

Application No: A.15-07-
Exhibit No.: _____
Witness: Rose-Marie Payan

Application of Southern California Gas Company
(U 904 G) and San Diego Gas & Electric Company
(U 902 G) for Authority to Revise their Natural Gas
Rates Effective January 1, 2017 in this Triennial
Cost Allocation Proceeding Phase 2

A.15-07-_____
(Filed July 8, 2015)

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

July 8, 2015

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**PREPARED DIRECT TESTIMONY
OF ROSE-MARIE PAYAN**

I. PURPOSE

The purpose of my prepared direct testimony on behalf of Southern California Gas Company (SoCalGas) and San Diego Gas & Electric Company (SDG&E) is to present the Average Temperature Year, Cold Temperature Year, peak month, and extreme design peak day gas demand forecasts for the years 2017 through 2019 for SoCalGas and SDG&E's core commercial and industrial (C&I) and natural gas vehicle (NGV) markets. I also present the forecast of gas exchange between SoCalGas and Pacific Gas and Electric Company (PG&E) for 2017-2019, the weighted-average cost of gas (WACOG) gas price forecast, and the core brokerage fee recommendation.

II. SOCALGAS' GAS DEMAND FORECASTS (2017 – 2019)

A. Introduction

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

1 **B. Economics and Customer Growth**

2 The gas demand projections are largely determined by the economic growth outlook for
3 the SoCalGas service territory. Projected employment growth is the main driver of the core
4 commercial and industrial demand forecasts. From 2013 to 2035, annual employment growth is
5 forecasted to average 0.9% in SoCalGas' service area and 1.2% in San Diego County. The next
6 few years should see continued gradual recovery in Southern California's job growth.

7 The total customer count comprises forecasts by customer class. The employment
8 assumptions underlying the core non-residential customer forecast used recorded data from the
9 California Employment Development Department (the aggregate of the 12 counties in which
10 SoCalGas serves customers).¹ For the forecast, percentage growth rates were used from Global
11 Insight's Regional forecast for the aggregated largest six counties that SoCalGas serves.
12 Recorded employment data was then projected into the forecast period by applying Global
13 Insight's forecasted percentage growth rates to the latest year of corresponding recorded data at
14 the time the forecast was made.

15 SoCalGas uses econometric and statistical techniques to develop quarterly-data forecasts
16 of core commercial and industrial customers. SoCalGas expects its core active meters to
17 increase an average of 1% per year during the TCAP period, from 5,766,654 meters in 2017 to
18 5,886,248 meters by 2019. Table 1 details SoCalGas' expected meter counts during the 2017 to
19 2019 TCAP period.

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¹ IHS Global Insight is an internationally recognized econometric forecasting firm. The firm's forecasts have been used in many regulatory proceedings.

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Table 1**SoCalGas Active Meters (Annual Averages)**

	2017	2018	2019	3-Year Avg. 2017- 2019
Residential	5,558,410	5,617,329	5,677,687	5,617,809
Core C&I	207,146	207,377	207,429	207,317
Gas A/C	9	9	9	9
Gas Engine	738	745	753	745
NGV	351	355	370	359
Total Core	5,766,654	5,825,815	5,886,248	5,826,239

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C. SoCalGas Overall Forecasted Core Gas Demand

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SoCalGas expects a slight increase in gas demand in the core commercial and industrial market, the Gas A/C and the Gas Engine markets. The remaining large customers comprise the noncore market.

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Table 2 shows the composition of SoCalGas' throughput forecast for 2017, 2018, and 2019 under Average Temperature Year conditions, and Table 3 shows demand under Cold Year Temperature conditions.²

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Table 2**Composition of SoCalGas Throughput (Mth) Average Temperature Year**

	2017	2018	2019	3-Year Avg. 2017-2019
Core				
Core C&I	1,033,422	1,024,343	1,011,792	1,023,186
Gas A/C	772	772	772	772
Gas Engine	20,493	20,698	20,905	20,699
NGV	148,370	156,931	165,986	157,096
Total Core	1,203,057	1,202,744	1,199,455	1,201,752

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² Cold Year design criteria are described in the prepared direct testimony of Mr. Teplow.

