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Chapter: 5

PREPARED DIRECT TESTIMONY OF
WEI BIN GUO
ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY
AND SAN DIEGO GAS & ELECTRIC COMPANY

(NONCORE AND CONSOLIDATED DEMAND FORECASTS)

July 2018

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1 **CHAPTER 5**

2 **PREPARED DIRECT TESTIMONY OF WEI BIN GUO**
3 **(NONCORE AND CONSOLIDATED DEMAND FORECASTS)**
4

5 **I. PURPOSE**

6 The purpose of my prepared direct testimony is to present the demand forecasts for
7 Southern California Gas Company's (SoCalGas) and San Diego Gas & Electric Company's
8 (SDG&E) noncore market segments other than large electric generation (EG) and large
9 cogeneration customers (those with capacity greater than 20 megawatts (MW)), whose gas
10 demand forecasts are discussed in Chapter 4 (Huang). In my testimony, I also prepare the meter
11 count forecasts for all of SoCalGas' and SDG&E's markets except for large EG and large
12 cogeneration customers whose meter forecasts are discussed in Chapter 4 (Huang). My
13 testimony also presents the consolidated gas demand forecasts for Average Year and Cold Year
14 temperature conditions, along with peak day and peak month demand forecasts, for the years
15 2020 through 2022 (TCAP period) for SoCalGas' and SDG&E's markets. My consolidated
16 forecasts rely on the forecasts of residential customer demand provided in Chapter 2 (Teplow),
17 the forecasts of core commercial and industrial (core C&I) customer demand presented in
18 Chapter 3 (Payan), and the forecasts of large EG and large cogeneration customer demand
19 presented in Chapter 4 (Huang). Further, Chapter 2 (Teplow) provides the underlying heating
20 degree-day design scenarios for Average Year and Cold Year temperature conditions, as well as
21 the peak day temperature design conditions, for both SoCalGas and SDG&E. Finally, I provide
22 the calculated allocations of core storage among key core market segments for SoCalGas and

1 | SDG&E along with values for unaccounted-for gas and their allocation between core and
2 | noncore markets for both companies.

3 | **II. SOCALGAS' NONCORE GAS DEMAND FORECASTS**

4 | **A. Introduction**

5 | SoCalGas' service to noncore markets includes both retail and wholesale service. Retail
6 | service consists of transportation and distribution of gas directly for end-use consumption.

7 | Wholesale service is provided to municipalities or other investor-owned utilities who re-deliver
8 | the gas to their end-use customers. SoCalGas' wholesale customers are the City of Long Beach
9 | (Long Beach), SDG&E, the City of Vernon (Vernon), and Southwest Gas Corporation (SWG).

10 | Noncore retail customers typically represent those with much larger individual loads than
11 | are characteristic of core customers. Also, noncore customers are generally business
12 | establishments with many employees.

13 | **B. SoCalGas' Noncore Customer Segment Demand**

14 | **1. Commercial**

15 | During this TCAP period, we forecast noncore commercial demand to average 18,608
16 | MDth per year, higher than the 2017 Heating Degree Day (HDD)-adjusted actual usage of
17 | 18,262 MDth.¹ The increase in the HDD-adjusted average year demand for 2020 through year
18 | 2022 is the net result of expected modest growth in this market (including migration of core
19 | commercial load to noncore) net of decreases from the expected implementation of mandated
20 | Energy Efficiency (EE) programs.

¹ The HDD-adjusted value for 2017 is 18,262 MDth and reflects the small, but statistically significant, sensitivity to HDD where calendar year 2017 had about 357 fewer HDD than our average year design HDD value of 1,320. The observed value for 2017 was 17,738 MDth less 8 MDth for G30 rule 38 commercial customer load.

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Table 1
Average Year Noncore Commercial Demand Forecast (MDth/yr)

	2020	2021	2022	3-Year Avg. 2020-2022
Noncore Commercial	18,670	18,616	18,538	18,608

2. Industrial

We forecast retail noncore industrial (non-refinery) demand to decline from 53,029 MDth in 2017 to an average of 52,293 MDth during the TCAP period. Decline of this market segment from 2017 through the TCAP period is the net result of expected modest growth in this market (including migration of core industrial load to noncore) net of decreases from the expected implementation of mandated Energy Efficiency programs and the migration of noncore industrial load to the City of Vernon.

