

Application No: A.11-11-002
Exhibit No.: _____
Witness: Rose-Marie Payan

)
In the Matter of the Application of San Diego Gas &)
Electric Company (U 902 G) and Southern California)
Gas Company (U 904 G) for Authority to Revise)
Their Rates Effective January 1, 2013, in Their)
Triennial Cost Allocation Proceeding)
_____)

A.11-11-002
(Filed November 1, 2011)

UPDATED PREPARED DIRECT TESTIMONY
OF ROSE-MARIE PAYAN
SAN DIEGO GAS & ELECTRIC COMPANY
AND
SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

June 1, 2012

TABLE OF CONTENTS

I. QUALIFICATIONS..... 1

II. PURPOSE 1

III. SOCALGAS’ GAS DEMAND FORECASTS (2013 – 2015)..... 2

 A. Introduction..... 2

 B. Economics and Customer Growth..... 2

 C. SoCalGas Overall Forecasted Core Gas Demand 4

 D. SoCalGas’ Customer Segment Demand..... 5

 1. Residential..... 5

 2. Commercial and Industrial 6

 3. Natural Gas Vehicles 7

 4. Gas A/C and Gas Engines 7

 E. SoCalGas’ Retail Core Peak Day and Peak Month Demand 7

IV. SDG&E’S GAS DEMAND FORECASTS (2013 – 2015)..... 8

 A. Introduction..... 8

 B. Economics and Customer Growth..... 9

 C. SDG&E Core Gas Demand 10

 1. Residential..... 11

 2. Core Commercial and Industrial 11

 3. Natural Gas Vehicles 11

 D. SDG&E’s Core Peak Day and Peak Month 12

V. EXCHANGE GAS FORECASTS (2013 – 2015)..... 12

1 **III. SOCALGAS' GAS DEMAND FORECASTS (2013 – 2015)**

2 **A. Introduction**

3 SoCalGas is the principal distributor of natural gas in Southern California, providing
4 retail and wholesale customers with procurement, transportation, and storage services. In
5 addition to serving the residential, commercial, and industrial markets, SoCalGas provides gas
6 for the Enhanced Oil Recovery (EOR) and electric generation (EG) markets in Southern
7 California. SDG&E, Southwest Gas Corporation (SWG), the City of Vernon (Vernon), and the
8 City of Long Beach Gas and Oil Department (Long Beach) are SoCalGas' four wholesale
9 customers. SoCalGas also provides gas service to ECOGAS in Mexicali, Mexico. This
10 discussion begins with an examination of the economic conditions facing the utilities, followed
11 by a review of the factors affecting gas demand in various core market sectors. Summary tables
12 and figures underlying my forecasts are provided.

13 **B. Economics and Customer Growth**

14 The gas demand projections are largely determined by the economic growth outlook for
15 the SoCalGas service territory. After several years of strong growth through 2006, the SoCalGas
16 service area's 12-county economy was hit by a severe housing slump starting in 2007, and a
17 debt-related national financial crisis starting in 2008. From healthy 2.2% growth in 2006, the
18 area's total employment grew by only 0.5% in 2007, then dropped by 1.6% in 2008 and plunged
19 6.4% in 2009, with a further fall of 1.4% in 2010. Recovery is expected to be gradual, with local
20 employment growth of 0.6% in 2011, 1.7% in 2012, then average annual growth of 1.9% from
21 2013 through 2015.

22 Local industrial employment (manufacturing and mining) plummeted nearly 11% in 2009
23 and another 3.4% in 2010. After many years of decline, the area's industrial jobs now stand at

1 over 40% below their 1988 peak of 1.3 million. Industrial jobs are forecasted to stage a modest
 2 recovery, averaging 0.86%, annual growth during the 2013 through 2015 TCAP years. Non-
 3 industrial employment is faring relatively better. In 2010, local commercial jobs (all jobs except
 4 industrial) shrank by 1.2%, but should return to positive growth in 2011 and 2012.

5 SoCalGas' service area population grew about 0.7% in 2010. Area population is
 6 forecasted to average 1.0% annual growth from 2013 through 2015. Mainly as a result of
 7 population and slightly faster household growth, SoCalGas expects its active meters to increase
 8 an average of 0.9% per year during the TCAP period, from 5.7 million meters in 2013 to 5.8
 9 million meters by 2015. Table 1 details SoCalGas' expected meter counts during the 2013 to
 10 2015 TCAP period.