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

	2017	2018	2019	3-Year Avg. 2017-2019
Core				
Core C&I	1,083,662	1,074,229	1,061,201	1,073,031
Gas AC	772	772	772	772
Gas Engines	20,493	20,698	20,905	20,699
NGV	148,370	156,931	165,986	155,009
Total Core	1,251,326	1,250,545	1,246,659	1,249,510

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

D. SoCalGas' Customer Segment Demand

1. Commercial and Industrial

On a temperature-adjusted basis, core commercial and industrial market demand in 2014 totaled 1,041,349 Mth. It is expected to increase to 1,201,086 in 2017 and then decline slightly to 1,199,666 by the year 2019.

2. Natural Gas Vehicles

NGV throughput is expected to increase from 125,389 Mth in 2014 to 148,370 Mth in 2016 and 165,986 Mth by 2019. NGV stations are expected to grow from a 2014 level of 278 to approximately 326 in 2016, which amounts to an annual compound growth rate of 8.3% per year. By the year 2019, NGV stations will be expected to reach 370 meters. SoCalGas remains optimistic about the NGV market, with growth expected in both private and public sectors. Most of the NGV growth in the public sector is expected to come from public transit, goods movement, and trash haulers.

1 **3. Gas A/C and Gas Engines**

2 The gas engine throughput totaled 25,849 Mth in 2014, and it is expected to decline to
3 20,493 Mth by the year 2017. By 2019, the gas engine load is expected to rise to 20,905 Mth.
4 The gas engine market is expected to rise at an annual average rate of 1% per year over the
5 TCAP period.

6 In 2014, the gas A/C load totaled 912 Mth. The gas A/C load is expected to fall to 772
7 Mth by 2017 and remain at 772 Mth throughout the TCAP period.

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

9 SoCalGas plans and designs its system to provide continuous service to its core (retail
10 and wholesale) customers under an extreme peak day event. The extreme peak day design
11 criteria are defined as a 1-in-35 annual event; this corresponds to a system average temperature
12 of 40.0 degrees Fahrenheit (°F).

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

17 **Table 5**

**1-in-35 Annual Likelihood (40.0°F System Avg. Temperature)
Peak Day Demand in Mth/day**

	2017	2018	2019	3-Year Avg. 2017-2019
Core C&I	5,889	5,844	5,783	5,839
Gas AC	1	1	1	1
Gas Engine	46	46	47	46
NGV	<u>396</u>	<u>418</u>	<u>442</u>	<u>419</u>
Total Core Peak Day	6,332	6,309	6,273	6,305

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Table 6

Cold Design Temperature Year: Peak Month Demand in Mth				
	2017	2018	2019	3-Year Avg. 2017-2019
Core C&I	95,383	94,585	93,499	94,489
Gas AC	37	37	37	37
Gas Engine	1,300	1,313	1,326	1,313
NGV	<u>12,261</u>	<u>12,968</u>	<u>13,716</u>	<u>12,982</u>
Total Core Peak Month	108,981	108,903	108,578	108,821

III. SDG&E’S GAS DEMAND FORECASTS (2017 – 2019)

A. Introduction

SDG&E delivers natural gas to customers in San Diego County and northern Orange County. Non-residential core gas throughput in SDG&E’s system for the year 2014 totaled 202,969 Mth, which is an average of 556 Mth/day. SDG&E’s forecast report begins with a discussion of area economic conditions, followed by a discussion of the factors affecting gas demand in various market sectors. Summary tables and figures underlying the forecast are provided.

