

Exhibit No: _____
Application: A.22-09-015
Witness: Wei Bin Guo
Chapter: 5a5b

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)

September 30, 2022

(Errata redlined dated ~~July-August 24~~31, 2023)

TABLE OF CONTENTS

I. PURPOSE 1

II. SOCALGAS’ NONCORE GAS DEMAND FORECASTS 2

 A. Introduction..... 2

 B. SoCalGas’ Noncore Customer Segment Demand 2

 1. Noncore Commercial 2

 2. Noncore Industrial 3

 3. Electric Power Generation 4

 4. Enhanced Oil Recovery-Cogeneration and Steaming..... 5

 5. Wholesale..... 5

 6. ECOGAS..... 6

 7. Exchange..... 6

III. SOCALGAS METER COUNT AND CONSOLIDATED GAS DEMAND FORECASTS 7

 A. Introduction..... 7

 B. Meter Count Forecasts 7

 C. Consolidated Gas Demand for Average Year and Cold Year 9

 D. Consolidated Peak Day Gas Demand 10

 E. Consolidated Peak Month Gas Demand 12

IV. SDG&E’S NONCORE GAS DEMAND FORECASTS 13

V. SDG&E METER COUNT AND CONSOLIDATED GAS DEMAND FORECASTS 14

 A. Introduction..... 14

 B. Meter Count Forecasts 14

 C. Consolidated Gas Demand for Average Year and Cold Year 15

 D. Consolidated Peak Day Gas Demand 16

 E. Consolidated Peak Month Gas Demand 17

VI. CORE STORAGE ALLOCATIONS AND UNACCOUNTED FOR GAS..... 18

 A. Core Storage Allocations 18

 B. Unaccounted-For (UAF) Gas..... 19

VII. QUALIFICATIONS 22

1 **CHAPTER 5**

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

4 **I. PURPOSE**

5 The purpose of my prepared direct testimony is to present the demand forecasts for
6 Southern California Gas Company's (SoCalGas) and San Diego Gas & Electric Company's
7 (SDG&E) noncore market segments other than large electric generation (EG) and large
8 cogeneration customers (with capacity greater than 20 megawatts (MW)), whose gas demand
9 forecasts are discussed in the testimony of Jeff Huang (Chapter 4). In my testimony, I also
10 prepare the meter count forecasts for all of SoCalGas' and SDG&E's markets except for large
11 EG and large cogeneration customers whose meter forecasts are discussed in the testimony of
12 Jeff Huang (Chapter 4) . My testimony also presents the consolidated gas demand forecasts for
13 Average Year and Cold Year temperature conditions, along with peak day and peak month
14 demand forecasts, for the years 2024 through 2027 (Cost Allocation Proceeding period, or CAP
15 period) for SoCalGas' and SDG&E's markets. My consolidated forecasts rely on the forecasts
16 of residential customer, core commercial and industrial (core C&I) customer demand presented
17 in the testimony of Rose-Marie Payan (Chapter 3), and the forecasts of large EG and large
18 cogeneration customer demand presented in the testimony of Jeff Huang (Chapter 4). Further,
19 the testimony of Wei Bin Guo (Chapter 2) provides the underlying heating degree-day design
20 scenarios for Average Year and Cold Year temperature conditions, as well as the peak day
21 temperature design conditions, for both SoCalGas and SDG&E. Finally, I provide the calculated
22 allocations of core storage among key core market segments for SoCalGas and SDG&E along

1 with values for unaccounted-for gas and their allocation between core and noncore markets for
2 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 In addition to these 4 wholesale customers, SoCalGas also has an international customer called
11 ECOGAS of Mexicali (ECOGAS).

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

15 **B. SoCalGas' Noncore Customer Segment Demand**

16 **1. Noncore Commercial**

17 During this Cost Allocation Proceeding (CAP) period, SoCalGas forecasts noncore
18 commercial demand to average 18,369 MDth per year, higher than the 2021 Heating Degree Day
19 (HDD)¹-adjusted actual usage of 17,967 MDth.² The increase in the HDD-adjusted average year

¹ Heating Degrees (HD) is computed from the formula, $HD = \max\{0, 65-T\}$, where T is the daily system average temperature. For each calendar month, the accumulated number of HD is determined, upon which an annual total is calculated. Accumulated values of HD for a specified number of days (>1) are called Heating-Degree-Days (HDD).

