

Application No.: A.23-05-XXX
Exhibit No.: _____
Witness: Jimmy Elias

PREPARED DIRECT TESTIMONY OF
JIMMY ELIAS
ON BEHALF OF
SAN DIEGO GAS & ELECTRIC COMPANY

*****REDACTED – PUBLIC VERSION*****

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



May 15, 2023

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TO D.16-08-024, *et al.***

1 **PREPARED DIRECT TESTIMONY OF**
2 **JIMMY ELIAS**
3 **ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

4 **I. INTRODUCTION**

5 This testimony describes the resources San Diego Gas & Electric Company (“SDG&E”)
6 expects to use in calendar year 2024 to provide electric commodity service to its bundled service
7 customers; provides a forecast of the procurement costs that SDG&E expects to record in 2024
8 to the Energy Resources Recovery Account (“ERRA”), Transition Cost Balancing Account
9 (“TCBA”), Portfolio Allocation Balancing Account (“PABA”), and Local Generation Balancing
10 Account (“LGBA”); provides a 2024 forecast of SDG&E’s San Onofre Generating Station
11 (“SONGS”) Unit 1 Offsite Spent Fuel Storage Costs; provides a forecast of 2024 total
12 greenhouse gas (“GHG”) costs; and provides a 2024 forecast of Tree Mortality Non-Bypassable
13 Charge (“TMNBC”) costs. SDG&E witness Ms. Hua uses my forecast of ERRA, Competition
14 Transition Charge (“CTC”) and Local Generation (“LG”) in developing 2024 revenue
15 requirements for each element. In addition, this testimony provides information that supports
16 SDG&E witness Ms. Baez’s development of the GHG allowance revenue return allocation for
17 non-residential and residential customers, as well as rates for the Green Tariff Shared
18 Renewables (“GTSR”) program and the Power Charge Indifference Adjustment (“PCIA”).
19 SDG&E witness Ms. Miller uses the forecasted costs and volumes provided in this testimony to
20 calculate PCIA costs to discuss PCIA treatment and related issues.

21 **A. Summary of Testimony**

22 Section II provides a forecast of the energy requirements that will be required to serve
23 SDG&E’s bundled customer load for 2024, as well as forecasts of the supply resources that
24 SDG&E expects to utilize to meet that load in calendar year 2024. The supply resources for the
25 forecasts include: (1) conventional generation resources that are under contract for 2024; (2)

1 generation resources owned by SDG&E; (3) renewable generation resources that are under
2 contract for 2024; and (4) Qualifying Facilities (“QFs”) under the Public Utility Regulatory
3 Policies Act (“PURPA”) that are under contract for 2024.

4 Section III quantifies the costs associated with the resources described in Section II,
5 along with other electric procurement costs that are recorded in ERRA, such as market
6 purchases, California Independent System Operator (“CAISO”) charges and portfolio hedging
7 costs. These costs are summarized in Attachment A.

8 Section IV provides a forecast of the 2024 SONGS Unit 1 Offsite Spent Fuel Storage
9 Costs associated with SDG&E’s 20% minority ownership interest in SONGS.

10 Section V provides a forecast of the 2024 GHG emissions and associated costs, both
11 direct and indirect, incurred in connection with SDG&E’s compliance with California’s cap-and-
12 trade program. This testimony also provides a forecast of GHG allowance auction revenues.

13 Section VI provides a forecast of the 2024 TMNBC costs.

14 Section VII, provides a summary of SDG&E’s meet-and-confer activities with
15 Community Choice Aggregators in SDG&E’s service territory.

16 Finally, this testimony refers to the following attachments:

17 Attachment A: SDG&E 2024 ERRA and LG Expenses (CONFIDENTIAL)

18 Attachment B: SDG&E 2024 Generation Portfolio Delivery Volumes (CONFIDENTIAL)

19 Attachment C: SDG&E 2024 Renewable Resource Detail

20 Attachment D: SDG&E 2024 CTC & QF Detail (CONFIDENTIAL)

21 Attachment E: SDG&E GHG Detail (CONFIDENTIAL)

1 **II. 2024 FORECAST OF ENERGY REQUIREMENTS AND SUPPLY RESOURCES**

2 **A. Energy Requirements Forecast**

3 The sales forecast utilized in this filing was developed internally by SDG&E witness Mr.
4 Schiermeyer. This forecast includes the projected load departure of Community Choice
5 Aggregators (“CCA”) Clean Energy Alliance (“CEA”), Orange County Power Authority
6 (“OCPA”), and San Diego Community Power (“SDCP”). Using this forecast and adjusting for
7 direct access load, SDG&E projects that the energy requirements for SDG&E’s bundled load for
8 2024 will be [REDACTED] gigawatt hours (“GWh”). The 2024 forecast is [REDACTED] GWh or [REDACTED] % less than
9 SDG&E’s forecasted bundled energy for 2023 ([REDACTED] GWh).

10 **B. Supply Resource Forecast**

11 After determining the amount of energy that SDG&E’s bundled load customers will
12 require in 2024, SDG&E developed a forecast of the supply that will meet that demand. To
13 quantify the generation associated with the supply resources, I used the PLEXOS production cost
14 modeling software. Inputs to this model include the characteristics of the various generation
15 resources, including capacity, heat rate, operating constraints, both fixed and variable Operating
16 and Maintenance (“O&M”) costs, and other factors that impact each plant’s dispatch and
17 generation costs. The natural gas and electric market price forecasts were derived using a recent
18 (March 01, 2023) assessment of 2024 market prices. The model simulates a least-cost dispatch
19 of SDG&E’s resource portfolio for every hour of 2024 to serve load. The supply resources fall
20 into the following four categories, each of which is addressed in the next four subsections.

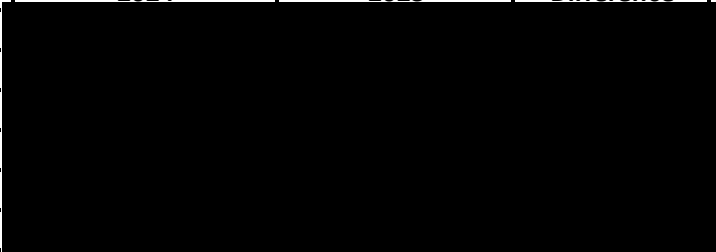
21 **1. SDG&E-Contracted Conventional Generation**

- 22 • SDG&E has multiple conventional generation resources under contract in
23 its 2024 resource portfolio. These resources are available under a variety
24 of contractual arrangements, including tolling contracts, fixed energy

1 contracts, and contracts for Resource Adequacy only. The largest of the
2 tolling and fixed energy contracts are:

- 3 • the Carlsbad Energy Center Power Purchase Agreement (“PPA”) for the
4 output of a 528 MW simple cycle combustion turbine unit;
- 5 • the Pio Pico Energy Center PPA for the output of a 336 MW simple cycle
6 combustion turbine unit;
- 7 • the Orange Grove PPA for the output of two 48 MW simple cycle combustion
8 turbine units;
- 9 • the El Cajon Energy Center PPA for the output of a 48 MW simple cycle
10 combustion turbine unit; and
- 11 • the Escondido Energy Center PPA for the output of a 48 MW simple cycle
12 combustion turbine unit.

13 The forecasted generation for these contracts is detailed in Attachment B and is
14 summarized in Table 1 below:

Table 1: Generation (GWh)		
2024	2023	Difference
El Cajon Energy Center		
Orange Grove		
Escondido Energy Center		
Pio Pico		
Carlsbad Energy Center		
Total		

20 SDG&E also enters into additional contracts each year to meet its California Public
21 Utilities Commission (“CPUC”) Resource Adequacy (“RA”) requirements.¹ Under its RA

¹ California Public Utilities Code Section 380 established the Resource Adequacy program to provide enough resources to the CAISO to ensure the safe and reliable operation of the grid in real time and to

1 contracts, SDG&E shows this capacity as meeting its RA obligation, but SDG&E does not have
2 rights to the energy or ancillary services from these units. For 2024, SDG&E has been granted
3 approval for contracts providing ████████ of RA capacity and sales of ████████ of RA capacity.
4 R.20-05-003² is scheduled to resolve and establish the cost recovery mechanism for the resources
5 in compliance with D.19-11-016³ while D.21-03-056⁴ establishes the cost recovery mechanism
6 for resources as a result of procurement in R.20-11-003.⁵ Some of these contracts were executed
7 prior to the official announcement of CCA load departure and were procured to meet load levels
8 assuming no CCA load departure.

9 2. SDG&E-Owned Dispatchable Generation

10 SDG&E owns several generation facilities, which it uses to meet its bundled customer
11 load, including the following:

- 12 • the Palomar Energy Center (“Palomar”), a 588 MW combined cycle
13 power plant;
- 14 • the Desert Star Energy Center (“Desert Star”), a 485 MW combined cycle
15 power plant;

provide appropriate incentives for the siting and construction of new resources needed for reliability in the future.