Refinery industrial demand is comprised of gas consumption by petroleum refining customers, hydrogen producers and petroleum refined product transporters. Refinery industrial demand is forecasted separately from other industrial demand because of the distinct nature of these customers. These customers are characterized by a complex interaction of refinery operations, on-site production of alternate fuels, and changing regulatory requirements impacting the production of petroleum products. We expect refinery industrial demand to average 83,681 MDth per year for the calendar years 2020 through 2022. This is 4,947 MDth lower than the 88,627 MDth recorded for 2017. This decrease is driven by the refineries’ use of alternate fuels, such as propane during months in the forecasted period when natural gas prices are forecasted to be less competitive than alternate fuel prices. The reduction of refinery gas demand also reflects savings from Commission-mandated EE programs.

1 **Table 2**

Average Year Noncore Industrial Demand Forecast (MDth/yr)

	2020	2021	2022	3-Year Avg. 2020-2022
Noncore Industrial	52,951	52,323	51,605	52,293
Industrial Refinery	84,196	83,462	83,383	83,681
Total	137,147	135,785	134,988	135,973

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3 **3. Electric Power Generation**

4 The electric power generation sector includes the markets for all industrial/commercial
5 cogeneration and non-cogeneration EG. Small industrial/commercial and refinery cogeneration
6 demand is included in my testimony; the other sectors of electric power generation demand are
7 discussed in Chapter 4 (Huang).

8 Industrial/Commercial cogeneration units (<20 MW) are installed primarily to generate
9 electricity for customers' internal consumption rather than for power sales to electric utilities or
10 to the California Independent System Operator. In 2017, gas deliveries to this market were
11 25,296 MDth. We forecast small industrial/commercial cogeneration demand to average 26,111
12 MDth per year during the TCAP period. The increase in demand is due to the expected decrease
13 in the burner-tip price of natural gas relative to retail electricity over the forecast period.

14 Refinery cogeneration units are installed primarily to generate electricity for refinery
15 customers' internal use. We project refinery-related cogeneration to average 22,759 MDth in the
16 three-year TCAP period. This average consumption is 831 MDth lower than the recorded
17 throughput of 23,590 MDth for year 2017.

18 **4. Enhanced Oil Recovery-Cogeneration and Steaming**

19 The Enhanced Oil Recovery (EOR) demand forecast is prepared based on historical
20 throughput and general market conditions. For the 2020 to 2022 TCAP period, we forecast EOR
21 demand—combined for cogeneration and steaming usage—to average 20,894 MDth per year.

1 This is the same as the 2017 recorded gas demand of 20,894 MDth; we expect this market to
2 exhibit stable throughput throughout this TCAP period.

3 **5. ECOGAS (Mexicali)**

4 For this forecast, SoCalGas uses a forecast prepared and provided by ECOGAS of
5 Mexicali. ECOGAS expects the natural gas consumption to increase from 10,221 MDth in 2017
6 to an average of 11,630 MDth per year in the 2020-2022 TCAP period.

7 **6. Wholesale**

8 The forecast of wholesale gas demand includes transportation service to SDG&E, Long
9 Beach, SWG, and Vernon.

10 The non-electric generation (non-EG) gas demand forecast for SDG&E is made on a
11 customer class basis. Under average temperature conditions, total non-EG requirements for
12 SDG&E are expected to increase from 57,247 MDth in 2017 to an average of 57,908 MDth for
13 the TCAP period.

14 The forecast of electric generation gas demand in SDG&E's service area shows a
15 decrease in SDG&E's EG gas requirements from 61,976 MDth in 2017 to an average of 53,023
16 MDth for the TCAP period. During the TCAP period, EG demand is expected to decline about
17 1.2% per year, from 53,525 MDth in 2020 to 52,249 MDth in 2022.

18 For Long Beach, a forecast received from Long Beach has been used. SoCalGas'
19 average transportation deliveries to Long Beach are forecasted to be 7,965 MDth per year in the
20 TCAP period.

21 The demand forecast for SoCalGas deliveries to SWG has been prepared and provided by
22 SWG for its southern California markets. The direct service load to SWG is expected to grow
23 0.76% per year in this TCAP period, from 6,595 MDth in 2020 to 6,695 MDth in 2022.

