

See above ("Web pages shall be designed so that all information conveyed with color is also available without color") for one instance of poor color contrast that affects the ability to distinguish link text.

Additional Instances

<http://www.socalgas.com/myaccount/inserts/>

The light blue text on dark blue background provides insufficient contrast:



<http://www.socalgas.com/service/>

Links inside alert boxes (red link text on yellow background) have insufficient contrast:
emergency or questions regarding a Gas Odor or please call us immediately at 1-800-427-2200.

Use appropriate font-size and text-scaling.

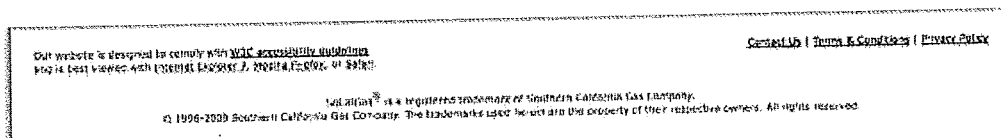
Individuals Affected

People with low vision who do not use screen readers but enlarge text, either in their browser, by changing the magnification in their screen settings, or by using an assistive technology such as ZoomText.

On a positive note, almost all font sizes appear to be coded in ems or %, leaving maximum flexibility for users to adjust font-sizing to their needs. Review of stylesheets showed a handful of styles that set font-size in px, but we could not locate those styles actually in use on any pages.

The default text size for the bulk of text will be about 11.2 for most users, assuming they don't change their browser's default size of 16. The footer text is quite a bit smaller (under 10pt):

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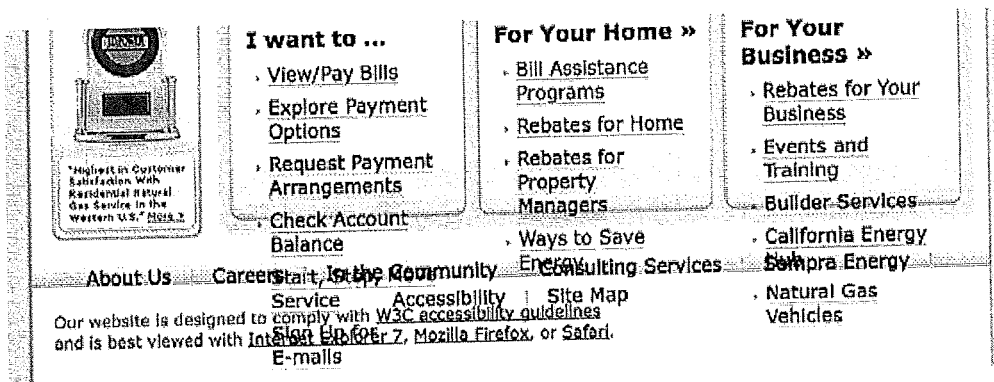


CforAT recommends that default text sizes be at least the equivalent of 12pt (.75em in most browsers).

The socalgas.com default layout results in text overlap with moderate amounts of text-scaling:



Menu items wrap lines and start to disappear behind Flash content, and links in the "My Account" box begin to disappear behind other content. Additionally, homepage content in feature boxes spills out of those boxes, overlapping with other text:



CforAT recommends allowing for text-scaling to 200% of default. Accommodating this on socialgas.com could largely be solved by allowing content containers to grow with their content, rather than setting fixed heights for containers.

Use heading elements to convey document structure (do not use headings solely for visual formatting).

Individuals Affected

Screen reader users, who use headings to navigate around a page and decide which text to read.

Default template

Pages using the default template make excellent, correct use of heading elements. CforAT notes that some accessibility experts consider it imperative that the h1 element be the first heading element in the source order of a page. We do not subscribe to this view, recognizing that left-hand sidebars often come before the main content in the source order, and benefit from having h2 or h3 headings in their markup.

A few instances were noted where heading usage could be improved:

<http://www.socialgas.com/index/>

There are multiple h1 headings. In general, there should be only one h1 tag per page, and it should closely mirror the <title> of the page. In this instance, the current h1 tags should probably be switched to h2 tags. Additionally, other content blocks (such as the "My Account" login area) would benefit from a heading. This would greatly increase screen reader accessibility.

<http://www.socialgas.com/myaccount/inserts/>

On the right sidebar, "Related Info" should be coded as a heading. Otherwise, it is likely to be missed by screen reader users.

<http://www.socalgas.com/contactUs/>

In areas where the yellow box with background exclamation point image is used to alert users, a heading should be provided that signifies the relative importance of the content:



When providing information in PDF format, provide the same information in an alternative, accessible format (e.g. HTML or text).

Individuals Affected

Blind/low vision and people with learning disabilities, who may need assistive technology to read documents.

It is possible to create accessible PDF files, and we encourage SDG&E to consider implementation of these practices going forward. Extensive documentation of accessible PDF creation can be found on Adobe's website (<http://www.adobe.com/accessibility/products/acrobat/training.html>). Additionally, a more concise tutorial on creating accessible PDF files can be found at <http://www.webaim.org/techniques/acrobat/>.

Given that the socalgas.com website has close to 1,900 PDF files, and none of the ones reviewed were tagged to incorporate accessibility practices, it's likely that most of the PDF content is inaccessible.

Additionally, most PDFs reviewed had areas of insufficient color contrast and/or very small text.

Re-creating all 1,900 PDFs so that they are accessible is probably not practical. CforAT recommends implementing guidelines for PDF creation. One question to consider is whether the document is really needed in PDF format or not. Many people will simply not click a link if they know it's a PDF document, because they need to wait for plugins to load or the document to download, know that they will lose navigation elements, etc.

If no gains are made by having a document in PDF format, then posting the content as a well-structured html document is advised. If PDF is necessary, then either create an accessible PDF

or provide the content in alternate format. Options (in order of decreasing accessibility) are HTML, .TXT or .DOC formats.

Give each page a unique, concise TITLE to aid users in orienting themselves within the site.

Individuals Affected

Anyone using the site will be helped by this practice, but for people with learning disabilities/cognitive issues, this is very important. Blind/low vision users will also use titles to orient themselves while using a site.

Without unique titles people who are blind, have visual impairments or processing problems cannot easily determine if the website has changed or the purpose of the current page. This forces them to have to read and try to interpret context information from the information available on the pages.

All reviewed pages had concise, unique, descriptive titles.

The full list of URLs reviewed with their respective titles is included in Appendix A.

Use the clearest and simplest language appropriate for the site's content.

Individuals Affected

People who are screen reader users will appreciate clear and simple language, as will people with learning disabilities and other cognitive issues. People with limited dexterity will appreciate not having to scroll through long prose documents and the ability to get information in a clear format. Clear and simple language also assists customers who do not use English as their first language.

The Flesch Reading Ease Scale is a widely used formula outside for measuring readability. The scale ranges from 100 (for easy to read) to 0 (for very difficult to read). A zero score indicates text has averages more than 37 words per sentence and the average word is more than 2 syllables. Compliant pages will be able to pass the Flesch Reading Ease test with a score of 60 or higher (the higher the score, the more readable the text).

Most socialgas.com pages reviewed had scores just below 60. These scores do not necessarily indicate the content itself is inaccessible. We do recommend SDG&E review the following pages to determine if the language can be simplified, particularly for pages with larger amounts of text:

<http://www.socialgas.com/index/> (58.11)

Prepared by The Center for Accessible Technology
www.cforat.org

November 2009

<http://www.socalgas.com/myaccount/inserts/> (54.93)

<http://www.socalgas.com/contactUs/> (59.93)

<http://www.socalgas.com/service/> (58.29)

<http://www.socalgas.com/rebates/residential/waterheater/> (48.00)

<http://www.socalgas.com/rebates/residential/> (35.26)

<http://www.socalgas.com/contactUs/form.html> (28.79)

<http://www.socalgas.com/residential/conservation/> (48.47)

<http://www.socalgas.com/business/ngv/refueling.html> (52.54)

Check that the text formatting does not result in illegibly small text. Ensure the text content is legible.

Individuals Affected

This primarily affects individuals with low vision, mobility impairments, or learning disabilities.

See "Use appropriate font-size and text-scaling" above.

Help users avoid and correct mistakes when providing input.

Individuals Affected

People with learning disabilities and people with low vision/blind users may not realize they have input erroneous information. Ultimately, implementation of this guideline can benefit all users.

<http://www.socalgas.com/contactUs/form.html>

The JavaScript alerts used to notify users of an input error on the Contact Form are highly accessible. Focusing the form on the first element that needs correction is particularly helpful. However, several aspects of the form submission process provide accessibility barriers:

- Form validation is only done through JavaScript, so anyone with JavaScript disabled gets the message that their submission has gone through, even if they have filled out no information.
- Required fields are not indicated anywhere – this is only discovered after trying to submit the form.

- The three buttons at the bottom of the form will be confusing to some users. Many will not understand the difference between "Clear" and "<< Cancel Back". We recommend using only a "Submit" button, as user interaction research has shown that "Clear Form" buttons are confusing and unnecessary for users:



Utilize link colors corresponding to conventions.

Individuals Affected

Blind and low vision users, as well as those with cognitive disabilities will benefit from the color cues that distinguish visited links from non-visited links. Several studies have shown that all users benefit from links colored in the standard scheme (blue for unvisited links, purple for visited links).

All reviewed pages display most links in the same color, whether they are visited or not. We recommend making visited links stand out with a different color (purple being the accepted standard, darker color being the accepted alternative convention), to help meet user expectations and decrease the cognitive load for users with vision or cognitive disabilities.

Use descriptive link text that makes sense out of context. (Do not use "click here").

Individuals Affected

Screen reader users, who will often read through a list of the links on a page to navigate to the desired location.

All reviewed pages make excellent use of descriptive link text. Overall, links are understandable out of context.

Use a logical and sequential tab order.

Individuals Affected

Blind users and sighted users who do not use a mouse and navigate through the page using the Tab key.

Default template

Tab order on all reviewed pages using the default template is logical and sequential.

Make all functionality available from a keyboard.

Individuals Affected

Blind users and sighted keyboard-only users.

Default template

On all pages using the default template, the sidebar navigation items are not keyboard accessible (accordion sections cannot be opened via the keyboard):

For Your Home

For Your Business

Additional Instances

See "Flash Content" below under "Alternate File Formats".

Provide navigation assistance on every page.

Individuals affected

Blind, low vision, and users with cognitive disabilities will all benefit from consistent layouts incorporating navigation assistance through the use of "Home", "Sitemap" and "Site Search" links. Ultimately, all users benefit from navigation assistance.

Default template

All reviewed pages using the default template have consistent use of navigation assistance.

Additional Instances

<http://www.socalgas.com/contactUs/form.html>

After the Contact Form is submitted, the user sees a simple success page with no navigation menus and is instructed not to use the browser's back button. Providing the wrapper of the default template here would be helpful.

http://www.socalgas.com/business/ngv/video/NGV_Refuling.html

This flash video is embedded on its own page, causing users to lose all navigation assistance. Embedding the video on the page that links to it

(<http://www.socalgas.com/business/ngv/refueling.html>) would solve this, as would wrapping the video in the template wrapper (header, sidebar, footer).

Use valid markup.

Individuals affected

Blind users rely on well-formed markup to interact with screen reader software. Additionally, valid markup helps ensure pages will be compatible with future assistive technologies.

Given that socalgas.com utilizes a doctype of XHTML 1.0 Strict, the number of instances of invalid markup was very low. Instances include:

<http://www.socalgas.com/myaccount/inserts/>
A problem with the way an unordered list is coded.

<http://www.socalgas.com/residential/conservation/>
Improperly nested elements.

Search results page (e.g. -
http://search.socalgas.com/search?site=socalgas&client=socalgas_frontend&output=xml_no_dtd&proxystylesheet=socalgas_frontend&q=rebate)
Many errors, though none seem to affect accessibility.

Part Three - Alternate File Formats

Regarding most additional formats, our advice for socalgas.com is to evaluate whether it's necessary to post so many PDFs, Word Documents, and Excel files to the website. Most reviewed were inaccessible, and while they can be made more accessible, in most cases an html version would be preferable. The Google index shows a large volume of alternate format files on the socalgas.com website:

- .pdf: 1,860
- .doc: 1,310
- .swf: 49
- .xls: 767
- .ppt: 32

It is probably impractical to revise each of these documents, many of which are probably accessed very infrequently. CforAT recommends devising guidelines for alternate format documents moving forward. We anticipate that the number can be reduced significantly, and the remaining can either be posted accessibly or posted in html format.

PDF Content

See the descriptions above under "When providing information in PDF format, provide the same information in an alternative, accessible format" for detailed recommendations on addressing inaccessible PDF files. Appendix A lists the PDF files reviewed.

For PDF forms that end users can fill out (such as <http://www.socalgas.com/rebates/documents/2009ResRebatesApplicationFill.pdf>), CforAT recommends making these html forms. This will allow them to be accessible for screen reader users, and much more accessible for low vision users and persons with cognitive disabilities, provided the layout of the form is simple. If a PDF version is helpful for those who wish to download and complete at a later time, both formats can be provided. If a PDF version remains, we strongly recommend reformatting the form layout to make it less crowded and easier to read.

Flash Content

Reviewed files fell into two categories:

1. Flash content used to highlight rotating features or choose products
2. Embedded Flash video

For both of these applications, a key consideration is keyboard accessibility. Keyboard accessibility of flash elements such as that used on the homepage (<http://www.socalgas.com/includes/swf/promosMain.swf>) is very good in Internet Explorer. The controls are all accessible, and the yellow box highlighting the focus works well. However, some browsers (including Firefox) do not allow tabbing into a flash element. For flash content to be keyboard accessible in Firefox, the controls must be outside of the flash element itself. The flash video reviewed () was not keyboard accessible in Internet Explorer or Firefox. To make Flash keyboard accessible, different approaches are available depending on the application. For Flash content, refer to: <http://www.adobe.com/accessibility/products/flash/tutorial/> (This tutorial also provides instruction on labeling content accessibly, such as images within Flash content.)

For Flash video, the video controls can be placed outside of the Flash element as either text or image links that then use JavaScript to control the flash content. An example with documentation is the Easy YouTube Player: <http://icant.co.uk/easy-youtube/> (Note that using text links has the added advantage of making the video controls resizable for low vision users, which controls embedded in the flash player are not.)

To be accessible, Flash videos should also have captions and a transcript provided so that those who are deaf or hard of hearing can access the content. If the content of the video is not clear from the audio, then audio descriptions can be provided to make video accessible for screen reader users. Assistance with captioning, transcripts, and audio descriptions can be found at <http://www.webaim.org/techniques/captions/>.

Lastly, Flash content does not scale when text size is increased. Therefore it is especially important to use large fonts for text in Flash elements. Many of the Flash elements on reviewed pages have small text that cannot be scaled, such as the numbers, pause button, and "Learn more >>" link in the example below:



Microsoft PowerPoint Documents

In general, CforAT recommends against posting .ppt files directly to websites. There are techniques available for making PowerPoint presentations more accessible, but they require extensive effort on the part of the person creating the presentation, and often still end up being inaccessible to many users.

If PowerPoint content needs to be migrated to the web, we recommend saving the presentation as a web page, then having a developer familiar with web accessibility practices edit the html to make proper use of headings, alternate text for images, etc.

The PowerPoint file we reviewed () had good color contrast and font sizes, but like most PowerPoint presentations, was totally inaccessible via screen reader.

Microsoft Word Documents

In general, Word Documents can be accessible for many users provided that the bulk of the content is text and that structural headings are used to delineate content blocks. Two additional key areas are images, which need to have alternate text specified and data tables, which require table headings in order to be accessible to screen reader users. A primary downside of using Word documents on the web is that some users may not have access to the software required to read them.

In addition, any Word document that requires Visual Basic Macros (such as to create a form that can be filled out) should be converted to an alternate format.

Specific instances of reviewed Word documents:

<http://www.socalgas.com/regulatory/documents/a-08-09-023/responses/DRA-13.doc>

This document is moderately accessible. A key barrier is that it does not make use of headings to outline the document structure, which will cause considerable frustration for any screen reader user, especially when reading longer documents. Additionally, there are tables of data that are included as images. Those images do not make use of alternate text, which is problematic. However, the data is complicated enough that alternate text would probably not describe it – the images should be changed to actual tables in Word (using table headings).

<http://www.socalgas.com/regulatory/documents/a-08-02-001/SCGC-28.doc>

As a plain text document (no images and no tables) this is one of the more accessible Word documents. Again, it lacks use of headings, which results in a technically accessible document that is inaccessible for screen reader users on a practical level.

Most of the Word documents on the socalgas.com site appear to be quite old, and we believe that simply removing unneeded files and ensuring that future documents are accessible could address many of the accessibility issues.

Microsoft Excel Documents

As with Word documents, we recommend converting any file that requires visual basic programming to a web form that users can interact with.

Excel files are largely accessible if their content is merely plain text in cells. However, this is rarely the case. In the document we reviewed, (<http://www.socalgas.com/regulatory/efficiency/2008monthly/Jul08.xls>), it was difficult to make sense of the tabular nature of the data using a screen reader, because some cells

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

crossed multiple columns and it was impossible to determine which category specific numbers belonged to. Creating an HTML table with proper headings would be much more accessible.

In addition to the technical limitations of accessing spreadsheet content directly, it is important to think about the audience for the documents. Outside of professional office environments, few people have experience with spreadsheets. For most of these visitors, spreadsheet content will be largely inaccessible, regardless of whether they have a disability or how the document is constructed.

Appendix A - Reviewed Pages

Web Pages

<http://www.socalgas.com/index/> (Southern California Gas Company)
<http://www.socalgas.com/myaccount/inserts/> (What's in Your Bill This Month)
<http://www.socalgas.com/contactUs/> (Contact Us)
<http://www.socalgas.com/service/> (Service Requests)
<http://www.socalgas.com/rebates/residential/waterheater/> (Water Heater Rebate)
<http://www.socalgas.com/rebates/residential/> (Residential Rebates)
<http://www.socalgas.com/contactUs/form.html> (Online Contact Form)
http://search.socalgas.com/search?site=socalgas&client=socalgas_frontend&output=xml_no_dtd&proxystylesheet=socalgas_frontend&q=rebate (Search Results: rebate)
<http://www.socalgas.com/residential/conservation/> (Conservation)
<http://www.socalgas.com/business/ngv/refueling.html> (NGV Refueling)

PDF Documents

http://www.socalgas.com/documents/myaccount/inserts/200910_fyi.pdf
http://www.socalgas.com/documents/myaccount/inserts/200910_myaccount.pdf
http://www.socalgas.com/documents/myaccount/inserts/200910_wildfires.pdf
<http://www.socalgas.com/myaccount/backofbill.pdf>
<http://www.socalgas.com/rebates/documents/FINALResRebateBro.pdf>
<http://www.socalgas.com/rebates/documents/2009ResRebatesApplicationFill.pdf>

Flash Content

<http://www.socalgas.com/rebates/media/resRebates/resRebates.swf>
<http://www.socalgas.com/includes/swf/promosMain.swf>

http://www.socalgas.com/business/ngv/video/NGV_Refueling.html

Microsoft Word Documents

<http://www.socalgas.com/regulatory/documents/a-08-09-023/responses/DRA-13.doc>

<http://www.socalgas.com/regulatory/documents/a-08-02-001/SCGC-28.doc>

Microsoft PowerPoint Documents

http://www.socalgas.com/documents/business/selfgen/SGIP_2006_Program_Overview.ppt

Microsoft Excel Documents

<http://www.socalgas.com/regulatory/efficiency/2008monthly/Jul08.xls>

Pipeline Awareness Evaluation Program Research ~

Stakeholder Group I: Customers

Results of Research

December 18, 2008

Prepared for:



A Sempra Energy utility

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(12-19-08)

TABLE OF CONTENTS

INTRODUCTION.....	2
BACKGROUND AND PURPOSE OF THE RESEARCH.....	3
METHODOLOGY.....	4
SUMMARY OF FINDINGS.....	5
DETAILED FINDINGS	
AWARENESS.....	9
PERCEPTIONS OF SCG'S SAFETY INFORMATION EFFORTS.....	13
SAFETY-RELATED BEHAVIOR.....	15
KEY SUBGROUP RESULTS.....	18
APPENDIX.....	22



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*Pipeline Awareness Evaluation Program Research ~
SCG Stakeholders Group 1 Customers ~ Results of Research*

travisresearch Page 1

INTRODUCTION

travisresearch Page 2

*Pipeline Awareness Evaluation Program Research ~
SCG Stakeholders Group 1 Customers ~ Results of Research*



BACKGROUND AND PURPOSE OF THE RESEARCH

Federal pipeline safety regulations require pipeline operators to conduct continuing programs to educate a wide variety of stakeholders – including the public, governmental agencies, local officials, and excavators – on pipeline safety issues. Specific topics to be addressed by the educational program include:

- The use of a One-Call notification system prior to excavation; and other damage prevention activities
- The possible hazards associated with the unintended leaks from the pipeline facility
- The physical indications that a leak may have occurred
- What steps should be taken for public safety in the event of a pipeline leak
- How to report such an event.

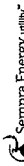
In accordance with this federal mandate, Southern California Gas Company (SCG) and San Diego Gas & Electric (SDG&E) are executing a multi-year communications program. In order to measure the efficiency of this educational process, a multi-phase marketing research effort has been initiated.

- Several stakeholder groups are being surveyed at various points in time.
- This report presents the SCG* results of the Wave 1 study among the stakeholder group defined as *Customers* – i.e., residents and businesses who are located in the service territory and receive regular billing from SCG.

The findings address three major informational objectives:

- Measure **awareness** of SCG safety information – e.g., incidence of awareness, sources of awareness, specific messages recalled
- Evaluate **perceptions** of SCG's efforts to ensure public safety near pipelines as well as to inform the public about pipeline safety tips
- Understand **behavior** – e.g., pipeline safety actions residents are likely to take, both preventatively and in the event of a suspected pipeline leak.

* SDG&E results will be provided separately.



METHODOLOGY

- Mail surveys were sent to SCG customers defined as residents and businesses located in the service territory and regularly billed by SCG.

# Surveys Mailed	# Surveys Received by Cut-Off Date*	# Completed Surveys Tabulated	Response Rate**
8,000	1,266	1,244	16%

- The questionnaire was developed by SCG (see Appendix). The document was printed in English on one side and in Spanish on the reverse.
- As a thank-you for participation, respondents were entered into a drawing for one of twenty \$100 gift certificates.
- The data were collected between October 21 and November 21, 2008.
- Computer cross tabulations of the data are on file with SCG.
- ✓ Given the self-administered nature of the questionnaire, tables have been based to Those Responding (i.e., No Answer is excluded from the base).
- ✓ For reporting purposes, between-group differences are flagged at the 95% confidence level.
- The next wave of the study among this stakeholder group is scheduled for 2012.

* Includes 22 that are self-reported non-customers of SCG.
 ** Calculated on total number of surveys received by cut-off date.



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SUMMARY OF FINDINGS



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SCG Stakeholders Group I Customers ~ Results of Research*

travisresearch Page 5

SUMMARY OF FINDINGS

Summarized below are the results of the recently completed SCG pipeline awareness evaluation survey to which 1,244 SoCalGas customers responded by mail.

AWARENESS

- Only about one-fifth of respondents believe that their location is in fact "near" a natural gas pipeline.
- A similar proportion of the total sample (18%) indicates that they have seen or heard SCG pipeline safety information in the past year.
- Among these individuals that have been "reached" by the recent communications:
 - ✓ The bill insert is the number one source of information.
 - ✓ The brochure/flyer is playing a strong supporting role
 - ✓ Broadcast/print media are also making a contribution to awareness
 - ✓ Topping the list of messages recalled is "what to do before digging," followed by "what to do if a pipeline leak is suspected." On the other hand, substantially fewer recall the message of "what to do after digging."

PERCEPTIONS OF SCG'S SAFETY INFORMATION EFFORTS

- Nearly all respondents agree that SoCalGas acts responsibly to ensure the safety of the pipelines.
- Also quite strong (roughly 75%-80%) is the general perception that SoCalGas takes the necessary steps to inform the public about measures they can personally take with respect to pipeline safety.
 - ✓ Close to one in four indicate that SoCalGas is not adequately informing the public regarding measures they can take to detect pipeline damage and/or potential leaks.



SUMMARY OF FINDINGS (continued)

- Respondents were presented with various options in terms of what they would do if they suspected a gas leak or pipeline damage.
 - ✓ Virtually everyone would make at least one phone call.
 - ❖ More than four out of five would call SoCalGas; and among this group, a majority would also leave the area – either before or after making the call (in fairly equal measure).
 - ❖ Half would call 9-1-1, and within this group, half specify they would call 9-1-1 and then leave the area.
 - ❖ Roughly three in ten would call the fire department.
 - ✓ Looking at the results for “leaving the area”: two out of three would leave the area, but not without making the phone call(s) either before or after.
- A question concerning various preventative actions finds that customers would take a number of actions to ensure their own safety and that of others.
 - ✓ The most widespread action (79%) is learning how to turn off the gas at their home/business.
 - ✓ At least half the sample indicates that they would...
 - ❖ learn how to identify gas leaks.
 - ❖ report suspicious behavior.
 - ❖ read pipeline communications received.

SAFETY-RELATED BEHAVIOR

- The most important subgroup finding is that those individuals who report being reached by the SCG information are, in fact, more likely than their less aware counterparts to anticipate taking personal actions in prevention and response, including:
 - ✓ Calling SoCalGas and then leaving the area (or vice versa)
 - ✓ Calling the fire department
 - ✓ Calling 8-1-1 before digging.
- Awareness of proximity to the pipeline is linked to higher recall of SoCalGas’ pipeline safety information, both in general, as well as from the brochure/flyer specifically.
- Business customers are slightly less likely than residential customers to recall seeing/hearing SCG pipeline communications, and they are admittedly a bit less likely to read these types of communications received.
- The few respondents who utilized the Spanish language version of the survey appear to hold even more favorable perceptions of SoCalGas informational efforts than do their English language counterparts.

KEY SUB-GROUP RESULTS



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Pipeline Awareness Evaluation Program Research ~
 SCG Stakeholders Group I Customers ~ Results of Research

travisresearch

Page 7

SUMMARY OF FINDINGS – Conclusions and Recommendations

- Although it is beyond the scope of the study to pinpoint the proximity of these mail survey respondents to a natural gas pipeline, the relatively low self-reported perception of being in the vicinity suggests that there may be an opportunity for SoCalGas to step up efforts in this regard.
- Similarly, the relatively low self-reported incidence of receiving SoCalGas pipeline-related communications suggests an ongoing opportunity for improvement on this measure.
- That being said, the study also finds that those customers who do recall being reached by the materials are especially likely to play back the desired messages and behaviors – notably the message of what to do before digging.
- SoCalGas may wish to discuss internally the results for customers' propensity to call specific entities (SoCalGas, 9-1-1, fire department) and leave the area (before or after), with an eye toward judging whether these results reflect the desired behaviors.



*Pipeline Awareness Evaluation Program Research ~
SCG Stakeholders Group 1 Customers ~ Results of Research*

travisresearch Page 8

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Customer Assistance
 Workpaper: 2IN003.000

Summary for Category: B. Customer Assistance

	In 2009\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	152	175	175	325
Non-Labor	2,007	4,349	4,349	4,874
NSE	0	0	0	0
Total	2,159	4,524	4,524	5,199
FTE	2.1	2.4	2.4	4.4

Workpapers belonging to this Category:

2IN003.000 CUSTOMER ASSISTANCE

Labor	152	175	175	325
Non-Labor	2,007	4,349	4,349	4,874
NSE	0	0	0	0
Total	2,159	4,524	4,524	5,199
FTE	2.1	2.4	2.4	4.4

Beginning of Workpaper
2IN003.000 - CUSTOMER ASSISTANCE

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Customer Assistance
 Category-Sub: 1. Customer Assistance
 Workpaper: 2IN003.000 - CUSTOMER ASSISTANCE

Activity Description:

The Customer Assistance organization delivers programs and services to Special Needs customers who benefit from assistance beyond traditional customer services. Special Needs customers are those residential customers with low or fixed incomes, and persons with medical conditions which require specialized medical equipment to maintain suitable living environment.

Forecast Methodology:

Labor - 5-YR Average

Labor costs in this organization was relatively flat for the recorded 5-years period with the exception of 2006 which reflected slight a higher costs. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast plus adjustments to account for specific program growth.

Non-Labor - 5-YR Average

Nonlabor costs in this organization was relatively flat for 2005 to 2008 with an uptrend starting in 2009 due to increased spending for NGAT. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast plus adjustments to account for specific program growth.

NSE - 5-YR Average

Not applicable

Summary of Results:

	In 2009\$ (000)								
	Adjusted-Recorded					Adjusted-Forecast			
Years	2005	2006	2007	2008	2009	2010	2011	2012	
Labor	167	266	138	156	152	175	175	325	
Non-Labor	1,536	1,323	1,337	1,543	2,007	4,349	4,349	4,874	
NSE	0	0	0	0	0	0	0	0	
Total	1,703	1,589	1,475	1,699	2,159	4,524	4,524	5,199	
FTE	2.2	3.4	1.9	2.2	2.1	2.4	2.4	4.4	

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Customer Assistance
 Category-Sub: 1. Customer Assistance
 Workpaper: 2IN003.000 - CUSTOMER ASSISTANCE

Forecast Summary:

Forecast Method		In 2009 \$(000)								
		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		2010	2011	2012	2010	2011	2012	2010	2011	2012
Labor	5-YR Average	175	175	175	0	0	150	175	175	325
Non-Labor	5-YR Average	1,549	1,549	1,549	2,800	2,800	3,325	4,349	4,349	4,874
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		1,724	1,724	1,724	2,800	2,800	3,475	4,524	4,524	5,199
FTE	5-YR Average	2.4	2.4	2.4	0.0	0.0	2.0	2.4	2.4	4.4

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010	0	2,800	0	2,800	0.0	1-Sided Adj

Incremental costs associated with mandatory CO testing for approximately 120,000 low income homes at \$35/home. The number of homes forecasted is consistent with low income weatherization forecasts approved in D.08-11-031.

2010 Total	0	2,800	0	2,800	0.0	
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2011	0	2,800	0	2,800	0.0	1-Sided Adj
------	---	-------	---	-------	-----	-------------

Incremental costs associated with mandatory CO testing for approximately 120,000 low income homes at \$35/home. The number of homes forecasted is consistent with low income weatherization forecasts approved in D.08-11-031.

2011 Total	0	2,800	0	2,800	0.0	
-------------------	----------	--------------	----------	--------------	------------	--

2012	150	0	0	150	0.0	1-Sided Adj
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Labor costs for 2 FTEs to support Medical Baseline and Special Needs segments outreach efforts.

2012	0	0	0	0	2.0	1-Sided Adj
------	---	---	---	---	-----	-------------

2 market advisors to support Medical Baseline and Special Needs segments outreach efforts,

2012	0	400	0	400	0.0	1-Sided Adj
------	---	-----	---	-----	-----	-------------

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Customer Assistance
 Category-Sub: 1. Customer Assistance
 Workpaper: 2IN003.000 - CUSTOMER ASSISTANCE

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
Outreach / Promote Medical Baseline via infomercials, adds dedicated to doctor's office waiting rooms, collateral materials and disabled outreach.						
2012	0	125	0	125	0.0	1-Sided Adj

Incremental costs for a new outreach and educational program to help Special needs customers - The new program will leverage the Commission's Communications Division's TEAM Collaborative (Telecommunications Education and Assistance in Multiple-languages) which provides education and complaint resolution to consumers who are not proficient in English. Assistance will be provided through the TEAM Collaborative's network of community based organizations (CBOs) to help educate customers with Limited English Proficiency to better understand their energy bills, payment arrangement options, and to inform them about other assistance programs and services offered by SoCalGas.

2012	0	2,800	0	2,800	0.0	1-Sided Adj
------	---	-------	---	-------	-----	-------------

Incremental costs associated with mandatory CO testing for approximately 120,000 low income homes at \$35/home. The number of homes forecasted is consistent with low income weatherization forecasts approved in D.08-11-031.

2012 Total	150	3,325	0	3,475	2.0	
-------------------	------------	--------------	----------	--------------	------------	--

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Customer Assistance
Category-Sub: 1. Customer Assistance
Workpaper: 2IN003.000 - CUSTOMER ASSISTANCE

Determination of Adjusted-Recorded:

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	128	208	111	128	129
Non-Labor	1,368	1,222	1,275	1,547	2,007
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	1,496	1,429	1,386	1,674	2,136
FTE	1.9	2.9	1.6	1.8	1.8
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	128	208	111	128	129
Non-Labor	1,368	1,222	1,275	1,547	2,007
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	1,496	1,429	1,386	1,674	2,136
FTE	1.9	2.9	1.6	1.8	1.8
Vacation & Sick (Nominal \$)					
Labor	22	37	19	25	23
Non-Labor	0	0	0	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	22	37	19	25	23
FTE	0.3	0.5	0.3	0.4	0.3
Escalation to 2009\$					
Labor	18	22	8	4	0
Non-Labor	168	102	61	-4	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	186	123	69	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	167	266	138	156	152
Non-Labor	1,536	1,323	1,337	1,543	2,007
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	1,703	1,590	1,474	1,699	2,159
FTE	2.2	3.4	1.9	2.2	2.1

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Customer Assistance
 Category-Sub: 1. Customer Assistance
 Workpaper: 2IN003.000 - CUSTOMER ASSISTANCE

Summary of Adjustments to Recorded:

Year	In Nominal \$ (000)				
	2005	2006	2007	2008	2009
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj_Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005 Total	0	0	0	0.0			
2006 Total	0	0	0	0.0			
2007 Total	0	0	0	0.0			
2008 Total	0	0	0	0.0			
2009 Total	0	0	0	0.0			

Supplemental Workpapers for Workpaper 2IN003.000

**CSI - Customer Assistance
 Medical Baseline Outreach Nonlabor Cost Estimates
 (Thousands 2009 dollars)**

Program	Description	Annual Cost	
Market Assessment	Focus Group		\$44
Targeted Customer Marketing Campaign			
	Mailing to Seniors. Service, Print, and Graphics (80 and over)	\$9	
	Paid Search/Pay-Per-Click Online Advertising	\$30	
	Print Media using AARP	\$30	
	Senior Ads in Various Targeted Publications (range from 3-5 total)	\$10	
	Pilot Public Health Television (4-week buy)	\$125	
	Sub-total		\$204
Marketing to Medical/Health Affiliated Organizations and Professionals			
	Develop and Implement Targeted Direct Mail Campaign	\$55	
	Medical Baseline Direct Mail-Purchase List Options	\$63	
	Cost to Print Senior/Disabled Brochure (design estimate and reorder)	\$3	
	Pilot Point of Purchase Program: Program Design, Stands for Pharmacies/Doctor Offices, Point of Purchase Posters, Applications Printing/Stocking	\$28	
	Sub-total		\$149
Events	"Abilities Expo", and Community Events, Walks, etc.		\$7
Total Costs			\$403

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

ALJ/SRT/sid

Date of Issuance 11/10/2008

Decision 08-11-031 November 6, 2008

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric
Company for Approval of the 2009-11
Low Income Energy Efficiency and
California Alternate Rates for Energy
Programs and Budget (U39M).

Application 08-05-022
(Filed May 15, 2008)

And Related Matters.

Application 08-05-024
Application 08-05-025
Application 08-05-026

**DECISION ON LARGE INVESTOR-OWNED UTILITIES'
2009-11 LOW INCOME ENERGY EFFICIENCY (LIEE) AND CALIFORNIA
ALTERNATE RATES FOR ENERGY (CARE) APPLICATIONS**

360461

- 1 -

D. 08-11-031 Cover Page

A.08-05-022 et al. ALJ/SRT/sid

Conclusions of Law

1. We should allow LIEE marketing and outreach efforts to focus on customers with high energy use, burden or insecurity.
2. The IOUs should target neighborhoods with high energy usage/burden/insecurity, severe climate zones, or other customer segments in choosing where to install feasible measures first, so as to ensure the greatest energy savings from the LIEE program, but all customers shall ultimately receive measures.
3. The IOUs should focus on treating homes, rather than customers, because while a home will remain, its occupants may change.
4. The LIEE program should serve all willing and eligible customers.
5. The IOUs should use a segmentation approach which first locates neighborhoods with a large numbers of low income customers and thereafter segments eligible customers within each neighborhood by energy usage.
6. The IOUs should consider the particular neighborhood and its population when deciding which neighborhood outreach methods to employ.
7. The IOUs should work with willing local governments and agencies to understand which strategies work best in which neighborhoods.
8. The IOUs should use more aggressive outreach to target high energy users (and customers with late payment histories and on medical baseline), though not to the exclusion of low energy users.
9. The categorical eligibility requirements that apply to LifeLine should be the same as those for LIEE and CARE. The IOUs should allow customers receiving federal means-tested SSI to qualify for LIEE and CARE categorically.

A.08-05-022 et al. ALJ/SRT/sid

10. IOUs should be allowed to add additional means tested programs to the list of programs that afford categorical eligibility for LIEE and CARE, so long as they receive approval to add such programs by Tier 2 Advice Letter.

11. IOUs should not segment customers by energy usage or other characteristics in deciding which measures to install.

12. We should require a "whole house" approach to meeting customer's energy needs, which focuses on making the state's entire housing stock energy efficient, rather than installing insignificant measures in a scattering of homes on a piecemeal basis.

13. Each house IOUs serve in the LIEE program should receive an individualized energy audit so that it receives all feasible measures necessary for maximal energy efficiency. To the extent the energy audit focuses on energy use, such information should not be used to limit the number of feasible measures installed in an eligible home.

14. In order to achieve long-term and enduring energy savings, a home should be treated with long-term occupancy patterns in mind, thus resulting in the installation of all feasible measures.

15. IOUs should minimize the number of times they visit a home as part of the LIEE program.

16. LIEE measure installation should occur at the same time as energy audits, except where impossible.

17. The IOUs should use the Whole Neighborhood Approach to minimize the number of trips the utility or its contractors make to serve eligible LIEE customers.

18. The Commission has discretion to determine what measures are feasible, taking into account cost effectiveness and hardships. Feasibility depends in part

A.08-05-022 et al. ALJ/SRT/sid

on the cost effectiveness of measures. Feasibility must also focus on reducing energy-related hardships facing low income households.

19. "All feasible measures" for LIEE does not mean "all available measures."

20. We should adopt the following methodology, as of January 1, 2009, for determining whether specific measures are cost effective (taking into account the housing type as well as climate zone) and set forth an approach to screening all measures going forward:

- a. Measures that have both a PC_m and a UCT benefit-cost ratio greater than or equal to 0.25 (taking into consideration the housing type and climate zone for that measure) for that utility shall be included in the LIEE program. This rule applies for both existing and newly measures.
- b. Existing measures that have either a PC_m or a UCT benefit-cost ratio less than 0.25 shall be retained in the program.
- c. Existing and new measures with both PC_m and UCT test results less than 0.25 for that utility may be included in the LIEE program for all climate zones if they consist of furnace repair and replacement or water heater repair and replacement. Air conditioning and evaporative cooling measures may be included in the LIEE program in hot climates (in accordance with the measure guidelines of the 2007-08 LIEE program, which disallowed cooling measures in temperate climate zones), subject to new reporting requirements. Heating and water heating measures in landlord-owned property may not be installed with LIEE funds, as landlords' legal habitability obligations require them to pay for such amenities.

22. We should require expanded reporting by IOUs on measures that fall below the 0.25 cost effectiveness threshold to determine the impact of such measures on *Plan* goals.

A.08-05-022 et al. ALJ/SRT/sid

23. Any LIEE measure meeting the criteria in the foregoing two paragraphs should be eligible for installation in a low income customer's home, except where infeasible.

24. We approve the IOUs' cost effectiveness and energy savings analysis for purposes of the 2009 program year. The IOUs will perform a 2009 Impact Evaluation study and we also authorize them to perform a new Non Energy Benefits study. We expect the results of these studies to be used to show updated cost effectiveness numbers and new expected energy savings. Although we understand that the energy impacts cannot be pre-determined, we expect that energy savings will increase given the many changes this decision makes to the IOUs' programs. We also require the utilities to incorporate these new cost-effectiveness and energy savings numbers into their estimates in drafting their 2012-14 budget applications.

25. The IOUs should carry out the Non Energy Benefits study we authorize in this decision as early in 2009 as possible.

26. We should require that the IOUs' energy efficiency education - in which the IOUs inform and teach low income customers about the benefits of energy efficiency - occur close in time to installation of measures, rather than in a vacuum. We should allow IOUs to fund facilitated education, including workshops, provided such workshops target low income persons eligible or likely to be eligible for LIEE and take steps to enroll customers in LIEE.

27. We should disallow the portion of SCE's budget devoted to effort that involves education-only kits not tied to measure installation. We also should disallow SCE's proposal for "door-to-door canvassing structured to provide energy education and awareness to low income customers who might otherwise not be treated through LIEE due to ineligibility for LIEE measures."

A.08-05-022 et al. ALJ/SRT/sid

28. PG&E's Energy Education workshops should not occur unless they lead to installation of energy efficiency measures or enrollment of customers in LIEE.

29. We do not have a record to determine the adequacy of the IOUs' ethnic marketing efforts. We should allow the IOUs to continue such marketing at current levels in 2009 (except PG&E, which should add ethnic marketing to its LIEE program for 2009). The single statewide ME&O program will have an ethnic marketing component.

30. The Commission and IOUs should focus on training for LIEE installation workers so those expanded programs also benefit from a trained workforce.

31. New state and federal law will drastically alter the marketplace for lighting, and it is imperative that we and the IOUs begin to prepare customers for the transition. Given the timelines in the legislation, such preparation must begin now.

32. Buying and installing lightbulbs should be a fungible activity funded equally across all IOUs.

33. Population growth should be taken into consideration in determining the number of customers eligible for LIEE.

34. Households treated under the LIHEAP program should also be counted as treated in determining the number of LIEE eligible customers, given that LIHEAP offers most of the same measures offered by LIEE.

35. The LIEE and CARE statutes do not allow for funding of programs such as PG&E's REACH utility shutoff assistance program.

36. We should not approve pilots or studies that the IOUs fail adequately to describe, or that would accomplish goals that are inconsistent with the mandates of this decision.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

A.08-05-022 et al. ALJ/SRT/sid

37. The Commission should approve SDG&E and SoCalGas' LIEE customer rewards program on a pilot basis.

38. The Commission should approve LIEE and CARE fund shifting consistently with its prior decisions.

39. Telling customers about services for which they are likely eligible is a basic utility function to be borne in general rates.

40. CARE recertification is essential so that ineligible customers do not receive the often substantial subsidies the program affords.

O R D E R

IT IS ORDERED that:

1. We approve 2009-11 Low Income Energy Efficiency (LIEE) and California Alternate Rates for Energy (CARE) budgets of the large investor owned utilities (IOUs), Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), and Southern California Gas Company (SoCalGas), as follows:

Adopted Budget Summary 2009-2011				
Utility	LIEE			
	2009	2010	2011	Cycle Total
PG&E	\$109,056,366	\$151,067,347	\$156,789,038	\$416,912,752
SCE	\$60,242,000	\$61,561,082	\$63,413,860	\$185,216,942
SoCalGas	\$49,571,908	\$76,872,816	\$78,256,269	\$204,700,993
SDG&E	\$21,184,008	\$21,184,009	\$20,327,606	\$62,695,622
Total	\$240,054,283	\$310,685,254	\$318,786,772	\$869,526,309
Utility	CARE			
	2009	2010	2011	Cycle Total
PG&E	\$470,314,651	\$479,331,337	\$489,228,435	\$1,438,874,423
SCE	\$208,541,000	\$213,312,000	\$216,885,000	\$638,738,000
SoCalGas	\$139,132,786	\$140,737,280	\$142,489,637	\$422,359,704
SDG&E	\$49,961,816	\$51,516,795	\$53,064,454	\$154,543,065
Total	\$ 867,952,262.40	\$ 884,899,422.01	\$ 901,669,537.33	\$ 2,654,515,191.74

2. We authorize the IOUs their requested LIEE Marketing, Education & Outreach (ME&O) budgets, adjusted to reflect new LIEE population estimates,

A.08-05-022 et al. ALJ/SRT/sid

subject to the restriction that they may only expend 1/3 of their requested 2009-11 budgets for 2009. The IOUs shall hold the remaining 2/3 of their ME&O budgets (the amounts for 2010 and 2011) in abeyance as the Commission works to develop a single statewide ME&O program that supplants existing IOU ME&O for 2010 and beyond.

3. To ensure that the IOUs' ME&O and the single statewide ME&O program are coordinated, the IOUs shall stay abreast of developments on the ME&O program as part of the general Energy Efficiency proceeding.

4. The IOUs shall coordinate 2009 LIEE marketing so that it is consistent with the developing single statewide ME&O program.

5. The IOUs shall not spend ME&O funding we allocate for 2010-11 except on the single statewide ME&O program, which we expect to be in place in late 2009 or early 2010 as part of the Commission's general Energy Efficiency proceeding.

6. The IOUs shall, for the 2009-11 period, continue or institute the LIEE targeted self-certification and enrollment activities the Commission ordered for 2007-08 in Decision (D.) 06-12-038. Such LIEE self-certification and enrollment consists of offering LIEE in areas of their service territory where 80% of the customers are at or below 200% of the federal poverty line.

7. The IOUs shall immediately make all categorical eligibility requirements that apply to LifeLine the same as those for LIEE and CARE.

8. The IOUs shall allow customers receiving federal means-tested Supplemental Security Income (SSI) to qualify for LIEE and CARE categorically.

9. The IOUs shall investigate the eligibility requirements of each of the benefits programs that qualify customers for LifeLine. If the IOUs find that certain listed programs have eligibility requirements that differ from the requirements applicable to LIEE and CARE, they may file with Energy Division

A.08-05-022 et al. ALJ/SRT/sid

a request for a workshop, listing the programs that present problems, the problems at issue, and their proposed response. If Energy Division finds the workshop request has merit, it will schedule a workshop at that time, but it need not do so if it is able to resolve the IOUs' concerns in another manner.

10. The IOUs may add additional means-tested programs to the list of programs that confer categorical eligibility on customers seeking CARE or LIEE benefits beyond those identified in the preceding three ordering paragraphs. The IOUs shall seek such additions by Tier 2 Advice Letter.

11. Unless otherwise provided in this decision, all Advice Letters this decision requires shall be Tier 2 Advice Letters pursuant to General Order 96-B.

12. To carry out the "Whole Neighborhood Approach," the IOUs shall use their own data about customer energy usage, late bill payment, and service shutoffs or threatened shutoffs to find neighborhoods (including rural areas) with concentrated high energy usage, burden and insecurity.

13. We expect the IOUs to work with the Energy Division in carrying out the Whole Neighborhood Approach, and delegate responsibility to Energy Division to offer additional guidance and oversight to ensure that the IOUs follow the approach in an efficient manner.

14. IOUs may segment customers by energy usage or other attributes in conducting LIEE outreach.

15. The IOUs shall install all feasible measures for all eligible LIEE customers.

16. The IOUs shall pursue a "whole house" approach to meeting LIEE customers' energy needs. Each eligible home shall receive an individualized energy audit so that it receives all feasible measures necessary for maximal energy efficiency. To the extent an energy audit focuses on the energy use in a

A.08-05-022 et al. ALJ/SRT/sid

home, such usage shall not be used to lower the number of feasible measures to be installed in the home.

17. We adopt the following methodology, as of January 1, 2009, for determining whether specific measures are cost effective (taking into account the housing type as well as climate zone) and set forth an approach to screening all measures going forward:

- a. Measures that have both a PC_m and a UCT benefit-cost ratio greater than or equal to 0.25 (taking into consideration the housing type and climate zone for that measure) for that utility shall be included in the LIEE program. This rule applies for both existing and new measures.
- b. Existing measures that have either a PC_m or a UCT benefit-cost ratio less than 0.25 shall be retained in the program.
- c. Existing and new measures with both PC_m and UCT test results less than 0.25 for that utility may be included in the LIEE program for all climate zones if they consist of furnace repair and replacement or water heater repair and replacement. Air conditioning and evaporative cooling measures may be included in the LIEE program in hot climates (in accordance with the measure guidelines of the 2007-08 LIEE program, which disallowed cooling measures in temperate climate zones), subject to new reporting requirements. Heating and water heating measures in landlord-owned property may not be installed with LIEE funds, as landlords' legal habitability obligations require them to pay for such amenities.

18. The IOUs shall forecast, for 2009-2011 (per year and for the full three year period), for any measure that we include in the program that falls below the 0.25 cost effectiveness threshold test, the following:

- The measure type and climate zone;

A.08-05-022 et al. ALJ/SRT/sid

- How many such measures the IOU anticipates installing in 2009-2011 in each "add-back" climate zone;
- The budget impact of the "add-backs," and
- The energy savings impacts of the "add-backs," based on the assumption that installation of measures that do not already exist in a home will increase, rather than decrease, energy usage.

19. The IOUs shall report in their annual reports, for the prior year, the actual figures in each of the foregoing four categories. If the LIEE measure "add-backs," this decision allows will compromise the IOUs' ability to meet the 2020 *Plan* goal that 100% of eligible and allows willing customers will have received all cost effective LIEE measures, the IOUs shall include a narrative in their annual reports on how they propose to address the shortfall in other parts of their LIEE program. We direct Energy Division to examine these reports when they are submitted, and to recommend Commission action aimed at enhancing program energy savings if the information reported shows a lack of progress toward meeting *Plan* goals.

20. The provisions of the foregoing ordering paragraphs regarding furnace repair and replacement and water heater repair and replacement are subject to the holding in D.07-12-051 that landlords are responsible, pursuant to the warranty of habitability, for providing heating and water heating to their tenants. No cost of furnace repair and replacement or water heater repair and replacement shall be borne by the LIEE program in rental housing.

21. IOUs shall perform a 2009 Impact Evaluation study and Non Energy Benefits study. The IOUs shall report the results of these studies once the studies are completed. We anticipate that these reported results will show that energy savings of the LIEE portfolio are increasing over time, with a closer correlation

A.08-05-022 et al. ALJ/SRT/sid

between program spending and energy savings than shown in the IOUs' 2009-11 budget applications.

22. We require that the IOUs' energy efficiency education – in which the IOUs inform and teach low income customers about the benefits of energy efficiency – occur close in time to installation of measures, rather than in a vacuum. We allow IOUs to fund facilitated education, including workshops, provided such workshops target low income persons eligible or likely to be eligible for LIEE and take steps to enroll customers in LIEE.

23. We disallow the portion of SCE's budget devoted to effort that involves education-only kits not tied to measure installation. We also disallow SCE's proposal for "door-to-door canvassing structured to provide energy education and awareness to low income customers who might otherwise not be treated through LIEE due to ineligibility for LIEE measures."

24. To the extent PG&E's Energy Education workshops do not result in installation of energy efficient measures, they shall be removed from PG&E's LIEE program.

25. We allow the IOUs approximately one third of their proposed ME&O funding to pursue their own, individual marketing campaigns in 2009. The IOUs shall implement this marketing in coordination with the *California Long-Term Energy Efficiency Strategic Plan's (Plan)* work on a single statewide ME&O program.

26. Those IOU personnel involved in developing the single statewide ME&O program shall communicate with the IOUs' LIEE program personnel and ensure that 2009 IOU marketing for the LIEE program is consistent with the direction of the single statewide ME&O program.

A.08-05-022 et al. ALJ/SRT/sid

27. For 2010-11, while we approve the IOUs' requested funding, we do not allow the IOUs to spend the funds on the marketing efforts they propose. Rather, they shall hold this money in reserve so that it forms part of the single statewide ME&O program budget. Once we approve the single statewide ME&O program in our Energy Efficiency proceeding, the IOUs will receive further direction on how to allocate this funding.

28. PG&E's shall add a LIEE component to its ethnic advertising campaign for 2009.

29. We set a goal for the IOUs to increase their disabled household enrollments for the 2009-11 program years so that customers with disabilities comprise approximately 15% of new LIEE enrollments annually.

30. We require the IOUs to leverage their LIEE program outreach with the Commission's Deaf and Disabled Telecommunications Program (DDTP) and disability-related community based organizations (CBOs) in California.

31. We will allow IOUs to count customers they enroll in LIEE as a result of leveraging with CBOs that serve the disabled community, or with the DDTP, toward the 15% annual disabled enrollment goal. IOUs may also count customers who voluntarily self-identify as disabled or whom the IOUs enroll from the Medical Baseline program, but should not ask customers whether they are disabled. Rather, the IOUs may count as disabled persons who voluntarily describe themselves as having a disability, persons who have an observed disability such as a mobility, vision or hearing disability, and persons who use TTY/TDD or request accessible formats of written materials (*i.e.*, large print and/or Braille).

32. IOUs shall enroll in CARE all eligible customers they add to the LIEE program as part of the 15% goal for enrollment of customers with disabilities.

A.08-05-022 et al. ALJ/SRT/sid

33. We require that the IOUs report the status of their efforts to enroll persons with disabilities in their annual reports to the Commission identifying the level to which their efforts meet the 15% penetration goal. In cases where the participation from the disabled community is below the 15% goal, the IOUs shall provide an explanation.

34. The IOUs shall track the training and hiring of a low income energy efficiency workforce, and report on progress in their annual reports.

35. The Commission directs the Energy Division to issue a Request For Proposals for the development of Workforce Education and Training (WE&T) pilot programs. The selected proposals shall receive funding to be distributed by the utility in the pilot's service territory.

36. IOUs or their agents shall install all CFLs distributed in the LIEE program.

37. The IOUs or their agents shall remove old bulbs after installing CFLs, unless a customer asks to keep the old bulbs.

38. The IOUs shall include information with CFLs explaining how to dispose of them safely.

39. This decision does not establish any presumption for ratepayer CFL funding in the pending general Energy Efficiency applications.

40. We set a maximum \$6.90 per installed bulb cost that is the same across IOUs, although IOUs shall install bulbs at a lower cost if they can negotiate the costs downward. The IOUs shall charge less than \$6.90 if their actual cost is lower than this amount.

41. The IOUs shall immediately pursue joint lightbulb procurement, warehousing, transportation and related expenses unless such procurement will raise the per-bulb price above \$1.90 and/or the overhead and related expense per bulb above \$5.00.

A.08-05-022 et al. ALJ/SRT/sid

42. The IOUs shall begin monitoring whether lightbulb shortages are threatened, and begin contingency planning if shortages or bulb price increases appear possible. They shall also notify the Energy Division in their monthly reports if shortages may affect the LIEE program.

43. For the 2009-11 LIEE budget cycle, the utilities' programs may continue to install CFLs as part of their standard measures, because they still have potential for cost effective energy savings in low income households, when installed.

44. As new technologies in lighting come into play between 2009 and 2011, the IOUs shall adhere to the new legal standards in introducing lighting measures to LIEE portfolios. They shall report in their annual reports their preparation to meet the new legal requirements.

45. Should the general Energy Efficiency decision, expected in 2009, develop a major shift in lighting focus for the state, the IOUs may need to readjust their lighting portfolios midcourse to reflect such changes.

46. We allow the IOUs to go back and treat any dwelling not treated since 2002, but the IOUs shall first seek out new dwellings that have not yet been treated. In their annual reports, IOUs shall distinguish between customers treated as "go backs" and brand new customers/dwellings so the Commission has clear information on the number of new customers/dwellings added to the LIEE program.

47. We eliminate the 3 Measure Minimum rule (which prohibits IOUs from installing measures in a home that does not require at least three measures) in favor of a rule that allows IOUs to install one or two measures in a home, as long as the measures achieve energy savings of at least either 125 kWh/annually or 25 therms/annually. Attachment G to this decision specifies, based on the data the IOUs provided with their applications, which measures qualify.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

A.08-05-022 et al. ALJ/SRT/sid

48. The utilities shall treat a total of 1,055,096 households over the next budget cycle to meet 25% of the programmatic initiative, as shown in the following table:

Projected Number of Homes to be Treated 2009-2011								
Utility	2009		2010		2011		Total Cycle - Original	Total Cycle - New
	Original	New Projection	Original	New Projection	Original	New Projection		
PG&E	80,000	90,903	110,000	124,991	110,000	124,991	300,000	340,884
SCE	75,243	83,445	75,243	83,445	75,243	83,445	225,729	250,336
SoCalGas	95,000	110,864	123,000	143,540	125,000	145,874	343,000	400,279
SDG&E	20,000	20,384	20,000	20,384	20,000	20,384	60,000	61,152
Total	270,243	305,596	328,243	372,360	330,243	374,694	928,729	1,052,651

49. In order to be counted as successful, IOUS shall demonstrate that their integration efforts accomplish at least two of the following four goals:

- *Interdepartmental Coordination:* Increased coordination in work efforts between departments within the utility. This type of integration results in cost and/or resource savings as well as one or both of the following:
 - Consolidation of work efforts,
 - Elimination of overlapping and/or repetitive tasks.
- *Program Coordination:* Increased coordination between multiple programs managed by the utility. This type of integration results in cost and/or resource savings as well as one or both of the following:
 - Increased services provided to customers,
 - Greater number of customers served by a program.
- *Data Sharing:* Increased information and data sharing between departments within the utility and/or multiple programs managed by the utility. This type of integration results in cost and/or resource savings as well as one or both of the following:
 - Greater number of customers served,
 - Consolidation of work efforts.
- *ME&O Coordination:* Consolidation of marketing, education and outreach for multiple programs managed by the utility. This type of integration results in cost and/or resource savings as well as any or all of the following:
 - Greater number of customers reached,

A.08-05-022 et al. ALJ/SRT/sid

- o More cost effective marketing, education and/or outreach to customers,
- o Elimination of customer confusion.

50. We decline DRA's proposal to discontinue the Quarterly Public Meetings.

51. IOUs shall track and report the status of each of the integration efforts listed in their applications or *Plan* submissions in their annual report submitted to the Commission each May. In cases where the integration effort does not meet at least two of the above goals, the IOUs shall provide a reasonable explanation. We direct Energy Division to review the reports and work with IOUs to enhance integration during the 2009-11 cycle if our metrics are not met.

52. The utilities shall coordinate all LIEE outreach with CARE.

53. The IOUs shall pursue integration in other program functions such as income verification.

54. All utilities shall increase coordination between LIEE and Energy Efficiency departments, thereby achieving greater interdepartmental coordination.

55. The utilities shall examine current and future Local Government Partnerships and pursue any potential synergies that exist with the LIEE program to ultimately reduce costs.

56. The IOUs shall make sure that what they learn in their Demand Response proceedings is leveraged with the LIEE program.

57. In accordance with D.07-11-045, the Commission directs the utilities to remove any barriers to LIEE participation for eligible customers who wish to participate in the CSI low income programs. Solar applicants shall be fast-tracked through the LIEE program in the event that a waiting list for LIEE measure installation exists.

A.08-05-022 et al. ALJ/SRT/sid

58. Low income single family homeowners may receive solar facilities (1) if they have already received all feasible LIEE measures, or (2) if they are on the waiting list to receive such measures.