B. Economics and Customer Growth

SDG&E’s gas demand forecast is largely determined by the economic outlook for its San Diego County service area. In the 2017 through 2019 TCAP period, the county’s inflation-adjusted Gross Product is expected to average healthy 3.2% annual growth, about the same as in 2014.³ In the 2017 to 2019 TCAP years, we expect local total employment growth to average 1.5% per year, with 0.5% annual job growth in the small but energy-intensive industrial (mining

³ Gross Product is the local equivalent of national Gross Domestic Product, a measure of the total economic output of the area economy.

1 and manufacturing) sector. During those three years, the number of SDG&E core gas meters is
 2 expected to increase nearly 1.5% annually.

3 **Table 7**

SDG&E Meters (Annual Averages)

	2017	2018	2019	3-Year Avg. 2017-2019
Core				
Residential	871,364	884,559	897,948	884,624
Core C&I	30,150	30,263	30,382	30,265
NGV	37	38	40	38
Total Core	901,551	914,860	928,370	914,927

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 5 SDG&E’s forecasting models were developed using regression models that integrate
 6 input assumptions regarding demographics, economics, and measurable factors that affect gas
 7 meter growth. Those input assumptions were based on Global Insight’s 2014 Regional forecast
 8 (California state-level and for San Diego County). Commercial and industrial meters were
 9 modeled as a function of regional employment growth and seasonal patterns.

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

11 The outlook for SDG&E’s core commercial and industrial and transportation demand is
 12 projected to increase by an average of about 0.4% annually from 2017 to 2019. The forecast
 13 presents core gas consumption and core peak demand for the SDG&E service territory. Core
 14 customer gas usage forecasts are derived from models that integrate demographic assumptions,
 15 economics, energy prices, conservation, marketing programs, building and appliance standards,
 16 weather, and other factors. Tables 8 and 9 show details of SDG&E’s forecasted annual core gas
 17 demand under average-year and 1-in-35 cold-year conditions.⁴

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⁴ Cold Year design criteria are described in the prepared direct testimony of Mr. Teplow.

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Table 8

Composition of SDG&E Throughput in Mth Average Temperature Year

	2017	2018	2019	3-Year Avg. 2017- 2019
Core				
Core C&I	184,677	182,905	180,398	182,660
NGV	17,474	18,482	19,548	18,501
Total Core	202,151	201,387	199,946	201,161

Table 9

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

	2017	2018	2019	3-Year Avg. 2017- 2019
Core				
Core C&I	191,783	189,941	187,338	189,687
NGV	17,474	18,482	19,548	18,501
Total Core	209,257	208,423	206,886	208,188

1. Core Commercial and Industrial

On a temperature-adjusted basis, core commercial and industrial (C&I) market demand in 2014 totaled 186,143 Mth. Core C&I demand is forecasted to decline to 184,677 Mth in 2017 and 180,398 Mth by 2019.

2. Natural Gas Vehicles

SDG&E’s NGV throughput is expected to increase from 17,474 Mth in 2017 to 19,548 Mth in 2019, with growth expected in both private and public sectors.

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

SDG&E plans and designs its system to provide continuous service to its core customers under an extreme peak day event. The extreme peak day design criteria are defined as a 1-in-35 annual event; this corresponds to a system average temperature of 42.7°F.

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

3 **Table 10**

**1-in-35 Annual Likelihood (42.7°F System Avg. Temperature)
 Peak Day Demand in Mdth/day**

	2017	2018	2019	3 Year Avg. 2017-2019
C&I	905	897	884	896
NGV	48.9	51.7	54.7	52
Total	954	949	939	948

5 **Table 11**

Cold Design Temperature Year: Peak Month Demand in Mth

	2017	2018	2019	3 Year Avg. 2017-2019
C&I	20,607	20,408	20,128	20,381
NGV	1,517	1,604	1,697	1,606
Total	22,124	22,012	30,387	21,987