² The HDD-adjusted value for 2021 is 17,967 MDth and reflects the small, but statistically significant, sensitivity to HDD where calendar year 2021 had about 3 HDD higher than our average year design HDD value of 1,248. The observed value for 2021 was 17,983 MDth less 13 MDth for G30 rule 38 noncore commercial customer loads.

1 demand for 2024 through year 2027 is the net result of expected modest growth in this market
2 (including migration of core commercial load to noncore) net of decreases from the expected
3 implementation of mandated Energy Efficiency (EE) programs.

4 **Table 1**

SoCalGas Average Year Noncore Commercial Demand Forecast (MDth/Year)

	2024	2025	2026	2027	4-Year Avg. (2024-2027)
Noncore Commercial	18,321	18,377	18,391	18,386	18,369

5 **2. Noncore Industrial**

6 We forecast SoCalGas retail noncore industrial (non-refinery) demand to decline from
7 50,206 MDth in 2021 to an average of 50,047 MDth during this CAP period. A small decline of
8 this market segment from 2021 through the CAP period is the net result of expected modest
9 decline in this market, migration of core industrial load to noncore, the expected implementation
10 of mandated EE programs and the migration of noncore industrial load to the City of Vernon.

11 Refinery industrial demand is comprised of gas consumption by petroleum refining
12 customers, hydrogen producers, and petroleum refined product transporters. Refinery industrial
13 demand is forecasted separately from other industrial demand because of the distinct nature of
14 these customers. These customers are characterized by a complex interaction of refinery
15 operations, on-site production of alternate fuels, and changing regulatory requirements impacting
16 the production of petroleum products. We expect refinery industrial demand to increase about
17 0.1% annually from 2024 through 2027,³ and average at 96,081 MDth per year in this CAP
18 period. The forecast of refinery gas demand also reflects savings from Commission-mandated
19 EE programs.

³ The small increase of refinery during this CAP period 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 more competitive than alternate fuel prices.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Table 2
SoCalGas Average Year Noncore Industrial Demand Forecast (MDth/Year)

	2024	2025	2026	2027	4-Year Avg. (2024-2027)
Noncore Industrial (non-refinery)	50,534	50,161	49,815	49,676	50,047
Industrial Refinery	95,976	96,013	96,082	96,254	96,081
Total	146,510	146,174	145,897	145,930	146,128

3. Electric Power Generation

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

Industrial/Commercial cogeneration units (<20 MW) (“self-generation”) are installed primarily to generate electricity for customers’ internal consumption rather than for power sales to electric utilities or to the California Independent System Operator. In 2021, gas deliveries to this market were 26,174 MDth. We forecast small industrial/commercial cogeneration demand to average 27,862 MDth per year during the CAP period. The increase in demand is due to the expected decrease in the burner-tip price of natural gas relative to retail electricity over the forecast period.

Refinery cogeneration units are installed primarily to generate electricity for refinery customers’ internal use. We project refinery-related cogeneration to increase about 0.1% annually from 2024 through 2027, and average 24,226 MDth in this CAP period.

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

2 The Enhanced Oil Recovery (EOR) demand forecast is prepared based on historical
3 throughput and general market conditions. For the 2024 to 2027 CAP period, we forecast EOR
4 demand, combined for cogeneration and steaming usage, to average 15,407 MDth per year. This
5 is about 2% lower than the average of 2020 and 2021 recorded EOR gas demand of 15,758
6 MDth; we expect this market to decline at about 2% annually over this CAP period.

7 **5. Wholesale**

8 The forecast of wholesale gas demand includes transportation service to SDG&E, Long
9 Beach, Southwest Gas (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 decrease from 53,430 MDth in 2021 to an average of 52,200 MDth for
13 the CAP period.