1 Vernon initiated municipal gas service to its electric power plant in June 2005 and to
2 noncore customers in December 2006. We expect the annual usage of Vernon to average 9,689
3 MDth for this TCAP period. Vernon’s commercial and industrial load is based on recorded 2017
4 usage for commercial and industrial customers already served by Vernon, plus those additional
5 customers who are expected to request retail service from Vernon. Results from the power
6 market simulation model described in Chapter 4 (Huang) provided the basis for our forecast of
7 Vernon’s EG gas demand.

8 **III. SOCALGAS METER COUNT AND CONSOLIDATED GAS DEMAND**
9 **FORECASTS**

10 **A. Introduction**

11 For year 2017, SoCalGas’ total gas demand, adjusted to the Average Year HDD of 1,320
12 HDD, totaled 961,015 MDth, which is an average of 2,633 MDth/day. In this TCAP period,
13 SoCalGas expects its Average Year gas demand to decline from 2020 through 2022 at
14 approximately 1.0% annually. The average for the TCAP years is 935,096 MDth, a decrease of
15 2.7% from the 2017 Average Year value.

16 SoCalGas’ Consolidated gas demand forecasts are used in SoCalGas’ Cost Allocation
17 and Long Run Marginal Cost Study presented in Chapter 9 (Schmidt-Pines) and SoCalGas’ Rate
18 Design presented in Chapter 12 (Chaudhury).

19 **B. Meter Count Forecasts**

20 SoCalGas’ overall outlook for customer meter counts for this TCAP period is
21 summarized in Table 3 below. In this TCAP period, we expect steady customer growth for core
22 markets overall and stable customer counts in retail noncore markets.

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Table 3
SoCalGas Active Meters (annual averages)

	2020	2021	2022	3-Year Avg. 2020-2022
Core				
Residential	5,663,352	5,714,082	5,766,159	5,714,531
Core C&I	203,651	203,522	203,370	203,514
Gas AC	4	4	4	4
Gas Engine	712	712	712	712
NGV	363	378	393	378
Total Core	5,868,082	5,918,698	5,970,638	5,919,139
Noncore				
Noncore C&I	591	593	595	593
Electric Generation	388	389	391	389
EOR	34	34	34	34
Total Retail Noncore	1,013	1,016	1,019	1,016
Wholesale and International	5	5	5	5
System Total Active Meters	5,869,100	5,919,719	5,971,663	5,920,161

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Residential and total C&I meter forecasts are presented in Rose-Marie Payan's SoCalGas 2019 General Rate Case workpapers.² Gas A/C, gas engine, and natural gas vehicle (NGV) meter counts are forecasted from base year 2017 data and projected forward based on observed trend. The core C&I meter forecast for this TCAP period is derived by subtracting the other non-residential markets' meter forecasts from total C&I meter forecasts.

Noncore customer and meter counts are developed from base year 2017 data and projected forward based on the observed trend of each noncore market segment. Customer/meter counts for large EG and large cogeneration customers are described in Chapter 4 (Huang).

² See A.17-10-007, A.17-10-008 (consolidated), Exhibit SCG-39-WP, Workpapers to SoCalGas Direct Testimony of Rose-Marie Payan, October 6, 2017.

1 **C. Consolidated Gas Demand for Average Year and Cold Year**

2 Table 4 shows the composition of SoCalGas' throughput forecast for 2020, 2021 and
 3 2022 under Average Year temperature conditions, and Table 5 shows demand under Cold Year
 4 temperature conditions.³

5 **Table 4**
Composition of SoCalGas Throughput (MDth/Yr) Average Temperature Year

	2020	2021	2022	3-Year Avg. 2020-2022
Core				
Residential	238,159	234,857	230,889	234,635
Core C&I	101,330	99,418	97,064	99,271
Gas AC	42	42	42	42
Gas Engine	2,230	2,230	2,230	2,230
NGV	16,933	17,860	18,838	17,877
Total Core	358,695	354,407	349,062	354,055
Non-Core				
Non-core C&I	155,817	154,401	153,526	154,581
Electric Generation	261,177	256,571	255,585	257,778
EOR	20,894	20,894	20,894	20,894
Total Retail Non-core	437,888	431,867	430,006	433,253
Wholesale and International				
Long Beach	7,957	7,964	7,972	7,965
SDG&E	112,712	112,229	110,643	111,861
Southwest Gas	6,595	6,639	6,695	6,643
Vernon	9,662	9,721	9,684	9,689
Mexicali	11,596	11,618	11,676	11,630
Total Wholesale & Intl.	148,523	148,171	146,671	147,788
Average Year Throughput (AYTP)				
	945,105	934,444	925,739	935,096

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³ Gas demand under Average Year temperature conditions is called Average Year Throughput (AYTP) and gas demand under Cold Year temperature conditions is called Cold Year Throughput (CYTP).