11 **Table 1**
SoCalGas Active Core Meters (annual averages)

	2013	2014	2015	3-Year Avg. 2013-2015
Residential	5,475,270	5,546,406	5,624,886	5,548,854
Core C&I	209,729	210,398	211,223	210,450
Gas AC	9	9	8	9
Gas Engine	703	700	696	700
NGV	285	296	307	296
Total Core	5,685,996	5,757,810	5,837,120	5,760,309

12 SoCalGas uses econometric and statistical techniques to develop forecasts of residential
 13 single family, residential multi-family, and core commercial and industrial meters. Major
 14 economic and demographic assumptions underlying the meter forecast are from Global Insight's
 15 2011 Regional forecasts (state level and the six most populous counties in SoCalGas' service
 16 territory).

17 Connected residential single-family and multi-family meters are a function of lagged
 18 authorized housing permits. A small third sector of the residential class, master meters

1 (including sub-metered customers), is forecasted to decline at a steady 0.6% annual rate.¹

2 Connected meters in the industrial and commercial sectors are forecasted based on lagged
3 employment in those corresponding sectors.

4 Once the number of connected meters is forecasted for each customer class, it is split into
5 active and inactive meters, where inactive meters are those with no billed gas use during a billing
6 period. Inactive meters are forecasted by applying a factor to each customer class of forecasted
7 connected meters. The factors used are based on seasonal and multi-year historical patterns of
8 inactive meters for that particular customer class. The number of active meters is equal to the
9 number of connected meters less the number of inactive meters.

10 Both the core commercial and core industrial active meters are forecasted based on recent
11 historical ratios of those core active meters to their total active commercial and industrial meters,
12 respectively. For Gas Air Conditioning (Gas A/C), SoCalGas expects 9 meters for years 2013
13 and 2014 and 8 for year 2015. The number of Gas Engine meters is expected to decline from
14 703 in 2013 to 696 in 2015.

15 **C. SoCalGas Overall Forecasted Core Gas Demand**

16 SoCalGas expects a slight reduction in gas demand in the residential market as well as in
17 the core commercial and industrial market, the Gas A/C and the Gas Engine markets. These
18 markets, along with small and medium sized core commercial customers and NGV customers,
19 comprise the core market. The remaining large customers make up the noncore market. There
20 has been some movement between the core and noncore markets. From June 2010 to May 2011,
21 this movement resulted in a net throughput shift of 636 Mdth from the core to the noncore
22 market.

¹ This decline reflects the fact that no new master meters are being installed in SoCalGas' service territory. All units in new multi-family construction or conversions are now required to have individual meters.

1 Table 2 shows the composition of SoCalGas' throughput forecast for 2013, 2014, and
 2 2015 under Average Temperature Year conditions, and Table 3 shows demand under Cold Year
 3 Temperature conditions.²

4

Table 2
Composition of SoCalGas Throughput (Mdt) Average Temperature Year

	2013	2014	2015	3-Year Avg. 2013-2015
Core				
Residential	249,118	248,263	247,535	248,305
Core C&I	102,025	101,611	100,318	101,318
Gas AC	60	60	53	58
Gas Engine	1,874	1,766	1,756	1,798
NGV	12,745	13,192	13,636	13,191
Total Core	365,822	364,891	363,297	364,670

5

Table 3
Composition of SoCalGas Throughput (Mdt) 1-in-35 Cold Temperature Year

	2013	2014	2015	3-Year Avg. 2013-2015
Core				
Residential	272,737	271,801	271,003	271,847
Core C&I	106,921	106,529	105,223	106,224
Gas AC	60	60	53	58
Gas Engines	1,874	1,766	1,756	1,798
NGV	12,745	13,192	13,636	13,191
Total Core	394,337	393,347	391,671	393,119

6 The following subsection describes the calculation of forecasted demand for the individual core
 7 customer segments.

8 **D. SoCalGas' Customer Segment Demand**

9 **1. Residential**

10 Active residential meters averaged 5.3 million in 2010, an increase of about 0.7% from the 2009
 11 average. From 2013 through 2015, SoCalGas' active residential customer base is expected to grow at an
 12 average annual rate of 0.90%, reaching a little over 5.6 million by 2015.