14 The forecast of electric generation gas demand in SDG&E’s service area shows a
15 significant decrease in SDG&E’s EG gas requirements from 43,722 MDth in 2021 to an average
16 of 29,760 MDth for the CAP period. During the CAP period, EG demand is expected to decline
17 about 3.5% per year, from 31,955 MDth in 2024 to 28,713 MDth in 2027.

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 9,170 MDth per year in the
20 CAP 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 0.9% per year in this CAP period, from 7,371 MDth in 2024 to 7,572 MDth in 2027.

Vernon initiated municipal gas service to its electric power plant in June 2005 and to noncore customers in December 2006. We expect the annual usage of Vernon to average 9,704 MDth for this CAP period. Vernon’s commercial and industrial load is based on recorded 2021 usage for commercial and industrial customers already served by Vernon, plus those additional customers who are expected to request retail service from Vernon. Results from the power market simulation model described in the testimony of Jeff Huang (Chapter 4) provided the basis for our forecast of Vernon’s EG gas demand.

6. ECOGAS

For this forecast, SoCalGas uses a forecast prepared and provided by ECOGAS of Mexicali. ECOGAS expects its natural gas consumption to increase from 12,432 MDth in 2021 to an average of 13,949 MDth per year in the 2024-2027 CAP period.

7. Exchange

The exchange of gas between SoCalGas and PG&E for operational reasons has been an ongoing practice since 1949. Such exchanges are currently governed by the Master Exchange Agreement (MEA), approved by the Commission in February 1990. The net exchange of gas deliveries from SoCalGas to PG&E under the MEA is forecasted to average -11,411 Mdth per year over the CAP period. SoCalGas’ annual deliveries are expected to be 336 Mdth, while PG&E’s deliveries are expected to be 11,746 Mdth, exceeding SoCalGas deliveries to PG&E significantly. The exchange forecast is based on the historical average spanning 2019-2021, as shown below.

Table 3
Exchange Gas Historical Volumes in Mdth

	2019	2020	2021	3-Year Average
SoCalGas Deliveries to PG&E	312	322	373	336
PG&E Deliveries to SoCalGas	11,775	11,390	12,074	11,746
Net Difference	(11,463)	(11,068)	(11,701)	(11,411)

1 **III. SOCALGAS METER COUNT AND CONSOLIDATED GAS DEMAND**
2 **FORECASTS**

3 **A. Introduction**

4 For year 2021, SoCalGas' total gas demand, adjusted to the Average Year HDD of 1,248
5 HDD, totaled 906,709 MDth, which is an average of 2,484 MDth/day. In this CAP period,
6 SoCalGas expects its Average Year gas demand to decline from 2024 through 2027 at
7 approximately 1.6% annually. The average for the CAP years is 843,313 MDth, a decrease of
8 7.0% from the 2021 Average Year value.

9 SoCalGas' Consolidated gas demand forecasts are used in SoCalGas' Cost Allocation
10 and Long Run Marginal Cost Study presented in the testimony of Marjorie Schmidt-Pines
11 (Chapter 9) and SoCalGas' Rate Design presented in the testimony of Michael Foster (Chapter
12 13).

13 **B. Meter Count Forecasts**

14 SoCalGas' overall outlook for customer meter counts for this CAP period is summarized
15 in Table 4 below. In this CAP period, we expect steady customer growth for core markets
16 overall and stable customer counts in retail noncore markets.

1

Table 4
SoCalGas Active Meters (annual averages)

	2024	2025	2026	2027	4-Year Avg. 2024-2027
Core					
Residential	5,794,138	5,834,165	5,873,684	5,912,768	5,853,689
Core C&I	203,105,203, 997	203,043,203, 036	202,998,202, 992	202,940,202, 936	203,022,203,01 5
Gas AC	5	5	5	5	5
Gas Engine	667	667	667	667	667
NGV	364,373	372,380	380,387	388,393	376,383
Total Core	5,998,279	6,038,252	6,077,734	6,116,768	6,057,758
Noncore					
Noncore C&I	556	556	556	556	556
Electric Generation	382	382	382	382	382
EOR	32	32	32	32	32
Total Retail Noncore	970	970	970	970	970
Wholesale and Int'l	5	5	5	5	5
Total Active Meters	5,999,254	6,039,227	6,078,709	6,117,743	6,058,733

2

Residential and total C&I meter forecasts are presented in Scott Wilder's SoCalGas 2024

3

General Rate Case testimony.⁴ Gas A/C, gas engine, and natural gas vehicle (NGV) meter

4

counts are forecasted from base year 2021 data and projected forward based on observed trend.