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Table 5
Composition of SoCalGas Throughput (MDth/Yr) 1-in-35 Cold Temperature Year

	2020	2021	2022	3-Year Avg. 2020-2022
Core				
Residential	261,905	258,692	254,739	258,445
Core C&I	105,527	103,615	101,260	103,467
Gas AC	42	42	42	42
Gas Engine	2,230	2,230	2,230	2,230
NGV	16,933	17,860	18,838	17,877
Total Core	386,637	382,439	377,108	382,061
Non-Core				
Non-core C&I	156,225	154,809	153,935	154,990
Electric Generation	261,177	256,571	255,585	257,778
EOR	20,894	20,894	20,894	20,894
Total Retail Non-core	438,296	432,275	430,414	433,662
Wholesale and International				
Long Beach	8,626	8,635	8,645	8,636
SDG&E	116,630	116,131	114,510	115,757
Southwest Gas	7,126	7,175	7,235	7,179
Vernon	10,197	10,221	10,157	10,192
Mexicali	11,596	11,618	11,676	11,630
Total Wholesale & Intl.	154,176	153,780	152,223	153,393
Cold Year Throughput (CYTP)				
	979,109	968,494	959,746	969,116

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D. Consolidated Peak Day Gas Demand

SoCalGas uses the following consolidated peak day gas demand for cost allocation and rate design purposes. Table 6 below shows the peak day gas demand for each year of the TCAP period as well as the three-year average for that period.

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Table 6
SoCalGas' Peak Day Demand (MDth/d)

	2020	2021	2022	3-Year Avg. 2020-2022
Core				
Residential	2,437	2,419	2,395	2,417
Core C&I	583	576	568	576
Gas AC	0.1	0.1	0.1	0.1
Gas Engine	3	3	3	3
NGV	45	47	50	47
Total Core	3,068	3,046	3,016	3,043
Non-Core				
Non-core C&I	477	474	470	474
Electric Generation	834	848	827	837
EOR	57	57	57	57
Total Retail Non-core	1,369	1,379	1,355	1,368
Wholesale and International				
Long Beach	56	56	56	56
SDG&E	630	611	612	618
Southwest Gas	52	53	53	53
Vernon	30	20	30	27
Mexicali	32	32	32	32
Total Wholesale & Intl.	799	772	784	785
Total Peak Day Demand	5,236	5,198	5,155	5,196

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For HDD-sensitive core market segments, peak day demand is calculated using the

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applicable 1-in-35 peak day temperature condition for SoCalGas or SDG&E. For the SoCalGas

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retail noncore HDD-sensitive market segment, peak day demand is calculated under a 1-in-10

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peak day temperature condition. For the SoCalGas and SDG&E electric generation facilities

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presented in Chapter 4 (Huang), peak day demand is calculated as a coincident peak day for all

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these facilities. For all other market segments, peak day load is calculated as average daily

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December month's demand.

E. Consolidated Peak Month Gas Demand

SoCalGas uses gas demand for the month of December as the peak month for cost allocation and rate design purposes. Consolidated forecasts of peak month gas demands are shown below in Table 7 for each year of the TCAP period as well as the three-year average for that period.

Table 7
SoCalGas' Peak Month Demand (MDth/Mo)

	2020	2021	2022	3-Year Avg. 2020-2022
Core				
Residential	39,817	39,328	38,727	39,291
Core C&I	11,989	11,779	11,521	11,763
Gas AC	3	3	3	3
Gas Engine	97	97	97	97
NGV	1,394	1,471	1,551	1,472
Total Core	53,299	52,678	51,899	52,625
Non-Core				
Non-core C&I	14,071	13,971	14,032	14,025
Electric Generation	21,770	21,758	21,547	21,692
EOR	1,775	1,775	1,775	1,775
Total Retail Non-core	37,616	37,503	37,354	37,491
Wholesale and International				
Long Beach	1,054	1,057	1,059	1,057
SDG&E	12,203	12,062	12,292	12,186
Southwest Gas	1,148	1,158	1,168	1,158
Vernon	820	826	844	830
Mexicali	982	987	992	987
Total Wholesale & Intl.	16,207	16,090	16,356	16,218
Total Peak Month Demand	107,122	106,271	105,608	106,334

For HDD-sensitive market segments, December HDD for cold year temperature designs are used to calculate gas demand.