59. IOUs shall use the following three criteria to measure the level of success of each of their leveraging efforts and partnerships:

- (i) Leveraging results in dollars saved;
- (ii) The opportunity results in energy savings/benefits; and
- (iii) The opportunity results in enrollment increases.

60. The IOUs shall report the extent to which their LIEE leveraging efforts meet the foregoing metrics in their annual reports provided each May to the Commission. In cases where the leveraging effort or relationship does not meet a criterion, the IOU shall provide a reasonable explanation. We direct Energy Division to review the reports and work with IOUs to enhance leveraging during the 2009-11 cycle if our metrics are not met.

61. IOUs shall use all available resources that will assist them in determining, before a LIEE contractor goes to a home, whether that home has received LIHEAP measures and the type of measures involved.

62. The IOUs shall make arrangement with DCSD or LIHEAP contractors to have their personnel trained on what the LIHEAP program entails.

63. Our goal is full LIHEAP and LIEE leveraging, as well as ensuring that LIHEAP and LIEE measure installation happen at the same time, or sequentially, as part of the Whole Neighborhood Approach. The IOUs shall assist in working with DCSD and the Commission to develop a database that will allow IOUs and their contractors to determine if a home has already received LIHEAP service,

A.08-05-022 et al. ALJ/SRT/sid

and the measures installed. They shall also use all means currently available to determine such service by LIHEAP.

64. Each IOU shall make a reasonable effort to differentiate between eligible and ineligible public housing residents for CARE and LIEE enrollment, and only enroll eligible public housing residents in the programs. We grant the IOUs discretion how to do this in each of their service areas.

65. Natural Gas Appliance Testing (NGAT) funding shall be from general rates and not the LIEE program. No IOU shall request otherwise in future LIEE requests, as we have resolved the issue in the same manner for many LIEE program cycles.

66. PG&E shall not reduce the number of LIEE customers it serves as a result of our holding on NGAT funding.

67. The IOUs shall coordinate with the Energy Division to incorporate all changes we make in this decision to the relevant sections of the 2006 LIEE Policy and Procedures Manual within 180 days of the effective date of this decision. The IOUs shall thereafter serve a link to the updated version of the Manual on the service list for this proceeding.

68. For all pilots and studies we approve here, all IOUs shall meet with Energy Division staff, and the other IOUs, and other stakeholders to review the pilots' and studies' results. In the annual reports filed after the completion of each pilot, the affected IOUs shall make clear recommendations as to whether the pilots should be expanded statewide.

69. We approve the following budgets for pilots and studies for 2009-11:

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

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

Applications of Pacific Gas and Electric Company for Approval of the 2009-2011 Low Income Energy Efficiency and California Alternate Rates for Energy Programs and Budget (U39M)	Application 08-05-022 (Filed May 15, 2008)
Application of San Diego Gas & Electric Company (U 902 M) for Approval of Low Income Assistance Programs and Budgets for Program Years 2009 – 2011.	Application 08-05-024 (Filed May 15, 2008)
Application of Southern California Gas Company (U 904 G) for Approval of Low Income Assistance Programs and Budgets for Program Years 2009 – 2011.	Application 08-05-025 (Filed May 15, 2008)
Application of Southern California Edison Company (U 338-E) for Approval of Low Income Assistance Programs and Budgets for Program Years 2009, 2010 and 2011.	Application 08-05-026 (Filed May 15, 2008)

**PETITION OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902E) AND
THE SOUTHERN CALIFORNIA GAS COMPANY (U 904G) TO MODIFY
DECISION 08-11-038**

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May 14, 2010

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

Applications of Pacific Gas and Electric Company for Approval of the 2009-2011 Low Income Energy Efficiency and California Alternate Rates for Energy Programs and Budget (U39M)	Application 08-05-022 (Filed May 15, 2008)
Application of San Diego Gas & Electric Company (U 902 M) for Approval of Low Income Assistance Programs and Budgets for Program Years 2009 – 2011.	Application 08-05-024 (Filed May 15, 2008)
Application of Southern California Gas Company (U 904 G) for Approval of Low Income Assistance Programs and Budgets for Program Years 2009 – 2011.	Application 08-05-025 (Filed May 15, 2008)
Application of Southern California Edison Company (U 338-E) for Approval of Low Income Assistance Programs and Budgets for Program Years 2009, 2010 and 2011.	Application 08-05-026 (Filed May 15, 2008)

**PETITION OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902E) AND
THE SOUTHERN CALIFORNIA GAS COMPANY (U 904G) TO MODIFY
DECISION 08-11-031**

I. BACKGROUND AND INTRODUCTION

On November 6, 2008, the California Public Utilities Commission issued (“D.”) 08-12-031, which approved the large investor-owned utilities’ (“IOUs”) 2009-11 Low Income Energy Efficiency (“LIEE”) and California Alternate Rate for Energy (“CARE”) Applications. Pursuant to Rule 16.4 of the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”) San Diego Gas & Electric Company (“SDG&E”) and Southern California Gas Company (“SoCalGas”) (collectively, the “Joint Utilities”), respectfully submit this petition for modification (“PFM”) of D.08-11-031. In this PFM, the Joint Utilities request

modifications or clarifications to D.08-11-031 that will enable the utilities to: 1) establish memorandum accounts to track natural gas appliance testing ("NGAT") costs;¹ 2) increase their enrollment of disabled households in the LIEE programs; 3) correct the list of eligible measures offered under the LIEE program; 4) and modify certain LIEE program components.

II. DISCUSSION

A. D.08-11-031 Should Be Modified to Permit the Joint Utilities to Establish Memorandum Accounts to Track Unanticipated and Unforeseeable NGAT Costs Incurred Above Authorized GRC Levels.

The Joint Utilities respectfully request that D.08-11-031 be modified to permit the tracking through memorandum account of the unanticipated and unforeseeable NGAT costs which will be incurred as a result of the Joint Utilities' compliance with the directive that the IOUs provide LIEE measures for 25% of eligible and willing customers in the 2009-2011 program cycle.² The Decision substantially increased the number of homes that the IOUs must treat, as well as the number of natural gas appliance tests that must be conducted pursuant to the LIEE program. In each of their General Rate Case ("GRC") applications, filed in 2006, the Joint Utilities based their proposed levels of NGAT funding on 2005 recorded expenses and activity levels and only moderately adjusted upward for Test Year 2008, as the Joint Utilities, the settling parties, and the Commission itself could not have reasonably foreseen that the Commission, three months *after* its approval of the Joint Utilities' Test Year 2008 GRC funding, would require the IOUs to drastically increase their NGAT requirements in the following years.³ The Commission approved the parties' settlement containing the Joint Utilities Test Year 2008 GRC

¹ NGAT tests for gas leaks and carbon monoxide ("CO") emissions from natural gas appliances. NGAT is also known as "combustion appliance testing" and refers generically to CO testing of household appliances that use combustion fuels, such as natural gas or propane.

² The Decision requires the IOUs to treat a total of 1,055,096 households in the 2009-2011 program cycle. SDG&E was ordered to treat, on an annual basis, an average of 20,384 homes. SoCalGas was ordered to treat, on an annual basis, an average of 133,426 homes. See D.08-11-031, Ordering Paragraph ("OP") 48.

³ See Attachment 1, SDG&E Operating and Maintenance Assumptions for Test Year 2008 requests. See Attachment 2, SoCalGas Operating and Maintenance Assumptions for Test Year 2008 requests.

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

funding for NGAT in D.08-07-046 on July 31, 2008. On November 6, 2008, the Commission approved D.08-11-031, ordering an increase in the number of homes to be NGAT-treated above the approved Test Year 2008 GRC funding in D.08-07-046.

As such, while SDG&E in its GRC application projected that 8,400 homes would require NGATs annually, at a cost of approximately \$300,000,⁴ D.08-11-031 requires SDG&E to conduct approximately 15,288 NGATs annually,⁵ at a cost of \$535,000. This represents an increase of 82% over the assumed GRC level. Although SoCalGas in its GRC application projected that 45,500 homes would require NGATs annually, at a cost of approximately \$1,592,500,⁶ D.08-11-031 requires SoCalGas to conduct some 120,083 NGATs annually,⁷ at a cost of \$4.2 million. This represents an increase of 163.9% over the GRC's assumed level of 45,500 homes that would require NGATs annually. The Joint Utilities, the settling parties, and the Commission could not and did not anticipate the higher NGAT requirements of D.08-11-031.

The Joint Utilities did not pursue additional NGAT funding in their 2009-2011 LIEE and CARE Program Applications, filed in May 2008, because the Commission made clear in D.06-12-038, OP 19, that NGAT costs should be funded through base rates and not through public purpose program ("PPP") funds. In fact, the Commission reaffirmed its position regarding NGAT source funding in D.08-11-031 when it denied PG&E's request to fund NGAT activities with PPP funds, stating: "Natural Gas Appliance Testing (NGAT) funding shall be from general

⁴ SDG&E requested an additional \$75,000 above the base 2005 expenses in Test Year 2008 to cover the costs of an increased number of NGATs to be conducted and for increases in contractor costs associated with conducting those tests. See Prepared Direct Testimony of Joseph Velasquez on Behalf of San Diego Gas & Electric Company, December 2006, page JSV-14.

⁵ This figure is based on the projections that 75% of the 20,384 homes SDG&E treats annually will require NGAT.

⁶ SoCalGas, in its GRC application, requested authorization of an additional \$474,000 above the 2005 base year expenses in Test Year 2008 to cover the costs of an increased number of tests and to provide for increases in contractor costs associated with performing the tests. See Revised Prepared Direct Testimony of Phillip E. Baker on Behalf of Southern California Gas Company, April 2007, page PEB-25.

⁷ This figure is based on the projections that 90% of the 133,426 homes SoCalGas treats annually will require NGAT.

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

rates and not the LIEE program. No IOU shall request otherwise in future LIEE request, as we have resolved the issue in the same manner for many LIEE program cycles.”⁸

As part of their GRC proceedings, the Joint Utilities reached Test Year 2012 revenue requirement settlements with DRA (SDG&E) and with DRA and TURN (SoCalGas). Included with the Motions to adopt the settlement agreements (filed on December 21, 2007) were detailed comparison exhibits that described the positions of the parties and the settlement amounts on a detailed basis. SDG&E requested \$300,000 and SoCalGas requested \$1.592 million for NGAT funding in FERC account 908.0, respectively. DRA instead proposed a two-year average for most of the components of FERC 908.0, including NGAT funding. The settling parties agreed upon an overall funding level for each of the 908.0 accounts that did not specifically address each component of the 908.0 accounts. The overall SDG&E 908.0 funding level was equivalent to 83.3% of the SDG&E GRC request, and the overall SoCalGas 908.0 funding level was equivalent to 85.2% of the SoCalGas GRC request. Thus, while a specific authorized NGAT GRC funding level is not identified for SDG&E or SoCalGas, it is reasonable to assume that in no case would the settlement funding level for NGAT have been increased over the Joint Utilities GRC request, given the facts known at the time that the test year cost projections were prepared or at the time that settlement was reached.

Further, it is also reasonable to conclude that based on the intent of the settling parties, the implied authorized level of NGAT funding for SDG&E was \$250,000 ($\$300,000 \times 83.3\%$), and the implied authorized level of NGAT funding for SCG was \$1.357 million ($\$1.592 \text{ million} \times 85.2\%$). Clearly the implied authorized funding for NGAT in the Joint Parties TY 2008 GRCs is inconsistent with the level of program activity for NGAT as ordered by the Commission in D.08-11-031. Some may proffer the argument that the Joint Utilities’ GRC NGAT funding in

⁸ D.08-11-031 at OP 65.

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

FERC account 908 comingles funds with ethnic media and other items, and, therefore, there is no way for the Commission to know that current NGAT funding is indeed inadequate. This argument uses the settlement terms against the Joint Utilities. It puts the Joint Utilities at risk for mandated expenses not foreseen in the GRC by the Joint Utilities or the settling parties and, thus, generally conflicts with the Commission policy of encouraging settlements.

To rectify this discrepancy, the Joint Utilities propose that the Commission find that the Joint Parties' TY 2008 GRC funding is reasonably insufficient to meet the unanticipated and unforeseeable NGAT costs of D.08-11-031 and, therefore, that the Commission permit the Joint Utilities to establish memorandum accounts⁹ to track the unanticipated and unforeseeable NGAT costs incurred that are in excess of the levels requested in the GRC by SDG&E and SoCalGas. The use of the Joint Utilities' implied authorized level of NGAT funding to establish the requested memorandum accounts represents a conservative interpretation of the potential shortfall in funding because it takes into account the fact that the Settlements for FERC 908 were below the amount in total requested by the utilities.

The Commission has previously permitted the IOUs to establish memorandum accounts in similar situations to track unanticipated costs incurred because of IOU compliance with Commission directives. For example, in response to D.05-04-052 in which call center costs were disallowed, SDG&E filed Advice Letter 1721-E-A and received Commission approval, in Resolution E-3958, to establish a memorandum account to track the previously disallowed call center costs, which were not projected in its GRC. More recently, the Commission, in the Order Instituting Rulemaking ("OIR"), regarding customer disconnections, authorized the IOUs to establish memorandum accounts to track additional and unforeseen costs associated with complying with the Order's directives. Specifically, OP 3 (c) of Rulemaking 10-02-005 states:

Each utility is authorized to file a Tier 1 advice letter to establish a memorandum account to track any significant costs associated with complying with the new practices initiated with this proceeding, including any operations and maintenance charges associated with implementation of the practices as well as any

⁹ A memorandum account is simply a mechanism to record costs into an account for future Commission determination regarding recovery; it does not guarantee recovery of costs.

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

uncollectibles that are in excess of those projected in the utility's last general rate case.

Thus, precedent exists to support establishment of a memorandum account in this instance.

As discussed above, the requested NGAT levels and associated costs projected in the Joint Utilities' GRC applications, and subsumed within the settlement amounts for FERC 908 as approved in D.08-07-046, are significantly lower than NGAT levels and costs as adjusted by D.08-11-031. Per D.08-11-031, the Joint Utilities should be allowed the opportunity to seek recovery in base rates of additional costs that can be reasonably quantified and will inure as a consequence of the Commission's updated policy direction for the LIEE programs. For these reasons, the Joint Utilities request that the Commission modify D.08-11-031 (1) to find that per D.08-11-031, the Joint Utilities will realize additional, unanticipated and unforeseeable costs associated with NGAT testing that are not reflected in their base rates and (2) to permit the Joint Utilities to file advice letters to establish memorandum accounts to track these costs, which will be determined in the utilities' next GRC proceedings.

SoCalGas and SDG&E respectfully request that the Commission modify OP 65 of D.08.11.031 to read:

65. Natural Gas Appliance Testing (NGAT) funding shall be from general rates and not the LIEE program. No IOU shall request otherwise in future LIEE requests, as we have resolved the issue in the same manner for many LIEE program cycles. We find, however, that the costs of expanding NGAT testing, as required by this Decision, could not have been anticipated or foreseen by the Commission, the parties, and the IOUs in the Commission's prior decisions approving settlements among the parties that include GRC funding for prior levels of NGAT. Accordingly, we will allow the IOUs to establish memorandum accounts to track the unanticipated and unforeseeable NGAT incurred costs, as a result of compliance with this Decision, that are in excess of the implied authorized level of NGAT funding from those settlements as approved by the Commission in prior utility GRC decisions.

ATTACHMENT 2

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

**Southern California Gas Company
 Test Year 2008 General Rate Case
 SCG Customer Services Team**

*** O&M Working Template ***

PUC Acct:
 Acct Name: Assistance
 Prepared by: Connie Schramm
 Department: Customer Assistance
 Date: 06/01/08

Cost centers: 2200-2032; 2200-0366; 2200-2033; 2200-2034; 2200-2035

NOTE: Input amounts in thousands, e.g., if the amount is \$1,523,254, divide and the result would be reflected as \$

SUMMARY

	2005 \$ - Thousands of Direct Dollars				FTE
	Labor (\$000)	N/Labor (\$000)	Other (\$000)	Total (\$000)	
2005 Base	\$ 43	\$ 1,365		\$ 1,408	10.6
Net Adj to Base	\$ 107	\$ 113		\$ 220	1.6
2005 Adj-Base	\$ 150	\$ 1,378		\$ 1,528	2.2
2006 Total	\$ 333	\$ 1,713	\$ -	\$ 2,046	5.5
2007 Total	\$ 333	\$ 1,863	\$ -	\$ 2,196	5.5
2008 GRC Total	\$ 473	\$ 2,248	\$ -	\$ 2,721	7.5
Incr/(Decr) from 2005 to 2008	\$ 323	\$ 870	\$ -	\$ 1,193	5.2
% Change	216.3%	63.1%	0.0%	78.1%	235.6%

Explanation of Changes from 2005 to 2008:

Key Driver	Type of Cost	Assumption/Calculation	2005 \$ - Millions of Direct Dollars				FTE
			Labor	N/Labor	Other	Total	
2005 Adjusted Base			\$ 150	\$ 1,378	\$ -	\$ 1,528	2.2
Changes from 2005 - 2006							labor n/l
CO Testing	Non-Labor	40000 homes x \$35.00 per home = \$1.4M Contracted services for CO Testing of homes under the Direct Assistance Program		\$ 274		\$ 274	
Reg Rqmts Compliance	Labor & Non-Labor	Support and development of Third Party Notification Program Customer research on payment issues and development of services		\$ 44		\$ 44	
Outreach	Non-Labor	Research, community outreach and collateral for special needs customer programs including summer and winter preparedness 2.2 FTEs Program Managers \$60k	\$ 128	\$ (10)		\$ 118	2.2
Medical Baseline	Non-Labor	Design and printing of Medical Baseline collateral materials for disabled customers. Expanded Proc Medical Baseline outreach for special needs customers. 1.0 FTE Processing Clerk	\$ 55	\$ 27		\$ 82	1.0
Sub-Total: 2005 - 2006 Change			\$ 193	\$ 335	\$ -	\$ 518	3.2
% Change >>			122.0%	24.3%	0.0%	33.9%	145.6%
2006 GRC			\$ 333	\$ 1,713	\$ -	\$ 2,046	5.5

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

**Southern California Gas Company
 Test Year 2008 General Rate Case
 SCG Customer Services Team**

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 Acct Name: Assistance
 Prepared by: Connie Schramm
 Department: Customer Assistance
 Date: 06/01/06

Cost centers: 2200-2032; 2200-0356;
 2200-2033; 2200-2034; 2200-2035

NOTE: Input amounts in thousands
 e.g., if the amount is \$1,523,254, divide
 and the result would be reflected as \$

	2005 \$ - Thousands of Direct Dollars				FTE
	Labor (\$000)	N/Labor (\$000)	Other (\$000)	Total (\$000)	
2005 Base	\$ 143	\$ 1,365		\$ 1,408	0.6
Net Adj to Base	\$ 107	\$ 113		\$ 120	1.6
2005 Adj Base	\$ 150	\$ 1,378	\$ -	\$ 1,528	2.2
2006 Total	\$ 333	\$ 1,713	\$ -	\$ 2,046	5.5
2007 Total	\$ 333	\$ 1,863	\$ -	\$ 2,196	5.5
2008 GRC Total	\$ 473	\$ 2,248	\$ -	\$ 2,721	7.6
Incr/(Decr) from 2005 to 2008	\$ 323	\$ 870	\$ -	\$ 1,193	5.2
% Change	216.3%	63.1%	0.0%	78.1%	235.6%

Explanation of Changes from 2005 to 2008:

Key Driver	Type of Cost	Assumption/Calculation	2005 \$ - Millions of Direct Dollars				FTE
			Labor	N/Labor	Other	Total	
Changes from 2006 - 2007							
CO2 Testing	Non-Labor	42600 Homes x \$85/00 per home = \$1.5M		\$ 100		\$ 100	
Reg Rqmts Compliance		Contracted services for CO2 Testing of homes under the Direct Assistance Program					
Payment Assistance	Labor & Non-labor	Support and development of Third Party Notification Program		\$ 15		\$ 15	
Increased Quality of Customer Service		Customer research on payment issues and development of services					
Outreach	Non-Labor	Research, community outreach and collateral for special needs customer programs including summer and winter preparedness	\$	\$ 35		\$ 35	
Increased Quality		2.2 FTE's Program Managers					
Medical Baseline	Non-Labor	Design and printing of Medical Baseline collateral materials for disabled customers	\$	\$		\$	
Reg Rqmts Compliance		Expanded Medical Baseline outreach for special needs customers - 1.0 FTE Processing Clerk					
Sub-Total: 2006 - 2007 Change			\$ -	\$ 150	\$ -	\$ 150	-
			% Change >>	0.0%	8.8%	0.0%	7.3%
							0.0%
2007 GRC			\$ 333	\$ 1,863	\$ -	\$ 2,196	5.5

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

**Southern California Gas Company
 Test Year 2008 General Rate Case
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 Prepared by: Connie Schramm
 Department: Customer Assistance
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Cost centers: 2200-2032; 2200-0356; 2200-2033; 2200-2034; 2200-2035

NOTE: Input amounts in thousands, e.g., if the amount is \$1,523,254, divide and the result would be reflected as \$

	2005 \$ - Thousands of Direct Dollars				FTE
	Labor (\$000)	N/Labor (\$000)	Other (\$000)	Total (\$000)	
2005 Base	\$ 43	\$ 1,365		\$ 1,408	0.6
Net Adj to Base	\$ 107	\$ 13		\$ 120	1.6
2005 Adj Base	\$ 150	\$ 1,378		\$ 1,528	2.2
2006 Total	\$ 333	\$ 1,713	\$ -	\$ 2,046	5.5
2007 Total	\$ 333	\$ 1,863	\$ -	\$ 2,196	5.5
2008 GRC Total	\$ 473	\$ 2,248	\$ -	\$ 2,721	7.5
Incr/(Decr) from 2005 to 2008	\$ 323	\$ 870	\$ -	\$ 1,193	5.2
% Change	216.3%	63.1%	0.0%	78.1%	235.8%

Explanation of Changes from 2005 to 2008:

Key Driver	Type of Cost	Assumption/Calculation	2005 \$ - Millions of Direct Dollars				FTE
			Labor	N/Labor	Other	Total	
Changes from 2007 - 2008							
Co-Testing	Non-Labor	45500 homes x \$36.00 per home = \$1.6M Contracted services for CO-Testing of homes under the Direct Assistance Program.		\$ 100		\$ 100	
Reg Rqmts Compliance							
Payment Assistance	Labor & Non-labor	Support and development of third Party Notification Program Customer research on payment issues and development of services	\$ 105	\$ 165		\$ 270	1.5
Increased Quality of Cust Svcs							
Outreach	Non-Labor	Research, community outreach and collateral for special needs customer programs, including summer and winter preparedness. 5 FTE's Program Managers	\$ 35	\$ 120		\$ 155	0.5
Increased Quality							
Medical Baseline	Non-Labor	Design and printing of Medical Baseline collateral materials for disabled customers. Expanded Medical Baseline outreach for special needs customers.	\$ -	\$ -		\$ -	
Reg Rqmts Compliance							
Sub-Total: 2007 - 2008 Change			\$ 140	\$ 385	\$ -	\$ 525	2.0
% Change >>			42.0%	20.7%	0.0%	23.8%	36.7%
2008 GRC			\$ 473	\$ 2,248	\$ -	\$ 2,721	7.5

COM/DGX, ALJ/KLM/rbg

Date of Issuance 12/24/2007

Decision 07-12-051 December 20, 2007

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the Low Income Energy Efficiency Programs of California's Energy Utilities.

Rulemaking 07-01-042
(Filed January 25, 2007)

Southern California Edison Company's (U338E) Application for Approval of SCE's "Change A Light, Change The World," Compact Fluorescent Lamp Program.

Application 07-05-010
(Filed May 10, 2007)

**DECISION PROVIDING DIRECTION FOR LOW-INCOME
ENERGY EFFICIENCY POLICY OBJECTIVES, PROGRAM GOALS,
STRATEGIC PLANNING AND THE 2009-2011 PROGRAM PORTFOLIO
AND ADDRESSING RENTER ACCESS
AND ASSEMBLY BILL 2140 IMPLEMENTATION**

D. 07-12-051, Summary of Order, LIEE Programmatic Initiative

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

R.07-01-042, A.07-05-010 COM/DGX, ALJ/KLM/rbg

**DECISION PROVIDING DIRECTION FOR LOW-INCOME
ENERGY EFFICIENCY POLICY OBJECTIVES, PROGRAM GOALS,
STRATEGIC PLANNING AND THE 2009-2011 PROGRAM PORTFOLIO
AND ADDRESSING RENTER ACCESS
AND ASSEMBLY BILL 2140 IMPLEMENTATION**

This decision updates and expands our policy direction for the Low-Income Energy Efficiency (LIEE) programs provided by the Commission's regulated energy utilities. It is a companion to our recent decision Decision (D.)07-10-032 which set the stage for the next generation of energy efficiency in California.

Today we clarify that the complementary objectives of LIEE programs are to provide an energy resource for California, consistent with our "loading order" that establishes energy efficiency as our first priority, while reducing low-income customers' bills and improving their quality of life. We commit to expand LIEE programs by making them available to more customers, improving their cost-effectiveness and designing them in ways to make them a reliable energy resource. To achieve these objectives, we adopt a programmatic LIEE initiative to provide all eligible LIEE customers the opportunity to participate in LIEE programs and to offer those who wish to participate all cost-effective energy efficiency measures in their residences by 2020. We provide direction for implementation of this initiative through a collaborative process, utilized both in the overall energy efficiency strategic plan ordered by D.07-10-032 as well as the upcoming applications by the utilities for their 2009-2011 LIEE program portfolios.

This decision also addresses outstanding issues relating to access to LIEE programs by residents who rent their living spaces, natural gas appliance testing (NGAT) problems, and the requirements of Assembly Bill (AB) 2140, which

The Washington Post
washingtonpost.com
The Washington Post
May 26, 2010 Wednesday
Suburban Edition

Widening a safety net; From rats to heaters, **doctor**-lawyer alliance battles obstacles to family health care

BYLINE: Lena H. Sun

SECTION: METRO; Pg. B01

LENGTH: 1205 words

Thirteen-year-old Haji Conteh had all the irritating symptoms of seasonal allergies when her father took her to see a pediatrician at a D.C. clinic last summer.

But when the **doctor** questioned Haji and her father, she began to suspect there might be a cause other than pollen for the girl's sneezing and itchy eyes: the rats and mold in the family's Northwest Washington apartment.

The pediatrician didn't have the time or expertise to probe more deeply. But she did refer the family to a specialist-- not another **doctor**, but a lawyer.

The family is among 1,400 referred by **doctors** and others at Children's National Medical Center to the Children's Law Center. As part of a medical-legal **partnership** that began in 2002, lawyers work alongside **doctors** at four District clinics run by the hospital. Their shared goal is to overcome legal and social challenges that threaten the care of their patients -- low-income children, predominantly African American, and virtually all covered by Medicaid.

The lawyer who took on Haji's case secured housing inspections that documented numerous violations in the family's Adams Morgan apartment. She forced the landlord to replace water-damaged ceilings in which mold had festered and to seal holes in the floor and walls where rats scampered.

Within several months, "everything was fixed," said Haji's father, Idrissa Munu. Her allergies are now manageable. Family members no longer jump on the couch, feet tucked beneath them, he said, to escape the scurrying rats.

The **doctors** who work in the clinics say they welcome the lawyers' help. More than ever, they say, the pediatric patients going through their doors complain of symptoms that stem from social and legal problems. Catching them early can prevent full-blown emergencies that are more difficult and costly to treat, say supporters of such **partnerships**.

"If a child comes in and they're failing kindergarten, or their asthma isn't getting better because of substandard housing conditions, it gives us a chance to do something about them," said Alsan Bellard Jr., medical director of two clinics in Southeast Washington.

The **partnership** that operates through the four clinics in the District -- part of a grass-roots program launched in Boston in 1993 that has 85 **partnerships** in 37 states -- is the only one in the Washington area. Some other D.C. primary-care physicians say they would like to team up with lawyers, but the law center can't afford to hire more full-time staff lawyers, Executive Director Judith Sandalow said.

Even existing funds could be in jeopardy. The law center relies in part on a D.C. government grant that could be
<http://www.lexisnexis.com.libproxy.usc.edu/us/lnacademic/frame.do?reloadEntirePage=true&rand=12756...> 6/4/2010

cut next year because of tight budgets. The D.C. Council is scheduled to take its final budget vote Wednesday.

In Washington, lawyers from more than 70 firms assist the Children's Law Center. The American Bar Association supports the **partnerships** and recently opened an office to help firms interested in participating.

The success of the Integrative approach is one reason advocates say there is bipartisan support, even in health care-weary Congress, for a federal demonstration project to measure the effects on patients, physicians and health centers, said Ellen Lawton, executive director of the National Center for Medical Legal **Partnership**.

'It just didn't sound right'

In Washington, five staff lawyers and two investigators work with pediatricians at the health centers. Two centers are in Northwest Washington -- at the main hospital on Michigan Avenue and in Adams Morgan -- and two in Southeast, on Good Hope Road and Martin Luther King Jr. Avenue.

The legal office is often just steps from an exam room. On a typical day at the Michigan Avenue clinic, **doctors** see 100 to 150 children and make about a dozen legal referrals. Those don't include quick consultations that take place in the hallway.

Some referrals happen while a lawyer is on-site; others are sent a day or two later via e-mail or phone calls. Last year, the law center worked with 300 patient families, project director Tracy Goodman said.

The lawyers train the pediatricians to screen for red flags during an exam, including housing conditions and school absenteeism. **Doctors** have only 10 to 15 minutes to devote to each patient.

"We train them to go with their gut," said staff lawyer Lauren Onkeles. "If they think there are legal issues, we tell them not to sweat the details. So a lot of our referrals are, 'It just didn't sound right.'"

That was the case last month, when pediatrician Jennifer Tender noticed an infant with breathing problems during a well-child exam at the Michigan Avenue clinic. The parents told her they couldn't turn down the heat in their apartment. Tender told the law center's Goodman about the potential for an "acute life-threatening event," Goodman said.

Neither the **doctor** nor lawyer could provide details about the case because it is ongoing.

Many referrals have to do with access to school services, especially in special education.

Lawyers are investigating a case about a child who might be held back a grade for missing too much school because of her HIV-related illnesses. A parent told the **doctor** that the child wasn't able to receive her daily medicine at school. Only the school nurse was allowed to dispense the medicine, the parent said, and the nurse did not work every day.

Sometimes, all it takes is one question.

A few years ago, staff lawyer Onkeles was referred a case that began when a 15-year-old girl went to the Adams Morgan clinic for a routine checkup. How is school? the pediatrician asked, only to find out that the girl was no longer attending and was working at a Chipotle restaurant.

Onkeles later determined that the mother, a native Spanish speaker, had unwittingly signed a school withdrawal form that was never translated or properly explained. Within weeks, the girl was back in school, the lawyer said.

Although many health clinics have social workers to help families with social and legal needs, legal expertise is becoming more necessary as safety net systems become more complicated, Lawton said.

Other benefits

In the Munu household, the battle with the rats had gone on for nearly three years. The landlord ignored the problem, Idrissa Munu said, even after Munu killed three with a baseball bat and took them to the management office in a plastic bag.

Lawyer Kathy Ziesel helped the family resolve two other problems that were flagged during the **doctor's** exam.

<http://www.lexisnexis.com.libproxy.usc.edu/us/lnacademic/frame.do?reloadEntirePage=true&rand=12756...> 6/4/2010

She helped the **pharmacist** and insurance company understand that it was medically necessary for Hajl to receive prescription-strength Zyrtec, an allergy medicine, in syrup form because she cannot swallow pills.

The public school had also concluded that Hajl, who has Down syndrome, was "incapable of learning," Ziesel said. The parents had unsuccessfully challenged that assessment.

Ziesel helped the parents obtain an independent evaluation, which found that Hajl could learn better life skills if she received speech therapy and if teachers used pictures to communicate.

Working with the lawyers has made Munu a better advocate for his family in all settings, he said. He asks more questions. And he documents any concerns he has -- whether with insurance or his daughter's teacher -- at the **doctor's** office.

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- LAWYERS
- PEDIATRICS
- PHYSICIANS & SURGEONS
- Minor Terms
- BUILDING & HOUSING INSPECTIONS
- CHILDREN'S HOSPITALS
- MEDICAID

Subject

- HAY FEVER
- LAWYERS
- CHILDREN
- Minor Terms
- INVESTIGATIONS
- BUILDING & HOUSING INSPECTIONS
- FAMILY
- POOR POPULATION
- MEDICAID
- ASTHMA
- FULL TIME EMPLOYMENT
- AFRICAN AMERICANS
- LOW INCOME PERSONS

Geography

- DISTRICT OF COLUMBIA, USA
- UNITED STATES
- Minor Terms
- BOSTON, MA, USA
- MASSACHUSETTS, USA



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SUBJECT: HAY FEVER (90%); PEDIATRICS (90%); PHYSICIANS & SURGEONS (90%); LAWYERS (90%); CHILDREN (88%); INVESTIGATIONS (77%); BUILDING & HOUSING INSPECTIONS (76%); FAMILY (76%); CHILDREN'S HOSPITALS (76%); POOR POPULATION (76%); MEDICAID (74%); ASTHMA (73%); FULL TIME EMPLOYMENT (68%); LOW INCOME PERSONS (67%); AFRICAN AMERICANS (67%)

GEOGRAPHIC: BOSTON, MA, USA (79%) DISTRICT OF COLUMBIA, USA (94%); MASSACHUSETTS, USA (79%) UNITED STATES (94%)

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Page 4 of 4

IMAGE; Nikki Kahn/the Washington Post; Haji Conteh, 13, listens as her father, Idrissa Munu, describes the rat problem in their apartment. He used the walking stick to poke at them.

PUBLICATION-TYPE: Newspaper

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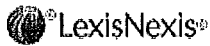
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 55 of 82 

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EFFECTIVE OUTREACH TO PERSONS WITH DISABILITIES

**Prepared by Disability Rights Advocates
for California Utility Companies**

**February 2006
Updated June 2007**

TABLE OF CONTENTS

I. Challenges In Outreach to People with Disabilities 1

II. Challenges In Communication 2

 A. Deaf and Hard of Hearing Populations 2

 1) TTY/TTD 3

 B. Blind and Low Vision Populations 5

 1) Braille 5

 2) Large Print 5

 3) Plain Text 6

 4) Electronic Format 6

 C. Website Access 6

III. Involving Community-Based Disability Organizations In Outreach 8

 A. Independent Living Centers 9

 B. Deaf and Hard of Hearing Organizations 10

 C. Blind and Low Vision Organizations 11

IV. Recommendations For Improving Outreach to Californians with
Disabilities 11

V. Resources 12

APPENDIX A: Listing of Independent Living Centers 14

I. Challenges In Outreach to People with Disabilities

Approximately one in five people in California have some type of disability. According to estimates from the U.S. Census Bureau (2000), 19% of Californians have disabilities, including people who are blind and low vision, deaf and hard of hearing, people with communication disorders, mobility disabilities, developmental disabilities, and chronic and systemic conditions. Some people experience multiple disabilities. Disability is reported in all cultures and language groups and in all socio-economic levels, with disproportionately higher incidence occurring at the poverty and below poverty levels.

Unlike the general population, there are several factors that complicate customer communication and outreach for people with disabilities. Successful outreach to this community involves a number of factors, including: (1) understanding the disability-related needs of customers; (2) using appropriate communication methods; and (3) developing partnerships and working relationships with under-served customers and their community organizations.

Some outreach challenges affecting people with disabilities include the lack of targeted outreach, lack of appropriate languages, communication barriers and attitudinal barriers. Successful outreach employs a variety of communication methods and multiple formats to sufficiently achieve effective outreach to people with disabilities. Since disability occurs in all cultures, it is important to include other language groups, such as Chinese and Spanish, when developing an outreach strategy. Furthermore, people with multiple disabilities may be missed in targeted "single-disability" outreach efforts.

Because persons with disabilities are disproportionately low income, utilities should develop outreach strategies that can be used for all general communication and information plus specific information regarding low-income assistance programs offered by the utility. The California Public Utilities Commission Low Income Needs Assessment Study found that one in four low income households have a member with a disability.¹ Also, persons with disabilities have the highest unemployment rate (68%) of any minority population in the United

¹ Draft Report on Phase 2 Low Income Needs Assessment (September 5, 2006), p. 4-6.

States.² Accordingly, many persons with disabilities have a limited and fixed income, often of government assistance. Those persons with disabilities who do work often can only work part-time, keeping them in a low income bracket.

This report discusses some of the challenges encountered in communicating with a diverse disability population, and it suggests methods and strategies for increasing effective communication and outreach.

II. Challenges In Communication

For outreach efforts to people with disabilities to be successful, information must be provided in formats and languages that are accessible to the targeted populations. Accessible formats include Braille, large print, electronic formats, telephone and TTY (teletypewriter), also known as TDD (telecommunication device for the deaf), and sign language. Since specific disabilities may present very specific communication challenges, it is important that any outreach strategy be flexible.

A. Deaf and Hard of Hearing Populations

According to the National Center for Health Statistics (NCHS) 2002 survey, approximately 22,000,000 Americans, or 8.6% of the US population, are deaf or hard of hearing, having some difficulty hearing normal conversation even with the use of a hearing aid.

For people who have been deaf since birth, American Sign Language is frequently their primary language. English is acquired as a second language. Consequentially, illiteracy rates are higher for the deaf population and many people who are deaf have some difficulty with reading English. However, most sighted deaf and hard of hearing people will prefer and request information and materials in print.

Because a person who is deaf cannot use a standard telephone, alternative technologies must be used in direct-call outreach strategies. Calls made to customers who are deaf or hard of hearing should be done using either a TTY (teletypewriter) / TTD

² According to the National Organization on Disability-Harris Poll in 2000, among adults with disabilities of working age (18 to 64), 32% work full or part-time as compared to 81% of those without disabilities.

(telecommunication device for the deaf), Telephone Relay Service (TRS), or Video Relay Service (VRS).

1) TTY/TTD

The most common method of communicating with people who are deaf is by using a TTY or TDD device. The terms TTYs (tele-typewriters) and TDDs (telecommunication display devices) refer to the same type of device and these terms are used interchangeably. TTYs are also called text telephones. Deaf or hearing-impaired people can use a TTY or TDD to enable communication with another party using TTY technology. A TTY device resembles a telephone with a keyboard. TTY users type in their information and it is transmitted over the phone line to the receiving party's TTY where the text is displayed. For more information on TTY services, visit: www.captions.com/tty.html.

TTY machines can be purchased from a variety of places, including Amazon.com and specialized stores. For an example of an online retailer with a large selection of TTY devices, visit: www.enablemart.com. (Please note that DRA does not endorse any retailer or product.)

2) Telephone Relay Service (TRS)

To enable communications between deaf and hearing people, phone companies provide free relay services. Hearing telephone users are connected to TTY operators who transcribe the spoken statements of the telephone user on TTY for deaf callers and, in turn, vocalize the statements received through TTY. Although this method does not require that both parties have a TTY, communication can be more time consuming and awkward because an intermediary is involved. Relay services have recently been expanded to offer services in Spanish. For more information on TRS services, visit: www.ddtp.org/california_relay_service/.

3) Video Relay Services (VRS)

Because sign language may be a person's primary language, spoken or written English, as used through TTY or Telephone Relay Service, may present problems in communication. As such, Video Relay Services (VRS) and interpreted American Sign Language (ASL) are more effective methods to communicate with some individuals.

Video Relay offers some advantages that permit effective communication with deaf people especially for sensitive issues such as dispute resolution. Specifically, because American Sign Language relies on physical communication—body language, facial expression and positioning—to convey meaning, context and “tone of voice”, meaning can get lost in translation. Video relay is also available in Spanish. To learn more, visit:
<https://secure.hovrs.com/common/abouthovrs.aspx>.

4) Email

For customers who have access to the Internet, communicating through email messages may be an effective means of communication. Specifically, email can be useful for distributing information about services and programs.

5) Instant Messenger (IM)

Instant Messaging (IM) is text based communication software that allows internet users to communicate in real-time online. Instant messaging is similar to a telephone conversation, but utilizes a computer or wireless technology. According to the organization Deaf and Hard of Hearing in Government (DHHIG), www.dhhig.org, there are currently 28 million hearing impaired users who rely on IM as a communication medium.

Increasing numbers of deaf people use wireless communication technology and text messaging technology, all of which are compatible with email and IM systems. Additionally, more and more technology companies are offering real-time communications or “live chat” options in their customer service departments. If your company offers this type of service, be sure to advertise this in your outreach materials to people with disabilities.

6) Summary

In addition to outreach, it is important that deaf and hard of hearing customers are provided the same access to customer call centers as hearing customers. Utility companies should strive to provide accessible, culturally competent customer service for deaf and hard of hearing populations by ensuring that TTY service lines are staffed with trained operators and that calls to TTY lines receive responses which meet the same standards as voice calls to standard customer service call centers.

B. Blind and Low Vision Populations

Not all blind people are totally blind—only a small percentage of those identified as blind experience total loss of sight. The term “blind” covers a wide range of visual acuity. Based on the 2001 National Health Interview Survey, nearly 20.4 million persons age 18 and over reported having trouble seeing even when wearing glasses or contact lenses. Low vision is a term that refers to diminished vision that cannot be corrected with conventional glasses, contact lenses, surgery or medication. Low vision is not to be confused with legal blindness, which is defined for use by the Social Security Administration or Internal Revenue Service as central visually acuity of 20/200 or less.

The biggest barrier faced by people with visual impairments is the mass of printed material they encounter on a daily basis. To successfully reach people with visual impairments, materials must be available in accessible formats.

The National Federation of the Blind (NFB) cautions that there is not one simple accessibility solution. Format preference will vary with each person and it is important to offer information in formats including Braille, large print, electronic media, and plain text formats.

For more information on Braille and accessible formats, contact the American Printing House for the Blind (APH) at www.aph.org/.

1) Braille

Braille is a code of raised dots which enables blind persons to read. Braille is embossed by machine onto thick paper, and is read with the fingers moving across the dots. Contrary to popular perceptions, only a small percentage of blind and visually impaired people are able to read Braille. Braille can be produced for languages other than English, including Spanish and Chinese.

2) Large Print

According to the American Foundation for the Blind (AFB), most people who have low vision prefer to receive materials in large print. Although there is no universally accepted standard for large print point size, the APH recommends 18 points or higher. Most general publishing houses use 16 points for body text and higher point sizes for titles and subheadings. The APH also recommends using a

typeface without serifs such as Verdana, Arial or Comic Sans, and avoiding the use of columns and divided words.

3) Plain Text

A commonly requested format for electronic documents is plain text, which is printed using a standard size font. Typically plain text documents are scanned into computer (for use with a magnifier or screen reader). In developing plain text outreach materials, avoid charts and graphics as they present problems for scanners.

4) Electronic Format

Electronic text is the format most preferred by blind and low vision customers who use a computer with text-to-speech or screen magnification software, or other "access technology" devices. Information can also be sent electronically, downloaded from a website or stored on disk or CD-ROM. However, despite these technological advances in computer applications, the internet poses numerous barriers to persons with disabilities, as addressed below in the section on website access.

5) Summary

Since disability crosses all cultures and language groups, requests may be made for accessible formats in a variety of languages. People with multiple disabilities may have more specific requests. For example, a person identified as deaf may still request large print and in a language other than English. It is important that any outreach strategy include flexibility and provide information in multiple formats.

C. Website Access

Under California Government Code § 11135, "state governmental entities, in developing, procuring, maintaining, or using electronic or information technology, either indirectly or through the use of state funds by other entities, shall comply with the accessibility requirements of Section 508." The 508 standards found in Section 508 of the federal Rehabilitation Act of 1973, 29 U.S.C. § 794, were amended in 1998 to ensure that electronic and information technology is accessible to people with disabilities. Since the utilities conduct so much business with state entities and they themselves receive state (and federal) funds, the utilities' websites should also meet 508 standards. In addition, the World Wide Web Consortium (W3C) has

established guidelines that are substantially similar to the 508 standards. The W3C is an international consortium where member organizations, a full-time staff, and the public work together to develop web accessibility standards.

An accessible website is one that is usable by all people, without regard to the way in which the user accesses the site. Most commonly, this means that a person who uses a screen-reader must be able to obtain the same information as provided to a person who can see the page, despite accessing the material in a different way. To make these images accessible, an extra step must be taken in the code of the web page to provide an alternative text description of the information provided by the image, so that the person who uses a screen-reader can access such text. If a text description is not included in the code, a person with a visual disability using a screen-reader will not obtain information that a sighted person would receive by viewing the image.

While all information presented in images should be accessible to people who use screen-readers, lack of text labels creates the greatest barrier when it involves the explicit labeling of form controls. Form controls include text-input fields, dropdown menus, radio buttons, and checkboxes that are used in forms on web pages. They typically allow access to personalized information (e.g. personal accounts) or information based on individualized interest or requests. If such form controls are not labeled properly in the code of the web page, a screen-reader will not be able to tell what information the user is being asked to put in the field, rendering the form useless for the visually impaired user. Simply put, this means that the user will not be able to interact with a website.

In making a website accessible, disabilities other than vision impairments must also be considered because hearing, motor and cognitive disabilities can all affect the ability of the user to access a website. All audio that conveys information must be presented in an alternate format. For instance, streaming video must be captioned. Further, increasing the ease of navigation assists both persons with motor and cognitive impairments who may have difficulty using a mouse or learning the navigation mechanisms of a complex website. For instance, 508 standards require a "skip navigation" feature on all websites to avoid cumbersome navigation menus.

Further information regarding internet accessibility requirements can be found at the following sites:

- www.section508.gov
- www.access-board.gov/508.htm
- www.jimthatcher.com/webcourse1.htm
- www.w3.org

There also are tools available for testing the accessibility of a website. For instance, "Bobby" was a free online tool provided by the Centre for Applied Special Technology (CAST), www.cast.org/, used to assess website accessibility. Today, this service is provided by Watchfire WebXACT, a similar online tool that tests single pages of web content for quality, accessibility, and privacy issues. Bobby and WebXACT test web pages using the guidelines established by the World Wide Web Consortium's (W3C) Web Access Initiative (WAI), as well as the Section 508 guidelines of the U.S. Federal Government. Keep in mind, however, that these are only automated tools and require "human evaluation" of the report generated in order to determine whether a site is accessible.

To run a "Bobby" check of a particular web page, visit: <http://webxact.watchfire.com/>. For more information on Bobby, visit: <http://www.mardiros.net/bobby-accessibility-tool.html>.

III. Involving Community-Based Disability Organizations In Outreach

California, regarded as the birthplace of the disability rights movements, has always been in the forefront of disability community organizing. The state leads the nation in disability protections and is home to a wealth of community-based, disability-focused organizations.

Including disability-focused organizations in outreach efforts presents a distinct advantage: community credibility. Community-based, disability-focused organizations are run by people with disabilities who are aware of community needs and already have the tools for community outreach. The services that these organizations provide reach into many aspect of life, such as medical benefits counseling, housing and employment searches and peer support. Each organization is familiar with other disability-focused organizations and likely is part of a statewide advocacy network.

A. Independent Living Centers

The term "Independent Living" is based on a philosophy that seniors and people with disabilities, even those with profound disabilities, maintain the right to self determination and the right to chose to live in their own communities rather than in institutions. With support programs, such as vocational rehabilitation and telecommunication relay services (TRS), people with all types of disabilities have been able to live independently. Disability rights and independent living concepts merged into one operational organization: the Independent Living Center. Today, there are over 25 such centers throughout California.

Independent Living Centers (ILCs) are "cross-disability" organizations serving people with all types of disabilities including visual, hearing and mobility impairments and psychiatric, cognitive, and many other categories of disability. ILCs play an important role in their community, providing counseling on programs and services, information and referral, and coordinating community education. To respond to community issues, each center employs a "systems change advocate" who serves as staff trainer, community organizer, and public educator at the local level. Independent Living staff members are experts on outreach to their local community and this expertise should be utilized in outreach strategies.

At the center of this network is the California Foundation for Independent Living Centers (CFILC), www.cfilc.org, which is the information hub for the statewide advocacy network. CFILC's board of directors is made up of executive directors from most of the ILCs in California.³ The CFILC can initiate statewide outreach on an issue through its extensive listservs, newsletters, and website. Informational meetings and conference calls can be arranged to directly inform Systems Change Advocates, Benefits Planners and Community Educators about utilities' programs and services that affect the disabled population.

Independent Living Centers also provide cultural competency in their outreach. Each center has developed a unique connection to the cultures in their area. For example, in San Francisco, the ILRC has

³ The following Independent Living Centers in California are not affiliated with CFILC: Center for Independent Living (Berkeley), Independent Living Services of Northern California (Chico), Independent Living Center of Southern California (Van Nuys), and Resources for Independent Living (Sacramento).

expertise in outreach to disabled individuals in the Chinese community, as well as to Latino communities. In the Mendocino region, the CIL has developed unique outreach styles and methodologies for Native American communities. Because each center knows the cultural makeup of the area that it serves, it can conduct targeted outreach to such individuals.

Independent Living Centers are also a source of information on various disabilities, disability awareness accessibility, alternative formats, and technology – all important for effective outreach strategies.

B. Deaf and Hard of Hearing Organizations

Deaf advocacy organizations provide outreach service comparable to the ILCs to the deaf and hard of hearing communities. There are several deaf advocacy organizations, each serving a specific region within California. Each of these organizations engages in community education and outreach, providing direct information dissemination, workshops, community advisory/outreach, and (monthly) meetings. Each organization also maintains a mailing list and listserv for members. The following organizations can offer more information on hearing loss, accessible formats, technology and outreach to deaf populations:

- Deaf Counseling and Referral Agency (DCARA) – serves 14 counties in northwestern California, including the San Francisco Bay Area. (www.dcara.org)
- Deaf and Hard of Hearing Service Center, Inc. (DHHSC) – serves Fresno, Monterey and San Benito, Merced, Madera, Mariposa, Tulare and Kings Counties. (www.dhhsc.org)
- Greater Los Angeles Deaf (GLAD) – serves Los Angeles Area. (www.glad.org)
- NorCal – serves Sacramento, with outreach offices in Stockton, Modesto, Chico, Truckee, Susanville, Yuba City, and Redding. (www.norcalcenter.org/aboutus.htm)
- Orange County Deaf Advocacy Center – serves Orange and San Diego Counties. (www.deafadvocacy.com/about.htm)

- Hearing Loss Association of America (formerly Self Help for Hard of Hearing) – statewide, but only focusing on hard of hearing. (www.shhh.org)

C. Blind and Low Vision Organizations

Similar to deaf advocacy organizations, the National Council of the Blind (NCB) and the National Federation of the Blind (NFB), both of which have California chapters, provide outreach to blind Californians through listservs, newsletters and their advocacy network. The following organizations can answer questions related to the needs of the blind, accessible formats, technology and outreach.

- The California Council of the Blind (CCB) has offices in the Bay Area, Sacramento and Los Angeles, and over 40 local chapters statewide which are connected as a support network for its members. For purposes of information dissemination, the CCB has developed The California Connection, a news service for up-to-date information, The Blind Californian and the monthly publication of The American Council of the Blind, The Braille Forum. Members also receive information through a CCB listserv. (www.ccbnet.org)
- National Federation of the Blind of California (NFBC) consists of 27 chapters throughout the state. Members share information through listservs and mailing lists. NFBC also posts information on its website. (www.nfbcal.org/)

IV. Recommendations For Improving Outreach to Californians with Disabilities

- Make sure your website is accessible.
- Incorporate access information such as TTY numbers and accessible formats as a standard part of all customer communications, including providing key information (such as who to contact with questions) in large print.
- Increase your company's cultural competence regarding disability issues. Become experts in accessible formats, technology and practice. Train customer service staff on disability, accessibility issues, and technology and incorporate this information into company policies and practices.

- Develop a disability expert/advisory panel that includes people with disabilities from a variety of disability types and diverse cultures to create and pilot cultural competence outreach guidelines for utility companies and their partners.
- Tap into the Independent Living Center network. Contact the California Foundation on Independent Living Centers to learn specific outreach strategies.
- Initiate communications with deaf and blind advocacy organizations. Utilize their outreach channels.
- Provide a channel for customer feedback.

V. Resources

OUTREACH TO PEOPLE WITH DISABILITIES

Anthony Tussler (2005) *How to Create Disability Access to Technology*. Available from the World Institute on Disability, www.wid.org.

STATISTICS ON DISABILITY

Waldrop, J. & Stern, S. (2003). *Census Brief: Disability Status 2000*. Washington, DC: U.S. Census Bureau, www.census.gov/prod/2003pubs/c2kbr-17.pdf.

DEAF AND HARD-OF HEARING

-National Center for Health Statistics (NCHS):

www.cdc.gov/nchs/

-Deaf Demographics:

www.gri.gallaudet.edu/Demography/factsheet.html#Q1

-General information:

www.csun.edu/~sp20558/dis/deaf.html

-The National Association of the Deaf: www.nad.org

-Gallaudet University: www.gallaudet.edu

-Telecommunications:

TTY information: www.captions.com/tty.html

Relay services: www.ddtp.org/california_relay_service/

BLIND AND LOW VISION

-Statistics:

www.visionconnection.org/Content/Research/EpidemiologyandStatistics/Statistics/

-Low vision definitions: www.cde.ca.gov/re/pn/sm/lowvision.asp

-General information

Lighthouse for the Blind: www.lighthouse.org/about/default.htm

American Foundation of the Blind: www.afb.org

National Federation of the Blind: www.nfb.org

American Council of the Blind: www.acb.org

-Accessible Formats:

American Printing House for the Blind: www.aph.org

National Braille Authority of America:

www.brailleauthority.org/Guidelines.html

Braille Institute:

www.brailleinstitute.org/Services/GeneralStatisticsaboutBlindness.htm

Large Print: www.aph.org/edresearch/lpguide.htm

Accessible Websites: www.w3.org/WAI/WCAG1AAA-Conformance

INDEPENDENT LIVING CENTERS

California Foundation for Independent Living Centers:

www.cfilc.org

APPENDIX A: Listing of Independent Living Centers

Access Center of San Diego, Inc.
1295 University Ave., Suite 10
San Diego 92103
phone: 619.293.3500
fax: 619.293.3508
tty/tdd: 619.293.7757
www.accesscentersd.org
louisf@accesscentersd.org
contact: Louis Frick, Executive Director

California Foundation for
Independent Living Centers
1029 J St. ste 120
Sacramento 95814
phone: 916.325.1690
fax: 916.325.1699
tty/tdd: 916.325.1695
www.cfilc.org
teresa@cfilc.org
CFILC@cfilc.org
contact: Teresa Favuzzi, Executive Director

Center for Independence of the Disabled
875 O'Neill Avenue
Belmont 94002
phone: 650.595.0783
fax: 650.595.0261
tty/tdd: 650.595.0743
www.cidbelmont.org
cidbelmont@cidbelmont.org
contact: Kent Mickelson

Center for Independent Living, Berkeley*
2539 Telegraph Avenue
Berkeley 94704
phone: 510.841.4776
fax: 510.841.6168
tty/tdd: 510.848.3101
www.cilberkeley.org
jgarrett@cilberkeley.org
contact: Jan Garrett, Executive Director

Center for Independent Living, Fresno
3475 West Shaw Ave. Ste. 101
Fresno 93711
phone: 559.276.6777
800.244.2274
fax: 559.276.6778
tty/tdd: 559.276.6779
j_soto@cil-fresno.org
contact: Jimmy Soto
website temporarily out of service:
www.cil-fresno.org

Central Coast Center for Independent Living
234 Capitol Street Ste. A and B
Salinas 93901
phone: 831.757.2968
fax: 831.757.5549
tty/tdd: 831.757.3949
www.cccil.org
cccil@cccil.org
contact: Elsa Quezada, Executive Director

Southern California Gas Company
Test Year 2012 GRC - APP
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Community Actively Living Independent &
Free

634 S. Spring St. 2nd floor

Los Angeles 90014

phone: 213.627.0477

fax: 213.627.0535

tty/tdd: 213.623.9502

www.calif-ilc.org

sgaribay@calif-ilc.org

info@calif-ilc.org

contact: Lilibeth Navarro, Executive
Director

Community Rehab Services

4716 Cesar Chavez Ave.

Los Angeles 90022

phone: 323.266.0453

fax: 323.266.7992

tty/tdd: 323.266.3016

evasquez1@covad.net

jonantez1@covad.net

contact: Eric Vasquez, Executive Director

Community Resources for Independence

980 Hopper Ave.

Santa Rosa 95403

phone: 707.528.2745

fax: 707.528.9477

tty/tdd: 707.528.2151

www.cri-dove.org

contact: Sandy Hobart, Executive Director

Community Resources for Independent
Living

439 A Street

Hayward 94541

phone: 510.881.5743

fax: 510.881.0218

tty/tdd: 510.881.0218

contact: Elizabeth Pazdral, Executive
Director

Dayle McIntosh Center for the Disabled

13272 Garden Grove Blvd.

Garden Grove 92843

phone: 714.621.3300

fax: 714.663.2094

tty/tdd: 714.772.8366

www.daylemc.org

wdchrisner@daylemc.org

info@daylemc.org

contact: W.D. Chrisner, Executive Director

Disability Resources Agency for

Independent Living (DRAIL)

221 Mc Henry Avenue

Modesto 95354

phone: 209.521.7260

fax: 209.521.4763

tty/tdd: 209.521.1425

www.drail.org

dwight@drail.org

contact: Dwight Bateman

Disabled Resources Center, Inc.