5

The core C&I meter forecast for this CAP period is derived by subtracting the other non-

6

residential markets' meter forecasts from total C&I meter forecasts.

7

Noncore customer and meter counts are developed from base year 2021 data and

8

projected to be stable in the CAP period based on the historical data of each noncore market

9

segment. Customer/meter counts for large EG and large cogeneration customers are described in

10

the testimony of Jeff Huang (Chapter 4).

⁴ See A.22-05-015/016 (cons.) Exhibit SCG-35 Direct Testimony of Scott Wilder (May 2022). GRC meter forecast was for 2022-2024. The same forecast model was used to forecast 2025-2027. More detailed meter forecast data are available in California Gas Report 2022 workpapers.

C. Consolidated Gas Demand for Average Year and Cold Year

Table 5 shows the composition of SoCalGas’ throughput forecast for 2024-2027 under Average Year temperature conditions, and Table 6 shows demand under Cold Year temperature conditions.⁵

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

	2024	2025	2026	2027	4-Year Avg. 2024-2027
Core					
Residential	224,362	220,445	216,767	212,820	218,598
Core C&I	91,109	88,902	86,969	85,148	88,032
Gas AC	14	14	14	14	14
Gas Engine	1,983	1,983	1,983	1,983	1,983
NGV	16,136	16,501	16,885	17,311	16,708
Total Core	333,604	327,846	322,617	317,275	325,336
Non-Core					
Non-core C&I	164,831	164,551	164,288	164,316	164,497
Electric Generation	225,416	214,243	209,751	205,090	213,625
EOR	15,758	15,758	15,285	14,826	15,407
Total Retail Non-core	406,005	394,552	389,324	384,231	393,528
Wholesale and International					
Long Beach	9,103	9,148	9,193	9,238	9,170
SDG&E	87,121	83,841	83,255	82,414	84,158
Southwest Gas	7,371	7,430	7,501	7,572	7,468
Vernon	9,554	9,630	9,743	9,889	9,704
ECOGAS	13,869	13,920	13,977	14,030	13,949
Total Wholesale & Intl.	127,017	123,969	123,670	123,142	124,450
Average Year Throughput (AYTP)	866,626	846,366	835,611	824,649	843,313

⁵ 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).

1

Table 6**Composition of SoCalGas Throughput (MDth/Year) 1-in-35 Cold Temperature Year**

	2024	2025	2026	2027	4-Year Avg. 2024-2027
Core					
Residential	242,458	238,229	234,243	229,994	236,231
Core C&I	94,382	92,106	90,115	88,237	91,210
Gas AC	14	14	14	14	14
Gas Engine	1,983	1,983	1,983	1,983	1,983
NGV	16,136	16,501	16,885	17,311	16,708
Total Core	354,974	348,833	343,240	337,539	346,147
Non-Core					
Non-core C&I	165,117	164,838	164,575	164,602	164,783
Electric Generation	225,416	214,243	209,751	205,090	213,625
EOR	15,758	15,758	15,285	14,826	15,407
Total Retail Non-core	406,291	394,838	389,611	384,518	393,815
Wholesale and International					
Long Beach	9,781	9,832	9,876	9,928	9,854
SDG&E	90,614	87,331	86,742	85,898	87,646
Southwest Gas	7,941	8,004	8,081	8,157	8,046
Vernon	9,640	9,726	9,809	9,946	9,780
ECOGAS	13,869	13,920	13,977	14,030	13,949
Total Wholesale & Intl.	131,844	128,813	128,486	127,959	129,276
Cold Year Throughput (CYTP)	893,110	872,484	861,337	850,016	869,237

2

D. Consolidated Peak Day Gas Demand

3

SoCalGas uses the following consolidated peak day gas demand for cost allocation and

4

rate design purposes. Table 7 below shows the peak day gas demand for each year of the CAP

5

period as well as the four-year average for that period.

