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SOCALGAS

REBUTTAL TESTIMONY OF JEFFREY G. REED

**(CUSTOMER SERVICE TECHNOLOGIES,
POLICIES AND SOLUTIONS)**

June 2015

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



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SOCALGAS REBUTTAL TESTIMONY OF JEFFREY G. REED
(CUSTOMER SERVICE TECHNOLOGIES, POLICIES AND SOLUTIONS)

I. SUMMARY OF DIFFERENCES¹

TOTAL O&M - Constant 2013 (\$000)			
	Base Year 2013	Test Year 2016	Change
SoCalGas	13,066	20,857	7,791
ORA	13,066	13,793	727

II. INTRODUCTION

A. ORA

The Office of Ratepayer Advocates (ORA) issued its report on Customer Service Technologies, Policies and Solutions (CSTP&S) on April 24, 2015.² The following is a summary of ORA's positions:

- Non-Shared Research, Development and Demonstration (RD&D) Expenses: ORA uses a five-year average (2009-2013) as the basis for its Test Year (TY) 2016 forecast for RD&D expenses and recommends a TY 2016 revenue requirement of \$10.385 million;³ \$2.330 million less than the SoCalGas zero-based forecast for TY 2016.
- Shared Expenses: ORA states that it used a five-year average as the basis for its TY 2016 forecasts with adjustments for TY 2016 activities.⁴ ORA's forecast for several work groups, however, departed from the five-year average. Although ORA recommends reductions and disallowances in some cases, no explanation was provided on the specific adjustments made to the five-year average forecasts in relation to TY 2016 activity levels. ORA's estimate for Shared expenses was \$3.408 million; \$4.734 million less than SoCalGas' TY 2016 forecast. Specifically:
 - ORA found SoCalGas' TY 2016 forecast of \$0.665 million for its Biofuels and Low-Carbon Energy Resources Market Development work group to be reasonable and does not oppose the requested funding levels.⁵

¹ ORA is the only party that submitted testimony containing TY 2016 forecast expenses for Customer Service Technologies, Policies and Solutions. TURN submitted testimony recommending 2013 Customer Service Technologies, Policies and Solutions non-labor expenses totaling \$1,756 dollars for gear containing the utility name and logo be removed from rates. TURN did not propose any changes to the TY 2016 forecast for Customer Service Technologies, Policies and Solutions. Therefore no cost forecast is shown for TURN. See Exhibit (Ex.) TURN-Marcus, pages 44-48.

² Ex. ORA-13, Report on the Results of Operations for San Diego Gas & Electric Company and Southern California Gas Company, Test Year 2016 General Rate Case – Customer Services, page 96, beginning at line 9 through page 107.

³ Ex. ORA-13, page 97.

⁴ Ex. ORA-13, page 100.

⁵ Ex. ORA-13, page 101.

- 1 ○ ORA found SoCalGas' TY 2016 forecast of \$1.201 million for its Business
2 Strategy and Development work group to be reasonable and does not oppose the
3 requested funding levels.⁶
- 4 ○ ORA recommended zero funding in TY 2016 for SoCalGas' Policy and
5 Environmental Solutions (PE&S) work group, asserting that the entirety of the
6 activities performed by the work group should be classified as lobbying expense
7 for shareholder benefit and excluded from rates.⁷ ORA does not provide a TY
8 2016 forecast, but states that, should the California Public Utilities Commission
9 (Commission) reject ORA's recommendation for zero funding, the Commission
10 should adopt 2013 adjusted-recorded expenses of \$2.344 million "as an expense
11 level for SCG TY activities"⁸ and recommends additional tracking of outreach
12 activities.
- 13 ○ ORA recommended \$1.542 million for the Natural Gas Vehicle (NGV) Program
14 using a five-year average forecasting methodology.⁹ ORA suggests that any
15 incremental activity requirements be absorbed within the five-year average
16 revenue requirement.¹⁰
- 17 ● ORA claimed for some work groups (Non-Shared RD&D and Shared NGV Program)
18 that it had discovered through its analysis and data requests that the SoCalGas
19 forecasts included costs for "one-time, non-recurring and unusual expenses."¹¹ These
20 items were not identified or described in ORA's testimony and there was no
21 information provided on how these items impacted ORA's TY 2016 forecasts.
- 22 ● ORA claimed for some work groups (Non-Shared RD&D and Shared P&ES and
23 NGV Program) that SoCalGas' historical expenses included embedded costs that
24 could be redirected to incremental expenses in TY 2016.¹² ORA does not explain
25 how funding for non-incremental ongoing activities can be used to fund incremental
26 activities.

27 **B. TURN**

28 TURN (The Utility Reform Network) filed its testimony on May 15, 2015.¹³ The only
29 item regarding the CSTP&S testimony was a recommendation to exclude \$1,756 dollars in
30 expenses for "Clothing and Other Promotional Gear" from 2013 recorded expenses.¹⁴

⁶ Ex. ORA-13, page 101.

⁷ Ex. ORA-13, page 103.

⁸ Ex. ORA-13, page 104.

⁹ Ex. ORA-13, page 105.

¹⁰ Ex. ORA-13, page 107.

¹¹ Ex. ORA-13, page 99 and footnote 262, and page 105, and page 106 and footnote 277.

¹² Ex. ORA-13, page 98; page 104; and pages 105 through 106.

¹³ Ex. TURN-Marcus, Report on Various Results of Operations Issues in Southern California Gas Company's and San Diego Gas and Electric Company's 2016 Test Year General Rate Cases, May 15, 2015.

¹⁴ TURN-Marcus, Section V Base Year Accounting Adjustments, pages 44-48.

1 **III. REBUTTAL TO PARTIES’ O&M PROPOSALS**

2 **A. Non-Shared Services O&M**

NON-SHARED O&M - Constant 2013 (\$000)			
	Base Year 2013	Test Year 2016	Change
SoCalGas	8,080	12,715	4,635
ORA	8,080	10,385	2,305

3 **1. Research, Development and Demonstration Disputed Cost**

4 SoCalGas forecasts a TY 2016 revenue requirement for Non-Shared RD&D O&M
5 expenses of \$12.715 million. This is an increase of \$3.206 million over the authorized annual
6 funding of \$9.509 million for the 2012 funding cycle. This increase is necessary to address
7 expanding requirements for technology development to address air emissions, climate impacts
8 and system reliability and integrity.

9 **a. ORA**

10 ORA’s estimate for SoCalGas’ Non-Shared RD&D O&M expenses is \$10.385 million
11 (labor of \$1.304 million and non-labor of \$9.081 million). To arrive at its estimate, ORA utilized
12 a five-year average (2009-2013) of SoCalGas’ RD&D expenses. Although the RD&D program
13 is authorized at the program level, ORA forecast funding levels by sub-area as a basis for its
14 forecast.¹⁵ ORA’s RD&D program forecasts is \$2.330 million lower than SoCalGas’ TY 2016
15 forecast. ORA’s testimony can be summarized as follows:

- 16 • Forecasting Methodology: ORA asserts that a five-year average forecasting
17 methodology is appropriate for determining the revenue requirement for the
18 SoCalGas RD&D program.¹⁶ ORA claims that the Commission adopted an
19 averaging forecast methodology for SoCalGas’ RD&D program in the 2012 GRC.¹⁷
- 20 • Year-to-Year Spending Variation: ORA offers its assessment of year-to-year
21 variation in RD&D recorded expenses.¹⁸
- 22 • Funds Available from One-time or Unusual Costs and Projects in Progress: ORA
23 asserts that historical expenses for “one-time, non-recurring and unusual expenses”
24 have not been excluded from historical costs.¹⁹

¹⁵ SoCalGas also forecast by sub-area, although ORA forecasts are markedly lower than SoCalGas forecasts for several high-priority areas.

¹⁶ Ex. ORA-13, page 97.

¹⁷ Ex. ORA-13, page 99, footnote 263.

¹⁸ Ex. ORA-13, page 99.

¹⁹ Ex. ORA-13, page 99.

- 1 • Carry-over From Prior Funding Cycles: ORA asserts that, “SCG’s forecast includes
2 funding for projects that are continuous or ongoing in nature and have costs
3 embedded in historical expenses.”²⁰
- 4 • Need for the Proposed RD&D Projects: ORA states that it “discovered that not all of
5 SCG’s TY 2016 projects are required to meet regulatory mandates and to maintain
6 system safety and reliability because projects proposed in its TY 2016 testimony
7 could be eliminated or postponed.”²¹
- 8 • RD&D Balancing Account: ORA recommends continuing the balancing account
9 treatment of the SoCalGas RD&D program.²²

10 **i. SoCalGas Response to ORA RD&D Recommendation**

11 a. Forecasting Methodology

12 ORA’s TY 2016 revenue requirement forecast for RD&D is based on a five-year average.
13 A five-year average forecasting methodology, however, is not appropriate for RD&D.

14 In support of its methodology, ORA incorrectly states that the Commission adopted an
15 averaging forecast methodology in the 2012 GRC.²³ This is an incorrect interpretation of
16 SoCalGas’ direct testimony. ORA references Ex. SCG-13, p JGR-5 where it states, “D. 13-05-
17 010 adopted an average funding level of \$9.511 million...”. As discussed elsewhere, the RD&D
18 program is authorized for a multi-year cycle. \$9.511 million was simply stating the authorization
19 on an annualized basis. It was not in reference to any forecasting methodology. It was merely a
20 statement of what funding the Commission authorized. The Commission did not comment or
21 rule on the zero-based forecasting methodology used for the SoCalGas forecast in the TY 2012
22 GRC cycle in D. 13-05-010.

23 A zero-based methodology, developed from a forward looking assessment of RD&D
24 needs, is a more appropriate basis for forecasting this work group than historical averaging. As
25 discussed in my direct testimony,²⁴ the SoCalGas RD&D program is funded through a one-way
26 balancing account and is funded across each GRC cycle and trued up at the end of each GRC
27 cycle. The program is managed on a multi-year basis against a spending plan that matches the
28 authorized budget. For example, for the 2008 program cycle (the last complete cycle) the full-

²⁰ Ex. ORA-13, page 99.

²¹ Ex. ORA-13, page 99, footnote 261.

²² Ex. ORA-13, page 99.

²³ Ex. ORA-13, page 99, footnote 263.

²⁴ Ex. SCG-13-R, Direct Testimony of Jeffrey G. Reed page JGR-5.

1 cycle spend was within less than 1% of the authorized amount.²⁵ For this reason, a multi-year
2 average will be very close to the authorized funding level, by design.

3 ORA provides no testimony disputing the facts or accuracy of the RD&D needs
4 assessment and analysis presented in my direct testimony's "Technology Needs Assessment
5 Summary",²⁶ upon which the SoCalGas TY 2016 forecast is based. In particular, ORA does not
6 address the growing need for technology development to address air emissions reductions,
7 climate mitigation, reliability and system integrity. The ORA TY 2016 forecasts for the
8 Customer Applications, Transportation and Operations RD&D categories are 56%, 65% and
9 71% respectively of the SoCalGas forecasts and are offered without any discussion addressing
10 the increased RD&D drivers in those areas provided in direct testimony and the supporting
11 appendix noted above. These include the need to dramatically reduce nitrogen oxides (NOx) and
12 greenhouse gas (GHG) emissions in both transportation and customer applications and the
13 growing need for technology solutions to support system integrity, reliability and automation
14 (smart energy grid). Therefore, the SoCalGas forecast of \$12.715 million should be adopted as
15 proposed.

16 The need for increased funding is demonstrated by the increases in utility RD&D
17 addressing the same drivers in relation to the electric system operations and utilization. In 2010,
18 total authorized Public Interest Energy Research (PIER) funding for electric and natural gas
19 RD&D was \$69 million and \$24 million, respectively (nominal 2010 dollars).²⁷ However, in
20 2012, Commission Decision 12-05-037²⁸ established the Electric Program Investment Charge
21 (EPIC) program annual budget at \$162 million, more than doubling funding levels for electric
22 RD&D. SoCalGas is not requesting a similar increase here, but a reasonable increase to fund
23 RD&D efforts to address air emissions, climate impacts and system reliability and integrity.

²⁵ The CPUC authorized \$40 million (nominal) in SoCalGas RD&D program funding for the four-year 2008 - 2011 GRC cycle (D.13-05-010, page 636). SoCalGas' 2008 - 2011 recorded program expenses to the RD&D one-way balancing account were \$39.8 million (nominal) which is a difference of 0.5%.

²⁶ The "Technology Needs Assessment Summary" is attached to this testimony as Appendix C. For discussion of Gas Operations RD&D needs, please refer to the Direct Testimony of Raymond Stanford (SCG-07).

²⁷ CPUC Responsibilities for Renewable and Energy Efficiency Resource Commitments by Investor-Owned Utilities and Ratepayers Hearing on Public Goods Charge & the Renewable Resources Trust Fund Senate Energy, Utilities and Communications Committee, March 29, 2011. Available at: http://www.cpuc.ca.gov/NR/rdonlyres/E8F14974-C95E-4B65-81A0-852D72E8A4FE/0/CPUC_Senate_PGCreauthorizationHearing_032911_RenewablesEE.ppt

²⁸ Available at: http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/167664.pdf

1 work group and held two follow up telephone calls with ORA to answer questions about the data
2 request response. The first was held on February 24, 2015 and the second discussion occurred
3 on February 26, 2015, approximately 2 months prior to the filing of ORA's testimony. ORA did
4 not issue additional data requests. Notwithstanding the fact that ORA's assertions regarding
5 unusual historical costs are incorrect, ORA's claims would not impact the zero-based forecast for
6 TY 2016 because it is based on a forward-looking RD&D program plan as opposed to a
7 historical average.

8 d. Carry-over From Prior Funding Cycles

9 ORA asserts that projects that are ongoing from the prior funding cycle (e.g., projects
10 started in 2014 or 2015 that continue in 2016) reduce the need for funding in the new cycle
11 because they have already been partially funded.³⁴ The phenomenon of projects extending
12 beyond a funding cycle does not impact the forecast because a roughly equal number of projects
13 will be ongoing at the end of the cycle which balances the effect across the full cycle (funds
14 needed for ongoing projects at the beginning of the cycle are offset by projects started at the end
15 of the cycle that are not completed and therefore not fully funded during the cycle). The effect
16 that ORA describes actually has the reverse effect of what they claim. Carryover projects would
17 increase, not decrease funding requirements at the beginning of the cycle but, again, the
18 SoCalGas forecast is based on the full cycle including beginning and end effects.