2750 East Spring St. Suite 100

Long Beach 90806

phone: 562.427.1000

fax: 562.427.2027

tty/tdd: 562.427.1366

www.drcinc.org

info@drcinc.org

director@drcinc.org

contact: Jeannette Nishikawa

Freed Center for Independent Living

154 Hughes Rd. #1

Grass Valley 95945

phone: 530.272.1723 x V

fax: 530.272.7793

tty/tdd: 30.272.1723 x

www.freed.org

ann@freed.org

contact: Ann Guerra

Southern California Gas Company
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Non-Shared Service Workpapers

IL Services of Northern California*
1161 East Ave.
Chico 95926
phone: 530.893.8527
fax: 530.893.8574
tty/tdd: 530.893.8527
www.ilsnc.org
Evan.LeVang@ilsnc.org
info@ilsnc.org
contact: Evan LeVang, Executive Director

Independent Living Resource Center
423 West Victoria St.
Santa Barbara 93101
phone: 805.963.0595
fax: 805.963.1350
tty/tdd: 805.963.0595 x.TTY
www.ilrc-trico.org
jblack@ilrc-trico.org
contact: Josephine Black, Executive Director

Independence Center
3640 South Sepulveda Suite 102
Los Angeles S90034
phone: 310.202.7102
fax: 310.202.7180
tty/tdd:
www.independencecenter.com
judym@independencecenter.com
contact: Judy Maizlish

Independent Living Resource Center of SF
649 Mission Street 3rd Floor
San Francisco 94105
phone: 415.543.6222
fax: 415.543.6318
tty/tdd: 415.543.6698
www.ilrcsf.org
contact: Herb Levine, Executive Director

Independent Living Center of Kern County
1631 30th street
Bakersfield 93301
phone: 661.325.1063
800.529.9541
fax: 661.325.6702
tty/tdd: 661.325.4143
www.ilcofkerncounty.org
bonita@ilcofkerncounty.org
contact: Bonita Coyle, Executive Director

Independent Living Resource of Contra
Costa
3200 Clayton Rd.
Concord 94519
phone: 925.363.7293
fax: 925.363.7296
tty/tdd: 925.363.7293
<http://ilrccc.org>
paul@ilrccc.org
contact: Bryan M. Balch, Executive Director

Independent Living Center of Southern CA*
14402 Haynes St. Suite 103
Van Nuys 91401
phone: 818.785.6934
fax: 818.785.0330
tty/tdd: 818.785.7097
www.ilcsc.org
ilcsc@ilcsc.org
contact: Norma Vescovo, Executive Director

Marin Center for Independent Living
710 4th Street
San Rafael 94901
phone: 415.459.6245
fax: 415.459.7027
tty/tdd: 415.459.7027
www.marincil.org
contact: Bob Roberts, Executive Director

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Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Placer Independent Living Resource Services

11768 Atwood Rd. Suite 29
Auburn 95603

phone: 530.885.6100

fax: 530.885.3032

tty/tdd: 530.885.0326

www.pirs.org

tmiller@pirs.org

contact: Tink Miller, Executive Director

Resources for Independent Living

1211 H Street #B

Sacramento 95814

phone: 916.446.2968 x.V

fax: 916.446.2443

tty/tdd: 916.446.2968 x.TTY

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francesg@ril-sacramento.org

contact: Frances Gracechild, Executive Director

Silicon Valley ILC

2306 Zanker Rd.

San Jose 95131

phone: 408.894.9041

fax: 408.894.9050

tty/tdd: 408.894.9012

www.svilc.org

cherylc@svilc.org

sherib@svilc.org

info@svilc.org

contact: Cheryl Cairns

Southeast Center for Independent Living (SECIL)

Southern California Rehab Services

7830 Quill Dr. Suite D

Downey 90242

phone: 562.862.6531

fax: 562.923.5274

tty/tdd: 562.869.0931

www.scrs-ilc.org/secil.html

executivedirector@scrs-ilc.org

scrs@scrs-ilc.org

contact: Tim Whittier, Executive Director

Tri-Counties Center for Independent Living

955 Myrtle Avenue

Eureka 95501

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fax: 707.445.9751

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www.tilinet.org

chrisjones@tilinet.org

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Westside Center for Independent Living

12901 Venice Blvd.

Los Angeles 90066

phone: 310.390.3611

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tty/tdd: 310.398.9204

www.wcil.org

wcil@wcil.org

contact: Mary Ann Jones, Executive Director

* Not affiliated with CFILC

COM/CAB/tcg

Date of Issuance 2/5/2010

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to address the issue of customers' electric and natural gas service disconnection.

FILED
PUBLIC UTILITIES COMMISSION
FEBRUARY 4, 2010
SAN FRANCISCO, CALIFORNIA
RULEMAKING 10-02-005

**ORDER INSTITUTING RULEMAKING
TO ESTABLISH WAYS TO IMPROVE CUSTOMER NOTIFICATION
AND EDUCATION TO DECREASE THE NUMBER OF GAS
AND ELECTRIC UTILITY SERVICE DISCONNECTIONS**

1. Summary

We open this rulemaking to continue our efforts to reduce the number of residential gas and electric utility service disconnections due to nonpayment by improving customer notification and education. The economic crisis currently existing in California and a recent increase in utility service disconnections has led us to reexamine utility disconnection rules and practices. We want to identify more effective ways for the utilities to work with their customers and develop solutions that avoid unnecessary disconnections without placing an undue cost burden on other customers.

In this rulemaking, we require Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E), and Southern California Gas Company (SoCalGas) to implement the following interim practices no later than five business days from the mailing of this order:

R.10-02-005 COM/CAB/tcg

- 1) All customer service representatives (CSRs) must inform any customer that owes an arrearage on a utility bill that puts the customer at risk for disconnection that the customer has right to arrange for a bill payment plan extending a minimum of three months in which to repay the arrearage. CSRs may exercise discretion as to extending the three months up to twelve months¹ depending on the particulars of a customer's situation and ability to repay the arrearage. CSRs may work with customers to develop a shorter repayment plan, as long as the customer is informed of the three-month option. Customers must keep current on their utility bills while repaying the arrearage balance.
- 2) Once a customer has established credit as a customer of that utility, the utility must not require that customer to pay additional reestablishment of credit deposits with the utility for either slow-payment/no-payment of bills or following a disconnection.
- 3) Each utility is authorized to file a Tier 1 advice letter to establish a memorandum account to track any significant additional costs associated with complying with the new practices initiated with this rulemaking, including the operations and maintenance charges associated with implementing the practices as well as any uncollectables that are in excess of those projected in the utility's last general rate case. As part of this proceeding, the Commission will consider the process for determining the categories and amounts of costs in the memorandum account that should be considered reasonable for recovery, as well as the appropriate methods for recovery.

The utilities and parties will have an opportunity to comment on these interim practices and their efficacies, as well as sunset provisions if appropriate, while the parties continue to explore and dialogue about other solutions to assist customers to pay their utility bills and avoid disconnection of service. The

¹ Each utility may implement a repayment plan schedule that exceeds twelve months, but we are not currently requiring any utility to extend the schedule beyond three months.

R.10-02-005 COM/CAB/tcg

Commission recognizes that each utility has been implementing its own respective program on outreach and education to reduce the number of unnecessary disconnections; however, there has been no consistency or uniformity across all utilities. The Commission is initiating this Rulemaking to incorporate the productive and effective practices that each utility can share so that all gas and electric utilities have the benefit of implementing best practices in this area.

2. Background

On June 19, 2009, The Utility Reform Network (TURN) filed a Petition to initiate a rulemaking (Petition) to address arrearage management and shutoff prevention for residential customers. (Petition (P.) 09-06-022.) In response to TURN's Petition, a proposed decision issued on September 25, 2009, which examined the existing low-income programs that are available to low-income customers, evaluated whether the utilities are performing outreach and education on the availability of the low-income programs, and considered whether any additional programs are necessary at this time. Upon initial examination, the proposed decision determined that existing programs and outreach were sufficient and that a rulemaking was not needed at this time.

On November 19, 2009, the Division of Ratepayer Advocates (DRA), who strongly supported TURN's Petition, released a report, "Status Report on Energy Utility Service Disconnections," that discussed data regarding service disconnections and reconnections from January 2006 through August 2009. Based on the data contained in DRA's Report, President Peevey announced that the Commission would hold an en banc on December 17, 2009.

Commissioners Peevey, Grueneich, Bohn and Simon participated in the en banc and listened to presentations from DRA, TURN, Greenling Institute and



Telecommunications Education and Assistance in Multiple-languages

Annual Report

June 16, 2008 – February 15, 2009

**Self-Help for the Elderly
407 Sansome Street
San Francisco, CA 94111**

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Test Year 2012 GRC - APP
Non-Shared Service Workpapers

TABLE OF CONTENTS

BACKGROUND.....	1
ABOUT TEAM, ORGANIZATIONAL CHART AND CBO LIST	1
TEAM PROGRAM COMPONENTS.....	4
Administrative Activities	4
Highlights.....	5
Kick-Off Press Conferences.....	6
CBO Training and Support	7
Community Outreach Events	8
Looking forward to the next term	9
PROGRAM STATISTICS.....	10
Outreach.....	10
Consumer Education	17
Complaint Resolution.....	19

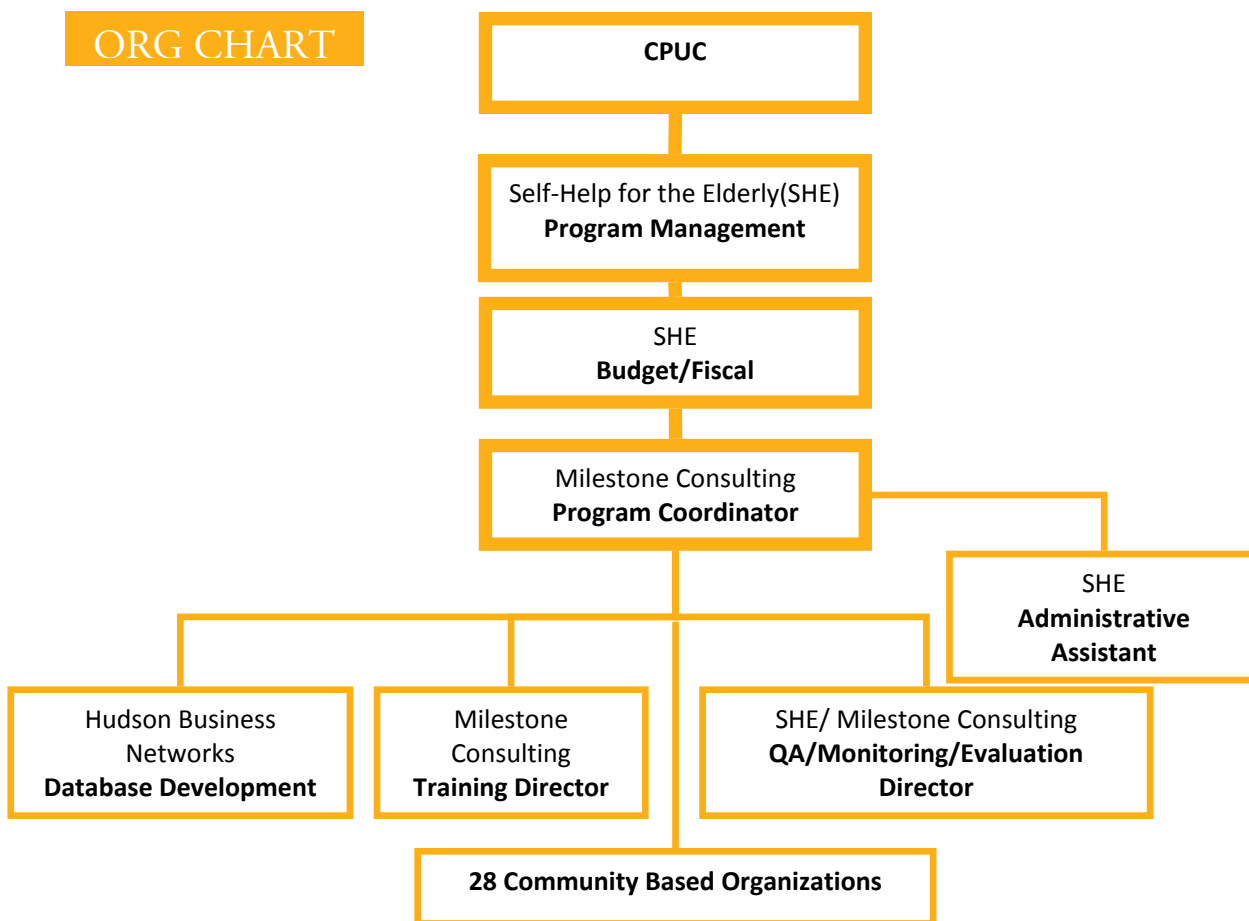
BACKGROUND

In February 2008, the California Public Utilities Commission (CPUC) issued a request for Proposals to operate the Telecommunications Education and Assistance in Multiple-languages (TEAM) program. A new program, TEAM was developed to address issues identified in the CPUC's limited English proficiency decision (D.07.07.043) which emerged from the CPUC's Telecommunications Consumer Protection Initiative (CPI).

Self-Help for the Elderly, as lead organization for a statewide coalition of Community Based Organizations (CBOs) representing a diverse group of populations, was awarded a contract to provide services. The contract began on June 16, 2008 and the first year concluded on February 15, 2009. This report covers that period.

ABOUT TEAM, ORGANIZATIONAL CHART AND CBO LIST

Self-Help for the Elderly serves as the lead agency in the TEAM collaborative, which consists of 28 CBOs throughout California, serving consumers in over 23 languages.



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The following Community Based Organizations provided TEAM services during the program period:

Organization	Location	Languages
Asian-American Resource Center	San Bernardino	Vietnamese, Cambodian, Hmong, Spanish
Asian Community Center	Sacramento	Japanese, Chinese, Vietnamese, Hmong
Campaign for Social Justice	Tarzana	Arabic, Armenian, Russian, Farsi, Dari, Pashto, Spanish, Urdu, Persian, Vietnamese
Central California Legal Service, Inc.	Fresno	Spanish, Hmong, Cambodian
Centro La Familia Advocacy Services, Inc.	Fresno	Spanish
Centro Legal de la Raza	Oakland	Spanish
Chinatown Service Center	Los Angeles	Spanish, Cantonese, Mandarin
Chinese Newcomers Service Center	San Francisco	Cantonese, Mandarin
Eastern European Service Agency	San Jose	Bosnian, Albanian, Serbian, Croatian, Macedonian, Russian, Polish
El Concilio of San Mateo County	Burlingame	Spanish
Fresno Center for New Americans	Fresno	Hmong, Lao, Khmer
International Institute of Los Angeles	Los Angeles	Spanish and Chinese
Khmer Society of Fresno	Fresno	Cambodian and Lao
Korean American Community Services*	San Jose	Korean
Koreatown Youth and Community Center	Los Angeles	Korean, Spanish
Lao Khmu Association	Stockton	Lao, Khmer, Hmong, Vietnamese, Cambodian, Spanish, Chinese, and Tagalog
Lighthouse Learning Resource Center*	Grand Terrace	Spanish
People's CORE	Los Angeles	Tagalog Ilocano and Cebuano

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Portuguese Community Center	San Jose	Portuguese
Search to Involve Pilipino Americans	Los Angeles	Tagalog Ilocano and Cebuano
Southeast Asian Community Center	San Francisco	Vietnamese, Chinese
Self Help for the Elderly	San Francisco	Cantonese, Mandarin, Toihanese, Taiwanese
SHE M.T. Liang	San Jose	Cantonese, Mandarin
Suscol Intertribal Council	Napa	Native American, English
Union of Pan Asian Communities	San Diego	Vietnamese, Tagalog & Spanish
Vietnamese Community of Orange County, Inc.	Santa Ana	Vietnamese
Watsonville Law Center	Watsonville	Spanish
Yu-Ai-Kai *	San Jose	Japanese, Spanish

TEAM PROGRAM COMPONENTS



The TEAM program provides services to limited English proficient consumers by focusing on three (3) service components – Program Outreach, Consumer Education, and Complaint Resolution.

Outreach includes publicizing the program by posting posters in public locations in the community; conducting media interviews through local ethnic newspaper, radio and television outlets; and attending community events or providing education workshops at schools and other community organizations.

Education includes small group workshops, one-to-one sessions with consumers.

Complaint resolution includes assisting consumers with resolving disputes that they may have about their bills or telecommunications services.

Each component serves a unique purpose, while also building upon and supporting other components. For example, many consumers, particularly recent immigrants, are not aware that they are able to dispute charges on their bills. When they participate in consumer education workshops they learn about various ways in which they can protect themselves and are better able to identify issues in their bills. This may lead them to seek assistance through complaint resolution services.

Data regarding outreach, education and complaint resolution is provided later in this report under statistical information.

Administrative Activities

1. As part of program implementation, a database was developed to track various statistics related to resolved complaints. Those statistics are included later in this report.
2. Two (2) Kick-Off press conferences were held at CPUC offices in San Francisco and Los Angeles. The events were attended by various media outlets, telecom carriers, and CBO representatives.

3. An initial 2-day training was attended by all participating CBOs at which program operations, updates on telecom issues, and administrative procedures were covered.
4. Ongoing training continues throughout the program and to minimize administrative costs many training sessions and other meetings with the statewide network are conducted through webcasts.

Highlights

- TEAM CBOs provided mutual support by planning and working together on various regional events
- Program management travelled to the Round Valley Indian reservation to provide program information to Native American consumers. Discussed issues specific to this group of consumers and developed plan for addressing their unique circumstances.
- TEAM management provided a Legislative Briefing in August to representatives of the California Legislature.
- TEAM received feedback from numerous consumers regarding how the education workshops benefitted them. Feedback will be used to inform a more detailed evaluation process in year 2.
- Complaints in which TEAM was successful in resolving varied and included:
 - consumers unnecessarily subscribing to inside wiring services while they were renting and the wiring responsibilities were the landlords
 - Receiving full benefits from prepaid calling cards
 - Issues resulting from lack of English proficiency and inability understand sales contracts
 - Bills for cell phones which were already paid for
 - Assisting with difficulties encountered as a result of changes to the California Lifeline program
 - Identity thief
 - Getting credit for DSL service which had been removed months prior
 - Getting credit for calls billed on a phone bill which had been placed with the use of a calling card

- o Getting credit for incoming calls from Korea – the customer was not aware that cell service was billed differently here than in Korea.

Kick-Off Press Conferences

Two Press Conferences were held at CPUC offices in San Francisco and Los Angeles to inform the public about the availability of new program services.



CBO Training and Support

The TEAM program has been designed to provide ongoing comprehensive training and support to participating CBO partners. In addition to a 2-day training, ongoing training sessions are conducted in person and via webinar, regular technical assistance visits are provided, and consistent networking is facilitated to promote sharing of best practices among CBOs.



Some Northern California TEAM members joined forces at the Kick-Off media event in San Francisco. True to its name, the TEAM program is a partnership between Community Based Organizations, the CPUC, and telecom carriers.

Community Outreach Events

TEAM CBOs conducted outreach at numerous community events throughout the State. Below, CBOs in the Fresno area organized their own event to reach students at a local adult school. Representatives from various community organizations were invited, telecom education workshops were conducted, and consumers brought bills for review and dispute resolution assistance.



Looking forward to the next term

Self Help for the Elderly was awarded a two year contract with more funding and a longer term in the second year. Self Help plans to expand on the program by:

- contracting with more CBOs,
- including a study on the telecommunications needs of remotely situated native American Indians,
- conducting regular outreach to local elected officials
- increasing outreach and education, particularly in areas where CBOs are not currently located



TEAM members consistently share information and offer mutual support to ensure excellence in program services and continued quality improvement.

PROGRAM STATISTICS

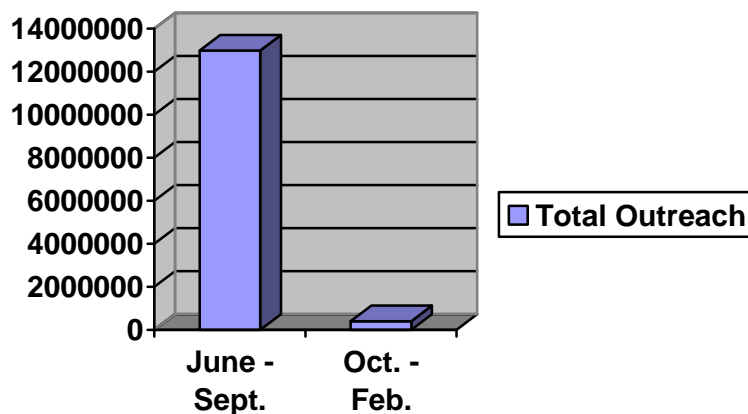
Outreach

TEAM CBOs conducted outreach by attending various community events, placing announcements or providing interviews to local ethnic media organizations, and through the placement of TEAM posters at CBO offices.

Through all outreach components, CBOs potentially reached nearly 14 million telecommunications consumers in 18 different languages:

Outreach by Language**	
Language	Year-to-Date
Armenian	300
Bosnian	125
Cambodian	1,450
Cebuano	250
Chinese	703,662
Dari	25,000
English	180,250
Hmong	1,200
Japanese	1,650
Ilokano	300
Korean	148,120
Laotian	400
Portuguese	110
Russian	200
Spanish	353,810
Tagalog	12,201,600
Thai	150
Vietnamese	151,970
TOTAL	13,770,547

Although Outreach activities continue throughout the program year, CBOs focused the majority of their outreach efforts during the first half of the contract period in order to inform communities about the availability of these new program services:



Outreach Posters

Posters were designed and printed by the CPUC and contain space for CBOs to enter contact information in the primary languages of the populations they serve. At least 27 posters were displayed reaching a minimum of 1,350 people. This number is based on a minimum of 50 individuals viewing each poster. CBOs submit sign-in sheets from the location at which the poster is placed.

In addition to posters placed in CBO offices, posters have been placed in locations at which limited English proficient consumers may view them, such as libraries, check cashing outlets, and welfare offices. Statistics do not include the numbers of consumers who may view posters at those sites.

Community Events/Fairs

TEAM CBOs conducted outreach at a minimum of 55 events during the program period. Through those events, CBOs provided program information and educational brochures to over 30,000 individuals in eighteen (18) languages.

Community Event Outreach	
Language	# Reached
Armenian	300
Bosnian	125
Cambodian	1,450
Cebuano	300
Chinese	8,462
English	250
Hmong	1,200
Ilokano	300
Japanese	1,650
Korean	1,620
Laotian	400
Mandarin	200
Portuguese	110
Russian	200
Tagalog	4,100
Spanish	8,320
Thai	150
Vietnamese	1,970
TOTAL	31,107

Media Outreach

Media outreach is conducted by CBOs through local ethnic newspaper, radio and television outlets, and may include program announcements, calendar placements, and interviews about the general program services or issues of importance to limited English proficient telecommunications consumers. Reported reach is based upon the circulation, listenership, or viewership numbers reported by the media outlets.

“과다 청구 전화비 꼭 해결해드려요”

KYCC 무료 프로그램 럽을 소개했다. 김아름 디렉터는 “한인들 중에 전화비가 갑자기 많이 나오거나 전화 서비스가 문제가 생겨도 영어가 불편하다 보니 문제를 해결하지 못하고 피해를 입는 분들이 많다”며 “이런”분들을 위해 영어통역과 함께 전화서비스에 대한 피해를 줄이기 위해 이번 프로그램을 시작하게 됐다”고 말했다.

노인들을 돕는 단체인 ‘셀프-헬프 포 더 엘더리(Self-Help for the Elderly)’의 후원으로 시작된 이 프로그램은 지난 한달여간의 준비를 거쳐 본격적으로 시작됐다. 2009년 2월까지 계속된다.

김 디렉터는 “전화회사에 서 옵션을 추가해 고객들과 전화비가 더 청구되거나, 법이나 영어를 몰라 전화서비스 피해를 입기도 한다”며 “영어가 불편하거나 전화비 청구서에 의문점이 갈때, 또 한국 본들은 국제전화를 많이 하시는데

한인들의 전화비 과다 청구 피해를 막기 위해 새 서비스를 KYCC가 시작한다. 왼쪽부터 KYCC 오드리 카시아스 디렉터, 김아름 디렉터, 리 김 코디네이터.

전화카드에 문제가 발생했을 경우 전화요금 상담을 하시면 청구서 검토 등을 통해 문제점을 찾아 전화 회사들 통해 피해보상을 받을 수 있다”고 말했다.

한편 이 프로그램은 매주 화요일부터 금요일 오전 9시~오후 6시까지 실시된다. 문의: (213) 365-7400, Ext: 215 장열 기자

The Los Angeles Korean community was informed about TEAM Program services in this article in The Korea daily in October, 2008.

Television

Television interviews potentially reached over 12 million viewers and were conducted on the following stations/programs:

- Inland Empire Local Channel 3
- Colton Channel 11
- KTSF Channel 26 – Vietnamese Journal
- Arriba Valle Central, Channel 21
- Kababayan LA, Channel 18 (2 interviews)
- Canal 42 Tu Vision
- Payame Afghan

Television Outreach	
Language	# Reached Y-T-D*
English	100,000
Dari	25,000
Spanish	142,000
Tagalog	11,800,000
Vietnamese	50,000
TOTAL	12,117,000



A TEAM CBO representative conducts an “in-language” interview with a local television station.

Radio

Radio interviews and announcements potentially reached over 650,000 listeners and were conducted on the following stations/programs:

- KLOK
- KHDV
- KMJV
- Little Saigon Radio
- 105.1 FM – LA Buena
- Station KIQI
- Radio AM 1430 (Heavenly Rainbow)
- KPFZ

Radio Outreach	
Language	# Reached Y-T-D*
Chinese	300,000
English	60,000
Spanish	200,000
Vietnamese	80,000
TOTAL	650,000

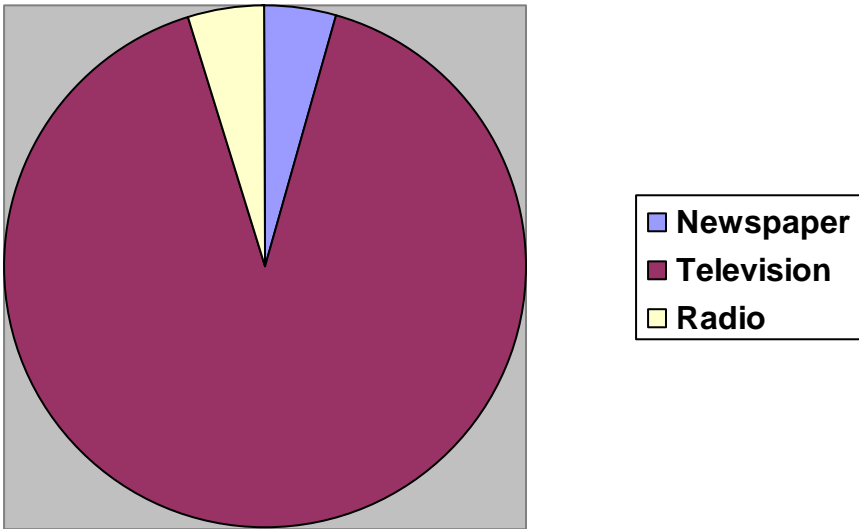
Newspaper

Articles and announcements in local, ethnic, in-language newspapers potentially reached over 600,000 readers. Articles were placed in the following publications:

- World Journal
- Ming Pao Daily News
- International Daily News
- Sing Tao Daily
- Tieng Viet San Diego
- KACS Korean Monthly
- El Chicano
- Korea Daily
- Korea Times Los Angeles
- The Voice

Newspaper Outreach	
Language	# Reached Y-T-D*
Chinese	395,000
English	20,000
Korean	1,500
Spanish	24,000
Vietnamese	20,000
TOTAL	605,500

Total media outreach potentially reached more consumers through television because of the medium's larger reach throughout various communities:



Consumer Education

Consumer education consists of educational workshops to small groups and one-to-one education with individuals. Educational topics are based on the CPUC's educational brochures and are conducted in the primary languages of the consumers.



Educational workshops are based on the CPUC's CalPhone Info brochures.

Consumer Education by Topic	
Topic	YTD Total
Slamming and Cramming	8,022
California LifeLine	7,965
Do Not Call List	2,546
Late Fees, Disconnection, Deposits	1,050
Take Charge of Your Phone Service	2,502
Tips for Buying Cell Phone Service	2,867
Understanding Your Phone Bill	6,900
Who to Complaint to	781
VOIP	394
TOTAL	33,027
<p><i>NOTE: Totals will exceed monthly duplicated count of people educated because some workshops combine more than one topic. In those cases, the number is counted for each topic. Example: Ten people attend a workshop on Slamming and Cramming combined with Understanding Your Phone Bill. Ten people will be counted for each topic.</i></p>	

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Consumer Education by Language	
Language	YTD Total
Arabic	4
Armenian	443
Bosnian	97
Cambodian	584
Chinese (Cantonese and Mandarin)	4,944
Croatian	15
Dari	8
English	2,851
Farsi	488
Hmong	427
Ilokano	30
Japanese	404
Khmer	36
Korean	421
Laotian	205
Portuguese	113
Russian	84
Serbian	13
Spanish	4,987
Tagalog	1,899
Vietnamese	3,586
TOTAL	21,639
<i>NOTE: Totals will exceed monthly duplicated count of people educated because some workshops combine more than one topic and some clients attend more than one workshop.</i>	

Complaint Resolution

TEAM CBOs assist limited English proficient consumers with resolving issues related to their phone bills and/or services. Throughout the program period, CBOs successfully resolved over 800 consumer complaints. Various statistics are tracked to help TEAM identify trends in complaint issues, and populations that may be in need of additional services or education.

Complaints Resolved by City of Clients' Residence	
City of Residence	YTD Total
Alhambra	4
Anaheim	3
Bell	2
Burbank	3
Campbell	4
Chino Hills	1
Claremont	1
Clovis	1
Colton	2
Cupertino	5
Cypress	1
Daly City	4
East Palo Alto	6
El Cajon	2
El Sobrante	1
Freemont	1
Fresno	57
Fountain Valley	7
Fullerton	2
Garden Grove	45
Gardena	1
Gilroy	1
Glendale	113
Halfmoon Bay	1
Hayward	2
Hemet	1
Hesperia	1
Highland	5
Huntington Beach	5
Huntington Park	5
Irvine	1
Lakewood	1

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Test Year 2012 GRC - APP
Non-Shared Service Workpapers

La Habra	1
La Mirada	1
Los Altos	1
Los Angeles	130
Lynwood	2
Menlo Park	2
Milpitas	8
Montebello	3
Monterey Park	3
Montrose	3
Mountain View	1
Newark	1
North Hills	1
North Hollywood	2
Oakland	13
Ontario	1
Parlier	1
Pinedale	1
Rancho Cucamonga	1
Redwood City	3
Reedley	1
Reseda	17
Riverside	1
Sacramento	29
Salinas	1
San Bernardino	11
San Bruno	1
San Diego	33
San Francisco	122
San Joaquin	1
San Jose	74
San Leandro	1
San Mateo	12
Santa Ana	2
Santa Clara	5
Sanger	1
Sherman Oaks	1
South Pasadena	1
Stanton	4
Stockton	4
Sunnyvale	4
Tarzana	1
Temecula	1
Tujunga	1
Tustin Ranch	2

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Union City	1
Upland	2
Van Nuys	2
Visalia	1
Vista	1
Watsonville	5
Westminster	10
West Covina	1
TOTAL	823

TEAM CBOs inquire about LifeLine enrollment to determine whether assistance with applying for program participation may be needed:

Is the consumer currently enrolled in the California LifeLine Program?	
	YTD Total
YES	522
NO	301
Not Indicated	0
Total	823

TEAM CBOs inquire about home ownership to determine whether the consumer is unnecessarily paying for WirePro protection that should be provided by the landlord:

Is the Consumer a Homeowner or Renter?	
	YTD Total
Homeowner	125
Renter	696
Not Indicated	2
Total	823

The primary language of the consumer is tracked to help identify trends in marketing or service issues:

Complaints Resolved by Language	
Language	YTD Total
Albanian	1
Arabic	1
Armenian	16
Bosnian	2
Cambodian	5
Cantonese	168
Cebuano	1
Dari	14
English	60
Farsi	108
Hmong	30
Ilokano	2
Indonesian	1
Japanese	14
Khmer	3
Korean	49
Lao	2
Mandarin	49
Pashto	5
Portuguese	23
Russian	8
Spanish	135
Tagalog	11
Toishanese	1
Vietnamese	114
TOTAL	823

A consumer's language does not automatically identify ethnicity. For example, Armenians may speak Armenian, Farsi, Russian or Arabic; likewise, A Farsi speaker may be Iranian, Armenian or Afghan.

Complaints Resolved by Consumer Ethnicity	
Ethnicity	YTD Total
Afghan	7
African	3
African American	14
Armenian	86
Bosnian	1
Cambodian	7
Chinese	221
Unspecified Eastern European	12
Filipino	19
Hmong	30
Indonesian	2
Iranian	9
Japanese	13
Korean	51
Laotian	75
Latino	78
Unspecified Middle Eastern	43
Other	2
Portuguese	24
Russian	9
Vietnamese	116
White American	1
TOTAL	823

TEAM CBOs track the general age range of consumers to help identify areas in need of additional outreach. For example, the low number of youth assisted may mean that youth are able to resolve complaints with carriers on their own. However, it is more likely, given the high usage of cell phones and text messaging by youth, that additional outreach and education should be directed to youth in the upcoming year:

Complaints Resolved by Age of Consumer	
	YTD Total
Youth (under 21)	5
Adult (21 – 60)	402
Senior (60+)	410
Not Indicated	6
TOTAL	823

Tracking household size helps to identify potential California LifeLine consumers, when paired with income levels.

Complaints Resolved by Household Size	
Number in Household	YTD Total
1 – 2	546
3	84
4	78
5	37
6	13
7	11
8	1
10	5
11	5
Not Indicated	43
TOTAL	823

Complaints Resolved by Income Level	
Income Level	YTD Total
Over \$ 25,000 annually	452
Under \$ 25,000 annually	334
Not Indicated	37
TOTAL	823

Complaints are categorized into six (6) different service types.

Complaints Resolved by Service Type	
Service Type	YTD Total
Residential	654
Wireless	115
Internet	24
Pre-paid Phone Card	22
Business	7
Video	1
TOTAL	823

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

TEAM CBOs categorize complaints by Issue Type. Many bills have more than one issue.

Complaints Resolved by Issue Type	
Issue Type	YTD Total
3 rd Party Billing	72
Cancellation	4
Collection	3
Consumer Education	3
Cramming	246
Faulty Equipment	5
Not-In-Language Contract	56
LifeLine	114
In-language Assistance	82
Maintenance Agreement	3
IVR	2
Misleading Ads	16
Misrepresentation	62
No Answer at Customer Service	0
Over-Billing	261
Pay Phone	3
Poor Coverage	6
Pre-Paid Calling	3
Promotion Not Honored	49
Repairs/Installation Problems	25
Rude Customer Service	13
Slamming	48
Termination Fee	16
Undisclosed Fee	17
WirePro	49
Wrong Rate	49
Wrongful Disconnection	5
TOTAL	1,212
<i>NOTE: Total number of issues may exceed the total number of complaints because some complaints involve more than one issue.</i>	

Disputed and Recovered Amounts

TEAM CBOs track the amount of a bill that is disputed and the amount of money they were able to recover on behalf of consumers. Not all complaints will have an actual disputed monetary amount. For example, a complaint about an equipment issue will not directly correspond to a charge on a phone bill.

Recovered amounts will vary from the disputed amounts for several reasons. A CBO may determine in an initial review of a phone bill that a certain charge should be disputed, but after addressing the issue with the phone company, or investigating further, they may determine that the initial disputed amount should be reduced or they may not be able to provide proof of an entire disputed claim. There are also instances in which a phone company and a consumer disagree about whether charges are valid and the entire disputed amount cannot be recovered. In most cases, the CBO and the phone company are able to negotiate a resolution that is acceptable to the consumer.

In the period of June 16, 2008 through February 15, 2009, TEAM CBOs recovered the following amounts for consumers:

- Total amount disputed: \$ 96,187.27
- Average amount disputed per complaint: \$ 90.32
- Total amount recovered: \$ 31,763.93
- Average amount recovered per case: \$ 29.83
- 217 complaints did not indicate a disputed amount
- 381 complaints did not indicate a recovered amount



Sponsored By California Public Utilities Commission

ARABIC بالعربي
ARMENIAN Հայերեն
BOSNIAN U Bosanskom
CANTONESE 粵語
CEBUANO sa Sugbaanon
DARI به دري
FARSI به فارسي
HMONG Ua Lus Hmoob
ILOCANO iT Ibkanon
JAPANESE 日本語訳
KHMER ភាសាខ្មែរ
KOREAN 한국어로
LAO ເປັນສາລາວ
MANDARIN 國語
PASHTO په پښتو
PORTUGUESE em Português
RUSSIAN по-русски
SPANISH en Español
TAGALOG sa Tagalog
THAI ภาษาไทย
URDU اردو میں
VIETNAMESE Bằng tiếng Việt

Do you need help
with understanding
your phone bill
or
help in resolving
a complaint with
your phone company?

Get **help** at the **community center**
listed below . . .

TEAM in Multiple Languages
Telecommunications Education & Assistance

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. Nonresidential Markets
 Workpaper: VARIOUS

Summary for Category: C. Nonresidential Markets

	In 2009\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	5,833	6,257	6,257	6,457
Non-Labor	1,504	1,795	1,795	2,045
NSE	0	0	0	0
Total	7,337	8,052	8,052	8,502
FTE	64.4	70.5	70.5	72.5

Workpapers belonging to this Category:

2IN005.000 CAPACITY PRODUCTS AND PLANNING

Labor	847	764	764	764
Non-Labor	127	120	120	120
NSE	0	0	0	0
Total	974	884	884	884
FTE	7.8	7.2	7.2	7.2

2IN007.000 COMMERCIAL, INDUSTRIAL, AND GOVERNMENT SEGMENTS

Labor	4,986	5,493	5,493	5,693
Non-Labor	1,377	1,675	1,675	1,925
NSE	0	0	0	0
Total	6,363	7,168	7,168	7,618
FTE	56.6	63.3	63.3	65.3

Beginning of Workpaper
2IN005.000 - CAPACITY PRODUCTS AND PLANNING

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: C. Nonresidential Markets
Category-Sub: 1. Capacity Products & Planning
Workpaper: 2IN005.000 - CAPACITY PRODUCTS AND PLANNING

Activity Description:

Capacity Products and Planning (CP&P) provides account management services, natural gas storage services, operates the California Energy Hub (CEH) and procures natural gas to maintain system integrity. Capacity Products and Planning also provides shared services, relating to capacity services and regulatory compliance and support for intrastate transmission and storage activities. The historical costs and forecasts reflected in this workpaper are only for nonshared activities, and the cost related to shared services are provided in a different shared services workpaper for this organization.

Forecast Methodology:

Labor - 5-YR Average

Labor costs in this organization was relatively flat for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast.

Non-Labor - 5-YR Average

Nonlabor costs in this organization was relatively flat for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast.

NSE - 5-YR Average

Not applicable

Summary of Results:

	In 2009\$ (000)								
	Adjusted-Recorded					Adjusted-Forecast			
Years	2005	2006	2007	2008	2009	2010	2011	2012	
Labor	772	724	737	743	847	764	764	764	
Non-Labor	120	115	125	114	127	120	120	120	
NSE	0	0	0	0	0	0	0	0	
Total	892	839	862	857	974	884	884	884	
FTE	7.4	6.9	6.9	6.8	7.8	7.2	7.2	7.2	

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. Nonresidential Markets
 Category-Sub: 1. Capacity Products & Planning
 Workpaper: 2IN005.000 - CAPACITY PRODUCTS AND PLANNING

Forecast Summary:

Forecast Method		In 2009 \$(000)								
		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Labor	5-YR Average	764	764	764	0	0	0	764	764	764
Non-Labor	5-YR Average	120	120	120	0	0	0	120	120	120
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		884	884	884	0	0	0	884	884	884
FTE	5-YR Average	7.2	7.2	7.2	0.0	0.0	0.0	7.2	7.2	7.2

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010 Total	0	0	0	0	0.0	
2011 Total	0	0	0	0	0.0	
2012 Total	0	0	0	0	0.0	

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: C. Nonresidential Markets
Category-Sub: 1. Capacity Products & Planning
Workpaper: 2IN005.000 - CAPACITY PRODUCTS AND PLANNING

Determination of Adjusted-Recorded:

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	890	883	953	984	1,083
Non-Labor	107	106	119	115	127
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	997	989	1,072	1,099	1,210
FTE	9.6	9.1	9.5	9.4	10.1
Adjustments (Nominal \$) **					
Labor	-301	-319	-361	-376	-366
Non-Labor	0	0	0	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	-301	-319	-361	-376	-366
FTE	-3.3	-3.3	-3.7	-3.7	-3.5
Recorded-Adjusted (Nominal \$)					
Labor	589	564	592	608	718
Non-Labor	107	106	119	115	127
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	696	670	711	723	845
FTE	6.3	5.8	5.8	5.7	6.6
Vacation & Sick (Nominal \$)					
Labor	100	101	103	117	130
Non-Labor	0	0	0	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	100	101	103	117	130
FTE	1.1	1.1	1.1	1.1	1.2
Escalation to 2009\$					
Labor	82	59	42	18	0
Non-Labor	13	9	6	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	95	67	47	18	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	772	724	737	743	847
Non-Labor	120	115	125	114	127
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	892	839	862	858	974
FTE	7.4	6.9	6.9	6.8	7.8

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: C. Nonresidential Markets
Category-Sub: 1. Capacity Products & Planning
Workpaper: 2IN005.000 - CAPACITY PRODUCTS AND PLANNING

Summary of Adjustments to Recorded:

In Nominal \$ (000)					
Year	2005	2006	2007	2008	2009
Labor	-301	-319	-361	-376	-366
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	-301	-319	-361	-376	-366
FTE	-3.3	-3.3	-3.7	-3.7	-3.5

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2005	-146	0	0	0.0	CCTR Transf	To 2200-2061.000	TTRAN20100419 090845550
Cost alignment adjustment - Transfer labor cost for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2005	0	0	0	-1.7	CCTR Transf	To 2200-2061.000	TTRAN20100419 090928800
Cost alignment adjustment - Transfer FTE for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2005	-94	0	0	0.0	CCTR Transf	To 2200-0328.000	TTRAN20100419 100234597
Cost alignment adjustment - Transfer labor cost for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2005	0	0	0	-0.8	CCTR Transf	To 2200-0328.000	TTRAN20100419 100322520
Cost alignment adjustment - Transfer FTE for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2005	-61	0	0	0.0	CCTR Transf	To 2200-0328.000	TTRAN20100419 101805780
Cost alignment adjustment - Transfer labor costs associated with 1 market advisor from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2005	0	0	0	-0.8	CCTR Transf	To 2200-0328.000	TTRAN20100419 101930043
Cost alignment adjustment - Transfer FTE for 1 market advisor from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2005 Total	-301	0	0	-3.3			

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. Nonresidential Markets
 Category-Sub: 1. Capacity Products & Planning
 Workpaper: 2IN005.000 - CAPACITY PRODUCTS AND PLANNING

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2006	-150	0	0	0.0	CCTR Transf	To 2200-2061.000	TTRAN20100419 091105190
Cost alignment adjustment - Transfer labor cost for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2006	0	0	0	-1.7	CCTR Transf	To 2200-2061.000	TTRAN20100419 091611423
Cost alignment adjustment - Transfer FTE for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2006	-96	0	0	0.0	CCTR Transf	To 2200-0328.000	TTRAN20100419 100502283
Cost alignment adjustment - Transfer labor cost for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2006	0	0	0	-0.8	CCTR Transf	To 2200-0328.000	TTRAN20100419 100534800
Cost alignment adjustment - Transfer FTE for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2006	-72	0	0	0.0	CCTR Transf	To 2200-0328.000	TTRAN20100419 102138433
Cost alignment adjustment - Transfer labor costs associated with 1 market advisor from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2006	0	0	0	-0.8	CCTR Transf	To 2200-0328.000	TTRAN20100419 102230547
Cost alignment adjustment - Transfer FTE for 1 market advisor from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2006 Total	-319	0	0	-3.3			
2007	-154	0	0	0.0	CCTR Transf	To 2200-2061.000	TTRAN20100419 091819690
Cost alignment adjustment - Transfer labor cost for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2007	0	0	0	-1.7	CCTR Transf	To 2200-2061.000	TTRAN20100419 091849393
Cost alignment adjustment - Transfer FTE for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2007	-99	0	0	0.0	CCTR Transf	To 2200-0328.000	TTRAN20100419 100654673
Cost alignment adjustment - Transfer labor cost for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. Nonresidential Markets
 Category-Sub: 1. Capacity Products & Planning
 Workpaper: 2IN005.000 - CAPACITY PRODUCTS AND PLANNING

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2007	0	0	0	-0.8	CCTR Transf	To 2200-0328.000	TTRAN20100419 100751987
Cost alignment adjustment - Transfer FTE for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2007	-108	0	0	0.0	CCTR Transf	To 2200-0328.000	TTRAN20100419 102554793
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2007	0	0	0	-1.2	CCTR Transf	To 2200-0328.000	TTRAN20100419 102656660
Cost alignment adjustment - Transfer FTE associated with 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2007 Total	-361	0	0	-3.7			
2008	-159	0	0	0.0	CCTR Transf	To 2200-2061.000	TTRAN20100419 092000503
Cost alignment adjustment - Transfer labor cost for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2008	0	0	0	-1.7	CCTR Transf	To 2200-2061.000	TTRAN20100419 092028817
Cost alignment adjustment - Transfer FTE for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2008	-102	0	0	0.0	CCTR Transf	To 2200-0328.000	TTRAN20100419 100951860
Cost alignment adjustment - Transfer labor cost for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2008	0	0	0	-0.8	CCTR Transf	To 2200-0328.000	TTRAN20100419 101026127
Cost alignment adjustment - Transfer FTE for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2008	-114	0	0	0.0	CCTR Transf	To 2200-0328.000	TTRAN20100419 102859030
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2008	0	0	0	-1.2	CCTR Transf	To 2200-0328.000	TTRAN20100419 102940030
Cost alignment adjustment - Transfer FTE for 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2008 Total	-376	0	0	-3.7			

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. Nonresidential Markets
 Category-Sub: 1. Capacity Products & Planning
 Workpaper: 2IN005.000 - CAPACITY PRODUCTS AND PLANNING

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2009	-164	0	0	0.0	CCTR Transf	To 2200-2061.000	TTRAN20100419 092555410
Cost alignment adjustment - Transfer labor cost for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2009	0	0	0	-1.7	CCTR Transf	To 2200-2061.000	TTRAN20100419 092620190
Cost alignment adjustment - Transfer FTE for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2009	-105	0	0	0.0	CCTR Transf	To 2200-0328.000	TTRAN20100419 101145440
Cost alignment adjustment - Transfer labor cost for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2009	0	0	0	-0.8	CCTR Transf	To 2200-0328.000	TTRAN20100419 101207533
Cost alignment adjustment - Transfer FTE for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2009	-96	0	0	0.0	CCTR Transf	To 2200-0328.000	TTRAN20100419 103240850
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2009	0	0	0	-1.0	CCTR Transf	To 2200-0328.000	TTRAN20100419 103318290
Cost alignment adjustment - Transfer FTE for 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2009 Total	-366	0	0	-3.5			

Beginning of Workpaper
2IN007.000 - COMMERCIAL, INDUSTRIAL, AND GOVERNMENT SEGMENTS

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. Nonresidential Markets
 Category-Sub: 2. Commercial, Industrial, and Government Segments
 Workpaper: 2IN007.000 - COMMERCIAL, INDUSTRIAL, AND GOVERNMENT SEGMENTS

Activity Description:

Major Customer Markets organization provides account management to large commercial, industrial, government, electric generation, and wholesales accounts. This organization also includes supporting staff that oversees policy and other regulatory support for issues affecting these customer segments.

Forecast Methodology:

Labor - 5-YR Average

For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast plus adjustments to account for specific program growth.

Non-Labor - 5-YR Average

For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast plus adjustments to account for specific program growth.

NSE - 5-YR Average

Not applicable

Summary of Results:

	In 2009\$ (000)							
	Adjusted-Recorded					Adjusted-Forecast		
	2005	2006	2007	2008	2009	2010	2011	2012
Years								
Labor	6,101	5,588	5,480	5,314	4,986	5,493	5,493	5,693
Non-Labor	1,826	1,718	1,736	1,569	1,377	1,675	1,675	1,925
NSE	0	0	0	0	0	0	0	0
Total	7,927	7,306	7,216	6,883	6,363	7,168	7,168	7,618
FTE	70.4	64.6	64.2	60.8	56.6	63.3	63.3	65.3

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. Nonresidential Markets
 Category-Sub: 2. Commercial, Industrial, and Government Segments
 Workpaper: 2IN007.000 - COMMERCIAL, INDUSTRIAL, AND GOVERNMENT SEGMENTS

Forecast Summary:

Forecast Method		In 2009 \$(000)								
		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		2010	2011	2012	2010	2011	2012	2010	2011	2012
Labor	5-YR Average	5,493	5,493	5,493	0	0	200	5,493	5,493	5,693
Non-Labor	5-YR Average	1,645	1,645	1,645	30	30	280	1,675	1,675	1,925
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		7,138	7,138	7,138	30	30	480	7,168	7,168	7,618
FTE	5-YR Average	63.3	63.3	63.3	0.0	0.0	2.0	63.3	63.3	65.3

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010	0	30	0	30	0.0	1-Sided Adj

Incremental costs for customer support related changes in various air quality rules

2010 Total	0	30	0	30	0.0
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2011	0	30	0	30	0.0	1-Sided Adj
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Incremental costs for customer support related to changing air quality rules.

2011 Total	0	30	0	30	0.0
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2012	0	280	0	280	0.0	1-Sided Adj
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Incremental costs for CHP support and customer support related to changing air quality rules.

2012	200	0	0	200	0.0	1-Sided Adj
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Adding 2 FTEs for CHP Support program

2012	0	0	0	0	2.0	1-Sided Adj
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Adding 2 FTEs for CHP Support program

2012 Total	200	280	0	480	2.0
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Test Year 2012 GRC - APP
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Witness: Wright, Gillian Alice
Category: C. Nonresidential Markets
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Workpaper: 2IN007.000 - COMMERCIAL. INDUSTRIAL. AND GOVERNMENT SEGMENTS

Determination of Adjusted-Recorded:

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	4,350	4,177	4,404	4,246	4,201
Non-Labor	1,536	1,391	1,514	1,456	1,377
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	5,886	5,567	5,918	5,702	5,577
FTE	56.2	52.8	54.5	50.0	47.6
Adjustments (Nominal \$) **					
Labor	307	180	-1	99	22
Non-Labor	90	195	142	118	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	397	376	141	217	22
FTE	3.4	1.8	-0.2	0.8	0.0
Recorded-Adjusted (Nominal \$)					
Labor	4,656	4,357	4,403	4,345	4,223
Non-Labor	1,626	1,586	1,656	1,573	1,377
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	6,283	5,943	6,059	5,918	5,599
FTE	59.6	54.6	54.3	50.8	47.6
Vacation & Sick (Nominal \$)					
Labor	794	779	768	837	763
Non-Labor	0	0	0	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	794	779	768	837	763
FTE	10.8	10.0	9.9	10.0	9.0
Escalation to 2009\$					
Labor	651	453	309	131	0
Non-Labor	200	132	80	-4	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	851	585	389	127	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	6,101	5,588	5,480	5,314	4,986
Non-Labor	1,826	1,718	1,736	1,569	1,377
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	7,927	7,306	7,216	6,883	6,362
FTE	70.4	64.6	64.2	60.8	56.6

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
Test Year 2012 GRC - APP
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Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: C. Nonresidential Markets
Category-Sub: 2. Commercial, Industrial, and Government Segments
Workpaper: 2IN007.000 - COMMERCIAL, INDUSTRIAL, AND GOVERNMENT SEGMENTS

Summary of Adjustments to Recorded:

In Nominal \$ (000)					
Year	2005	2006	2007	2008	2009
Labor	307	180	-1	99	22
Non-Labor	90	195	142	118	0
NSE	0	0	0	0	0
Total	397	376	141	217	22
FTE	3.4	1.8	-0.2	0.8	0.0

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005	0	-100	0	0.0	CCTR Transf	To 2200-2076.000	TTRAN20090911 152823083
Cost center correction - Transfer costs related to FYI and Prop 65 bill inserts from CC 2200-0426 to CC 2200-2076. These charges should be in CC 2200-2076.							
2005	0	-108	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 102818437
Cost alignment adjustment - Transfer of producer reimbursement for blend gas truck operational costs from USS 2200-0234 to NSS 2200-2269.							
2005	0	271	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 153252147
Cost alignment adjustment - Transfer blended fuel truck related expenses from USS 2200-0234 to NSS 2200-2269.							
2005	74	0	0	0.0	CCTR Transf	From 2200-0248.000	TTRAN20100419 084637423
Cost alignment adjustment - Transfer labor cost for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2005	0	0	0	0.8	CCTR Transf	From 2200-0248.000	TTRAN20100419 084740660
Cost alignment adjustment - Transfer FTE for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2005	146	0	0	0.0	CCTR Transf	From 2200-0251.000	TTRAN20100419 090845550
Cost alignment adjustment - Transfer labor cost for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2005	0	0	0	1.7	CCTR Transf	From 2200-0251.000	TTRAN20100419 090928800
Cost alignment adjustment - Transfer FTE for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

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Category-Sub: 2. Commercial, Industrial, and Government Segments
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<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005	216	0	0	0.0	CCTR Transf	From 2200-0422.000	TTRAN20100419 110037970
Cost alignment adjustment - Transfer labor costs associated with Codes & Standards and Customer Program Director activities from CC2200-0422 to CC 2200-0177 due to reorganization.							
2005	0	0	0	2.6	CCTR Transf	From 2200-0422.000	TTRAN20100419 110128563
Cost alignment adjustment - Transfer FTE associated with Codes & Standards and Customer Program Director activities from CC2200-0422 to CC 2200-0177 due to reorganization.							
2005	0	27	0	0.0	CCTR Transf	From 2200-0422.000	TTRAN20100419 131039577
Cost alignment adjustment - Transfer Customer Program Director and Codes & Standards non-labor expenses from CC 2200-0422 to CC 2200-0177 due to reorganization.							
2005	-129	0	0	0.0	CCTR Transf	To 2200-2143.000	TTRAN20100422 143146873
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2005	0	0	0	-1.7	CCTR Transf	To 2200-2143.000	TTRAN20100422 143310343
Cost alignment adjustment - Transfer FTE for 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2005 Total	307	90	0	3.4			
2006	0	-9	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 103222690
Cost alignment adjustment - Transfer of producer reimbursement for blend gas truck operational costs from USS 2200-0234 to NSS 2200-2269.							
2006	0	184	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 154610647
Cost alignment adjustment - Transfer blended fuel truck related expenses from USS 2200-0234 to NSS 2200-2269.							
2006	76	0	0	0.0	CCTR Transf	From 2200-0248.000	TTRAN20100419 084839893
Cost alignment adjustment - Transfer labor cost for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2006	0	0	0	0.8	CCTR Transf	From 2200-0248.000	TTRAN20100419 084907080
Cost alignment adjustment - Transfer FTE for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							

Southern California Gas Company
 Test Year 2012 GRC - APP
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Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. Nonresidential Markets
 Category-Sub: 2. Commercial, Industrial, and Government Segments
 Workpaper: 2IN007.000 - COMMERCIAL, INDUSTRIAL, AND GOVERNMENT SEGMENTS

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2006	150	0	0	0.0	CCTR Transf	From 2200-0251.000	TTRAN20100419 091105190
Cost alignment adjustment - Transfer labor cost for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2006	0	0	0	1.7	CCTR Transf	From 2200-0251.000	TTRAN20100419 091611423
Cost alignment adjustment - Transfer FTE for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2006	87	0	0	0.0	CCTR Transf	From 2200-0422.000	TTRAN20100419 125532813
Cost alignment adjustment - Transfer labor costs associated with Codes & Standards activities from CC 2200-0422 to CC 2200-0177 due to reorganization.							
2006	0	0	0	1.0	CCTR Transf	From 2200-0422.000	TTRAN20100419 125559720
Cost alignment adjustment - Transfer FTE associated with Codes & Standards activities from CC 2200-0422 to CC 2200-0177 due to reorganization.							
2006	0	20	0	0.0	CCTR Transf	From 2200-0422.000	TTRAN20100419 130637983
Cost alignment adjustment - Transfer nonlabor expenses related to Codes & Standards activities from 2200-0422 to 2200-0177 due to reorganization.							
2006	-133	0	0	0.0	CCTR Transf	To 2200-2143.000	TTRAN20100422 143535123
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2006	0	0	0	-1.7	CCTR Transf	To 2200-2143.000	TTRAN20100422 143615577
Cost alignment adjustment - Transfer FTE for 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2006 Total	180	195	0	1.8			
2007	-97	0	0	0.0	CCTR Transf	To 2200-2288.000	TTRAN20090910 082140850
Cost alignment adjustment - Transfer labor \$ for personnel now reflected in Environmental Affairs cost center due to reorganization.							
2007	0	0	0	-1.0	CCTR Transf	To 2200-2288.000	TTRAN20090910 082443590
Cost alignment adjustment - transfer FTE for 2 market advisors (partial year) supporting air quality issues from 2200-2060 to 2200-2288 due to reorganization.							