² A successor docket to R.16-02-007, this proceeding addressed ongoing oversight of the IRP planning process and the procurement necessary to achieve the goals set by the Legislature in SB 350 and SB 100, as well as by the Commission in R.16-02-007.

³ The Integrated Resource Plan (IRP) proceeding, R.16-02-007, issued Decision (D.) 19-11-016, requiring 3,300 MW of procurement by all LSEs within the CAISO for purposes of long-term statewide planning. The decision requires at least 50% of the resources to come online by August 1, 2021, 75% by August 1, 2022, and 100% by August 1, 2023.

⁴ Electric Reliability proceeding directed the IOUs within the CAISO to procure additional resource capacity for the summers of 2021 and 2022.

⁵ During August 2020 the commission instituted the Emergency Reliability Rulemaking Order as a result of extreme heat storms experienced in California

- the Miramar Energy Facility (“Miramar I and II”), consisting of two 48 MW simple cycle combustion turbine units;
- the Battery Storage facilities, consisting of Escondido at 30 MW, El Cajon at 7.5 MW, Top Gun at 30 MW, Fallbrook at 40 MW, Kearny (“Kearny South and North”), consisting of two 10 MW facilities, Melrose at 20 MW, Pala-Gomez at 10 MW, Westside Canal at 131 MW, Clairemont at 10 MW, Boulevard at 10 MW, Elliott at 10 MW, and Paradise at 10 MW; and
- the Cuyamaca Peak Energy Plant, consisting of a 45 MW simple cycle combustion turbine.

These units are dispatched by the CAISO for generation and ancillary services (“A/S”) awards based on economic merit.⁶ The forecasted generation for these plants for 2024 is detailed in Attachment B and is summarized in Table 2 below:

		Table 2: Generation (GWh)		
		2024	2023	Difference
Palomar				
Desert Star				
Miramar				
Battery Storage				
Cuyamaca				
Total				

⁶ SDG&E’s dispatch model considered only generation dispatched for energy and not for A/S because the CAISO co-optimizes market awards between energy and A/S based on the opportunity cost of capacity. Thus, the economic benefit (and ERRRA contribution) of using energy for generation is equivalent to using capacity for A/S.

1 **3. Renewable Energy Contracts**

2 The 2024 forecast of renewable energy supply from CPUC-approved contracts is 6,679
3 GWh, which includes 903 GWh of Renewable Energy Credit (“REC”) quantities⁷ that are
4 delivered to SDG&E in conjunction with existing non-renewable imports. This forecast
5 represents an increase of 973 GWh from the 2023 forecast (5,706 GWh). The forecasted
6 generation associated with SDG&E’s monthly renewable contracts is set forth in Attachment C.

7 For 2024, SDG&E forecasts it will receive 1,869 GWh of bundled renewable energy
8 under 40 contracts with facilities that generate electricity using wind, solar, biogas, and non-
9 pumped hydro technologies. This number considers forecasted RPS sales for 2024 in the amount
10 of 4,810 GWh. Forecasted sales represent a reduction of renewable energy credits to maintain an
11 equivalent RPS compliance position considering CCA load departure and voluntary allocations
12 of RPS resources as designated in R.18-07-003.⁸ These sales volumes are estimates only and do
13 not represent specific current or future agreements with counterparties. Any sales agreements
14 subsequently entered into by SDG&E will be included in the October Update filing. The
15 forecasted generation for projects that are currently online and operating, and for those projects
16 that have recently come online and are expected to continue operations in 2024, are derived from
17 generation profiles based on historical data for similar technologies.⁹ The forecasted energy mix
18 from these renewable resources is shown in Table 3 below:

⁷ Renewable Energy Credits represent the green attribute of renewable generation and, while they can be purchased independent of physical delivery of generation from the source, they must accompany a delivery of “tagged” physical power to be imported into California.

⁸ Based on R.17-06-026 the amount of RPS sales is subject to change.

⁹ SDG&E did not include renewable energy quantities or costs associated with the Sustainable Communities Photovoltaic program because costs for this program are not charged to ERRRA.

Table 3: Generation (GWh)			
	2024	2023	Difference
Solar	3,263	2,311	952
Wind	2,163	1,966	197
Wind RECs	902	1,236	(334)
Biogas	229	165	64
Other	122	28	94
RPS Sales	(4,810)	(3,259)	(1,551)
Total	1,869	2,447	(578)

4. Competitive Transition Charge (CTC) Contracts

In 2024, SDG&E will have approximately 106.7 MW of CTC capacity under contract, with one QF.¹⁰ All CTC contracts are in SDG&E’s service area except for the Yuma Cogeneration Associates (“YCA”) plant, a 55 MW natural gas-fired plant located in Arizona, the output of which is imported into CAISO.

SDG&E’s CTC contracts include a combination of must-take and dispatchable resources. For must-take resources, SDG&E is obligated to pay the contract price for all delivered QF generation and schedule it into the CAISO market; SDG&E has no such obligation with dispatchable resources. SDG&E has amendments with Goal Line and YCA, which provide SDG&E with more economic dispatch rights. SDG&E forecasted the plants’ dispatch in accordance with these terms. The forecast of CTC energy supply for 2024 is [REDACTED]. The forecasted generation for these plants is detailed in Attachment D.

III. 2024 FORECAST OF ERRRA EXPENSES

To quantify the costs associated with the supply resources described in Section II, the production cost model also tracks the costs of the economic dispatch. Electric procurement

¹⁰ The actual number of active QF contracts is over 50, but many of these QF resources only serve on-site load and do not deliver net energy to SDG&E. As a result, these are not included in the production cost model analysis. The one QF referenced above delivers net energy to SDG&E and thus is included in SDG&E’s model.

1 expenses incurred by SDG&E to serve its bundled load are also recorded to the ERRA. These
2 expenses include, among other items, costs and revenues for energy and capacity cleared through
3 the CAISO market, power purchase contract costs, generation fuel costs, market energy purchase
4 costs, CAISO charges, brokerage fees, and hedging costs.

5 SDG&E expects to incur \$523 million of ERRA costs in 2024,¹¹ as reflected in
6 Attachment A. This forecast is \$113 million less than the \$636 million forecasted for 2023.

7 The above-market costs of all generation resources that are eligible for cost recovery
8 through PCIA rates will be recorded in PABA going forward. SDG&E's 2024 PABA cost
9 forecast is \$91 million.¹² This compares with a forecast of \$98 million for 2023 filed in the 2023
10 ERRA forecast proceeding.

11 The cost forecasts for specific ERRA items are discussed in greater detail below.

12 **A. ISO Load Charges**

13 The CAISO supplies and sells to SDG&E the energy and A/S necessary to meet
14 SDG&E's bundled load requirement. Based on forecasted prices for energy and A/S, SDG&E's
15 production cost model forecasts \$ [REDACTED] of ISO load charges for 2024. This cost includes
16 the indirect GHG costs embedded in the market price of energy. GHG quantities and costs are
17 presented in Section V.

¹¹ This amount does not include Franchise Fees and Uncollectible ("FF&U"), nor do any of the other figures in my testimony.

¹² In D.07-01-025, the Commission adopted the PCIA methodology for CCA customers. AL 3318-E, effective January 1, 2019, established the PABA to record the "above-market" costs and revenues associated with all PCIA eligible resources by vintage subaccounts.

1 **B. ISO Supply Revenues**

2 In the CAISO market, all generation from SDG&E’s resource portfolio is sold to the
3 CAISO. Based on the market price benchmark for energy, SDG&E forecasts revenues totaling
4 \$ [REDACTED] for generation sold in 2024.

5 **C. Contracted Energy Purchases**

6 **1. Purchased Power Contracts**

7 SDG&E’s forecast of total costs for non-renewable power purchase and capacity
8 contracts in 2024 is \$ [REDACTED]. These costs cover capacity payments and variable generation
9 costs for facilities with which SDG&E has contracts. The largest components in this category
10 are RA capacity costs, expected to cost \$ [REDACTED]. This category also includes \$ [REDACTED] of
11 RA sale transactions to maintain SDG&E’s RA compliance position considering CCA load
12 departure in 2024.

13 **2. Renewable Energy Contracts**

14 SDG&E’s renewable energy contracts usually contain only an energy payment and no
15 capacity payment. For 2024, SDG&E’s renewable energy portfolio will include a cost for all the
16 renewable power delivered based on contract prices and the renewable energy credits (RECs)
17 described in Section II under “Renewable Energy Contracts.” All costs associated with these
18 contracts are forecasted to be \$598.4 million for 2024 and are booked to ERRA with above
19 market costs booked to PABA. This includes \$77 million of REC sales to maintain an
20 equivalent RPS compliance position considering CCA load departure and allocations according
21 to the VAMO process outlined in R.18-07-003. Attachment C details the renewable projects by
22 technology type, their costs, and forecasted energy deliveries.