² Cold Year design criteria are described in Mr. Wetzel's testimony.

1 Residential gas demand adjusted for temperature decreased to 244,940 Mdth in 2010 from 247,423
2 Mdth in 2009. Temperature-adjusted residential demand is projected to decline from 249,118 Mdth in 2013
3 to 247,535 Mdth in 2015, a decrease of about 1,583 Mdth or 0.2% per year. This forecast reflects the demand
4 reductions from SoCalGas' Advanced Metering Initiative (AMI)³ as well as the energy efficiency programs
5 described in Commission Decision (D.) 09-09-047.

6 **2. Commercial and Industrial**

7 On a temperature-adjusted basis, core commercial market demand in 2010 totaled 79,765
8 Mdth, down 177 Mdth from the 2009 commercial load total of 79,942 Mdth. The decrease is
9 largely the result of the economic downturn in Southern California. Over the TCAP period, the
10 core commercial market demand is expected to increase about 0.009% per year increasing from
11 81,059 Mdth in 2013 to 81,081 Mdth by 2015. This increase is due to forecasted employment
12 growth. In 2010, local commercial jobs shrank by 1.2%. In the period covering 2013-2015,
13 SoCalGas expects local commercial employment to grow at an average annual rate of 2.1% per
14 year.

15 In 2010, temperature-adjusted core industrial demand was 22,621 Mdth, an increase of
16 191 Mdth over 2009 weather adjusted deliveries of 22,430 Mdth. The core industrial market
17 demand is projected to decrease from 20,966 Mdth in 2013 to 19,237 Mdth in 2015, which is a
18 decrease of approximately 2.8% per year over the TCAP period. The demand decrease in the
19 core industrial market stems mainly from AMI conservation and the Commission-mandated
20 energy efficiency savings for the years 2013 to 2015.

³ D.10-04-027.

1 **Table 4**

Average Year Core Commercial and Industrial Demand Forecast in Mdth

	2013	2014	2015	3 Year Avg. 2013-2015
Core Commercial	81,059	81,351	81,081	81,164
Core Industrial	20,966	20,260	19,237	20,154
Total	102,025	101,611	100,318	101,318

2 **3. Natural Gas Vehicles**

3 NGV throughput is expected to increase from 12,745 Mdth in 2013 to 13,192 Mdth in
4 2014 and 13,636 Mdth in 2015. NGV stations are expected to grow from a 2010 level of 252 to
5 approximately 308 in 2015, which amounts to an annual compound growth rate of 3.4% (or 11
6 stations) per year. SoCalGas remains optimistic about the NGV market, with growth expected in
7 both private and public sectors. Most of the NGV growth in the public sector is expected to
8 come from public transit, goods movement, and trash haulers.

9 **4. Gas A/C and Gas Engines**

10 In 2010, the gas engine load totaled 1,546 Mdth. The gas engine load is expected to
11 reach 1,874 Mdth by 2013. By 2015, the gas engine load is forecasted to fall to 1,756 Mdth.
12 Over the TCAP period, the gas engine load is expected to decline at an average annual rate of
13 2.1%.

14 The Gas A/C throughput totaled 81.7 Mdth in 2010 and it is expected to decline to 53.1
15 Mdth by the year 2015. The Gas A/C market is expected to decrease at an annual average rate of
16 3.9% per year over the TCAP period.

17 **E. SoCalGas' Retail Core Peak Day and Peak Month Demand**

18 SoCalGas plans and designs its system to provide continuous service to its core (retail
19 and wholesale) customers under an extreme peak day event. The extreme peak day design
20 criteria are defined as a 1-in-35 annual event; this corresponds to a system average temperature

of 39.7 degrees Fahrenheit (°F). Core demand on an extreme peak day is met through a combination of withdrawals from underground storage facilities and flowing pipeline supplies.

For peak month planning, December demand is used, since December has generally been the coldest month in SoCalGas' service territory based on more than 20 years of weather records. Tables 5 and 6 below show the forecasted retail core peak day demand and cold design-temperature-year peak month demand.