Southern California Gas Company
 Test Year 2012 GRC - APP
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Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. Nonresidential Markets
 Category-Sub: 2. Commercial, Industrial, and Government Segments
 Workpaper: 2IN007.000 - COMMERCIAL, INDUSTRIAL, AND GOVERNMENT SEGMENTS

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2007	0	-5	0	0.0	CCTR Transf	To 2200-2288.000	TTRAN20090910 083345043
Cost alignment adjustment - transferred nonlabor expense for Muyco and Simons from 2200-2060 to 2200-2288 due to reorganization.							
2007	0	-61	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 103325820
Cost alignment adjustment - Transfer of producer reimbursement for blend gas truck operational costs from USS 2200-0234 to NSS 2200-2269.							
2007	0	208	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 155616580
Cost alignment adjustment - Transfer blended fuel truck related expenses from USS 2200-0234 to NSS 2200-2269.							
2007	78	0	0	0.0	CCTR Transf	From 2200-0248.000	TTRAN20100419 085044643
Cost alignment adjustment - Transfer labor cost for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2007	0	0	0	0.8	CCTR Transf	From 2200-0248.000	TTRAN20100419 085129970
Cost alignment adjustment - Transfer FTE for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2007	154	0	0	0.0	CCTR Transf	From 2200-0251.000	TTRAN20100419 091819690
Cost alignment adjustment - Transfer labor cost for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2007	0	0	0	1.7	CCTR Transf	From 2200-0251.000	TTRAN20100419 091849393
Cost alignment adjustment - Transfer FTE for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2007	-136	0	0	0.0	CCTR Transf	To 2200-2143.000	TTRAN20100422 143745233
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2007	0	0	0	-1.7	CCTR Transf	To 2200-2143.000	TTRAN20100422 143833827
Cost alignment adjustment - Transfer FTE for 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2007 Total	-1	142	0	-0.2			
2008	0	-16	0	0.0	CCTR Transf	To 2200-0234.000	TTRAN20090910 090044820
Dollars were incorrectly charged to the wrong cost center. Adjustment to transfer from 2200-2269 (nonshared cost center) to 2200-0234 (shared cost center)							

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 Non-Shared Service Workpapers

Area: CS - INFORMATION
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 Category: C. Nonresidential Markets
 Category-Sub: 2. Commercial, Industrial, and Government Segments
 Workpaper: 2IN007.000 - COMMERCIAL, INDUSTRIAL, AND GOVERNMENT SEGMENTS

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2008	0	-69	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 103409803
Cost alignment adjustment - Transfer of producer reimbursement for blend gas truck operational costs from USS 2200-0234 to NSS 2200-2269.							
2008	0	204	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091006 100645893
Cost alignment adjustment - Transfer blended fuel truck related expenses from 2200-0234 (shared) to 2200-2269 (nonshared).							
2008	80	0	0	0.0	CCTR Transf	From 2200-0248.000	TTRAN20100419 085226893
Cost alignment adjustment - Transfer labor cost for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2008	0	0	0	0.8	CCTR Transf	From 2200-0248.000	TTRAN20100419 085304143
Cost alignment adjustment - Transfer FTE for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2008	159	0	0	0.0	CCTR Transf	From 2200-0251.000	TTRAN20100419 092000503
Cost alignment adjustment - Transfer labor cost for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2008	0	0	0	1.7	CCTR Transf	From 2200-0251.000	TTRAN20100419 092028817
Cost alignment adjustment - Transfer FTE for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2008	-141	0	0	0.0	CCTR Transf	To 2200-2143.000	TTRAN20100422 143951187
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2008	0	0	0	-1.7	CCTR Transf	To 2200-2143.000	TTRAN20100422 144048437
Cost alignment adjustment - Transfer FTE for 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2008 Total	99	118	0	0.8			
2009	83	0	0	0.0	CCTR Transf	From 2200-0248.000	TTRAN20100419 085404270
Cost alignment adjustment - Transfer labor cost for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							

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 Non-Shared Service Workpapers

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<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2009	0	0	0	0.8	CCTR Transf	From 2200-0248.000	TTRAN20100419 085428347
Cost alignment adjustment - Transfer FTE for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2009	164	0	0	0.0	CCTR Transf	From 2200-0251.000	TTRAN20100419 092555410
Cost alignment adjustment - Transfer labor cost for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2009	0	0	0	1.7	CCTR Transf	From 2200-0251.000	TTRAN20100419 092620190
Cost alignment adjustment - Transfer FTE for 2 Account Managers from CC 2200-0251 to CC 2200-2061 due to reorganization.							
2009	-80	0	0	0.0	CCTR Transf	To 2200-0422.000	TTRAN20100419 140226640
Cost alignment adjustment - Transfer labor cost associated with 1 project manager from 2200-2060 to 2200-0422 due to reorganization.							
2009	0	0	0	-0.8	CCTR Transf	To 2200-0422.000	TTRAN20100419 140511873
Cost alignment adjustment - Transfer FTE for 1 project manager from 2200-2060 to 2200-0422 due to reorganization.							
2009	-145	0	0	0.0	CCTR Transf	To 2200-2143.000	TTRAN20100422 144530233
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2009	0	0	0	-1.7	CCTR Transf	To 2200-2143.000	TTRAN20100422 144601420
Cost alignment adjustment - Transfer FTE for 2 market advisors from 2200-2060 to 2200-2143 due to reorganization.							
2009 Total	22	0	0	0.0			

Supplemental Workpapers for Workpaper 2IN007.000



CLIMATE CHANGE SCOPING PLAN

a framework for change

DECEMBER 2008

*Pursuant to AB 32
The California Global Warming Solutions Act of 2006*

*Prepared by
the California Air Resources Board
for the State of California*

*Arnold Schwarzenegger
Governor*

*Linda S. Adams
Secretary, California Environmental Protection Agency*

*Mary D. Nichols
Chairman, Air Resources Board*

*James N. Goldstene
Executive Officer, Air Resources Board*

Scoping Plan

II. Recommended Actions

*Plan.*³⁵ Released September 2008, this Plan sets forth a set of strategies toward maximizing the achievement of cost-effective energy efficiency in California's Electricity and Natural Gas sectors between 2009 and 2020, and beyond. Its recommendations are the result of a year-long collaboration by energy experts, utilities, businesses, consumer groups, and governmental organizations in California, throughout the west, nationally and internationally.

For many of the above goals and others, the Strategic Plan discusses practical implementation strategies, detailing necessary partnerships among the state, its utilities, the private sector, and other market players and timelines for near-term, mid-term and long-term success. While the Strategic Plan is the most current and innovative summary of energy efficiency strategies needed to meet State goals, additional planning and new strategies will likely be needed, both to achieve the 2020 emissions reduction goals and to set the State on a trajectory toward 2050.

Other innovative approaches could also be used to motivate private investment in efficiency improvements. One example that will be evaluated during the development of the cap-and-trade program is the creation of a mechanism to make allowances available within the program to provide incentives for local governments, third party providers, or others to pursue projects to reduce greenhouse gas emissions, including the bundling of energy efficiency improvements for small businesses or in targeted communities.

Solar Water Heating

Solar water heating systems offer a potential for natural gas savings in California. A solar water heating system offsets the use of natural gas by using the sun to heat water, typically reducing the need for conventional water heating by about two-thirds. Successful implementation of the zero net energy target for new buildings will require significant growth in California's solar water heating system manufacturing and installation industry. The State has initiated a program to move toward a self-sustaining solar water heater industry. The Solar Hot Water and Efficiency Act of 2007 (SHWEA) authorized a ten year, \$250-million incentive program for solar water heaters with a goal of promoting the installation of 200,000 systems in California by 2017.³⁶

Combined Heat and Power

Combined heat and power (CHP), also referred to as cogeneration, produces electricity and useful thermal energy in an integrated system. The widespread development of efficient CHP systems would help displace the need to develop new, or expand existing, power plants. This measure sets a target of an additional

³⁵ California Public Utilities Commission. *California Long Term Energy Efficiency Strategic Plan*. September 2008. <http://www.californiaenergyefficiency.com/docs/EEStrategicPlan.pdf> (accessed October 12, 2008).

³⁶ Established under Assembly Bill 1470 (Huffman, Chapter 536, Statutes of 2007).

II. Recommended Actions

Scoping Plan

4,000 MW of installed CHP capacity by 2020, enough to displace approximately 30,000 GWh of demand from other power generation sources.³⁷

California has supported CHP for many years, but market and other barriers continue to keep CHP from reaching its full market potential. Increasing the deployment of efficient CHP will require a multi-pronged approach that includes addressing significant barriers and instituting incentives or mandates where appropriate. These approaches could include such options as utility-provided incentive payments, the creation of a CHP portfolio standard, transmission and distribution support payments, or the use of feed-in tariffs.

**Table 7: Energy Efficiency Recommendation - Electricity
 (MMTCO₂E in 2020)**

Measure No.	Measure Description	Reductions
E-1	Energy Efficiency (32,000 GWh of Reduced Demand) <ul style="list-style-type: none"> • Increased Utility Energy Efficiency Programs • More Stringent Building & Appliance Standards • Additional Efficiency and Conservation Programs 	15.2
E-2	Increase Combined Heat and Power Use by 30,000 GWh	6.7
Total		21.9

**Table 8: Energy Efficiency Recommendation - Commercial and Residential
 (MMTCO₂E in 2020)**

Measure No.	Measure Description	Reductions
CR-1	Energy Efficiency (800 Million Therms Reduced Consumption) <ul style="list-style-type: none"> • Utility Energy Efficiency Programs • Building and Appliance Standards • Additional Efficiency and Conservation Programs 	4.3
CR-2	Solar Water Heating (AB 1470 goal)	0.1
Total		4.4

4. Renewables Portfolio Standard

Achieve 33 percent renewable energy mix statewide.

CEC estimates that about 12 percent of California’s retail electric load is currently met with renewable resources. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. California’s current Renewables Portfolio Standard (RPS) is intended to

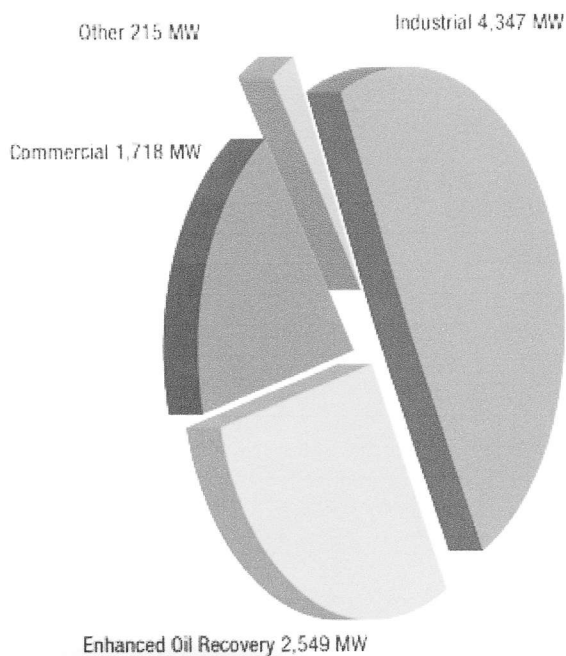
³⁷ Accounting for avoided transmission line losses of seven percent, this amount of CHP would actually displace 32,000 GWh from the grid.

CALIFORNIA ENERGY COMMISSION
2009 INTEGRATED ENERGY
POLICY REPORT

CEC-100-2009-003-CMF

ARNOLD SCHWARZENEGGER
GOVERNOR

**FIGURE 9: EXISTING
COMBINED HEAT AND
POWER IN CALIFORNIA**



Source: ICF International

tariff for small, new, highly efficient CHP to be implemented under AB 1613 (Blakeslee, Chapter 713, Statutes of 2007). The CPUC opened a rulemaking in June 2008 to implement the requirements of AB 1613, including establishing the policies and procedures for purchasing electricity from new CHP systems, and the Energy Commission is in the process of developing guidelines establishing technical eligibility criteria for programs to be developed by the CPUC and publicly owned utilities. Assembly Bill 1613 requires that the guidelines be adopted by January 1, 2010.

CHP, also referred to as cogeneration, is the most efficient and cost-effective form of distributed generation, providing benefits to California citizens in the form of reduced energy costs, more efficient fuel use, fewer environmental impacts, improved reliability and power quality, locations near load centers, and support of utility transmission and distribution systems. In this sense, CHP can be considered a viable end-use efficiency strategy for California businesses. Widespread development of efficient CHP systems will help avoid the need for new power plants or expansion of existing plants.

Existing Combined Heat and Power in California

California is one of the most prolific states in the country in terms of the amount of CHP in the state's energy mix. California has almost 1,200 sites representing nearly 9,000 MW of installed CHP capacity (see Figure 9).

The industrial sector represents about half of existing CHP, the bulk of which is in food processing and refining. The remainder of the industrial sector is from process industries like chemicals, metals, paper, and wood products. About one-third of existing CHP is in enhanced oil recovery because of the large steam load to produce heavy oil. The third largest group of CHP installations is in the commercial sector, which includes universities, hospitals, pris-

ons, utility generation, water treatment, and other commercial applications. The remaining CHP is in the mining and agricultural sectors.

Existing CHP installations in California can also be characterized in terms of facility size, primary fuel, and technology (prime mover). Large installations make up most of the existing capacity, with systems smaller than 5 MW representing only 5.5 percent. Systems larger than 100 MW represent almost 40 percent of the total existing capacity. The market saturation of CHP in large facilities is much higher than for smaller sites; much of the remaining technical market potential for CHP is for smaller systems.

The dominant fuel used for CHP is natural gas, representing 84 percent of the total installed capacity. Renewable fuel makes up 4.5 percent of the total capacity, mostly in the wood products, paper, and food processing industries and in wastewater treatment facilities.

Because of the concentration of large-scale systems in the existing CHP population, the most common prime movers are gas turbines. In the very large sizes, these are often in a combined cycle configuration. In intermediate sizes, simple cycle gas turbines are used. Renewable fuels or waste fuels are used in boilers driving steam turbines in the wood, paper, food, and petrochemical industries. Most of the small systems are driven by gas-fired reciprocating engines; while total capacity is small (5 percent), the reciprocating engine technology represents the greatest number of CHP sites (62 percent).

Within existing CHP, there are approximately 6,000 MW of CHP capacity under qualifying facility contracts under which all or a portion of the output is sold to the utilities. The continued existence and viability of this power is a major issue; the 2007 IEPR noted that as much as 2,000 MW of CHP capacity could shut down by 2010 as contracts expire.

Combined Heat and Power and the Environment

In December 2008, the ARB adopted its *Climate Change Scoping Plan* with a target of 4,000 MW of CHP to displace 30,000 GWhs of demand and reduce GHG emissions by 6.7 million metric tons of CO₂ by 2020. A CHP facility produces electricity and utilizes the excess heat, thus increasing efficiencies and reducing GHG emissions.

For CHP to meet ARB's goals, a new generation of highly efficient CHP facilities must be encouraged and supported. Critical to achieving these efficiencies and meeting these targets will be the legislatively mandated minimum efficiency standard of 60 percent to guide development and operation of these facilities over time. AB 1613 is intended to encourage the development of new CHP systems in California with a generating capacity of not more than 20 MW. Assembly Bill 1613 directs the Energy Commission to adopt guidelines by January 1, 2010, establishing technical criteria for eligibility of CHP systems for programs to be developed by the CPUC and publicly owned utilities. When these guidelines are adopted, they will set an efficiency standard for CHP facility development and assure that facilities are designed and operated in a way that reduces GHG emissions and will create a new benchmark for CHP efficiencies in California. As CHP technology continues to develop, efficiencies more than 70 percent can be expected to become standard and cost effective.

Another environmental benefit of CHP that is often overlooked has to do with water use. In California, central-station thermal, water-cooled power generators use enormous amounts of water for cooling. The National Renewable Energy Laboratory estimates that almost half a gallon of water is evaporated at central station thermoelectric plants for every kWh of electricity consumed at the point of

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

use.⁹³ CHP generally does not use condensers or cooling towers, therefore, its water consumption is much lower.

CHP that uses renewable fuels provides additional environmental benefits to California. There is potential for doubling the renewable CHP at the state's wastewater treatment plants. Sludge from waste treatment plants can be fed into an anaerobic digester to create biogas (methane), which is then burned in a CHP system. The wastewater treatment plants can also co-digest other biodegradable waste streams, such as the dairy and food processing industry and restaurant waste. Many waste treatment plants are exploring co-digestion to increase their biogas production and to take advantage of underused digester capacity. California's dairy and food processing industries are exploring co-digestion to solve the problem of waste disposal. Using these wastes for electricity generation also addresses the adverse impact of the GHG emissions from untreated wastes, as well as the GHG impacts from transporting wastes for disposal elsewhere. A recent report by the Energy Commission staff identified a market potential of 450 MW of CHP capacity from co-digesting sludge and other biodegradable waste.⁹⁴ There are, however, some economic and regulatory barriers, including streamlining the permitting process and providing some financing options that municipally owned waste treatment plants require.

An assessment of statewide CHP technical and market potential, discussed in more

detail below, suggests that the largest untapped market for CHP is in the commercial and institutional sectors (20 MW and less).⁹⁵ Unlike industrial sector CHP, these smaller systems will use distributed generation applications that will be located at or near existing customer's thermal loads. Because a CHP unit must be in close proximity to the facility where the waste heat will be utilized, new green space will not be needed to develop this new generation, meaning fewer environmental impacts. Additionally, most small CHP and distributed generation are interconnected to the distribution system. Developing generation closer to load centers instead of in remote areas miles where it will be consumed would help reduce the need to build new transmission infrastructure and thereby avoid the associated environmental impacts.

Combined Heat and Power Technical Potential

The technical potential of CHP is an estimation of market size constrained only by technological limits – the ability of CHP technologies to fit customer energy needs. CHP technical potential is calculated in terms of CHP electrical capacity that could be installed at existing and new facilities based on the estimated electric and thermal needs of the site. The technical market potential does not include screening for economic rate of return, or other factors such as ability to retrofit, an owner's interest in using CHP, availability of capital or natural gas, and variations in energy consumption within customer application/size class. Identifying the technical market potential is a preliminary step in assessing actual economic market size and ultimate market penetration.

93 National Renewable Energy Laboratory, *Consumptive Water Use for U.S. Power Production*, December 2003, NREL/TP-550-33905, available at: [<http://www.nrel.gov/docs/ty04osti/33905.pdf>].

94 California Energy Commission, *Combined Heat & Power Potential at California's Wastewater Treatment Plants*, final staff paper, September 2009, CEC-200-2009-014-SF, available at: [<http://www.energy.ca.gov/2009publications/CEC-200-2009-014/CEC-200-2009-014-SF.PDF>].

95 *Combined Heat and Power Market Assessment*, draft consultant report, October 2009, CEC-500-2009-094-D, available at: [<http://www.energy.ca.gov/2009publications/CEC-500-2009-094/CEC-500-2009-094-D.PDF>].

TABLE 3: TOTAL COMBINED HEAT AND POWER TECHNICAL POTENTIAL (MW) IN 2009 BY MARKET SECTOR

MARKET TYPE	FACILITY SIZE				TOTAL
	50-500 kW	500 kW-1 MW	1-5 MW	> 20 MW	
Industrial Onsite	966	501	1,403	245	4,157
Commercial Traditional	297	133	124	0.0	568
Commercial Heating & Cooling	2,862	760	1,668	604	6,802
Export Existing	71	110	261	3,530	4,544
Total	4,197	1,504	3,456	4,379	16,071

Source: ICF International

CHP is best applied at facilities that have significant and concurrent electric and thermal demands. In the industrial sector, CHP thermal output has traditionally been in the form of steam used for process heating and for space heating. For commercial and institutional users, thermal output has traditionally been steam or hot water for space heating and potable hot water heating, and more recently for providing space cooling through the use of absorption chillers.

Two different types of CHP markets were included in the evaluation of technical potential for this assessment. The first is the traditional CHP market where the electrical output meets all or a portion of the baseload needs for a facility and the thermal energy is used to provide steam or hot water. In this market, industrial facilities often have "excess" thermal load compared to their on-site electric load (meaning the CHP system will generate more power than can be used on-site if sized to match the thermal load). In the commercial sector, CHP systems almost always have excess electric

load compared to their thermal load, so these facilities will use all power generated on site. In California, interest in the combined cooling, heating, and power market could potentially open up the benefits of CHP to facilities that do not have the year-round heating or hot water loads to support a traditional CHP system. A typical system would provide the annual hot water load, a portion of the space heating load in the winter months, and a portion of the cooling load during the summer months.

The previous two categories are based on the assumption that all of the thermal and electric energy is used on-site. Within large industrial process facilities, there is typically an excess of steam demand that could support CHP with significant quantities of electricity export to the wholesale power system. The export potential was quantified and evaluated as a separate market.

Table 3 shows the total technical potential for CHP in existing facilities in California for 2009. There is more potential in commercial facilities than in industrial facilities, which is

TABLE 4: TOTAL COMBINED HEAT AND POWER TECHNICAL POTENTIAL GROWTH (MW) BETWEEN 2009 AND 2029 BY MARKET SECTOR

MARKET TYPE	FACILITY SIZE				TOTAL
	50–500 kW	500 kW–1 MW	1–5 MW	> 20 MW	
Industrial Onsite	132	62	154	64	438
Commercial Traditional	47	15	19	4	85
Commercial Heating & Cooling	622	190	416	181	1,526
Export New Facilities	22	16	39	45	294
Total	823	283	628	294	2,346

Source: ICF International

a switch from the traditional characterization of CHP target markets. There is also a heavy concentration of potential in the small size ranges, indicating that many large facilities already have CHP systems for their on-site needs, leaving the remaining large size system potential in the export market.

The utility with the largest amount of CHP technical potential is PG&E, with SCE a close second. Since PG&E also has the largest amount of existing CHP installations, the remaining CHP potential indicates that SCE has more room for growth in CHP capacity as a percentage of current CHP installations. The LADWP also has a significant amount of remaining potential given the small size of its service area.

While the 2009 technical potential estimate is based on the facility data in the potential CHP site list, the 2029 estimate includes economic growth projections for target applications between 2009 and 2029 (Table 4). To estimate the development of new facilities

and growth in existing facilities between the present and 2029, economic projections for growth by target market applications in California were used.⁹⁶ Due to recent economic factors, the outlook on growth rates for several industries are not as strong as they once were, leading to a lower amount of new technical potential additions in the forecast period.

Clearly, California contains significant technical potential for growth in CHP installations. Considering the market for both existing and new commercial and industrial facilities, there is a total technical market potential that

⁹⁶ These growth projections were derived from data in the Annual Energy Outlook 2009 stimulus case developed by the U.S. Department of Energy's Energy Information Administration. The growth rates were used in this analysis as an estimate of the growth in new facilities or capacity additions at existing facilities. In cases where an economic sector is declining, it was assumed that no new facilities would be added to the technical potential for combined heat and power.

is more than 18,000 MW by 2029. The most significant regions for growth are in PG&E and SCE service territory; however the other utilities in California also have significant room for growth.

Combined Heat and Power Market Potential

To determine the outlook for CHP market penetration in California, several factors were considered in the analysis:

- The relationship of delivered natural gas and electricity prices, or spark spread.
- The cost and performance of the CHP equipment suitable for use at a given facility.
- The electric and thermal load characteristics of commercial, industrial, and institutional facilities in the state.
- Incentive payments to the CHP user that reflect societal or utility benefits of CHP.
- Customer decisions about the economic value that will trigger investment in CHP or the willingness to consider CHP.

All of these factors are accounted for in the forecasts of CHP market penetration between 2009 and 2029. A base case to reflect current market conditions and policies was developed first, followed by four alternative cases that include CHP stimulus measures including restoration of the Self-Generation Incentive Program, implementation of payments to CHP operators for CO₂ emissions reductions compared to separately purchased fuel and power, addition of an effective economic mechanism for the export power from facilities larger than 20 MW, and an "all-in" case that includes all of these measures combined.

Base Case Results

In the 20-year forecast period, the base case market penetration of CHP generating capacity equals 2,731 MW with an additional 267 MW of avoided electric capacity for air conditioning supplied by CHP for a total market impact of 2,998 MW. (With the passage of SB 412 [Kehoe, Chapter 182, Statutes of 2009], an additional 497 MW of combined heat and power was made available for addition to the base case, in accordance with an alternative incentive scenario analyzed for this assessment.)

Figure 10 shows the generating capacity market penetration by CHP system size. In the base case, the largest share of the market penetration will be in sizes below 5 MW. This distributed generation CHP market makes up 65 percent of the total market penetration. The 5- to 20-MW size category makes up 25 percent of the market. Without a mechanism (such as a Qualifying Facility contract) for export of power in the greater than 20-MW size category, these large systems will make up only 10 percent of the new market penetration expected over the next 20 years.

Incentive Cases

The assessment of CHP potential included different incentive scenarios and an all-in incentive case. Following are brief descriptions of the assumptions used for the incentive cases analyzed for this assessment.

CO₂ Payments Case. CHP is a more efficient use of energy than purchasing boiler fuel and electricity separately. The CHP operator does not gain any special benefit from this fact, only from the reduction in operating costs at the site. Benefits of CHP that contribute to State or federal policy goals such as increased efficiency or CO₂ emissions reduction are external to the decisions to build and operate CHP. Providing CHP operators with a payment for reducing overall CO₂ emissions would internalize

this benefit into the CHP deployment decision and stimulate the CHP market based on the social value of emissions reduction that is provided. An average value of \$50/ton of CO₂ emissions reduction is provided for all CHP electric output and also for avoided electricity generation due to CHP supplied air conditioning as well.

Restore the Self-Generation Incentive Program Eligibility. Senate Bill 412 expands program eligibility to include “distributed energy resources that the [CPUC], in consultation with the State Air Resources Board, determines will achieve reductions of greenhouse gas emissions.” This includes CHP facilities that meet specified emissions and efficiency standards. The CPUC will be required to implement the Self-Generation Incentive Program using its own discretion about program details. For this analysis, conducted before SB 412’s passage, it was assumed that all payments would be restored as they existed before they were suspended in 2007 and that the current phased expansion of benefits for projects up to 5 MW would be included as well.

Basic Large Export Case. When the AB 1613 feed-in tariffs for new CHP are finalized they will apply only to systems 20 MW or less. In the base case, no mechanism for exporting power from larger facilities (greater than 20 MW) was assumed. In this first of two expanded export scenarios, export of power from large facilities is assumed to be at a contract price reflecting the cost of power generation from a combined cycle power plant using the plant cost and performance assumptions defined in an Energy Commission staff report.⁹⁷

97 California Energy Commission, *Comparative Costs of Central Station Electricity Generation*, draft staff report, August 2009, CEC-200-2009-017-SD, available at: [<http://www.energy.ca.gov/2009publications/CEC-200-2009-017/CEC-200-2009-017-SD.PDF>].

Strong Stimulus Large Export Case. A second contract price track for large export CHP projects was also evaluated that included an aggressive contract price.

All Incentives Case. The all-in case represents a combination of restoration of the Self-Generation Incentive Program, addition of CO₂ emissions reduction payments of \$50/ton, and encouragement of large export projects with the aggressive contract pricing mechanism and accompanying CO₂ payments. The large export market contributes 2,714 MW to this case.

Incentive Case Results

Figure 11 shows the cumulative CHP market penetration for the incentive cases. The figure includes both CHP generation and avoided air conditioning. The range of market penetration from the base case to the all-in case is from 3,000 to 6,500 MW. The case results can be summarized as follows:

- CO₂ payments increase market penetration by 244 MW.
- The restoration of the Self-Generation Incentive Program for the next 10 years increases market penetration by 497 MW.
- Expanding export contracting to facilities larger than 20 MW with a basic contracting mechanism increases market penetration by 1,441 MW. All of this increase in export market penetration is for facilities larger than 20 MW.
- In the all-in case, which includes all measures plus a more aggressive large export contract price, the market increases by 3,521 MW, with 79 percent of this increase in the export market.

FIGURE 10: BASE CASE CUMULATIVE COMBINED HEAT AND POWER MARKET PENETRATION BY SIZE CATEGORY

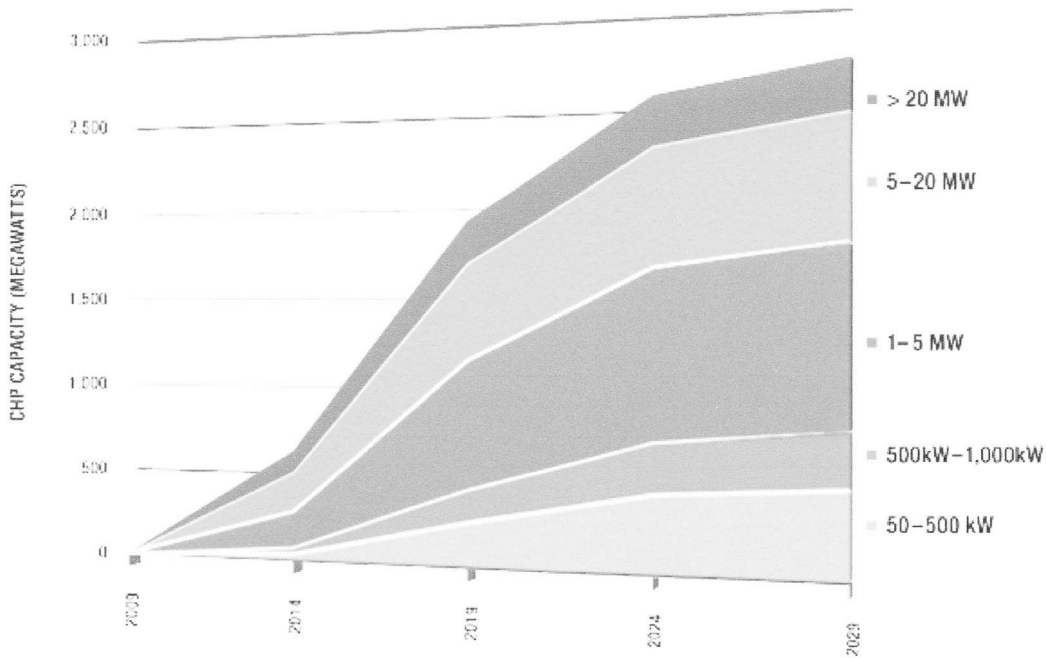
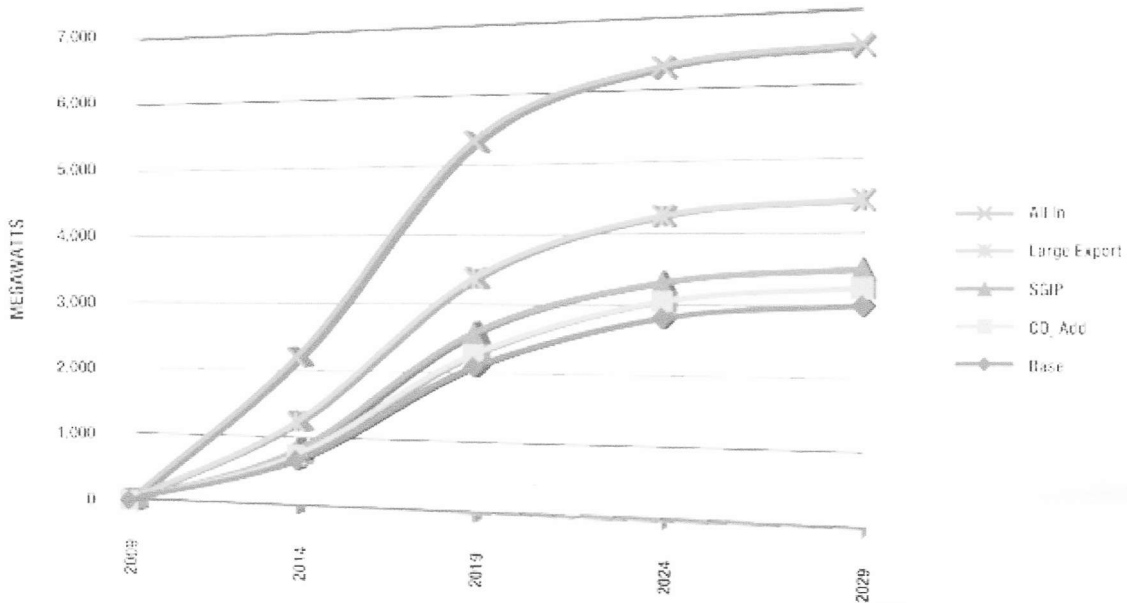
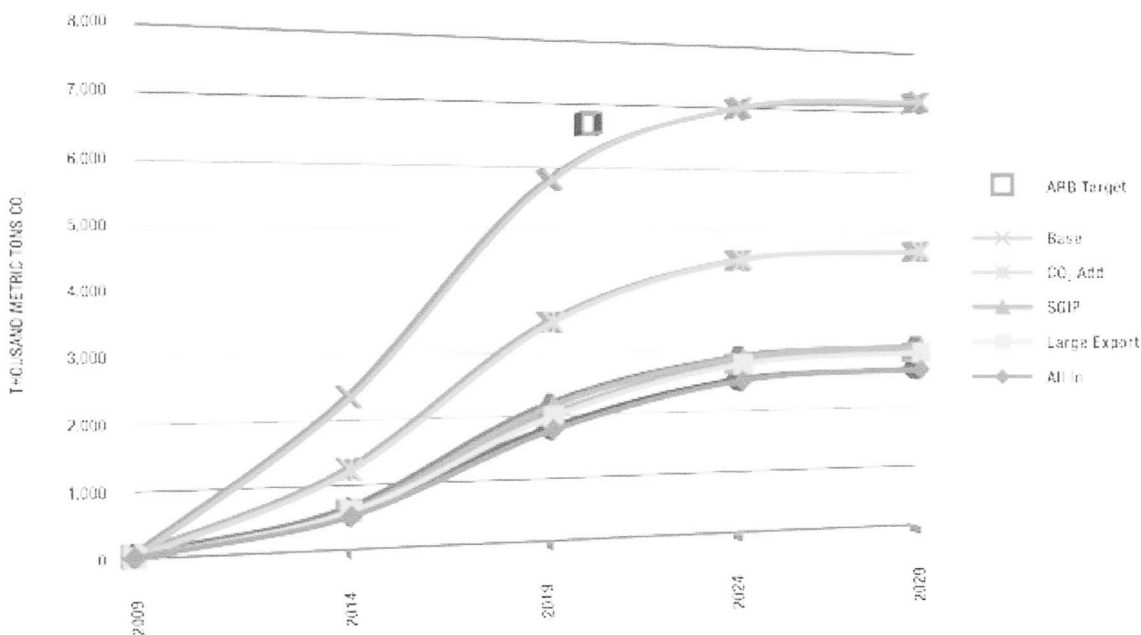


FIGURE 11: INCENTIVE CASES CUMULATIVE MARKET PENETRATION RESULTS



Source for figures: ICF CHP Market Model

FIGURE 12: GREENHOUSE GAS EMISSIONS SAVINGS BY SCENARIO USING AIR RESOURCES BOARD AVOIDED CENTRAL STATION EMISSIONS ESTIMATE



Source: ICF CHP Market Model

TABLE 5: COMPARISON OF STUDY RESULTS GREENHOUSE GAS SAVINGS TO AIR RESOURCES BOARD GOALS

SCENARIO	CAPACITY MW	OUTPUT GWh/YEAR	AVERAGE LOAD FACTOR	AVOIDED CO ₂ MMT/YEAR	CO ₂ SAVINGS RATE lb/MWh
ARB 2020 Goal	4,000	30,000	85.6%	6.70	492
Base Case 2020	2,240	14,466	73.8%	1.93	294
Base Case 2029	2,998	18,296	69.6%	2.67	322
All In Case 2020	5,532	39,545	81.6%	6.05	357
All In Case 2029	6,549	45,779	80.2%	7.20	347

Source: ARB and ICF International

GHG Emissions Savings

Emissions reductions by scenario were calculated and are shown in Figure 12. Annual GHG savings by the end of the forecast time horizon (2029) range from 2.7 million metric tons carbon dioxide equivalent (CO₂e) emissions to 7.0 million metric tons in the all-in case. The graph also shows the ARB target for CHP of 6.7 million metric tons reduction by 2020.

Table 5 compares the study results with the ARB target of GHG emissions savings from CHP by 2020. In the base case, market penetration by CHP is projected to be 56 percent of the ARB target estimate for additional CHP capacity market penetration, and power generation and avoided air conditioning from CHP is less than half of the ARB estimate. In the all-in case, 2020 market penetration and generation both exceed the ARB targets, and the expected GHG savings reach 90 percent of the target 2020 GHG emissions reduction.

Because both the ARB estimates and this study are based on the ARB assumption for avoided GHG emissions, the differences to the CO₂ savings rates shown in the table – 492 lb/MWh for ARB and 294–347 lb/MWh for this study – are primarily due to changes in the operating profile and performance assumptions for CHP. The differences are as follows:

- ARB assumes an 85 percent load factor for CHP, while the calculated value for the all-in case is 80.2 percent.
- ARB assumes an overall CHP efficiency of 77 percent, while the calculated value for the all-in case is 67.8 percent.

Combined Heat and Power and Reliability

As businesses, government facilities, hospitals, and data centers increasingly depend on sophisticated technologies and computers and information systems to run their operations,

it is critical to provide protection from both short and extended power outages resulting from grid failures, natural disaster, terrorist attacks, or other disruptions. Hospitals and data centers in particular are vulnerable should power be interrupted. Reliable power is essential to keep cooling and ventilations system operating, high-tech diagnostic systems working, and electronic patient information available. Encouraging and supporting the development of CHP at hospitals throughout California will assure these essential services continue to operate reliably, even if there is a major disruption of regional power.

Traditionally, on-site diesel generators are used to protect facilities from utility power outages. However, recent events suggest that these generators may not be reliable and able to operate during both short and extended outages. During the August 2003 Northeast blackout, about half of New York City's 58 hospitals experienced failures of their backup diesel generators. Even though periodic testing is required, infrequent use of conventional diesel backup generators increases the potential for failure when they are needed most.

In addition, if there is a prolonged outage, fuel supplies for diesel generators may also be a problem. After Hurricane Katrina, diesel fuel for backup generators could not be resupplied for many reasons including blocked or destroyed roads and contaminated fuel supplies. Because CHP systems operate continuously (or for extended periods every day) and because they operate (typically) on natural gas, CHP systems eliminate many of these issues. During and after Hurricane Katrina, natural gas lines remained pressurized. As a result, natural gas was the only fuel available for several weeks afterwards.⁹⁸

⁹⁸ Gillette, Stephen F., *CHP Case Studies – Saving Money and Increasing Security*, available at: [http://www.chpcenternw.org/NwChpDocs/Microturbines_Capstone_overview_cases.pdf].

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Encouraging and supporting the development of CHP at hospitals and other facilities or institutions that support essential health and safety functions for the state can provide a range of benefits beyond assured reliability. Benefits for hospitals include cost savings, improved patient service, and improved reliability and power quality to ensure expensive and sensitive electronics and equipment are not damaged when voltage fluctuates. From the state's perspective, encouraging the installation of CHP in hospitals and other essential facilities will assure that if electric supplies are interrupted for hours, days, or weeks, as was the case when Hurricane Katrina devastated New Orleans, California citizens will be able to find a "safe haven" at hospitals and other similar institutions in the state that are equipped with CHP systems. A secondary benefit of increased use of CHP at hospitals throughout the state is the retirement of old diesel backup generators and the reduction of emissions associated with their operation.

Combined Heat and Power and the Economy

A facility with constant thermal load, constant electrical load, and hence a uniform "power-to-heat ratio" (or electrical load-to-thermal load ratio), is an ideal CHP prospect. However, many of the remaining CHP prospects have fluctuating loads and variable load profiles. For these facilities, electricity export loosens the operating constraints. A thermally matched CHP system will compete economically and environmentally with the separate production of electricity at a central station plant and the production of steam or heat on site. However, the following barriers limit the economic competitiveness:

- Uncertainty about the differential between the cost of buying electric power from the grid and the cost of natural gas.

- A required payback period of as little as two years and usually no longer than five years. The new assessment of CHP potential indicates that these facts imply a very high risk perception on the part of potential CHP project developers.
- The ability of a CHP system owner to offset only about 80 percent of the electrical retail rate because of standby and demand charges. Tariffs in other states provide higher offsets.
- Current tariffs not fully accounting for the system and societal benefits that CHP provides.
- Additional technical economic and technical design challenges faced by facilities with fluctuating loads.

The variation in CHP market penetration forecasts under various economic assumptions illustrates the effects of those factors on the attractiveness of CHP. An export tariff would mitigate some of the barriers, depending on the tariff's simplicity, a term of at least 10 years, and prices that reflect capacity, energy, environmental values, and locational values. Restoration of the Self-Generation Incentive Program that provides up-front incentive payments to offset some of the capital costs of the CHP system and a CO₂ emission reduction payment for CHP electric output are examples of economic incentives that can on their own or in combination promote CHP in California markets.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Research Development & Demonstration (RD&D)
 Workpaper: VARIOUS

Summary for Category: D. Research Development & Demonstration (RD&D)

	In 2009\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	1,321	1,487	1,487	1,682
Non-Labor	8,135	8,699	8,699	11,504
NSE	0	0	0	0
Total	9,456	10,186	10,186	13,186
FTE	13.3	15.7	15.7	17.7

Workpapers belonging to this Category:

2IN008.000 TECHNOLOGY DEVELOPMENT SUPPORT

Labor	249	132	132	132
Non-Labor	21	54	54	54
NSE	0	0	0	0
Total	270	186	186	186
FTE	2.5	1.2	1.2	1.2

2IN008.001 RESEARCH DEVELOPMENT AND DEMONSTRATION (RD&D) - REFUNDABLE PROGR

Labor	1,072	1,355	1,355	1,550
Non-Labor	8,114	8,645	8,645	11,450
NSE	0	0	0	0
Total	9,186	10,000	10,000	13,000
FTE	10.8	14.5	14.5	16.5

Beginning of Workpaper
2IN008.000 - TECHNOLOGY DEVELOPMENT SUPPORT

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Research Development & Demonstration (RD&D)
 Category-Sub: 1. Technology Development Support
 Workpaper: 2IN008.000 - TECHNOLOGY DEVELOPMENT SUPPORT

Activity Description:

In connection with activities and staff support for the SoCalGas Base Margin RD&D programs which has a one way balancing account treatment, there are certain costs that were incurred but must be funded separately from the Base Margin RD&D program. Such costs includes employee training and development, staff supporting outreach efforts to identify co-sponsors including DOE and other government agencies to co-fund select RD&D projects, and associated employee expenses.

Forecast Methodology:

Labor - 5-YR Average

Labor costs in this organization was relatively flat at an annual average cost of approximately \$132 for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012. There is no adjustment to the base TY2012 forecast.

Non-Labor - 5-YR Average

This organization incurred small amount of nonlabor expenses, but fluctuated significantly from year to year. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012. There is no adjustment to the base TY2012 forecast.

NSE - 5-YR Average

Not applicable

Summary of Results:

	In 2009\$ (000)								
	Adjusted-Recorded					Adjusted-Forecast			
	2005	2006	2007	2008	2009	2010	2011	2012	
Years									
Labor	72	134	90	116	249	132	132	132	
Non-Labor	21	89	105	38	21	54	54	54	
NSE	0	0	0	0	0	0	0	0	
Total	93	223	195	154	270	186	186	186	
FTE	0.7	1.2	0.7	1.0	2.5	1.2	1.2	1.2	

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Research Development & Demonstration (RD&D)
 Category-Sub: 1. Technology Development Support
 Workpaper: 2IN008.000 - TECHNOLOGY DEVELOPMENT SUPPORT

Forecast Summary:

Forecast Method		In 2009 \$(000)								
		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Labor	5-YR Average	132	132	132	0	0	0	132	132	132
Non-Labor	5-YR Average	54	54	54	0	0	0	54	54	54
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		186	186	186	0	0	0	186	186	186
FTE	5-YR Average	1.2	1.2	1.2	0.0	0.0	0.0	1.2	1.2	1.2

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010 Total	0	0	0	0	0.0	
2011 Total	0	0	0	0	0.0	
2012 Total	0	0	0	0	0.0	

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: D. Research Development & Demonstration (RD&D)
Category-Sub: 1. Technology Development Support
Workpaper: 2IN008.000 - TECHNOLOGY DEVELOPMENT SUPPORT

Determination of Adjusted-Recorded:

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	55	105	73	95	211
Non-Labor	19	82	100	38	21
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	73	187	172	132	232
FTE	0.6	1.0	0.6	0.8	2.1
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	55	105	73	95	211
Non-Labor	19	82	100	38	21
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	73	187	172	132	232
FTE	0.6	1.0	0.6	0.8	2.1
Vacation & Sick (Nominal \$)					
Labor	9	19	13	18	38
Non-Labor	0	0	0	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	9	19	13	18	38
FTE	0.1	0.2	0.1	0.2	0.4
Escalation to 2009\$					
Labor	8	11	5	3	0
Non-Labor	2	7	5	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	10	18	10	3	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	72	134	90	116	249
Non-Labor	21	89	105	38	21
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	93	223	195	153	270
FTE	0.7	1.2	0.7	1.0	2.5

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Research Development & Demonstration (RD&D)
 Category-Sub: 1. Technology Development Support
 Workpaper: 2IN008.000 - TECHNOLOGY DEVELOPMENT SUPPORT

Summary of Adjustments to Recorded:

Year	In Nominal \$ (000)				
	2005	2006	2007	2008	2009
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005 Total	0	0	0	0.0			
2006 Total	0	0	0	0.0			
2007 Total	0	0	0	0.0			
2008 Total	0	0	0	0.0			
2009 Total	0	0	0	0.0			

Beginning of Workpaper
2IN008.001 - RESEARCH DEVELOPMENT AND DEMONSTRATION (RD&D) -
REFUNDABLE PROGRAM

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Research Development & Demonstration (RD&D)
 Category-Sub: 2. RD&D - Refundable Program
 Workpaper: 2IN008.001 - RESEARCH DEVELOPMENT AND DEMONSTRATION (RD&D) - REFUNDABLE PROGR

Activity Description:

RD&D organization managed the base margin RD&D program. The organization is focused on developing, demonstrating and deploying new and emerging technologies and products of significant potential value to customers and by accelerating the launch of these products into the marketplace. The base margin RD&D program has a one way balancing account treatment.

Forecast Methodology:

Labor - Zero-Based

Labor costs in this program was relatively flat for the recorded 5-years period. This program has an authorized total funding level of \$10,000 annually from 2008 GRC decision, Although 2008 and 2009 labor expenses were slightly below authorized level, based on current activities level, SoCalGast expect total 4 years (2008-2011) cycle expenses will approximate authorized level. Therefore, historical averaging forecast methodology would not be appropriate to use for this program. Zero base forecast is used instead. The 2010 and 2011 forecasts reflect 2008 GRC annual authorized funding level, and adjustments are made to TY2012 forecasts to account for specific program growth.

Non-Labor - Zero-Based

Nonlabor costs in this program averaged approximately \$7,200 which is slightly below authorized funding of \$8,600 from 2008 GRC. However, based on current activities level, SoCalGast expect total 4 years (2008-2011) cycle expenses will approximate authorized level. Therefore, historical averaging forecast methodology would not be appropriate to use for this program. Zero base forecast is used instead. The 2010 and 2011 forecasts reflect 2008 GRC annual authorized funding level, and adjustments are made to TY2012 forecasts to account for specific program growth.

NSE - Zero-Based

Not Applicable

Summary of Results:

	In 2009\$ (000)								
	Adjusted-Recorded					Adjusted-Forecast			
	2005	2006	2007	2008	2009	2010	2011	2012	
Years									
Labor	1,146	1,045	980	1,077	1,072	1,355	1,355	1,550	
Non-Labor	9,076	8,046	6,869	4,014	8,114	8,645	8,645	11,450	
NSE	0	0	0	0	0	0	0	0	
Total	10,222	9,091	7,849	5,091	9,186	10,000	10,000	13,000	
FTE	12.3	11.2	9.9	10.7	10.8	14.5	14.5	16.5	

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Research Development & Demonstration (RD&D)
 Category-Sub: 2. RD&D - Refundable Program
 Workpaper: 2IN008.001 - RESEARCH DEVELOPMENT AND DEMONSTRATION (RD&D) - REFUNDABLE PROGRA

Forecast Summary:

Forecast Method		In 2009 \$(000)								
		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		2010	2011	2012	2010	2011	2012	2010	2011	2012
Labor	Zero-Based	0	0	0	1,355	1,355	1,550	1,355	1,355	1,550
Non-Labor	Zero-Based	0	0	0	8,645	8,645	11,450	8,645	8,645	11,450
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		0	0	0	10,000	10,000	13,000	10,000	10,000	13,000
FTE	Zero-Based	0.0	0.0	0.0	14.5	14.5	16.5	14.5	14.5	16.5

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010	1,355	0	0	1,355	0.0	1-Sided Adj
Current annual RD&D funding level based on 2008 GRC approval						
2010	0	8,645	0	8,645	0.0	1-Sided Adj
Current annual RD&D funding level based on 2008 GRC approval						
2010	0	0	0	0	14.5	1-Sided Adj
Current annual RD&D funding level based on 2008 GRC approval						
2010 Total	1,355	8,645	0	10,000	14.5	
2011	1,355	0	0	1,355	0.0	1-Sided Adj
Current annual RD&D funding level based on 2008 GRC approval						
2011	0	8,645	0	8,645	0.0	1-Sided Adj
Current annual RD&D funding level based on 2008 GRC approval						
2011	0	0	0	0	14.5	1-Sided Adj
Current annual RD&D funding level based on 2008 GRC approval						
2011 Total	1,355	8,645	0	10,000	14.5	

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Research Development & Demonstration (RD&D)
 Category-Sub: 2. RD&D - Refundable Program
 Workpaper: 2IN008.001 - RESEARCH DEVELOPMENT AND DEMONSTRATION (RD&D) - REFUNDABLE PROGRA

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2012	1,550	0	0	1,550	0.0	1-Sided Adj

Authorized annual RD&D funding from 2008 GRC of \$1,355,000 plus incremental labor costs of \$195k to support additional projects to accelerate the development, demonstration and commercialization of solar thermal systems and bioenergy.

2012	0	0	0	0	16.5	1-Sided Adj
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Authorized annual RD&D funding from 2008 GRC of 14.5 FTEs plus an incremental request of 2 FTEs to support additional projects.

2012	0	11,450	0	11,450	0.0	1-Sided Adj
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Authorized annual RD&D funding from 2008 GRC of \$8,645k plus an incremental request of \$2,805k to support additional projects to accelerate the development, demonstration and commercialization of solar thermal systems and bioenergy.

2012 Total	1,550	11,450	0	13,000	16.5	
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Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: D. Research Development & Demonstration (RD&D)
Category-Sub: 2. RD&D - Refundable Program
Workpaper: 2IN008.001 - RESEARCH DEVELOPMENT AND DEMONSTRATION (RD&D) - REFUNDABLE PROGRAM

Determination of Adjusted-Recorded:

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	874	815	787	880	908
Non-Labor	8,769	7,428	6,554	4,024	6,114
NSE	0	0	0	0	0
Total	9,643	8,242	7,342	4,904	7,022
FTE	10.4	9.5	8.4	8.9	9.1
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	-685	0	0	0	2,000
NSE	0	0	0	0	0
Total	-685	0	0	0	2,000
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	874	815	787	880	908
Non-Labor	8,084	7,428	6,554	4,024	8,114
NSE	0	0	0	0	0
Total	8,958	8,242	7,342	4,904	9,022
FTE	10.4	9.5	8.4	8.9	9.1
Vacation & Sick (Nominal \$)					
Labor	149	146	137	170	164
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	149	146	137	170	164
FTE	1.9	1.7	1.5	1.8	1.7
Escalation to 2009\$					
Labor	122	85	55	27	0
Non-Labor	992	618	315	-10	0
NSE	0	0	0	0	0
Total	1,114	703	371	17	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	1,146	1,045	980	1,077	1,072
Non-Labor	9,076	8,046	6,869	4,014	8,114
NSE	0	0	0	0	0
Total	10,221	9,091	7,850	5,090	9,186
FTE	12.3	11.2	9.9	10.7	10.8

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Research Development & Demonstration (RD&D)
 Category-Sub: 2. RD&D - Refundable Program
 Workpaper: 2IN008.001 - RESEARCH DEVELOPMENT AND DEMONSTRATION (RD&D) - REFUNDABLE PROGR.

Summary of Adjustments to Recorded:

In Nominal \$ (000)						
Year	2005	2006	2007	2008	2009	
Labor	0	0	0	0	0	
Non-Labor	-685	0	0	0	2,000	
NSE	0	0	0	0	0	
Total	-685	0	0	0	2,000	
FTE	0.0	0.0	0.0	0.0	0.0	

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005	0	-685	0	0.0	1-Sided Adj	N/A	TTRAN20091112 104327620

To exclude non-GRC corporate legal costs

2005 Total	0	-685	0	0.0			
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2006 Total	0	0	0	0.0			
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2007 Total	0	0	0	0.0			
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2008 Total	0	0	0	0.0			
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2009	0	2,000	0	0.0	1-Sided Adj	N/A	TTRAN20100303 090528830
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To exclude royalty revenue received from DDS sales. This royalty revenue will be distributed back to ratepayers via regulatory account update filing.

2009 Total	0	2,000	0	0.0			
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Supplemental Workpapers for Workpaper 2IN008.001

RD&D APPENDIX B

CSI – RD&D Key Accomplishments (2006 – 2009)

1). Gas Operations Key Accomplishments

Construction Technologies

- **Trenchless Technologies**

A pipe splitting system was developed as a cost-effective trenchless alternative to the traditional replacement method for small diameter plastic service lines. The system utilizes a newly developed hydraulic winch with multiple capstan pulleys, a splitter head, and an expander. This system allows the existing bore slot to be used and is especially beneficial where subsurface space is limited or congested. Pavement removal is also minimized resulting in lower O&M costs.

O&M Technologies

- **Thermal Electric Generator**

Cathodic protection (CP) of buried steel gas facilities requires an electrical supply of DC current, which is provided by a local utility. In remote locations, where utility power is not available, the company utilizes natural gas fired engines to power electric generators. A new technology called a "Thermo Electric Generator" (TEG) was evaluated to determine if it can meet the performance requirements and cost parameters of maintaining CP on our pipeline. TEGs contain no moving parts and converts heat produced by a natural gas burner directly into electricity. Several sizes and configurations of TEGs were field tested in various remote locations over a complete seasonal cycle. These units proved to be reliable and required minimal cost to operate, and as a result, have been approved for company use.

- **Gas Chromatograph Test Protocol**

A Gas Chromatograph (GC) test protocol and standard that can be used by industry was developed. Natural gas receipts or custody transfers regularly rely upon GCs to measure energy content and gas composition to verify if the gas meets tariff or other requirements. This proposed protocol can be used to evaluate the accuracy of new and existing GC units against a common test method. The proposed standard has been submitted to the American Petroleum Institute for acceptance.

Pipeline Technologies

- **Flaw Acceptance Criteria for Low Stress Pipelines**

A flaw acceptance criteria for pipelines operating at pressures below 40% SMYS (low stress) was developed. Regulations require the flaw acceptance criteria for low stress pipelines mirror those operating at pressures above 40% SMYS (high stress). In certain situations, this rule can be unnecessarily costly to pipeline operators. Following extensive engineering analysis and empirical testing, a flow chart and software program were developed that assesses flaws and determines acceptable repair methods on low stress pipelines.

- **Guided Wave Validation as Hydro-Test Equivalent**

In this research project, Guided Wave Ultrasonic Testing (GWUT) methods and results were compared to hydro-testing. Empirical GWUT results found no false negatives and few false positives (conservative interpretations). All anomalies predicted to fail via hydro-test were identified by GWUT, and anomalies that were too small to fail a hydro-test were also found by GWUT. Results of this research are being used as a foundation for developing an ANSI accredited GWUT Standard.

Environment

- **Dairy Waste – Renewable Energy Source**

A Gas Quality Guidance Document was developed for biomethane derived from Dairy Waste. Biogas is an attractive renewable energy source, but has different constituents in the gas compared to traditional gas supplies. Current gas quality specifications were established based on geologically formed natural gas supplies. This Guidance Document helps utilities determine if the dairy based gas supply can be introduced safely into gas delivered to customers. Research on biogas quality specifications from landfills is currently underway.

Safety

- **Methane Leak Detection**

Two methane leak detection instruments, employing state-of-the-art infrared absorption techniques to detect only methane gas, were developed and tested. The units are used in Gas Operations, replacing combustible gas leak detectors that use an open flame to measure hydrocarbon concentrations. The infrared leak detectors reduce potential false positive detection from other combustible gases (e.g., gasoline, propane, petroleum). One instrument operates like a speed radar gun, allowing the operator to check for methane gas leaks at distances up to 100 feet. Because they do not use an open flame, they are also safe for indoor operation.

- **Flame Resistant Safety Suits**

A new flame resistant (FR) suit was evaluated to validate the manufacturer's claim of 8-second protection against a flash fire. The new multi-layered suit provided over twice the personnel protection compared to existing FR suits.

Independent tests were conducted at the University of North Carolina's pyro-chamber and at the company's flash fire training facility. Assessment of temperature profiles on an experimental mannequin clothed with the new Nomex suit validated the manufacturer's claim. The project's findings provided justification for the company to replace all existing FR suits to the new design.

- **Jackhammer Lift Assist**

A pneumatic actuator or Lift Assist was developed to reduce the lifting force required by the field crews when using jackhammers to break pavement. The actuator, when mounted on a jackhammer, produces a 350 lb upward force. Because the tool reduces the potential for back injuries, the Lift Assist has been approved for company field use.

Transmission Operations

- **Internal Corrosion Threat Assessment Guidelines**

SCG co-funded a Pipeline Research Council International (PRCI) led project to evaluate various pipeline segments for internal corrosion threats. The company provided information from past inspections to help create a robust database. Guidelines based on conservative parameters were designed into the model. SCG can better develop inspection plans to assess corrosion pipelines by eliminating unnecessary tasks and resources when there is limited risk from internal corrosion.

- **Reliability-Based Pipeline Integrity Guidelines**

This project developed a step-by-step methodology for using reliability methods to prioritize and schedule inspection, remediation and maintenance activities directed at metal loss corrosion, based upon data obtained from in-line inspection and direct assessments via excavations. The guidelines are

used to ensure compliance with Pipeline Integrity regulations for gas transmission pipelines.

- **Pre-Construction Drillability Assessment**

SCG participated in a PRCI project improving practices for assessing the drillability in rock encountered during Horizontally Directionally Drilled (HDD) pipeline projects. Improved understanding of subsurface conditions, frequently under river beds, leads to more accurate HDD plans, which increases the success of the project. Construction cost savings can be substantial where a single HDD attempt can exceed \$100,000.

- **Tensile Strain Limits for Strain-Based Design**

This project develops enhanced tensile strain limit models to support strain-based pipeline design procedures. Pipeline construction, in areas subject to large ground movements (e.g., earthquake faulting, subsidence, and landslides), are engineered and designed using strain-based designs. Use of the new model will minimize construction costs from using overly conservative designs in critical locations.

- **Pipe Material Properties Study**

The goal of this project is to establish guidelines on pipeline material specifications for strain-based design applications. A strain demand model was used to characterize stress-strain relationships and study the influence of material properties. This PRCI led project will optimize selection of pipe materials.

- **Smart Ultrasonic Meter Diagnostics**

The company has co-funded various measurement related research projects at PRCI that advance metering technology. Clamp-On Ultrasonic meters were

found to be useful in proving primary meter performance, which will improve “measurement data used to calculate unaccounted for gas totals. A Smart Ultrasonic Meter diagnostics tool that can be used to evaluate ultrasonic meter performance from various manufacturers was developed.

- **Measurement Research**

Comprehensive laboratory performance tests for ultrasonic and other new meter types were evaluated by NOVA Research as part of the METCON consortium. Ultrasonic meter performance under unusual flow and pressure conditions was tested, and the results largely verified manufacturer’s specifications. These tests will support the identification of new meter technology that improve overall measurement quality and establish the use of specialized measurement equipment. METCON report findings can also assist in developing operational guidelines and maintenance practices.

- **LNG Interchangeability Materials Testing**

Gas Operations is co-funding a project with NGA and GTI to test the impact of LNG based gas supplies on elastomers found in valves used in our system. This project was initiated in part due to the leakage problems encountered by a utility on the East Coast. Extensive laboratory conditioning and testing of existing and new materials is underway for several LNG compositions. Very preliminary test results indicate no impact from LNG-based supplies on elastomers found in new products.

- **Large Diameter Pipeline Inspection System**

The company is co-funding with the Northeast Gas Association and U.S. Department of Transportation the design and development of an innovative robotic inspection system for large diameter transmission pipelines which has been upgraded from a laboratory unit to a commercial prototype. This system

can be used to inspect internal corrosion in un-piggable and cased pipeline segments for which tools of this accuracy are unavailable. Research to improve the system's durability, range, and reliability under live conditions has been incorporated in the new robotic design. If successful, this system would be the first of its kind and a major technical accomplishment with significant benefits to industry.

- **External Casings Corrosion Model**

This project will create an analytical tool to determine the likelihood of external corrosion in a casing annulus, required under integrity assessment regulations for pipelines in high consequence locations. Cased pipe is very difficult and expensive to inspect because the "short" segment needs to be taken out-of-service and pressure tested. The model will provide a means to support cased pipe risk assessments using External Corrosion Direct Assessment (ECDA) data. The model is currently undergoing final review and will be presented to regulators.

Compressor Station & Storage Operations

- **Compressor Engine Efficiency**

In a multi-year project with PRCI, SCG co-funded research on improving the efficiency and lowering maintenance costs for large gas engines used in transmission operations. Significant strides were made on closed-loop control systems, using a Model Predictive Controller (MPC) that enables the control of engine performance within a very narrow and precise window of operation. This optimizes the air/fuel ratio and engine speed. The MPC system was shown to be superior to the Programmable Logic Controllers.