Table 7
SoCalGas' Peak Day Demand (MDth/Day)

	2024	2025	2026	2027	4-Year Avg. 2024-2027
Core					
Residential	2,282	2,244	2,208	2,171	2,226
Core C&I	541	529	518	508	524
Gas AC	0.03	0.03	0.03	0.03	0.03
Gas Engine	3	3	3	3	3
NGV	46	47	48	50	48
Total Core	2,872	2,823	2,778	2,732	2,801
Non-Core					
Non-core C&I	584	583	583	584	583
Electric Generation	642	612	593	619	617
EOR	43	43	42	41	42
Total Retail Non-core	1,269	1,239	1,218	1,243	1,242
Wholesale and International					
Long Beach	66	66	66	67	66
SDG&E	538	541	544	542	541
Southwest Gas	58	58	59	59	59
Vernon	29	29	30	30	29
ECOGAS	38	38	38	38	38
Total Wholesale & Intl.	728	732	737	736	733
Total Peak Day Demand	4,869	4,794	4,733	4,711	4,777

1 For HDD-sensitive core market segments, peak day demand is calculated using the
2 applicable 1-in-35-year peak day temperature condition for SoCalGas or SDG&E. SoCalGas
3 noncore commercial peak day demand is calculated under a 1-in-10-year peak day temperature
4 condition. SoCalGas noncore industrial peak day demand is estimated using the ratio of 2021
5 historical December peak day demand over average December daily demand. SoCalGas refinery
6 peak day demand is at connected load.⁶ For SoCalGas and SDG&E electric generation facilities
7 presented in the testimony of Jeff Huang (Chapter 4), peak day demand is calculated as a

⁶ Connected load is an indication of how much gas supply would be needed to serve all gas-burning devices connected to the system at these customer locations and running at maximum level.

coincidental peak day⁷ for all these facilities. For all other market segments, peak day load is calculated as average daily 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 8 for each year of the CAP period as well as the four-year average for that period.

Table 8
SoCalGas' Peak Month Demand (MDth/Mo)

	2024	2025	2026	2027	4-Year Avg. 2024-2027
Core					
Residential	36,746	36,067	35,426	34,748	35,747
Core C&I	10,627	10,360	10,125	9,902	10,253
Gas AC	1	1	1	1	1
Gas Engine	90	90	90	90	90
NGV	1,432	1,466	1,502	1,542	1,486
Total Core	48,896	47,985	47,144	46,282	47,577
Non-Core					
Non-core C&I	14,322	14,316	14,309	14,314	14,315
Electric Generation	18,042	17,353	16,937	16,653	17,246
EOR	1,338	1,338	1,298	1,259	1,309
Total Retail Non-core	33,702	33,007	32,544	32,226	32,870
Wholesale and International					
Long Beach	1,303	1,308	1,314	1,321	1,312
SDG&E	10,248	9,993	9,796	9,716	9,938
Southwest Gas	1,254	1,266	1,278	1,290	1,272
Vernon	824	816	805	868	828
ECOGAS	1,104	1,109	1,114	1,118	1,111
Total Wholesale & Intl.	14,732	14,492	14,307	14,313	14,461
Total Peak Day Demand	97,329	95,484	93,995	92,822	94,907

⁷ EG Winter coincidental peak day is the day in December which has the highest EG throughput of the combined SDG&E and SoCalGas EG system.