23 Customers who opt into the Green Tariff Shared Renewables (“GTSR”) program, which
24 consists of both a Green Tariff (“GT”) component and an Enhanced Community Renewables

1 (“ECR”) component, pay a subset of the renewable costs.¹³ On August 25 2022, the CPUC
2 issued a ruling that suspended the GT program; as a result, the estimated GT customer usage in
3 2024 is 0 GWh.¹⁴ The Interim Pool Sales for 2024 are forecast to be zero because forecasted
4 customer usage is lower than the forecasted generation from the Midway and Wister solar
5 projects. The estimated GT charges include the cost of local solar¹⁵ of \$ [REDACTED], Grid
6 Management Charges (“GMC”) of \$0.92/MWh and Western Renewable Energy Generation
7 Information System (“WREGIS”) costs of \$0.00400/MWh. The estimated total energy
8 procurement cost of GT in 2024 is \$0. The estimated ECR customer usage in 2024 is 0.00 GWh.
9 The estimated total cost of ECR in 2024 is \$0. Additionally, the solar value adjustment was
10 calculated as \$ [REDACTED].¹⁶ These GTSR rates are illustrative; full details of SDG&E’s GTSR
11 proposal are discussed in the testimony of SDG&E witness Rachelle R. Baez.

12 **3. Competitive Transition Charge (CTC) Contracts**

13 SDG&E’s CTC contracts consist of dispatchable capacity or firm capacity PURPA
14 contracts. These contracts include provisions for both energy and capacity payments. The
15 energy payments for QFs that are under firm capacity PURPA contracts are forecasted using

¹³ Decision 15-01-051 authorizing the GTSR program was approved on January 29, 2015. The GT and ECR components are two separate rate offerings under the GTSR Program accessing different pools of solar resources and with different terms.

¹⁴ GT and ECR usage forecasts were developed using average consumption estimates for each customer class in conjunction with program enrollment targets.

¹⁵ Cost of local solar is an average price of projects built specifically to serve the GT component (GT Dedicated Procurement Projects).

¹⁶ In A.22-05-023 the CPUC granted SDG&E authorization to temporarily suspend the EcoChoice program, therefore, the NQC of the resources that are used to serve these customers is assumed to be zero.

1 SDG&E’s Short-Run Avoided Cost (“SRAC”) formula.¹⁷ For the dispatchable contracts,
2 SDG&E pays fuel, variable O&M and capacity payments. These contracts, whether PURPA or
3 dispatchable, are considered CTC contracts¹⁸ and the ERRA expenses are based on delivered
4 energy multiplied by the market price benchmark (“MPB”). Any costs, including capacity
5 payments, greater than the market price benchmark are booked to the TCBA. For the purposes
6 of ERRA accounting, ERRA expenses for CTC contracts are recorded on Line 5 of Attachment
7 A, “Contract Costs (CTC up to market),” and are forecasted to be \$ [REDACTED] in 2024.
8 Attachment D details the breakdown of all the units discussed in this section and shows the
9 associated costs, both ERRA and TCBA, and the forecasted energy deliveries. These costs
10 include the indirect GHG cost embedded in the market price that flows through the SDG&E
11 SRAC formula. GHG quantities and costs are presented in Section IV of this testimony.

12 **D. Generation Fuel**

13 **1. Palomar, Desert Star, Miramar and Cuyamaca (Fuel Expenses**
14 **Recovered through ERRA)**

15 For 2024, the ERRA expense for generation fuel purchased by SDG&E for Palomar,
16 Miramar I & II, Desert Star and Cuyamaca is forecasted to be \$ [REDACTED].¹⁹ These forecasted
17 expenses include in lieu of gas fees for Palomar, which are also recovered in ERRA. These costs

¹⁷ The derivation of the SRAC price for QF contracts is posted monthly on an SDG&E website:
<http://www2.sdge.com/SRAC/>.

¹⁸ The CP Kelco contract is not considered a CTC contract for cost allocation purposes.

¹⁹ Capital and non-fuel operating costs for these plants are recovered in the Non-Fuel Generation
Balancing Account (“NGBA”) as required by D.05-08-005, Resolution E-3896 and D.07-11-046.

1 are calculated based on SDG&E’s forecasted fuel usage for this plant and the applicable tariffs,
2 Schedule GP-SUR²⁰ and Schedule EG.²¹

3 **E. Local Generation**

4 As previously noted, SDG&E has entered into contracts for generation resources which
5 specifically provide local RA for the SDG&E system. Because these contract costs are allocated
6 to both bundled and unbundled customers, the costs are accounted for in a separate Local
7 Generating Balancing Account. The Carlsbad Energy Center, El Cajon Energy Storage, Top
8 Gun Energy Storage, Fallbrook Energy Storage, Escondido Energy Center, Escondido Energy
9 Storage, Pio Pico, Kelco, Grossmont, a portion of Sentinel Energy Center, Melrose Energy
10 Storage, Pala-Gomez Creek Energy Storage, Westside Canal Energy Storage, Sagebrush Energy
11 Storage, Clairemont, Boulevard, Elliot, and Paradise contracts are included in this balancing
12 account and are expected to cost \$ [REDACTED], net of supply ISO revenue. Attachment A details
13 the breakdown of local generation expenses.

14 **F. Integrated Resource Planning and Electric Reliability Procurement Tracks**

15 The Integrated Resource Plan (IRP) proceeding, R.16-02-007, issued Decision (D.) 19-
16 11-016, requiring 3,300 MW of procurement by all LSEs within the CAISO for purposes of
17 long-term statewide planning. The decision requires at least 50% of the resources to come online
18 by August 1, 2021, 75% by August 1, 2022, and 100% by August 1, 2023. The Commission
19 determined that SDG&E is responsible for 292.9 MW of incremental procurement beyond the
20 State’s existing portfolio of resources. SDG&E may also be responsible for incremental
21 procurement of LSEs in its service territory that fail to procure, whether by choice or by

²⁰ Customer-procured Gas Franchise Fee Surcharge

²¹ Natural Gas Intrastate Transportation Service for Electric Generation Customers.

1 consequence, their allocation of the total procurement need identified. This “on-behalf-of”
2 procurement is additive to the IOU procurement for its own share of the identified need. In
3 D.19-11-016, the Commission ordered cost recovery for this “backstop” procurement through a
4 modified Cost Allocation Mechanism (“CAM”) mechanism. Until the Commission adopted the
5 cost recovery for procurement undertaken in D.19-11-016, SDG&E requested that the
6 Commission, authorize SDG&E to establish a new memorandum account, the Resource
7 Adequacy Procurement Memorandum Account (“RAPMA”), to track and record costs related to
8 the procurement of incremental RA capacity required by D.19-11-016 and related administrative
9 costs.²² Resolution (E-5241), approving SDG&E’s rate implementation plan to recover
10 procurement costs associated with MCAM, was issued January 2023. Therefore, this 2024
11 forecast does not have any forecasted dollars in RAPMA.

12 The Integrated Resource Plan (R.20-05-003) issued Decision D.21-06-035 requiring all
13 LSEs in the CAISO to procure a total of at least 11,500 megawatts (MW) of net qualifying
14 capacity (NQC). The decision requires 2,000 MW by 2023, an additional 6,000 MW by 2024,
15 an additional 1,500 MW by 2025, and an additional 2,000 MW by 2026. The Commission
16 determined that SDG&E is responsible for 361 MW of incremental procurement beyond the
17 State’s existing portfolio of resources. Due to updated load departure forecasts since the
18 decision, SDG&E filed advice letter 3967-E requesting an adjustment to the capacity
19 requirements to ensure both SDG&E and San Diego Community Power's (SDCP) respective
20 obligations more accurately account for expected load migration. SDG&E and SDCP mutually
21 agreed and requested Commission approval to increase SDG&E’s total procurement obligation
22 by 114.3 MW and correspondingly decrease SDCP’s obligation by the same amount. SDG&E’s

²² Advice Letter 3707-E

1 new procurement requirement would be 475.3 MW. Any procurement resulting from the
2 Commission’s Order must be requested via advice letter outlining details of the resource and cost
3 recovery methods. SDG&E requested approval for two advice letters 4096-E and AL 4189-E.
4 AL 4096-E which included three projects: Edward Sanborn, Bottleneck, and Cald was approved
5 January 2023. AL 4189-E is still pending commission approval. LSEs were not given the
6 opportunity to opt out of this procurement, and procurement costs as a result of this decision are
7 allocated to bundled customers through PCIA. However, the IOUs are designated as backstop
8 procurers in the event an LSE fails to reach their targets, and any backstop procurement costs
9 SDG&E incurs is authorized to be recovered through the CAM cost recovery mechanism.