2). Customer Applications Key Accomplishments

Residential Appliances

- **Whole House Energy Efficiency Wizard**

SCG and the UTD are funding GTI to develop a user-friendly Internet-based tool that allows for the analysis and easy selection of the latest applicable energy saving technologies for residential applications. The program allows the user to select single family or multifamily structures, choice of building materials and appliances (both electric and gas). The latest version 1.5 was released with analysis of renewable solar energy (photovoltaic) applications. This is in addition to the previously implemented modules analyzing impacts of energy efficient building envelope components, HVAC equipment, and appliances on building energy consumption, air emissions, and carbon footprint. Customization for a local region taking into account weather and utility rates will be addressed in 2010.

- **Roadmap for Gas Usage in Net-Zero Energy Homes**

SCG and the UTD are funding GTI to develop a user-friendly Internet-based tool that allows for the analysis and easy selection of the latest applicable energy saving technologies for residential applications. The goal is to leverage energy efficiency programs to promote long-term viability of residential gas service in high performance homes to (1) maintain traditional revenue streams while (2) promoting new revenue opportunities. This tool is currently being assessed by SCG Residential Marketing staff to assist them in attaining a goal to develop a net zero energy home.

- **Residential Furnace NOx Emissions**

The objective of this project area is to develop new designs for residential central furnaces that will meet the new NOx emissions requirements (14 NG/J) in South Coast Air Quality Management District (SCAQMD).

Currently, there are no products on the market that can achieve these emission levels. In 2009, GTI completed an initial evaluation to determine what technologies exist that could lower the emissions level, what emissions levels could realistically be achieved with these existing technologies and what technologies should be pursued in future work with selected manufacturing partners. In 2010, development work will focus on building lab prototypes using best candidate burner systems and structuring projects with manufacturing partners.

- **Carbon Management Information Center**

This program is being funded by the UTD to develop information intended to serve as a clearinghouse for relevant carbon management information and to develop functional tools to meet the needs of funding members and our customers. Natural gas provides the least-cost option for major reductions in carbon emissions compared to electric and oil equipment on a full fuel-cycle (“source-to-site”) basis. This fact is generally not recognized by policymakers, regulators, customers, and environmental groups.

- **Gas Technology Advisor**

SCG and UTD are funding GTI to develop a computer-driven training and on-line reference tool that consists of a series of easy-to-navigate, easy-to-understand information modules. Accessed via CDROM and the Internet, the tool uses animation, graphics, and logically presented concepts to thoroughly explore critical technologies of interest to utilities and their customers. In 2005 a module was developed for commercial food service and in 2006 work began on a module to address commercial water heating and space conditioning.

Commercial Buildings

- **Green Building Wizard**

SCG and the UTD are funding GTI to develop a user-friendly Internet-based tool that allows for the analysis and easy selection of the latest applicable energy saving technologies for commercial building applications. The program allows the user to evaluate 1) building envelope (glazing and insulation), 2) HVAC and high efficiency lighting, and 3) fuel switching natural gas vs. electric. The program also provides an evaluation of the impacts EE measures have on natural gas and electricity consumption, natural gas and electric utility costs, and NOx emissions and building carbon footprint. A beta version of the tool was released in January 2010. GTI is offering customization of the tool for specific utility serving areas to address regional variations in weather and utility rates.

Commercial Cooking & Food Service

- **Advanced Fryer: Low Oil Volume Fryer**

SCG and the UTD funded GTI and Frymaster to develop a Low Oil Volume fryer that reduces volume of oil used to cook from about 50 pounds for a typical deep fat fryer to about 30 pounds. In addition, this new fryer has achieved an Energy Star rating for its fuel efficient design. Current drivers within the foodservice industry have stated the need for a gas deep-fat fryer with reduced energy costs, improved performance and reduced oil volume. McDonald's Corporation has assessed this new product and is now ordering units for their stores throughout the United States.

- **Solstice Fryer**

SCG and the UTD funded GTI and Pitco in the development of the Solstice fryer to achieve improved cooking performance and high efficiency, using

atmospheric combustion. These new Pitco Solstice fryers are Energy Star rated. The design is a significant upgrade from traditional fryer cast iron burners and is now available in several different models. Approximately 1,000 Solstice fryers are sold in the SCG territory per year.

- **Commercial Combi Oven**

SCG and the UTD funded GTI and Avantec in the development of the commercial combi oven. In this project, research focused on the development of a patented design for a Crossflow™-style oven. The oven employs a novel airflow design that mimics bakery ovens; however, air flows are automatically switched by a valve and alternate from side to side as baking progresses. This oven can operate in various cooking modes, including baking, steaming, poaching, roasting and rethermalizing. Avantec introduced this product into the market in 2008.

Commercial Steam Equipment Development

SCG and the UTD funded GTI and Stellar to develop a new high efficiency steamer that can offer cooking production capacity equal or better than best available electric steamers. This new product is the only gas-fired boilerless steamer with an Energy Star rating in the market. It is currently being sold throughout the United States.

- **Deployment of New Technology Key National Accounts**

SCG and the UTD are funding the Southern Gas Association to develop a web-based application that will include the latest technologies for effectively disseminating information to users. User groups include: key account energy managers, cooking professionals, kitchen designers, product and equipment decision-makers, gas industry commercial sales representatives, manufacturer sales reps, technical service personnel and research & development engineers.

This web-based communications tool will provide a means for the gas industry to promote new technologies, acquire feedback on existing technologies, and allow for cross company communication.

- **Wok Burner Improvements and Testing**

This project is being conducted with GTI working with a large chain Asian restaurant. A prototype was developed using a powered radiant burner that doubled system thermal efficiency. However, the burner was expensive and was subject to plugging from oils used in Asian style restaurants. A second project was initiated in 2009 with Royal Range (restaurant equipment manufacturer), to develop a comparable unit that uses atmospheric radiant burner technology which should address cost and plugging issues.

- **Gas Fired Ware Washer Field Test**

Initiated field tests of the Gas-Fired Ware Washer at a restaurants in Marina del Rey and in El Segundo. The objective of this project is to field test the new prototype gas fired ware-washer developed by GTI and Jackson (restaurant equipment manufacturer). In these tests SCG is comparing a standard electric unit to the prototype gas fired washer to determine load potential to our utility, determine energy and cost savings potential to the restaurant, and discover any potential installation issues. Initial estimates show a restaurant could potentially save over \$4,000 in operating costs each year.

- **Commercial Range**

SCG is working with GTI and Garland (restaurant equipment manufacturer) to improve the efficiency of a commercial gas-fired range. There are an estimated 415,000 gas-fired commercial range tops operating in the United States with an estimated gas-load of 400 million therms per year. Doubling

the commercial range efficiency has the potential to save millions of therms per year. Key design features will focus on elimination of the standing pilot and shutting off the range burners when there is no cooking pot/pan on the burner.

- **Gas Fired Rethermalizer**

SCG is working with GTI and Frymaster (restaurant equipment manufacturer) to develop an improved efficiency rethermalizer, a device widely used in commercial kitchens for reheating refrigerated or frozen pre-cooked food. Design aspects include improvements to the combustion system and improved temperature uniformity.

- **Conveyor Oven**

SCG is working with GTI and Lincoln (restaurant equipment manufacturer) on developing designs for improving the efficiency of a commercial foodservice conveyor oven, typically used in pizza restaurants. The project goal is to double the efficiency of the small Lincoln gas-fired conveyors. The project will specifically investigate affects on energy efficiency associated with the open ends of the conveyor, stand by losses associated with idling the burner, cooking tunnel design/dimensions and air flow distribution.

Commercial Heating and Cooling

- **Aisin Engine-Driven Heat Pump Demonstration**

A new generation of Gas Engine-Driven Heat Pumps, GEHPS, for residential and light commercial applications has recently introduced successfully in Japan, Korea and Europe. It offers better energy efficiency and thermal comfort. Because of the availability of a gas engine as the drive, a GEHP can easily vary its speed to provide a better load following ability for space

conditioning and it can utilize the engine waste heat for winter heating reducing the need for supplemental heating. Two Aisin 6.5 ton units were tested at homes. Data gathered indicated that energy savings can be realized. However, equipment costs are significant hurdles to full commercialization. In addition, emission control technology needed to be developed for these engines based systems in order to meet proposed air quality standards.

- **The Broad BCT Demonstration**

Lithium bromide absorption models with Americanized components will greatly enhance the U S gas cooling for small commercial and residential markets. Two other important benefits in BCT systems are the factory incorporated cooling towers and automatic evacuation that simplifies field installation and reduces frequency of services from twice to once per year. SCG field tested several BCT units and the technology showed benefits to customers in reducing peak electric charges. Various sizes (6, 20 and 33 tons) were available for demonstration. However, due to maintenance costs and support from the manufacturer, only the smaller units were demonstrated at customer sites.

- **Robur Lab Test**

SCG tested a new gas air conditioning product made by Robur, an Italian Company. The units were tested at the SCG Energy Analysis Center to examine and demonstrate their performance. The Robur unit is a gas fired unit capable of supplying chilled water or hot water and designed to produce 4.8 ton of space cooling/heating. The system is a Generator-Absorber heat eXchanger (GAX) gas-fired absorption chiller with high cooling Coefficient of Performance (COP) of 1.05 and 0.85% heating efficiency. The system is capable of space conditioning (cooling/heating) and domestic hot water service, an all-in-one system, serving both the residential and light commercial

markets. The results matched the manufacturers' performance data. The units are offered for commercialization in the U.S.

The Gas Technology Institute, GTI, also tested for SCG a Robur GAX gas fired heat pump for application to light commercial and residential markets. Rated COP's for the unit were 0.6 in the cooling mode and 1.25 in the heating mode. Experimentally the unit was evaluated in GTI's environmental chamber in both heating and cooling modes. In summary, the unit performed according to manufacturers' specifications and no problems were encountered during testing. The application for this unit must be evaluated for site-specific characteristics, such as location, application, construction, utility rates, and Time Dependent Value potential.

- **GAX LLC**

Rocky Research (RR) has accumulated thousands of hours on lab chiller units and components. Current performance results have demonstrated 5 tons of cooling at a COP approaching 0.7 and a heating COP of 1.4. Some initial field test results indicated the need to develop more reliable and durable subsystems. RR continued performing work in several areas including generator firetube life testing, corrosion testing, pump designs and testing. QA/AC analyses were performed to support OEM manufacturing support. It is anticipated that the initial units will be in the 5 ton range with a multi-link controller which can operate several units simultaneously in chiller or heat pump link applications which could apply to 10-25 ton systems. The initial market will be niche applications in industrial, pool dehumidification, and light commercial cooling. Additional work continued in areas of heat recovery in IC engine applications where the units were interfaced with the exhaust of engines for small cooling applications. RR has invested \$1 million

in tooling at the Nevada facility. RR will have the capability to manufacture several hundred units per year. Work is continuing in the laboratory with support from DOE. The LLC is monitoring the developmental progress.

Industrial Boilers

- **Super Boiler**

This project has been funded by DOE with funding support from SCG, UTD and Cleaver Brooks (the manufacturing partner). The objective of this project is to develop a high efficiency boiler that can also achieve less than 5 ppm NO_x. Local air districts in southern California now require both existing and new boilers to meet single digit NO_x emissions. Project design includes use of a two stage burner to meet emission objectives and utilization of three heat exchangers to achieve a system efficiency of about 95%. A prototype 300 HP firetube boiler has been successfully tested for the last 16 months at a juice bottling manufacturing facility in Rancho Cucamonga, California. Both efficiency and emission targets were consistently achieved during the field test period. Final training on operation of the boiler will be conducted by GTI in early 2010, concluding this project.

- **Transport Membrane Condenser (TMC)**

The Transport Membrane Condenser technology (TMC) has been developed by GTI with funding from DOE, SCG and the UTD as part of the Super Boiler project. The TMC is a unique low temperature heat recovery technology that captures both sensible and latent heat from an exhaust stream, providing both waste heat and clean water to a facility/user. The first demonstration of the TMC was conducted at a juice bottling plant in Rancho Cucamonga (see Super Boiler). A second successful demonstration of the TMC on an existing boiler is currently being conducted at chemical plant in Thousand Oaks, California. Test results show 93% system efficiency. GTI has recently signed

a licensing agreement with Cannon Boiler Inc. to manufacture and market this heat recovery technology. The UTD is still funding a project to make improvements in the manufacturing of this technology.

- **Advanced Boiler Technology for Large Watertube Boilers – Phase 1**

This project has been funded by DOE, SCG and the UTD with development work being conducted by GTI and Nebraska Boiler Company. The overall goal is to expand Super Boiler Technology to watertube boilers including those that generate high-pressure superheated steam and use multiple fuels. Like the earlier Super Boiler project, this project is using a two stage burner to achieve low single digit NO_x emissions and multiple heat exchangers to increase boiler efficiency. Ultimately, the goal is to build boiler products that will meet SCAQMD 5 ppm NO_x requirements.

- **Forced Internal Recirculation Burner**

The forced internal recirculation (FIR) burner was developed to dramatically reduce nitrogen oxide (NO_x) and CO emissions from natural gas combustion without sacrificing steam boiler efficiency. The NO_x reduction goal is to achieve less than 9 volumetric parts per million (vppm) and the CO reduction goal is to achieve less than 50 vppm in the combustion process.

This burner has been proven to reduce emissions without using diluents such as steam, water, or external flue gas recirculation. It can increase system efficiency and reduce developmental, operating, maintenance, and capital costs compared to traditional burner systems. One significant feature is that it can be installed new or retrofitted to a wide range of combustion chamber configurations. These include watertube boilers used in the paper, chemicals, petroleum refining, food, and steel industries.

Currently, the FIR burner is operating in several natural gas-fired industrial boilers in Southern California. The FIR was developed by the GTI and licensed to Johnston Boiler Company for the firetube boiler applications and to the COEN Company for the watertube boiler applications. This burner can cover any boiler sizes between 5 and 100 million Btu per hour of heat input. At the end of 2009, Johnston Boiler Company had sold approximately 70 boilers incorporating the FIR burner technology.

- **Low Emission Boiler - Parker Boiler**

SCG and Parker Boiler Company are funding this work with an objective to develop an advanced boiler in the 2 million to 10 million BTU size ranges that can achieve less than 5 ppm NO_x. Boiler regulations in SCAQMD and in SJVUAPCD have already been passed that require NO_x emissions from 5 to 9 ppm (limits depend on boiler size). Parker Boiler is assessing latest burner designs including fuel staging and use of radiant metal fiber burners. Also advanced sensor technology and control systems will be assessed in this work.

- **M-Cycle Testing**

SCG is funding GTI to investigate the potential of the Maisotsenko Cycle (M-cycle) technology in an initial lab evaluation. The M-Cycle realizes a heat recovery process through the latent heat of water for thermal and combustion systems. This technology has already been successfully commercialized in space air conditioning. SCG is evaluating this cycle further to assess other possible applications.

- **Low Cost NO_x/O₂ Sensors**

GTI is evaluating and testing NO_x/O₂ sensor(s) for boiler, oven, dryers and furnace applications. The evaluation includes review of available commercial and prototype NO_x and O₂ sensors, development of a test module and testing

of a unit in a laboratory boiler. A reliable and low cost NO_x/O₂ sensor is needed for optimizing low-emission combustion systems for boiler and other industrial applications in order to meet new ultra stringent emission requirements in SCAQMD and SJVUAPCD.

Industrial Processes

- **Reverse Annulus Single Ended Radiant Tube (RASERT) Burner**
Initiated field demonstration of the RASERT Burners at major steel manufacturing facility, in Fontana, California. The demonstration of this burner technology has been funded by SCG and UTD. The RASERT burner is a patented GTI technology that has demonstrated a range of fuel savings from 20 to 27% and a NO_x reduction ranging from 56 to 62% over the standard burners used at this customer site. The key to the GTI concept is that heat is released directly to the outer tube and the products of combustion are drawn back through the center of burner. This reversal of flows compared to conventional firing methods result in higher thermal efficiency and lower NO_x concentration. The customer is still evaluating the longevity of the burner before investing in this technology further.
- **Optimization of a Gas-Fired Glow Tube for Process Heating Applications**
GTI has been funded by SCG and UTD to develop a small-diameter, gas-fired heating element (Glow Tube) to directly replace the electric resistance elements commonly used in indirect industrial process heating applications. GTI has developed prototype units with diameters of Glow Tubes in the range of 1.5" to 2.5", with lengths of 22" to 38".
Development of a unique recuperator design showed results of 65% thermal efficiency when operating at a furnace temperature of 1500 °F.

Additional development is still required before commercialization.

- **Low Temperature Heat and Water Recovery (DOME)**

SCG is funding GTI on this initial effort to fabricate, test and assess the DOME thermosyphon technology in the laboratory to obtain engineering data on size, throughput, and energy balances. The DOME technology is an advanced thermosyphon method for evaporation of waste water and collection of clean water. Many industries, including food processors, have large wastewater streams currently sent to disposal. The low level exhaust gases (300° to 500°F) from these same facilities can be effectively utilized to reclaim a portion of this waste water as clean water for re-use.

- **Gas Guard Recuperator (GGR)**

SCG, CEC and the UTD are funding GTI to develop and demonstrate that chlorine and fluorine can be captured from aluminum remelt furnace exhausts. Currently, corrosive gases such as Cl and F prevent the use of recuperators on these furnaces, which limits their efficiency. GGR operating at high temperature will allow standard commercial recuperators to be installed, saving large amounts of energy without making any changes to the melting operation. In this project, a sorbent-based approach, using trona, will be used to remove chlorine and fluorine gas species.

- **IR Drying for Food Process - UC Davis**

This project is primarily funded by the CEC with small funding provided by SCG. The main objectives of this project are to quantify and demonstrate the energy and water saving capability, process efficiency and product quality improvement gained from use of IR heating

technology for processing fruits and vegetables. Based on the results obtained from the demonstrations, the operational and design parameters for commercial scale IR heating devices for specific applications will be optimized. The project team includes USDA-ARS Western Regional Research Center (WRRC) and UC Davis, in addition to collaborators from food processing and equipment manufacturing companies.

3). Clean Generation Key Accomplishments

Distributed Generation & Combined Heat & Power

- **Flywheels**

In 2002 SCG made an investment in a flywheel development company, Pentadyne. SCG continues to support this company, making a follow-on investment in 2006. Pentadyne originally developed and successfully marketed a unit that provided up to 120 kW of power for 20 seconds. They have since commercialized a larger unit that is capable of providing 190 kW for up to 15 seconds. This will allow low-emission distributed generation equipment such as fuel cells and microturbines, as well as more traditional systems (i.e. diesel generators) to be used in quality power and UPS applications. Pentadyne has purchased the intellectual property for an existing flywheel technology that is ideally suited for light rail applications. The machines can be located at the station, using regenerative braking to charge the flywheel. The unit would discharge as the train began to leave the station, thus drastically reducing the power surge normally seen as the train begins to move. This machine could also be placed between stations to reduce the effects of voltage sag. Pentadyne is planning to develop even larger units that will continue to expand the available market for this clean and highly efficient energy storage system.

- **Flex CHP**

SCG, CEC and the UTD funded GTI to develop and demonstrate a high-efficiency ultra-clean power and steam package that will meet distributed generation emission requirements in southern California. The developed system includes a 65 kW Capstone Microturbine and use of an ultra low NO_x, forced internal recirculation burner technology incorporated into a Johnson waste heat boiler. A field demonstration of this system will be conducted at facility in El Centro, California in 2010.

- **Ultra Low Emission Integrated CHP**

SCG and the CEC funded Continental Controls to develop an advanced emission control package that will address environmental regulations and monitoring requirements on engines that are the most stringent in the world. SCAQMD now requires all engine operators to validate that an engine is operating within permit limits on a weekly basis. In addition this air agency also requires engines used in CHP/DG to meet less than 2 ppm NO_x and 10 ppm CO under all loading conditions. Older engine control systems are not able to meet these emission limits and struggle to deliver consistent performance in reducing emissions to permit levels. Continental Controls is using the latest technology in NO_x emission sensors, O₂ sensors, ignition control, and in fuel valve control to consistently control engine emissions. A field test of the system is planned for 2010.

- **Engine CHP Emission Control Technology**

This project was primarily funded by the CEC with funding support from SCG. In this project, Tecogen, a packager and marketer of small CHP engine based systems, is developing improved air fuel ratio controller technology in order to meet new emission and monitoring regulations in SCAQMD. Engine operators located within the SCAQMD must now test and prove compliance with their permit limits on a weekly basis. In addition new CHP engine projects must meet 2 ppm NO_x and 10 ppm CO emission limits. Currently, there are no engine systems available to meet these aggressive emission limits. Tecogen is incorporating the latest wide band oxygen sensor technology along with new software and improved catalysts to meet the new regulations. The first prototype controller is currently being tested on an engine at commercial facility in Chatsworth.

Prime Movers: Internal Combustion Engines

- **ARICE/TCR System**

SCG and the CEC are funding GTI and Cummins to develop an advanced engine based on thermal chemical recuperation (TCR) technology. In this process, natural gas is reformed to produce a hydrogen rich gas which is combusted by the engine. Advantages of combusting a mix of hydrogen and natural gas result in an increase in engine efficiency and a reduction in NOx emissions which has now been demonstrated in a 50 kW engine. In 2010, work will start on building a TCR system for a 330 kW engine.

- **Partial Oxidation Gas Turbine Development**

SCG has co-funded GTI in the development of a partial oxidation gas turbine (POGT) for many years. Initial work on the project was quite promising and the concept was proven. In 2009, GTI and Caterpillar jointly submitted a new proposal to DOE to design, build, and demonstrate that a 470 kWe partial oxidation gas turbines can be assembled from commercially available turbocharger components resulting in lower \$/kWe than conventional combustion turbines. Other goals in the project include integration of the POGT with a boiler for combined heat and power applications, with a target thermal efficiency of ~85% and an emission target of CARB 2007 limits for distributed generation. SCG has issued a letter of funding support if accepted by DOE.

- **IES Emission Control**

In 2007, SCG funded a report by Innovative Environmental Solutions, Inc. (IES) to investigate state-of-the-art emission control technology for IC engines. The report focused on development plans, and candidate companies for mutually beneficial technology research and development related to

emission controls for and monitoring of stationary rich-burn reciprocating internal combustion engines with a primary focus on non-selective catalytic control systems (NSCR). The report identified equipment, current or developmental, that can consistently and reliably meets the CARB 2007 emission levels and SCAQMD Proposed Amended Rule 1110.2 monitoring requirements. The key project findings and recommended next steps for original equipment manufacturers (OEMs), engine packagers, and to address NSCR components and operation issues.

Prime Movers: Microturbines

- **CHP Demonstrations**

SCG participated in a field demonstration of utilizing the exhaust gases from a distributed generation microturbine to directly provide heat to an absorption chiller at various customer sites in Southern California. SCG tested several CHP packages using 30 and 60 KW Capstone microturbines, each with natural gas compressors and battery back up systems for demonstration in a CHP application. The exhaust from the microturbines is supplying the necessary heat to drive chillers with supplemental natural gas.

- **Next Generation Microturbine**

In 2009, SCG co-funded at 50% the development of the next generation microturbine with the CEC. The objective is to develop a 350kW inter-cooled-recuperated gas turbine which will incorporate ceramic components, new combustor technology and will not require a fuel booster compressor. Brayton Energy has initiated design and engineering activity in the initial phase of the program. This project involves the development of the next generation microturbine which will improve efficiency up to 40%, meet the CARB 2010 emission requirements, and will be economical to manufacture.

Furthermore, the use of a thermal-reactor combustion strategy allows natural gas to be injected directly into the engine inlet roughly at atmospheric pressure, eliminating the need for external gas compression.

- **Microturbine – CHP Applications**

In 2009, SCG initiated the development and application of a fuel-efficient and clean microturbine in a CHP application that is CARB-2007 compliant. The system is based on a 100 kWe microturbine package. CMC Engineering purchased a TA-100 microturbine and modified the electronics. The unit will be fitted with a new low NO_x silo combustor. SCG is co-funding this project with the CEC. The proposed installation will reduce the cost to operate these devices while providing the site with the benefits of lower cost onsite power generation.

Fuel Cells and Hydrogen

SCG continued to be active in supporting the development of fuel cell and hydrogen technologies. SCG has provided financial and technical support to several fuel cell organizations including the National Fuel Cell Research Center, the Houston Advanced Research Center, the Solid Oxide Commercialization Association, the California Stationary Fuel Cell Collaborative, and the California Hydrogen Business Association.

- **Evogy Fuel Cell**

SCG, working with the Electric Power Research Institute (EPRI), co-funded an effort with a solid oxide fuel cell developer, Evogy, to test the feasibility of a new tubular solid oxide fuel cell stack. Project goals were to evaluate the effect of fuel utilization on power density, compare cell behavior at high fuel utilizations for planar and tubular configurations, and to define approaches to improve cell performance and high temperatures. Evogy was able to

demonstrate a very high performance tubular solid oxide fuel cell that has similar power density as most advanced planar SOFC configurations, and has potentially lower fabrication costs than planar SOFC's while alleviating most physical design problems associated with planar units. The technology could offer a quicker product development pathway to SOFC commercialization.

- **Fuel Cell Demonstrations**

In late 2009 SCG was selected to co-fund several fuel cell projects, with the installations to begin in 2010. These included (1) a project co-funded through the American Recovery and Reinvestment Act (\$3.4 million, SCG share \$180,000) to test the durability and commercial readiness of Plug Power high temperature PEM 5 kW fuel cells in residential and commercial applications; (2) a project heavily co-funded with DOE, CARB, Air Products, and Fuel Cell Energy (\$16.8 million, SCG share \$100,000) to demonstrate a 300 kW molten carbonate fuel cell at an energy station located at a sanitation facility in Orange County; and (3) a demonstration of a 300 kW molten carbonate fuel cell coupled with a 40 ton Yazaki Absorption Chiller (\$3.4 million, SCG share \$200,000). SCG is also negotiating a project with Ceramic Fuel Cells Ltd to demonstrate two 2 kW solid oxide fuel cells at its Energy Resource Center and the Engineering Analysis Center.

- **Hydrogen Generation**

SCG continued to support the development of new fuel processing systems by working with two of its portfolio companies; Nano Products and H2Gen. Nano Products had discovered a novel method of producing hydrogen based on an electrically activated catalyst system. While this effort had promise, the company was unable to raise sufficient funds to stay in business. The technology was acquired by PPG. Their plans to continue the development of the concept are unknown. H2Gen completed the development of a 2000 scf

and 10,000 scf hydrogen production systems that use natural gas as feedstock. These units were developed to be located onsite at commercial and industrial facilities to provide needed hydrogen without increasing their carbon footprint by having to truck in and store hydrogen from commercial gas suppliers. H2Gen also developed a hydrogen clean-up system to purify waste hydrogen streams, saving the energy required to reform it in the traditional way. H2Gen was unable to raise sufficient capital to continue operations. The company was sold in 2009 with the hydrogen generation technology going to Air Liquide and the gas clean-up system to Chicago Bridge and Iron (CB&I). Both companies plan to continue development and commercialization of the respective technologies.

Carbon Capture and Sequestration

Through its investment in Clean Energy Systems, SCG helped to develop and test all of the power block components required to build a natural gas power plant with 100% CO₂ capture. These components include: 1) 20 MWt high pressure oxy-fuel steam/CO₂ generator capable of generating steam and CO₂ turbine drive gases in excess of 3000F. 2) 200 MWt high pressure oxy-fuel steam/CO₂ generator capable of generating steam and CO₂ turbine drive gases in excess of 3000F. 3) A J-79 combustion turbine modified to accept 1500F steam/CO₂ drive gases. 4) An oxy-fuel re-heater designed to improve the overall oxy-fuel power cycle. 5) Testing the oxy-fuel combustion technology on other fuels such as glycerol and algae slurries. 6) Engineering designs for a 40 MW renewable fuel peaker plant. 7) Engineering designs for a 50MW zero emissions base-load power plant. 8) Proposals were submitted in response to DOE FOA DE-FOA-0000015, Carbon Capture and Sequestration from Industrial Sources.

4). Clean Transportation Key Accomplishments

Infrastructure

- **CARB CNG Fuel Specification**

From 2006 to 2007, SCG worked with CARB, CEC, APCDs, EMA, engine manufacturers, and gas producers to modify the existing CARB CNG fuel specification. The goal of these negotiations was to modify the fuel specification to allow the state access to additional sources of natural gas while also ensuring the safe, reliable and economic operation of CNG vehicles. In 2005, Southwest Research Institute (SWRI) produced two reports for SCG that evaluated the effects of varying the fuel composition on existing, “legacy fleet” engines as a result of potential changes in natural gas quality standards. The reports concluded that some older Detroit Diesel Corporation DDC and Cummins engines will need to be modified depending on the change in natural gas composition. Additional engine testing has been followed up in order to obtain quantitative data to support the conclusions. In 2005, SCG began testing two DDC Series 50G engine models (the “MK” and the “TK”) at the SWRI to determine how the engines operate on various natural gas compositions. The testing methodology was developed jointly with DDC and SWRI and was designed to evaluate engine performance and emissions. The tests concluded that no knocking was noticed at low Methane Number (MN) fuels. Subsequently, SCG funded the testing of two buses at a transportation facility in Los Angeles that have the DDC engines. The test validated the results from SWRI testing. In 2007, work was performed to determine the feasibility of operating heavy-duty natural gas engines over a wide range of fuel compositions by evaluating engine performance and emission levels. Five heavy-duty compressed natural gas engines from various engine manufacturers, and eight natural gas blends were tested with each engine, and ranged from MN 75 to MN 100. Performance testing consisted of monitoring

engine knock or auto-ignition, as well as engine power levels and overall engine operability. Emissions of total hydrocarbons (HC), non-methane hydrocarbons (NMHC), carbon monoxide (CO), oxides of nitrogen (NO_x), nitrogen dioxide (NO₂), particulate matter (PM), and carbon dioxide (CO₂) were measured. The engines showed no knocking or auto ignition throughout the program, with slight differences in power levels with the various test fuels. All lean burn engines showed increased NO_x and HC emission levels with decreased MN and increased Wobbe level, while the stoichiometric of the ISL G engine showed no clear trend in NO_x or HC levels with the various fuels. The increase in NO_x with the lean-burn engines was likely due to richer combustion and the effective advancement of ignition timing due to increased combustion mixture flame speed with lower MN fuels. PM showed no significant trends with the various fuels for all engines, while CO showed a slight increase with decreased MN for some engines. Brake-specific fuel consumption increased with low Wobbe blends, and decreased with high Wobbe fuels.

- **Home Refueling Demonstration**

In 2007, SCG worked with GTI to field test six Phill home refueling compressor systems. Four of these locations had the Phill equipment installed outdoors and two had equipment located indoors. The installation services included obtaining necessary building permits, installation of natural gas service, installation of electrical service, and installation and commissioning of the Phill unit per manufacturer's recommendations. Results showed that neither pressure nor flow rate have an appreciable impact on electricity usage. The compressor power is essentially constant even as the discharge pressure goes up taking into account that flow rate decreases. After shakeout, the units performed well. The participants were all very pleased with the units. No compressor failures occurred. Five participants in the survey rated their

overall experience as "Excellent" with one at "Good". The Phil unit is designed as an appliance that requires minimal user intervention or maintenance between service intervals.

- **Galileo Refueling Station**

In 2009, SCG initiated a project to demonstrate a modular compressor station at the SCG Riverside base. The work involves the demonstration of a self-contained CNG compressor station manufactured by GNC Galileo S.A., of Argentina. The modular station is called a MICROBOX whose modules contain the totality of the necessary components needed for the functioning of a CNG station. The dispensers are state-of-art technology for CNG refueling of cars and buses. Clean Fuel Connections, Inc. will design, install and commission the system at our Riverside base. This self-contained design is more economical to install and operate than existing CNG designed stations.

- **Small Scale LNG Liquefaction Plant**

From 2000 to 2004, SCG partnered with PG&E and the Idaho National Engineering and Environmental Laboratory (INEEL) to develop a small and compact LNG liquefaction plant technology intended to diversify the production of LNG fuel supplies at a lower overall cost and offset the need to transport LNG (via truck) from suppliers located outside of California. The concept was demonstrated in the field. In 2005, INEEL began licensing the small scale LNG system to several worldwide corporations.

Systems & Components

- **ISL G Field Demonstration**

As part of the ISL G product development program, Cummins Westport Inc. conducted a field demonstration on the ISL G engine with selected transit bus and refuse collection fleets. The primary objective of the field test and

demonstration program was to obtain engine operating experience and data from a variety of operational environments prior to commercial release of the ISL G engine. The ISL G field test and demonstration program enabled Cummins Westport to confirm a number of items, including validation of the engine performance at high altitudes and cold ambient conditions, validation of a significant improvement in vehicle acceleration performance at low engine speeds, and confirmation of the impact of improperly sized cooling packages for Exhaust Gas Recirculation engine operation. As a result of the field test experience, CWI is working closely with vehicle OEMs to confirm that cooling packages are adequately sized.

- **CNG Port of Los Angeles Project**

In 2008, SCG with support of several other entities initiated the demonstration of four CNG fueled class 8 drayage trucks at the Port of Los Angeles. The trucks were retrofitted with new CNG Cummins/Westport ISL G engines that already meet 2010 CARB emission standards. This effort supports the Ports of Los Angeles and Long Beach Clean Air Action Plan. The trucks are leased for three years and will be operated by Cal Cartage. The Los Angeles and Long Beach Port Authorities have been mandated through the Clean Air Action Plan, to reduce emissions from goods moving to and from the Port area. The Port Authority is co-funding the testing of one truck over as part of their mandate. Potentially, this project could affect several hundred or over a thousand hauling trucks that move in and out of the Ports. Data will be collected to measure performance, reliability and assess refueling options.

- **ESI Engine Retrofit**

SCG, in 2006 initiated a project with Emissions Solutions Inc., ESI, to demonstrate the repowering of two International DT466 diesel engines to natural gas. Two engines were removed and repowered to operate on CNG

and met CARB 2007 emission levels of 0.8g NOx. ESI has developed engine technology applicable to International diesel engines which enables the engines to be repowered and operate on CNG. These engines have been retrofitted in dump trucks and beverage trucks.

SCG is working with ESI to apply the engine in school buses. ESI will repower a school bus and crash test them in California with the ESI 7.6L dedicated natural gas engine. This crash test project is required by the California Highway Patrol before they will allow ESI to proceed with re-powering these school buses. ESI will test 2 pre-owned International Class C diesel school buses. ESI has completed detailed engineering drawings and specifications, per FMVSS and Cal-OSHA standards, for the CNG cylinders and fuel system fabrication and installation of the engines on the 2 buses.

5). Renewable Energy Key Accomplishments

- **Solar Thermal - Air Conditioning Demonstration**

Project status: ongoing – project was installed during Q1 2009. SCG has procured and installed two distinct concentrated solar power (CSP) collector systems from two different companies in the solar thermal industry. Both CSP systems are installed and operated at the Energy Resource Center (ERC) as a demonstration project. The collectors are piped to simultaneously provide hot water for the existing Yazaki 10-ton absorption chiller. The chilled water from the Yazaki is connected to the upstairs offices in the ERC for space cooling. The Yazaki is designed to take 190°F water as the medium for the absorption process to bring 55°F chilled water flowing at 24.2 gallons per minute down to 45°F, or produce 10 refrigerated tons of cooling, at a COP of 0.70. Data over the past summer season show the collectors operating at about 24%

efficiency from the sun, respectively a combined 567,185 Btu's out of 2,312,055 Btu's available. On average the available energy to the system was 2,312,055 Btu's per day from total solar radiation and 1,009,544 Btu's per day of natural gas

- **Solar/Natural Gas Domestic Hot Water Solution**

Project status: ongoing – initiated development work in 2008, site demo scheduled for 2010. SCG and the UTD are funding Enbridge to develop a solar and natural gas powered domestic hot water solution and commission a prototype that is attractive and affordable to homeowners. System design uses two storage tanks, evacuated tubes to collect solar radiation and use of a glycol solution as the heat transfer fluid.

- **Residential Hybrid Gas -Solar Demonstration**

Project status: ongoing – initiated development work in 2008, site demo scheduled for 2010. SCG and the UTD are funding GTI to develop and demonstrate a solar-assisted natural gas water heating system for use in residential single family homes. Technology incorporates the latest in solar tank design with a tankless water heater and use of evacuated tubes. A residence in Chino Hills, California has been selected for one of five units to be tested in locations throughout the United States.

- **Commercial Hybrid Gas- Solar Demonstration**

Project status: ongoing – initiated development work in 2008, site demo scheduled for 2010. SCG, the CEC and the UTD are funding GTI to develop and demonstrate a solar-assisted natural gas water heating system for use in commercial, industrial, and agricultural applications that can provide energy savings of up to 40 percent and provide a 10-20 percent savings on installation over similar systems. Research is needed

to ensure that these systems are able to meet the price and performance U.S. commercial businesses require for an acceptable payback. A demonstration site has been located at a winery in southern California.

- **Solar-Assisted Natural Gas Energy Systems**

Project status: ongoing – initiated development work in 2006. SCG and the UTD are funding GTI and SolFocus to develop and demonstrate a high temperature solar-assisted natural gas water heating system for use in commercial and industrial applications. The GTI/SolFocus team has proposed to CEC to pilot a solar thermal installation at a brewing facility in Irwindale, California. The solar thermal installation will drive key industrial process heat applications at the facility displacing natural gas and electricity use. It is anticipated that the integrated solar thermal applications will be replicable in other plants and similar settings across the U.S, improving energy efficiency, reducing greenhouse gas emissions, reducing reliance on fossil fuels, and benefiting end-users.

- **Biogas Upgrading, Monitoring and Analysis**

At a resource recovery facility in Escondido, California SCG is evaluating and validating: (1) Pressure Swing Adsorption (PSA) gas separation technology; and, (2) biogas sampling, analyzing and monitoring protocols and equipment. This will help enable SCG to accept biogas into its distribution system and assure that it continuously meets pipeline quality standards.

PSA is a technology used to separate specific gas species from a mixture of gases under pressure according to the species' molecular characteristics and affinity for an adsorbent material. Special adsorptive materials called “zeolites” are used to preferentially adsorb targeted gas species (CO₂, N₂, and O₂) at high pressure. As a result, a clean methane stream exits the PSA at high

pressure. The process then swings to low pressure to “desorb” the unwanted gases from the adsorbent material. As the pressure drops the unwanted gases desorb from the adsorption media. This allows raw digester gas to be separated into low energy “tail gas” and high-energy “product” gas.

SCG demonstrated an advanced PSA-based biogas upgrading plant that has been developed and is manufactured by Xebec Adsorption, Inc. Xebec’s gas processing plant and PSA system are capable of efficiently removing CO₂, nitrogen, oxygen, silicon compounds and trace contaminants from digester gas. Xebec’s PSA systems operate at higher cycle speeds than conventional PSA systems, thereby decreasing the amount of adsorbent material required and significantly reducing the size of the gas purification equipment. Xebec also uses rotary valves instead of complex piping and valves used on conventional PSA systems. These compact rotary valves are expected to be reliable and low maintenance. The Xebec system recovered about 90% of the methane in the raw digester gas.

- **Smart Microwave Gasifier/Reformer Demonstration**

SCG developed a bench top, proof-of-concept of “Smart” Microwave Gasifier. The key purpose was to demonstrate mass energy balance and determine the feasibility and efficiency of this advanced microwave gasification approach. This demonstration confirmed the output quality and components of the syntatic gas and understand the amounts of other components potentially including char, tar, slag, oils and particulates. This also confirmed the concept of using an anaerobic plasma to produce a high quality syngas.

- **Black and Veatch Biogas Assessment**

The purpose of this study was to identify the most promising technologies and integrated systems in three areas of biogas energy recovery: Biomass Digestion, Biogas Conditioning, and Biomass Gasification for Power Generation/Methanation. These biogas technologies and integrated systems are not in widespread application. This project helped SCG select the most advanced technologies at appropriate sizes to meet performance and financial criteria. A summary of the work performed, including technology selections, cost and design estimates, and environmental requirements are highlighted below.

Anaerobic Digesters - Two different scenarios were considered for digestion. Both considered food waste and fats, oils and grease (FOG) collected from grease traps. The second also considered adding up to 18 percent manure to the digester. According to the assumed feed rates and gas generation potential for the substrates analyzed, both of the designs ended up producing very similar amounts of biogas (± 2 percent).

Digester Gas Conditioning - Digester gas is composed primarily of methane and carbon dioxide, but can also contain impurities that include foam, sediments, hydrogen sulfide (H₂S), inert, and siloxanes. The gas will also be saturated with moisture at the operating temperature of the digesters. When left unchecked, these contaminants can increase the maintenance requirements of the equipment fueled by the gas, reduce equipment life, and prevent the gas from being suitable for pipeline injection. Thus, the study assessed technology options and costs for cleaning raw digester gas to pipeline quality conditions.

Biomass Gasification - Gasification occurs when any carbonaceous material is introduced into an oxygen deprived atmosphere and elevated to high

temperatures (approximately 1,200 to 2,900° F). The study assessed different technology options for the production of power and substitute natural gas (SNG) from wood and green waste via a gasification route. The design and costing of three different size plants (500, 1000, and 1500 wet tons per day, at 15 percent moisture) were assessed to understand the impact of scale on cost and plant performance.

RD&D APPENDIX C
CSI – RD&D Equity Investments (2006 – 2009)

SCG has made ten equity investments with three successful exits to date resulting in ratepayer's share of profit approximately \$7.5 million. Several of these technologies have reached beta testing or early commercialization. These investments are summarized in the following table and described in detail below.

TABLE 1
RD&D Equity Investment Portfolio (\$ in Millions, Nominal Dollars)

Date	Technology	Company	Ratepayer Investment Amount	Status	Ratepayer Proceeds from Exit (note 1)	Shareholder Proceeds from Exit
1996	Low Emission Burners	Alzeta	\$ 2.000	Commercialization	\$	\$
1997	GAX Space Conditioning	Unitary GH&C Products	\$ 2.518	Endurance & reliability testing continuing	\$-	\$ -
1999	Residential Fuel Cell	Plug Power	\$ 6.670	Commercialization	\$ 5.300	\$ 5.30
2001 - 2003	Natural gas to hydrogen reformation	Nano Products	\$ 4.652	Company was acquired by PPG	\$-	\$ -
2002 - 2005	High-speed flywheels	Pentadyne	\$ 2.707	Initial commercialization	\$ -	\$ -
2002 - 2005	Advanced Cooking Ovens	Global Appliance Tech	\$ 0.625	Company was acquired by TurboChef	\$ 0.547	\$ 0.547
2004	Natural gas to hydrogen reformation	H2Gen	\$ 1.810	Company was sold to Air Liquide and CBI	\$ -	\$-
2004	Stirling Engines	STM Power, Inc.	\$ 3.615	Company was sold to private investor	\$-	\$-
2005	Oxy-fuel, zero emissions power	Clean Energy Systems	\$ 5.000	Initial development	\$-	\$-
2006-2007	Direct Drive motor generators	Direct Drive Systems	\$ 2.000	Company was acquired by FMC	\$1.600	\$1.600
Total			\$ 31.607		\$ 7.45	\$ 7.45

Note 1: "Ratepayer Proceeds from Exit" represents the ratepayer's share of the profit from the project. The profits (above what was returned to the Balancing Account) were split 50/50% with ratepayers and shareholders for investments made before the 2008 GRC cycle. The 2008 GRC decision changed the sharing mechanism to 60/40% between ratepayers and shareholders.

- **Alzeta – Low Emissions Burners**

In the early 1990's SCG participated in a technology fund, Enertek. The total investment was \$2.0 million. The fund was dissolved in Jan 2006 and SCG received 110,630 shares of Alzeta stocks and approximately \$24,000 in cash. Alzeta develops and sells low emission burner systems for commercial and industrial use. They have received over 25 patents and have recently introduced a low NOx combustor for use in industrial gas turbines. The company is a well respected player in the gas industry and continues to perform extremely well.

- **Unitary GH&C Products, LLC - GAX Space Conditioning**

Since 1997, SCG invested \$2.52 million in Unitary GH&C Products, LLC (Ambian) to support the development and commercialization of generator absorber heat exchange (GAX) space conditioning technology, including a new generation of small gas chillers and heat pump system. In 2005, a license agreement was executed between Ambian and Rocky Research. Current work includes reliability testing on chillers, pumps and scale inhibitors. Additionally, development of a 5 ton reversible heat pump along with associated controls, and development of quality assurance (QA) and quality control (QC) protocols for manufacturing is continuing. Ten units are operating with a measured cooling coefficient of performance (COP) of 0.7. The unit height has been reduced to 64 inches. Better performance than electric units at higher ambient temperatures (above 95°F) has been demonstrated. A 5 ton heat pump prototype demonstrated a heating COP of 1.4 at Air Conditioning and Refrigeration Institute (ARI) conditions and a new heat pump was tested with COP of 1.0.

- **Plug Power – Residential Fuel Cell**

In April 1999, SCG invested \$6.67 million in Plug Power to help accelerate fuel cell product development. Plug Power successfully launched its initial public offering (IPO) in November 1999. SCG elected to liquidate its shares one year later because

Plug Power had adequate funding to continue RD&D activities on its own. SCG also had an opportunity to realize a financial return on its investment for both ratepayers and shareholders. The \$5.3 million ratepayer profit from this investment, along with the original investment of \$6.67 million were recorded in a royalty balancing account and refunded to ratepayers.

- **Nano Products – Natural Gas to Hydrogen Reformation**

SCG has invested a total of \$4.65 million in Nano Products (Nano), located in Longmont, Colorado. Nano manufactures nano-scale powders that have a variety of applications including glass, plastics, pharmaceuticals, medicine, etc. They can also be used in catalysts to increase the efficiency of conventional methane reformers. In the course of their work, Nano scientists discovered a radically new method of reforming natural gas into hydrogen - “Electrically Activated Catalysis.” This technology offers increased efficiencies, reduced energy costs, and lower equipment costs. The development of a prototype reformation plant was underway when the company was sold. Nano was acquired by PPG (Pittsburgh Plate and Glass) in 2008. All proceeds from the sale were paid to note-holders, leaving nothing for distribution to the shareholders.

- **Pentadyne - High Speed Flywheels**

SCG invested \$2.71 million in Pentadyne, located in Southern California, Pentadyne is developing high speed flywheel energy storage devices. These units are capable of supplying 190 kW of power for up to 15 seconds. The uses for units of this size are varied, but include distributed generation, energy recycling, and hybrid electric vehicles. The primary application that interests SCG is in the distributed generation and back-up power areas, where the flywheel could be packaged with other more traditional technologies, such as fuel cells, microturbines, internal combustion (IC) engines, to provide “bridge power” while back-up power sources come online. Pentadyne has been selling units commercially for several years (190 kW) and had

sales in excess of \$10 million in 2009. They have recently acquired a flywheel technology that is well suited for light rail applications and have been awarded a contract with New York City to test this technology.

- **Global Appliance Technologies - Advanced Cooking Ovens**

In 2002, SCG invested \$625,000 in Global Appliance Technologies to develop a rapid cooking combination convection microwave oven. The mission of SCG was to conceive and develop a new line of “RapidCook” technologies and appliances for the residential and commercial marketplace which would feature 5-10 times reduced cooking time, increase efficiency, and no compromise in food quality. This technology was acquired by TurboChef, a manufacturer of commercial Rapid Cook ovens, in 2005. The net gain from this investment was \$1.1 million dollars. In accordance with established Commission guidelines, the initial \$625,000 invested was returned to the ratepayers through the RD&D Balancing Account. The remaining funds were split 50/50 between the shareholders and the ratepayers..

- **H2Gen - Natural Gas to Hydrogen Reformation**

SCG invested \$1.810 million in H2Gen, a natural gas to hydrogen reformation company. H2Gen developed and commercialized steam methane reformer systems targeted at industrial applications, off-road vehicles, hydrogen internal combustion engines, stationary fuel cells, and fuel cell vehicles. There are many market applications for these units, including a variety of commercial and industrial applications. These machines are ideally sized to serve as reformers in vehicle refueling stations, as described in the Governor Schwarzenegger’s Hydrogen Highway project. In late 2008 the company experienced some technical failures in units operating in the field. Although extensive work was done in isolating and correcting the problem, H2Gen was unable to recover from this setback. The assets were sold to Air Liquide and CBI (Chicago Bridge and Iron) for a total of \$9.6 million. All proceeds from the sale were used to pay off note-holders and creditors..

- **STM – Stirling Engines**

SCG has invested a total of \$3.62 million in STM Power, Inc., the world's leading manufacturer of on-site, mechanical, electrical and cogeneration systems utilizing external combustion (Stirling-cycle) engine technology. STM completed endurance tests on a number of these units with excellent results, and shipped additional units into field applications for additional validation. In late 2006 the company determined that significant additional work would be required to overcome some unforeseen technical issues. The investors decided not to continue to support the company. In 2007 the assets were sold to a private investor who plans to continue development of the units. All proceeds from the sale were used to pay creditors, with no funds available for distribution to the shareholders.

- **CES – Oxy-Fuel, Zero Emissions Power Generator**

Starting in 2005, SCG invested \$5.0 million in Clean Energy Systems (CES), an aerospace spin-off located in Rancho Cordova, California. CES has used rocket technology to develop and demonstrate zero emissions oxy-fuel gas generation technology that can be used to drive steam power turbines. CES has received funding or in-kind support from the DOE, CEC, major oil producers, AES, Siemens, and European industrial companies and governmental agencies to develop and test prototypes and demonstrations. SCG's funding is aimed at helping CES commercialize its power plant and CO₂ capture technology for the benefit of California ratepayers. SCG believes that CES' oxy-fuel power systems have the potential to be as efficient as the most efficient combined cycle power plants. The key to this efficiency potential is the high temperature steam (>3000 F) produced by the CES gas generator. Since 2005, CES has built and tested all the major power plant components required to construct a 50 MW zero emissions power plant. These components include: a water-cooled fuel/oxygen injector, a 200MWt high temperature gas generator, a steam-cooled oxy-fuel reheater, a 1500 F steam/CO₂ turbine, and the system monitoring and control system. CES is now focused on project development

work to build the first commercial power plants with 100% CO₂ capture and sequestration in California and Europe.

- **DDS – Direct Drive Motor**

SCG has invested \$2.0 million dollars in DDS (Direct Drive Systems). This company, located in Cerritos, CA is developing high speed motor generator sets for commercial and industrial use. The specific interest of SCG in this technology is to use the DDS equipment to drive compressors in our gas transmission system. The technology is also ideally suited for applications in subsea production and processing systems. In 2009, DDS was acquired by FMC for a purchase price of \$120 million. SCG received a total of \$5.2 million dollars from the sale. The initial \$2 million was returned to the RD&D Balancing Account, with the remaining gains split 60%/40% between ratepayers and shareholders.

RD&D APPENDIX D

CSI – RD&D Cost Benefit Analysis

Summary

Southern California Gas Company (SCG) conducted a preliminary benefit-cost (B/C) analysis of its portfolio of research, development, and demonstration (RD&D) projects during the period 2005-2010. The Benefit/Cost (B/C) analysis is based on a ratepayer perspective using a method similar to the Total Resource Cost test methodology contained in the CPUC's *Standard Practice Manual*.

This report provides estimates of the net ratepayer benefits within SCG' service territory from the RD&D projects currently active in the year 2005-2010. The projects are specifically directed towards development and demonstration of

- Increased-energy-efficiency end-use technologies for core residential, commercial, and industrial customers that will lower energy bills and reduce CO2 and other emissions.
- Operational technologies that will result in reduced operational cost, increased productivity, increased system integrity, and increased safety.

Benefits were estimated for the years 2011 through 2025. Of the 292 active projects, tangible benefits were identified for 182 projects across 40 projects/technologies/markets. The remaining active projects were not included because they were in the earlier stages of development, had been terminated due to poor performance, were limited to one-time beta tests, or were related to other RD&D activities such as development of analytical, safety, and management tools and memberships in consortiums for which direct benefits could not be quantified.

However, costs for all 292 projects were included in the B/C analysis. Other key analytical considerations include:

- Estimates of any future royalty payments collected from sales of the technology were included in the analysis.
- Estimated benefits were limited to those, which would be engendered within SCG's service territory although many of the technologies will also produce California benefits outside the service area and the state.
- Investments made in similar technologies by organizations other than SCG were not included in the project cost estimates nor were the benefits accounted for in this analysis.

The results are presented in **Table 1**.

Key report findings are as follows:

- Total present value of RD&D expenditures (during the period 2005-2011) on all 292 projects is \$67.7 million.
- Using the CPUC's Total Resource Cost Test (TRC), the selected RD&D projects are expected to generate NPV ratepayer benefits of approximately \$26.2 billion over the next 15 years compared to a cost of \$17.6 billion. This results in a benefit-cost ratio of 1.5 with net benefits to ratepayers totaling \$8.6 billion.
- The cost of \$17.6 billion includes direct RD&D costs of all projects, in addition to customer costs related to the purchase, installation and operation of new appliances, equipment and technologies in future years, and utility operations costs of the advanced technologies.
- The ratepayer benefits of \$26.2 billion include energy and equipment cost

savings and operational cost savings. Benefits of increased safety, reliability, deliverability, and system integrity were not quantified, so the analysis is conservative.

- For this analysis, CO₂ (equivalent) savings were quantified, resulting in CO₂ reduction of 52 million tonnes. Most CO₂ savings were due to increased efficiency of the advanced equipment, some due to methane emissions reduction, and some due to biogas use in lieu of natural gas. These benefits were not monetized, adding further conservatism to the analysis.
- The B/C analysis is also conservative in that benefits were truncated in 2025. Thus technology that was installed in 2025 had only one year of benefits' shown, even though full RD&D and first costs were included in the cost side of the equation. In reality, these technologies would continue to operate for 13-30 years after their installation.
- Individual project benefit-to-cost ratios vary considerably. It is the objective of SCG for the RD&D portfolio as a whole to have a benefit cost ratio greater than one based on tangible, quantifiable benefits. Intangible benefits were not quantified, reflecting a very conservative approach. Projects that primarily provide intangible benefits may not, therefore, be considered 'cost-effective' by this conservative analysis. Surprisingly, all projects were found to be individually cost effective in this very conservative analysis.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Table 1
Summary of Benefit Cost Analysis

Line	Project	PV (\$2010) of RD&D Costs	# of Projs Analyzed	NPV Benefits (\$000)	NPV Costs (\$000)	Net Benefits (\$000)	B/C Ratio	CO2 Avoided (000 tonnes)
1	Instantaneous R Water Heater (G&E unit replacements)	\$46,940	3	\$1,419,182	\$1,039,850	\$379,332	1.36	1,875
2	R GHP	\$251,168	1	\$156,167	\$59,743	\$96,425	2.61	-4
3	R CHP	\$27,593	1	\$35,992	\$34,956	\$1,036	1.03	90
4	R Space Heating System	\$159,177	2	\$395,292	\$329,075	\$66,217	1.20	456
5	R Fuel Cells	\$185,488	1	\$9,174	\$8,051	\$1,123	1.14	47
6	C Unit Heater for Warehouses	\$5,000	1	\$397,699	\$339,022	\$58,677	1.17	427
7	C & I SuperBoiler	\$1,297,396	13	\$1,648,260	\$1,351,357	\$296,903	1.22	3,180
8	C BChP + Cooling + HW	\$2,412,888	19	\$44,740	\$42,763	\$1,977	1.05	27
9	C Cooling	\$836,908	10	\$1,362,625	\$1,351,576	\$11,050	1.01	-1,990
10	C Warewasher	\$27,435	2	\$135,629	\$60,494	\$75,136	2.24	180
11	C Conveyor Oven and other C Cooking	\$427,412	9	\$28,265	\$21,347	\$6,918	1.32	57
12	Vehicles (HD)	\$2,397,020		\$1,136,655	\$744,892	\$391,763	1.53	1,421
13	Vehicles (MD)	\$1,891,524	22	\$189,806	\$108,896	\$80,910	1.74	204
14	Vehicles (LD)	\$2,090,641		\$107,993	\$68,554	\$39,439	1.58	116
15	Industrial Low NOx Burners	\$36,212	3	\$1,431,322	\$493,951	\$937,371	2.90	3,659
16	Industrial Direct flame impingement (DFI) Technology	\$3,977	1	\$461,950	\$239,787	\$222,162	1.93	231
17	Small Gas Turbines	\$2,916,021	4	\$1,429,491	\$229,425	\$1,200,066	6.23	146
18	Recip Engines	\$1,603,551	10	\$11,306,495	\$6,886,706	\$4,419,789	1.64	26,877
19	C Fuel Cells	\$1,333,658	7	\$3,462,033	\$3,460,372	\$1,661	1.00	8,629
20	Gas-Solar Hybrid System	\$1,525,959	9	\$14,556	\$14,370	\$186	1.01	28
21	Biogas	\$6,022,202	18	\$662,715	\$575,009	\$87,705	1.15	6,470
22	Ethane/Methane Detector	\$70,854	1	\$78,234	\$722	\$77,513	108.39	0
23	Handheld Acoustic Pipe Detector	\$237,393	4	\$42,867	\$629	\$42,238	68.11	0
24	Remote Leak Survey Using Lasers	\$346,821	4	\$4,930	\$1,397	\$3,533	3.53	0
25	Obstacle Detection for Horizontal Directional Drilling	\$352,658	4	\$13,101	\$786	\$12,315	16.66	0
26	Universal Underground Facility Locating	\$22,247	3	\$2,656	\$40	\$2,616	67.07	0
27	Aldyl A Risk Analysis	\$103,845	1	\$27,006	\$5,505	\$21,501	4.91	0
28	Increase in Design Factor for PE Pipe	\$19,283	2	\$10,026	\$19	\$10,007	519.96	0
29	Design Criteria & Repair Techniques for Repair of Low-Stress Pipe	\$129,061	2	\$1,665	\$129	\$1,536	12.90	0
30	PE Joint Quality	\$125,480	3	\$772	\$125	\$647	6.15	0
31	External Tool for PE Repair and PE Repair Patch	\$61,056	2	\$28,106	\$19,778	\$8,328	1.42	0
32	Pipeline Field Applied Coatings	\$41,183	1	\$18,239	\$6,419	\$11,820	2.84	0
33	Reinforced Plastic Pipe	\$16,553	1	\$87,739	\$30,888	\$56,852	2.84	0
34	Keyhole Technology	\$159,901	3	\$3,870	\$307	\$3,563	12.60	0
35	Broadband EM for Risk Assessment	\$1,250,751	8	\$5,224	\$2,264	\$2,959	2.31	0
36	Risk Assessment for PE Pipe	\$55,376	1	\$859	\$55	\$804	15.52	0
37	Live Gas Camera Enhancements	\$51,364	1	\$506	\$168	\$338	3.01	0
38	Dynamic Cone Penetrometer	\$40,657	1	\$292	\$127	\$164	2.29	0
39	Increasing Lower Boundary from 20 to 30% of SMYS	\$71,974	1	\$3,394	\$72	\$3,322	47.15	0
40	Carbon Management Information Center (CMIC)	\$156,775	2	\$37,915	\$157	\$37,758	241.84	4,991
41	PCB Rapid Tester	\$30,697	1	\$2,767	\$671	\$2,096	4.12	0
42								
43								
44								
45	Allocated	\$28,842,100	182					
46	Unallocated, 2011	\$11,536,573						
47	Management, Administration, and Planning (2005-2010)	\$8,590,936						
48	Unallocated, Remainder	\$23,035,701			\$43,163			
49	Total	\$72,005,311		\$26,155,253	\$17,570,104	\$8,628,312	1.49	52,127

1.0 Introduction

The definition of RD&D used in this report comports with the meaning used by the CPUC, as follows:

Research, development and demonstration (RD&D) means expenditures incurred by natural gas companies either directly or through another person or organization (such as research institute, industry association, foundation, university, engineering company, or similar contractor) in pursuing research, development and demonstration activities including experiment, design, installation, construction, or operation. This definition includes expenditures for the implementation or development of new and/or existing concepts until technically feasible and commercially feasible operations are verified...The term includes, but is not limited to: All costs incidental to the design, development, or implementation of an experimental facility, a plant process, a product, a formula, an invention, a system of similar items, and the improvement of already existing items of a like nature...The term does not include expenditures for efficiency surveys; studies of management, management techniques, and organization; consumer surveys, advertising, promotions, or items of like nature.¹

CONSISTENT WITH THE ABOVE DEFINITION, SCG HAS USED ONLY THOSE COSTS DIRECTLY RELATED TO THE ADMINISTRATION, DEVELOPMENT AND IMPLEMENTATION OF THE INDIVIDUAL RESEARCH PROJECTS IN THE ANALYSIS.