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

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

4 This section presents noncore customers’ gas demand for SDG&E, with the exception of
5 the gas requirements for large electric generation and large cogeneration customers (with
6 capacity greater than 20 MW) discussed in the testimony of Jeff Huang (Chapter 4). Gas
7 demand forecasts for noncore C&I and Industrial/Commercial Cogeneration (<20 MW) are
8 derived by trending recorded data for 2006 through 2021 driven primarily by expected growth in
9 commercial and industrial employment in San Diego County. C&I non-cogeneration gas
10 demand is adjusted to reflect decreases from the expected implementation of mandated EE
11 programs. The data in Table 9 below shows SDG&E’s noncore throughput each year for the
12 CAP period, as well as the four-year average.

13 **Table 9**
Composition of SDG&E Noncore Throughput (MDth/Year)

	2024	2025	2026	2027	4-Year Avg. (2024-2027)
Noncore C&I	4,927	4,923	4,933	4,938	4,930
Small Cogeneration (<20 MW)	7,913	7,883	7,876	7,879	7,888

14 We forecast SDG&E’s noncore commercial and industrial demand to be stable, growing
15 about 0.1% per year in the CAP period, from 4,927 MDth in 2024 to 4,938 MDth by 2027.

16 Noncore commercial and industrial load was 5,042 MDth for 2021.

17 SDG&E’s industrial/commercial cogeneration (capacity <20 MW) load was 7,346 MDth
18 in 2021. We expect Industrial/Commercial cogeneration load to average 7,888 MDth in this
19 CAP 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 1,158 HDD, totaled 97,151 MDth for year 2021, an average of 266 MDth/day. In the
5 2024 to 2027 CAP years, SDG&E expects Average Year throughput to decline at about 1.8%
6 annually from 2024 through 2027. Total Average Year throughput for the CAP years averages
7 81,960 MDth, a decrease of 15.6% from the 2021 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 the testimony of Michael Foster (Chapter 10),
10 and SDG&E's Rate Design presented in the testimony of Michael Foster (Chapter 13).

11 **B. Meter Count Forecasts**

12 SDG&E's meter counts for this CAP period are summarized in Table 10 below. In this
13 CAP period, we expect steady customer growth in core markets and stable customer counts in
14 retail noncore markets.

1

Table 10
SDG&E Meters (Annual Averages)

	2024	2025	2026	2027	4-Year Avg. 2024-2027
Core					
Residential	896,990	905,216	913,509	921,721	909,359
Core C&I	30,424	30,467	30,510	30,549	30,488
NGV	37	36	36	36	36
Total Core	927,451	935,719	944,055	952,306	939,883
Noncore					
Noncore C&I	58	58	58	58	58
Electric Generation	98	98	98	98	98
Total Noncore	156	156	156	156	156
Total Meters	927,607	935,875	944,211	952,462	940,039

2

SDG&E’s residential, core C&I, and NGV meter forecasts for this CAP period are based

3

on customer forecasts presented in Mr. Wilder’s SDG&E 2024 General Rate Case workpapers.⁸

4

Noncore customer counts are developed from base year 2021 data and projected to be stable in

5

CAP period based on the observed trend of each noncore market segment. Customer/meter

6

counts for the large EG and large cogeneration market segments are described in the testimony

7

of Jeff Huang (Chapter 4).

8

C. Consolidated Gas Demand for Average Year and Cold Year

9

Tables 11 and 12 show the details of SDG&E’s forecasted annual gas demand under

10

Average-Year and 1-in-35 Cold-Year temperature conditions, respectively.

⁸ See A.22-05-015/016 (cons.) Exhibit SDG&E-39 Direct Testimony of Scott Wilder (May 2022). GRC meter forecast was for 2022-2024. The same forecast model was used to forecast 2025-2027. More detailed meter forecast data are available in California Gas Report 2022 workpapers.