10 In the Electric Reliability proceeding (R.20-11-003), D.21-03-056 directed the IOUs
11 within the CAISO to procure additional resource capacity for the summers of 2021 and 2022. In
12 a subsequent decision (D.21-12-015), the IOUs were directed to procure additional resource
13 capacity for the summers of 2022 and 2023. Both decisions authorize the IOUs to seek CAM
14 cost recovery for any resulting procurement.

15 **G. CAISO Related Costs**

16 SDG&E forecasts the miscellaneous CAISO costs to be \$ [REDACTED] in 2024. SDG&E
17 also forecasts the cost of the Federal Energy Regulatory Commission (“FERC”) Fees and
18 Western Renewable Energy Generation Information System to be \$ [REDACTED] in 2024.

19 **H. Hedging Costs & Financial Transactions**

20 SDG&E’s resource portfolio has substantial exposure to gas price volatility because of
21 fuel requirements for its gas-fired resources, as well as the gas price-based pricing formula for its
22 QF contracts. To manage this exposure, SDG&E engages in hedging activity, consistent with its

1 CPUC-approved procurement plan,²³ and it will book the resulting hedging costs and any
2 realized gains and losses from hedge transactions to ERRRA consistent with its CPUC-approved
3 hedge plan. The estimate of hedging costs for 2024 is \$ [REDACTED], calculated as the marked-to-
4 market profit/loss of hedges already in place. The profit/loss of these and future hedges placed
5 will rise and fall with market prices. Therefore, the final cost or savings will not be known until
6 the settlement process has been completed for the hedging transactions. SDG&E had only
7 hedged costs for January through March of 2024.

8 SDG&E may also trade short-term financial power products to hedge its long or short
9 position against potentially volatile CAISO market clearing prices. SDG&E does not include a
10 forecast of net cost or benefit from these power hedges due to the unpredictability of market
11 prices relative to the price of the hedges.

12 **I. Convergence Bids**

13 SDG&E uses convergence bids²⁴ to hedge certain operational risks in the day-to-day
14 management of its portfolio. It is not possible to forecast the gains or losses associated with
15 potential convergence bidding activity because of the unpredictable relationship between day-
16 ahead and real-time prices. Therefore, SDG&E did not forecast an ERRRA revenue/charge for
17 convergence bids.

²³ SDG&E's 2014 Long-Term Procurement Plan, Appendix B: Electric and Gas Hedging Strategy.

²⁴ A convergence bid (also known as a virtual bid) is not backed by any physical generation or load and is thus completely financial. Convergence bidding allows market participants to arbitrage expected price differences between the Day-Ahead and Real-Time markets. Using convergence bids, market participants can sell (buy) energy in the Day-Ahead market, with the explicit requirement to buy (sell) that energy back in the Real-Time market, without intending to physically consume or produce energy in Real-Time. Convergence bids that clear the Day-Ahead market will either earn (or lose) the difference between the Day-Ahead and Real-Time market prices at a specified node multiplied by the megawatt volume of their bids.

1 **J. Congestion Revenue Rights (CRRs)**

2 Market participants, including SDG&E, were allocated CRRs by the CAISO for which
3 they can nominate source and sink P-nodes²⁵ to match those in their portfolio. If congestion
4 arises between the source and sink P-nodes, the CAISO will pay the market participant holding
5 the CRR the congestion charges to offset the congestion costs incurred. SDG&E expects its
6 CRRs to generate revenues from the CAISO to offset congestion costs incurred within its
7 portfolio. However, expected revenues were not included in the 2024 ERRR forecast because
8 SDG&E assumed congestion-free clearing prices to develop forecasts for load requirement costs
9 and generation revenues. A forecast of CRR revenues would have required SDG&E to forecast
10 offsetting market-congestion prices at various P-nodes over the 2024 period. Since there are no
11 forward market prices for congestion, there does not exist a strong basis to perform this forecast
12 without introducing complexity and additional uncertainty into the forecast.

13 Market participants, including SDG&E, are offered the ability to purchase CRRs through
14 an auction process. SDG&E may elect to participate in the annual and monthly auction
15 processes to procure the incremental CRRs. Since the incremental CRRs volumes cannot be
16 forecasted, the incremental CRR costs and revenues also cannot be forecasted.

17 **K. Inter-Scheduling Coordinator Trades (IST)**

18 In the CAISO market, SDG&E may transact ISTs²⁶ bilaterally with counterparties to
19 hedge long or short positions. Under an IST purchase, SDG&E pays the counterparty the
20 contracted energy price and in return receives payment from the CAISO based on the market

²⁵ The source and the sink are the two ends of a path for which congestion may occur. The CRR represents the difference in the Marginal Cost of Congestion component of the Locational Marginal Prices for the Nodal Prices of the source and sink.

²⁶ ISTs are financial bilateral transactions which allow SDG&E to hedge long or short price positions in the market.

1 clearing price. Under an IST sale, SDG&E receives payment from the counterparty based on the
2 contracted energy price and in return pays the market clearing price to the CAISO. For IST
3 purchases and sales, the payment to, or revenue from, the counterparty is largely offset by the
4 respective credit from, or payment to, the CAISO. Because ISTs are used as a hedge against
5 unknown market prices, SDG&E does not include a forecast of the net cost or benefit from these
6 transactions.

7 **IV. SONGS UNIT 1 OFFSITE SPENT FUEL STORAGE COSTS**

8 **A. Background**

9 SONGS Unit 1 ceased operation on November 30, 1992. Defueling was completed on
10 March 6, 1993. On July 18, 2005, SDG&E submitted AL 1709-E, which removed SONGS Unit
11 1 shutdown O&M expense from the revenue requirement pursuant to D.04-07-022. Southern
12 California Edison Company (“SCE”), the majority owner of SONGS, has decommissioned the
13 Unit 1 facility, and as of 2010, most of the Unit 1 structures and equipment have been removed
14 and disposed of

15 Spent fuel assemblies from SONGS Unit 1 have been stored since 1972 at the General
16 Electric-Hitachi spent fuel storage facility located in Morris, Illinois. There are 270 spent fuel
17 assemblies from SONGS Unit 1 currently in storage at that facility. Because there are no other
18 facilities currently available in the U.S. for the commercial storage of spent nuclear fuel, those
19 270 assemblies are expected to remain at the Morris facility until they are accepted for ultimate
20 disposal by the U.S. Department of Energy. Pursuant to the terms of the storage contract with
21 General Electric-Hitachi, payments are made monthly by SCE, which in turn bills SDG&E for its
22 20% ownership share.

1 **B. 2024 Forecast**

2 SDG&E estimates its 2024 SONGS Unit 1 offsite spent fuel storage expense to be \$1.300
3 million, including adjustments for escalation, in accordance with the GE-Hitachi spent fuel
4 storage contract.²⁷ The storage contract utilizes the Bureau of Labor Standards' labor non-
5 financial corporations and industrial commodities indices to forecast escalation rates, which are
6 included in SCE's billing statement to SDG&E. This estimate is based on a spent fuel storage
7 cost forecast prepared by SCE's Nuclear Fuel Manager utilizing the contract escalation terms.

8 **V. 2024 FORECAST OF GHG COSTS**

9 In this section, my testimony describes the cost forecast for GHG compliance obligations
10 under the California Air Resources Board ("CARB") cap-and-trade program. The cap-and-trade
11 program provides that compliance obligations in the electricity sector are applicable to "first
12 deliverers of electricity."²⁸ Generally, first deliverers of electricity in 2024 are electricity
13 generators inside California that emit more than 25,000 metric tons ("MT") of GHG, and
14 importers of electricity from outside of California. SDG&E is the first deliverer for its utility-
15 owned generation, for generation it purchases under third-party tolling agreements in California,
16 and for its imports of electricity into California. The cost of allowances and offsets is a direct
17 GHG cost. In Section V.A below, this testimony addresses the direct GHG compliance costs
18 associated with SDG&E utility-owned generation plants, procurement of electricity from third
19 parties under tolling agreements, and electricity imports attributed to SDG&E.

²⁷ SDG&E may recover these costs through ERRA per D.15-12-032.

²⁸ ARB, Article 5: California Cap on Greenhouse Gas Emissions and Market-based Compliance Mechanisms, at 60, Section 95811(b), available at <https://www.arb.ca.gov/cc/capandtrade/c-t-reg-reader-2013.pdf>.