19 e. Need for the Proposed RD&D Projects

20 ORA stated that it "discovered that not all of SCG's TY 2016 projects are required to
21 meet regulatory mandates and to maintain system safety and reliability because projects
22 proposed in its TY 2016 testimony could be eliminated or postponed."³⁵ ORA is simply noting
23 the obvious fact that, if the RD&D program is not funded, the planned projects cannot be
24 undertaken. RD&D projects are not mandated, but RD&D programs are explicitly recognized in
25 California Public Utilities Code Section 740.1, which allows for customer funding of RD&D
26 activities that meet established standards. All planned projects are in the customer interest, meet
27 the established standards, and should be funded.

³⁴ Ex. ORA-13, page 98, footnote 258.

³⁵ Ex. ORA-13, page 99, footnote 261.

1 f. Conclusion

2 In summary, ORA's proposed reductions to the requested RD&D program funding is not
3 adequately supported and should not be adopted. ORA's proposed forecast, based on historic
4 average spending, is inadequate to fund natural gas based RD&D projects needed to support
5 California's environmental policy goals and achieve greater natural gas reliability, lower costs,
6 and increased safety. SoCalGas' zero-based TY 2016 RD&D program forecast totaling \$12.715
7 million should be adopted.

8 **B. Shared Services O&M**

SHARED O&M - Constant 2013 (\$000)			
	Base Year 2013	Test Year 2016	Change
SoCalGas	4,986	8,142	3,156
ORA	4,986	3,408	(1,578)

9 SoCalGas forecasts \$8.142 million for its Customer Service Technologies, Policies and
10 Solutions Shared Services O&M expense for TY 2016 in four work groups: Policy and
11 Environmental Solutions (P&ES), Biofuels and Low-Carbon Energy Resources Market
12 Development, Business Strategy and Development and the Natural Gas Vehicle (NGV) Program.
13 There are disputed costs in the P&ES and NGV forecasts.

14 **1. Policy & Environmental Solutions Disputed Costs**

15 SoCalGas requests TY 2016 funding of \$4.005 million for P&ES O&M expenses (labor
16 of \$1.940 million and non-labor of \$2.065 million). The P&ES group was formed in 2013,
17 incorporating the existing Environmental Affairs (now Air Agency Liaison and Customer
18 Support) group and adding resources in the areas of Energy & Environmental Policy and
19 Legislative Analysis & Public Policy. The additional functions were necessary to address a
20 significant increase in the volume of new and proposed policies and regulations by agencies
21 regulating SoCalGas that impact SoCalGas operations, rates, and customers.

22 The core function of the newly formed groups is to provide analysis of the impacts of
23 policies and regulations to inform planning and policy development by SoCalGas, its customers
24 and other stakeholders such as state agencies and interested parties. The group engages on
25 matters that directly impact SoCalGas' operations, customers, and SoCalGas' efforts to provide
26 safe and reliable service, at reasonable rates.

1 The function of these groups is predominantly analytical and focuses on evaluating the
2 impacts of existing or potential policies and regulations on air emissions, greenhouse gas
3 emissions, system operations, and customers. The work products of these groups inform internal
4 decision making, support education and outreach to agency staff, policy makers and other
5 stakeholders to ensure that these groups have an accurate fact base with which to address matters
6 related to natural gas and natural gas infrastructure, and they support SoCalGas participation in
7 formal processes and proceedings impacting SoCalGas operations, rates, environmental
8 footprint, or customers. The external engagement of the group is predominantly with customers
9 and agencies that directly regulate SoCalGas. Engagement by EP&S staff with public officials
10 who are not with agencies that directly regulate SoCalGas has been, and is expected to be, de
11 minimis.

12 **a. ORA**

13 ORA disputes SoCalGas TY 2016 revenue requirement forecast of \$4.005 million
14 funding in TY 2016 for the P&ES work group, claiming that the entire amount should be
15 excluded from rates as lobbying expense. ORA states that “The primary purpose of this work
16 group is to engage in lobbying activities that benefit SoCalGas and its shareholders more than
17 ratepayers. These costs should be recorded below the line and be funded 100% by SoCalGas
18 shareholders.”³⁶

19 ORA’s assertion regarding lobbying appears to be based upon an incorrect understanding
20 of the function and activities of the P&ES work group. SoCalGas lobbying activities are
21 undertaken by the State Government Affairs group and those costs have been excluded from
22 GRC cost forecasts.

23 ORA’s assertion that the activities of the P&ES group are undertaken for the benefit of
24 shareholders is also incorrect. The activities undertaken by the P&ES group are for the benefit
25 of SoCalGas’ customers and are appropriate to include in SoCalGas’ authorized revenue
26 requirement. ORA claims that the activities of the P&ES group are undertaken primarily for the
27 benefit of shareholders. ORA does not, however, explain how P&ES activities benefit
28 shareholders. ORA’s claim is simply unsupported. The matters addressed by this group include
29 greenhouse gas mitigation, air emissions regulation, operational requirements, and how these
30 matters impact SoCalGas’ operations and customers. These efforts assist in the provision of safe

³⁶ Ex. ORA-13, page 103.

1 and reliable service at reasonable rates. Any collateral benefit to shareholders is speculative and
2 independent of the purpose of the group. The P&ES work groups and activities are described in
3 direct testimony and are summarized again below.³⁷

4 **i. Air Agency Liaison and Customer Support**

5 The Air Agency Liaison and Customer Support (formerly Environmental Affairs) group
6 is responsible for education of and assistance to customers regarding compliance with current
7 and proposed air emissions regulation and liaison with the air districts regarding these matters.
8 The 2012 GRC decision specifically found that such costs (then incurred by Environmental
9 Affairs) were appropriate for recovery through rates. There, the Commission recognizes that
10 “Since the use of natural gas by both large and small customers is affected by these air quality
11 standards and regulations, we believe it is important for SoCalGas to have a role in explaining to
12 its customers how the use of these standards and regulations will affect their businesses, and the
13 way in which they consume natural gas.”³⁸ It would certainly follow that explaining these
14 impacts to other stakeholders, including agency staff and decision makers, is equally appropriate
15 and important. Regardless, SoCalGas is permitted to incur reasonable expenditures related to
16 appearances before regulatory and other governmental bodies in connection with SoCalGas’
17 existing or proposed operations.

18 **ii. Energy & Environmental Policy**

19 The Energy & Environmental Policy group performs analysis of potential impacts of
20 existing or proposed regulations or state policies on SoCalGas operations, rates, and customers in
21 their use of natural gas; and to disseminate that information to internal and external stakeholders
22 (education and outreach). In addition, the analysis provides factual basis to support appearances
23 before regulatory or other governmental bodies in connection with SoCalGas’ operations. The
24 activities of this group relate to agencies that are direct regulators of SoCalGas: the California
25 Energy Commission, the air districts, District 9 of the United States Environmental Protection
26 Agency and the California Air Resources Board and the California Public Utilities Commission
27 (in support of the regulatory affairs group). SoCalGas must engage with its regulators on matters
28 relevant to its operations, its customers, and the use of natural gas. Such activities are
29 appropriate for rate recovery provided they are reasonable. A recap of some of the primary

³⁷ Ex. SCG-13-R, Direct Testimony of Jeffrey G. Reed pages JGR-20 through JGR-28.

³⁸ Decision (D.)13-05-010, page 642.

1 matters addressed by the Energy & Environmental Policy group is presented below. All of these
2 matters relate directly to SoCalGas operations, rates and the use of natural gas by customers.

3 **Air Quality Management Plan (AQMP) Development and Implementation** — Local
4 air districts must develop periodic AQMP identifying rules and strategies to meet the
5 National Ambient Air Quality Standards (NAAQS) established by the Federal
6 Environmental Protection Agency (EPA). Two of the local air districts served by
7 SoCalGas the South Coast Air Quality District (SCAQMD) and the San Joaquin Valley
8 Air Pollution Control District (SJVAPCD), are currently not in attainment for particulate
9 matter (PM) and ozone. By 2016, both districts must submit plans to meet current ozone
10 standards. The districts have already begun the public process to evaluate potential rules
11 and strategies to meet the standard. P&ES staff works with the district to develop cost
12 effective means to meet NAAQS. Activity levels will continue to increase as the districts
13 get closer to their 2016 deadlines and the subsequent implementation period.

14 **Natural Gas Act (AB1257) Implementation**—Beginning in November 2015, and every
15 four years thereafter, the California Energy Commission (CEC) will identify strategies to
16 maximize the benefits obtained from natural gas as an energy source, helping the state
17 realize environmental and cost benefits afforded by natural gas. The CEC’s ongoing and
18 continuous effort requires SoCalGas (through the P&ES group) to support and participate
19 in CEC’s working group and submit testimony to form the basis of periodic policy
20 reports.

21 **Greenhouse Gas Reductions**—Assembly Bill (AB) 32 requires California to reduce its
22 GHG emissions to 1990 levels by 2020 and executive order S-3-05 requires a reduction
23 to 80 percent below 1990 levels by 2050. In the First Update to the AB32 Scoping Plan
24 approved in May 2014, California Air Resources Board (CARB) lays out an ambitious
25 agenda to put regulations in place to meet the 2050 goal. Implementing this plan and
26 future updates will require significant effort by SoCalGas’ P&ES group in TY 2016 and
27 beyond.

28 **Zero Net Energy Building Policies**—The CEC’s 2013 Integrated Energy Policy Report
29 (IEPR) established a definition for zero net energy (ZNE) buildings in anticipation of
30 ZNE requirements for new construction starting in 2020. The treatment of natural gas
31 technologies in these regulations will have significant impact on natural gas customers
32 and SoCalGas operations to deliver natural gas to homes and buildings. The P&ES group
33 will be asked to assess alternatives and proposals related to this set of new regulations.

34 **Methane Emissions Reduction Policies** — New policies and regulations on methane
35 emissions from natural gas production, transmission and distribution are emerging at the
36 federal, state and local levels in order to meet federal and state climate change policies, as
37 well as address safety concerns related to natural gas operations. These regulations may
38 impact natural gas supplies and will impact SoCalGas operating practices and costs.³⁹
39 Significant effort is currently being expended by the P&ES group to review the numerous

³⁹ Ex. SCG-13-R, page 24 and page 25.

1 studies and mitigation proposals in this topic area and this is expected to increase in TY
2 2016.

3 **iii. Legislative Analysis and Public Policy Group**

4 The Legislative Analysis and Public Policy group engages in similar activities to the
5 Energy and Environmental Policy group but it focuses on analysis of the impact of proposed
6 legislation on SoCalGas operations, rates and customers in their utilization of natural gas. The
7 group also deals with various other matters related to local issues such as the Dig Alert program
8 or other matters that do not fall within the purview of the Energy and Environmental Policy
9 group.

10 **iv. Historical P&ES Costs**

11 ORA also takes issue with information provided to ORA to explain where historical
12 P&ES costs resided. In Ex. ORA-13, ORA states:

13 ORA attempted to review and analyze costs SCG incurred from 2009-2013 for
14 efforts to educate policy makers and assist in the development of reasoned
15 legislation ORA was trying to determine whether SCG employees were charging
16 time accurately between ratepayers and shareholders with regard to lobbying
17 activities. SCG did not provide the information and stated that “The hours and
18 costs of various staff members previously supporting policy work on an
19 occasional or *ad hoc* basis was not separately tracked and is therefore not
20 available.”⁴⁰

21 In making this statement, however, ORA appears to misunderstand SoCalGas’ response to data
22 request ORA-SCG-DR-043-TLG questions 12b and 12c.⁴¹

23 In ORA’s testimony, ORA cites SoCalGas response to questions 12b and 12c for
24 support.⁴² Questions 12b and 12c ask for historical cost detail on who was performing the
25 activities currently performed by the Policy and Environmental Solutions Group prior to
26 formation of the group in 2013. Specifically, Question 12b asks which work group performed
27 and what costs were associated with “state and federal agency policy analysis, engagement,
28 outreach and customer support related to existing and proposed state and federal policies, laws
29 and regulations concerning natural gas utilization.”⁴³ Question 12c asks the same question
30 related to, “efforts to educate policymakers and assist in the development of reasoned legislation,

⁴⁰ Ex. ORA-13, page 104.

⁴¹ Responses to data request ORA-SCG-DR-043-TLG questions 12b and 12c are attached to this testimony in Appendix A.

⁴² Ex. ORA-13, page 104, footnote 272.

⁴³ Appendix A, Attachment 2 (Data request ORA-SCG-DR-043-TLG questions 12b).

1 environmental policy and regulation (such as criteria pollution and greenhouse gas regulation),
2 and energy policy and regulation (such as CEC's IEPR)."⁴⁴

3 SoCalGas responded by providing the work groups and associated FTEs performing the
4 activities currently being performed by the P&ES group as well as the historical costs for the
5 work groups that mapped to the P&ES group.⁴⁵ SoCalGas provided cost and staffing levels at
6 the work group level rather than according to the specific activities that ORA requested because
7 costs are not recorded according to activity areas.

8 SoCalGas added to its response, for transparency and completeness of response, that
9 "hours and costs of various staff members previously supporting work on policy matters on an
10 occasional or ad hoc basis was not separately tracked and is, therefore, not available."⁴⁶ This
11 means that SoCalGas employees, in various departments, that are, for example, asked to provide
12 subject matter input related to policy issues, do not track or charge time to P&ES; rather, their
13 costs stay in their departments. These costs do not appear in P&ES historical costs nor are they
14 part of the TY forecast. As such, ORA was provided the requested historical data and there is no
15 basis for ORA's claim that ORA was unable to review and analyze the costs.

16 **v. ORA's 2013 P&ES Funding Alternative**

17 ORA suggests that, if the Commission rejects their zero funding request, a revenue
18 requirement of \$2.344 million should be adopted based on SoCalGas' 2013 adjusted-recorded
19 expenses.⁴⁷ This is well below the P&ES 2014 recorded expense of \$2.990 million. ORA
20 provides no support or rationale for its TY 2016 recommendation. SoCalGas has provided full
21 detail on its forecast for this group, including a detailed staffing breakdown and back-up for the
22 non-labor forecast.⁴⁸ SoCalGas' engagement on matters that impact its operations, rates and
23 customers is clearly in the customer's interest. The uptrend in activity in the P&ES work group
24 is evident in the historical data and SoCalGas' funding request of \$4.005 million is reasonable,
25 was fully supported in direct testimony and should be adopted.

⁴⁴ Appendix A, Attachment 2 (Data request ORA-SCG-DR-043-TLG questions 12b).

⁴⁵ Appendix A, Attachment 2 (Data request ORA-SCG-DR-043-TLG questions 12b).

⁴⁶ Appendix A, Attachment 2 (Data request ORA-SCG-DR-043-TLG questions 12b).

⁴⁷ Ex. ORA-13, page 104.

⁴⁸ Ex. SCG-13-R, page JGR-22, Table JGR-10; and Appendix A, Attachment 2 (response to ORA's data request ORA-SCG-DR-043-TLG, Question 12).