7 **IV. EXCHANGE GAS FORECASTS (2017 – 2019)**

8 The exchange of gas between SoCalGas and PG&E for operational reasons has been an
 9 ongoing practice since 1949. Such exchanges are currently governed by the Master Exchange
 10 Agreement (MEA), approved by the Commission in February 1990. The net exchange of gas
 11 deliveries under the MEA is forecasted to be 360 Mdth each year over the period 2017-2019.
 12 SoCalGas’ annual deliveries are expected to equal 376 Mdth, while PG&E’s deliveries are
 13 expected to be 735 Mdth. The exchange forecast is based on a three-year historical average.
 14 Over the historic period covering 2012-2014, exchange values show that PG&E deliveries to
 15 SoCalGas exceeded SoCalGas deliveries to PG&E.

1 **Table 12**

Exchange Gas Historical Volumes in Mdth

	2012	2013	2014	3 Year Avg.
SoCalGas Deliveries to PG&E	435	386	306	376
PG&E Deliveries to SoCalGas	<u>829</u>	<u>580</u>	<u>798</u>	<u>735</u>
Net Difference	394	193	492	360

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3 **V. GAS PRICE FORECAST (2017 – 2019)**

4 The natural gas price forecast used to develop the demand forecasts for SoCalGas and
5 SDG&E in this proceeding was prepared using New York Mercantile Exchange (NYMEX)-
6 based natural gas futures prices and other forecast sources. This forecast was prepared in
7 February 2015. Consistent with the gas price forecast methodology used to develop demand
8 forecasts authorized by Commission Decision (D.)09-11-006,⁵ SoCalGas and SDG&E used this
9 methodology to forecast the cost of gas to be used for determining the cost of Unaccounted-For
10 (UAF) and Company-Use (CU) fuel.

11 This forecast is based on NYMEX Henry Hub ClearPort Basis Swap futures prices
12 through October 2016. For the period covering November 2016 to January 2019, the natural gas
13 price was forecast at Henry Hub and blended with a composite of proprietary and public market
14 gas price forecasts. Consistent with the integration of the gas procurement function for both
15 SoCalGas and SDG&E set forth in D.07-12-019, a combined core Weighted Average Cost of
16 Gas (WACOG) for both utilities was estimated using 2014 purchase weights by production basin
17 and interstate pipeline receipt points. The final WACOG for purchase also includes the
18 integrated interstate pipeline and Backbone Transportation Service (BTS) charges. The futures-
19 based forecasted gas price used to forecast TCAP gas demand is \$3.79/MMBtu, as shown in
20 Table 13. The natural gas price used for pricing out UAF and CU fuel is based on the updated

⁵ D.09-11-002 approved a settlement agreement in Phase 2 of SoCalGas and SDG&E's 2009 BCAP.

1 March 2015 Basis swaps trading contract settlements from NYMEX ClearPort⁶ at the California
2 Border to arrive at the natural gas price forecasts used to forecast UAF and CU fuel. Because the
3 UAF and CU fuel cost forecasts are adjusted using NYMEX California Border prices each
4 October for use in pricing out UAF and CU fuel in the subsequent year, using a more recent
5 California Border price is reasonable.

6 **Table 13**

**SoCalGas and SDG&E
Combined SoCalGas Citygate WACOG**

	<u>\$/MMBtu</u>
2017	3.91
2018	4.03
<u>2019</u>	<u>4.48</u>
Three-Year Average (2017-2019)	3.79

7 The actual cost of UAF gas purchases will be balanced through the appropriate regulatory
8 accounts. To minimize the likelihood of undercollections or overcollections over the TCAP
9 period, the underlying gas price will continue to be updated through the annual Regulatory
10 Account Update Advice Letter filing in October, as is done today, using a forecast of Southern
11 California Citygate gas prices for the next year that is based on then current NYMEX ClearPort
12 futures prices at the Southern California Border. The proposed UAF prices are listed below.

13 The UAF gas price includes the 2017 SoCalGas Border price forecast, added to the
14 brokerage fee, as described in Section IV of my testimony, with Franchise Fee & Uncollectibles
15 (FF&U) and then added to the BTS rate as shown in the direct testimony of Mr. Bonnett.