1 SDG&E customers also face a second type of GHG compliance cost – indirect costs.
2 Indirect costs are costs embedded in market electricity prices, or costs that SDG&E incurs from
3 third parties under contracts. The party selling the power is responsible for the GHG allowance
4 acquisition, but it implicitly charges SDG&E for the cost of acquiring allowances. In Section
5 V.B below, indirect GHG costs are addressed. Section V.C describes the calculation of both
6 direct and indirect 2024 GHG costs. Finally, Section V.D discusses the 2024 allowance auction
7 revenues and the allocations of those revenues.

8 **A. Direct GHG Emissions**

9 Each first deliverer of electricity within California must surrender to CARB one
10 allowance or offset for each MT of carbon dioxide emissions or its equivalent (CO_{2e}). Under
11 CARB’s first deliverer approach, SDG&E will have a direct compliance obligation for GHG
12 emissions from burning natural gas at facilities in its portfolio, including carbon dioxide,
13 methane, and nitrous oxide. SDG&E’s expected direct GHG compliance costs were forecasted
14 using the same production simulation model results that produced the ERRAs discussed
15 above. The amount of fuel needed for each natural gas fired plant is provided as an output based
16 on the expected operation of the plant, including fuel associated with starts. The fuel volume is
17 then multiplied by an emissions factor of 0.05307 MT of CO_{2e} per MMBtu to calculate direct
18 emissions obligations for each plant.²⁹ The forecast of GHG emissions from SDG&E facilities
19 in 2024 is included in Table 4 below.

²⁹ CARB’s Mandatory Reporting Regulations requires use of emission factors from federal regulations - 40 Code of Federal Regulations (“C.F.R.”) Section 98. For pipeline natural gas, there are three components – CO₂, CH₄, and NO₂. Using Tables C-1 and C-2 from 40 C.F.R. Subpart C Section 98 we calculate an overall emissions rate of 0.05307 MT/MMBtu. SDG&E’s portfolio of GHG emitting resources uses only natural gas, not other fuels.

1 Similarly, the estimated emissions for tolling agreements are estimated by multiplying the
2 forecast of MMBtu of natural gas burned from the production simulation by the emission factor
3 of 0.05307 MT of CO_{2e} per MMBtu. Table 4 below provides the forecast of GHG emissions
4 from generators that are under tolling agreements with SDG&E in 2024.

5 In addition, SDG&E imports out-of-state electricity to a delivery point inside California,
6 and it is thus responsible for the GHG emissions attributed to generation of that electricity.

7 There are three categories of GHG emissions associated with imports.

8 First, there are imports from “specified sources” (*i.e.*, imports where the source of the
9 power is known), which consist of either a specific plant or an asset-controlling supplier.³⁰

10 Accordingly, power from SDG&E’s Desert Star combined-cycle generation plant in Nevada, for
11 example, is included on the same basis as SDG&E’s other utility-owned facilities—multiplying
12 the forecast of MMBtu of natural gas burned from the production simulation by the emission
13 factor of 0.05307 MT of CO_{2e} per MMBtu.

14 Second, imported power from “unspecified sources” is multiplied by an estimated
15 transmission loss factor of 1.02³¹ to estimate the MWh related to emitting generation from
16 unspecified electricity imports. The quantity is multiplied by the CARB default emission rate,
17 which is 0.428 metric tons of CO_{2e} per MWh. For any market purchases of energy, 2.5% of the
18 total purchased power is considered to be an unspecified power import with direct GHG
19 emissions.

³⁰ SDG&E currently does not have any contracts with asset-controlling suppliers such as the Bonneville Power Administration or Powerex. CARB assigns an emissions factor based on the entire portfolio for these suppliers.

³¹ Transmission losses on SDG&E’s system are measured at approximately 2% of load requirement.

1 The emissions of imported power are shown in Table 4 below. Monthly emissions for all
2 categories are summarized in Attachment E.

3 **B. Indirect GHG Emissions**

4 In addition to the direct GHG costs described above, the cap-and-trade program results in
5 GHG compliance costs being embedded in the market price of electricity procured in the
6 wholesale market and from third parties. The cost to purchase electricity from the wholesale
7 market, as well as from suppliers under contracts that include market-based prices, will have
8 these embedded costs of compliance with the cap-and-trade program built into the electricity
9 price. The compliance instrument will be procured by the first deliverer, rather than by SDG&E,
10 as purchaser. SDG&E's expected indirect GHG compliance costs are based on an assumption
11 that all power sold by SDG&E-controlled assets are used by SDG&E customers, up to the level
12 of the forecasted SDG&E load.³² If the total CAISO market purchases exceed the MWh from
13 SDG&E-controlled generation, then the assumption is that SDG&E entered into market
14 purchases to cover this difference. To estimate the GHG emissions embedded in these net
15 CAISO market purchases, SDG&E used the CARB's default emissions rate, which is 0.428 MT
16 per MWh, and considers 97.5% of the total purchased energy to contain indirect GHG emissions.
17 The rest is considered as imported power with direct GHG emissions as described earlier.

18 In addition to market purchases, contracts with some Combined Heat and Power ("CHP")
19 facilities are included as indirect costs. Specific CHP contracts require payments based on a
20 market electricity price (with embedded GHG costs), or a fixed heat rate with the GHG cost

³² In fact, however, the generation is bid into the CAISO market and dispatched by CAISO to meet statewide needs. The simplifying assumption is used to calculate net CAISO market purchases – all CAISO purchases less all resources that are forecasted to successfully bid into the CAISO market by SDG&E, including imports. However, SDG&E does make an adjustment for expected sales of renewable energy beyond regulatory requirements.

1 based on the contract heat rate; or in other cases, a reimbursement of GHG expenditures incurred
 2 by the CHP facility associated with sales to SDG&E. These contracts represent a second source
 3 of indirect GHG costs in that the CHP owner acquires GHG compliance instruments.

4 Contractual GHG costs do not provide a good estimate of actual GHG costs.
 5 Accordingly, determining actual GHG costs is difficult because it requires knowledge of
 6 confidential counterparty data and the choice of method used to split the GHG emissions
 7 between electricity production and useful thermal energy. For simplicity, SDG&E estimates
 8 GHG costs associated with CHP on the assumption that the CHP units, on average, are as
 9 efficient as unspecified power, assigning a 0.428 MT per MWh emissions rate to all purchases of
 10 power from CHP facilities.

11 Finally, SDG&E forecasts REC sales to maintain an equivalent RPS compliance position
 12 considering CCA load departure in 2024 and allocations according to R.18-07-003. REC sales
 13 remove the GHG-free attribute of the renewable resource generation. To estimate the GHG
 14 emissions of the unbundled renewable generation, SDG&E treats this the same as imported
 15 power from unspecified sources. The GHG emissions from indirect sources are summarized on
 16 an annual basis in Table 4 below and monthly in Attachment E.

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Resource	Fuel (000 MMBtu)	GHG (000 Metric Tons)
Palomar - UOG		
Desert Star - UOG - Out of State		
Pio Pico - PPA		
Carlsbad Energy Center - PPA		
Miramar - UOG		
Yuma - PPA Out of State		
Fuel-Based		
	Generation (GWh)	GHG (000 Metric Tons)
Imports		
Total Direct Emissions		

Resource	Generation (GWh)	GHG (000 Metric Tons)
Net Market Purchases		
Unbundled RPS after REC Sales		
CHP (CP Kelco)		
Total Indirect Emissions		
Total Forecasted Emissions		

1 **C. 2024 GHG Costs**

2 The proxy for the 2024 GHG emissions price is calculated as \$ [REDACTED]. This figure was
3 derived using a recent (March 01, 2023) assessment of 2024 GHG market prices based on the
4 forward prices on the Intercontinental Exchange (“ICE”), consistent with the forecasted natural
5 gas and electricity prices associated with the forecast of emissions in Table 4 above. The GHG
6 cost forecast multiplies the expected emissions, both direct and indirect, by the forecasted proxy
7 GHG price resulting in forecasted GHG costs for 2024 of \$ [REDACTED], with \$ [REDACTED] of
8 direct GHG costs in LGBA, \$ [REDACTED] of direct GHG costs in ERRA, and \$ [REDACTED] of
9 indirect GHG costs.

10 **D. 2024 Allowance Auction Revenues**

11 The CARB allocates cap-and-trade allowances to SDG&E for 2024. SDG&E is required
12 to place all these allowances for sale in CARB’s 2024 quarterly auctions. The forecast of
13 allowance revenues was developed by multiplying the total number of allowances allocated to
14 SDG&E for consignment by a forecast price for the allowances.³³

15 The total allowances that will be allocated to SDG&E for 2024 is expected to be
16 6,435,664 MT. SDG&E’s Forecast 2024 Allocated Allowances (MT) represents the SDG&E
17 allocation as established in Table 9-4 of the Cap-and-Trade regulation. This new quantity is
18 reflected in the forecast column within Appendix G template D-1. The allowance price is the
19 same proxy price as used in the calculation of GHG costs, which is \$31.6/MT. The allowance
20 auction revenue forecast is the allowances allocated times the allowance price, which totals
21 \$203.4 million.