1 **vi. ORA’s Tracking Alternative**

2 ORA’s recommendation for additional tracking of activities is unnecessary, but, in the
3 interest of full transparency, SoCalGas would not object to reporting in the next GRC time spent
4 by the P&ES group performing education and outreach efforts with public officials who are not
5 regulators of SoCalGas (this would generally be state or local elected officials or appointees).
6 Such educational and outreach efforts are expected to be immaterial as a proportion of the total
7 activity of the group.

8 **2. Natural Gas Vehicle Program Disputed Cost**

9 The SoCalGas NGV program has been authorized since the mid-1990s to advance state
10 goals for expansion of the use of alternative fuel vehicles. In this GRC, SoCalGas proposes an
11 expansion of program funding from base year funding of \$1.432 million to a TY 2016 forecast of
12 \$2.272 million to continue ongoing program activities and to address new work requirements
13 related to an expanding NGV customer base, increasing volume of new NGV installations and
14 expanded activity on customer outreach, including activity in several new transportation areas
15 (such as off-road applications). SoCalGas is requesting \$0.839 million in incremental funding
16 over 2013 BY expense of \$1.432 million to support accelerating growth in the NGV customer
17 segment. ORA and TURN both dispute some costs forecast for the NGV program.

18 **a. ORA**

19 ORA takes issue with the SoCalGas TY2016 NGV request. In opposing SoCalGas’
20 NGV program O&M forecast, ORA states “...SoCalGas has not demonstrated that it requires
21 incremental funding of 58.55% over 2013 recorded expenses to perform activities associated
22 with its Natural Gas Vehicle Program. The Commission should adopt ORA’s estimate of \$1.542
23 million for SoCalGas Natural Gas Vehicle Program as a reasonable expense level for the TY
24 2016...”⁴⁹ ORA arrives at their forecast using a five-year average (2009-2013).

25 ORA did not dispute the program of work proposed for the NGV group but asserted that
26 the work could be accomplished at historical funding levels through realization of undefined
27 productivity gains and re-allocation of what it calls embedded costs.⁵⁰ These claims are not

⁴⁹ Ex. ORA-13, page 105.

⁵⁰ Ex. ORA-13, page 106.

1 supported by analysis of resource requirements and ignore the work driver analysis presented in
2 direct testimony and in response to ORA's data request.⁵¹

3 Increases in new service requests and customer count in the historical period were
4 absorbed by scaling back outreach activities, extending cycle time on some processes and on
5 process redesign efforts which have since been completed. The SoCalGas forecast is based on
6 analysis of the resources required to execute work volumes forecast for TY 2016 (volumes that
7 ORA does not dispute). While not contesting activity levels forecast for TY 2016, ORA states
8 that SoCalGas "has been able to manage significant market growth, customer interest and
9 associated utility outreach activities at expense levels that have remained stable between 2009
10 and 2014 (with the exception of 2012)."⁵² This does not address the difference in work drivers
11 and activity levels between the historical period and TY 2016. Current resources available for
12 customer outreach are not adequate to meet the program goal of 10 million (MM) therms of
13 annual new NGV load. The historical costs also do not reflect any expenses for addressing
14 planned new activity in off-road applications (marine, rail, equipment) and commuter / home
15 refueling applications described in direct testimony.⁵³

16 In addition, ORA states that "...SoCalGas TY 2016 forecast includes costs for activities
17 that are on-going and have costs already embedded in its historical expenses for the same or
18 similar activities..."⁵⁴ It is not activities, but activity levels (not the nature of the work but the
19 volume of the work) that are relevant. ORA is correct that the SoCalGas TY2016 forecast
20 includes funding to meet historical activity levels. It also includes funding for incremental
21 activity levels in TY 2016 that go beyond activity levels in the historical period.

22 The state has ambitious goals for alternative fuel vehicles. With the low price of natural
23 gas relative to other fuels, and advances in vehicle technology, the natural gas vehicle market in
24 southern California is poised for growth and the SoCalGas NGV program can play a significant
25 role in promoting attainment of this potential. The role of the Commission in promoting
26 alternative fuel vehicles is codified in Public Utilities Code 740.3(a), which instructs the

⁵¹ Ex. JGR-13, page JGR-31 and Appendix A, Attachment 3 (SoCalGas' response to data request ORA-SCG-DR-043-TLG question 13).

⁵² Ex. ORA-13, page 107.

⁵³ Ex. SCG-13-R, page JGR-31.

⁵⁴ Ex. ORA-13, pages 105 - 106.

1 Commission to evaluate and implement polices to "...promote the development of equipment
2 and infrastructure needed to facilitate the use of...natural gas to fuel low-emission vehicles..."

3 SoCalGas' TY 2016 forecast of \$2.271 million for the NGV program is fully supported
4 by its work-driver analysis and should be adopted.

5 **b. TURN**

6 TURN challenged \$1,756 in 2013 recorded-adjusted expense categorized as "Clothing
7 and Other Promotional Gear",⁵⁵ stating that these expenses are not necessary and should be
8 excluded from the TY 2016 forecast. These expenditures were for items such as pens and flash
9 drives containing the web address of the SoCalGas NGV site and were provided to current or
10 prospective NGV users for the purpose of promoting the use of natural gas as a transportation
11 fuel, which is the core purpose of the program. TURN's recommended reduction should be
12 rejected.

13 **IV. CONCLUSION**

14 To summarize, the Customer Services Technology, Policy and Solutions work area
15 comprises a number of functions that benefit customers by advancing technologies in support of
16 Commission goals, supporting customer environmental compliance, ensuring that there is a
17 proper fact base for establishing and implementing policies and regulations impacting SoCalGas
18 and its customers and promoting adoption of clean natural gas solutions such as natural gas
19 vehicles and biogas. SoCalGas TY 2016 forecasts are well supported and SoCalGas' forecasts
20 of a TY 2016 revenue requirement of \$12.715 million for its non-shared RD&D and its TY 2016
21 forecast for shared-service activities of \$8.142 million should be adopted.

22 This concludes my prepared rebuttal testimony.

⁵⁵ Ex. TURN-Marcus, Section V Base Year Accounting Adjustments, pages 44-48.

APPENDIX
TO REBUTTAL TESTIMONY
OF JEFFREY G. REED
ON BEHALF OF SOCALGAS
CUSTOMER SERVICE TECHNOLOGIES, POLICIES AND SOLUTIONS

Appendix Attachments

A. Responses to Data Request ORA-SCG-DR-043-TLG

1. Questions 10 and 11
2. Question 12
3. Question 13

B. Response to Data Request SoCalGas-ORA-DEF-004-TLG; Question B.1

C. Technology Needs Assessment Summary

(Appendix B of Ex. SCG-013-R; Direct Testimony of Jeffrey G. Reed;
Customer Service Technologies, Policies and Solutions)

Appendix A-Attachment A.1
ORA-SCG-DR-043-TLG, Questions 10 and 11

**ORA DATA REQUEST
ORA-SCG-DR-043-TLG
SOCALGAS 2016 GRC – A.14-11-004
SOCALGAS RESPONSE
DATE RECEIVED: JANUARY 21, 2015
DATE RESPONDED: FEBRUARY 5, 2015**

10. For SCG’s Customer Service Technologies, Policies and Solutions for 2009-2013 provide, in a spreadsheet similar to the one shown in workpapers on page 65, a detailed and itemized listing of all labor and non-labor expenses (note: do not lump expenses together in the response, separate and identify the expenses by the categories as requested below) incurred for 1) lobbying activities (“efforts to educate policymakers and assist in the development of reasoned legislation, environmental policy and regulation...”; see pg. JGR-20) , 2) employee meals, 3) employee luncheons, 4) vendor payments for offsite meetings and events (provide copies of contracts for costs and services provided), 5) all entertainment expenses, 6) employee recognition activities, 7) sporting events, 8) bonuses/awards, 9) employee/company memberships and dues, 10) all contributions, 11) charitable events, 12) brand awareness and loyalty surveys/campaigns/events, and 13) other employee reimbursable expenses.

SoCalGas Response:

The expenses shown in the attachment “ORA-SCG-DR-043-TLG-Q10” reflect the dollars spent in 2009-2013 as charged by the operating areas. The data shows that there is variation in categories used, which is dependent upon the people responsible for assigning costs. All recorded costs are included in the attachment. Not all categories requested by ORA are specifically or separately identifiable. For example, brand awareness and loyalty surveys/campaigns/events are not separately identified from other advertising or event expenses.

Please note that lobbying activities are not included in recorded or requested GRC dollars. Lobbying activities are out of the scope of the GRC and are not ratepayer funded.

		TOTAL O&M (NSS+USS)						Fiscal year		2010		2011		2012		2013	
NON-SHARED Total										Total 2010		Total 2011		Total 2012		Total 2013	
Workpaper	Workpaper Description	Cost Type	C/E Categ	Cost Element	Cost Element Description	2009	2010	2011	2012	2013							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Straight Time Labor	6110020	SAL-MGMT T&1/2	\$10,171,320	\$16,636,561	\$17,826,358	\$13,677,020	\$13,067,495							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Overtime Labor T&1/2	6110030	SAL-MGMT T&1/2	\$901,597	\$1,099,235	\$1,019,241	\$1,152,421	\$858,590							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Straight Time Labor	6110080	SAL-CLERICAL/TECH ST	\$12,680	\$21,126	\$18,469	\$15,247	\$5,776							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Straight Time Labor	6110110	SAL-UNION S/T	\$46,096	\$45,164	\$55,564	\$72,892	\$32,902							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Overtime Labor T&1/2	6110120	SAL-UNION T&1/2	\$0	\$1,084	\$3,212	\$2,959	\$9,006							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Overtime Labor DT	6110130	SAL-UNION D/T	\$0	\$0	\$0	\$158	\$3,586							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Straight Time Labor	6110140	SAL-TEMP P-T S/T	\$0	\$0	\$0	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Straight Time Labor	6110170	SAL-TEMP P-T S/T	\$40,477	\$24,880	\$67,387	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Straight Time Labor	6110171	SAL-PT TIME MGT S/T	\$0	\$0	\$0	\$3,454	\$13,591							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Straight Time Labor	6110172	SAL-PT TIME C&T S/T	\$0	\$0	\$0	\$0	\$44,449							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Overtime Labor T&1/2	6110180	SAL-TEMP P-T T&1/2	\$0	\$0	\$149	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Paid Time Off Labor	V&S	Add V&S to Adj-Rec Labor	\$180,854	\$208,272	\$193,344	\$199,666	\$161,719							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Labor	Employee Related	Labor	TOTAL LABOR	\$1,181,703	\$1,399,761	\$1,357,367	\$1,446,797	\$1,135,032							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Related	6120019	EMP BEN-TRANSP ALLOW	\$145	\$489	\$126	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Recognition	6120145	EMP BEN-GIFT CARDS	\$109	\$0	\$0	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Reimbursable	6130001	EMP TRVL-AIR	\$48,441	\$62,543	\$48,934	\$39,140	\$43,305							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Reimbursable	6130002	EMP TRVL-RAIL	\$5,992	\$2,334	\$124	\$348	\$471							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Meals	6130010	EMP TRVL-MEALS&TIP	\$0	\$343	\$0	\$208	\$14							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Reimbursable	6130011	EMP TRVL-INCIDENTALS	\$430	\$399	\$336	\$288	\$583							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Reimbursable	6130012	EMP TRVL-MILEAGE	\$13,200	\$19,242	\$16,988	\$13,817	\$12,097							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Reimbursable	6130014	EMP TRVL-PARKING	\$4,498	\$3,432	\$3,485	\$3,066	\$3,104							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Meals	6130016	EMP TRVL-MEALS/ENT	\$13,157	\$14,243	\$8,004	\$17,499	\$6,861							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Reimbursable	6130017	EMP TRVL-CAR RENTAL	\$3,655	\$4,294	\$2,522	\$4,753	\$1,346							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Reimbursable	6130020	EMP TRVL-TAXI/SHUTTLE	\$6,066	\$4,943	\$4,369	\$3,725	\$4,184							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Reimbursable	6130023	EMP TRVL-HOTEL/LODG	\$54,057	\$59,991	\$43,911	\$44,266	\$38,202							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Events	6130035	EMP BEN-CORP EVENTS	\$2,432	\$0	\$0	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Reimbursable	6130050	EMP OTHR-SPOUSE TRVL	\$0	\$0	\$0	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Employee Reimbursable	6130050	EMP TRVL-OTHER	\$243	\$205	\$312	\$234	\$354							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6211380	MATL-ELECTRIC PARTS	\$2,187	\$2,898	\$0	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Communication/Adv Svcs	6211470	MATL-PRINTED MATERIALS	\$372	\$110	\$95	\$113	\$1,858							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6211535	MATL-VEHICLES	\$0	\$0	\$0	\$45,792	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Office/Fum Supplies	6213005	MATL-OFFICE SUPPLIES	\$3,831	\$3,646	\$2,821	\$2,887	\$2,592							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6213010	MATL-PCARD/FIELD CD	\$575	\$312	\$526	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Office/Fum Supplies	6213015	MATL-OFC FURNITURE	\$222	\$0	\$0	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Office/Fum Supplies	6213020	MATL-OFFICE EQUIPMT	\$131	\$208	\$10	\$0	\$142							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Computer Related	6213025	MATL-COMPUTER EQUIP	\$134	\$300	\$0	\$1,249	\$5,357							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Computer Related	6213030	MATL-SOFTWARE	\$1,610	\$665	\$3,088	\$0	\$5,392							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6213035	MATL-GAS&DIESEL FUEL	\$273	\$320	\$244	\$951	\$228							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6213060	MATL-VEHICLE PARTS	\$0	\$301	\$1,724	\$323	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6213065	MATL-TIRES & RECAPS	\$0	\$0	\$0	\$2,511	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6213070	MATL-PARTS	\$0	\$0	\$4,319	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6213080	MATL-REPAIR PARTS	\$0	\$0	\$1,438	\$0	\$1,107							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6213085	MATL-MISCELLANEOUS	\$2,199	\$7,168	\$14,256	\$12,719	\$27,741							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6213090	MATL-FREIGHT	\$0	\$180	\$753	\$2,391	\$672							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6213095	MATL-SUBSCR&PUBLICN	\$0	\$154	\$105	\$15	\$400							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6213115	MATL-ASPHALT	\$0	\$3,009	\$7,903	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Other Materials	6213155	MATL-CATHODIC EQUIPM	\$13,125	\$9,189	\$1,185	\$0	\$0							
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Computer Related	6213180	MATL-COMPUTR HARDWAR	\$14,211	\$852	\$587	\$409	\$832							