2.0 PROJECT SCOPE

The utility RD&D function is a continuous process of identifying potential projects, developing technical concepts, conducting fundamental research, and building prototypes, testing and demonstrating early production units, and introducing products into the marketplace.

This analysis forecasts the future benefits associated with 182 selected RD&D projects across 40 project/technology/market analyses based on a forward looking examination of benefits and costs which include ratepayer investments, customer equipment purchases, energy savings, utility expenses, and operating expenses. This method directly addresses

¹ FERC Order No. 566, 1976

the merits of the existing RD&D portfolio, consistent with the approach taken in the CPUC's published *Standard Practice Manual*.

3.0 Methodology

The CPUC has traditionally employed benefit-cost analysis (BCA) as the primary method of estimating energy efficiency program benefits and costs. The analysis methodology is based on the CPUC TRC test published in the *Standard Practice Manual*. Under a BCA framework the costs and benefits associated with a project are totaled, and an estimate of the ratio of benefits to costs is developed. From a BCA perspective this ratio must exceed "one" for the expenditures to be considered worthwhile (i.e., benefits must exceed costs).

There are no standard benefit-cost analysis tools available for RD&D projects due to the unique complexity and risk associated with RD&D. Therefore, SCG elected to use the same BCA methodology for RD&D equity investment as is used to evaluate energy efficiency programs described above in order to at least recognize their tangible, quantifiable ratepayer benefits. SCG does not advocate use of this methodology for analyzing RD&D projects in general because the nature of RD&D is very different from that of energy efficiency programs. Plus, RD&D projects provide several intangible benefits that are not easily quantified such as improvements in air quality, safety, reliability, energy diversity and the quality of end-use products produced by these technologies. Thus, the BCA used in this analysis is a conservative analysis tool for evaluating the benefits of RD&D projects.

The California *Standard Practice Manual* (SPM) for Economic Analysis of Demand Side Programs and Projects was first issued by the CPUC in 1983. It has gone through several revisions since then. The 1987 revision renamed the All Ratepayer Test to the Total Resource Cost (TRC) Test and the Non-Participant Test to the Rate Impact Measure (RIM) Test. Additional revision included an expanded explanation of "demand-side" activities. The latest 2001 revision included renaming the Utility Cost Test to the Program Administrator Test and specific definitions of self-generation as a demand side activity and the inclusion of "externalities" in the TRC test.

For this analysis SCG has used the Total Resource Cost (TRC) test in conducting the cost benefit analyses of its RD&D equity investments. Although the RIM test could be used for evaluating RD&D projects, the test has several disadvantages. As the SPM states;

“The results of the RIM test are probably less certain than those of other tests because the test is sensitive to the differences between long-term projections of marginal costs and long-term projections of rates, two cost streams that are difficult to quantify with certainty.”

RIM test results are also sensitive to assumptions regarding the financing of program costs. Sensitivity analyses and interactive analyses that capture feedback effects between system changes, rate design options, and alternative means of financing generation and non-generation options can help overcome these limitations. However, these types of analyses may be difficult to implement.

An additional caution must be exercised in using the RIM test to evaluate a fuel substitution program with multiple end use efficiency options. For example, under conditions where marginal costs are less than average costs, a program that promotes an inefficient appliance may give a more favorable test result than a program that promotes an efficient appliance. Though the results of the RIM test accurately reflect rate impacts, the implications for long-term conservation efforts need to be considered.”

The TRC test, on the other hand, is a better representation of the quantifiable ratepayer benefits. It is a measure of the effects of the program or project on both the participating customer and the non-participating customer. Another strength of the TRC test is that the test results are unaffected by the uncertainties of projected average tariff rates, thus reducing the uncertainty of the test results.

In its analysis of the benefits and costs of the selected RD&D projects, SCG did not include the value of environmental impacts or other benefits such as safety that are not

readily quantified. However, each of these technologies has significant environmental benefits.

SCG has shown CO₂ savings for each project, but has not monetized CO₂ benefits.

Technologies that would foster increased implementation of distributed generation would offset emissions of utility operated power plants during peak demand periods and defer or eliminate the need to construct new power plants. In addition, technologies that utilize waste heat from distributed generation to displace on-site mechanical cooling would also offset emissions from utility power plants. Furthermore, technologies such as the natural gas fired fuel cells are virtually emissions free.

This analysis however takes into account any operational benefits from the technology such as, reduced maintenance, reduced losses, reduced material costs, reduced construction and repair costs. These benefits had to be accounted for since many of the RD&D projects in gas operations have no energy benefits (except methane emissions savings), whereas RD&D projects in the end-use utilization can have both energy and operational benefits. Both types of projects can however have environmental benefits.

4.0 Analytical Approach and Assumptions

The analytical approach and key assumptions used are as follows:

- Actual historical and current costs for the selected projects were tabulated on a NPV basis, and estimates of future project costs were developed.
- For projects that involve energy use, estimates of per unit fuel use associated with the technology were made. Estimates for both the new technology as well as the reference technology were made. This was derived from technology fuel efficiency, annual loads and other parameters.
- Estimates of future royalty payments collected from sales of the technology were included in the analysis.
- An estimate of the target date for commercial introduction.
- An estimate of the likely market penetration rate of the commercial technology. Market penetration was assumed to take a linear form and in most cases estimated penetration rates were considered to be conservative. An estimate of the likely penetration period for the technology. Market potential was based on Bureau of

Census data, DOT Form 7100 data, EIA California demand data, and SCG data.

- An estimate of the likely equipment life and product life cycle.
- For projects that improve company operations, estimate of annual savings due to the new technology and estimates of future costs of equipment purchases were used in the analysis.
- Estimated benefits were limited to those, which would be engendered within SCG's service territory although many of the technologies will also produce benefits outside the service area and the state.
- Investments made in similar technologies by organizations other than SCG were not included in the project cost estimates. This assumption acts to reduce the total actual costs associated with development of the technology. However, SCG's participation in a given project is an indication that, without the Company's participation, the project's chances of success are less.
- Natural gas and electricity costs were from the EIA cost data and the 2010 Annual Energy Outlook, scaled by current California energy prices.
- Prices were interpolated for the years for which forecasts were not available.
- An analysis window of only 15 years was used although benefits from RD&D projects that find market acceptance could continue for many years to come, especially those introduced in the latter years of the analysis.

5.0 RD&D Project Categories

SCG's RD&D portfolio consists of 292 projects in varying stages of development. Many of these projects are still in their infancy and some projects have not been started yet; others are winding down after successful market introduction. Most of the active projects fall under three broad categories, as follows:

Operations. These projects are primarily concerned with improving the company's operating functions associated with natural gas transmission and distribution (T&D). SCG is constantly working to improve T&D operating efficiency and reduce maintenance costs. Operation's primary goals include safety, reliability, integrity, deliverability, and

productivity improvements in pipeline operations, maintenance, metering, and environmental mitigation through remediation and minimization of hazardous waste emissions. In addition, a major program emphasis is exploring applications of advanced tools and emerging technologies to improve field operations. Both SCG direct projects and Gas Technology Institute's (GTI's) Operations Technology Development (OTD) projects funded by SCG were analyzed.

Utilization Systems. These projects are targeted to increase efficiency in residential, commercial and industrial end-use applications. They include development and demonstration of improved natural gas appliances, equipment, processes and related technologies. The goal is to provide customers with energy efficient, reliable, low-cost, and environmentally acceptable equipment and appliances. Both SCG direct projects and GTI's Utilization Technology Development (UTD) projects funded by SCG were analyzed.

Power Generation. These projects focus on increasing the cost-effectiveness and energy efficiency of small-scale distributed power generation and combined heat and power (CHP) equipment. They also focus on reducing emissions associated with natural gas-fueled power equipment, including engines, turbines and hydrogen-based technologies. In addition to electricity generation, Power Generation RD&D projects include pumping, compressing, and shaft power applications. Both SCG direct projects and GTI's UTD projects funded by SCG were analyzed.

Descriptions of some of these active projects, as well as a discussion of their qualitative benefits, are provided in **Appendix B**.

6.0 Ratepayer Net Benefits

Table 1 summarizes the results of the ratepayer benefit cost analyses of the selected 182 RD&D projects. **Total benefits amount to \$26.2 billion dollars with costs totaling \$17.6 billion resulting in a benefit-cost ratio of 1.49.** Net benefits from the 182 projects analyzed across 40 project/technology/market areas totaled \$8.6 billion. Total RD&D

expenditures incurred by SCG for all 292 projects amounted to \$72.0 million in 2010 dollars.

7.0 Model Analysis of Individual RD&D Projects

SCG conducted preliminary cost effectiveness analysis of each of 182 selected projects in its RD&D portfolio. These projects were grouped into 40 market segments. For instance all 13 boiler R&D projects were grouped under the commercial and industrial boiler market analysis. This approach eliminated duplication of benefits for similar technologies, yet debited the project/technology/market for all associated R&D costs.

8.0 Conclusions

SCG's RD&D portfolio of 182 projects across 40 project/technology/market segments was evaluated for its potential ratepayer benefits by assessing the technological viability and likely commercial success of the new products under various scenarios. At the core of this analysis is an assessment of how potential individual applications compare with existing competing products. The analysis uses best estimates of the technology's successful commercialization, and the market potential and penetration once the technology is commercialized. The analytic method applied herein uses a standard CPUC stipulated cost effectiveness methodology to best estimate the quantifiable benefits of SCG's RD&D equity investment portfolio. All of the 182 selected projects are individually cost effective, and as a portfolio, they are found to be cost effective with a benefit-to-cost ratio equal to 1.5, even with R&D costs from all 292 projects included. This is a preliminary analysis that did not take into account the environmental benefits. The analysis also ignored other potential benefits of improved operation, enhanced safety, reduced material waste as a result of these technologies. Therefore the estimates of project benefits should be considered to be very conservative.

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RD&D APPENDIX E

Letters of Support: the California Energy Commission and the Gas Technology Institute

STATE OF CALIFORNIA - NATURAL RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, Governor

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET, MS 39
SACRAMENTO, CA 95814-5512
www.energy.ca.gov



July 7, 2010

Mr. Hal Snyder
Vice President of Customer Solutions
Southern California Gas Company
555 West Fifth Street
Los Angeles, CA 90013-1040

Mr. James Avery
Senior Vice President Power Supply
San Diego Gas & Electric
8330 Century Park Court
San Diego, CA 92123-1530

Dear Messrs. Snyder and Avery:

The California Energy Commission supports Southern California Gas Company (SCG) and San Diego Gas and Electric's (SDG&E) proposed Research, Development, and Demonstration (RD&D) proposals for the 2012 General Rate Case filings. We believe your utility's RD&D program complements the State's Public Interest Energy Research (PIER) Program. Both of our organization's staffs have a long history of working closely on projects and programs that have ratepayer benefits.

Energy Commission staff reviewed the draft testimony from both utilities to determine the potential for collaboration and coordination with your proposed research program and the Public Interest Energy Research (PIER) program. Generally, both utilities propose research and development programs that is either unique to your service territory, or offers an extension of PIER programs. Several Sempra projects build on projects that PIER pioneered or incorporate PIER research and development into the utilities' operations. For example, both utilities propose natural gas initiatives for clean transportation that follow PIER's Natural Gas Vehicle Research Roadmap. In addition both utilities propose energy efficiency programs associated with appliances, commercial heating and cooling, cooking and industrial processes and builds off of existing PIER research or focuses on new areas not in PIER. Both utilities focus their renewable energy research and development on maximizing renewable energy resources within their service territory such as solar hot water and space conditioning systems.

SCG and SDG&E programs also focus on developing technologies related to utility operations and specific customer needs unique to its service territory. These programs emphasize near term research with results that can be used directly in utility rebate and emerging technologies programs. The Energy Commission's programs are driven by legislative and state energy priorities and policies and focus on public energy needs that have statewide economic, energy security and environmental benefits and impacts. Additionally, the PIER program funds earlier phases of project development when

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Messrs. Snyder and Avery
July 7, 2010
Page 2


project proponents face difficulty in securing outside investors. As research products get closer to commercialization, PIER funding decreases and funding from venture capitalists and utilities assist in getting the products into the marketplace.

Combining the PIER and utilities' RD&D programs leverage the limited amount of research funds. This includes the many research centers throughout California, such as the California Lighting Technology Center, Western Cooling Efficiency Center, and the Center for the Built Environment. While these centers were established for the benefit of all Californians, utilities, in particular, have used these research centers to help them with technology issues specific to their service area and customers. Additionally, the results from these centers have fed directly into the utility emerging technologies programs.

Inclosing, we wish to recognize the active participation of SCG and SDG&E in advisory committees to ensure effective coordination of our agencies complementary research programs. We support the proposed SCG and SDG&E programs and believe that they fill an important role in meeting the state's energy policy goals that is not covered by PIER.

For any questions, please contact Kenneth Koyama at (916) 654-3838.

Sincerely,



MELISSA JONES
Executive Director

Southern California Gas Company
Test Year 2012 GRC - APP
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GAS TECHNOLOGY INSTITUTE
855 15th Street, NW | Suite 420 | Washington, DC | 20005 -5708
T: 202 661 8650 | F: 202 661 8651 | www.gastechnology.org



June 2, 2010

The Honorable Michael R. Peevy
Chairman, California Public Utilities Commission
California State Building
505 Van Ness Avenue
San Francisco, CA 94102

Dear Chairman Peevy:

The Gas Technology Institute (GTI) strongly supports Sempra's proposed research and development (R&D) program, as filed with the California Public Utility Commission. The R&D program has offered and will continue to offer substantial benefits to California natural gas consumers. Sempra's R&D program is well coordinated with the California Energy Commission's (CEC's) R&D program, GTI's R&D program, and the U.S. Department of Energy's (DOE's) research program. Sempra's program is not duplicative of any of the other programs. In fact, by careful collaboration with all these efforts, Sempra will be able to help ensure that critical operations and energy efficiency technologies can pass through the R&D process and enter the California market place to benefit gas consumers, and that California consumer dollars are highly leveraged to support critical energy R&D needs.

The Sempra residential energy efficiency R&D program will provide proof of concept and field testing for primary residential uses, like water and space heating, and offer consumers new options for combined heat and power (CHP) and other applications. The commercial energy efficiency program will provide technology development for primary space and water heating, cooking, CHP, and commercial cooling options that can lower energy usage, reduce energy bills, reduce CO₂ output, and reduce peak electric loads. The industrial energy efficiency program provides R&D to reduce emissions such as NO_x and CO₂, reduce energy usage, and lower energy bills, for boilers, process heat, and CHP. The program will also help to keep critical manufacturing jobs in California.

The natural gas vehicle (NGV) R&D program will provide testing for vehicles, fueling stations, and storage options to help support the development of NGV options, especially for medium- and heavy-duty fleet vehicles, to lower emissions and reduce energy bills.

The distributed energy R&D program will provide small-scale distributed generation and CHP options for near-market electricity generation that can reduce energy costs and emissions.

The operations R&D program will help to ensure the safety, integrity, and deliverability of the gas distribution system, now and into the future, delivered at reasonable costs.

The renewables and biogas R&D programs will help to enable natural gas-solar hybrid systems to be developed and provide a renewable source of natural gas for Californians.

GTI believes that the Sempra R&D program is critical to meeting California's energy, economic and environmental needs and to providing benefits to California's gas consumers and urges its adoption.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Ron Edelstein".

Ron Edelstein
Director, Regulatory and Governmental Relations

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice

Summary of Shared Services Workpapers:

Description	In 2009 \$ (000) "Book Expense"			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
A. NGV Program	1,220	1,256	1,605	2,028
B. Capacity Products & Planning	1,855	2,600	2,600	2,600
C. BioFuel Market Development	181	364	364	364
D. Environmental Affairs	151	146	221	295
E. Emerging Technology	64	88	88	88
F. VP Customer Solutions	200	209	209	209
G. USS Billed-in from SDG&E	846	1,146	1,146	1,146
Total	4,517	5,809	6,233	6,730

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: A. NGV Program
 Cost Center: 2200-0234.000

Summary for Category: A. NGV Program

	In 2009\$ (000) "Book Expense"			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	612	629	788	1,017
Non-Labor	608	627	817	1,011
NSE	0	0	0	0
Total	1,220	1,256	1,605	2,028
FTE	8.1	8.1	10.1	13.1

**Cost Centers belonging to this Category:
 2200-0234.000 NGV PROGRAM**

Labor	612	629	788	1,017
Non-Labor	608	627	817	1,011
NSE	0	0	0	0
Total	1,220	1,256	1,605	2,028
FTE	8.1	8.1	10.1	13.1

Beginning of Workpaper
2200-0234.000 - NGV PROGRAM

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: A. NGV Program
Category-Sub: 1. NGV Program
Cost Center: 2200-0234.000 - NGV PROGRAM

Activity Description:

This cost center contains the costs associated with the NGV Information, Education and Training program at both SoCalGas and SDG&E. This program provides ratepayers with services and information directed by and consistent with Public Utilities Code 740.3 and D.05-05-010. Services and information provided assist in identifying, developing and implementing NGV transportation solutions.

Forecast Methodology:

Labor - Base YR Rec

This cost center has only 2 years recorded costs because NGV program had a different funding mechanism until 2008. The base year 2009 is used as the basis to forecast TY2012, plus adjustments for specific program growth.

Non-Labor - Base YR Rec

This cost center has only 2 years recorded costs because NGV program had a different funding mechanism until 2008. The base year 2009 is used as the basis to forecast TY2012, plus adjustments for specific program growth.

NSE - Base YR Rec

Not applicable

Southern California Gas Company
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Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: A. NGV Program
 Category-Sub: 1. NGV Program
 Cost Center: 2200-0234.000 - NGV PROGRAM

Summary of Results:

		In 2009\$ (000)							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2005	2006	2007	2008	2009	2010	2011	2012
		Total Incurred (100% Level)							
Labor		0	0	0	699	693	693	870	1,125
Non-Labor		22	27	2	830	703	703	915	1,131
NSE		0	0	0	0	0	0	0	0
Total		22	27	2	1,529	1,396	1,396	1,785	2,256
FTE		0.0	0.0	0.0	8.2	8.1	8.1	10.1	13.1
		Allocations Out							
Labor		0	0	0	112	81	64	82	108
Non-Labor		0	0	0	105	95	76	98	120
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	217	176	140	180	228
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Retained							
Labor		0	0	0	587	612	629	788	1,017
Non-Labor		22	27	2	725	608	627	817	1,011
NSE		0	0	0	0	0	0	0	0
Total		22	27	2	1,312	1,220	1,256	1,605	2,028
FTE		0.0	0.0	0.0	6.8	8.1	8.1	10.1	13.1
		Allocations In							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Book Expense							
Labor		0	0	0	587	612	629	788	1,017
Non-Labor		22	27	2	725	608	627	817	1,011
NSE		0	0	0	0	0	0	0	0
Total		22	27	2	1,312	1,220	1,256	1,605	2,028
FTE		0.0	0.0	0.0	6.8	8.1	8.1	10.1	13.1

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: A. NGV Program
Category-Sub: 1. NGV Program
Cost Center: 2200-0234.000 - NGV PROGRAM

Calculation of Book Expense:

	2009 Adjusted-Recorded					2010 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	63	-31	0	32	0.40	63	-31	0	32	0.40
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	630	734	0	1,364	7.70	630	734	0	1,364	7.70
% Allocation										
Retained	87.11%	87.10%				89.71%	89.71%			
SEU	12.89%	12.90%				10.29%	10.29%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	549	639	0	1,188		566	658	0	1,224	
SEU	81	95	0	176		64	76	0	140	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	693	703	0	1,396	8.10	693	703	0	1,396	8.10
Total Alloc. Out	81	95	0	176		64	76	0	140	
Total Retained	612	608	0	1,220		629	627	0	1,256	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	612	608	0	1,220		629	627	0	1,256	

	2011 Adjusted-Forecast					2012 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	63	-31	0	32	0.40	63	-31	0	32	0.40
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	807	946	0	1,753	9.70	1,062	1,162	0	2,224	12.70
% Allocation										
Retained	89.71%	89.71%				89.71%	89.71%			
SEU	10.29%	10.29%				10.29%	10.29%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	725	848	0	1,573		954	1,042	0	1,996	
SEU	82	98	0	180		108	120	0	228	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	870	915	0	1,785	10.10	1,125	1,131	0	2,256	13.10
Total Alloc. Out	82	98	0	180		108	120	0	228	
Total Retained	788	817	0	1,605		1,017	1,011	0	2,028	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	788	817	0	1,605		1,017	1,011	0	2,028	

Southern California Gas Company
Test Year 2012 GRC - APP
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Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: A. NGV Program
Category-Sub: 1. NGV Program
Cost Center: 2200-0234.000 - NGV PROGRAM

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2009

The allocation % is estimated proportionally using meter counts for each utility. Meter counts is a good proxy for the relative amount of resources required to provide customer information, education, and training programs.

Cost Center Allocation Percentage for 2010

The allocation % is estimated proportionally using meter counts for each utility. Meter counts is a good proxy for the relative amount of resources required to provide customer information, education, and training programs.

Cost Center Allocation Percentage for 2011

The allocation % is estimated proportionally using meter counts for each utility. Meter counts is a good proxy for the relative amount of resources required to provide customer information, education, and training programs.

Cost Center Allocation Percentage for 2012

The allocation % is estimated proportionally using meter counts for each utility. Meter counts is a good proxy for the relative amount of resources required to provide customer information, education, and training programs.

Southern California Gas Company
 Test Year 2012 GRC - APP
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Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: A. NGV Program
 Category-Sub: 1. NGV Program
 Cost Center: 2200-0234.000 - NGV PROGRAM

Forecast Summary:

		In 2009 \$(000) "Incurred Costs"								
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Labor	Base YR Rec	693	693	693	0	177	432	693	870	1,125
Non-Labor	Base YR Rec	703	703	703	0	212	428	703	915	1,131
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		1,396	1,396	1,396	0	389	860	1,396	1,785	2,256
FTE	Base YR Rec	8.1	8.1	8.1	0.0	2.0	5.0	8.1	10.1	13.1

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010 Total	0	0	0	0	0.0	

2011 177 0 0 177 0.0 1-Sided Adj

1 Market Advisor to handle regulatory and policy issues confronting customers using alternate fuel vehicles (AB 32, LCFS, SCAQMD Fleet Rules, CARB Fleet Rules, Gas Quality Regulations, etc.), and 1 account management FTE to support customer growth

2011 0 0 0 0 2.0 1-Sided Adj

1 Market Advisor to handle regulatory and policy issues confronting customers using alternate fuel vehicles (AB 32, LCFS, SCAQMD Fleet Rules, CARB Fleet Rules, Gas Quality Regulations, etc.), and 1 account management FTE to support customer growth

2011 0 212 0 212 0.0 1-Sided Adj

Incremental costs will be used for customer education and training programs associated with customer growth.

2011 Total	177	212	0	389	2.0	
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2012 432 0 0 432 0.0 1-Sided Adj

2 Market Advisors to handle regulatory and policy issues confronting customers using alternate fuel vehicles (AB 32, LCFS, SCAQMD Fleet Rules, CARB Fleet Rules, Gas Quality Regulations, etc.), provide information on grant funding and economics, support education & training, and 3 account management FTEs to support customer growth.

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 Test Year 2012 GRC - APP
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Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: A. NGV Program
 Category-Sub: 1. NGV Program
 Cost Center: 2200-0234.000 - NGV PROGRAM

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2012	0	0	0	0	5.0	1-Sided Adj

2 Market Advisors to handle regulatory and policy issues confronting customers using alternate fuel vehicles (AB 32, LCFS, SCAQMD Fleet Rules, CARB Fleet Rules, Gas Quality Regulations, etc.), provide information on grant funding and economics, support education & training, and 3 account management FTEs to support customer growth

2012	0	428	0	428	0.0	1-Sided Adj
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Incremental costs will be used for customer education and training programs associated with customer growth.

2012 Total	432	428	0	860	5.0	
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Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: A. NGV Program
Category-Sub: 1. NGV Program
Cost Center: 2200-0234.000 - NGV PROGRAM

Determination of Adjusted-Recorded (Incurred Costs):

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	651	662	573	503	529
Non-Labor	674	854	948	883	688
NSE	0	0	0	0	0
Total	1,325	1,516	1,521	1,386	1,217
FTE	8.5	8.5	7.4	6.4	6.5
Adjustments (Nominal \$) **					
Labor	-651	-662	-573	74	57
Non-Labor	-654	-829	-946	-65	14
NSE	0	0	0	0	0
Total	-1,305	-1,491	-1,519	9	71
FTE	-8.6	-8.5	-7.4	0.6	0.4
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	577	586
Non-Labor	20	24	2	818	702
NSE	0	0	0	0	0
Total	20	24	2	1,396	1,288
FTE	0.0	0.0	0.0	6.9	6.8
Vacation & Sick (Nominal \$)					
Labor	0	0	0	111	106
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	111	106
FTE	0.0	0.0	0.0	1.3	1.3
Escalation to 2009\$					
Labor	0	0	0	10	0
Non-Labor	2	2	0	12	0
NSE	0	0	0	0	0
Total	2	2	0	22	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	0	0	0	699	692
Non-Labor	22	27	2	830	702
NSE	0	0	0	0	0
Total	22	27	2	1,530	1,394
FTE	0.0	0.0	0.0	8.2	8.1

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: A. NGV Program
Category-Sub: 1. NGV Program
Cost Center: 2200-0234.000 - NGV PROGRAM

Summary of Adjustments to Recorded:

Year	In Nominal \$ (000) "Incurred Costs"				
	2005	2006	2007	2008	2009
Labor	-651	-662	-573	74	57
Non-Labor	-654	-829	-946	-65	14
NSE	0	0	0	0	0
Total	-1,305	-1,491	-1,519	9	71
FTE	-8.6	-8.5	-7.4	0.6	0.4

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2005	0	108	0	0.0	CCTR Transf	To 2200-2269.000	TTRAN20091005 102818437
Cost alignment adjustment - Transfer of producer reimbursement for blend gas truck operational costs from USS 2200-0234 to NSS 2200-2269.							
2005	-151	0	0	0.0	CCTR Transf	To 2200-2288.000	TTRAN20091005 110433840
Cost alignment adjustment - transfer labor costs associated with 2 advisors from 2200-0234 to 2200-2288 due to reorganization.							
2005	0	0	0	-1.7	CCTR Transf	To 2200-2288.000	TTRAN20091005 110510043
Cost alignment adjustment - transfer FTE for 2 advisors from 2200-0234 to 2200-2288 due to reorganization.							
2005	-60	0	0	0.0	1-Sided Adj	N/A	TTRAN20091005 142229130
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2005	0	-37	0	0.0	1-Sided Adj	N/A	TTRAN20091005 142931433
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2005	-440	0	0	0.0	1-Sided Adj	N/A	TTRAN20091005 151524207
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2005	0	-435	0	0.0	1-Sided Adj	N/A	TTRAN20091005 151621770
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							

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Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: A. NGV Program
 Category-Sub: 1. NGV Program
 Cost Center: 2200-0234.000 - NGV PROGRAM

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005	0	0	0	-6.0	1-Sided Adj	N/A	TTRAN20091005 151740740
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2005	0	-271	0	0.0	CCTR Transf	To 2200-2269.000	TTRAN20091005 153252147
Cost alignment adjustment - Transfer blended fuel truck related expenses from USS 2200-0234 to NSS 2200-2269.							
2005	0	22	0	0.0	1-Sided Adj	N/A	TTRAN20091005 154038907
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2005	0	-41	0	0.0	CCTR Transf	To 2200-2288.000	TTRAN20091005 154300003
Cost alignment adjustment - Transfer air quality related expenses (\$34,536) and employee expenses (\$6,667) from 2200-0234 to 2200-2288 due to reorganization.							
2005	0	0	0	-0.9	1-Sided Adj	N/A	TTRAN20091006 072910260
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2005 Total	-651	-654	0	-8.6			
2006	0	9	0	0.0	CCTR Transf	To 2200-2269.000	TTRAN20091005 103222690
Cost alignment adjustment - Transfer of producer reimbursement for blend gas truck operational costs from USS 2200-0234 to NSS 2200-2269.							
2006	-160	0	0	0.0	CCTR Transf	To 2200-2288.000	TTRAN20091005 122927873
Cost alignment adjustment - transfer labor costs associated with 2 advisors from 2200-0234 to 2200-2288 due to reorganization.							
2006	0	0	0	-1.7	CCTR Transf	To 2200-2288.000	TTRAN20091005 123030703
Cost alignment adjustment - transfer FTE for 2 advisors from 2200-0234 to 2200-2288 due to reorganization.							
2006	0	-184	0	0.0	CCTR Transf	To 2200-2269.000	TTRAN20091005 154610647
Cost alignment adjustment - Transfer blended fuel truck related expenses from USS 2200-0234 to NSS 2200-2269.							

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: A. NGV Program
Category-Sub: 1. NGV Program
Cost Center: 2200-0234.000 - NGV PROGRAM

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2006	0	-32	0	0.0	CCTR Transf	To 2200-2288.000	TTRAN20091005 154948247
Cost alignment adjustment - Transfer air quality related expenses (\$24,055) and employee expenses (\$7,571) from 2200-0234 to 2200-2288 due to reorganization.							
2006	-409	0	0	0.0	1-Sided Adj	N/A	TTRAN20091005 155051920
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2006	0	-594	0	0.0	1-Sided Adj	N/A	TTRAN20091005 155140340
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2006	0	0	0	-5.5	1-Sided Adj	N/A	TTRAN20091005 155206357
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2006	-93	0	0	0.0	1-Sided Adj	N/A	TTRAN20091005 155312327
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2006	0	-29	0	0.0	1-Sided Adj	N/A	TTRAN20091005 155349360
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2006	0	0	0	-1.3	1-Sided Adj	N/A	TTRAN20091006 072957293
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2006 Total	-662	-829	0	-8.5			
2007	0	61	0	0.0	CCTR Transf	To 2200-2269.000	TTRAN20091005 103325820
Cost alignment adjustment - Transfer of producer reimbursement for blend gas truck operational costs from USS 2200-0234 to NSS 2200-2269.							
2007	-66	0	0	0.0	CCTR Transf	To 2200-2288.000	TTRAN20091005 123230800
Cost alignment adjustment - transfer labor costs for 2 advisors (partial year) from 2200-0234 to 2200-2288 due to reorganization.							
2007	0	0	0	-0.7	CCTR Transf	To 2200-2288.000	TTRAN20091005 123318410
Cost alignment adjustment -Transfer FTE for 2 advisors (partial year) from 2200-0234 to 2200-2288 due to reorganization.							

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

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<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2007	0	-208	0	0.0	CCTR Transf	To 2200-2269.000	TTRAN20091005 155616580
Cost alignment adjustment - Transfer blended fuel truck related expenses from USS 2200-0234 to NSS 2200-2269.							
2007	0	-16	0	0.0	CCTR Transf	To 2200-2288.000	TTRAN20091005 155754990
Cost alignment adjustment - Transfer air quality related expenses (\$13,608) and employee expenses (\$2,040) from 2200-0234 to 2200-2288 due to reorganization.							
2007	-101	0	0	0.0	1-Sided Adj	N/A	TTRAN20091005 155905117
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2007	0	-1,518	0	0.0	1-Sided Adj	N/A	TTRAN20091005 155938193
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2007	-406	0	0	0.0	1-Sided Adj	N/A	TTRAN20091005 160013163
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2007	0	736	0	0.0	1-Sided Adj	N/A	TTRAN20091005 160046320
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2007	0	0	0	-5.3	1-Sided Adj	N/A	TTRAN20091005 160118650
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2007	0	0	0	-1.4	1-Sided Adj	N/A	TTRAN20091006 073051920
EXCLUSION - NGV program costs excluded from historical as 2007 & prior years recovery via balancing accounts. Reference D.05-05-010.							
2007 Total	-573	-946	0	-7.4			
2008	0	16	0	0.0	CCTR Transf	From 2200-2269.000	TTRAN20090910 090044820
Dollars were incorrectly charged to the wrong cost center. Adjustment to transfer from 2200-2269 (nonshared cost center) to 2200-0234 (shared cost center)							

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

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<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2008	0	16	0	0.0	SSD_Type Transf	From CC_Subj	TTRAN20091005 100621053
Secondary transfer to change the SSD type from "Subject to Allocation" to "Directly Retained".							
2008	0	-16	0	0.0	SSD_Type Transf	To IO_Alloc	TTRAN20091005 100621053
Secondary transfer to change the SSD type from "Subject to Allocation" to "Directly Retained".							
2008	0	69	0	0.0	CCTR Transf	To 2200-2269.000	TTRAN20091005 103409803
Cost alignment adjustment - Transfer of producer reimbursement for blend gas truck operational costs from USS 2200-0234 to NSS 2200-2269.							
2008	0	-204	0	0.0	CCTR Transf	To 2200-2269.000	TTRAN20091006 100645893
Cost alignment adjustment - Transfer blended fuel truck related expenses from 2200-0234 (shared) to 2200-2269 (nonshared).							
2008	74	0	0	0.0	1-Sided Adj	N/A	TTRAN20100603 140304433
Cost alignment adjustment - This one side adjustment is to transfer labor costs for NGV program reflected in SDG&E cost center 2100-3709 that should be billed to SoCalGas.							
2008	0	0	0	0.6	1-Sided Adj	N/A	TTRAN20100603 140351013
Cost alignment adjustment - This one side adjustment is to transfer FTE for NGV program reflected in SDG&E cost center 2100-3709 that should be billed to SoCalGas.							
2008	0	53	0	0.0	1-Sided Adj	N/A	TTRAN20100603 140603953
Cost alignment adjustment - This one side adjustment is to transfer nonlabor costs for NGV program reflected in SDG&E cost center 2100-3709 that should be billed to SoCalGas.							
2008 Total	74	-65	0	0.6			
2009	57	0	0	0.0	1-Sided Adj	N/A	TTRAN20100603 140746690
Cost alignment adjustment - This one side adjustment is to transfer labor costs for NGV program reflected in SDG&E cost center 2100-3709 that should be billed to SoCalGas.							
2009	0	0	0	0.4	1-Sided Adj	N/A	TTRAN20100603 140840457
Cost alignment adjustment - This one side adjustment is to transfer FTE for NGV program reflected in SDG&E cost center 2100-3709 that should be billed to SoCalGas.							

Southern California Gas Company
 Test Year 2012 GRC - APP
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<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2009	0	14	0	0.0	1-Sided Adj	N/A	TTRAN20100603 140927600

Cost alignment adjustment - This one side adjustment is to transfer nonlabor costs for NGV program reflected in SDG&E cost center 2100-3709 that should be billed to SoCalGas.

2009 Total	57	14	0	0.4			
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Supplemental Workpapers for Workpaper 2200-0234.000

COM/SK1/cvm/vfw

Mailed 5/10/2005

Decision 05-05-010 May 5, 2005

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Joint Application of Southern California Gas Company (U 904 G) and San Diego Gas & Electric Company (U 902 M) for Authority to Continue Funding of Low Emission Vehicle Programs.

Application 02-03-047
(Filed March 25, 2002)

Application of Southern California Edison Company (U 338-E) to Extend the Operation of its Electric Vehicle Adjustment Clause Mechanism and Related Accounts Until the Date of the Commission's Final Decision in Southern California Edison's Test Year 2003 General Rate Case Proceeding.

Application 02-03-048
(Filed March 25, 2002)

Application of Pacific Gas and Electric Company for Review of and Authorization for Recovery of Costs Relating to Its Low Emission Vehicle Program for 2002 through 2005. (U 39 E)

Application 02-03-049
(Filed March 25, 2002)

**OPINION ON CONTENTS OF UTILITY
LOW EMISSION VEHICLE PROGRAM APPLICATIONS**

I. Summary

This decision addresses the Low Emission Vehicle (LEV) programs of the Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE) and Southern California Gas Company (SoCalGas) that these utilities provide, which are not mandated by federal law. While not specifically addressed, this decision is consistent with recent California Public Utilities Commission's (CPUC's) air quality efforts; the

194822

-1 -

A.02-03-047 *et al.* COM/SK1/cvm/vfw

CPUC and the California Energy Commission's (CEC's) Energy Action Plan; the California Air Resources Board's (CARB's) recently approved rules to reduce greenhouse gas emissions (GHGs) from cars and light trucks statewide during this decade; and efforts surrounding the CPUC's Climate Change En Banc of February 23, 2005.

Specifically, this decision specifies the contents of the applications that PG&E, SDG&E, SCE and SoCalGas should file in seeking future funding for their LEV programs. Decision (D.) 03-10-086 approved prior requests for LEV funding, but ordered all interested parties to engage in a collaborative workshop process to refine the contents of the foregoing utilities' (IOUs) applications. As a result of this process, thirteen parties submitted a joint recommendation on June 22, 2004 to the CPUC. This joint recommendation was a near universal proposal from the thirteen parties on issues such as reporting requirements, funding cycles, and the showing necessary to approve future rounds of funding for these programs. The adoption of this joint recommendation is also consistent with Public Utilities Code Section 740.3(a), which requires the CPUC to work cooperatively on LEV matters with other state agencies to achieve air quality improvements by advancing adoption of LEVs in California. Finally, this decision removes the "discretionary" connotation to these programs and places review of these programs in each of the utilities' general rate cases or cost of service applications. As LEVs become more common in California, it is becoming abundantly clear that many of these programs are a natural extension of utility service.

II. Background

A. History of LEV Programs

The utilities' LEV programs are designed to develop and support motor vehicles powered by electricity and natural gas. We approved IOU ratepayer funding for LEVs in 1993 in D.93-07-054, after the Legislature enacted Pub. Util.

A.02-03-047 *et al.* COM/SK1/cvm/vfw

Code § 740.3 *et seq.* The statute provides that the Commission should work with other state agencies, air quality management districts, the motor vehicle industry and the IOUs to facilitate the use of electric power and natural gas to fuel LEVs. The statute prohibits the Commission from passing funding for such programs through to ratepayers unless the programs are in the ratepayers' interest. In 1999, the Legislature amended Pub. Util. Code § 740.8 to provide that "interests of ratepayers, short- or long-term, mean direct benefits that are specific to ratepayers in the form of *safer, more reliable, or less costly gas or electrical service.*"¹

As described in D.03-10-086, the IOUs' LEV programs have three facets. First, the IOUs share information they have gained as operators of their own LEV fleets with other actual or potential fleet owners. This information sharing is the key focus of the IOUs' "customer education" activities. Second, they evaluate new LEV products to determine their impact on the energy grids they operate. This appears to be their principal activity aimed at enhancing system reliability. Third, they provide information on safe fueling and charging techniques to third parties who use IOU-owned fueling stations and charge electric vehicles.

B. D.03-10-086 Requirements

D.03-10-086 allowed IOUs to use the current LEV application process until the end of 2005. The decision set up a process to develop criteria for judging whether the Commission would authorize funding for LEV programs in the future:

We would like the parties, and any other interested stakeholders, to work together to come up with specific criteria that will be used to judge whether LEV programs should receive continued funding in the future, while also addressing whether or not these programs should be included in the utility cost-of-service proceedings or whether they

¹ Emphasis added.

A.02-03-047 *et al.* COM/SK1/cvm/vfw

should be discontinued because they have been duplicated by market efforts. The forum for this shall be a workshop, hosted by the Energy Division, to be held no later than April 2004. The parties will then jointly file in this Docket any proposals resulting from this workshop (or workshops if necessary). The assigned ALJ should then establish, through ruling, a schedule for comments and reply comments and any other record development, as needed.

....

The workshops are required because there seems to be a lack of clarity on behalf of the parties with respect to what they need to prove in order to have funding extended in future applications. We anticipate responding to the workshop proposal by developing guidelines that would apply when the utilities apply for funding for the next round of discretionary LEV programs. This procedure will help facilitate the coordination envisioned in PU Code § 740.3(a).²

We set up workshops because, in the words of Resolution G-3322,

[W]e never intended ratepayer-funded LEV programs to be permanent or become part of the IOUs' entrenched operations:

[O]ur intent at the time we issued the current authorization was to fund the utilities' programs for a set period of time with the expectation that at some point further subsidization of the LEV market by utility ratepayers would not be warranted. As stated in Findings of Fact No. 3 in D.93-07-054, "It is not clear how long a utility presence is needed to provide a bridge to a sustainable competitive market for LEVs."³

C. Workshop and Report

In accordance with the Commission's direction, the Energy Division held a workshop on April 29, 2004, and on June 22, 2004, several parties to this

² D.03-10-086, *mimeo.*, pp. 33-34 (footnotes supplied).

³ Resolution G-3322, Jan. 23, 2002, at 9, available at http://www.cpuc.ca.gov/PUBLISHED/FINAL_RESOLUTION/12757.htm

A.02-03-047 *et al.* COM/SK1/cvm/vfw

proceeding submitted a *Joint Report on Low Emission Vehicle Program Workshop* (Report). PG&E supplemented that submission on August 11, 2004. The signatories who supported the Report in its entirety were PG&E, Bay Area Clean Air Task Force, California Air Resources Board, California Electric Transportation Coalition, California Energy Commission, CALSTART, Clean Energy, INFORM, Sacramento Municipal Utility District, SDG&E, South Coast Air Quality Management District, SCE and SoCalGas. Western States Petroleum Association (WSPA) declined to sign on to a portion of the Report, and the remaining workshop participants – Southern California Generating Coalition (SCGC) and TIAX (a fuel cell company) did not sign on to the Report at all.

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A.02-03-047 *et al.* COM/SK1/cvm/vfw

The Report took the following positions:

1. The proposed LEV application appended to D.03-10-086 requires too much detail and would burden the IOUs. The Commission should adopt a simplified format.
2. The IOUs should be able to make future LEV funding requests as part of their general rate cases (GRCs) or cost of service (COS) proceedings, rather than as a separate application.
3. The Commission need not develop new guidelines for determining whether ratepayer funding of LEV-related research, development and demonstration (RD&D) work is appropriate.
4. Only when there are no longer any LEVs in the hands of utilities may the IOUs' LEV programs be terminated.
5. Compliance with existing law is adequate to assure fair competition between IOUs and third parties operating in the LEV market.
6. IOU participation in a broad range of industry organizations will ensure IOU efforts in the LEV market do not duplicate other available products and services.
7. Future LEV funding should be continued as long as the IOUs and their customers use LEVs and customers receive direct benefits from such programs.

D. Comments on Workshop Report

1. WSPA

On September 16, 2004, WSPA filed comments on the Report. WSPA makes the following points:

1. The IOUs' citation to "a new, stronger emphasis in California on the need to encourage LEVs"⁴ is irrelevant to whether utility ratepayers should pay for LEV activities. General state policy does not justify imposing such costs on ratepayers.

⁴ Report at 9.

A.02-03-047 *et al.* COM/SK1/cvm/vfw

2. IOU participation in LEV-related advocacy groups should be limited to communicating utility experience with LEVs and should not include activities to promote LEV use or influence public policy.
3. The Report's criteria for determining whether LEV programs should receive continued funding are too broad:
 - The IOUs' customer education should be limited to utility vehicles and refueling stations, and not include general information on the operation of LEVs that should be provided by manufacturers or dealers.
 - IOU efforts to inform customers about the environmental and societal benefits of LEVs should not be funded by ratepayers unless they are focused on utility LEV use and infrastructure.
 - IOUs should not be allowed to "inform customers about the economic operation of LEVs and related infrastructure"⁵ unless such information is limited to training in the use of utility infrastructure and in the economic operation of vehicles as it impacts the utility and the efficient use of energy.

2. SCGC

SCGC filed comments on the report on September 20, 2004. SCGC is concerned that the Report addresses matters beyond the scope of and in conflict with D.03-10-086. SCGC notes that it is irrelevant whether LEVs are a good thing for California; rather, the issue is whether ratepayers should fund utility LEV programs: "the workshop was not to be on whether the utilities' discretionary LEV programs should continue. It was to be on specific criteria for determining whether *ratepayer funding* should continue and on the appropriate forum for deciding ratepayer funding issues."⁶ SCGC's specific comments are as follows:

⁵ *Id.* at 25.

⁶ [SCGC] *Comment on Workshop Report*, filed Sept. 20, 2004, at 2 (emphasis in original).

A.02-03-047 *et al.* COM/SK1/cvm/vfw

1. The Report's conclusion that funding for LEVs may terminate only when there are no longer any LEVs in the hands of utilities or their customers contradicts Commission decisions on the subject. Decision 03-10-086, D.98-12-028, D.95-11-035 and D.93-07-054 all make clear that ratepayer funded LEV programs are not supposed to be permanent.
2. The Report conflicts with D.03-10-086 by recommending that funding requests for LEV programs should be considered in GRCs. Electric generators bear a substantial portion of gas utility LEV costs. Because the Commission has viewed gas utility LEV costs as being atypical costs that require special treatment, the costs should be examined in separate stand-alone proceedings, and not in GRCs.⁷

III. Discussion

A. Content of Applications for Discretionary LEV Funding

1. Discretionary vs. Mandatory Funding

This decision only addresses the IOUs' LEV programs that are not the subject of statutory clean air requirements (which have been known as "mandatory.") The Commission has previously titled these programs, "discretionary". While called discretionary programs, the utilities do not carry these programs out at their own discretion. In fact, the utilities play a unique and vital role by engaging in these programs. For example, growing volumes of customer calls to utilities on such LEV matters as tariff explanation, hook up concerns and fueling safety issues are to be expected and will increase as the adoption of these technologies increases. LEV technology assessment and applications research included in these programs are needed to evaluate new options for meeting *utilities'* fleet mandates. These are just some examples from

⁷ TIAX did not provide input on the Report.

A.02-03-047 *et al.* COM/SK1/cvm/vfw

the record in A.02-03-047 that demonstrate why gas and electric utilities must inherently remain involved with LEV-related research and development, technology assessment, standards development and customer education and training. Since it is obvious that these efforts are inextricably linked to the utilities' "mandatory" programs, we will adopt the recommendation from that joint parties that, "the IOUs should be able to make future LEV funding requests as part of their GRCs or COS proceedings, rather than as a separate application." This will not only increase administrative efficiencies, but it will allow the Commission to review these programs in their full context so that a better understanding of the relationship of these programs can be achieved.

2. Annual Report Template Appropriate as Template for Applications

In setting up the workshop, the Energy Division proposed that the template D.03-10-086 adopted for IOU reporting on their LEV programs also serve as the form IOUs would use to submit their applications. In response, the IOUs argue that the template actually reduces the efficiency of the utilities' LEV program delivery and is simply not necessary for assessing program benefits. They state that the template adopted in D.03-10-086, includes creating and maintaining additional accounting and reporting processes such as the cost of each and every project, event, and piece of material. Furthermore, accounting and reporting processes have to be subdivided into separate ratepayer benefit categories, and the labor associated with each has to be allocated accordingly. Instead, the twelve parties in this proceeding have proposed a streamlined reporting template allows for a cost-effective way for the CPUC to obtain the information it needs in order to evaluate these modest programs.

We therefore agree that the template the IOUs and the other parties to this proceeding have proposed is a much more efficient way to track the ratepayer benefit associated with the utility LEV programs that are associated with this

A.02-03-047 *et al.* COM/SK1/cvm/vfw

decision. It would be overly burdensome for the IOUs to provide all the information in the form set forth in the report template attached to D.03-10-086. The somewhat streamlined template recommended in the Joint Report, by bringing the required disclosures into line with utility accounting conventions, would cut compliance costs yet still provide the CPUC with adequate information with which to evaluate and oversee the utility's LEV programs.

The streamlined report template recommended in the June 22, 2004 Joint Report as well as set forth in the April 19, 2004 Joint Recommendations is straightforward and adequately tracks P.U. Code Section 740.3. We have recognized in the past that LEV programs provide health benefits through improved air quality, thus satisfying utilities' obligations under P.U. Code Section 451. Therefore, it is not necessary for each and every subprogram to artificially disaggregate and report the percentage of that subprogram that goes toward each of the other three benefits of "safety, reliability, and cost reduction," mentioned in P.U. Code Section 740.3. A somewhat more aggregated showing of those three ratepayer benefits, in addition to the air quality benefits of these LEV subprograms is sufficient and is more cost-effective means for CPUC oversight of these programs.

3. Objections to Certain Aspects of LEV Programs

(1) LEVs in IOU's Possession

We reject the Report's proposition (item 4 on the list above) that "Only when there are no longer any LEVs in the hands of utilities may the IOUs' LEV programs be terminated." Similarly, we reject the notion that IOUs should continue to receive ratepayer funding for discretionary LEV programs "as long as the IOU and its customers use LEVs and customers receive direct benefits from such programs." (Item 7 above.) IOUs are free to offer LEV programs indefinitely, but they may not presume indefinite ratepayer funding. Our inquiry here is whether and how ratepayers should continue to pay for these activities.

A.02-03-047 *et al.* COM/SK1/cvm/vfw

It is a fair assumption that from here on, IOUs will always have LEVs in their possession and that IOU customers will always use LEVs. If we were to adopt the foregoing criteria, ratepayer-funded discretionary LEV funding would never end, contrary to statute and all our prior decisions.

Thus, the IOUs may not justify continued ratepayer funding simply because "LEVs are in the hands of utilities" or "the IOU and its customers use LEVs." It is not even relevant whether ratepayers "receive direct benefits from such programs." Such benefits could be unrelated to safety, reliability or low cost and in that case, they would not be justifiable under § 740.3. To receive continued ratepayer funding, the IOUs must tie requests for funding to the ratepayer goals of safety, reliability and low cost.

(2) Research, Development and Demonstration Work

The Report proposes that the Commission refrain from developing new guidelines for determining whether ratepayer funding of LEV-related research, development and demonstration (RD&D) work is appropriate. In D.95-11-035, we prohibited activities designed to lead directly to the development of new commercial products: "Their development should be supported by the firms that could profit from their commercialization. . . ." ⁸ We further stated that, "the use of regulated monopoly funds for the development of a private business in this emerging market raises the potential for unfair competition."⁹ The LEV statute states that "The commission's policies shall . . . ensure that utilities do not unfairly compete with nonutility enterprises." Pub. Util. Code § 740.3(c).

We did not find any problem with the IOUs' RD&D expenditures in D.03-10-086, and no party has shown a need for detailed rules. Therefore, we

⁸ D.95-11-035, 1995 Cal. PUC LEXIS 978, at *126.

⁹ *Id.* at *140-41.

A.02-03-047 *et al.* COM/SK1/cvm/vfw

adopt the Report's recommendation, and do not develop further rules in this area. We opt instead to rely on the proscriptions in the statute and our prior decisions.

A.02-03-047 *et al.* COM/SK1/cvm/vfw

(3) Customer Education

We find too vague WSPA's critique that 1) the IOUs' customer education should be limited to utility vehicles and refueling stations, and not include general information on the operation of LEVs that should be provided by manufacturers or dealers; and 2) the IOUs should not be allowed to "inform customers about the economic operation of LEVs and related infrastructure"¹⁰ unless such information is limited to training in the use of utility infrastructure and in the economic operation of vehicles as it impacts the utility and the efficient use of energy. Any requirement that IOUs parse funding in this way would be too difficult to enforce. As long as the IOUs' educational efforts further the goals of ratepayer safety, reliability of the electric and gas systems, and control of ratepayer costs, we will not further circumscribe the educational activities in which the utilities engage. We shall provide reasonable funding for the utilities' customer education programs. These programs should primarily further the goals of ratepayer safety, reliability of electric and natural gas systems, control of ratepayer costs, inform customers about related load impacts and methods for mitigating them in a manner that is responsive to their and the public's needs.

IV. Assignment of Proceeding

Geoffrey F. Brown is the Assigned Commissioner and Sarah R. Thomas is the assigned Administrative Law Judge in these proceedings.

V. Comments on Alternate Decision

The alternate decision of Commissioner Susan P. Kennedy in this matter was mailed to the parties in accordance with Pub. Util. Code § 311(g)(1) and Rule

¹⁰ *Id.* at 25.

A.02-03-047 *et al.* COM/SK1/cvm/vfw

77.7 of the Rules of Practice and Procedure. Comments were filed on April 28, 2005.

Findings of Fact

1. The only subjects of this proceeding are what have been called the utilities' "discretionary" programs, including the customer service, training, research and development programs. Although these activities are not directly required by statutory clean air requirements, the evidence shows they are generally closely related to either utility fleet safety, or cost reduction, or to such other traditional utility functions as load management, system safety and reliability and customer tariff inquiries. Therefore it is not necessarily within the utility's "discretion" to cease providing them even if funding were denied at some future time..
2. Mandatory LEV activities include the acquisition of alternative fuel use fleet vehicles pursuant to federal law, operation and maintenance costs associated with use of alternative fuel use fleet vehicles and associated infrastructure, infrastructure (fueling facilities and related equipment) needed to support alternative fuel use fleet vehicles, employee training and instruction necessary for the use of alternative fuel use fleet vehicles, and accounting for the costs of these mandatory activities. Mandatory activities are outside the scope of this proceeding.
3. It would be overly burdensome for the IOUs to provide all the information in the form set forth in the report template attached to D.03-10-086. The somewhat streamlined template recommended in the Joint Report, by bringing the required disclosures into line with utility accounting conventions, would cut compliance costs yet still provide the CPUC with adequate information with which to evaluate and oversee the utility's LEV programs.

A.02-03-047 *et al.* COM/SK1/cvm/vfw

4. The streamlined report template recommended in the June 22, 2004 Joint Report as well as set forth in the April 19, 2004 Joint Recommendations is straightforward and adequately tracks P.U. Code Section 740.3. Because LEV programs provide health benefits through improved air quality, thus satisfying utilities' obligations under P.U. Code Section 451, it is not necessary for each and every subprogram to artificially disaggregate and report the percentage of that subprogram that goes toward each of the other three benefits of "safety, reliability, and cost reduction," mentioned in P.U. Code Section 740.3. A somewhat more aggregated showing of those three ratepayer benefits, in addition to the air quality benefits of these LEV subprograms is sufficient and is more cost-effective means for CPUC oversight of these programs.

Conclusions of Law

1. IOU's discretionary LEV programs may be ratepayer funded if such programs are shown to be in the ratepayer's interest. The interests of ratepayers, short- or long-term, includes both direct benefits that are specific to ratepayers in the form of safer, more reliable or less costly gas or electrical service, per P.U. Code Section 740.8, in addition to the "health and comfort" benefits gained from air quality improvements achieved through utility services and instrumentalities that facilitate LEV adoption throughout California, per P.U. Code Section 451.
2. The IOUs should use the streamlined, more cost-efficient Annual Reporting Narrative Template recommended in the Joint Report and set forth in the April 19, 2004 Joint Recommendations. The IOUs proposals for future funding should include such information as included in that same template.
3. While the IOUs discretionary LEV education and training programs should primarily serve to ensure safety, reliability and cost reductions for utility electricity and gas systems, IOUs are not prohibited from also including as

A.02-03-047 *et al.* COM/SK1/cvm/vfw

part of their LEV education and training efforts program elements that incidentally educate the public generally about the societal benefits of clean air or LEVs in fulfillment of the utility's obligations under P.U. Code Section 451 to provide services promoting the health and comfort of their patrons and the public.

4. We shall provide reasonable funding for the utilities' customer education programs that primarily further the goals of ratepayer safety, reliability of electric and natural gas systems, control of ratepayer costs, inform customers about related load impacts and methods for mitigating them in a manner that is responsive to their and the public's needs.
5. We need not develop new guidelines to determine whether to approve ratepayer funding of LEV programs including LEV-related RD&D. Sufficient guidance appears in existing Commission decisions and relevant statutes.
6. We will evaluate the IOUs discretionary LEV programs a multi-year basis, no more frequently than every 3 years, as part of their GRCs or Cost of Service proceedings.

O R D E R

IT IS ORDERED that:

1. Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE) and Southern California Gas Company (SoCalGas) (collectively utilities or IOUs) shall not use ratepayer funds for discretionary Low Emissions Vehicles (LEV) programs unless they are found to be consistent with P.U. Code Section 740.8 and P.U. Code Section 451.
2. The IOUs shall use the streamlined narrative template set forth in the Joint Recommendations of April 19, 2004 to prepare their annual reports. This

A.02-03-047 *et al.* COM/SK1/cvm/vfw

template shall also be used as the basis for the IOUs showing supporting future requests for discretionary LEV program funding.

3. The IOUs shall not use discretionary LEV program funds for education and training that does not primarily serve to ensure safety, reliability and cost reductions for utility electricity and gas systems, though, to provide environmentally and socially responsible utility services. Program elements may incidentally educate the public generally about the societal benefits of clean air or LEVs, in fulfillment of the utility's obligations under P.U. Code Section 451 to provide services promoting the health and comfort of their patrons and the public.

4. We will evaluate future requests for discretionary LEV on a multi-year basis in each of the utilities' next General Rate Cases (GRCs) or other cost of service (COS) proceedings according to the schedules for these proceedings otherwise set by the CPUC.

5. In order to prevent any lapse in current levels of discretionary LEV program funding, if the CPUC is not able to issue a final decision in each utility's upcoming GRC or COS proceeding, we will automatically postpone the sunset date of December 31, 2005 adopted in D.03-10-086 so that current discretionary LEV program funding levels continue until a final CPUC decision is issued on each utility's next LEV funding request in its respective GRC or COS proceeding.

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

A.02-03-047 *et al.* COM/SK1/cvm/vfw

6. These proceedings are closed.

This order is effective today.

Dated May 5, 2005, at San Francisco, California.

MICHAEL R. PEEVEY
President
GEOFFREY F. BROWN
SUSAN P. KENNEDY
Commissioner

Commissioner Dian M. Grueneich recused herself from this agenda item and was not part of the quorum in its consideration.