1 **IV. SDG&E’S NONCORE GAS DEMAND FORECASTS**

2 This section presents noncore customers’ gas demand for SDG&E, with the exception of
3 the gas requirements for large electric generation and large cogeneration customers (with
4 capacity greater than 20 MW) discussed in Chapter 4 (Huang). Gas demand forecasts for
5 noncore C&I and Industrial/Commercial Cogeneration (<20 MW) are derived by trending
6 recorded data for 2006 through 2017 driven primarily by expected growth in commercial and
7 industrial employment in San Diego county. C&I non-cogeneration gas demand is adjusted to
8 reflect decreases from the expected implementation of mandated EE programs. The data in
9 Table 8 below shows SDG&E’s noncore throughput each year for the TCAP period, as well as
10 the three-year average.

11 **Table 8**
Composition of SDG&E Noncore Throughput (MDth/Yr)

	2020	2021	2022	3-Year Avg. 2020-2022
Noncore C&I	4,688	4,697	4,699	4,694
Cogeneration (<20 MW)	9,328	9,343	9,341	9,337

12
13 We forecast SDG&E’s noncore commercial and industrial demand to grow about 0.1%
14 per year in the TCAP period, from 4,688 MDth in 2020 to 4,699 MDth by 2022. Noncore
15 commercial and industrial load was 4,371 MDth for 2017.

16 SDG&E’s industrial/commercial cogeneration (capacity <20 MW) load was 8,829 MDth
17 in 2017. We expect Industrial/Commercial cogeneration load to average 9,337 MDth in this
18 TCAP period.

1 **V. SDG&E METER COUNT AND CONSOLIDATED GAS DEMAND FORECASTS**

2 **A. Introduction**

3 SDG&E’s total throughput (gas sales and transportation), adjusted to the Average Year
4 HDD of 1,246 HDD, totaled 119,223 MDth for year 2017, an average of 327 MDth/day. In the
5 2020 to 2022 TCAP years, SDG&E expects Average Year throughput to decline at about 0.9%
6 annually from 2020 through 2022. Total Average Year throughput for the TCAP years is
7 110,932 MDth, a decrease of 7.0% from the 2017 value.

8 SDG&E’s consolidated gas demand forecast data are used for SDG&E’s Cost Allocation
9 and Long Run Marginal Cost Study presented in Chapter 10 (Foster), and SDG&E’s Rate Design
10 presented in Chapter 12 (Chaudhury).

11 **B. Meter Count Forecasts**

12 SDG&E’s meter counts for this TCAP period are summarized in Table 9 below. In this
13 TCAP period, we expect steady customer growth overall and stable customer counts in retail
14 noncore markets.

15 **Table 9**
SDG&E Meters (Annual Averages)

	2020	2021	2022	3-Year Avg. 2020-2022
Core				
Residential	867,507	874,002	880,694	874,067
Core C&I	30,844	30,940	31,027	30,937
NGV	27	28	28	28
Total Core	898,378	904,970	911,748	905,032
Non-Core				
Non-core C&I	53	53	53	53
Electric Generation	90	90	90	90
Total Retail Non-core	143	143	143	143
System Total Meters	898,521	905,113	911,891	905,175

1 SDG&E’s residential, core C&I, and NGV meter forecasts for this TCAP period are
 2 based on customer forecasts presented in Ms. Payan’s SDG&E 2019 General Rate Case
 3 workpapers.⁴ Noncore customer counts are developed from base year 2017 data and projected
 4 forward based on the observed trend of each noncore market segment. Customer/meter counts
 5 for the large EG and large cogeneration market segments are described in Chapter 4 (Huang).

6 **C. Consolidated Gas Demand for Average Year and Cold Year**

7 Tables 10 and 11 show the details of SDG&E’s forecasted annual gas demand under
 8 Average-Year and 1-in-35 Cold-Year temperature conditions, respectively.