		Fiscal year		2009		2010		2011		2012		2013	
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6220670	SRV-RESRCH & DEVEL	\$545,265	\$1,054,637	\$277,599	\$1,013,055	\$686,457			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Events	6220811	SRV-CUSTOMER EVENT	\$0	\$0	\$0	\$2,188	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Events	6220813	SRV-SPNSR BUS & CVC	\$0	\$0	\$0	\$0	\$5,000			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6220840	SRV-VEH&EQUIP RENTAL	\$0	\$0	\$0	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6220846	SRV-VEHICLE TOWING	\$0	\$195	\$0	\$0	\$150			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6220850	SRV-VEH&EQUIP W/OPER	\$0	\$8,635	\$25,539	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6220860	SRV-MAINT/REPAIR	\$4,432	\$5,404	\$4,398	\$8,693	\$1,528			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Telephone Expenses	6220870	SRV-PHONE&COMMUN SYS	\$0	\$26	\$0	\$5,088	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Contract Services	6220880	SRV-CONSTR-GAS PIPE	\$0	\$3,864	\$15,969	\$3,176	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6221010	SRV-STORAGE	\$1,961	\$0	\$0	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6221015	SRV-CORP REC-ARCHIVE	\$3,047	\$0	\$0	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6221040	SRV-FREIGHT AUDIT	\$0	\$1,303	\$12	\$0	\$720			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6221050	SRV-LABORATORY	\$9,612	\$14,043	\$15,514	\$9,634	\$6,489			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Contract Services	6230004	#SRV-CONTR LBR	\$0	\$0	\$0	\$25,440	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6230095	SRV-MEDIATION	\$0	\$0	\$0	\$127	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Communication/Adv Svcs	6230140	SRV-MEDIA RELATIONS	\$0	\$432	\$0	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Communication/Adv Svcs	6230160	SRV-NEWS PHOTO	\$6,052	\$0	\$923	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Computer Related	6230250	SRV-SFTWR MAINT&LSE	\$0	\$0	\$0	\$2,076	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Communication/Adv Svcs	6230390	SRV-PNTGR GRPH VIDEO	\$23	\$12,753	\$4,191	\$0	\$11			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Office/Fum Supplies	6230434	SRV-COURIER	\$0	\$378	\$0	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Events	6230540	SRV-HOLIDAY EVENTS	\$2,233	\$0	\$0	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Events	6230680	SRV-EVENT & TICKETS	\$332	\$0	\$364	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Events	6230681	SRV-EV & TKT-CHGBK	\$2,537	\$0	\$0	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6231000	RDD EQUITY INVESTMENTS	\$0	\$1,378,006	\$2,703,609	\$639,947	\$250,000			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Dues	6250000	DUES	\$299,136	\$22,150	\$0	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Dues	6250001	DUES-BUSINESS/PROFES	\$716,787	\$1,509,635	\$781,417	\$151,196	\$768,997			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Purchased Services	6260001	VEH-EXPRD AMORT-EXTIE	\$0	\$0	\$97,761	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Misc NL Costs	6310020	PMT FOR EASEMENT / R	\$0	\$0	\$0	\$37	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Telephone Expenses	6320000	TELE-COMMUNICATIONS	\$80	\$1,111	\$633	\$955	\$73			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Telephone Expenses	6320001	TELE-COMM SYS COSTS	\$377	\$574	\$0	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Telephone Expenses	6320002	TELE-CELLULAR PHONES	\$9,362	\$8,474	\$9,760	\$6,579	\$4,220			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Telephone Expenses	6320003	TELE-CALLING CARDS	\$16	\$18	\$3	\$26	\$2			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Telephone Expenses	6320010	MEASURED BUSINESS LI	\$0	\$0	\$906	\$1,749	\$1,952			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Misc NL Costs	6340000	Cash Discounts on Pu	\$0	(\$57)	(\$2)	(\$13)	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Misc NL Costs	6350742	MISC CHARGES	\$33,791	\$0	\$0	\$88	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	Misc NL Costs	6405012	A&G-GOVT PMTS-PERMIT	\$0	\$0	\$493	\$0	\$0			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	Non-Labor	TOTAL	Non-Labor	TOTAL NON-LABOR	\$8,989,617	\$11,264,366	\$11,287,999	\$6,919,570	\$6,945,173			
2RD001.001	R-RD&D CS TECHNOLOGY DEVELOPMENT	TOTAL	TOTAL ALL	TOTAL ALL		\$10,171,320	\$12,664,126	\$12,645,366	\$8,366,368	\$8,080,205			

		Fiscal year		2009		2010		2011		2012		2013	
2200-0234	SHARED SERVICES TOTAL												
2200-0234	NGV PROGRAM	Labor	Straight Time Labor	6110020	SAL-MGMT S/T	\$2,697,105	\$3,972,435	\$5,180,992	\$5,310,652	\$4,987,291			
2200-0234	NGV PROGRAM	Labor	Straight Time Labor	6110080	SAL-CLERICAL/TECH ST	\$528,608	\$562,658	\$495,682	\$489,711	\$485,131			
2200-0234	NGV PROGRAM	Labor	Straight Time Labor	6110110	SAL-UNION S/T	\$42,526	\$42,297	\$42,572	\$41,948	\$42,878			
2200-0234	NGV PROGRAM	Labor	Other Labor	6110256	SAL-MISC	\$0	\$0	\$0	\$0	\$0			
2200-0234	NGV PROGRAM	Labor	Paid Time Off Labor	V&S	Adj V&S to Adj-Rec Labor	\$103,669	\$105,863	\$89,404	\$2,631	\$1,679			
2200-0234	NGV PROGRAM	Labor	TOTAL LABOR	TOTAL LABOR	\$676,098	\$710,818	\$627,658	\$619,830	\$617,721				
2200-0234	NGV PROGRAM	Non-Labor	Employee Related	6120053	EMP BEN-MISC	\$0	\$0	\$0	\$0	\$0			
2200-0234	NGV PROGRAM	Non-Labor	Employee Recognition	6120145	EMP BEN-GIFT CARDS	\$0	\$0	\$0	\$102	\$0			
2200-0234	NGV PROGRAM	Non-Labor	Employee Reimbursable	6130001	EMP TRVL-AIR	\$1,399	\$5,096	\$5,445	\$5,631	\$12,814			
2200-0234	NGV PROGRAM	Non-Labor	Employee Reimbursable	6130002	EMP TRVL-RAIL	\$102	\$324	\$52	\$0	\$137			
2200-0234	NGV PROGRAM	Non-Labor	Employee Reimbursable	6130011	EMP TRVL-INCIDENTALS	\$5	\$36	\$14	\$0	\$31			
2200-0234	NGV PROGRAM	Non-Labor	Employee Reimbursable	6130012	EMP TRVL-MILEAGE	\$21,729	\$21,263	\$14,328	\$15,694	\$15,647			
2200-0234	NGV PROGRAM	Non-Labor	Employee Reimbursable	6130014	EMP TRVL-PARKING	\$433	\$606	\$617	\$920	\$732			
2200-0234	NGV PROGRAM	Non-Labor	Employee Meals	6130015	EMP TRVL-MEALS/ENT	\$1,874	\$2,648	\$2,669	\$2,189	\$2,734			

										Fiscal year		2009	2010	2011	2012	2013
2200-0234	NGV PROGRAM		Non-Labor	Employee Reimbursable	6130016	EMP TRVL-CAR RENTAL		\$0	\$0	\$301	\$311	\$0	\$0	\$301	\$311	\$0
2200-0234	NGV PROGRAM		Non-Labor	Employee Reimbursable	6130017	EMP TRVL-TAXI/SHUTTLE		\$90	\$691	\$567	\$870	\$868				\$868
2200-0234	NGV PROGRAM		Non-Labor	Employee Reimbursable	6130020	EMP TRVL-HOTEL/LODG		\$1,788	\$4,809	\$3,614	\$3,062	\$6,895				\$6,895
2200-0234	NGV PROGRAM		Non-Labor	Employee Reimbursable	6130025	EMP TRV-SUPP MILEAGE		\$945	\$0	\$0	\$44	\$281				\$281
2200-0234	NGV PROGRAM		Non-Labor	Employee Reimbursable	6130050	EMP TRVL-OTHER		\$5	\$0	\$0	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6211470	MATL-PRINTED MATERIALS		\$0	\$0	\$728	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Office/Furn Supplies	6213005	MATL-OFFICE SUPPLIES		\$1,848	\$1,921	\$1,320	\$1,272	\$628				\$628
2200-0234	NGV PROGRAM		Non-Labor	Office/Furn Supplies	6213015	MATL-OFC FURNITURE		\$0	\$273	\$0	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Computer Related	6213030	MATL-SOFTWARE		\$0	\$733	\$0	\$295	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Other Materials	6213035	MATL-GAS&DIESEL FUEL		\$24	\$55	\$68	\$96	\$136				\$136
2200-0234	NGV PROGRAM		Non-Labor	Other Materials	6213050	MATL-NGV FUEL		\$0	\$0	\$0	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Other Materials	6213085	MATL-MISCELLANEOUS		\$2,993	\$2,201	\$4,230	\$1,128	\$1,890				\$1,890
2200-0234	NGV PROGRAM		Non-Labor	Other Materials	6213095	MATL-SUBSCR&PUBLICN		\$5,527	\$1,101	\$5,910	\$7,794	\$5,746				\$5,746
2200-0234	NGV PROGRAM		Non-Labor	Other Materials	6213140	MATL-BUILDING MATERI		\$0	\$0	\$0	\$424	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Computer Related	6213180	MATL-COMPUTR HARDWAR		\$705	\$2,049	\$686	\$43	\$18				\$18
2200-0234	NGV PROGRAM		Non-Labor	Office/Furn Supplies	6213205	MATL-COPIERS		\$0	\$0	\$0	\$243	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6213475	MATL-PRINT-BROCHURES		\$0	\$0	\$287	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6213480	MATL-PROMOTNL ITEMS		\$3,376	\$2,988	\$3,494	\$3,117	\$1,756				\$1,756
2200-0234	NGV PROGRAM		Non-Labor	Telephone Expenses	6213560	MATL-TELECOM EQUIPMT		\$115	\$314	\$76	\$31	\$54				\$54
2200-0234	NGV PROGRAM		Non-Labor	Other Materials	6213680	MATL-CUSTOMER EVENT		\$2,898	\$0	\$0	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Consulting	6220002	SRV-CONSULTING		\$310,567	\$222,512	\$253,934	\$467,291	\$574,795				\$574,795
2200-0234	NGV PROGRAM		Non-Labor	Supplemental Workforce	6220007	SRV-CONTR-TIME&EQUIP		\$0	\$0	\$0	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6220030	SRV-ADVT & MKTG PUBL		\$6,072	\$0	\$0	\$3,578	\$2,280				\$2,280
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6220050	SRV-ADVTSG&MKTG		\$8,304	\$15,275	\$10,466	\$25,928	\$10,163				\$10,163
2200-0234	NGV PROGRAM		Non-Labor	Market Research	6220051	MARKET RESEARCH		\$0	\$8,047	\$1,410	\$35,576	\$12,600				\$12,600
2200-0234	NGV PROGRAM		Non-Labor	Employee Lunches	6220060	SRV-CATERING		\$697	\$11,299	\$6,118	\$11,293	\$3,565				\$3,565
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6220115	SRV-OUTDOOR ADVERTIS		\$0	\$0	\$0	\$1,926	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Purchased Services	6220190	SRV-SECURITY		\$0	\$0	\$0	\$0	\$612				\$612
2200-0234	NGV PROGRAM		Non-Labor	Supplemental Workforce	6220380	SRV-TEMP AGENCY LABOR		\$10,816	\$0	\$202	\$572	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6220390	SRV-PRINT/GRAPHICS		\$15,446	\$12,077	\$15,317	\$10,686	\$7,917				\$7,917
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6220401	SRV-BUSINESS CARDS		\$98	\$91	\$32	\$261	\$30				\$30
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6220402	SRV-PRNTG STATIONERY		\$42	\$0	\$0	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6220420	SRV-COPY CENTER		\$0	\$0	\$0	\$127	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6220422	SRV-COPY-SERVICE CTR		\$1,700	\$1,145	\$971	\$1,101	\$1,180				\$1,180
2200-0234	NGV PROGRAM		Non-Labor	Purchased Services	6220431	SRV-MAIL-SPEC PROJ		\$92	\$0	\$0	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Purchased Services	6220432	SRV-MAIL-O-NIGHT EXP		\$0	\$0	\$0	\$215	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Purchased Services	6220450	SRV-MAIL-POSTAGE		\$1,053	\$174	\$0	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Purchased Services	6220580	SRV-ONLINE SRV MISC		\$0	\$47	\$15	\$24	\$64				\$64
2200-0234	NGV PROGRAM		Non-Labor	Purchased Services	6220590	SRV-MISCELLANEOUS		\$5,989	\$9,065	\$5,721	\$2,846	\$8,395				\$8,395
2200-0234	NGV PROGRAM		Non-Labor	Consulting	6220600	SRV-CONSULTING-OTHER		\$0	\$0	\$0	\$64,052	(\$59,401)				(\$59,401)
2200-0234	NGV PROGRAM		Non-Labor	Employee Training	6220640	SRV-TRNG & SEM IN-H		\$982	\$2,453	\$2,268	\$1,196	\$725				\$725
2200-0234	NGV PROGRAM		Non-Labor	Purchased Services	6220670	SRV-RESRCH & DEVEL		\$0	\$349	\$0	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Events	6220811	SRV-CUSTOMER EVENT		\$0	\$0	\$87,552	\$31,041	\$1,800				\$1,800
2200-0234	NGV PROGRAM		Non-Labor	Events	6220812	SRV-BUS & CIVIC MTGS		\$0	\$0	\$0	\$0	\$4,157				\$4,157
2200-0234	NGV PROGRAM		Non-Labor	Events	6220813	SRV-SPNSR BUS & CVC		\$83,286	\$32,424	\$90,808	\$75,597	\$31,529				\$31,529
2200-0234	NGV PROGRAM		Non-Labor	Purchased Services	6221010	SRV-STORAGE		\$0	\$0	\$1,593	\$920	\$1,800				\$1,800
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6230030	SRV-ADVERT LIT		\$0	\$0	\$0	\$2,392	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6230160	SRV-NEWS PHOTO		\$0	\$0	\$0	\$136	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Computer Related	6230250	SRV-SFTWR MAINT&LSE		\$2,437	\$2,675	\$2,757	\$2,833	\$2,924				\$2,924
2200-0234	NGV PROGRAM		Non-Labor	Communication/Adv Svcs	6230390	SRV-PNTG GRPH VIDEO		\$0	\$0	\$0	\$113,167	\$0				\$113,167
2200-0234	NGV PROGRAM		Non-Labor	Events	6230540	SRV-HOLIDAY EVENTS		\$0	\$0	\$0	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Employee Training	6230641	SRV-TRNG & SEMIN EXT		\$0	\$215,063	\$166,743	\$74,591	\$4,135				\$4,135
2200-0234	NGV PROGRAM		Non-Labor	Events	6230680	SRV-EVENT & TICKETS		\$374	\$643	\$5,222	\$0	\$3,284				\$3,284
2200-0234	NGV PROGRAM		Non-Labor	Events	6230681	SRV-EV & TKT-CHGBK		\$0	\$0	\$689	\$0	\$0				\$0
2200-0234	NGV PROGRAM		Non-Labor	Dues	6250001	DUES-BUSINESS/PROFES		\$250,897	\$169,536	\$134,911	\$299,461	\$145,730				\$145,730