Commissioner John A. Bohn recused himself from this agenda item and was not part of the quorum in its consideration.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Cost Center: VARIOUS

Summary for Category: B. Capacity Products & Planning

	In 2009\$ (000) "Book Expense"			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	1,699	2,225	2,225	2,225
Non-Labor	156	375	375	375
NSE	0	0	0	0
Total	1,855	2,600	2,600	2,600
FTE	17.5	23.2	23.2	23.2

Cost Centers belonging to this Category:

2200-0246.000 CAPACITY PRODUCTS AND PLANNING DIR

Labor	201	237	237	237
Non-Labor	36	74	74	74
NSE	0	0	0	0
Total	237	311	311	311
FTE	1.9	2.3	2.3	2.3

2200-0248.000 PIPELINE SUPPORT

Labor	627	658	658	658
Non-Labor	31	25	25	25
NSE	0	0	0	0
Total	658	683	683	683
FTE	6.7	6.9	6.9	6.9

2200-0328.000 CAPACITY SUPPORT

Labor	441	844	844	844
Non-Labor	14	50	50	50
NSE	0	0	0	0
Total	455	894	894	894
FTE	4.6	9.0	9.0	9.0

2200-0330.000 PIPELINE AND STORAGE STRATEGY

Labor	430	486	486	486
Non-Labor	75	226	226	226
NSE	0	0	0	0
Total	505	712	712	712
FTE	4.3	5.0	5.0	5.0

Beginning of Workpaper
2200-0246.000 - CAPACITY PRODUCTS AND PLANNING DIR

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 1. Capacity Products and Planning (2200-0246)
Cost Center: 2200-0246.000 - CAPACITY PRODUCTS AND PLANNING DIR

Activity Description:

This is one of four shared services cost centers within the Capacity Products and Planning organization. This organization is responsible for account management of SOCALGAS's largest customers including electric generation and wholesales customers (not a shared service), and provides staff support for both SOCALGAS and SDG&E on customer and policy issues related to activities in Capacity Services, Pipeline and Storage, and service to electric generation customers.

Forecast Methodology:

Labor - 5-YR Average

Labor costs in this cost center reflect costs for 2 FTEs and expect to continue at this level to TY2012. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast.

Non-Labor - 5-YR Average

Nonlabor costs in this cost center was relatively flat from 2005 to 2008 at over \$100,000. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast.

NSE - 5-YR Average

Not applicable

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 1. Capacity Products and Planning (2200-0246)
Cost Center: 2200-0246.000 - CAPACITY PRODUCTS AND PLANNING DIR

Summary of Results:

		In 2009\$ (000)							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2005	2006	2007	2008	2009	2010	2011	2012
		Total Incurred (100% Level)							
Labor		339	253	207	235	212	249	249	249
Non-Labor		92	69	114	82	38	78	78	78
NSE		0	0	0	0	0	0	0	0
Total		431	322	321	317	250	327	327	327
FTE		3.0	2.5	2.0	2.3	1.9	2.3	2.3	2.3
		Allocations Out							
Labor		17	13	10	12	11	12	12	12
Non-Labor		5	3	6	4	2	4	4	4
NSE		0	0	0	0	0	0	0	0
Total		22	16	16	16	13	16	16	16
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Retained							
Labor		322	240	197	223	201	237	237	237
Non-Labor		87	66	108	78	36	74	74	74
NSE		0	0	0	0	0	0	0	0
Total		409	306	305	301	237	311	311	311
FTE		3.0	2.5	2.0	2.3	1.9	2.3	2.3	2.3
		Allocations In							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Book Expense							
Labor		322	240	197	223	201	237	237	237
Non-Labor		87	66	108	78	36	74	74	74
NSE		0	0	0	0	0	0	0	0
Total		409	306	305	301	237	311	311	311
FTE		3.0	2.5	2.0	2.3	1.9	2.3	2.3	2.3

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 1. Capacity Products and Planning (2200-0246)
 Cost Center: 2200-0246.000 - CAPACITY PRODUCTS AND PLANNING DIR

Calculation of Book Expense:

	2009 Adjusted-Recorded					2010 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	1	0	1	0.00	0	0	0	0	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	212	37	0	249	1.90	249	78	0	327	2.30
% Allocation										
Retained	95.01%	95.00%				95.00%	95.00%			
SEU	4.99%	5.00%				5.00%	5.00%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	201	35	0	236		237	74	0	311	
SEU	11	2	0	13		12	4	0	16	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	212	38	0	250	1.90	249	78	0	327	2.30
Total Alloc. Out	11	2	0	13		12	4	0	16	
Total Retained	201	36	0	237		237	74	0	311	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	201	36	0	237		237	74	0	311	

	2011 Adjusted-Forecast					2012 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.00	0	0	0	0	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	249	78	0	327	2.30	249	78	0	327	2.30
% Allocation										
Retained	95.00%	95.00%				95.00%	95.00%			
SEU	5.00%	5.00%				5.00%	5.00%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	237	74	0	311		237	74	0	311	
SEU	12	4	0	16		12	4	0	16	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	249	78	0	327	2.30	249	78	0	327	2.30
Total Alloc. Out	12	4	0	16		12	4	0	16	
Total Retained	237	74	0	311		237	74	0	311	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	237	74	0	311		237	74	0	311	

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 1. Capacity Products and Planning (2200-0246)
Cost Center: 2200-0246.000 - CAPACITY PRODUCTS AND PLANNING DIR

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2009

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2010

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2011

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2012

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 1. Capacity Products and Planning (2200-0246)
 Cost Center: 2200-0246.000 - CAPACITY PRODUCTS AND PLANNING DIR

Forecast Summary:

Forecast Method		In 2009 \$(000) "Incurred Costs"								
		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Labor	5-YR Average	249	249	249	0	0	0	249	249	249
Non-Labor	5-YR Average	78	78	78	0	0	0	78	78	78
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		327	327	327	0	0	0	327	327	327
FTE	5-YR Average	2.3	2.3	2.3	0.0	0.0	0.0	2.3	2.3	2.3

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010 Total	0	0	0	0	0.0	
2011 Total	0	0	0	0	0.0	
2012 Total	0	0	0	0	0.0	

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
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Category-Sub: 1. Capacity Products and Planning (2200-0246)
Cost Center: 2200-0246.000 - CAPACITY PRODUCTS AND PLANNING DIR

Determination of Adjusted-Recorded (Incurred Costs):

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	257	197	167	194	179
Non-Labor	82	124	168	140	54
NSE	0	0	0	0	0
Total	339	321	335	335	233
FTE	2.5	2.1	1.7	1.9	1.6
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	-60	-60	-60	-15
NSE	0	0	0	0	0
Total	0	-60	-60	-60	-15
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	257	197	167	194	179
Non-Labor	82	64	108	80	38
NSE	0	0	0	0	0
Total	339	261	275	275	217
FTE	2.5	2.1	1.7	1.9	1.6
Vacation & Sick (Nominal \$)					
Labor	44	35	29	37	32
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	44	35	29	37	32
FTE	0.5	0.4	0.3	0.4	0.3
Escalation to 2009\$					
Labor	37	21	11	3	0
Non-Labor	10	6	6	1	0
NSE	0	0	0	0	0
Total	48	26	17	5	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	339	253	207	235	212
Non-Labor	92	69	114	82	38
NSE	0	0	0	0	0
Total	431	322	321	317	250
FTE	3.0	2.5	2.0	2.3	1.9

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 1. Capacity Products and Planning (2200-0246)
 Cost Center: 2200-0246.000 - CAPACITY PRODUCTS AND PLANNING DIR

Summary of Adjustments to Recorded:

Year	In Nominal \$ (000) "Incurred Costs"				
	2005	2006	2007	2008	2009
Labor	0	0	0	0	0
Non-Labor	0	-60	-60	-60	-15
NSE	0	0	0	0	0
Total	0	-60	-60	-60	-15
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005 Total	0	0	0	0.0			
2006	0	-60	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20100602 130044040
Cost alignment adjustment - Transferred nonlabor cost related to storage product valuation software from 2200-0246 to 2200-0330.							
2006 Total	0	-60	0	0.0			
2007	0	-60	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20100602 130136913
Cost alignment adjustment - Transferred nonlabor cost related to storage product valuation software from 2200-0246 to 2200-0330.							
2007 Total	0	-60	0	0.0			
2008	0	-60	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20100602 130215993
Cost alignment adjustment - Transferred nonlabor cost related to storage product valuation software from 2200-0246 to 2200-0330.							
2008 Total	0	-60	0	0.0			
2009	0	-15	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20100225 130356907
Cost Center Correction - Transfer software expense from cost center 2200-0246 (Director) to cost center 2200-0330 (Capacity Products Manager).							

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 1. Capacity Products and Planning (2200-0246)
Cost Center: 2200-0246.000 - CAPACITY PRODUCTS AND PLANNING DIR

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2009 Total	0	-15	0	0.0			

Beginning of Workpaper
2200-0248.000 - PIPELINE SUPPORT

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 2. Pipeline Support (2200-0248)
Cost Center: 2200-0248.000 - PIPELINE SUPPORT

Activity Description:

This is one of four shared services cost centers within the Capacity Products and Planning organization. This organization is responsible for account management of SOCALGAS's largest customers including electric generation and wholesales customers (not a shared service), and provides staff support for both SOCALGAS and SDG&E on customer and policy issues related to activities in Capacity Services, Pipeline and Storage, and service to electric generation customers.

Forecast Methodology:

Labor - 5-YR Average

Labor costs in this organization was relatively flat for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast.

Non-Labor - 5-YR Average

Nonlabor costs in this organization was relatively flat for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast.

NSE - 5-YR Average

Not applicable

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 2. Pipeline Support (2200-0248)
 Cost Center: 2200-0248.000 - PIPELINE SUPPORT

Summary of Results:

		In 2009\$ (000)							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2005	2006	2007	2008	2009	2010	2011	2012
		Total Incurred (100% Level)							
Labor		641	688	682	688	660	671	671	671
Non-Labor		31	30	23	16	33	26	26	26
NSE		0	0	0	0	0	0	0	0
Total		672	718	705	704	693	697	697	697
FTE		6.6	7.0	7.0	7.1	6.7	6.9	6.9	6.9
		Allocations Out							
Labor		32	34	34	34	33	13	13	13
Non-Labor		2	1	1	1	2	1	1	1
NSE		0	0	0	0	0	0	0	0
Total		34	35	35	35	35	14	14	14
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Retained							
Labor		609	654	648	654	627	658	658	658
Non-Labor		29	29	22	15	31	25	25	25
NSE		0	0	0	0	0	0	0	0
Total		638	683	670	669	658	683	683	683
FTE		6.6	7.0	7.0	7.1	6.7	6.9	6.9	6.9
		Allocations In							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Book Expense							
Labor		609	654	648	654	627	658	658	658
Non-Labor		29	29	22	15	31	25	25	25
NSE		0	0	0	0	0	0	0	0
Total		638	683	670	669	658	683	683	683
FTE		6.6	7.0	7.0	7.1	6.7	6.9	6.9	6.9

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 2. Pipeline Support (2200-0248)
Cost Center: 2200-0248.000 - PIPELINE SUPPORT

Calculation of Book Expense:

	2009 Adjusted-Recorded					2010 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	3	0	0	3	0.00	1	0	0	1	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	657	33	0	690	6.70	670	26	0	696	6.90
% Allocation										
Retained	95.00%	95.00%				98.00%	98.00%			
SEU	5.00%	5.00%				2.00%	2.00%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	624	31	0	655		657	25	0	682	
SEU	33	2	0	35		13	1	0	14	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	660	33	0	693	6.70	671	26	0	697	6.90
Total Alloc. Out	33	2	0	35		13	1	0	14	
Total Retained	627	31	0	658		658	25	0	683	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	627	31	0	658		658	25	0	683	

	2011 Adjusted-Forecast					2012 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	1	0	0	1	0.00	1	0	0	1	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	670	26	0	696	6.90	670	26	0	696	6.90
% Allocation										
Retained	98.00%	98.00%				98.00%	98.00%			
SEU	2.00%	2.00%				2.00%	2.00%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	657	25	0	682		657	25	0	682	
SEU	13	1	0	14		13	1	0	14	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	671	26	0	697	6.90	671	26	0	697	6.90
Total Alloc. Out	13	1	0	14		13	1	0	14	
Total Retained	658	25	0	683		658	25	0	683	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	658	25	0	683		658	25	0	683	

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 2. Pipeline Support (2200-0248)
Cost Center: 2200-0248.000 - PIPELINE SUPPORT

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2009

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2010

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2011

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2012

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 2. Pipeline Support (2200-0248)
 Cost Center: 2200-0248.000 - PIPELINE SUPPORT

Forecast Summary:

		In 2009 \$(000) "Incurred Costs"								
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Labor	5-YR Average	671	671	671	0	0	0	671	671	671
Non-Labor	5-YR Average	26	26	26	0	0	0	26	26	26
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		697	697	697	0	0	0	697	697	697
FTE	5-YR Average	6.9	6.9	6.9	0.0	0.0	0.0	6.9	6.9	6.9

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010 Total	0	0	0	0	0.0	
2011 Total	0	0	0	0	0.0	
2012 Total	0	0	0	0	0.0	

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 2. Pipeline Support (2200-0248)
Cost Center: 2200-0248.000 - PIPELINE SUPPORT

Determination of Adjusted-Recorded (Incurred Costs):

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	561	612	627	649	642
Non-Labor	27	27	22	16	33
NSE	0	0	0	0	0
Total	588	639	649	665	675
FTE	6.4	6.7	6.7	6.7	6.4
Adjustments (Nominal \$) **					
Labor	-74	-76	-78	-80	-83
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	-74	-76	-78	-80	-83
FTE	-0.8	-0.8	-0.8	-0.8	-0.8
Recorded-Adjusted (Nominal \$)					
Labor	487	536	549	568	559
Non-Labor	27	27	22	16	33
NSE	0	0	0	0	0
Total	514	563	571	585	592
FTE	5.6	5.9	5.9	5.9	5.6
Vacation & Sick (Nominal \$)					
Labor	83	96	96	110	101
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	83	96	96	110	101
FTE	1.0	1.1	1.1	1.2	1.1
Escalation to 2009\$					
Labor	71	56	36	10	0
Non-Labor	3	2	1	0	0
NSE	0	0	0	0	0
Total	74	59	37	10	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	641	688	682	688	660
Non-Labor	31	30	23	16	33
NSE	0	0	0	0	0
Total	672	717	705	704	693
FTE	6.6	7.0	7.0	7.1	6.7

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 2. Pipeline Support (2200-0248)
Cost Center: 2200-0248.000 - PIPELINE SUPPORT

Summary of Adjustments to Recorded:

Year	In Nominal \$ (000) "Incurred Costs"				
	2005	2006	2007	2008	2009
Labor	-74	-76	-78	-80	-83
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	-74	-76	-78	-80	-83
FTE	-0.8	-0.8	-0.8	-0.8	-0.8

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005	-74	0	0	0.0	CCTR Transf	To 2200-2060.000	TTRAN20100419 084637423
Cost alignment adjustment - Transfer labor cost for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2005	0	0	0	-0.8	CCTR Transf	To 2200-2060.000	TTRAN20100419 084740660
Cost alignment adjustment - Transfer FTE for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2005 Total	-74	0	0	-0.8			
2006	-76	0	0	0.0	CCTR Transf	To 2200-2060.000	TTRAN20100419 084839893
Cost alignment adjustment - Transfer labor cost for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2006	0	0	0	-0.8	CCTR Transf	To 2200-2060.000	TTRAN20100419 084907080
Cost alignment adjustment - Transfer FTE for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							
2006 Total	-76	0	0	-0.8			
2007	-78	0	0	0.0	CCTR Transf	To 2200-2060.000	TTRAN20100419 085044643
Cost alignment adjustment - Transfer labor cost for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.							

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 2. Pipeline Support (2200-0248)
 Cost Center: 2200-0248.000 - PIPELINE SUPPORT

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2007	0	0	0	-0.8	CCTR Transf	To 2200-2060.000	TTRAN20100419 085129970

Cost alignment adjustment - Transfer FTE for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.

2007 Total	-78	0	0	-0.8			
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2008	-80	0	0	0.0	CCTR Transf	To 2200-2060.000	TTRAN20100419 085226893
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Cost alignment adjustment - Transfer labor cost for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.

2008	0	0	0	-0.8	CCTR Transf	To 2200-2060.000	TTRAN20100419 085304143
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Cost alignment adjustment - Transfer FTE for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.

2008 Total	-80	0	0	-0.8			
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2009	-83	0	0	0.0	CCTR Transf	To 2200-2060.000	TTRAN20100419 085404270
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Cost alignment adjustment - Transfer labor cost for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.

2009	0	0	0	-0.8	CCTR Transf	To 2200-2060.000	TTRAN20100419 085428347
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Cost alignment adjustment - Transfer FTE for 1 Market Advisor from USS 2200-0248 to CC 2200-2060 due to reorganization.

2009 Total	-83	0	0	-0.8			
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Beginning of Workpaper
2200-0328.000 - CAPACITY SUPPORT

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 3. Capacity Support (2200-0328)
Cost Center: 2200-0328.000 - CAPACITY SUPPORT

Activity Description:

This is one of four shared services cost centers within the Capacity Products and Planning organization. This organization is responsible for account management of SOCALGAS's largest customers including electric generation and wholesales customers (not a shared service), and provides staff support for both SOCALGAS and SDG&E on customer and policy issues related to activities in Capacity Services, Pipeline and Storage, and service to electric generation customers.

Forecast Methodology:

Labor - 5-YR Average

For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast plus adjustments to account for specific program growth.

Non-Labor - 5-YR Average

For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast plus adjustments to account for additional employee expenses associated with the incremental FTEs.

NSE - 5-YR Average

Not applicable

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 3. Capacity Support (2200-0328)
 Cost Center: 2200-0328.000 - CAPACITY SUPPORT

Summary of Results:

		In 2009\$ (000)							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2005	2006	2007	2008	2009	2010	2011	2012
		Total Incurred (100% Level)							
Labor		705	733	781	483	490	938	938	938
Non-Labor		64	42	44	14	15	55	55	55
NSE		0	0	0	0	0	0	0	0
Total		769	775	825	497	505	993	993	993
FTE		6.6	6.7	7.4	4.6	4.6	9.0	9.0	9.0
		Allocations Out							
Labor		35	73	78	48	49	94	94	94
Non-Labor		3	4	4	1	1	5	5	5
NSE		0	0	0	0	0	0	0	0
Total		38	77	82	49	50	99	99	99
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Retained							
Labor		670	660	703	435	441	844	844	844
Non-Labor		61	38	40	13	14	50	50	50
NSE		0	0	0	0	0	0	0	0
Total		731	698	743	448	455	894	894	894
FTE		6.6	6.7	7.4	4.6	4.6	9.0	9.0	9.0
		Allocations In							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Book Expense							
Labor		670	660	703	435	441	844	844	844
Non-Labor		61	38	40	13	14	50	50	50
NSE		0	0	0	0	0	0	0	0
Total		731	698	743	448	455	894	894	894
FTE		6.6	6.7	7.4	4.6	4.6	9.0	9.0	9.0

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 3. Capacity Support (2200-0328)
Cost Center: 2200-0328.000 - CAPACITY SUPPORT

Calculation of Book Expense:

	2009 Adjusted-Recorded					2010 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	5	0	5	0.00	0	1	0	1	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	490	10	0	500	4.60	938	54	0	992	9.00
% Allocation										
Retained	90.00%	90.00%				90.00%	90.00%			
SEU	10.00%	10.00%				10.00%	10.00%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	441	9	0	450		844	49	0	893	
SEU	49	1	0	50		94	5	0	99	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	490	15	0	505	4.60	938	55	0	993	9.00
Total Alloc. Out	49	1	0	50		94	5	0	99	
Total Retained	441	14	0	455		844	50	0	894	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	441	14	0	455		844	50	0	894	

	2011 Adjusted-Forecast					2012 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	1	0	1	0.00	0	1	0	1	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	938	54	0	992	9.00	938	54	0	992	9.00
% Allocation										
Retained	90.00%	90.00%				90.00%	90.00%			
SEU	10.00%	10.00%				10.00%	10.00%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	844	49	0	893		844	49	0	893	
SEU	94	5	0	99		94	5	0	99	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	938	55	0	993	9.00	938	55	0	993	9.00
Total Alloc. Out	94	5	0	99		94	5	0	99	
Total Retained	844	50	0	894		844	50	0	894	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	844	50	0	894		844	50	0	894	

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 3. Capacity Support (2200-0328)
Cost Center: 2200-0328.000 - CAPACITY SUPPORT

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2009

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2010

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2011

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2012

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 3. Capacity Support (2200-0328)
 Cost Center: 2200-0328.000 - CAPACITY SUPPORT

Forecast Summary:

Forecast Method		In 2009 \$(000) "Incurred Costs"								
		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		2010	2011	2012	2010	2011	2012	2010	2011	2012
Labor	5-YR Average	638	638	638	300	300	300	938	938	938
Non-Labor	5-YR Average	35	35	35	20	20	20	55	55	55
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		673	673	673	320	320	320	993	993	993
FTE	5-YR Average	6.0	6.0	6.0	3.0	3.0	3.0	9.0	9.0	9.0

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010	300	0	0	300	0.0	1-Sided Adj

Labor costs for 3 FTEs to provide Envoy system administration/customer support, and storage program administration/customer support.

2010	0	0	0	0	3.0	1-Sided Adj
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Add 3 FTEs to provide Envoy system administration/customer support, and storage program administration/customer support.

2010	0	20	0	20	0.0	1-Sided Adj
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Employee expenses associated with incremental FTEs

2010 Total	300	20	0	320	3.0	
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2011	300	0	0	300	0.0	1-Sided Adj
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Labor costs for 3 FTEs to provide Envoy system administration/customer support, and storage program administration/customer support.

2011	0	0	0	0	3.0	1-Sided Adj
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Add 3 FTEs to provide Envoy system administration/customer support, and storage program administration/customer support.

2011	0	20	0	20	0.0	1-Sided Adj
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Employee expenses associated with the incremental FTEs

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 3. Capacity Support (2200-0328)
 Cost Center: 2200-0328.000 - CAPACITY SUPPORT

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2011 Total	300	20	0	320	3.0	
2012	300	0	0	300	0.0	1-Sided Adj
Labor costs for 3 FTEs to provide Envoy system administration/customer support, and storage program administration/customer support.						
2012	0	0	0	0	3.0	1-Sided Adj
Add 3 FTEs to provide Envoy system administration/customer support, and storage program administration/customer support.						
2012	0	20	0	20	0.0	1-Sided Adj
Employee expenses associated with the incremental FTEs						
2012 Total	300	20	0	320	3.0	

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 3. Capacity Support (2200-0328)
 Cost Center: 2200-0328.000 - CAPACITY SUPPORT

Determination of Adjusted-Recorded (Incurred Costs):

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	456	474	474	264	213
Non-Labor	60	45	44	16	15
NSE	0	0	0	0	0
Total	516	519	518	280	228
FTE	5.0	5.0	4.9	2.8	2.1
Adjustments (Nominal \$) **					
Labor	80	96	155	135	201
Non-Labor	-4	-6	-2	-2	0
NSE	0	0	0	0	0
Total	76	90	153	133	201
FTE	0.6	0.7	1.4	1.0	1.8
Recorded-Adjusted (Nominal \$)					
Labor	536	571	629	399	415
Non-Labor	57	38	42	14	15
NSE	0	0	0	0	0
Total	593	609	671	413	430
FTE	5.6	5.7	6.3	3.8	3.9
Vacation & Sick (Nominal \$)					
Labor	91	102	110	77	75
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	91	102	110	77	75
FTE	1.0	1.0	1.1	0.8	0.7
Escalation to 2009\$					
Labor	78	60	41	7	0
Non-Labor	7	3	2	0	0
NSE	0	0	0	0	0
Total	85	63	44	7	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	705	733	781	483	490
Non-Labor	64	42	44	14	15
NSE	0	0	0	0	0
Total	769	774	825	497	505
FTE	6.6	6.7	7.4	4.6	4.6

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 3. Capacity Support (2200-0328)
Cost Center: 2200-0328.000 - CAPACITY SUPPORT

Summary of Adjustments to Recorded:

Year	In Nominal \$ (000) "Incurred Costs"				
	2005	2006	2007	2008	2009
Labor	80	96	155	135	201
Non-Labor	-4	-6	-2	-2	0
NSE	0	0	0	0	0
Total	76	90	153	133	201
FTE	0.6	0.7	1.4	1.0	1.8

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2005	-75	0	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20090914 160646007
Cost alignment adjustment - Transfer labor \$ for a program manager from 2200-0328 to 2200-0330 due to reorganization.							
2005	0	0	0	-1.0	CCTR Transf	To 2200-0330.000	TTRAN20090914 160825007
Cost alignment adjustment - Transfer FTE from 2200-0328 to 2200-0330 due to reorganization.							
2005	0	-4	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20090917 083445637
Cost alignment adjustment - Transfer employee expenses from 2200-0328 to 2200-0330 due to reorganization.							
2005	94	0	0	0.0	CCTR Transf	From 2200-0249.000	TTRAN20100419 100234597
Cost alignment adjustment - Transfer labor cost for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2005	0	0	0	0.8	CCTR Transf	From 2200-0249.000	TTRAN20100419 100322520
Cost alignment adjustment - Transfer FTE for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2005	61	0	0	0.0	CCTR Transf	From 2200-0327.000	TTRAN20100419 101805780
Cost alignment adjustment - Transfer labor cost for 1 market advisor from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2005	0	0	0	0.8	CCTR Transf	From 2200-0327.000	TTRAN20100419 101930043
Cost alignment adjustment - Transfer FTE for 1 market advisor from CC 2200-0327 to CC 2200-0328 due to reorganization.							

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 3. Capacity Support (2200-0328)
 Cost Center: 2200-0328.000 - CAPACITY SUPPORT

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005 Total	80	-4	0	0.6			
2006	-73	0	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20090914 161030450
	Cost alignment adjustment - Transfer labor \$ for a program manger from 2200-0328 to 2200-0330 due to reorganization.						
2006	0	0	0	-0.9	CCTR Transf	To 2200-0330.000	TTRAN20090914 161135400
	Cost alignment adjustment - Transfer FTE for 1 Market Advisor from 2200-0328 to 2200-0330 due to reorganization.						
2006	0	-6	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20090917 083623153
	Cost alignment adjustment - Transfer employee expenses from 2200-0328 to 2200-0330 due to reorganization.						
2006	96	0	0	0.0	CCTR Transf	From 2200-0249.000	TTRAN20100419 100502283
	Cost alignment adjustment - Transfer labor cost for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.						
2006	0	0	0	0.8	CCTR Transf	From 2200-0249.000	TTRAN20100419 100534800
	Cost alignment adjustment - Transfer FTE for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.						
2006	72	0	0	0.0	CCTR Transf	From 2200-0327.000	TTRAN20100419 102138433
	Cost alignment adjustment - Transfer labor cost for 1 market advisor from CC 2200-0327 to CC 2200-0328 due to reorganization.						
2006	0	0	0	0.8	CCTR Transf	From 2200-0327.000	TTRAN20100419 102230547
	Cost alignment adjustment - Transfer FTE for 1 market advisor from CC 2200-0327 to CC 2200-0328 due to reorganization.						
2006 Total	96	-6	0	0.7			
2007	0	-2	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20090917 083832797
	Cost alignment adjustment - Transfer employee expenses from 2200-0328 to 2200-0330 due to reorganization.						
2007	-52	0	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20090917 084136350
	Cost alignment adjustment - Transfer labor \$ for a program manager from 2200-0328 to 2200-0330 due to reorganization.						

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
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 Category: B. Capacity Products & Planning
 Category-Sub: 3. Capacity Support (2200-0328)
 Cost Center: 2200-0328.000 - CAPACITY SUPPORT

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2007	0	0	0	-0.6	CCTR Transf	To 2200-0330.000	TTRAN20090917 085046250
Cost alignment adjustment - Transfer FTE for 1 Market Advisor from 2200-0328 to 2200-0330 due to reorganization.							
2007	99	0	0	0.0	CCTR Transf	From 2200-0249.000	TTRAN20100419 100654673
Cost alignment adjustment - Transfer labor cost for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2007	0	0	0	0.8	CCTR Transf	From 2200-0249.000	TTRAN20100419 100751987
Cost alignment adjustment - Transfer FTE for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2007	108	0	0	0.0	CCTR Transf	From 2200-0327.000	TTRAN20100419 102554793
Cost alignment adjustment - Transfer labor cost for 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2007	0	0	0	1.2	CCTR Transf	From 2200-0327.000	TTRAN20100419 102656660
Cost alignment adjustment - Transfer FTE for 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2007 Total	155	-2	0	1.4			
2008	-81	0	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20090917 084449100
Cost alignment adjustment - Transfer labor & for a program manager from 2200-0328 to 2200-0330 due to reorganization.							
2008	0	-2	0	0.0	CCTR Transf	To 2200-0330.000	TTRAN20090917 084610870
Cost alignment adjustment - Transfer employee expenses from 2200-0328 to 2200-0330 due to reorganization.							
2008	0	0	0	-1.0	CCTR Transf	To 2200-0330.000	TTRAN20090917 084823467
Cost alignment adjustment - Transfer FTE for 1 Market Advisor from 2200-0328 to 2200-0330 due to reorganization.							
2008	102	0	0	0.0	CCTR Transf	From 2200-0249.000	TTRAN20100419 100951860
Cost alignment adjustment - Transfer labor cost for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 3. Capacity Support (2200-0328)
Cost Center: 2200-0328.000 - CAPACITY SUPPORT

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2008	0	0	0	0.8	CCTR Transf	From 2200-0249.000	TTRAN20100419 101026127
Cost alignment adjustment - Transfer FTE for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2008	114	0	0	0.0	CCTR Transf	From 2200-0327.000	TTRAN20100419 102859030
Cost alignment adjustment - Transfer labor cost for 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2008	0	0	0	1.2	CCTR Transf	From 2200-0327.000	TTRAN20100419 102940030
Cost alignment adjustment - Transfer FTE for 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2008 Total	135	-2	0	1.0			

2009	105	0	0	0.0	CCTR Transf	From 2200-0249.000	TTRAN20100419 101145440
Cost alignment adjustment - Transfer labor cost for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2009	0	0	0	0.8	CCTR Transf	From 2200-0249.000	TTRAN20100419 101207533
Cost alignment adjustment - Transfer FTE for 1 manager from CC 2200-0249 to CC 2200-0328 due to reorganization.							
2009	96	0	0	0.0	CCTR Transf	From 2200-0327.000	TTRAN20100419 103240850
Cost alignment adjustment - Transfer labor costs associated with 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2009	0	0	0	1.0	CCTR Transf	From 2200-0327.000	TTRAN20100419 103318290
Cost alignment adjustment - Transfer FTE for 2 market advisors from CC 2200-0327 to CC 2200-0328 due to reorganization.							
2009 Total	201	0	0	1.8			

Beginning of Workpaper
2200-0330.000 - PIPELINE AND STORAGE STRATEGY

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 4. Pipeline and Storage Strategy (2200-0330)
Cost Center: 2200-0330.000 - PIPELINE AND STORAGE STRATEGY

Activity Description:

This is one of four shared services cost centers within the Capacity Products and Planning organization. This organization is responsible for account management of SOCALGAS's largest customers including electric generation and wholesales customers (not a shared service), and provides staff support for both SOCALGAS and SDG&E on customer and policy issues related to activities in Capacity Services, Pipeline and Storage, and service to electric generation customers.

Forecast Methodology:

Labor - 5-YR Average

Labor costs in this organization was relatively flat for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast.

Non-Labor - 5-YR Average

Nonlabor costs in this organization was relatively flat for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast.

NSE - 5-YR Average

Not applicable

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 4. Pipeline and Storage Strategy (2200-0330)
 Cost Center: 2200-0330.000 - PIPELINE AND STORAGE STRATEGY

Summary of Results:

		In 2009\$ (000)							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2005	2006	2007	2008	2009	2010	2011	2012
		Total Incurred (100% Level)							
Labor		566	532	492	521	453	512	512	512
Non-Labor		14	102	85	71	79	238	238	238
NSE		0	0	0	0	0	0	0	0
Total		580	634	577	592	532	750	750	750
FTE		5.5	5.3	4.8	5.3	4.3	5.0	5.0	5.0
		Allocations Out							
Labor		28	27	49	52	23	26	26	26
Non-Labor		1	5	9	7	4	12	12	12
NSE		0	0	0	0	0	0	0	0
Total		29	32	58	59	27	38	38	38
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Retained							
Labor		538	505	443	469	430	486	486	486
Non-Labor		13	97	76	64	75	226	226	226
NSE		0	0	0	0	0	0	0	0
Total		551	602	519	533	505	712	712	712
FTE		5.5	5.3	4.8	5.3	4.3	5.0	5.0	5.0
		Allocations In							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Book Expense							
Labor		538	505	443	469	430	486	486	486
Non-Labor		13	97	76	64	75	226	226	226
NSE		0	0	0	0	0	0	0	0
Total		551	602	519	533	505	712	712	712
FTE		5.5	5.3	4.8	5.3	4.3	5.0	5.0	5.0

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
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Category-Sub: 4. Pipeline and Storage Strategy (2200-0330)
Cost Center: 2200-0330.000 - PIPELINE AND STORAGE STRATEGY

Calculation of Book Expense:

	2009 Adjusted-Recorded					2010 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.00	0	0	0	0	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	453	79	0	532	4.30	512	238	0	750	5.00
% Allocation										
Retained	95.00%	95.01%				95.00%	95.00%			
SEU	5.00%	4.99%				5.00%	5.00%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	430	75	0	505		486	226	0	712	
SEU	23	4	0	27		26	12	0	38	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	453	79	0	532	4.30	512	238	0	750	5.00
Total Alloc. Out	23	4	0	27		26	12	0	38	
Total Retained	430	75	0	505		486	226	0	712	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	430	75	0	505		486	226	0	712	

	2011 Adjusted-Forecast					2012 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.00	0	0	0	0	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	512	238	0	750	5.00	512	238	0	750	5.00
% Allocation										
Retained	95.00%	95.00%				95.00%	95.00%			
SEU	5.00%	5.00%				5.00%	5.00%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	486	226	0	712		486	226	0	712	
SEU	26	12	0	38		26	12	0	38	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	512	238	0	750	5.00	512	238	0	750	5.00
Total Alloc. Out	26	12	0	38		26	12	0	38	
Total Retained	486	226	0	712		486	226	0	712	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	486	226	0	712		486	226	0	712	

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 4. Pipeline and Storage Strategy (2200-0330)
Cost Center: 2200-0330.000 - PIPELINE AND STORAGE STRATEGY

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2009

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2010

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2011

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Cost Center Allocation Percentage for 2012

The allocation % is estimated proportionally using gas throughput for each utility. The relative gas throughput is the best available proxy of resource allocation for providing policy and customer support between SCG and SDG&E in this cost center.

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 4. Pipeline and Storage Strategy (2200-0330)
Cost Center: 2200-0330.000 - PIPELINE AND STORAGE STRATEGY

Forecast Summary:

		In 2009 \$(000) "Incurred Costs"								
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Labor	5-YR Average	512	512	512	0	0	0	512	512	512
Non-Labor	5-YR Average	70	70	70	168	168	168	238	238	238
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		582	582	582	168	168	168	750	750	750
FTE	5-YR Average	5.0	5.0	5.0	0.0	0.0	0.0	5.0	5.0	5.0

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010	0	168	0	168	0.0	1-Sided Adj

Upgrade of storage products analysis software, and training to support off system storage sales

2010 Total	0	168	0	168	0.0	
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2011	0	168	0	168	0.0	1-Sided Adj
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Upgrade of storage products analysis software, and training to support off system storage sales

2011 Total	0	168	0	168	0.0	
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2012	0	168	0	168	0.0	1-Sided Adj
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Upgrade of storage products analysis software, and training to support off system storage sales

2012 Total	0	168	0	168	0.0	
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Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: B. Capacity Products & Planning
Category-Sub: 4. Pipeline and Storage Strategy (2200-0330)
Cost Center: 2200-0330.000 - PIPELINE AND STORAGE STRATEGY

Determination of Adjusted-Recorded (Incurred Costs):

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	355	342	345	349	384
Non-Labor	8	27	19	8	63
NSE	0	0	0	0	0
Total	363	369	363	357	448
FTE	3.7	3.6	3.5	3.4	3.6
Adjustments (Nominal \$) **					
Labor	75	73	52	81	0
Non-Labor	4	66	62	62	15
NSE	0	0	0	0	0
Total	79	139	114	144	15
FTE	1.0	0.9	0.6	1.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	430	415	396	430	384
Non-Labor	12	93	81	70	79
NSE	0	0	0	0	0
Total	442	508	477	501	463
FTE	4.7	4.5	4.1	4.4	3.6
Vacation & Sick (Nominal \$)					
Labor	73	74	69	83	69
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	73	74	69	83	69
FTE	0.8	0.8	0.7	0.9	0.7
Escalation to 2009\$					
Labor	63	44	26	8	0
Non-Labor	2	8	5	1	0
NSE	0	0	0	0	0
Total	64	52	31	9	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	566	532	492	521	453
Non-Labor	14	102	85	71	79
NSE	0	0	0	0	0
Total	579	634	577	592	532
FTE	5.5	5.3	4.8	5.3	4.3

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 4. Pipeline and Storage Strategy (2200-0330)
 Cost Center: 2200-0330.000 - PIPELINE AND STORAGE STRATEGY

Summary of Adjustments to Recorded:

Year	In Nominal \$ (000) "Incurred Costs"				
	2005	2006	2007	2008	2009
Labor	75	73	52	81	0
Non-Labor	4	66	62	62	15
NSE	0	0	0	0	0
Total	79	139	114	144	15
FTE	1.0	0.9	0.6	1.0	0.0

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005	75	0	0	0.0	CCTR Transf	From 2200-0328.000	TTRAN20090914 160646007
Cost alignment adjustment - Transfer labor \$ for a program manager from 2200-0328 to 2200-0330 due to reorganization.							
2005	0	0	0	1.0	CCTR Transf	From 2200-0328.000	TTRAN20090914 160825007
Cost alignment adjustment - Transfer FTE from 2200-0328 to 2200-0330 due to reorganization.							
2005	0	4	0	0.0	CCTR Transf	From 2200-0328.000	TTRAN20090917 083445637
Cost alignment adjustment - Transfer employee expenses from 2200-0328 to 2200-0330 due to reorganization.							
2005 Total	75	4	0	1.0			

2006	73	0	0	0.0	CCTR Transf	From 2200-0328.000	TTRAN20090914 161030450
Cost alignment adjustment - Transfer labor \$ for a program manger from 2200-0328 to 2200-0330 due to reorganization.							
2006	0	0	0	0.9	CCTR Transf	From 2200-0328.000	TTRAN20090914 161135400
Cost alignment adjustment - Transfer FTE for 1 Market Advisor from 2200-0328 to 2200-0330 due to reorganization.							
2006	0	6	0	0.0	CCTR Transf	From 2200-0328.000	TTRAN20090917 083623153
Cost alignment adjustment - Transfer employee expenses from 2200-0328 to 2200-0330 due to reorganization.							

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 4. Pipeline and Storage Strategy (2200-0330)
 Cost Center: 2200-0330.000 - PIPELINE AND STORAGE STRATEGY

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2006	0	60	0	0.0	CCTR Transf	From 2200-0246.000	TTRAN20100602 130044040

Cost alignment adjustment - Transferred nonlabor cost related to storage product valuation software from 2200-0246 to 2200-0330.

2006 Total	73	66	0	0.9			
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2007	0	2	0	0.0	CCTR Transf	From 2200-0328.000	TTRAN20090917 083832797
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Cost alignment adjustment - Transfer employee expenses from 2200-0328 to 2200-0330 due to reorganization.

2007	52	0	0	0.0	CCTR Transf	From 2200-0328.000	TTRAN20090917 084136350
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Cost alignment adjustment - Transfer labor \$ for a program manager from 2200-0328 to 2200-0330 due to reorganization.

2007	0	0	0	0.6	CCTR Transf	From 2200-0328.000	TTRAN20090917 085046250
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Cost alignment adjustment - Transfer FTE for 1 Market Advisor from 2200-0328 to 2200-0330 due to reorganization.

2007	0	60	0	0.0	CCTR Transf	From 2200-0246.000	TTRAN20100602 130136913
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Cost alignment adjustment - Transferred nonlabor cost related to storage product valuation software from 2200-0246 to 2200-0330.

2007 Total	52	62	0	0.6			
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2008	81	0	0	0.0	CCTR Transf	From 2200-0328.000	TTRAN20090917 084449100
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Cost alignment adjustment - Transfer labor & for a program manager from 2200-0328 to 2200-0330 due to reorganization.

2008	0	2	0	0.0	CCTR Transf	From 2200-0328.000	TTRAN20090917 084610870
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Cost alignment adjustment - Transfer employee expenses from 2200-0328 to 2200-0330 due to reorganization.

2008	0	0	0	1.0	CCTR Transf	From 2200-0328.000	TTRAN20090917 084823467
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Cost alignment adjustment - Transfer FTE for 1 Market Advisor from 2200-0328 to 2200-0330 due to reorganization.

2008	0	60	0	0.0	CCTR Transf	From 2200-0246.000	TTRAN20100602 130215993
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Cost alignment adjustment - Transferred nonlabor cost related to storage product valuation software from 2200-0246 to 2200-0330.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: B. Capacity Products & Planning
 Category-Sub: 4. Pipeline and Storage Strategy (2200-0330)
 Cost Center: 2200-0330.000 - PIPELINE AND STORAGE STRATEGY

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2008 Total	81	62	0	1.0			
2009	0	15	0	0.0	CCTR Transf	From 2200-0246.000	TTRAN20100225 130356907
Cost Center Correction - Transfer software expense from cost center 2200-0246 (Director) to cost center 2200-0330 (Capacity Products Manager).							
2009 Total	0	15	0	0.0			

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. BioFuel Market Development
 Cost Center: 2200-2286.000

Summary for Category: C. BioFuel Market Development

	In 2009\$ (000) "Book Expense"			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	144	194	194	194
Non-Labor	37	170	170	170
NSE	0	0	0	0
Total	181	364	364	364
FTE	2.0	2.0	2.0	2.0

Cost Centers belonging to this Category:

2200-2286.000 BIO-FUEL MARKET DEVELOPMENT

Labor	144	194	194	194
Non-Labor	37	170	170	170
NSE	0	0	0	0
Total	181	364	364	364
FTE	2.0	2.0	2.0	2.0

Beginning of Workpaper
2200-2286.000 - BIO-FUEL MARKET DEVELOPMENT

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: C. BioFuel Market Development
Category-Sub: 1. BioFuel Market Development
Cost Center: 2200-2286.000 - BIO-FUEL MARKET DEVELOPMENT

Activity Description:

This cost center contains labor and nonlabor costs in supporting of the market development efforts for the biogas markets. The primary focus is in promoting and supporting the installation of biogas conditioning systems at certain customer sites for the purpose of capturing 'raw biogas' and converting it to pipeline quality biogas (biomethane).

Forecast Methodology:

Labor - Base YR Rec

This is a new cost center with only two years of historical data. 2009 historical cost is reflective of full cost in this cost center for theTY2012 and therefore Base Year forecast method is used.

Non-Labor - Base YR Rec

This is a new cost center with only two years of historical data. The 2009 historical cost is consistent with base forecast for TY2012, and therefore Base Year forecast method is used with adjustments to account for specific program growth.

NSE - Base YR Rec

Not applicable

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: C. BioFuel Market Development
Category-Sub: 1. BioFuel Market Development
Cost Center: 2200-2286.000 - BIO-FUEL MARKET DEVELOPMENT

Summary of Results:

		In 2009\$ (000)							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2005	2006	2007	2008	2009	2010	2011	2012
		Total Incurred (100% Level)							
Labor		0	0	0	74	204	204	204	204
Non-Labor		0	0	0	14	53	173	173	173
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	88	257	377	377	377
FTE		0.0	0.0	0.0	0.7	2.0	2.0	2.0	2.0
		Allocations Out							
Labor		0	0	0	0	60	10	10	10
Non-Labor		0	0	0	0	16	3	3	3
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	76	13	13	13
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Retained							
Labor		0	0	0	74	144	194	194	194
Non-Labor		0	0	0	14	37	170	170	170
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	88	181	364	364	364
FTE		0.0	0.0	0.0	0.7	2.0	2.0	2.0	2.0
		Allocations In							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Book Expense							
Labor		0	0	0	74	144	194	194	194
Non-Labor		0	0	0	14	37	170	170	170
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	88	181	364	364	364
FTE		0.0	0.0	0.0	0.7	2.0	2.0	2.0	2.0

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: C. BioFuel Market Development
Category-Sub: 1. BioFuel Market Development
Cost Center: 2200-2286.000 - BIO-FUEL MARKET DEVELOPMENT

Calculation of Book Expense:

	2009 Adjusted-Recorded					2010 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.00	0	120	0	120	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	204	53	0	257	2.00	204	53	0	257	2.00
% Allocation										
Retained	70.63%	70.63%				95.00%	95.00%			
SEU	29.37%	29.37%				5.00%	5.00%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	144	37	0	181		194	50	0	244	
SEU	60	16	0	76		10	3	0	13	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	204	53	0	257	2.00	204	173	0	377	2.00
Total Alloc. Out	60	16	0	76		10	3	0	13	
Total Retained	144	37	0	181		194	170	0	364	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	144	37	0	181		194	170	0	364	

	2011 Adjusted-Forecast					2012 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	120	0	120	0.00	0	120	0	120	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	204	53	0	257	2.00	204	53	0	257	2.00
% Allocation										
Retained	95.00%	95.00%				95.00%	95.00%			
SEU	5.00%	5.00%				5.00%	5.00%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	194	50	0	244		194	50	0	244	
SEU	10	3	0	13		10	3	0	13	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	204	173	0	377	2.00	204	173	0	377	2.00
Total Alloc. Out	10	3	0	13		10	3	0	13	
Total Retained	194	170	0	364		194	170	0	364	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	194	170	0	364		194	170	0	364	

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: C. BioFuel Market Development
Category-Sub: 1. BioFuel Market Development
Cost Center: 2200-2286.000 - BIO-FUEL MARKET DEVELOPMENT

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2009

The allocation methodology is based on the cost center manager's assessment of time spent completing specific activities and

the allocation of this time between the utilities.

Cost Center Allocation Percentage for 2010

The allocation methodology is based on the cost center manager's assessment of time spent completing specific activities and

the allocation of this time between the utilities.

Cost Center Allocation Percentage for 2011

The allocation methodology is based on the cost center manager's assessment of time spent completing specific activities and

the allocation of this time between the utilities.

Cost Center Allocation Percentage for 2012

The allocation methodology is based on the cost center manager's assessment of time spent completing specific activities and

the allocation of this time between the utilities.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. BioFuel Market Development
 Category-Sub: 1. BioFuel Market Development
 Cost Center: 2200-2286.000 - BIO-FUEL MARKET DEVELOPMENT

Forecast Summary:

		In 2009 \$(000) "Incurred Costs"								
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Labor	Base YR Rec	204	204	204	0	0	0	204	204	204
Non-Labor	Base YR Rec	53	53	53	120	120	120	173	173	173
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		257	257	257	120	120	120	377	377	377
FTE	Base YR Rec	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010	0	120	0	120	0.0	1-Sided Adj

Incremental costs for biofuels market assessment study, engineering analysis, and commercial pilot/3rd party consulting expense.

2010 Total	0	120	0	120	0.0	
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2011	0	120	0	120	0.0	1-Sided Adj
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Incremental costs for biofuels market assessment study, engineering analysis, and commercial pilot/3rd party consulting expense.

2011 Total	0	120	0	120	0.0	
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2012	0	120	0	120	0.0	1-Sided Adj
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Incremental costs for biofuels market assessment study, engineering analysis, and commercial pilot/3rd party consulting expense.

2012 Total	0	120	0	120	0.0	
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Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: C. BioFuel Market Development
Category-Sub: 1. BioFuel Market Development
Cost Center: 2200-2286.000 - BIO-FUEL MARKET DEVELOPMENT

Determination of Adjusted-Recorded (Incurred Costs):

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	61	173
Non-Labor	0	0	0	13	53
NSE	0	0	0	0	0
Total	0	0	0	75	226
FTE	0.0	0.0	0.0	0.6	1.7
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	61	173
Non-Labor	0	0	0	13	53
NSE	0	0	0	0	0
Total	0	0	0	75	226
FTE	0.0	0.0	0.0	0.6	1.7
Vacation & Sick (Nominal \$)					
Labor	0	0	0	12	31
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	12	31
FTE	0.0	0.0	0.0	0.1	0.3
Escalation to 2009\$					
Labor	0	0	0	1	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	1	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	0	0	0	74	204
Non-Labor	0	0	0	13	53
NSE	0	0	0	0	0
Total	0	0	0	88	257
FTE	0.0	0.0	0.0	0.7	2.0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: C. BioFuel Market Development
 Category-Sub: 1. BioFuel Market Development
 Cost Center: 2200-2286.000 - BIO-FUEL MARKET DEVELOPMENT

Summary of Adjustments to Recorded:

Year	In Nominal \$ (000) "Incurred Costs"				
	2005	2006	2007	2008	2009
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005 Total	0	0	0	0.0			
2006 Total	0	0	0	0.0			
2007 Total	0	0	0	0.0			
2008 Total	0	0	0	0.0			
2009 Total	0	0	0	0.0			

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Environmental Affairs
 Cost Center: 2200-2288.000

Summary for Category: D. Environmental Affairs

	In 2009\$ (000) "Book Expense"			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	133	117	179	241
Non-Labor	18	29	42	54
NSE	0	0	0	0
Total	151	146	221	295
FTE	1.8	1.9	2.9	3.9

**Cost Centers belonging to this Category:
 2200-2288.000 ENVIRONMENTAL AFFAIRS**

Labor	133	117	179	241
Non-Labor	18	29	42	54
NSE	0	0	0	0
Total	151	146	221	295
FTE	1.8	1.9	2.9	3.9

Beginning of Workpaper
2200-2288.000 - ENVIRONMENTAL AFFAIRS

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: D. Environmental Affairs
Category-Sub: 1. Environmental Affairs
Cost Center: 2200-2288.000 - ENVIRONMENTAL AFFAIRS

Activity Description:

This cost center contains labor and nonlabor costs incurred by the Environmental Affairs organization for both SOCALGAS and SDG&E. This organization's primary focus is to assist large non-residential customers resolving increasingly complex air quality related compliance and regulatory issues, and also providing interpretation and policy support related to emissions control requirements for both SoCalGas and SDG&E's facilities.

Forecast Methodology:

Labor - 5-YR Average

Labor costs in this organization was flat for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast with adjustments for TY2012 forecasts to account for specific program growth.

Non-Labor - 5-YR Average

Nonlabor costs in this organization was flat for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast with adjustments for TY2012 forecasts to account for specific program growth.

NSE - 5-YR Average

Not applicable

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Environmental Affairs
 Category-Sub: 1. Environmental Affairs
 Cost Center: 2200-2288.000 - ENVIRONMENTAL AFFAIRS

Summary of Results:

		In 2009\$ (000)							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2005	2006	2007	2008	2009	2010	2011	2012
		Total Incurred (100% Level)							
Labor		199	205	202	157	184	188	288	388
Non-Labor		46	34	22	20	25	48	68	88
NSE		0	0	0	0	0	0	0	0
Total		245	239	224	177	209	236	356	476
FTE		2.0	2.0	2.0	1.6	1.8	1.9	2.9	3.9
		Allocations Out							
Labor		0	0	0	37	51	71	109	147
Non-Labor		0	0	0	4	7	19	26	34
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	41	58	90	135	181
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Retained							
Labor		199	205	202	120	133	117	179	241
Non-Labor		46	34	22	16	18	29	42	54
NSE		0	0	0	0	0	0	0	0
Total		245	239	224	136	151	146	221	295
FTE		2.0	2.0	2.0	1.6	1.8	1.9	2.9	3.9
		Allocations In							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Book Expense							
Labor		199	205	202	120	133	117	179	241
Non-Labor		46	34	22	16	18	29	42	54
NSE		0	0	0	0	0	0	0	0
Total		245	239	224	136	151	146	221	295
FTE		2.0	2.0	2.0	1.6	1.8	1.9	2.9	3.9

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: D. Environmental Affairs
Category-Sub: 1. Environmental Affairs
Cost Center: 2200-2288.000 - ENVIRONMENTAL AFFAIRS

Calculation of Book Expense:

	2009 Adjusted-Recorded					2010 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	2	0	0	2	0.00	0	0	0	0	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	182	25	0	207	1.80	188	48	0	236	1.90
% Allocation										
Retained	72.00%	72.00%				62.25%	62.25%			
SEU	28.00%	28.00%				37.75%	37.75%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	131	18	0	149		117	29	0	146	
SEU	51	7	0	58		71	19	0	90	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	184	25	0	209	1.80	188	48	0	236	1.90
Total Alloc. Out	51	7	0	58		71	19	0	90	
Total Retained	133	18	0	151		117	29	0	146	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	133	18	0	151		117	29	0	146	

	2011 Adjusted-Forecast					2012 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.00	0	0	0	0	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	288	68	0	356	2.90	388	88	0	476	3.90
% Allocation										
Retained	62.25%	62.25%				62.25%	62.25%			
SEU	37.75%	37.75%				37.75%	37.75%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	179	42	0	221		241	54	0	295	
SEU	109	26	0	135		147	34	0	181	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	288	68	0	356	2.90	388	88	0	476	3.90
Total Alloc. Out	109	26	0	135		147	34	0	181	
Total Retained	179	42	0	221		241	54	0	295	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	179	42	0	221		241	54	0	295	

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: D. Environmental Affairs
Category-Sub: 1. Environmental Affairs
Cost Center: 2200-2288.000 - ENVIRONMENTAL AFFAIRS

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2009

The allocation methodology is based on the cost center manager's assessment of time spent completing specific activities and the allocation of this time between the utilities.

Cost Center Allocation Percentage for 2010

The allocation methodology is based on the cost center manager's assessment of time spent completing specific activities and the allocation of this time between the utilities.

Cost Center Allocation Percentage for 2011

The allocation methodology is based on the cost center manager's assessment of time spent completing specific activities and the allocation of this time between the utilities.

Cost Center Allocation Percentage for 2012

The allocation methodology is based on the cost center manager's assessment of time spent completing specific activities and the allocation of this time between the utilities.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Environmental Affairs
 Category-Sub: 1. Environmental Affairs
 Cost Center: 2200-2288.000 - ENVIRONMENTAL AFFAIRS

Forecast Summary:

		In 2009 \$(000) "Incurred Costs"								
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Labor	5-YR Average	188	188	188	0	100	200	188	288	388
Non-Labor	5-YR Average	28	28	28	20	40	60	48	68	88
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		216	216	216	20	140	260	236	356	476
FTE	5-YR Average	1.9	1.9	1.9	0.0	1.0	2.0	1.9	2.9	3.9

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010	0	20	0	20	0.0	1-Sided Adj

Costs associated with increase in travel to support changing and new air quality related rules and regulations.

2010 Total	0	20	0	20	0.0	
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2011	0	40	0	40	0.0	1-Sided Adj
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Employee expenses associated with 1 incremental FTE and increase in travel expenses needed to support changing and new air quality related rules and regulations.

2011	100	0	0	100	0.0	1-Sided Adj
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1 Program Manager to coordinate and update regulatory/legislative compliance of environmental programs/initiatives throughout service territory. Changes are occurring rapidly. Examples: AB32 support/implementation, Distributive Generation and CHP support, SCAQMD rule 1111 (residential furnaces), Rules 433 and 433.1 (natural gas quality), Biogas/Renewable policy and regulatory changes, new requirements for siting and operation in Environmental Justice communities, new periodic monitoring requirements for gas equipment, new GHG analysis under CEQA, etc.

2011	0	0	0	0	1.0	1-Sided Adj
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1 Program Manager

2011 Total	100	40	0	140	1.0	
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Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: D. Environmental Affairs
 Category-Sub: 1. Environmental Affairs
 Cost Center: 2200-2288.000 - ENVIRONMENTAL AFFAIRS

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj Type</u>
2012	0	60	0	60	0.0	1-Sided Adj

Employee expenses associated with 2 incremental FTEs and increase in travel expenses needed to support changing and new air quality related rules and regulations.

2012	200	0	0	200	0.0	1-Sided Adj
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Program Managers will coordinate and update regulatory/legislative compliance of environmental programs/initiatives throughout service territory. Changes are occurring rapidly. Examples: AB32 support/implementation, Distributive Generation and CHP support, SCAQMD rule 1111 (residential furnaces), Rules 433 and 433.1 (natural gas quality), Biogas/Renewable policy and regulatory changes, new requirements for siting and operation in Environmental Justice communities, new periodic monitoring requirements for gas equipment, new GHG analysis under CEQA, etc.

2012	0	0	0	0	2.0	1-Sided Adj
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2 Program Managers

2012 Total	200	60	0	260	2.0	
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Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: D. Environmental Affairs
Category-Sub: 1. Environmental Affairs
Cost Center: 2200-2288.000 - ENVIRONMENTAL AFFAIRS

Determination of Adjusted-Recorded (Incurred Costs):

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	130	156
Non-Labor	0	0	0	20	25
NSE	0	0	0	0	0
Total	0	0	0	150	181
FTE	0.0	0.0	0.0	1.3	1.5
Adjustments (Nominal \$) **					
Labor	151	160	163	0	0
Non-Labor	41	32	21	0	0
NSE	0	0	0	0	0
Total	192	192	184	0	0
FTE	1.7	1.7	1.7	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	151	160	163	130	156
Non-Labor	41	32	21	20	25
NSE	0	0	0	0	0
Total	192	192	184	150	181
FTE	1.7	1.7	1.7	1.3	1.5
Vacation & Sick (Nominal \$)					
Labor	26	29	28	25	28
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	26	29	28	25	28
FTE	0.3	0.3	0.3	0.3	0.3
Escalation to 2009\$					
Labor	22	17	11	2	0
Non-Labor	5	3	1	0	0
NSE	0	0	0	0	0
Total	27	20	12	3	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	199	205	202	157	185
Non-Labor	46	34	22	20	25
NSE	0	0	0	0	0
Total	245	240	224	177	209
FTE	2.0	2.0	2.0	1.6	1.8

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: D. Environmental Affairs
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Cost Center: 2200-2288.000 - ENVIRONMENTAL AFFAIRS

Summary of Adjustments to Recorded:

Year	In Nominal \$ (000) "Incurred Costs"				
	2005	2006	2007	2008	2009
Labor	151	160	163	0	0
Non-Labor	41	32	21	0	0
NSE	0	0	0	0	0
Total	192	192	184	0	0
FTE	1.7	1.7	1.7	0.0	0.0

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005	151	0	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 110433840
Cost alignment adjustment - transfer labor costs associated with 2 advisors from 2200-0234 to 2200-2288 due to reorganization.							
2005	0	0	0	1.7	CCTR Transf	From 2200-0234.000	TTRAN20091005 110510043
Cost alignment adjustment - transfer FTE for 2 advisors from 2200-0234 to 2200-2288 due to reorganization.							
2005	0	41	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 154300003
Cost alignment adjustment - Transfer air quality related expenses (\$34,536) and employee expenses (\$6,667) from 2200-0234 to 2200-2288 due to reorganization.							
2005 Total	151	41	0	1.7			
2006	160	0	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 122927873
Cost alignment adjustment - transfer labor costs associated with 2 advisors from 2200-0234 to 2200-2288 due to reorganization.							
2006	0	0	0	1.7	CCTR Transf	From 2200-0234.000	TTRAN20091005 123030703
Cost alignment adjustment - transfer FTE for 2 advisors from 2200-0234 to 2200-2288 due to reorganization.							
2006	0	32	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 154948247
Cost alignment adjustment - Transfer air quality related expenses (\$24,055) and employee expenses (\$7,571) from 2200-0234 to 2200-2288 due to reorganization.							