³³ It was assumed that all allowances are sold in the auction process, which is consistent with the assumption that the market-clearing price is above the price floor.

1 A portion of the allowance auction revenue is reserved for clean energy and energy
2 efficiency projects initiated by the Solar on Multifamily Affordable Housing (“SOMAH”)
3 Program.^{34, 35} This program provides financial incentives for installation of solar energy systems
4 on multifamily affordable housing properties, as specified in the statute. For 2024, the funding
5 amount is \$12.0 million, which is the lesser of 10% of SDG&E’s total forecasted allowance
6 revenue amount or SDG&E’s proportionate stateside share of \$100 million.³⁶ Any true-ups for
7 allowance revenues set aside for clean energy and energy efficiency projects are addressed in the
8 testimony of SDG&E witness Brenda Hua.

9 D.18-06-027 (issued on June 22, 2018), adopted new programs to promote the
10 installation of renewable generation among residential customers in disadvantaged communities
11 (“DACs”) including the Single-family Solar Homes (“DAC-SASH”).³⁷ SDG&E shall fund this
12 program first through available GHG allowance revenues proceeds and if such funds are
13 exhausted, the program will be funded through public purpose programs (“PPP”) funds.³⁸
14 SDG&E estimates the DAC-SASH program funding for 2024 to be \$1.09 million.

³⁴ D.17-12-022 Ordering Paragraph (“OP”) 4, at 69, states that the IOUs “each shall reserve 10% of the proceeds from the sale of greenhouse gas allowances defined in Public Utilities Code Section 748.5 through its annual Energy Resource Recover Account (ERRA) proceedings for use in the Solar on Multifamily Affordable Housing Program, starting with its ongoing 2018 ERRA forecast proceeding.”

³⁵ On May 13, 2022, SCE filed a Petition for Modification of D.17-12-022 (issued in R.14-07-002) seeking to change the allocation to 10%, not to exceed \$1 million statewide. On September 15, 2022, the Commission adopted D.22-09-009, which modified D.17-12-022 and D.20-04-012, changing the funding requirements for the SOMAH program. The IOUs are now required to set aside 10% or their proportionate share of \$100 million, whichever is less, of the proceeds from the sale of GHG allowances.

³⁶ D.20-04-012, issued on April 23, 2020, continues authorization of allocation of funds to the SOMAH program through June 30, 2026.

³⁷ D.18-06-027 at OP 1.

³⁸ D.18-06-027 at OP 8.

1 **VI. 2024 FORECAST OF TMNBC COSTS**

2 The cost forecast for tree mortality-related procurement costs for 2024 is \$ [REDACTED].³⁹

3 The TMNBC costs will be recovered through the Public Purpose Program (PPP) charge, as
4 addressed in the testimony of SDG&E witness Rachelle R. Baez.

5 This concludes my prepared direct testimony.

³⁹ Per D.18-12-003, SDG&E filed Advice Letter 3343-E18 requesting approval to establish TMNBCBA as directed by Resolution E-4770 and Resolution E-4805.

1 **VII. QUALIFICATIONS**

2 My name is Jimmy Elias. My business address is 8315 Century Park Court, San Diego,
3 CA 92123. I joined SDG&E in July 2015 and my current title is Senior Resource Planner in the
4 Electric & Fuel Procurement Department. My responsibilities include running computer models
5 that forecast energy needs for both physical and financial operational needs.

6 I received a B.S. in Finance from San Diego State University in San Diego, CA.

7 I have not previously testified before the California Public Utilities Commission.

8

ATTACHMENT A

(CONFIDENTIAL)

SDG&E 2024 ERRATA AND LG EXPENSES

ATTACHMENT B

(CONFIDENTIAL)

SDG&E 2024 GENERATION PORTFOLIO DELIVERY VOLUMES

ATTACHMENT B - SDG&E 2024 GENERATION PORTFOLIO DELIVERY VOLUMES (GWh)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2024
CTC													
Non-CTC QF													
TOTAL													
Renewable - Bio Gas	20.3	18.6	18.3	20.1	21.5	19.3	18.3	19.1	18.2	15.7	20.9	18.6	229.0
Renewable - Other	4.5	5.0	6.5	7.0	7.8	12.7	13.0	12.8	11.3	11.4	9.9	9.3	111.2
Renewable - Solar	190.1	210.3	263.8	312.5	346.4	337.1	328.2	312.1	269.6	259.1	194.0	154.8	3,177.8
Renewable - Wind	133.7	165.1	226.0	273.6	277.3	215.9	188.6	166.5	135.6	148.2	104.0	128.2	2,162.7
Renewable - Wind REC	102.0	91.8	92.2	82.9	75.1	73.1	49.5	56.9	67.9	65.2	85.0	60.8	902.5
Midway-Green Tariff-EcoChoice	4.6	5.3	7.3	8.9	9.8	9.8	9.6	8.7	7.1	6.1	4.4	3.4	85.1
Renewable - RPS Sales	(329.6)	(360.1)	(442.1)	(512.9)	(536.4)	(483.4)	(439.7)	(416.6)	(366.7)	(361.7)	(294.0)	(266.9)	(4,810.1)
TOTAL NON-CTC RENEWABLE	125.6	136.0	172.0	192.1	201.5	184.5	167.4	159.5	143.1	144.1	124.2	108.2	1,858.2
Miramar													
Miramar 2													
Cuyamaca													
Palomar													
Desert Star													
Grossmont													
Kelco													
Lake Hodges													
El Cajon Energy Center													
Orange Grove													
Escondido Energy Center													
Pio Pico													
Carlsbad Energy Center													
Johanna Energy Storage													
Kearny Energy Storage North													
Kearny Energy Storage South													
Valley Center Energy Storage													
El Cajon Energy Storage													
Top Gun Energy Storage													
Escondido Energy Storage													
Fallbrook Energy Storage													
Miguel Energy Storage													
Sagebrush Storage													
Melrose Storage													
Pala-Gomez Storage													
Westside Canal Storage													
Clairemont													
Boulevard													
Elliot													
Paradise Substation													
Borrego Advanced Energy Storage													
TOTAL GENERATION													

ATTACHMENT C

SDG&E 2024 RENEWABLE RESOURCE DETAIL

Attachment C

PRIVILEGED AND CONFIDENTIAL PURSUANT TO P.U.C. CODE 583, 454.5(g), GO 66-C and D.06-06-066 as needed
ATTACHMENT C - SDG&E 2024 RENEWABLE RESOURCE DETAIL

Power Purchase Deliveries (GWh)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2024
BIO GAS													
MM San Diego LLC- Miramar Landfill	-	-	-	-	-	-	-	-	-	-	-	-	-
MM San Diego LLC - North City	0.9	1.0	1.1	1.0	0.9	1.0	1.0	1.0	0.9	1.0	1.0	0.8	11.6
Sycamore Energy	1.8	1.7	1.9	2.0	2.0	1.9	1.9	1.9	1.8	1.9	1.8	1.6	22.2
HL Power	17.6	15.9	15.3	17.1	18.6	16.5	15.3	16.2	15.5	12.8	18.0	16.3	195.2
Subtotal	20.3	18.6	18.3	20.1	21.5	19.3	18.3	19.1	18.2	15.7	20.9	18.6	229.0

OTHER													
Small Hydro	0.4	0.4	0.5	0.6	0.7	0.6	0.6	0.6	0.5	0.4	0.3	0.4	5.9
Lake Hodges	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Bright Canyon Hybrid	3.2	3.7	5.1	5.7	6.6	6.3	6.3	5.8	4.9	4.4	3.2	2.6	57.9
Edward-Sanborn Hybrid	3.2	3.7	5.1	5.7	6.6	6.3	6.3	5.8	4.9	4.4	3.2	2.6	57.9
Subtotal	6.8	7.8	10.8	11.9	13.8	13.3	13.3	12.1	10.3	9.2	6.8	5.6	121.7