2009-2013	2009	2010	2011	2012	2013	Fiscal year		2009	2010	2011	2012	2013
						2009	2010					
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Employee Reimbursable	6130002	EMP TRVL-RAIL			\$949	\$631	\$11	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Employee Meals	6130010	EMP TRVL-MEALS&TIP			\$0	\$0	\$0	\$0	\$44
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Employee Reimbursable	6130012	EMP TRVL-MILEAGE			\$2,913	\$1,851	\$2,169	\$931	\$1,099
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Employee Reimbursable	6130014	EMP TRVL-PARKING			\$191	\$458	\$245	\$270	\$386
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Employee Meals	6130015	EMP TRVL-MEALS/ENT			\$279	\$1,390	\$1,261	\$1,561	\$288
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Employee Reimbursable	6130017	EMP TRVL-CAR RENTAL			\$870	\$697	\$134	\$375	\$768
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Employee Reimbursable	6130020	EMP TRVL-TAXI/SHUTTLE			\$85	\$820	\$733	\$859	\$499
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Employee Reimbursable	6130023	EMP TRVL-HOTEL/LODGE			\$550	\$2,151	\$1,919	\$1,373	\$3,549
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Events	6130050	EMP BEN-CORP EVENTS			\$25	\$0	\$0	\$0	\$1,000
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Communication/Adv Svcs	6211470	MATL-PRINTED MATERLS			\$0	\$0	\$0	\$0	\$14
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Office/Furn Supplies	6213005	MATL-OFFICE SUPPLIES			\$77	\$299	\$451	\$253	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Computer Related	6213030	MATL-SOFTWARE			\$0	\$0	\$43	\$591	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Other Materials	6213035	MATL-GAS&DIESEL FUEL			\$60	\$28	\$114	\$135	\$454
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Other Materials	6213085	MATL-MISCELLANEOUS			\$40	\$0	\$0	\$298	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Other Materials	6213095	MATL-SUBSCR&PUBLCN			\$0	\$148	\$0	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Computer Related	6213180	MATL-COMPUTR HARDWAR			\$244	\$116	\$57	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Other Materials	6213680	MATL-CUSTOMER EVENT			\$4,580	\$0	\$5,222	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Purchased Services	6220000	PURCHASED SERVICES			\$0	\$32,589	\$126,722	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Consulting	6220002	SRV-CONSULTING			\$0	(\$19,313)	\$0	\$642	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Communication/Adv Svcs	6220050	SRV-ADVRTSNG&MKTG			\$372	\$0	\$0	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Market Research	6220051	MARKET RESEARCH			\$0	\$22,226	\$0	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Employee Lunches	6220060	SRV-CATERING			\$178	\$1,024	\$2,171	\$890	\$415
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Computer Related	6220250	SRV-SOFTWR MAINT&LSE			\$0	\$0	\$5,944	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Computer Related	6220360	SRV-CMPTR ORD FLMT			\$0	\$185	\$0	\$0	\$803
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Communication/Adv Svcs	6220390	SRV-PRINT/GRAPHICS			\$0	\$0	\$1,913	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Communication/Adv Svcs	6220410	SRV-PUBLICITNS&SUBSCR			\$31,661	\$0	\$0	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Communication/Adv Svcs	6220422	SRV-COPY-SERVICE CTR			\$0	\$0	\$26	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Supplemental Workforce	6220480	SRV-ENGINEERING			\$0	\$103,013	\$58,557	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Purchased Services	6220570	SRV-DESIGN			\$0	\$28,433	\$0	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Consulting	6220600	SRV-CONSULTING-OTHER			\$10,988	\$322,441	\$60,861	\$92,991	\$78,150
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Employee Training	6220640	SRV-TRNG & SEM IN-H			\$1,114	\$6,387	\$1,515	\$3,542	\$3,020
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Events	6220811	SRV-CUSTOMER EVENT			\$0	\$0	\$1,519	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Communication/Adv Svcs	6230390	SRV-PNTG GRPH VIDEO			\$0	\$0	\$16	\$26	\$148
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Dues	6250001	DUES-BUSINESS/PROFES			\$147	\$134	\$146	\$275	\$147
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Customer Refunds	6290400	MISC REIMBURSEMENTS			\$0	\$0	\$0	\$1,699	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Telephone Expenses	6320000	TELE-COMMUNICATIONS			\$0	\$0	\$35	\$28	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Telephone Expenses	6320002	TELE-CELLULAR PHONES			\$2,217	\$2,291	\$3,437	\$1,742	\$865
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Telephone Expenses	6320004	TELE-PAGERS			\$64	\$5	\$0	\$0	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	Misc NL Costs	6350710	CREDIT FOR CASH COLL			\$0	\$0	\$0	(\$48)	\$0
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	TOTAL	Non-Labor	TOTAL NON-LABOR			\$58,444	\$422,169	\$279,437	\$112,014	\$93,652
2200-2286	BIOFUELS & LOW-CRBN RESRCS MKT DEV	Non-Labor	TOTAL	TOTAL ALL				\$282,785	\$821,456	\$636,976	\$333,575	\$226,361
2200-2288	ENVIRONMENTAL AFFAIRS	Labor	Straight Time Labor	6110020	SAL-MGMT S/T			\$323,453	\$327,912	\$379,119	\$395,156	\$451,570
2200-2288	ENVIRONMENTAL AFFAIRS	Labor	Other Labor	6110110	SAL-UNION S/T			\$0	\$0	\$16	\$0	\$184
2200-2288	ENVIRONMENTAL AFFAIRS	Labor	Other Labor	6110256	SAL-MISC			\$0	\$0	\$886	\$0	\$0
2200-2288	ENVIRONMENTAL AFFAIRS	Labor	Other Labor	6110333	SAL-SIGNING BONUS			\$2,198	\$0	\$0	\$0	\$2,500
2200-2288	ENVIRONMENTAL AFFAIRS	Labor	Paid Time Off Labor	V&S	Add V&S to Adj-Rec Labor			\$54,799	\$55,177	\$62,984	\$63,264	\$75,497
2200-2288	ENVIRONMENTAL AFFAIRS	Labor	Employee Recognition	Labor	TOTAL LABOR			\$380,450	\$383,088	\$443,005	\$458,420	\$529,752
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Reimbursable	6120145	EMP BEN-GIFT CARDS			\$0	\$0	\$0	\$102	\$0
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Reimbursable	6130001	EMP TRVL-AIR			\$4,456	\$5,800	\$5,625	\$5,283	\$4,189
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Reimbursable	6130002	EMP TRVL-RAIL			\$46	\$108	\$144	\$136	\$222
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Meals	6130010	EMP TRVL-MEALS&TIP			\$0	\$0	\$0	\$285	\$0
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Reimbursable	6130011	EMP TRVL-INCIDENTALS			\$37	\$172	\$311	\$547	\$331
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Reimbursable	6130012	EMP TRVL-MILEAGE			\$11,579	\$10,673	\$6,312	\$4,775	\$5,626
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Reimbursable	6130014	EMP TRVL-PARKING			\$259	\$263	\$1,185	\$1,207	\$592

						Fiscal year							
						2009	2010	2011	2012	2013			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Meals	6130015	EMP TRVL-MEALS/ENT	\$2,126	\$2,746	\$3,665	\$4,206	\$1,738			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Reimbursable	6130016	EMP TRVL-CAR RENTAL	\$153	\$0	\$0	\$0	\$168			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Reimbursable	6130017	EMP TRVL-TAXI/SHUTTLE	\$26	\$352	\$399	\$621	\$266			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Reimbursable	6130020	EMP TRVL-HOTEL/LODG	\$10,844	\$12,227	\$11,985	\$14,580	\$9,164			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Reimbursable	6130050	EMP TRVL-OTHER	\$0	\$0	\$57	\$77	\$59			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Communication/Adv Svcs	6211470	MATL-PRINTED MATERIALS	\$0	\$0	\$15	\$0	\$0			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Office/Furn Supplies	6213005	MATL-OFFICE SUPPLIES	\$451	\$279	\$1,162	\$876	\$1,256			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Computer Related	6213025	MATL-COMPUTER EQUIP	\$0	\$0	\$0	\$0	\$160			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Computer Related	6213030	MATL-SOFTWARE	\$0	\$0	\$0	\$0	\$41			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Other Materials	6213035	MATL-GAS&DIESEL FUEL	\$17	\$0	\$1,975	\$1,496	\$1,156			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Other Materials	6213060	MATL-VEHICLE PARTS	\$0	\$0	\$0	\$0	\$8			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Other Materials	6213085	MATL-MISCELLANEOUS	\$0	\$0	\$0	\$84	\$270			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Other Materials	6213095	MATL-SUBSCR&PUBLOC	\$0	\$0	\$1,656	\$848	\$788			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Computer Related	6213180	MATL-COMPUTR HARDWAR	\$514	\$137	\$520	\$229	\$534			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Other Materials	6213260	MATL-FITTINGS	\$0	\$0	\$0	\$0	\$0			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Consulting	6220002	SRV-CONSULTING	\$2,306	(\$3,219)	\$0	\$0	\$0			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Lunches	6220060	SRV-CATERING	\$49	\$0	\$2,030	\$1,331	\$494			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Communication/Adv Svcs	6220401	SRV-BUSINESS CARDS	\$38	\$0	\$0	\$0	\$0			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Communication/Adv Svcs	6220422	SRV-COPY SERVICE CTR	\$0	\$0	\$15	\$60	\$44			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Purchased Services	6220580	SRV-ONLINE SRV MISC	\$0	\$0	\$33	\$114	\$70			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Purchased Services	6220590	SRV-MISCELLANEOUS	\$13	\$0	\$18	\$0	\$665			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Consulting	6220600	SRV-CONSULTING-OTHER	\$4,110	\$0	\$0	\$0	\$0			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Employee Training	6220640	SRV-TRNG & SEM IN-H	\$3,528	\$2,859	\$6,210	\$8,200	\$5,283			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Purchased Services	6221010	SRV-STORAGE	\$1,481	\$1,577	\$512	\$0	\$0			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Communication/Adv Svcs	6230390	SRV-PNIG GRPH VIDEO	\$0	\$0	\$30	\$31	\$324			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Events	6230540	SRV-HOLIDAY EVENTS	\$0	\$0	\$165	\$0	\$0			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Dues	6250001	DUES-BUSINESS/PROFES	\$423	\$655	\$637	\$353	\$400			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Dues	6250002	DUES-SOCIAL	\$165	\$0	\$0	\$0	\$0			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Telephone Expenses	6320001	TELE-COMM SYS COSTS	\$242	\$0	\$0	\$0	\$0			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Telephone Expenses	6320002	TELE-CELLULAR PHONES	\$2,795	\$2,973	\$5,842	\$6,055	\$5,213			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Misc NL Costs	6340000	Cash Discounts on Pu	\$0	\$0	\$0	\$0	\$0			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Misc NL Costs	6350710	CREDIT FOR CASH COLL	\$0	(\$11,486)	\$24,485	\$0	(\$3)			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	Misc NL Costs	6400361	A&G-RENTS GEN-GAS	\$135	\$0	\$1,024	\$1,503	\$1,470			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	TOTAL	TOTAL	TOTAL NON-LABOR	\$45,793	\$26,115	\$76,009	\$52,996	\$40,530			
2200-2288	ENVIRONMENTAL AFFAIRS	Non-Labor	TOTAL	TOTAL	TOTAL	\$426,243	\$409,204	\$519,013	\$511,416	\$570,282			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Labor	Straight Time Labor	6110020	SAL-MGMT S/T	\$0	\$40,773	\$200,948	\$375,148	\$348,862			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Labor	Paid Time Off Labor	V&S	Add V&S to Adj-Rec Labor	\$0	\$7,127	\$33,377	\$60,061	\$57,981			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Labor	Employee Related	Labor	TOTAL LABOR	\$0	\$47,900	\$234,326	\$435,210	\$406,843			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Related	6120093	EMP BEN-PREP F/MGMT	\$0	\$0	\$0	\$39	\$58			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Recognition	6120113	EMP BEN-GFT CARD/CRT	\$0	\$0	\$0	\$0	\$150			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Recognition	6120145	EMP BEN-GIFT CARDS	\$0	\$0	\$0	\$470	\$0			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Recognition	6120151	EMP BEN-GFT CRD INV	\$0	\$0	\$0	\$102	\$190			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Reimbursable	6130001	EMP TRVL-AIR	\$0	\$593	\$0	\$0	\$24,186			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Meals	6130010	EMP TRVL-MEALS&TIP	\$0	\$0	\$0	\$0	\$88			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Reimbursable	6130012	EMP TRVL-MILEAGE	\$0	\$0	\$512	\$757	\$9,534			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Reimbursable	6130014	EMP TRVL-PARKING	\$0	\$32	\$836	\$0	\$177			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Meals	6130015	EMP TRVL-MEALS/ENT	\$0	\$0	\$109	\$1,227	\$170			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Reimbursable	6130016	EMP TRVL-CAR RENTAL	\$0	\$0	\$0	\$0	\$237			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Reimbursable	6130017	EMP TRVL-TAXI/SHUTTLE	\$0	\$43	\$0	\$0	\$304			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Employee Reimbursable	6130020	EMP TRVL-HOTEL/LODG	\$0	\$0	\$704	\$0	\$8,282			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Office/Furn Supplies	6213005	MATL-OFFICE SUPPLIES	\$0	\$0	\$27	\$72	\$594			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Office/Furn Supplies	6213015	MATL-OFC FURNITURE	\$0	\$0	\$0	\$313	\$0			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Computer Related	6213025	MATL-COMPUTER EQUIP	\$0	\$0	\$0	\$0	\$76			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Computer Related	6213030	MATL-SOFTWARE	\$0	\$402	\$647	\$0	\$275			
2200-2396	POLICY AND ENVIRONMENTAL SOLUTION	Non-Labor	Other Materials	6213035	MATL-GAS&DIESEL FUEL	\$0	\$0	\$6	\$0	\$97			

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11. For SCG’s Customer Service Technologies, Policies and Solutions, provide, in a spreadsheet similar to the one shown in workpapers on page 65, a detailed and itemized listing of all costs incurred for one-time, unusual, or non-recurring costs for the years 2009 through 2013, including but not limited to studies, equipment demonstrations and testing, special projects and programs, surveys, training, contract expenses, product/project development, testing and/or implementation, etc.