9 **Table 10**
Composition of SDG&E Throughput (MDth/Yr) Average Temperature Year

	2020	2021	2022	3-Year Avg. 2020-2022
Core				
Residential	31,721	31,394	30,856	31,323
Core C&I	19,595	19,500	19,338	19,478
NGV	2,247	2,409	2,583	2,413
Total Core	53,563	53,303	52,776	53,214
Non-Core				
Non-core C&I	4,688	4,697	4,699	4,694
Electric Generation	53,525	53,295	52,249	53,023
Total Retail Non-core	58,213	57,992	56,947	57,718
Average Year Throughput (AYTP)	111,776	111,296	109,723	110,932

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 4 See A.17-10-007, A.17-10-008 (consolidated), Exhibit SDG&E-37-WP, Workpapers to SDG&E Direct Testimony of Rose-Marie Payan, October 6, 2017.

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Table 11

Composition of SDG&E Throughput (MDth/Yr) 1-in-35 Cold Year Temperature

	2020	2021	2022	3-Year Avg. 2020-2022
Core				
Residential	34,759	34,418	33,845	34,341
Core C&I	20,441	20,346	20,183	20,324
NGV	2,247	2,409	2,583	2,413
Total Core	57,448	57,174	56,610	57,077
Non-Core				
Non-core C&I	4,688	4,697	4,699	4,694
Electric Generation	53,525	53,295	52,249	53,023
Total Retail Non-core	58,213	57,992	56,947	57,718
Cold Year Throughput (CYTP)	115,661	115,166	113,558	114,795

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D. Consolidated Peak Day Gas Demand

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SDG&E uses the consolidated peak day gas demand for cost allocation and rate design

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purposes. Table 12 below shows the peak day gas demand.

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Table 12
SDG&E's Peak Day Demand (MDth/d)

	2020	2021	2022	3-Year Avg. 2020-2022
Core				
Residential	298	295	291	294
Core C&I	112	112	111	112
NGV	6	6	7	6
Total Core	415	413	408	412
Non-core				
Non-core C&I	13	13	13	13
Electric Generation	197	181	186	188
Total Retail Noncore	209	193	198	200
Total Peak Day Demand	625	606	607	613

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For SDG&E's HDD-sensitive core market segments, peak day demand is calculated

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under a 1-in-35 peak day temperature condition. For the SDG&E electric generation facilities

1 included in Chapter 4 (Huang) power market simulation model, peak day demand was calculated
 2 as a coincident peak day for all these facilities. For all the other market segments, peak day load
 3 is calculated as the average daily December month's demand.

4 **E. Consolidated Peak Month Gas Demand**

5 SDG&E uses gas demand for the month of December as the peak month for cost
 6 allocation and rate design purposes. Consolidated forecasts of the peak month gas demand are
 7 shown in Table 13 below.

8 **Table 13**
SDG&E's Peak Month Demand (MDth/Mo)

		2020	2021	2022	3-Year Avg. 2020-2022
Core	Residential	5,080	5,030	4,946	5,019
	Core C&I	2,346	2,336	2,318	2,333
	NGV	183	196	210	196
	Total Core	7,609	7,561	7,474	7,548
Noncore	Noncore C&I	394	395	395	395
	EG	4,098	4,006	4,322	4,142
	Total Retail Noncore	4,493	4,401	4,717	4,537
Total Peak Month Demand		12,101	11,962	12,190	12,085

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 10 For HDD-sensitive core market segments, December HDD for SDG&E's cold year
 11 temperature design is used to calculate gas demand.

1 **VI. Core Storage Allocations and Unaccounted-For Gas**

2 **A. Core Storage Allocations**

3 The following storage assets are allocated to serve the core customers of SoCalGas and
4 SDG&E combined:

- 5 • Storage Inventory of 82.5 Bcf,
- 6 • Winter Months' Withdrawal Capacity of 2,000 MMcfd, and
- 7 • Summer Months' Injection Capacity of 445 MMcfd.

8 These storage assets are discussed in Chapter 1 (Dandridge). The purpose of my
9 testimony regarding these assets is to provide the accompanying allocation of these overall core
10 asset levels to (1) SoCalGas and (2) SDG&E for each company's respective core rate classes.

11 Table 14 shows the allocation of the storage assets for SoCalGas' core customers by
12 customer class, and Table 15 shows the resulting storage asset allocation by customer class for
13 SDG&E's core customers.