SOLAR													
NRG Borrego Solar	3.8	4.2	5.4	6.2	7.3	7.3	7.3	7.1	5.9	5.4	4.1	3.1	67.1
Sol Orchard	1.5	1.8	2.3	2.9	3.1	3.5	3.8	3.6	2.9	2.7	2.1	1.4	31.5
Solar Energy Project	0.4	0.5	0.6	0.6	0.5	0.5	0.6	0.7	0.6	0.5	0.3	0.2	5.9
NLP Valley Center Solar	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.5	0.4	0.3	0.2	5.3
NLP Granger A82	0.4	0.4	0.6	0.7	0.7	0.8	0.9	0.7	0.6	0.6	0.5	0.3	7.3
Arlington Valley Solar	19.7	22.8	28.5	35.5	39.8	39.8	38.0	35.9	30.5	29.4	20.4	16.3	356.5
Calipatria	2.2	2.4	3.3	3.9	4.9	4.9	5.1	4.6	3.7	3.3	2.3	1.5	42.1
Campo Verde	24.5	24.5	28.3	31.4	33.9	31.7	30.0	30.9	28.3	29.7	24.7	20.8	338.7
Catalina Solar	16.0	18.2	21.7	23.9	24.4	24.4	25.1	24.7	21.9	21.1	17.3	13.1	251.9
Centinela Solar1	21.4	24.0	29.7	35.3	40.6	39.5	38.5	36.4	31.9	30.3	22.1	17.8	367.5
Centinela Solar2	7.5	8.4	10.5	12.4	14.2	13.6	13.3	12.6	11.1	10.5	7.6	6.2	127.9
Desert Green	0.8	0.9	0.9	1.2	1.3	1.3	1.3	1.3	1.1	1.2	0.9	0.6	12.8
Imperial Valley Solar I	24.4	27.6	36.6	43.8	47.6	46.2	43.7	40.6	34.2	32.7	23.2	18.7	419.2
Midway Solar	2.2	2.6	3.6	4.5	5.1	5.1	5.2	4.6	3.7	2.9	2.1	1.5	43.2
Maricopa West Solar	1.8	2.8	3.5	4.7	5.1	5.3	5.4	4.3	3.3	3.1	1.8	1.3	42.4
TallBear Seville	2.7	2.7	4.0	5.1	6.0	6.3	6.6	6.1	4.9	4.5	3.1	2.2	54.2
SolarGen 2	18.3	20.7	27.4	32.8	35.7	34.6	32.8	30.5	25.7	24.5	17.4	14.0	314.4
Cascade SunEdison	2.9	3.4	4.7	5.3	6.1	5.9	5.9	5.3	4.5	4.1	3.0	2.4	53.5
Csolar IV South	19.6	20.4	23.7	26.9	28.8	26.8	26.4	26.6	24.5	24.8	20.0	16.3	284.8
Csolar IV West	21.6	24.1	31.6	39.4	45.8	44.1	43.0	39.8	33.6	30.5	23.1	18.2	394.7
Wister Solar Project	2.4	2.8	3.7	4.4	4.8	4.6	4.4	4.1	3.4	3.3	2.3	1.9	41.9
Subtotal	194.7	215.6	271.0	321.3	356.2	346.9	337.8	320.8	276.7	265.3	198.4	158.1	3,262.9

WIND													
Glacier Wind (TREC)	29.8	28.9	29.9	25.9	24.2	23.7	14.5	17.8	20.8	11.7	-	-	227.1
Rim Rock (TREC)	72.3	62.9	62.4	57.0	50.9	49.5	34.9	39.1	47.0	53.6	85.0	60.8	675.4
Kumeyaay	15.4	14.2	17.2	14.3	14.1	9.8	8.8	7.3	7.7	14.0	13.7	15.3	151.8
Coram Energy	1.6	1.8	2.0	3.1	3.4	3.1	2.9	2.7	2.0	1.6	1.0	1.1	26.2
Energia Sierra Juarez	34.0	39.2	53.7	54.2	49.3	35.2	29.9	27.1	23.2	34.4	26.1	38.8	445.2
Energia Sierra Juarez 2	23.0	26.5	36.4	36.7	33.4	23.8	20.2	18.4	15.7	23.3	17.7	26.3	301.4
Manzana Wind	20.7	23.3	26.0	41.0	44.8	40.1	37.6	35.2	26.2	20.8	12.8	14.5	343.0
Oak Creek Wind Power	0.3	-	-	-	-	-	-	-	-	-	-	-	0.3
Ocotillo Express	18.0	34.0	59.9	79.0	86.7	65.8	57.4	46.8	36.2	31.1	19.0	14.3	548.1
Pacific Wind	19.8	24.3	27.1	40.8	40.5	33.9	27.7	24.9	21.1	20.4	12.5	16.7	309.9
San Geronio	1.0	1.8	3.7	4.4	4.9	4.2	4.2	4.1	3.5	2.6	1.3	1.2	36.8
Subtotal	235.8	256.9	318.2	356.5	352.3	289.1	238.1	223.3	203.5	213.4	189.0	189.0	3,065.1

RPS SALES													
Subtotal	(329.6)	(360.1)	(442.1)	(512.9)	(536.4)	(483.4)	(439.7)	(416.6)	(366.7)	(361.7)	(294.0)	(266.9)	(4,810.1)

Total Power Purchase Costs (\$000)													
Biogas	\$ 2,167	\$ 2,012	\$ 1,982	\$ 2,140	\$ 2,311	\$ 2,097	\$ 2,229	\$ 2,417	\$ 2,228	\$ 1,944	\$ 2,248	\$ 1,974	\$ 25,748
Other	\$ 220	\$ 250	\$ 344	\$ 382	\$ 455	\$ 443	\$ 443	\$ 407	\$ 345	\$ 301	\$ 222	\$ 188	\$ 4,002
Solar	\$ 20,758	\$ 22,983	\$ 29,630	\$ 33,957	\$ 38,199	\$ 37,392	\$ 47,814	\$ 48,024	\$ 39,998	\$ 39,188	\$ 21,397	\$ 16,811	\$ 396,151
Wind	\$ 11,708	\$ 15,088	\$ 20,698	\$ 25,624	\$ 26,170	\$ 20,634	\$ 18,656	\$ 16,621	\$ 13,438	\$ 14,389	\$ 9,071	\$ 10,916	\$ 203,012
Wind (REC)	\$ 4,073	\$ 3,634	\$ 3,640	\$ 3,286	\$ 2,964	\$ 2,887	\$ 1,974	\$ 2,253	\$ 2,695	\$ 2,707	\$ 3,740	\$ 2,676	\$ 36,530
RPS Sales	\$ (5,124)	\$ (5,682)	\$ (6,942)	\$ (8,557)	\$ (8,994)	\$ (7,986)	\$ (7,280)	\$ (6,807)	\$ (5,777)	\$ (5,658)	\$ (4,409)	\$ (4,213)	\$ (77,429)
GTSR Interim Pool Transfer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal	\$ 33,803	\$ 38,286	\$ 49,352	\$ 56,832	\$ 61,105	\$ 55,467	\$ 63,836	\$ 62,915	\$ 52,927	\$ 52,870	\$ 32,270	\$ 28,352	\$ 588,014

ATTACHMENT D

(CONFIDENTIAL)

SDG&E 2024 CTC QUALIFYING FACILITY DETAIL

Attachment D

PRIVILEGED AND CONFIDENTIAL PURSUANT TO P.U.C. CODE 583, 454.5(g), GO 66-C and D.06-06-066 as needed

ATTACHMENT D - SDG&E 2024 CTC DETAIL

CTC - Dispatchable (GWh)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2024
Goal Line	[REDACTED]												
Yuma Cogen Associates	[REDACTED]												
CTC QF - SRAC Priced (GWh)	[REDACTED]												
Aggregation of Hydro Units (SO1)	[REDACTED]												
Subtotal	[REDACTED]												
ERRA Expenses (\$000)	[REDACTED]												
CTC (up to market)	[REDACTED]												
TCBA Expenses (\$000)	[REDACTED]												
CTC (above market)	[REDACTED]												

ATTACHMENT E

(CONFIDENTIAL)

SDG&E GREENHOUSE GAS DETAIL

Attachment E

PRIVILEGED AND CONFIDENTIAL PURSUANT TO P.U.C. CODE 583, 454.5(g), GO 66-C and D.06-06-066 as needed

ATTACHMENT E - SDG&E GREENHOUSE GAS (GHG) DETAIL

2024 Direct Emissions (MT)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2024
California UOG Plants	[REDACTED]												
California Tolling Generators	[REDACTED]												
Specified Imports	[REDACTED]												
Unspecified Imports (Market Purchases)	[REDACTED]												
Total Direct Emissions	[REDACTED]												
2024 Indirect Emissions (MT)	[REDACTED]												
Unspecified Imports (Market Purchases)	[REDACTED]												
Unbundled RPS after REC Sales	[REDACTED]												
CHP	[REDACTED]												
Total Indirect Emissions	[REDACTED]												
2024 Total Forecasted Emissions	[REDACTED]												

ATTACHMENT F

DECLARATION OF JIMMY ELIAS

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

**DECLARATION
OF JIMMY ELIAS**

A.22-05-XXX

**Application of San Diego Gas & Electric Company (U 902-E)
for Approval of Its 2024 Electric Procurement Revenue Requirement Forecasts and GHG-
Related Forecasts**

I, Jimmy Elias, declare as follows:

1. I am a Senior Resource Planner for San Diego Gas & Electric Company (“SDG&E”). I sponsored my Prepared Direct Testimony (“Testimony”) in support of SDG&E’s Application for Approval of its 2024 Electric Procurement Revenue Requirement Forecasts and GHG-Related Forecasts (“Application”). Additionally, as the Senior Resource Planner, I am thoroughly familiar with the facts and representations in this declaration, and if called upon to testify I could and would testify to the following based upon personal knowledge.