Table 5

**1-in-35 Annual Likelihood (39.7°F System Avg. Temperature)
Peak Day Core Demand in Mdth/day**

	2013	2014	2015	3-Year Avg. 2013-2015
Residential	2,499	2,490	2,483	2,490
Core C&I	606	607	603	605
Gas AC	0.1	0.1	0.1	0.1
Gas Engine	2.9	2.0	2.0	2.3
NGV	<u>42</u>	<u>43</u>	<u>45</u>	<u>43</u>
Total Core Peak Day	3,149	3,142	3,132	3,141

Table 6

Cold Design Temperature Year: Peak Month Demand in Mdth

	2013	2014	2015	3-Year Avg. 2013-2015
Residential	41,332	41,190	41,070	41,197
Core C&I	12,092	12,076	11,962	12,043
Gas AC	4	4	3	4
Gas Engine	89	63	63	72
NGV	<u>1,293</u>	<u>1,338</u>	<u>1,383</u>	<u>1,338</u>
Total Core Peak Month	54,811	54,671	54,481	54,654

IV. SDG&E'S GAS DEMAND FORECASTS (2013 – 2015)

A. Introduction

SDG&E delivers natural gas to 847,183 core customers in San Diego County and northern Orange County. Core gas sales and transportation through SDG&E's system in 2010 totaled 50,670 Mdth, which is an average of 139 Mdth/day. SDG&E's forecast report begins

1 with a discussion of area economic conditions, followed by a discussion of the factors affecting
 2 gas demand in various market sectors. Summary tables and figures underlying the forecast are
 3 provided.

4 **B. Economics and Customer Growth**

5 SDG&E’s gas demand forecast is largely determined by the economic outlook for its San
 6 Diego County service area. In the 2013 through 2015 TCAP period, the county’s inflation-
 7 adjusted gross product is expected to average a healthy 3.2% annual growth, compared to growth
 8 of 2.5% in 2010.⁴ In the 2013 to 2015 TCAP period, SDG&E expects local total employment
 9 growth to average 2.1% per year, with 1.7% annual job growth in the small but energy-intensive
 10 industrial (mining and manufacturing) sector. During those three years, the number of SDG&E
 11 core gas meters is expected to increase an average of 0.90% annually.

12 **Table 7**
SDG&E Meters (Annual Averages)

	2013	2014	2015	3-Year Avg. 2013-2015
Core				
Residential	838,837	849,935	862,261	850,344
Core C&I	30,358	30,419	30,492	30,423
NGV	31	32	32	32
Total Core	869,226	880,386	892,785	880,799

13 SDG&E’s forecasting models were developed using regression models which integrate
 14 input assumptions regarding demographics, economics, and measurable factors which affect gas
 15 meter growth. Those input assumptions were based on Global Insight’s 2011 Regional forecast
 16 (California state-level and for San Diego County). The residential meters were modeled as a
 17 function of the expected level of housing starts as well as seasonal factors. Commercial and

⁴ Gross product is the local equivalent of national gross domestic product, a measure of the total economic output of the area economy.

1 industrial meters were modeled as a function of regional employment growth and seasonal
 2 patterns.

3 **C. SDG&E Core Gas Demand**

4 The outlook for SDG&E’s core gas sales and transportation demand is projected to
 5 decrease by an average of about 0.29% annually from 2013 to 2015. The forecast presents core
 6 gas consumption and core peak demand for the SDG&E service territory. Core customer gas
 7 usage forecasts are derived from models that integrate demographic assumptions, economics,
 8 energy prices, conservation, marketing programs, building and appliance standards, weather, and
 9 other factors. Tables 8 and 9 show details of SDG&E’s forecasted annual core gas demand
 10 under average-year and 1-in-35 cold-year conditions.

11 **Table 8**

Composition of SDG&E Core Throughput in Mdth Average Temperature Year

	2013	2014	2015	3-Year Avg. 2013- 2015
Core				
Residential	30,740	30,775	30,837	30,784
Core C&I	18,544	18,292	17,942	18,260
NGV	1,127	1,160	1,195	1,161
Total Core	50,410	50,228	49,974	50,204

12 **Table 9**

Composition of SDG&E Throughput in Mdth 1-in-35 Cold Year Temperature

	2013	2014	2015	3-Year Avg. 2013- 2015
Core				
Residential	34,008	34,047	34,115	34,057
Core C&I	19,367	19,104	18,739	19,070
NGV	1,127	1,160	1,195	1,161
Total Core	54,501	54,312	54,049	54,287

1 **1. Residential**

2 Residential meters averaged 817,006 meters in 2010, an increase of about 0.59% from the
3 2009 average of 812,174. From 2013 through 2015, SDG&E’s residential customer base is
4 expected to grow at an average annual rate of 0.92%, reaching 862,261 meters by 2015.