14 **Table 14**

SoCalGas Core Storage Allocations by Customer Class

Storage Asset	Residential	G-10	G-AC	G-GE	G-NGV	Total SCG Core
Inventory Allocation (BCF)	60.2	11.1	0.0	0.4	0.6	72.3
Injection (MMcfd)	324.6	59.7	0.0	2.4	3.1	389.8
Withdrawal (MMcfd)	1,398.8	333.3	0.0	1.8	27.5	1,761.4

15
16 **Table 15**

SDG&E Core Storage Allocations by Customer Class

Storage Asset	Residential	GN-3	G-NGV	Total SDG&E Core	SCG & SDG&E Core Totals
Inventory Allocation (BCF)	7.7	2.4	0.1	10.2	82.5
Injection (MMcfd)	41.7	13.0	0.5	55.2	445.0
Withdrawal (MMcfd)	170.4	64.6	3.7	238.6	2,000.0

1 These allocations are based on the monthly core demand forecasts presented in Chapter 2
2 (Teplow) and Chapter 3 (Payan). These core storage capacity allocations are used to allocate
3 storage costs among SoCalGas' and SDG&E's core customers.

4 **B. Unaccounted-For (UAF) Gas**

5 UAF gas is the difference between total receipts into SoCalGas' and SDG&E's respective
6 service territories and total deliveries within SoCalGas' and SDG&E's respective service
7 territories.⁵ The difference is comprised of the following major elements: accounting,
8 measurement, leakage, theft, and other unexplained unaccounted-for volumes of gas. The
9 contributions of each of the major elements to the total UAF are analyzed for each company in a
10 2006 UAF study, which is the most recent comprehensive analysis of UAF drivers available for
11 SoCalGas and SDG&E.

12 The cumulative recorded UAF gas of three production cycles (i.e., an April through
13 March period) for the months of April 2015 through March 2018 for SoCalGas and SDG&E are
14 shown in Table 16 and Table 17 below, along with UAF gas as percentages of total gas receipts.

15
16 **Table 16**

Recorded SoCalGas UAF

Apr-15 - Mar-18	Total Receipts (MMBtu)	Total Deliveries (MMBtu)	UAF (MMBtu)	UAF % of Receipts
36 Months Total	2,878,869,629	2,852,221,242	26,648,388	0.926%

17
18

⁵ Estimated gas releases that result from normal utility operations are not considered UAF and are not included in the UAF calculation.

1 **Table 17**

Recorded SDG&E UAF

Apr-15 - Mar-18	Total Receipts (MMBtu)	Total Deliveries (MMBtu)	Adjustments to LUAF (MMBtu)	UAF (MMBtu)	UAF % of Receipts
36 Months Total	344,462,419	342,235,334	-282,554	1,944,531	0.565%

2
3 SoCalGas and SDG&E propose that the UAF percentages used in Chapter 12
4 (Chaudhury) for each utility for ratemaking purposes be updated and based on the April 2015 to
5 March 2018 three-year average of 0.926% for SoCalGas, shown in Table 16, and 0.565% for
6 SDG&E as shown in Table 17. For cost recovery and ratemaking purposes, SoCalGas currently
7 allocates 71.1% of UAF gas to the core and 28.9% to noncore, while SDG&E currently allocates
8 76.71% of UAF gas to the core and 23.29% to the noncore. These allocation factors are based
9 on the 2006 UAF study for each respective company. SoCalGas and SDG&E propose that these
10 allocation factors continue to be used for cost recovery and ratemaking purposes for the 2020 to
11 2022 TCAP period. The monthly total of deliveries, receipts, and UAF are shown in detail in the
12 accompanying workpapers, along with a copy of the 2006 UAF Study covering both companies.

13 This concludes my prepared direct testimony.
14

1 **VII. QUALIFICATIONS**

2 My name is Wei Bin Guo. My business address is 555 West Fifth Street, Los Angeles,
3 California 90013-1011. I am employed by SoCalGas as a Forecasting Advisor in the Regulatory
4 Affairs Department. I am responsible for the preparation and consolidation of natural gas
5 demand forecasts for SoCalGas and SDG&E. I have held my current position since March
6 2016. I previously worked as a Principal Regulatory Economic Advisor in the Regulatory
7 Affairs Department of SoCalGas from March 2015 to March 2016.

8 I earned an undergraduate degree in Applied Mathematics from Dalian University of
9 Technology, and a Master of Science in Applied Statistics from Cal State University of Long
10 Beach.

11 I have not previously testified before the Commission.