SoCalGas Response

The groups within CSTP&S undertake a series of projects to support the function of the group. Examples are studies or analyses contracted to outside parties in the various functional areas and RD&D projects. These activities are part of the normal course of business and projects are not duplicated from one period to the next. See the attachment included in response to Question 10 above (“ORA-SCG-DR-043-TLG-Q10 Attachment.xlsx”) for a detailed listing of the types of costs included in the 2009 through 2013 adjusted recorded expenses.

Please see the following table for cost exclusions that were made to CSTP&S historical expenses.

Customer Service Technologies, Policies and Solutions Historical Cost Exclusions					Nominal (\$000)				
Workpaper	Workpaper Description	Cost Type	Workpaper Page	Cost Adjustment	2009	2010	2011	2012	2013
2200-0234	NGV Program	Labor	38-39	Pursuant to CPUC decision 12-12-037 Compression Service Tariff activities are excluded from base rates.		(\$0.247)	(\$3)	(\$0.049)	
2200-0234	NGV Program	Non-Labor	39	To exclude costs associated with the NGV employee incentive program.				(\$63)	(\$12)
2200-2229	Business Strategy & Development	Non-Labor	58-59	Pursuant to CPUC decision 12-12-037 Compression Service Tariff activities are excluded from base rates.				(\$0.374)	(\$37)
2200-2286	Bio-Fuels & Low-Carbon Resources Market Development	Labor	48	Costs related to a one-time project regulatory filing excluded from historical cost base for this function.		(\$18)	(\$10)		
2200-2286	Bio-Fuels & Low-Carbon Resources Market Development	Non-Labor	48-49	Costs related to a one-time project regulatory filing excluded from historical cost base for this function.			(\$469)	(\$9)	

Appendix A-Attachment A.2
ORA-SCG-DR-043-TLG, Question 12

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12. SCG's Policy and Environmental Solutions Work Group forecasts \$4.005 million (\$12.015 million over three years) in TY 2016. This is an increase of \$1.661 million or 70.86% over 2013 recorded adjusted expenses of \$2.344 million. SCG formed this group in 2013. The five year average (2009-2013) is \$1.643 million and the three year average (2011-2013) is \$2.256 million.
- a. Provide all documentation that SCG's management utilized and relied upon to determine that its Policy and Environmental Solutions Work Group is required considering that its Regulatory Affairs group and its State Government Affairs group performed similar or "complementary" activities.
 - b. SCG formed its Policy and Environmental Solutions Work Group in 2013 (see JGR-20). Provide documentation that explains in detail how the activities which have now been reorganized into the Policy and Environmental Solutions Work Group were performed (i.e., performing "state and federal agency policy analysis, engagement, outreach, and customer support related to existing and proposed state and federal policies, laws and regulations concerning natural gas utilization)." In the response include the count of FTEs that performed the work, associated accounts/recorded costs, prior to the reorganization in 2013.
 - c. Prior to the creation of Policy and Environmental Solutions Work Group in 2013, provide documentation that explains which Work Group/Cost Center performed activities associated with "efforts to educate policymakers and assist in the development of reasoned legislation, environmental policy and regulation (such as criteria air pollution and greenhouse gas regulation), and energy policy and regulation (such as the CEC's IEPR)." In the response provide the recorded costs (2009-2013) for this activity.
 - d. SCG forecasts 17 FTEs for its Policy and Environmental Solutions Work Group (see Tables JGR-9 and JGR-10 on pages JGR-20 and JGR-22) for its Shared Services activities for the TY 2016 over its 2013 FTEs of 7.8. SCG states that three additional FTEs were added in 2013 when the group was reorganized. Provide documentation that explains in detail and demonstrates the number of FTEs that are currently assigned duties associated with each of the following activities in its Policy and Environmental Solutions Work Group: support environmental and energy policy and regulation; support legislative and public policy activities; provide administrative support.
 - e. SCG states on page JGR-21 that "The staffing increases reflected in the forecast are necessary to respond to a substantial increase in energy and environmental legislative, policy and regulatory activities, as well as an increase in customer need for compliance assistance." Provide documentation that identifies the accounts, recorded costs (2009-2014), and activities for the "substantial increase in energy and environmental legislative, policy and regulatory activities, as well as an increase in customer need for compliance assistance" in order to substantiate the assertions mentioned in this question.

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Question 12 (Continued)

- f. Provide documentation that explains in detail and demonstrates why SCG’s current staffing level in its Policy and Environmental Solutions Work Group are insufficient to perform the work activities proposed for TY 2016 (include all supporting documentation in the response).
- g. On page JGR-22 in Table JGR-10 and on page JGR-27, SCG shows lump sum figures and provides a brief discussion for its non-labor forecast of \$2.066 million (\$6.198 million over three years) which is proposed to increase by \$0.658 million or 46.73% over 2013 recorded adjusted expenses of \$1.408 million. SCG’s testimony and workpapers are insufficient and incomplete. Provide all supporting documentation which clearly identifies proposed activities and the basis for each number used in the calculation of the forecasted expenses (i.e., the documentation that demonstrates the individual breakdown of all costs included in each estimate along with source documentation/basis for numbers; where/how did SCG calculate the non-labor figures found on page JGR-27).
- h. Provide documentation that clearly shows a detailed breakdown of all activities and associated non-labor costs incurred for 2013 for SCG’s Policy and Environmental Solutions Work Group.

SoCalGas Response:

- a. *[Provide all documentation that SCG’s management utilized and relied upon to determine that its Policy and Environmental Solutions Work Group is required considering that its Regulatory Affairs group and its State Government Affairs group performed similar or “complementary” activities.]*

SoCalGas determined that the Policy and Environmental Solutions Work Group was necessary to address state and local policy initiatives that were increasingly focused on electrification of all energy end uses to meet greenhouse gas reduction goals (AB32) and ozone standards (Federal Clean Air Act); without fully assessing the potential to meet these goals in a timelier and cost-effective manner using natural gas and related technologies.

The Policy and Environmental Solutions Work Group was established to provide an enhanced capability to analyze natural gas policy solutions and engage with regulators and policy leaders to provide solutions that would protect customers and help meet state and federal climate change and air quality goals cost effectively. The group was tasked with educating policymakers on the opportunities available with natural gas, renewable natural gas, and the full range of natural gas solutions capable of supporting state and federal goals.

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Response to Question 12a (Continued)

These resources and capabilities did not exist in the Regulatory Affairs or State Government Affairs groups and they do not overlap or duplicate the functions of those work groups although staff members may be consulted on specific matters from time to time. Previously, legislative issues were addressed by San Diego Gas & Electric (SDG&E), but there was limited expertise on unique natural gas related issues. As such, SoCalGas created a new group comprised of existing SoCalGas Environmental Affairs personnel that focused on air quality issues at local air districts, and hired additional staff with expertise on analyzing policy and engaging policymakers on state and federal environmental and energy policy issues. Therefore, P&ES is the group responsible for addressing unique, California-specific natural gas issues (a group that did not previously exist elsewhere at SoCalGas or SDG&E).

- b. [SCG formed its Policy and Environmental Solutions Work Group in 2013 (see JGR-20). Provide documentation that explains in detail how the activities which have now been reorganized into the Policy and Environmental Solutions Work Group were performed (i.e., performing “state and federal agency policy analysis, engagement, outreach, and customer support related to existing and proposed state and federal policies, laws and regulations concerning natural gas utilization).” In the response include the count of FTEs that performed the work, associated accounts/recorded costs, prior to the reorganization in 2013.]

Prior to formation of the P&ES group in 2013, the work on state and federal agency policy analysis, engagement, outreach, and customer support related to existing and proposed state and federal policies, laws, and regulations concerning natural gas utilization was performed by the Environmental Affairs Group, a part-time legislative analyst, and various staff members in regulatory affairs and other departments that devoted part of their time to addressing policy matters as they were identified. With the growing array of policy matters related to natural gas, this approach was deemed to be inadequate to provide the level of analysis and engagement needed.

The primary drivers for the increase in policy matters related to natural gas are the advent and implementation of AB32 and new and evolving Federal Clean Air Act standards and requirements. Due to these drivers, SoCalGas determined there was a need for a group to represent the interests of natural gas customers as the state developed plans to meet air quality requirements and long term greenhouse gas reduction goals.

The costs of FTEs working on local air quality issues are included in the testimony (see page JGR-20, Table JGR-9) and copied below. Also below is a table showing functions described above, previous location, and FTE count. The hours and costs of various staff members previously supporting work on policy matters on an occasional or ad hoc basis was not separately tracked and is, therefore, not available.

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Response to Question 12b (Continued)

TABLE JGR-9

Policy & Environmental Solutions

In Thousands of 2013 Dollars – Incurred Costs

Year	Adjusted-Recorded					Forecast			Change
	2009	2010	2011	2012	2013	2014	2015	2016	2013-2016
Labor	381	431	678	894	937	1,517	1,861	1,940	1,003
Non-labor	46	589	1,628	1,221	1,408	1,486	1,836	2,066	658
Total	427	1,020	2,307	2,115	2,345	3,002	3,696	4,005	1,661
FTEs	3.3	3.8	5.7	7.6	7.8	13.2	16.5	17.3	9.5

Note: Totals may include rounding differences

Function	Pre-2013 Location	FTE
Director, Environmental Affairs	Environmental Affairs, SoCalGas	1
Local Air District Policy and Support and Customer Support	Environmental Affairs, SoCalGas	6.6
Legislative Support	Legislative Affairs, SDG&E	0.5
	Total	8.1

- c. *[Prior to the creation of Policy and Environmental Solutions Work Group in 2013, provide documentation that explains which Work Group/Cost Center performed activities associated with “efforts to educate policymakers and assist in the development of reasoned legislation, environmental policy and regulation (such as criteria air pollution and greenhouse gas regulation), and energy policy and regulation (such as the CEC’s IEPR).” In the response provide the recorded costs (2009-2013) for this activity.]*

Please see response to Question 12b above.

- d. *[SCG forecasts 17 FTEs for its Policy and Environmental Solutions Work Group (see Tables JGR-9 and JGR-10 on pages JGR-20 and JGR-22) for its Shared Services activities for the TY 2016 over its 2013 FTEs of 7.8. SCG states that three additional FTEs were added in 2013 when the group was reorganized. Provide documentation that explains in detail and demonstrates the number of FTEs that are currently assigned duties associated with each of the following activities in its Policy and Environmental*

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Response to Question 12d (Continued)

Solutions Work Group: support environmental and energy policy and regulation; support legislative and public policy activities; provide administrative support.]

The number of FTEs that are currently (2014) assigned duties associated with the activities requested are:

- Support environmental and energy policy and regulation: 5 FTEs
- Support legislative and public policy activities: 2 FTEs
- Administrative support: 0 FTE

- e. *[SCG states on page JGR-21 that “The staffing increases reflected in the forecast are necessary to respond to a substantial increase in energy and environmental legislative, policy and regulatory activities, as well as an increase in customer need for compliance assistance.” Provide documentation that identifies the accounts, recorded costs (2009-2014), and activities for the “substantial increase in energy and environmental legislative, policy and regulatory activities, as well as an increase in customer need for compliance assistance” in order to substantiate the assertions mentioned in this question.]*

A significant increase in the number and scope of federal, state and local environmental and energy policy initiatives are the primary drivers behind the staffing increase request. For example, at the federal level, the Environmental Protection Agency (EPA) has proposed to revise the national ambient air quality standards for ozone, to regulate greenhouse gas emissions (GHG) from new and existing power plants, and to regulate methane emissions from the natural gas supply chain. The state of California has established ambitious goals to reduce greenhouse gas emissions to 1990 levels by 2020 and to 80% below 1990 levels by 2050. In order to accomplish these goals the Air Resources Board (ARB), the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC) are in the process of developing plans and regulations, all of which will impact natural gas customers. At the local level, the two extreme ozone non-attainment air districts in SoCalGas’ service territory are in the process of developing Air Quality Management Plans (AQMP). Meeting the current ozone standards will require approximately an 80% reduction beyond current levels in emissions of oxides of nitrogen (NOx), which is a precursor to ozone. Since the transportation sector is responsible for 80-90% of the NOx emissions in California and the local air districts regulate only stationary sources, the 2016 AQMPs will have a greater impact on SoCalGas’ customers than previous AQMPs. As such, SoCalGas needs additional resources to engage in an active, informed manner in the development of the plans (2015) and assist customers with implementation (2016).

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Response to Question 12e (Continued)

In summary, SoCalGas requires additional staff to engage in the federal, state and local environmental and energy policy initiatives discussed above on behalf of natural gas customers. A list of plans and proceedings resulting from the broader initiatives with links to the relevant documents is provided below. While some of these initiatives have been in place for several years, most have been updated since 2012 as it has become apparent that state and federal environmental policy goals cannot be achieved without redoubled efforts.