2. I am providing this Declaration to demonstrate that the confidential information (“Protected Information”) in support of the referenced Application falls within the scope of data provided confidential treatment in the IOU Matrix (“Matrix”) attached to the Commission’s Decision (“D.”) 06-06-066 (the Phase I Confidentiality decision). Pursuant to the procedure adopted in D.08-04-023, I am addressing each of the following five features of Ordering Paragraph 2 of D.06-06-066:

- that the material constitutes a particular type of data listed in the Matrix;
- the category or categories in the Matrix the data correspond to;
- that SDG&E is complying with the limitations on confidentiality specified in the Matrix for that type of data;
- that the information is not already public; and
- that the data cannot be aggregated, redacted, summarized, masked, or otherwise protected in a way that allows partial disclosure.

3. The Protected Information contained in my Testimony constitutes material, market sensitive, electric procurement-related information that is within the scope of Section 454.5(g) of the Public Utilities Code.¹ As such, the Protected Information is allowed confidential treatment in accordance with the Matrix, as follows:

Location of Protected Information	Matrix Reference	Reason for Confidentiality and Timing
JE-3	V.C	LSE Total Energy Forecast – Bundled Customer; confidential for the front three years
JE-4 Table 1	IV.F	Forecast of Post-1/1/2003 Bilateral Contracts; confidential for three years
JE-5	VI.A VII.B	Utility Bundled Net Open Position for Capacity; confidential for the front three years Contracts and power purchase agreements between utilities and non-affiliated third parties
JE-6 Table 2	IV.A	Forecast of IOU Generation Resources; confidential for three years
JE-8	IV.B	Forecast of Qualifying Facility Generation; confidential for three years
JE-9, JE-10	II.B.1 II.B.3 II.B.4 IV.J	Generation Cost Forecasts of Utility Retained Generation, confidential for three years, Generation Cost Forecasts of QF Contracts, confidential for three years, Generation Cost Forecasts of Non-QF Bilateral Contracts, confidential for three years, Forecast of Wholesale Market Purchases; confidential for the front three years
JE-11	II.A.2	Utility Electric Price Forecasts; confidential for three years,
JE-12	II.B.3	Generation Cost Forecast of QF Contracts; confidential for three years

¹ In addition to the details addressed herein, SDG&E believes that the information being furnished in my Testimony is governed by Public Utilities Code Section 583 and General Order 66-D. Accordingly, SDG&E seeks confidential treatment of this data under those provisions, as applicable.

Location of Protected Information	Matrix Reference	Reason for Confidentiality and Timing
JE-12, JE-13	II.B.1 II.B.4	Generation Cost Forecasts of Utility Retained Generation, confidential for three years, Generation Cost Forecasts of Non-QF Bilateral Contracts, confidential for three years,
JE-15, JE-16	I.A.4	Long-term Fuel (gas) Buying and Hedging; confidential for three years
JE-23 Table 4, JE-24	Justification for confidentiality provided in Declaration of Praem Kodiath	GHG emissions forecast: Providing these forecasts to market participants would allow them to know SDG&E's GHG forecasted GHG obligation, thereby compromising SDG&E's contractual bargaining power such that customer costs are likely to rise. Thus, the release of this non-public confidential information will unjustifiably allow market participants to use this information to the disadvantage of SDG&E's customers.
JE-26	II.B.4	Generation Cost Forecasts of Non-QF Bilateral Contracts, confidential for three years
Attachment A - SDG&E 2024 ERRA and LG Expenses	XI	Monthly Procurement Costs; confidential for three years
Attachment B - SDG&E 2024 Generation Portfolio Delivery Volumes <ul style="list-style-type: none"> • CTC and non-CTC QF generation data • UOG and non-UOG gas, pumped hydro storage, and battery storage generation data 	IV.A IV.E IV.B IV.F	Forecast of IOU Generation Resources; confidential for three years Forecast of Pre-1/1/2003 Bilateral Contracts; confidential for three years Forecast of Qualifying Facility Generation; confidential for three years Forecast of Post-1/1/2003 Bilateral Contracts; confidential for three years

Location of Protected Information	Matrix Reference	Reason for Confidentiality and Timing
Attachment D - SDG&E 2024 CTC Qualifying Facility (QF) Detail <ul style="list-style-type: none"> • CTC QF dispatchable and non-dispatchable data • Long-Term Power Purchase CTC data • TCBA Expenses data 	IV.E IV.B II.B.4 II.B.3	Forecast of Pre-1/1/2003 Bilateral Contracts; confidential for three years Forecast of Qualifying Facility Generation; confidential for three years Generation Cost Forecast of Non-QF Bilateral Contracts; confidential for three years Generation Cost Forecast of QF Contracts; confidential for three years
Attachment E - SDG&E Greenhouse Gas (GHG) Detail	Justification for confidentiality provided in Declaration of Praem Kodiath	GHG emissions forecasts: Providing these forecasts to market participants would allow them to know SDG&E's GHG forecasted GHG obligation, thereby compromising SDG&E's contractual bargaining power such that customer costs are likely to rise. Thus, the release of this non-public confidential information will unjustifiably allow market participants to use this information to the disadvantage of SDG&E's customers.

4. I am not aware of any instances where the Protected Information has been disclosed to the public. To my knowledge, no party, including SDG&E, has publicly revealed any of the Protected Information.

5. SDG&E will comply with the limitations on confidentiality specified in the Matrix for the Protected Information.

6. The Protected Information cannot be provided in a form that is aggregated, partially redacted, or summarized, masked, or otherwise protected in a manner that would allow further disclosure of the data while still protecting confidential information.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this 15th day of May, 2023, at San Diego, California.

/s/ Jimmy Elias
 Jimmy Elias
 Senior Resource Planner
 San Diego Gas & Electric Company

ATTACHMENT G

**DECLARATION OF PRAEM KODIATH REGARDING
CONFIDENTIALITY OF CERTAIN DATA/DOCUMENTS
PURSUANT TO D.16-08-024, *et al.***

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

**DECLARATION OF PRAEM KODIATH
REGARDING CONFIDENTIALITY OF CERTAIN DATA/DOCUMENTS
PURSUANT TO D.16-08-024, *et al.***

I, Praem Kodiath, do declare as follows:

1. I am the Resource Planning Manager in the Energy Supply Department for San Diego Gas & Electric Company (“SDG&E”). I have been delegated authority to sign this declaration by Estela de Llanos, Vice President of Energy Supply. I have reviewed Jimmy Elias’s Prepared Direct Testimony (“Testimony”) in support of SDG&E’s Application for Approval of its 2024 Electric Procurement Revenue Requirement Forecasts and GHG-Related Forecasts (“Application”). I am personally familiar with the facts and representations in this Declaration and, if called upon to testify, I could and would testify to the following based upon my personal knowledge and/or information and belief.

2. I hereby provide this Declaration in accordance with Decisions (“D.”) 16-08-024, D.17-05-035, and D.17-09-023 to demonstrate that the confidential information (“Protected Information”) provided in the Testimony is within the scope of data protected as confidential under applicable law.

3. In accordance with the legal authority described herein, the Protected Information should be protected from public disclosure.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct to the best of my knowledge.

Executed this 15th day of May, 2023, in San Diego.

/s/ Praem Kodiath
Praem Kodiath
Resource Planning Manager – Energy Supply

ATTACHMENT A

SDG&E Request for Confidentiality on the following information in its Application for Approval of Its 2024 Electric Procurement Revenue Requirement Forecasts and GHG- Related Forecasts

Location of Protected Information	Legal Authority	Narrative Justification
JE-23 Table 4, JE-24, and Attachment E - SDG&E Greenhouse Gas (GHG) Detail Application Attachment G, Template D-2: Forecasted Emissions and Costs	D.14-10-033; D.16-08-024; D.17-05-035; D.17-09-023; Public Utilities Code Section 454.5(g).	The information does not expressly fall within any category of the IOU Matrix applicable to electric procurement information, but is market-sensitive information in that providing these GHG emissions forecasts to market participants would allow them to know SDG&E's forecasted GHG obligation, thereby compromising SDG&E's contractual bargaining power such that customer costs are likely to rise. Thus, the release of this non-public confidential information will unjustifiably allow market participants to use this information to the disadvantage of SDG&E's customers.