16 SoCalGas' UAF gas price is \$0.40277/therm. SDG&E's UAF gas price is \$0.40492/therm. The
17 UAF gas price is updated in the October Regulatory Account filing.

⁶ New York Mercantile Exchange. NYMEX ClearPort Clearing and NYMEX ClearPort Trading Contract Settlements <https://www.services.nymex.com/otcsettlement/OTCSettle.jsp>

Table 14
SoCalGas and SDG&E Price for UAF Gas

	SoCalGas	SDG&E
SoCal Border price	\$0.37599	\$0.37599
Brokerage Fee	\$0.00162	\$0.00162
Subtotal	\$0.37761	\$0.37761
FF&U	101.76%	102.33%
Subtotal with FFU	\$0.38427	\$0.38642
Backbone Transportation Service \$/th/day	\$0.01850	\$0.01850
Citygate price for UAF gas(\$/th)	\$0.40277	\$0.40492

VI. BROKERAGE FEE STUDY

The SoCalGas and SDG&E core brokerage fee is currently 0.157 cents per therm. Based on an updated core brokerage fee study consistent with that used in the 2013 TCAP approved by D.14-06-007, the core brokerage fee proposed for this TCAP is 0.162 cents per therm, as shown in Table 15.

Table 15

Brokerage Fee Summary		
Current Brokerage Fee*	0.157	cents per therm
Proposed Brokerage Fee* (SoCalGas+SDG&E)	0.162	cents per therm

*Before FF&U

This Brokerage Fee is based on a total cost of \$6,370,148 to provide core gas acquisition services to SoCalGas and SDG&E's retail core class of customers. The costs of Gas Acquisition, Demand Forecasting, Case Management, Tariffs, Human Resources, Commercial & Industrial Sales, Information Technology Support, and Legal Services are included in the total cost to provide gas acquisition services. The breakdown of these costs is shown in Table 16 below. The complete study is shown in the accompanying workpapers.

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Table 16
Total Brokerage Fee Costs

	Labor	NonLabor	Overheads	Direct Cost	Rent	Total
Gas Acquisition	\$2,622,666	\$457,645	\$2,778,571	\$5,858,882	\$293,987	\$6,152,869
Demand Forecasting	\$36,601	\$3,823	\$33,363	\$73,788	\$4,291	\$78,079
Case Management	\$23,536	\$1,448	\$29,156	\$44,726	\$2,781	\$47,507
Regulatory Tariff	\$8,246	\$200	\$8,037	\$16,482	\$795	\$17,277
Human Resources	\$16,557	\$1,220	\$19,433	\$37,210	\$2,384	\$39,594
Law	\$16,160	\$1,273	\$17,120	\$34,553	\$269	\$34,823
	\$2,723,766	\$465,609	\$2,885,681	\$6,065,642	\$304,506	\$6,370,148

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This concludes my prepared direct testimony.

1 **VII. QUALIFICATIONS**

2 My name is Rose-Marie Payan. My business address is 555 West Fifth Street, Los
3 Angeles, California, 90013-1011. I am employed by SoCalGas as a Forecasting Advisor. I am
4 responsible for the development of core customers' natural gas demand forecasts for SoCalGas
5 and SDG&E.

6 My academic and professional qualifications are as follows: I earned an undergraduate
7 degree in Economics from the University of California, Davis in 1990, and a Master of Arts
8 Degree in Economics from the University of California, Santa Barbara in 1993.

9 My employment outside of SoCalGas has been in the area of Economics. I held the
10 positions of Analyst at Micronomics, Consultant at Navigant Consulting; Economics Lecturer at
11 California Polytechnic Institute, San Luis Obispo; and Adjunct Lecturer at California State
12 University, Channel Islands, Diablo Valley College and Glendale Community College, and the
13 California State University, Los Angeles.