Federal:

- Proposed Revisions to national Ambient Air Quality Standards for Ozone, issued: 2014 <http://www.epa.gov/airquality/ozonepollution/pdfs/2014decwebinar.pdf>
- Climate Action Plan, issued: 2013
<http://www.whitehouse.gov/share/climate-action-plan>
- Regulating carbon from existing power plants under section 111(d) of the clean air act, issued: 2014
<https://www.federalregister.gov/articles/2014/11/13/2014-26900/carbon-pollution-emission-guidelines-for-existing-stationary-sources-electric-utility-generating>
- Federal Methane Regulations, issued 2014
<http://www.epa.gov/airquality/oilandgas/whitepapers.html>

State:

- California's 2030 Climate Commitment, Fourth Assessment currently underway
<http://www.arb.ca.gov/html/2030climatecommitment.htm>
- Vision for Clean Air: A Framework for Air Quality and Climate Planning, issued 2012
<http://www.arb.ca.gov/planning/vision/vision.htm>
- First Update to the AB32 Scoping Plan, issued: 2013
<http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm>
- SB 605 (Lara, Chapter 523, Statutes of 2014), implementation: Ongoing
http://leginfo.ca.gov/pub/13-14/bill/sen/sb_0601-0650/sb_605_bill_20140921_chaptered.htm
- Low-Carbon Fuel Standard Reauthorization, implementation: 2012 - 2015
<http://www.arb.ca.gov/fuels/lcfs/2a2b/2a-2b-apps.htm>
- Sustainable Freight Transport Initiative, issued 2013, and related programs:
<http://www.arb.ca.gov/gmp/sfti/sfti.htm>
- Renewable Natural Gas Standard: expected legislation in 2015 based on
<http://www.bioenergyca.org/wp-content/uploads/2014/11/BAC-Report-on-Renewable-Gas-Standard.pdf>
- Natural Gas Act (AB1257) Report, work in process:
http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB1257

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Response to Question 12e (Continued)

- Integrated Energy Policy Report 2013 (IEPR): The CEC’s 2013 IEPR established a definition for ZNE buildings in anticipation of ZNE requirements for new construction starting in 2020. The treatment of natural gas technologies in these regulations will have significant impact on natural gas ratepayers.
http://www.energy.ca.gov/2011_energypolicy/documents/2011-07-20_workshop/presentations/Revised_Zero_Net_Energy_Definition.pdf

Local:

Air Quality Management Plan (AQMP) Development and Implementation:
<http://www.aqmd.gov/home/about/groups-committees/aqmp-advisory-group>

Local air districts must develop periodic AQMP identifying rules and strategies to meet the NAAQS established by the Federal Environmental Protection Agency (EPA). Two of the local air districts, SCAQMD and SJVAPCD, are currently not in attainment for PM and ozone. By 2016, both districts must submit plans to meet current ozone standards. The districts have already begun the public process to evaluate potential rules and strategies to meet the standard. P&ES staff is needed to work with the district to develop cost effective means to meet NAAQS. Activity levels will continue to increase as the districts get closer to their 2016 deadlines and through the implementation period. Finally, as discussed in testimony, new and more complex air quality regulations continue to be developed and introduced. SoCalGas staff works with local air regulatory entities to contribute expertise, address operational impacts on SoCalGas, and find the most cost effective way to achieve air quality requirements. Additionally, SoCalGas provides education and support to large non-residential customers who must comply with increasingly complex air quality rules and regulations (p. 26)

- f. *[Provide documentation that explains in detail and demonstrates why SCG’s current staffing level in its Policy and Environmental Solutions Work Group are insufficient to perform the work activities proposed for TY 2016 (include all supporting documentation in the response).]*

Please see response to Question 12e above.

Staffing levels in 2013 were not sufficient to support the activity levels for P&ES. Staffing levels in 2014 have increased due to the increased workload driven by policy initiatives described above. 5.4 additional staff were added in 2014 to accommodate the increased workload. These staff were: Environmental Policy Manager, Senior Environmental Policy Advisor, Energy Policy Manager, Energy Policy Advisor, Environmental Program Manager, and a staff member who was previously shared 60%/40% with another department was made 100% P&ES.

**ORA DATA REQUEST
ORA-SCG-DR-043-TLG
SOCALGAS 2016 GRC – A.14-11-004
SOCALGAS RESPONSE**

**DATE RECEIVED: JANUARY 21, 2015
DATE RESPONDED: FEBRUARY 5, 2015**

Response to Question 12 (Continued)

- g. *[On page JGR-22 in Table JGR-10 and on page JGR-27, SCG shows lump sum figures and provides a brief discussion for its non-labor forecast of \$2.066 million (\$6.198 million over three years) which is proposed to increase by \$0.658 million or 46.73% over 2013 recorded adjusted expenses of \$1.408 million. SCG’s testimony and workpapers are insufficient and incomplete. Provide all supporting documentation which clearly identifies proposed activities and the basis for each number used in the calculation of the forecasted expenses (i.e., the documentation that demonstrates the individual breakdown of all costs included in each estimate along with source documentation/basis for numbers; where/how did SCG calculate the non-labor figures found on page JGR-27)].*

The following table provides a breakdown and the basis for the TY 2016 P&ES non-labor forecast.

P&ES Non-labor Forecast		
Activities	2016	Explanation
Employee Costs	135,000	Additional travel with expanded responsibilities in Sacramento (ARB, CEC, Leg) plus travel & expense for new FTE
Conference & Event Sponsorship	230,000	On-going sponsorship of energy & environmental conferences and events
Communication & Educational Outreach	200,000	On-going educational webinars & communications plus Environmental Dialogue and Opinion Leader research
Membership	85,000	RegFlex, CCEEB, other
Engineering Support	168,000	Additional customer support for 2016 AQMP Rule development
Update of Existing Studies	323,000	Update of transportation pathways work & SJV emissions study, update of 2050 study/evaluation of 2030 GHG target
New Studies	925,000	Technology Development Pathway to 2050, evaluation of new EPA standard, studies on methane emissions, indoor air quality, natural gas in the ZNE home (several are likely to be multi-year studies)
Total	2,066,000	

**ORA DATA REQUEST
ORA-SCG-DR-043-TLG
SOCALGAS 2016 GRC – A.14-11-004
SOCALGAS RESPONSE
DATE RECEIVED: JANUARY 21, 2015
DATE RESPONDED: FEBRUARY 5, 2015**

Response to Question 12 (Continued)

- h. [Provide documentation that clearly shows a detailed breakdown of all activities and associated non-labor costs incurred for 2013 for SCG's Policy and Environmental Solutions Work Group].*

Please see the attachment included in response to Question 10 above (“ORA-SCG-DR-043-TLG-Q10.xlsx”) for a detailed breakdown of P&ES non-labor costs incurred in 2013.

Appendix A-Attachment A.3
ORA-SCG-DR-043-TLG, Question 13

**ORA DATA REQUEST
ORA-SCG-DR-043-TLG
SOCALGAS 2016 GRC – A.14-11-004
SOCALGAS RESPONSE**

DATE RECEIVED: JANUARY 21, 2015

DATE RESPONDED: FEBRUARY 5, 2015

13. SCG's Natural Gas Vehicle Program forecasts \$2.271 million (\$6.813 million over three years) in TY 2016. This is an increase of \$0.839 million or 58.59% over 2013 recorded adjusted expenses of \$1.432 million. The five year average (2009-2013) is \$1.541 million. SCG's expenses were relatively stable between 2009 and 2011, and then increased by \$0.429 million in 2012. SCG's expenses decreased by \$0.464 million between 2012 and 2013 back down to the recorded expense levels of 2009-2011.
- a. Provide documentation that explains in detail and demonstrates the amount of funding SCG requested and was authorized in its 2012 GRC (D.13-05-010) for its Natural Gas Vehicle Program.
 - b. Referring to pages JGR-29 to JGR-31, SCG forecasts \$1.111 million in labor expenses in TY 2016, this is an increase of \$0.493 million or 79.77% over 2013 recorded adjusted expenses. SCG's forecast includes incremental funding for five additional FTEs. SCG's FTEs and associated labor expenses have declined between 2010 and 2013. Provide documentation that explains if during 2009-2013 SCG added "new G-NGV customers", received customer inquiries, including inquires related to new programs and regulations, performed customer services for "existing G-NGV customers", performed "outbound customer contacts and meetings to promote adoption", and performed activities associated with various customer events.
 - c. On page JGR-29 in Table JGR-11, SCG shows a lump sum figure of \$1.161 million for its non-labor forecast but does not provide any discussion for its proposed non-labor activities which is proposed to increase cost by \$0.346 million or 42.45% over 2013 recorded adjusted expenses of \$0.815 million. The five year average from 2009 through 2013 is \$0.890 million. SCG's testimony and workpapers are insufficient and incomplete. Provide all supporting documentation which clearly identifies proposed activities and the basis for each number used in the calculation of the forecast expenses (i.e., the documentation that demonstrates the individual breakdown of all costs included in each estimate along with source documentation/basis for numbers; where/how did SCG calculate the non-labor figures).

SoCalGas Response:

- a. In the 2012 GRC (D.13-05-010), the NGV Program requested incremental funding of \$860,000 and was authorized \$230,000 (2009 dollars) in incremental funding (pages 640 – 641).
- b. During 2009-2013, SoCalGas and SDG&E added 94 G-NGV meters, an increase of 29.6%. The G-NGV tariff requires a separate meter for each compressed natural gas vehicle refueling station, so the increase in meter account directly correlates to an increase in compressed natural gas (CNG) vehicle refueling stations for both existing and new customers in the combined service territories.

**ORA DATA REQUEST
ORA-SCG-DR-043-TLG
SOCALGAS 2016 GRC – A.14-11-004
SOCALGAS RESPONSE
DATE RECEIVED: JANUARY 21, 2015
DATE RESPONDED: FEBRUARY 5, 2015**

Response to Question 13b (Continued)

Preliminary site evaluation forms are submitted by customers interested in potentially constructing CNG vehicle refueling stations. During 2009-2013, SoCalGas and SDG&E saw annual Preliminary Site Evaluation (PSE) submittals increase from 9 in 2009 to 79 in 2013. Although SoCalGas did not track all individual customer contacts and inquiries; collectively, the growth in these two metrics demonstrate the significant market growth, customer interest, and associated utility outreach activities occurring during this period.

- c. As stated in Exhibit SCG-13 page JGR-32, “Incremental non-labor costs include \$346,000 account management and customer outreach program costs for off-road applications, commuter/home refueling applications, Low-Carbon Fuel Standard (LCFS) program, customer safety training courses, and employee expenses related to incremental FTEs.” An explanation of the individual costs is detailed in Workpaper Exhibit SCG-13-WP (pages 35 to 36; see attached file “ORA-SCG-DR-043-TLG-Q13c Attachment.pdf”). Employee expenses are based on historical costs and LCFS program costs are based on quotations from contractors. Other non-labor costs associated with customer safety training courses and account management and customer outreach program costs for new and emerging markets (off-road applications, commuter/home refueling applications) were estimated.

Appendix B

SoCalGas-ORA-DEF-004-TLG; Question B.1

**ORA DEFICIENCY DATA REQUEST
SOCALGAS 2016 GRC – A.14-11-XXX
SOCALGAS-ORA-DEF-004-TLG
PARTIAL RESPONSE
DATE RECEIVED: AUGUST 21, 2014
DATE RESPONDED: SEPTEMBER 6, 2014**

B. D.89-01-040 Appendix B, page B-22 item 4 requires SoCalGas to furnish base year historical and estimated data and subsequent years with evaluation of changes up to and including the test year.

SoCalGas needs to:

1. Provide account/line item detail that shows explanations “**and**” a breakdown of the calculation for “**all**” recorded increases/decreases in the last five years for “labor and non-labor” expenses and capital expenditures. In the sections included in SCG-10, SCG-11 SCG-12, and SCG-13, SoCalGas did not provide discussions in its testimony or workpapers on the increases/decreases of the changes in expense levels during the last five years.

SoCalGas Response:

Please see separate attachments:

SCG-ORA-DEF-004-TLG-B1-O&M-SCG-10 (Sara Franke)*
SCG-ORA-DEF-004-TLG-B1-O&M-SCG-11 (Evan Goldman)
SCG-ORA-DEF-004-TLG-B1-O&M-SCG-12 (Gwen Marelli)
SCG-ORA-DEF-004-TLG-B1-O&M-SCG-13 (Jeffrey Reed)

*Response is forthcoming for SCG-ORA-DEF-004-TLG-B1-O&M-SCG-10

ORA Deficiency Data Request
SoCalGas-ORA-DEF-004-TLG
Question B.1

Exh No: SCG-13										
Witness Name: Jeffrey Reed										
Constant 2013\$ in Thousands										
	Adjusted Recorded					Variance				Workpaper Page
	2009	2010	2011	2012	2013	2009-10	2010-11	2011-12	2012-13	
2RD001.001 - RD&D CS Technology Development (Refundable)										
Labor	1,182	1,400	1,357	1,447	1,134	218	(43)	90	(313)	
NLbr	8,990	11,264	11,289	6,919	6,945	2,274	25	(4,370)	26	
NSE	0	0	0	0	0	-	-	-	-	
2RD001.001 Total	10,172	12,664	12,646	8,366	8,079	2,492	(18)	(4,280)	(287)	Page 6 of 60
Variance Explanation						Variance Amount				
2009-10										
Labor										
The Research Development and Demonstration (RD&D) program is on a 4 year cycle (2008-2011) with an authorized level of spend. Spending level fluctuates year-to-year based on project timing, mix of internal versus external resources and timing of movement of staff into and out of the department.										
						218				
NLbr										
The Research Development and Demonstration program is on a 4 year cycle (2008-2011) with an authorized level of spend. Spending level fluctuates year-to-year based on project timing, mix of internal versus external resources and timing of movement of staff into and out of the department.										
						2,274				
						2,492				
2010-11										
Labor										
The Research Development and Demonstration program is on a 4 year cycle (2008-2011) with an authorized level of spend. Spending level fluctuates year-to-year based on project timing, mix of internal versus external resources and timing of movement of staff into and out of the department.										
						(43)				
NLbr										
The Research Development and Demonstration program is on a 4 year cycle (2008-2011) with an authorized level of spend. Spending level fluctuates year-to-year based on project timing, mix of internal versus external resources and timing of movement of staff into and out of the department.										
						25				
						(18)				
2011-12										
Labor										
The Research Development and Demonstration program is on a 4 year cycle (2012-2015) with an authorized level of spend. This was the beginning of the cycle with new authorized level of spend. Spending level fluctuates year-to-year based on project timing, mix of internal versus external resources and timing of movement of staff into and out of the department.										
										90
NLbr										
The Research Development and Demonstration program is on a 4 year cycle (2012-2015) with an authorized level of spend. This was the beginning of the cycle with new authorized level of spend. Spending level fluctuates year-to-year based on project timing, variation in the size and co-funding of individual projects and timing of payments to outside parties near year end. 2012 spend was uncharacteristically low because of project start delays due to a delayed GRC decision.										
										(4,370)
										(4,280)
2012-13										
Labor										
The Research Development and Demonstration program is on a 4 year cycle (2012-2015) with an authorized level of spend. Spending level fluctuates year-to-year based on project timing, mix of internal versus external resources and timing of movement of staff into and out of the department.										
										(313)
NLbr										
The Research Development and Demonstration program is on a 4 year cycle (2012-2015) with an authorized level of spend. Spending level fluctuates year-to-year based on project timing, variation in the size and co-										

Note: Totals may include rounding differences.

ORA Deficiency Data Request
SoCalGas-ORA-DEF-004-TLG
Question B.1

	Adjusted Recorded					Variance				Workpaper Page
	2009	2010	2011	2012	2013	2009-10	2010-11	2011-12	2012-13	
2RD001.001 - RD&D CS Technology Development (Refundable)										
Labor	1,182	1,400	1,357	1,447	1,134	218	(43)	90	(313)	
NLbr	8,990	11,264	11,289	6,919	6,945	2,274	25	(4,370)	26	
NSE	0	0	0	0	0	-	-	-	-	
2RD001.001 Total	10,172	12,664	12,646	8,366	8,079	2,492	(18)	(4,280)	(287)	Page 6 of 60
funding of individual projects and timing of payments to outside parties near year end. 2012 spend was uncharacteristically low because of project start delays due to a delayed GRC decision.										
									26	
									(287)	

Note: Totals may include rounding differences.