1

Table 11**Composition of SDG&E Throughput (MDth/Year) Average Temperature Year**

	2024	2025	2026	2027	4-Year Avg. 2024-2027
Core					
Residential	27,630	27,218	26,875	26,518	27,060
Core C&I	17,979	17,934	17,865	17,787	17,891
NGV	2,355	2,305	2,305	2,305	2,318
Total Core	47,964	47,458	47,046	46,611	47,270
Noncore					
Noncore C&I	4,927	4,923	4,933	4,938	4,930
Electric Generation	31,955	29,270	29,103	28,713	29,760
Total Noncore	36,882	34,193	34,036	33,650	34,690
Average Year Throughput (AYTP)	84,846	81,651	81,081	80,262	81,960

2

Table 12**Composition of SDG&E Throughput (MDth/Year) 1-in-35 Cold Year Temperature**

	2024	2025	2026	2027	4-Year Avg. 2024-2027
Core					
Residential	30,444	30,031	29,686	29,327	29,872
Core C&I	18,566	18,521	18,450	18,372	18,477
NGV	2,355	2,305	2,305	2,305	2,318
Total Core	51,365	50,857	50,441	50,004	50,667
Noncore					
Noncore C&I	4,927	4,923	4,933	4,938	4,930
Electric Generation	31,955	29,270	29,103	28,713	29,760
Total Noncore	36,882	34,193	34,036	33,650	34,690
Cold Year Throughput (CYTP)	88,247	85,050	84,477	83,654	85,357

3

D. Consolidated Peak Day Gas Demand

4

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

5

purposes. Table 13 below shows the peak day gas demand.

1

Table 13
SDG&E’s Peak Day Demand (MDth/day)

	2024	2025	2026	2027	4-Year Avg. 2024-2027
Core					
Residential	306	305	303	302	304
Core C&I	102	102	101	101	102
NGV	7	6	6	6	6
Total Core	415	413	411	409	412
Noncore					
Noncore C&I	13	13	13	13	13
Electric Generation	97	101	105	105	102
Total Noncore	110	114	119	119	115
Total Peak Day Demand	524	527	530	528	527

2

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

3

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

4

facilities included in the testimony of Jeff Huang (Chapter 4) power market simulation model,

5

peak day demand was calculated as a coincident peak day for all these facilities. For all the other

6

market segments, peak day load is calculated as the average daily December month’s demand.

7

E. Consolidated Peak Month Gas Demand

8

SDG&E uses gas demand for the month of December as the peak month for cost

9

allocation and rate design purposes. Consolidated forecasts of the peak month gas demand are

10

shown in Table 14 below.

1

Table 14
SDG&E’s Peak Month Demand (MDth/Month)

	2024	2025	2026	2027	4-Year Avg. 2024-2027
Core					
Residential	4,477	4,413	4,358	4,301	4,387
Core C&I	2,110	2,104	2,095	2,084	2,098
NGV	202	198	198	198	199
Total Core	6,790	6,714	6,650	6,583	6,684
Noncore					
Noncore C&I	412	411	412	413	412
Electric Generation	2,778	2,606	2,477	2,466	2,582
Total Noncore	3,190	3,018	2,890	2,879	2,994
Total Peak Month Demand	9,980	9,732	9,540	9,462	9,678

2

For HDD-sensitive core market segments, December HDD for SDG&E’s cold year

3

temperature design is used to calculate gas demand.

4

VI. CORE STORAGE ALLOCATIONS AND UNACCOUNTED FOR GAS

5

A. Core Storage Allocations

6

The following storage assets are allocated to serve the core customers of SoCalGas and

7

SDG&E combined:

8

- Storage Inventory of 74.160 Bcf⁹,

9

- Winter Months’ Withdrawal Capacity of 1,174 MMcfd, and

10

- Summer Months’ Injection Capacity of 346 MMcfd.

11

These storage assets are discussed in the testimony of Manuel Rincon and Jimmy Yen

12

(Chapter 1). The purpose of my testimony regarding these assets is to provide the accompanying

⁹ The storage assets used for core storage allocation also include a small amount of storage assets for wholesale core customers. In compliance with CPUC Decision (D.) 20-02-045, “Southern California Gas Company is authorized to allocate wholesale core customers’ storage capacities from the core storage assets and balance the revenue in its Core Fixed Cost Account. D.20-02-045 at 106 (Ordering Paragraph 17).

1 allocation of these overall core asset levels to (1) SoCalGas and (2) SDG&E for each company's
 2 respective core rate classes.