5 Residential gas demand adjusted for temperature totaled 30,408 Mdth in 2010. Residential
6 demand is projected to grow from 30,740 Mdth in 2013 to 30,837 Mdth in 2015, an increase of
7 about 0.11 per year. This forecast reflects the savings from SDG&E’s Smart Meter project⁵ as
8 well as SDG&E’s Energy Efficiency programs.⁶

9 **2. Core Commercial and Industrial**

10 On a temperature-adjusted basis, core commercial and industrial (C&I) market demand in
11 2010 totaled 19,231 Mdth. Core C&I demand is forecasted to decline to 18,544 Mdth in 2013
12 and 17,942 Mdth by 2015. In 2010, SDG&E’s temperature-adjusted core commercial demand
13 was 17,633 Mdth. The core commercial market demand is projected to decrease by
14 approximately 1.2 % per year to about 16,379 Mdth by 2015. The core industrial demand was
15 1,599 Mdth in 2010. The core industrial market demand is projected to decrease by 0.38%
16 annually to about 1,563 Mdth by 2015. The decrease in the core commercial and industrial
17 demand is caused by Smart Meter conservation as well as the Commission-mandated energy
18 efficiency savings for the years 2013 through 2015.

19 **3. Natural Gas Vehicles**

20 SDG&E’s NGV throughput is expected to increase from 1,031 Mdth in 2010 to 1,127
21 Mdth in 2013 and 1,195 Mdth in 2015, with growth expected in both private and public sectors.

⁵ D.07-04-043.

⁶ D.09-09-047.

1 **D. SDG&E’s Core Peak Day and Peak Month**

2 SDG&E plans and designs its system to provide continuous service to its core customers
3 under an extreme peak day event. The extreme peak day design criteria are defined as a 1-in-35
4 annual event; this corresponds to a system average temperature of 42.5 degrees F. The cold year
5 weather design details and the peak day design criteria are described and defined in Mr. Bruce
6 Wetzel’s testimony.

7 Tables 10 and 11 below show the forecasted core peak day demand and the forecasted
8 peak month demand for a cold design temperature year.

9 **Table 10**

**1-in-35 Annual Likelihood (42.5°F System Avg. Temperature)
Peak Day Core Demand in Mdth/day**

	2013	2014	2015	3 Year Avg. 2013-2015
Residential	280	280	281	280
C&I	90	88	87	88
NGV	3	3	3	3
Total	373	372	371	372

10 **Table 11**

Cold Design Temperature Year: Peak Month Core Demand in Mdth

	2013	2014	2015	3 Year Avg. 2013-2015
Residential	5,089	5,095	5,105	5,097
C&I	2,077	2,048	2,009	2,045
NGV	100	103	106	103
Total	7,266	7,246	7,220	7,244

11 **V. EXCHANGE GAS FORECASTS (2013 – 2015)**

12 The exchange of gas between SoCalGas and PG&E for operational reasons has been an
13 ongoing practice since 1949. Such exchanges are currently governed by the Master Exchange
14 Agreement (MEA), approved by the Commission in February of 1990. The net exchange of gas

1 deliveries under the MEA is forecasted to be 174 Mdth each year over the period 2013-2015.
2 SoCalGas annual deliveries are expected to equal 402 Mdth, while PG&E deliveries are expected
3 to be 228 Mdth. The exchange forecast is based on a two-year historical average. The positive
4 exchange value indicates that SoCalGas deliveries to PG&E exceed PG&E deliveries to
5 SoCalGas during the year.

6 **Table 12**

Exchange Gas Forecast in Mdth

	2013	2014	2015	3 Year Avg. 2013-2015
SoCalGas Deliveries to PG&E	402	402	402	402
PG&E Deliveries to SoCalGas	<u>228</u>	<u>228</u>	<u>228</u>	<u>228</u>
Net Difference	174	174	174	174

7 This concludes my updated prepared direct testimony.