Appendix C

Technology Needs Assessment Summary

(Appendix B of Ex. SCG-013-R; Direct Testimony of Jeffrey G. Reed;
Customer Service Technologies, Policies and Solutions)

Appendix B
Technology Needs Assessment Summary

Residential End-use Applications RD&D

Project Area	Current Performance	Required Performance	Development Areas	SoCalGas RD&D Activities
Efficiency and Renewable Energy Systems Integration	<ul style="list-style-type: none"> Residential utility customers consume 74 MMBtu/yr of natural gas¹ and 10,837 kWh/yr of electricity² Present Title 24 residential home efficiency standards 	<ul style="list-style-type: none"> 2020 target for Zero Net Energy new homes and 40% energy reduction for existing homes to 37 MMBtu/yr of natural gas and 3,900 kWh/yr of electricity.³ Energy Efficiency Program goals set by the CPUC in D.12-11-015 	<ul style="list-style-type: none"> Develop and integrate new high efficiency appliances combined with distributed renewable thermal and electric energy generation like solar thermal, PV and fuel cells. Develop improved “Smart Home” technologies Cost reductions to make systems affordable for the home owner Integration of electric and natural gas grids through residential fuel cells, and CHP 	<ul style="list-style-type: none"> Single family home and multifamily home demonstrations that incorporate solar thermal, fuel cell (or other microCHP) with condensing appliances. Smart Home demonstration projects that integrate smart appliances, home energy management, on-site vehicles refueling, smart meters with two-way communication with energy utilities, and remote controls of appliances. Continued support and demonstration of residential solar thermal products and higher efficiency gas-fired condensing products.
Appliance NOx Emissions and Indoor Air Quality and	<ul style="list-style-type: none"> NOx emissions limit: 40 ng/joule⁴ 	<ul style="list-style-type: none"> NOx emissions: 10 ng/joule NOx for water heaters; 14 ng/joule by October 2014 for residential condensing central space heating furnaces; 14 ng/joule by October 2015 for residential non-condensing furnaces⁵ 2016 Title 24 residential home efficiency standards 	<ul style="list-style-type: none"> Develop space heaters < 14 ng/Joule NOx. Develop water heaters < 10 NG/joule NOx. Reduce cost of condensing tank-less water heaters. Reduce cost of condensing tank type water heaters. Reduce cost and improve efficiency of gas heat pump water heaters. 	<ul style="list-style-type: none"> Support industry developing new low NOx emission products on water heaters and space heaters. Foster development of new combustion technologies using metallic, ceramic, and fiber materials Foster development of lower cost condensing water heating and space heating technologies. Life cycle and field testing of new units with manufacturers

¹ EIA’s 2009 Residential Energy Consumption Survey, Trends in U.S. Residential Natural Gas Consumption p.1 Available at: http://www.eia.gov/pub/oil_gas/natural_gas/feature_articles/2010/ngtrendsresidcon/ngtrendsresidcon.pdf

² EIA Frequently Asked Questions. Available at <http://www.eia.gov/tools/faqs/faq.cfm?id=97&f=3>

³ CEC- 2007 Integrated Energy Policy Report (IEPR) Zero Net Energy (ZNE) goals

⁴ SCAQMD Rule 111 furnace NOx emissions limits. Available at http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111/par1111_prelimdraftsr.pdf?sfvrsn=2

⁵ Ibid.

Commercial End-use Applications RD&D

Project Area	Current Performance	Required Performance	Development Areas	SoCalGas RD&D Activities
Efficiency and Renewable Energy Systems Integration, Heating & Cooling	<ul style="list-style-type: none"> • NOx emissions limit is 40 ng/joule⁶ • Title 24 commercial building efficiency standards 	<ul style="list-style-type: none"> • 2030 target for commercial buildings⁷ • Energy Efficiency Program goals set by the CPUC under Decision 12-11-015 • Future Title 24 Energy Code 	<ul style="list-style-type: none"> • Develop cost competitive (high efficiency) condensing products and gas heat pump technologies • Thermodynamic cycles such as adsorption cooling and heat pumps • Insulation materials and geometries • Develop advanced controls to maximize the performance characteristics of the solar system, chillers, heaters, and water heaters 	<ul style="list-style-type: none"> • Evaluate and identify high efficiency water and space heating systems for commercial buildings including condensing water heating and condensing space heating products. • Support companies with advanced gas-fired heat pump technology based on absorption chiller technology and engine driven chiller advanced catalyst emission control. • Support development of cost effective adsorption cooling systems integrated with solar thermal. • Support development of advanced radiant burner technology for commercial warehouse and manufacturing applications.
Commercial Cooking & Food Service Equipment	<ul style="list-style-type: none"> • Commercial food service equipment does not have to meet NOx or efficiency standards. 	<ul style="list-style-type: none"> • NOx control projected for SCAQMD in 2016 AQMP • Energy Efficiency Program goals set by the CPUC under Decision 12-11-015 	<ul style="list-style-type: none"> • Improved combustion systems and geometries • Insulation and thermal control • Exhaust management and exhaust treatment systems 	<ul style="list-style-type: none"> • Support integration of advanced burner technologies that provide high efficiency and lower NOx emissions with major cooking appliances (fryers, griddles, ovens, ranges). • Demonstration of a “commercial kitchen of the future” which will integrate high efficiency appliances with advanced ventilation concepts and control systems. • Evaluate, identify, and encourage use of improved, higher efficiency gas-fired cooking appliances that can qualify for the California Energy Star program.

⁶ Ibid.

⁷ EPA 2030 Challenge Available at http://www.architecture2030.org/files/2030_Challenge_Targets_National.pdf.

Industrial End-use Applications RD&D

Project Area	Current Performance	Required Performance	Development Areas	SoCalGas RD&D Activities
Ovens, Furnaces, Boilers, Process Heating	<ul style="list-style-type: none"> • Uncontrolled NOx levels from industrial ovens, dryers, furnaces, afterburners and other process equipment • Boiler NOx limits: 9 to 30 ppm⁸ 	<ul style="list-style-type: none"> • 30 to 60 ppm NOx emission levels depending on process temperature for industrial ovens, dryers, furnaces, afterburners and other process equipment⁹ • Boiler NOx limits: 5 to 9 ppm • Increasingly stringent NOx emissions limits are anticipated in SCAQMD's 2016 AQMP 	<ul style="list-style-type: none"> • Advanced boiler products to reduce NOx emissions. • Advanced burner and heat recovery technologies to reduce increase efficiency and reduce emissions from industrial ovens, dryers, furnaces, afterburners and other process equipment 	<ul style="list-style-type: none"> • Demonstration of a high efficiency gas-fired rotary dryer with advanced heat pump in a food processing application. • Demonstrations of advanced waste heat recovery technologies in caustic effluent applications that are commonly found in various metal melting applications (e.g. testing of Gas Guard Heat Recovery technology that utilizes "trona" [soda ash] as a sorbent material that removes 96% of hydrogen chloride from the exhaust stream) • Demonstration of advanced economizers for industrial boiler applications to refine system performance and installation costs. • Demonstration of improved regenerative and recuperative thermal oxidation technologies to destroy smog-causing VOCs.

⁸ SCAQMD Rule 1146.

⁹ SCAQMD Rules 1147 and 1153.

Clean Generation RD&D

Project Area	Current Performance	Required Performance	Development Areas	SoCalGas RD&D Activities
Waste Heat Recovery	<ul style="list-style-type: none"> Organic Rankin cycle systems are less than 8% efficient 	<ul style="list-style-type: none"> 20% recovery is necessary to cost-effectively help meet AB32 CO2 emissions goals 	<ul style="list-style-type: none"> Develop improved cycles, heat exchange systems (e.g. micro-channel heat exchangers and advanced sorbents), thermally drive chillers 	<ul style="list-style-type: none"> Demonstrate heat recuperation and power generation systems. Demonstrate advanced adsorption chillers operating on waste heat
Internal Combustion Engines, Turbines, and Sterling Systems	<ul style="list-style-type: none"> NOx emission limit for stationary sources of 0.07lbs/MW-hour for 2013 AQMP for DG/CHP applications (AQMD-Rule 1110.2) 	<ul style="list-style-type: none"> NOx emission limit for stationary sources of 0.07lbs/MW-hour for DG/CHP. 30% efficiency gains are necessary to help meet AB32 GHG emissions goals. 	<ul style="list-style-type: none"> Advanced combustion technologies, after-treatment catalytic processes and control systems. Lighter, low-friction materials 	<ul style="list-style-type: none"> Demonstrate advanced combustion technologies, low-NOx post-combustion treatment systems, sensors and controls systems, free piston engines and dual fuel biogas/biomethane systems.
Fuel Cells	<ul style="list-style-type: none"> 60 percent efficiency (CHP) Capax: \$5,000/kW+ Poor dynamic and start-stop operation 	<ul style="list-style-type: none"> 80 percent efficiency (CHP) Capax: <\$2000/kW Excellent load following and start-stop operation 	<ul style="list-style-type: none"> Lower-cost catalyst materials with improved reaction kinetics Increased stack life by reducing operating temperatures and improving seals and adhesives Faster response electrolytes Materials advances 	<ul style="list-style-type: none"> Demonstration of small 1-100 kW low temperature proton exchange membrane fuel cells capable of load following to meet Zero-Net Energy goals for 2020. Demonstrate direct methane fuel cells using low-cost catalytic non-thermal plasma technology. Demonstrate ability of fuel cell systems to run on biogas/biomethane in order to validate a near-zero GHG emissions.
Carbon Capture, Utilization & Storage	<ul style="list-style-type: none"> Low system efficiency & costs 50% above market 	<ul style="list-style-type: none"> 30% reduction from 2005 levels by 2030 California's Interim Goal of 556 avg. lb. CO2 per net MWh and final goal of 537 avg. lb. CO2 per net MWh¹⁰ 	<ul style="list-style-type: none"> Variety of low-cost CO2 capture technologies from ARPA-e using pre-combustion separation, scrubbers, phase change, air separators and biological systems 	<ul style="list-style-type: none"> Demonstrate enzymatic and high velocity expansion CO2 precipitation technologies. Demonstrate profitable algae-based CO2 recycling

¹⁰ EPA's proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units.

Clean Transportation RD&D

Project Area	Current Performance	Required Performance	Development Areas	SoCalGas RD&D Activities
Engine Development, After-treatment, Vehicle Integration, and Hybrid electric vehicles	<ul style="list-style-type: none"> Cummins Westport, Honda and GM produce optimized natural gas engines. 	<ul style="list-style-type: none"> Multiple engines from several suppliers are required. NOx performance 80%+ below current levels 	<ul style="list-style-type: none"> New engine cycles, combustion systems, exhaust treatment and heat recovery to improve fuel efficiency and performance while decreasing emissions. NGV versions of hybrid gasoline-electric vehicles with part-time zero-emission miles and extended range 	<ul style="list-style-type: none"> Demonstrate advanced selective and non-selective catalytic reduction and lean NOx trap systems. Demonstrate Miller and Atkinson and Camless cycles, improved combustion, high pressure direct injection Demonstrate waste heat recovery using exhaust recirculation and thermo-chemical and thermoelectric recuperation. Demonstrate hybrid NG-electric vehicles.
Fueling Infrastructure	<ul style="list-style-type: none"> Natural Gas refueling cost is 50% higher compared to liquid fuel systems 	<ul style="list-style-type: none"> Cost competitive with liquid fuel systems Reduction in “carbon intensity” of California’s transportation fuels by at least 10 percent by 2020¹¹ 	<ul style="list-style-type: none"> Advanced compressor technologies Lighter, low-friction materials and low-cost additive manufacturing Modular package designs 	<ul style="list-style-type: none"> Develop standardized station designs, increased dispensing efficiencies, better controls, including for time-fill, smaller footprint, and lower cost. Support research in reducing methane emission from NGV fueling stations or in tailpipe emissions (e.g., new vehicle catalyst formation)
Fuel Storage	<ul style="list-style-type: none"> CNG fuel storage is 200% less dense and heavier than liquid fuel storage. 	<ul style="list-style-type: none"> NGV fuel storage equal to the energy density and weight of liquid fuel storage. 	<ul style="list-style-type: none"> Stronger and lighter materials for CNG storage Novel internal geometries Develop low pressure sorbent storage technologies 	<ul style="list-style-type: none"> Demonstrate next generation fuel storage systems.
Refueling	<ul style="list-style-type: none"> Only one product available and cost is over \$5,000 	<ul style="list-style-type: none"> Safe, reliable, durable home refueling systems that cost less than \$2,000 per unit. 	<ul style="list-style-type: none"> Micro-scale versions of advanced compressors being pursued through ARPA-e 	<ul style="list-style-type: none"> Advisory participation in ARPA-e program Field demonstration of prototype units

¹¹ California Executive Order S-1-07.

Renewable Natural Gas RD&D

Project Area	Current Performance	Required Performance	Development Areas	SoCalGas RD&D Activities
Solar Thermal Hydrogen and RNG	<ul style="list-style-type: none"> • Lab-scale systems • Cost >\$30/MMBtu 	<ul style="list-style-type: none"> • 100 kg/hour hydrogen • 250 MMBtu/day natural gas at a cost of <\$6/MMBtu 	<ul style="list-style-type: none"> • Develop Solar SMR with high-efficiency thermal energy recuperation • Develop Concentrated solar water-splitting and methanation 	<ul style="list-style-type: none"> • Demonstrate solar SMR and solar water-splitting technologies in collaboration with DoE and other partners
RNG from Biomass	<ul style="list-style-type: none"> • No commercial projects in CA • Pilot demonstration systems producing 1000 MMBtu/day • Cost > \$10/MMBtu 	<ul style="list-style-type: none"> • 1000 MMBtu/day at a cost of <\$10/MMBtu 	<ul style="list-style-type: none"> • Anaerobic digester yield improvement • Cost reduction and down-sizing of gasifier systems • Improve system heat recovery down-stream gas treatment • Inorganic and organic methanation technologies 	<ul style="list-style-type: none"> • Component test and validation • Gasification demonstration project with methanation and pipeline injection in collaboration with DoE and other partners
Renewable Energy Storage	<ul style="list-style-type: none"> • Power-to-gas round-trip efficiency ~35% • LCOE ~ \$0.30/kWh 	<ul style="list-style-type: none"> • Round-trip efficiency > 40% • LCOE <\$0.20/kWh 	<ul style="list-style-type: none"> • Improve the efficiencies of electrolysis and methanation systems • System design improvements through materials, manufacturing and volume 	<ul style="list-style-type: none"> • Techno-economic modelling including co-benefits with fueling applications • Demonstrate a complete grid-integrated power-to-gas system co-located with sources of CO2 such as breweries, waste water treatment plants, landfills or biomass gasifier in collaboration with DoE and other partners