3 Table 15 shows the allocation of the storage assets for SoCalGas' core customers by
 4 customer class, and Table 16 shows the resulting storage asset allocation by customer class for
 5 SDG&E's core customers, and summarized total storage assets.

6 **Table 15**
SoCalGas Core Storage Allocations by Customer Class

Storage Asset	Residential	G-10	G-AC	G-GE	G-NGV	Total SCG Core
Inventory Allocation (BCF)	54.46	9.54	0.002	0.43	0.68	65.11
Injection (MMcfd)	254.1	44.5	0.009	2.0	3.2	303.8
Withdrawal (MMcfd)	813.4	191.5	0.011	1.1	17.5	1,023.5

7 **Table 16**
SDG&E Core Storage Allocations by Customer Class & Combined SCG & SDG&E

Storage Asset	Residential	GN-3	G-NGV	Total SDG&E Core	Total SCG & SDG&E Core
Inventory Allocation (BCF)	6.84	2.11	0.10	9.05	74.160
Injection (MMcfd)	31.9	9.8	0.5	42.2	346.0
Withdrawal (MMcfd)	111.1	37.1	2.3	150.5	1,174.0

8 These allocations are based on the monthly core demand forecasts presented in the
 9 testimony of Rose-Marie Payan (Chapter 3). These core storage capacity allocations are used to
 10 allocate storage costs among SoCalGas' and SDG&E's core customers.

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

12 UAF gas is the difference between total receipts into SoCalGas' and SDG&E's respective
 13 service territories and total deliveries within SoCalGas' and SDG&E's respective service

territories.¹⁰ The difference is comprised of the following major elements: accounting, measurement, leakage, theft, and other unexplained unaccounted-for volumes of gas. The contributions of each of the major elements to the total UAF were analyzed for each company in a 2006 UAF study, which is the most recent comprehensive analysis of UAF drivers available for SoCalGas and SDG&E.

The cumulative recorded UAF gas of three production cycles (i.e., an April through March period) for the months of April 2019 through March 2022 for SoCalGas and SDG&E are shown in Table 17 and Table 18 below, along with UAF gas as percentages of total gas receipts.

Table 17
Recorded SoCalGas UAF

Apr-19 - Mar-22	Total Receipts (MMBtu)	Total Deliveries (MMBtu)	UAF (MMBtu)	UAF % of Receipts
36 Months Total	2,732,363,897	2,710,862,327	21,501,570	0.787%

Table 18
Recorded SDG&E UAF

Apr-19 - Mar-22	Total Receipts (MMBtu)	Total Deliveries (MMBtu)	Adjustments to LUAF (MMBtu)	UAF (MMBtu)	UAF % of Receipts
36 Months Total	290,175,445	285,851,943	2,128,192	6,451,694	2.223%

SoCalGas and SDG&E propose that the UAF percentages used in the testimony of Michael Foster (Chapter 13) for each utility for ratemaking purposes be updated and based on the April 2019 to March 2022 three-year average of 0.787% for SoCalGas, shown in Table 17, and 2.223% for SDG&E as shown in Table 18. For cost recovery and ratemaking purposes, SoCalGas currently allocates 71.1% of UAF gas to the core and 28.9% to noncore, while

¹⁰ UAF is different from natural gas emissions. Some main UAF components, e.g., UAF caused by accounting, measurement, and theft, are not natural gas emissions.

1 | SDG&E currently allocates 76.71% of UAF gas to the core and 23.29% to the noncore. These
2 | allocation factors are based on the 2006 UAF study for each respective company and were
3 | approved by the Commission in the most recent TCAP decision. SoCalGas and SDG&E
4 | propose that these allocation factors continue to be used for cost recovery and ratemaking
5 | purposes for the 2024 to 2027 CAP period. The monthly total of deliveries, receipts, and UAF
6 | are shown in detail in the accompanying workpapers, along with a copy of the 2006 UAF Study
7 | covering both companies.

8 | This concludes my prepared direct testimony.

1 **VII. QUALIFICATIONS**

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

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

12 I have previously submitted testimony before the Commission.