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
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 Cost Center: 2200-2288.000 - ENVIRONMENTAL AFFAIRS

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From Cctr</u>	<u>RefID</u>
2006 Total	160	32	0	1.7			
2007	97	0	0	0.0	CCTR Transf	From 2200-2060.000	TTRAN20090910 082140850
	Cost alignment adjustment - Labor costs associated with 2 advisors (partial year) due to reorganization.						
2007	0	0	0	1.0	CCTR Transf	From 2200-2060.000	TTRAN20090910 082443590
	Cost alignment adjustment - Labor costs associated with 2 advisors (partial year) due to reorganization.						
2007	0	5	0	0.0	CCTR Transf	From 2200-2060.000	TTRAN20090910 083345043
	Cost alignment adjustment - transferred nonlabor expense from 2200-2060 to 2200-2288 due to reorganization.						
2007	66	0	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 123230800
	Cost alignment adjustment - transfer labor costs for 2 advisors (partial year) from 2200-0234 to 2200-2288 due to reorganization.						
2007	0	0	0	0.7	CCTR Transf	From 2200-0234.000	TTRAN20091005 123318410
	Cost alignment adjustment -Transfer FTE for 2 advisors (partial year) from 2200-0234 to 2200-2288 due to reorganization.						
2007	0	16	0	0.0	CCTR Transf	From 2200-0234.000	TTRAN20091005 155754990
	Cost alignment adjustment - Transfer air quality related expenses (\$13,608) and employee expenses (\$2,040) from 2200-0234 to 2200-2288 due to reorganization.						
2007 Total	163	21	0	1.7			
2008 Total	0	0	0	0.0			
2009 Total	0	0	0	0.0			

Supplemental Workpapers for Workpaper 2200-2288.000

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**Final Socioeconomic Report For
Proposed Amended Rule1146—Emissions of Oxides of Nitrogen from
Industrial, Institutional, and Commercial Boilers, Steam Generators, and
Process Heaters**

August 2008

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INTRODUCTION

The proposed amendments to Rule 1146 would reduce NOx emission limits from boilers, steam generators, and process heaters (hereafter referred to as units). The current rule limit is 30 ppm NOx for all units. Proposed Amended Rule 1146 (PAR 1146) would require NOx limits of 25 ppm for any units fired on landfill gas and 15 ppm for any units fired on digester gas. For units burning gaseous fuel other than digester and landfill gases, PAR 1146 would require NOx limits of 5 ppm for Group I (75 million Btu/hr or greater) units and 9 ppm for the Group II (at least 20 but less than 75 million Btu/hr) and Group III (from 5 to less than 20 million Btu/hr except atmospheric units) units, respectively. Atmospheric units (units with non-sealed combustion chamber) would be required to meet 12 ppm NOx limit. It is projected that 1.2 tons per day of NOx emissions would be reduced, as a result, by 2015.

REGULATORY HISTORY

Rule 1146, which was originally adopted in September 1988, established a 40 ppm NOx emission limit for units with an annual heat input greater than 90,000 therms. Since the original adoption, the rule has been amended four times. The January 1989 amendments lowered NOx emission limit to 30 ppm for units with rated heat input greater or equal to 40 million Btu/hr. The costs associated with this amendment included the retrofitting cost of boilers and heaters with Selective Catalytic Reduction (SCR) and Fuel Gas Recirculation (FGR). The total annualized cost of this amendment was estimated at \$44,500 to \$445,400. The amendment was estimated to reduce 0.5 ton of NOx per day with an average cost-effectiveness of \$19,377 per ton of NOx reduced.

The May 1994 amendments added a tune-up procedure for natural-draft combustion units. The procedure had no cost or emission reductions associated with it because it had already been commonly used by operators of natural-draft units. In June 2000, Rule 1146 was amended to exempt one facility that exceeded the 90,000 therm fuel usage threshold from the NOx emission limit provided certain conditions were met. The amendment provided relief to the subject facility.

The most recent rule amendments were in November 2000. The amendments lowered the NOx limit from 40 to 30 ppm for units with rated heat input less than 40 million Btu/hr and burning gaseous fuel only, added annual testing requirement, and required fuel flow meters for all units. The total annualized cost of the proposed amendments was estimated at \$790,900. The amendments resulted in a reduction of 91 tons of NOx emissions per year with the cost-effectiveness of \$7,000 per ton of NOx reduced.

LEGISLATIVE MANDATES

The socioeconomic assessments at the South Coast Air Quality Management District (AQMD) have evolved over time to reflect the benefits and costs of regulations. The legal mandates directly related to the assessment of the proposed rules and amendments include the AQMD Governing Board resolutions and various sections of the California Health & Safety Code (H&SC).

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report
Proposed Amended Rule 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters

August 2008

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INTRODUCTION

Rule 1146.1 applies to existing boilers, steam generators, and process heaters with maximum rated heat input capacities greater than 2 million ~~BTU-Btu~~ per hour and less than 5 million ~~BTU Btu~~ per hour. The rule does not apply to units in NOx RECLAIM facilities. Instead, the units in those facilities in the Rule 1146.1 size range are subject to NOx limits established through the RECLAIM program.

REGULATORY HISTORY

Rule 1146.1 was originally adopted in October 5, 1990 and developed pursuant to the 1989 Air Quality Management Plan (AQMP) of the South Coast Air Quality Management District (AQMD). As adopted, the rule applied to new and existing boilers, steam generators, and process heaters with a maximum rated heat input greater than or equal to 2 million BTU per hour and less than 5 million BTU per hour. The rule established a 30 ppm NOx emission limit for units with an annual heat input greater than 18,000 therms. For units that did not exceed an annual heat input of 18,000 therms the owner or operator must either install a non-resetting fuel use totalizing meter or provide fuel use bills from a fuel supply company based on metering of fuel use indicating ~~less than that the~~ 18,000 therms per year of heat input per unit was not exceeded. In addition these low fuel usage units must comply with the rule by either semiannual tune-ups or maintaining stack gas oxygen concentrations at less than 3 percent on a dry basis.

At the time of the original rule adoption there were about 2,700 units in the District with a gross heat input between 2 and 5 million ~~BTU-Btu~~ per hour. However, in 1993 about 58% of these units were no longer subject to Rule 1146.1 and instead subject to the RECLAIM program.

The first amendment occurred in July 10, 1992. The amendment was the result of an CARB notification to the AQMD on February 14, 1992, of certain deficiencies in Rule 1146.1. These amendments corrected these deficiencies and other concerns raised by the EPA, prior to the rule's emission limits taking effect on July 1, 1994. The 1992 amendments specified either District Method 100.1 as the required test method for NOx, CO and O₂, or Methods 7.1 for NOx and 10.1 for CO and O₂.

The method of determining emission in pounds per million Btu was not explained in the rule. The 1992 amendment specified that the method in the Code of Federal Regulations, Title 40, Part 60, Appendix A, Method 19, Sections 2 and 3 must be used for this determination. EPA uses this method to convert the NOx concentration measured in the stack flue gas of a utility boiler to an emission rate in pounds per million ~~Btu~~ Btu's. For standard fuels such as fuel oil or natural gas, only measurements of NOx and O₂ concentrations in the flue gas are required to make the conversion. The conversion is based on combustion stoichiometry and is applicable to boilers and heaters regardless of size.

Other amendments in 1992 affected alternative tune-up procedures and limiting the start-up and shutdown period of exemption to a maximum of 6 hours.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**Final~~Draft~~ Socioeconomic Assessment for
Proposed Amendments to Rule 1110.2—Emissions from Gaseous- and Liquid-
Fueled Internal Combustion Engines**

January 2008~~November 2007~~

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EXECUTIVE SUMMARY

A socioeconomic analysis was conducted to assess the impacts of the proposed amendments to Rule 1110.2—Emissions from Gaseous-and Liquid-Fueled Internal Combustion Engines—and the alternatives for the proposed amendments identified in the Draft Environmental Assessment. A summary of the analysis and findings are presented below.

<p>Elements of Proposed Rule Amendments</p>	<p>The proposed amendments to Rule 1110.2 will require stationary, non-emergency engines to meet emission standards equivalent to current Best Available Control Technology (BACT) for natural gas engines in the next 3-5 years, <u>which partially implements the 2007 AQMP control measure MCS-001 Facility Modernization</u>; increase the source testing, <u>continuous monitoring</u>, and inspection and maintenance (I&M) and <u>reporting</u>monitoring (I&M) requirements to improve rule compliance; require new electrical generating engines to meet <u>standards that are at or near the CARB 2007 Distribution Generation Emission Standards, which require the same emissions limits as equivalent</u> to large central power plants; and clarify the status of portable engines. <u>Before biogas engines are required to comply with more stringent standards in 2012, staff will conduct a technology assessment to assure that the promising new technologies that have become available are feasible and cost-effective.</u> The proposed amendments are projected to result in emission reductions of 2.2 tpd NOx, 0.69 tpd of VOC and 19 tpd CO.</p>
<p>Affected Facilities and Industries</p>	<p>The proposed amendments to Rule 1110.2 will affect 405 facilities with 859 active internal combustion engines, of which 178 facilities are in Los Angeles County, 96 are in Orange County, 78 are in Riverside County, and 53 are in San Bernardino County. These facilities belong to a wide range of industries. Approximately half (47%) of the facilities belong to the utilities sector (NAICS 221) and another 10% each belong to the industries of oil and gas extraction (NAICS 211) and government (NAICS 92).</p>
<p>Assumptions of Analysis</p>	<p>Facilities subject to Rule 1110.2 were surveyed in 2005 with data collected on 631 out of 859 active engines (74% response rate). To reflect the total number of active engines in the AQMD permit database, scaling factors for each engine type were used to re-align the survey data.</p> <p>Daily inspections are assumed to be performed by the facilities. Source testing, parametric monitoring and emission checks are assumed to be performed by testing</p>

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Proposed Amended Rule 1110.2

FinalDraft Socioeconomic Report

	<p>laboratories except for facilities with more than one engine which would perform their own parametric monitoring and emission checks. It is assumed that facilities with more than one engine would perform their own CEMS maintenance while facilities with a single engine would contract maintenance with the equipment vendor.</p> <p>Based on the current technology, it is assumed that facilities have to install biogas cleanup systems, selective catalytic reduction system (SCR), and OC, or other equivalent technology by 2012. It is assumed that biogas engine maintenance would be performed by staff at the affected facilities. The life of all devices required for compliance with the proposed requirements is assumed to be 10 years.</p> <p>Catalysts are assumed to be installed and maintained by equipment vendors and will be replaced every three years.</p>
<p>Compliance Costs</p>	<p><u>Changes to the proposed amendments since the release of the Draft Socioeconomic Report have not significantly changed compliance cost.</u> Overall, costs for all the affected industries ranged from \$10.76 million in 2008 to \$27.24 million in 2012, with an average annual cost of \$22.39 million between 2008 and 2020. Costs vary significantly by industry with the majority of the cost in the utility industry (NAICS 221) with an average annual cost of \$11.53 million between 2008 and 2020. This is followed by the waste management and remediation services industry (NAICS 562) with an average annual cost of \$2.86 million between 2008 and 2020.</p> <p>Source testing and I&M requirements impact 614 engines at the affected facilities, followed by the requirements for new emission limits (333), and increased continuous monitoring requirements (83 engines to install CEMS, 48 engines to install CO analyzers, and 40 engines to install AFRC). However, the requirement of new emission limits would result in the highest compliance cost, an average annual cost of \$11.0 million between 2008 and 2020.</p> <p>A technology assessment will be conducted by rule staff in 2010 to evaluate new available technologies that are feasible and cost-effective. One possible technology for biogas engines is the NOxTech system which requires no catalyst or fuel treatment that will be tested by Eastern Municipal Water District. It is expected to be more cost-effective than the technology currently proposed.</p>

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Proposed Amended Rule 1110.2

Final~~Draft~~ Socioeconomic Report

<p>Jobs and Other Socioeconomic Impacts</p>	<p>Overall, 169 jobs could be forgone annually, on average, between 2008 and 2020 in the local economy. Additional job growth was projected in the professional, scientific, and technical services sector (NAICS 54) with 45 jobs gained and in the machinery manufacturing sector (NAICS 333) with 5 jobs gained. These job gains are due to an increased demand for source testing and specialized equipment to meet the lower emission limits. The industries with the greatest jobs forgone annually between 2008 and 2020 primarily are construction (NAICS 23) with 30 jobs forgone, other services (NAICS 81) with 26 jobs forgone, local and state government (NAICS 92) with 25 jobs forgone, and retail trade (NAICS 44-45) with 23 jobs forgone.</p>
<p>Competitiveness</p>	<p>The sectors of utilities (NAICS 221), oil and gas extraction (NAICS 211), and administrative and waste services (NAICS 56) would experience the largest increases in the relative cost of production and relative delivered price in 2012. These sectors also incur the highest average annual compliance costs among all private sectors. In 2020 increases in the relative cost of production and relative delivered price in these sectors are decreasing. All the remaining sectors will experience a smaller magnitude of increase in production cost and relative delivered price due to the proposed amendments.</p>
<p>Impacts of CEQA Alternatives</p>	<p>There are four CEQA alternatives associated with the proposed amendments to Rule 1110.2. Alternative A is the No Project Alternative, which is the existing Rule 1110.2. Alternative B—Expansion of Low Use Exemption—would increase the low usage exemption for non-biogas engines. Alternative C—Compliance Improvement Only—would only require increased source testing and I&M, and the installation of AFRC, CO analyzers, and CEMS. Alternative D—Engine Electrification—would give biogas engines that are less than 10 years old an additional two years to comply, eliminate the low-use exemption in the proposed amendments, and require mandatory electrification of selected engines. Average annual compliance costs for the CEQA alternatives range from \$11.4 to \$29.5 million between 2008 and 2020. Jobs forgone for the CEQA alternatives range from 89 jobs to 273 jobs. CEQA Alternative D has the highest average annual cost and job impacts of all the CEQA alternatives, with an average annual cost of \$29.5 million and 273 jobs forgone between 2008 and 2020.</p>

Southern California Gas Company
Test Year 2012 GRC - APP
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Press Release: 2007-12-06 Air Board passes two major building blocks in state's effort to fight global warming



Release 07-59
**FOR IMMEDIATE
RELEASE**
December 6, 2007

Stanley Young
916-956-9409
www.arb.ca.gov

Air Board passes two major building blocks in state's effort to fight global warming

Establishes greenhouse gas reduction goal, and adopts rules for large facilities to report their greenhouse gas emissions.

EL MONTE, Calif -The Air Resources Board set in place today two important building blocks in California's fight to slow the impacts of global warming when it approved a greenhouse gas emissions limit for 2020 and adopted regulations requiring mandatory reporting of greenhouse gases for large facilities.

Both items were required under AB32, California's landmark climate change legislation. AB32, also known as The Global Warming Solutions Act of 2006, was signed by Governor Schwarzenegger in September 2006 and requires that California reduce its greenhouse gas emissions to 1990 levels by 2020. The 1990 Greenhouse Gas Emissions Level establishes the actual number of tons of emissions that California is required to reach. The Board also adopted the state's first-ever rules and requirements for the largest facilities in California to report their annual greenhouse gas emissions.

"The items the Board adopted today are a clear demonstration that we continue to meet our statutory deadlines under AB32. Thanks to meticulous work by ARB staff, we now have a rock-solid calculation of the total number of tons of greenhouse gases emitted by California in 1990 - and a firm goal for us to reach by 2020," said Chairman Mary Nichols. "The mandatory reporting requirements are a crucial part of the state's efforts to reach that goal. We are now giving businesses and industry the clear guidance they need to calculate and report their greenhouse gas emissions for their largest facilities."

1990 Greenhouse Gas Emissions Inventory-2020 Emissions Limit

California's ARB staff has spent the past year assembling an inventory of the state's 1990 emissions using a variety of data sources, including inputs related to fuel combustion, industrial processes, and agricultural practices. That figure is 427 million metric tons of carbon dioxide equivalent. Preliminary estimates indicate that 2020 emission projections could be 600 million tons of carbon dioxide equivalent if no actions are taken to reduce greenhouse gases-the so-called 'business-as-usual' scenario. This means that California must prevent 173 million tons of carbon dioxide equivalent from being emitted by 2020 in order to meet the 1990 level as required by AB32.

ARB staff used accepted international guidance to develop the inventory and calculated the total emissions of six greenhouse gases including carbon dioxide (by far the largest single gas with 89 percent of the total), methane, nitrous oxide, and three gases used mainly in industrial applications. Each greenhouse gas has a different global warming potential. A ton of methane, for example, has 21 times the global warming potential as a ton of carbon dioxide. The final figure of 427 million metric tons of carbon dioxide

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Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Press Release: 2007-12-06 Air Board passes two major building blocks in state's effort to fight global warming

was arrived at by giving each gas its global warming potential weight., (By comparison, 200,000 passenger cars driven for a full year produce about one million tons of carbon dioxide.)

ARB staff reviewed more than 10,000 separate calculations to arrive at the total, and efforts included an eight-month review of a previous inventory for 1990 levels developed by the California Energy Commission in 2006. Major sectors such as transportation, electrical power, industry, petroleum refining, agriculture and forestry included 270 sub-categories, each with its own data sources and subject-specific calculations.

The inventory revealed that in 1990 transportation, with 35 percent of the state's total emissions, was the largest single sector, followed by industrial emissions, 24 percent; imported electricity, 14 percent; in-state electricity generation, 11 percent; residential use, 7 percent; agriculture, 5 percent; and commercial uses with 3 percent.

A series of early actions, tailpipe regulations and the development of fuels with less carbon in them are estimated to provide reductions totaling 66 million tons of carbon dioxide equivalent. ARB staff are currently developing a Scoping Plan to develop programs and measures to address the remaining 107 million tons of carbon dioxide equivalent in order to reach the total of 173 million tons by 2020. That plan will be submitted to the Board in November, 2008.

Mandatory Reporting Requirements

The mandatory reporting regulations require annual reporting from the largest facilities in the state, accounting for 94 percent of greenhouse gas emissions from industrial and commercial stationary sources in California. (Transportation sources, which account for 38 percent of California's total greenhouse gas emissions are not covered by these regulations but will continue to be tracked through existing means.) The standards and approaches to reporting were developed in close consultation with the California Climate Action Registry, as required by the law. The stakeholder process included five public workshops and 15 technical workgroup meetings, as well as numerous other meetings and teleconferences and extensive coordination with other state agencies.

There are about 800 separate sources that fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 tons of carbon dioxide each year from on-site stationary source combustions such as large furnaces. This last category includes a diverse range of facilities such as food processing, glass container manufacturers, oil and gas production and mineral processing. Backup generators, schools and hospitals are excluded from the requirements.

Affected facilities will begin tracking their emissions in 2008, to be reported beginning in 2009 with a phase-in process to allow facilities to develop reporting systems and train personnel in data collection. Emissions for 2008 may be based on best available emission data. Beginning in 2010, however, emissions reports will be more rigorous and will be subject to third-party verification. Verification will take place annually or every three years, depending on the type of facility. ARB is also developing a training and accreditation plan for third-party verifiers.

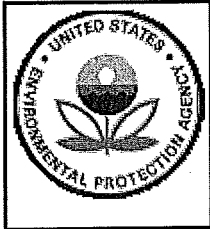
The Air Resources Board is a department of the California Environmental Protection Agency. ARB's mission is to promote and protect public health, welfare, and ecological resources through effective reduction of air pollutants while recognizing and considering effects on the economy. The ARB oversees all air pollution control efforts in California to attain and maintain health based air quality standards.

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EPA New Source Review: Fact Sheet

[Jump to main content.](#)



New Source Review (NSR)

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Fact Sheet -- Proposed Rule: Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule

ACTION

- On September 30, 2009, EPA announced a proposal that is focused on large facilities emitting over 25,000 tons of greenhouse gases a year. These facilities would be required to obtain permits that would demonstrate they are using the best practices and technologies to minimize GHG emissions.
- The rule proposes new thresholds for greenhouse gas emissions (GHG) that define when Clean Air Act (CAA) permits under the New Source Review (NSR) and title V operating permits programs would be required for new or existing industrial facilities.

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- The proposed thresholds would “tailor” the permit programs to limit which facilities would be required to obtain NSR and title V permits and would cover nearly 70 percent of the national GHG emissions that come from stationary sources, including those from the nation’s largest emitters—including power plants, refineries, and cement production facilities.
- Small farms, restaurants and many other types of small facilities would not be subject to these permitting programs.
- This proposal addresses the emissions of the group of six greenhouse gases (GHGs) that may be covered by an EPA rule controlling or limiting their emissions:
 1. Carbon dioxide (CO₂)
 2. Methane (CH₄)
 3. Nitrous oxide (N₂O)
 4. Hydrofluorocarbons (HFCs)
 5. Perfluorocarbons (PFCs)
 6. Sulfur hexafluoride (SF₆)
- EPA is proposing carbon dioxide equivalent (CO₂e) as the preferred metric for determining GHG emissions rates for any combination of these six GHGs, but we are requesting comment in this proposal on alternatives. Emissions of greenhouse gases are typically expressed in a common metric, so that their impacts can be directly compared, as some gases are more potent (have a higher global warming potential or GWP) than others. The international standard practice is to express GHGs in CO₂e. Emissions of gases other than CO₂ are translated into CO₂ equivalents by using the gases’ global warming potentials.
- Under the Title V operating permits program, EPA is proposing a major source emissions applicability threshold of 25,000 tons per year (tpy) of carbon dioxide CO₂e for existing industrial facilities. Facilities with GHG emissions below this threshold would not be required to obtain an operating permit.
- Under the Prevention of Significant Deterioration (PSD) portion of NSR—which is a permit program designed to minimize emissions from new sources and existing sources making major modifications—EPA is proposing a:
 1. Major stationary source threshold of 25,000 tpy CO₂e. This threshold level would be used to determine if a new facility or a major modification at an existing facility would trigger PSD permitting requirements.
 2. Significance level between 10,000 and 25,000 tpy CO₂e. Existing major sources making modifications that result in an increase of emissions above the significance level would be required to obtain a PSD permit. EPA is requesting comment on a range of values in this proposal, with the intent of selecting a single value for the GHG significance level.
- Operating permits contain air emissions control requirements that apply to a facility, such as

file:///C:/Documents and Settings/tpnpm/My Documents/...HG/EPA Reporting/EPA New Source Review Fact Sheet.htm (2 of 7)6/29/2010 11:32:09 AM

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national emissions standards for hazardous air pollutants, new source performance standards, or best available control technologies required by a PSD permit. In general, since there are currently no such air emission control requirements, existing facilities with GHG emissions greater than 25,000 tons per year that already have operating permits would not need to immediately revise them. At the end of a 5-year period when the operating permit must be renewed, these facilities would be required to include estimates of their GHG emissions in their permit applications. Facilities may use the same data reported to EPA under the Mandatory Reporting Rule to fulfill this requirement.

- New or modified facilities with GHG emissions that trigger PSD permitting requirements would need to apply for a revision to their operating permits to incorporate the best available control technologies and energy efficiency measures to minimize GHG emissions. These controls are determined on a case-by-case basis during the PSD process.
- Under the proposed emissions thresholds, EPA estimates that 400 new sources and modifications would be subject to PSD review each year for GHG emissions. Less than 100 of these would be newly subject to PSD. In total, approximately 14,000 large sources would need to obtain operating permits for GHG emissions under the operating permits program. About 3,000 of these sources would be newly subject to CAA operating permit requirements as a result of this action. The majority of these sources are expected to be municipal solid waste landfills.
- Municipal solid waste landfills are the second largest source of human-related methane emissions in the United States, accounting for approximately 23 percent of these emissions in 2007. Landfill methane, a powerful greenhouse gas, can be captured, converted, and used as an energy source, reducing emissions and providing an important renewable energy source.
- The current thresholds for criteria pollutants such as lead, sulfur dioxide and nitrogen dioxide, are 100 and 250 tons per year (tpy). These thresholds are in effect now, and are appropriate for criteria pollutants. However, they are not feasible for GHGs. Without the tailoring rule, these lower thresholds would take effect automatically for GHGs with the adoption of any EPA rule that controls or limits GHG emissions.
- The proposed thresholds would continue to preserve the ability of the NSR and title V operating permit programs to achieve and maintain public health and environmental protection goals while avoiding an administrative burden that would prevent state and local permitting authorities from processing CAA permits efficiently.
- EPA will accept comment on this proposal for 60 days after publication in the *Federal Register*.

NEXT STEPS

- The final emissions thresholds for GHG emissions under the federal PSD and operating permits

file:///C:/Documents and Settings/tpnpm/My Documents/...HG/EPA Reporting/EPA New Source Review Fact Sheet.htm (3 of 7)6/29/2010 11:32:09 AM

Southern California Gas Company
Test Year 2012 GRC - APP
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programs will take effect immediately upon promulgation of the final rule. At that time, EPA will put the new thresholds into effect in state, local and tribal agency programs that run PSD and Title V operating programs under EPA approval. Those agencies will continue to have the option to seek EPA approval for lower thresholds if they demonstrate that they can adequately implement the PSD program at the lower thresholds.

- EPA intends to evaluate ways to streamline the process for identifying GHG emissions control requirements and issuing permits. This will reduce costs and increase efficiency for both sources and for state permitting agencies, which in most cases are responsible for issuing the permits.
- Under the proposal, EPA must also re-evaluate the final GHG emissions thresholds after an initial phase, during which PSD and Title V permitting authorities will gain experience in issuing permits to GHG sources. By the end of the first phase, which is proposed to last five years, the Agency is proposing to complete a study to evaluate whether it is administratively feasible for PSD and Title V permitting authorities to adequately administer their programs at lower GHG thresholds.
- After reviewing the study results, EPA will complete a follow-on regulatory action, within one year (six years following promulgation of this rule). The follow-on rule will establish thresholds during the second phase, by either:
 1. Confirming the need to retain the GHG permitting thresholds for PSD and/or Title V at the levels promulgated with this rulemaking; or
 2. Establishing different GHG threshold levels that more accurately reflect the administrative capabilities of permitting authorities to address GHGs.
- EPA believes that a five-year duration for the first phase is appropriate but the Agency requests comment on alternative time periods.
- EPA also plans to develop supporting information to assist permitting authorities as they begin to address permitting actions for GHG emissions for the first time. The guidance would first cover source categories that typically emit GHGs at levels exceeding the thresholds established through this rulemaking.
- Although EPA has not yet identified specific source categories, the Agency plans to develop sector- and source-specific guidance that would help permitting authorities and affected sources better understand GHG emissions for the selected source categories, methods for estimating those emissions, control strategies for GHG emissions, and available GHG measurement and monitoring techniques.
- This guidance also will include approaches for making Best Available Control Technology determinations as required for a PSD permit.

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BACKGROUND

- On April 2, 2007, the Supreme Court found that GHGs, including carbon dioxide, are air pollutants covered by the CAA. *Massachusetts v. EPA*, 549 U.S. 497 (2007).
- The Supreme Court found that EPA was required to determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In April 2009, EPA responded to the Court by proposing a finding that greenhouse gases contribute to air pollution that may endanger public health or welfare.
- EPA expects soon to take final action on the finding. The agency also expects to issue regulations under the Clean Air Act to control GHG emissions from light duty vehicles (proposal signed 9/15/09). Such an action will trigger Clean Air Act permitting requirements under the Prevention of Significant Deterioration (PSD) and Operating Permit (title V) programs for GHG emissions. This will be the first time GHGs would be subject to either of these Clean Air Act permitting programs.
- Congress established the NSR program as part of the 1977 Clean Air Act Amendments and modified it in the 1990 Amendments. NSR is a preconstruction permitting program that serves two important purposes:
 1. Ensures the maintenance of air quality standards or, where there are not air quality standards, it ensures that air quality does not significantly worsen when factories, industrial boilers, and power plants are modified or added. In areas that do not meet the national ambient air quality standards, NSR assures that new emissions do not slow progress toward cleaner air. In areas that meet the standards, especially pristine areas like national parks, NSR assures that new emissions fall within air quality standards.
 2. Ensures that state-of-the-art control technology is installed at new plants or at existing plants that are undergoing a major modification.
- New major stationary sources and major modifications at existing major stationary sources that meet emissions applicability thresholds outlined in the Clean Air Act and in existing PSD regulations must obtain a PSD permit outlining how they will control emissions. The permit requires facilities to apply best available control technology (BACT), which is determined on a case-by-case basis taking into account, among other factors, the cost and effectiveness of the control.
- The Clean Air Act Amendments of 1990 required that all states develop operating permit programs. Under these programs, known as Title V operating permits programs, every major industrial source of air pollution (and some other sources) must obtain an operating permit. The permits, which are reviewed every five years, contain all air emission control requirements that apply to the facility, including the requirements established as part of the preconstruction

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permitting process.

HOW TO COMMENT

- EPA will accept comment on the proposal for 60 days after publication in the Federal Register. Comments, identified by Docket ID No. EPA-HQ-OAR-2009-0517, may be submitted by one of the following methods:
 - <http://www.regulations.gov/>: Follow the online instructions for submitting comments.
 - E-mail: Comments may be sent by electronic mail (e-mail) to a-and-r-docket@epa.gov.
 - Fax: Fax your comments to: (202) 566-9744.
 - Mail: Send your comments to: EPA Docket Center, EPA West (Air Docket), Attention Docket ID No. EPA-HQ-OAR-2009-0517, U.S. Environmental Protection Agency, Mailcode: 2822T, 1200 Pennsylvania Avenue, NW, Washington, DC 20460.
 - Hand Delivery or Courier: Deliver your comments to: .S. Environmental Protection Agency, EPA West (Air Docket), 1301 Constitution Avenue, Northwest, Room 3334, Washington, DC 20004, Attention Docket ID No. EPA-HQ-OAR-2009-0517. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information

FOR MORE INFORMATION

- To download a copy of this notice, go to EPA's Web site at: <http://www.epa.gov/nsr>.
- Today's proposed action and other background information are also available electronically at <http://www.regulations.gov/>, EPA's electronic public docket and comment system. The docket number for this action is Docket ID No. EPA-HQ-OAR-2009-0517.
- For more information on the final rule, contact Joseph Mangino at (919) 541-9778 or mangino.joseph@epa.gov.

Local Navigation

- [NSR Home](#)
- [Basic Information](#)
- [Where You Live](#)

file:///C:/Documents and Settings/tpnpm/My Documents/...HG/EPA Reporting/EPA New Source Review Fact Sheet.htm (6 of 7)/6/29/2010 11:32:09 AM

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Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: E. Emerging Technology
 Cost Center: 2200-2190.000

Summary for Category: E. Emerging Technology

	In 2009\$ (000) "Book Expense"			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	62	75	75	75
Non-Labor	2	13	13	13
NSE	0	0	0	0
Total	64	88	88	88
FTE	1.1	1.0	1.0	1.0

**Cost Centers belonging to this Category:
 2200-2190.000 EMERGING TECHNOLOGY**

Labor	62	75	75	75
Non-Labor	2	13	13	13
NSE	0	0	0	0
Total	64	88	88	88
FTE	1.1	1.0	1.0	1.0

Beginning of Workpaper
2200-2190.000 - EMERGING TECHNOLOGY

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Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: E. Emerging Technology
Category-Sub: 3. Emerging Technology
Cost Center: 2200-2190.000 - EMERGING TECHNOLOGY

Activity Description:

This cost center contains the costs associated with activities to identify future trends in energy technology and policy and proactively explores opportunities to better serve SOCALGAS and SDG&E's customers, whose changing needs are driven by the rapid advance of technology as well as environmental awareness, regulation and policy.

Forecast Methodology:

Labor - 5-YR Average

Labor costs in this organization was relatively flat for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast.

Non-Labor - 5-YR Average

Nonlabor costs in this organization was relatively flat for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast.

NSE - 5-YR Average

Not applicable

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 Test Year 2012 GRC - APP
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Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: E. Emerging Technology
 Category-Sub: 3. Emerging Technology
 Cost Center: 2200-2190.000 - EMERGING TECHNOLOGY

Summary of Results:

		In 2009\$ (000)							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2005	2006	2007	2008	2009	2010	2011	2012
		Total Incurred (100% Level)							
Labor		59	114	122	114	117	105	105	105
Non-Labor		0	3	72	11	4	18	18	18
NSE		0	0	0	0	0	0	0	0
Total		59	117	194	125	121	123	123	123
FTE		0.6	1.1	1.1	1.0	1.1	1.0	1.0	1.0
		Allocations Out							
Labor		0	57	61	56	55	30	30	30
Non-Labor		0	1	36	5	2	5	5	5
NSE		0	0	0	0	0	0	0	0
Total		0	58	97	61	57	35	35	35
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Retained							
Labor		59	57	61	58	62	75	75	75
Non-Labor		0	2	36	6	2	13	13	13
NSE		0	0	0	0	0	0	0	0
Total		59	59	97	64	64	88	88	88
FTE		0.6	1.1	1.1	1.0	1.1	1.0	1.0	1.0
		Allocations In							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Book Expense							
Labor		59	57	61	58	62	75	75	75
Non-Labor		0	2	36	6	2	13	13	13
NSE		0	0	0	0	0	0	0	0
Total		59	59	97	64	64	88	88	88
FTE		0.6	1.1	1.1	1.0	1.1	1.0	1.0	1.0

Southern California Gas Company
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Shared Services Workpapers

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Category-Sub: 3. Emerging Technology
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Calculation of Book Expense:

	2009 Adjusted-Recorded					2010 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.00	0	0	0	0	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	117	4	0	121	1.10	105	18	0	123	1.00
% Allocation										
Retained	52.67%	52.67%				71.67%	71.67%			
SEU	47.33%	47.33%				28.33%	28.33%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	62	2	0	64		75	13	0	88	
SEU	55	2	0	57		30	5	0	35	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	117	4	0	121	1.10	105	18	0	123	1.00
Total Alloc. Out	55	2	0	57		30	5	0	35	
Total Retained	62	2	0	64		75	13	0	88	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	62	2	0	64		75	13	0	88	

	2011 Adjusted-Forecast					2012 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.00	0	0	0	0	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	105	18	0	123	1.00	105	18	0	123	1.00
% Allocation										
Retained	71.67%	71.67%				71.67%	71.67%			
SEU	28.33%	28.33%				28.33%	28.33%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	75	13	0	88		75	13	0	88	
SEU	30	5	0	35		30	5	0	35	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	105	18	0	123	1.00	105	18	0	123	1.00
Total Alloc. Out	30	5	0	35		30	5	0	35	
Total Retained	75	13	0	88		75	13	0	88	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	75	13	0	88		75	13	0	88	

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Area: CS - INFORMATION
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Category-Sub: 3. Emerging Technology
Cost Center: 2200-2190.000 - EMERGING TECHNOLOGY

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2009

The MultiFactor percentages were used for the allocation between SDG&E and SCG for this cost center.

Cost Center Allocation Percentage for 2010

The allocation methodology is based on the cost center manager's assessment of time spent completing specific activities and the allocation of this time between the utilities.

Cost Center Allocation Percentage for 2011

The allocation methodology is based on the cost center manager's assessment of time spent completing specific activities and the allocation of this time between the utilities.

Cost Center Allocation Percentage for 2012

The allocation methodology is based on the cost center manager's assessment of time spent completing specific activities and the allocation of this time between the utilities.

Southern California Gas Company
 Test Year 2012 GRC - APP
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 Cost Center: 2200-2190.000 - EMERGING TECHNOLOGY

Forecast Summary:

Forecast Method		In 2009 \$(000) "Incurred Costs"								
		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Labor	5-YR Average	105	105	105	0	0	0	105	105	105
Non-Labor	5-YR Average	18	18	18	0	0	0	18	18	18
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		123	123	123	0	0	0	123	123	123
FTE	5-YR Average	1.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010 Total	0	0	0	0	0.0	
2011 Total	0	0	0	0	0.0	
2012 Total	0	0	0	0	0.0	

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Determination of Adjusted-Recorded (Incurred Costs):

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	45	89	99	94	99
Non-Labor	371	489	69	11	4
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	416	578	167	105	103
FTE	0.5	0.9	0.9	0.8	0.9
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	-371	-486	0	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	-371	-486	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	45	89	99	94	99
Non-Labor	0	3	69	11	4
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	45	92	167	105	103
FTE	0.5	0.9	0.9	0.8	0.9
Vacation & Sick (Nominal \$)					
Labor	8	16	17	18	18
Non-Labor	0	0	0	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	8	16	17	18	18
FTE	0.1	0.2	0.2	0.2	0.2
Escalation to 2009\$					
Labor	7	9	7	2	0
Non-Labor	0	0	4	0	0
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	7	10	10	2	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	59	114	122	114	117
Non-Labor	0	3	72	11	4
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	60	117	195	125	121
FTE	0.6	1.1	1.1	1.0	1.1

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

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 Cost Center: 2200-2190.000 - EMERGING TECHNOLOGY

Summary of Adjustments to Recorded:

Year	In Nominal \$ (000) "Incurred Costs"				
	2005	2006	2007	2008	2009
Labor	0	0	0	0	0
Non-Labor	-371	-486	0	0	0
NSE	0	0	0	0	0
Total	-371	-486	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2005	0	-371	0	0.0	1-Sided Adj	N/A	TTRAN20090924 110619053

To removed duplicate charge paid in 2006.

2005 Total	0	-371	0	0.0			
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2006	0	-486	0	0.0	1-Sided Adj	N/A	TTRAN20091103 094256130
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This adjustment is to exclude non-recurring consulting cost.

2006 Total	0	-486	0	0.0			
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2007 Total	0	0	0	0.0			
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2008 Total	0	0	0	0.0			
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2009 Total	0	0	0	0.0			
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Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: F. VP Customer Solutions
 Cost Center: 2200-2282.000

Summary for Category: F. VP Customer Solutions

	In 2009\$ (000) "Book Expense"			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	180	178	178	178
Non-Labor	20	31	31	31
NSE	0	0	0	0
Total	200	209	209	209
FTE	2.1	2.3	2.3	2.3

Cost Centers belonging to this Category:

2200-2282.000 VP CUSTOMER SOLUTIONS

Labor	180	178	178	178
Non-Labor	20	31	31	31
NSE	0	0	0	0
Total	200	209	209	209
FTE	2.1	2.3	2.3	2.3

Beginning of Workpaper
2200-2282.000 - VP CUSTOMER SOLUTIONS

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: F. VP Customer Solutions
Category-Sub: 1. VP Customer Programs
Cost Center: 2200-2282.000 - VP CUSTOMER SOLUTIONS

Activity Description:

The Customer Solutions vice-president oversees both shared and nonshared activities within Customer Solutions organization. The nonshared activities include customer communications, account management and customer services of all large commercial, industrial customers and government accounts excluding wholesales and electric generation which falls under the supervision of VP Engineering and Operational Staff, and Research, Development and Demonstration (RD&D). The Customer Solutions vice president is also responsible for overseeing the following shared programs and activities for both SOCALGAS and SDG&E:

- Customer Assistance activities
- Customer Programs
- NGV Program
- Environmental Affairs
- BioFuel Market Development
- Emerging Technology

Forecast Methodology:

Labor - 5-YR Average

Labor costs in this organization was relatively flat for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts, 5 years average is used as the basis for TY2012 forecast.

Non-Labor - 5-YR Average

This organization incurred annual labor expense average approximately \$50 for the recorded 5-years period. For consistency with the Customer Service forecasting methodologies for other accounts.

NSE - 5-YR Average

Not applicable

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: F. VP Customer Solutions
 Category-Sub: 1. VP Customer Programs
 Cost Center: 2200-2282.000 - VP CUSTOMER SOLUTIONS

Summary of Results:

		In 2009\$ (000)							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2005	2006	2007	2008	2009	2010	2011	2012
		Total Incurred (100% Level)							
Labor		332	335	340	340	339	337	337	337
Non-Labor		109	54	46	43	31	56	56	56
NSE		0	0	0	0	0	0	0	0
Total		441	389	386	383	370	393	393	393
FTE		2.4	2.2	2.6	2.2	2.1	2.3	2.3	2.3
		Allocations Out							
Labor		156	157	160	176	159	159	159	159
Non-Labor		51	25	22	18	11	25	25	25
NSE		0	0	0	0	0	0	0	0
Total		207	182	182	194	170	184	184	184
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Retained							
Labor		176	178	180	164	180	178	178	178
Non-Labor		58	29	24	25	20	31	31	31
NSE		0	0	0	0	0	0	0	0
Total		234	207	204	189	200	209	209	209
FTE		2.4	2.2	2.6	2.2	2.1	2.3	2.3	2.3
		Allocations In							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Book Expense							
Labor		176	178	180	164	180	178	178	178
Non-Labor		58	29	24	25	20	31	31	31
NSE		0	0	0	0	0	0	0	0
Total		234	207	204	189	200	209	209	209
FTE		2.4	2.2	2.6	2.2	2.1	2.3	2.3	2.3

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: F. VP Customer Solutions
Category-Sub: 1. VP Customer Programs
Cost Center: 2200-2282.000 - VP CUSTOMER SOLUTIONS

Calculation of Book Expense:

	2009 Adjusted-Recorded					2010 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	8	0	8	0.00	0	3	0	3	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	339	23	0	362	2.10	337	53	0	390	2.30
% Allocation										
Retained	53.00%	53.00%				52.70%	52.70%			
SEU	47.00%	47.00%				47.30%	47.30%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	180	12	0	192		178	28	0	206	
SEU	159	11	0	170		159	25	0	184	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	339	31	0	370	2.10	337	56	0	393	2.30
Total Alloc. Out	159	11	0	170		159	25	0	184	
Total Retained	180	20	0	200		178	31	0	209	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	180	20	0	200		178	31	0	209	

	2011 Adjusted-Forecast					2012 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	3	0	3	0.00	0	3	0	3	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	337	53	0	390	2.30	337	53	0	390	2.30
% Allocation										
Retained	52.70%	52.70%				52.70%	52.70%			
SEU	47.30%	47.30%				47.30%	47.30%			
CORP	0.00%	0.00%				0.00%	0.00%			
Unreg	0.00%	0.00%				0.00%	0.00%			
\$ Allocation										
Retained	178	28	0	206		178	28	0	206	
SEU	159	25	0	184		159	25	0	184	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	337	56	0	393	2.30	337	56	0	393	2.30
Total Alloc. Out	159	25	0	184		159	25	0	184	
Total Retained	178	31	0	209		178	31	0	209	
Allocations In	0	0	0	0		0	0	0	0	
Book Expense	178	31	0	209		178	31	0	209	

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: F. VP Customer Solutions
Category-Sub: 1. VP Customer Programs
Cost Center: 2200-2282.000 - VP CUSTOMER SOLUTIONS

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2009

The MultiFactor percentages were used for the allocation between SDG&E and SCG for this cost center.

Cost Center Allocation Percentage for 2010

The MultiFactor percentages were used for the allocation between SDG&E and SCG for this cost center.

Cost Center Allocation Percentage for 2011

The MultiFactor percentages were used for the allocation between SDG&E and SCG for this cost center.

Cost Center Allocation Percentage for 2012

The MultiFactor percentages were used for the allocation between SDG&E and SCG for this cost center.

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: F. VP Customer Solutions
 Category-Sub: 1. VP Customer Programs
 Cost Center: 2200-2282.000 - VP CUSTOMER SOLUTIONS

Forecast Summary:

Forecast Method		In 2009 \$(000) "Incurred Costs"								
		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Labor	5-YR Average	337	337	337	0	0	0	337	337	337
Non-Labor	5-YR Average	56	56	56	0	0	0	56	56	56
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		393	393	393	0	0	0	393	393	393
FTE	5-YR Average	2.3	2.3	2.3	0.0	0.0	0.0	2.3	2.3	2.3

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010 Total	0	0	0	0	0.0	
2011 Total	0	0	0	0	0.0	
2012 Total	0	0	0	0	0.0	

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: F. VP Customer Solutions
 Category-Sub: 1. VP Customer Programs
 Cost Center: 2200-2282.000 - VP CUSTOMER SOLUTIONS

Determination of Adjusted-Recorded (Incurred Costs):

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	267	287
Non-Labor	0	0	0	41	31
NSE	0	0	0	0	0
Total	0	0	0	308	319
FTE	0.0	0.0	0.0	1.7	1.8
Adjustments (Nominal \$) **					
Labor	253	261	274	14	0
Non-Labor	97	49	44	2	0
NSE	0	0	0	0	0
Total	350	310	318	16	0
FTE	2.0	1.9	2.2	0.1	0.0
Recorded-Adjusted (Nominal \$)					
Labor	253	261	274	281	287
Non-Labor	97	49	44	43	31
NSE	0	0	0	0	0
Total	350	310	318	324	319
FTE	2.0	1.9	2.2	1.8	1.8
Vacation & Sick (Nominal \$)					
Labor	43	47	48	54	52
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	43	47	48	54	52
FTE	0.4	0.3	0.4	0.4	0.3
Escalation to 2009\$					
Labor	37	27	18	5	0
Non-Labor	12	4	2	1	0
NSE	0	0	0	0	0
Total	49	32	20	6	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	332	335	340	340	339
Non-Labor	109	54	46	43	31
NSE	0	0	0	0	0
Total	442	388	386	384	370
FTE	2.4	2.2	2.6	2.2	2.1

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: F. VP Customer Solutions
 Category-Sub: 1. VP Customer Programs
 Cost Center: 2200-2282.000 - VP CUSTOMER SOLUTIONS

Summary of Adjustments to Recorded:

Year	In Nominal \$ (000) "Incurred Costs"				
	2005	2006	2007	2008	2009
Labor	253	261	274	14	0
Non-Labor	97	49	44	2	0
NSE	0	0	0	0	0
Total	350	310	318	16	0
FTE	2.0	1.9	2.2	0.1	0.0

Detail of Adjustments to Recorded:

Year/Expl.	Labor	NLbr	NSE	FTE	Adj Type	From CCtr	RefID
2005	253	0	0	0.0	1-Sided Adj	N/A	TTRAN20100419 152942170
Cost alignment adjustment - One side adjustment for costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.							
2005	0	0	0	2.0	1-Sided Adj	N/A	TTRAN20100419 153051860
Cost alignment adjustment - One side adjustment for costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.							
2005	0	97	0	0.0	1-Sided Adj	N/A	TTRAN20100419 153156187
Cost alignment adjustment - One side adjustment for nonlabor costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.							

2005 Total	253	97	0	2.0			
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2006	261	0	0	0.0	1-Sided Adj	N/A	TTRAN20100419 153332640
Cost alignment adjustment - One side adjustment for costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.							
2006	0	0	0	1.9	1-Sided Adj	N/A	TTRAN20100419 153409313
Cost alignment adjustment - One side adjustment for costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.							

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: F. VP Customer Solutions
 Category-Sub: 1. VP Customer Programs
 Cost Center: 2200-2282.000 - VP CUSTOMER SOLUTIONS

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2006	0	49	0	0.0	1-Sided Adj	N/A	TTRAN20100419 153531920

Cost alignment adjustment - One side adjustment for nonlabor costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.

2006 Total	261	49	0	1.9			
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2007	274	0	0	0.0	1-Sided Adj	N/A	TTRAN20100419 154113327
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Cost alignment adjustment - One side adjustment for costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.

2007	0	0	0	2.2	1-Sided Adj	N/A	TTRAN20100419 154149610
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Cost alignment adjustment - One side adjustment for costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.

2007	0	44	0	0.0	1-Sided Adj	N/A	TTRAN20100419 154231470
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Cost alignment adjustment - One side adjustment for costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.

2007 Total	274	44	0	2.2			
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2008	14	0	0	0.0	1-Sided Adj	N/A	TTRAN20100420 111109023
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Cost alignment adjustment - One side adjustment for costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.

2008	0	0	0	0.1	1-Sided Adj	N/A	TTRAN20100420 111137727
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Cost alignment adjustment - One side adjustment for costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.

2008	0	2	0	0.0	1-Sided Adj	N/A	TTRAN20100420 111213307
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Cost alignment adjustment - One side adjustment for costs associated with VP shared services cost center due to reorganization. This cost was booked to SDG&E cost center 2100-3445.

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: F. VP Customer Solutions
Category-Sub: 1. VP Customer Programs
Cost Center: 2200-2282.000 - VP CUSTOMER SOLUTIONS

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCtr</u>	<u>RefID</u>
2008 Total	14	2	0	0.1			
2009 Total	0	0	0	0.0			

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: G. USS Billed-in from SDG&E
 Cost Center: 2200-8910.000

Summary for Category: G. USS Billed-in from SDG&E

	In 2009\$ (000) "Book Expense"			
	Adjusted-Recorded	Adjusted-Forecast		
	2009	2010	2011	2012
Labor	585	789	789	789
Non-Labor	261	357	357	357
NSE	0	0	0	0
Total	846	1,146	1,146	1,146
FTE	0.0	0.0	0.0	0.0

Cost Centers belonging to this Category:

2200-8910.000 Billed-in Cost Center for CUSTOMER INFORMATION

Labor	585	789	789	789
Non-Labor	261	357	357	357
NSE	0	0	0	0
Total	846	1,146	1,146	1,146
FTE	0.0	0.0	0.0	0.0

Beginning of Workpaper
2200-8910.000 - Billed-in Cost Center for CUSTOMER INFORMATION

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: G. USS Billed-in from SDG&E
Category-Sub: 1. USS Billed To CCTR for Customer Information
Cost Center: 2200-8910.000 - Billed-in Cost Center for CUSTOMER INFORMATION

Activity Description:

This cost center was created for GRC to receive the billed-in costs for functional area - Customer Information

Forecast Methodology:

Labor - Zero-Based
N/A

Non-Labor - Zero-Based
N/A

NSE - Zero-Based
N/A

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: G. USS Billed-in from SDG&E
 Category-Sub: 1. USS Billed To CCTR for Customer Information
 Cost Center: 2200-8910.000 - Billed-in Cost Center for CUSTOMER INFORMATION

Summary of Results:

		In 2009\$ (000)							
		Adjusted-Recorded					Adjusted-Forecast		
Years		2005	2006	2007	2008	2009	2010	2011	2012
		Total Incurred (100% Level)							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Allocations Out							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Retained							
Labor		0	0	0	0	0	0	0	0
Non-Labor		0	0	0	0	0	0	0	0
NSE		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Allocations In							
Labor		526	663	590	551	585	789	789	789
Non-Labor		348	64	240	131	261	357	357	357
NSE		0	0	0	0	0	0	0	0
Total		874	727	830	682	846	1,146	1,146	1,146
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Book Expense							
Labor		526	663	590	551	585	789	789	789
Non-Labor		348	64	240	131	261	357	357	357
NSE		0	0	0	0	0	0	0	0
Total		874	727	830	682	846	1,146	1,146	1,146
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: G. USS Billed-in from SDG&E
 Category-Sub: 1. USS Billed To CCTR for Customer Information
 Cost Center: 2200-8910.000 - Billed-in Cost Center for CUSTOMER INFORMATION

Calculation of Book Expense:

	2009 Adjusted-Recorded					2010 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.00	0	0	0	0	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	0	0	0	0	0.00	0	0	0	0	0.00
\$ Allocation										
Retained	0	0	0	0		0	0	0	0	
SEU	0	0	0	0		0	0	0	0	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	0	0	0	0	0.00	0	0	0	0	0.00
Total Retained	0	0	0	0		0	0	0	0	
Allocations In	585	261	0	846		789	357	0	1,146	
Book Expense	585	261	0	846		789	357	0	1,146	

	2011 Adjusted-Forecast					2012 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.00	0	0	0	0	0.00
Directly Allocated	0	0	0	0	0.00	0	0	0	0	0.00
Subj. To % Alloc.	0	0	0	0	0.00	0	0	0	0	0.00
\$ Allocation										
Retained	0	0	0	0		0	0	0	0	
SEU	0	0	0	0		0	0	0	0	
CORP	0	0	0	0		0	0	0	0	
Unreg	0	0	0	0		0	0	0	0	
Total Incurred	0	0	0	0	0.00	0	0	0	0	0.00
Total Retained	0	0	0	0		0	0	0	0	
Allocations In	789	357	0	1,146		789	357	0	1,146	
Book Expense	789	357	0	1,146		789	357	0	1,146	

Southern California Gas Company
Test Year 2012 GRC - APP
Shared Services Workpapers

Area: CS - INFORMATION
Witness: Wright, Gillian Alice
Category: G. USS Billed-in from SDG&E
Category-Sub: 1. USS Billed To CCTR for Customer Information
Cost Center: 2200-8910.000 - Billed-in Cost Center for CUSTOMER INFORMATION

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2009

N/A

Cost Center Allocation Percentage for 2010

N/A

Cost Center Allocation Percentage for 2011

N/A

Cost Center Allocation Percentage for 2012

N/A

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: G. USS Billed-in from SDG&E
 Category-Sub: 1. USS Billed To CCTR for Customer Information
 Cost Center: 2200-8910.000 - Billed-in Cost Center for CUSTOMER INFORMATION

Forecast Summary:

		In 2009 \$(000) "Incurred Costs"								
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
		<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Labor	Zero-Based	0	0	0	0	0	0	0	0	0
Non-Labor	Zero-Based	0	0	0	0	0	0	0	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Forecast Adjustment Details:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>Adj_Type</u>
2010 Total	0	0	0	0	0.0	
2011 Total	0	0	0	0	0.0	
2012 Total	0	0	0	0	0.0	

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

Area: CS - INFORMATION
 Witness: Wright, Gillian Alice
 Category: G. USS Billed-in from SDG&E
 Category-Sub: 1. USS Billed To CCTR for Customer Information
 Cost Center: 2200-8910.000 - Billed-in Cost Center for CUSTOMER INFORMATION

Determination of Adjusted-Recorded (Incurred Costs):

	2005 (\$000)	2006 (\$000)	2007 (\$000)	2008 (\$000)	2009 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Vacation & Sick (Nominal \$)					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Escalation to 2009\$					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2009\$)					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Southern California Gas Company
 Test Year 2012 GRC - APP
 Shared Services Workpapers

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Summary of Adjustments to Recorded:

Year	In Nominal \$ (000) "Incurred Costs"				
	2005	2006	2007	2008	2009
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded:

<u>Year/Expl.</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>From CCTR</u>	<u>RefID</u>
2005 Total	0	0	0	0.0			
2006 Total	0	0	0	0.0			
2007 Total	0	0	0	0.0			
2008 Total	0	0	0	0.0			
2009 Total	0	0	0	0.0			

Southern California Gas Company
 Test Year 2012 GRC - APP
 Non-Shared Service Workpapers

Area: CSIN - CS - INFORMATION
 Witness: Wright, Gillian Alice

Appendix A: List of Non-Shared Cost Centers

Cost Center	Sub	Description
2200-0177	000	CODES & STANDARDS MANAGER
2200-0229	000	COMMERCIAL & INDUSTRIAL MARKETS DIRECTOR
2200-0230	000	COMM/IND SERVICES EAST MANAGER
2200-0231	000	COMM/IND SERVICES NORTH MANGER
2200-0232	000	COMM/IND SERVICES SOUTH MANAGER
2200-0239	000	CUSTOMER SERVICES PROJECTS MANAGER
2200-0249	000	ENERGY MARKETS ACCOUNT MANAGER AB - USS
2200-0250	000	ENERGY MARKETS ACCOUNT MANAGER AC
2200-0251	000	ENERGY MARKETS ACCOUNT MANAGER AD
2200-0327	000	STORAGE PRODUCTS MANAGER
2200-0356	000	CARE
2200-0402	000	DIRECT ASSISTANCE PROGRAM
2200-0422	000	PRODUCTS & ESERVICES PROGRAMS
2200-0424	000	NEW CONTRUCTION MGR
2200-0426	000	RES INFO & AUDIT PROGRAMS MGR
2200-0428	000	CUSTOMER AND MARKET RESEARCH SCG
2200-0429	000	SMALL C&I SEGMENT MGR
2200-0843	000	USS - FEDERAL PROJ CUST SERVICE MGR.
2200-1197	000	RES REBATE PROGRAM MGR
2200-2032	000	SPECIAL PROGRAMS DIRECTOR (SCG)
2200-2033	000	CAM-STRATEGY & OUTREACH MGR
2200-2034	000	CAM-PROGRAM SUPPORT
2200-2035	000	CAM MEDICAL BASELINE
2200-2048	000	POLICY & SUPPORT
2200-2059	000	TECHNOLOGY DEVELOPMENT MANAGER
	001	RD&D - TECHNOLOGY DEVELOPMENT MANAGER
2200-2060	000	COMMERCIAL/INDUSTRIAL GAS MARKETS MANAGE
2200-2061	000	MAJOR CUSTOMER INDUSTRIAL SERVICE MANAGE
2200-2076	000	CREATIVE SERVICES & BRANDING SCG
2200-2077	000	REF- COMMERCIAL NEW CONSTRUCTION MANAGER
2200-2100	000	COMMERCIAL/INDUSTRIAL WEST MANAGER
2200-2118	000	ASSISTANCE PROGRAMS
2200-2136	000	C & I OTHER
2200-2143	000	WEB SERVICES SCG
2200-2177	000	CUSTOMER PROGRAMS DIRECTOR
2200-2187	000	ENERGY MARKETS ACCOUNT MANAGER AB-NSS
2200-2188	000	CUSTOMER COMMUNICATIONS SCG
2200-2193	000	ENERGY EFFICIENCY PARTNERSHIP MANAGER
2200-2194	000	NEW CONSTRUCTION SEGEMENT MANAGER
2200-2205	000	ENERGY EFFICIENCY NEW CONSTRUCTION
2200-2215	000	DIRECTOR OF COMM, RSRCH & WEB STRATEGY

Southern California Gas Company
Test Year 2012 GRC - APP
Non-Shared Service Workpapers

Area: CSIN - CS - INFORMATION
Witness: Wright, Gillian Alice

Appendix A: List of Non-Shared Cost Centers

<u>Cost Center</u>	<u>Sub</u>	<u>Description</u>
2200-2234	000	TECHNICAL SUPPORT
2200-2238	000	MARKET PLANNING AND ANALYSIS
2200-2269	000	CLEAN TRANSPORTATION MANAGER
2200-2287	000	DISTRIBUTED GENERATION PROGRAMS