

Application of San Diego Gas & Electric
Company (U 902 E) for Authority to Update
Marginal Costs, Cost Allocation, and Electric
Rate Design.

Application: 23-01-XXX
Exhibit No.: _____

CHAPTER 5
PREPARED DIRECT TESTIMONY OF
JEFF DE TURI
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

*****REDACTED – PUBLIC VERSION*****

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

JANUARY 17, 2023



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**PREPARED DIRECT TESTIMONY OF
JEFF DE TURI
(CHAPTER 5)**

I. PURPOSE AND OVERVIEW

The purpose of my testimony is to provide the illustrative marginal cost study as well as the cost basis for the illustrative allocation of commodity costs and ongoing Competition Transition Charge (CTC) costs to San Diego Gas & Electric Company's (SDG&E) customer classes. Marginal commodity costs are the incremental electric commodity costs incurred on behalf of utility customers and are composed of marginal energy costs (MEC) and marginal generation capacity costs (MGCC), including marginal flexible capacity costs. Marginal energy costs are the added energy costs incurred to meet electricity consumption. Marginal generation capacity costs are the added costs incurred to meet electric demand. Marginal flexible capacity costs are the added costs incurred to meet the flexible capacity requirements to meet the demand ramp¹ in the greater San Diego region.²

My testimony also includes support for changes to SDG&E's current Time of Use (TOU) periods, which is discussed in detail in the prepared direct testimony of SDG&E witness Adam Pierce.³ The proposed change is to extend the weekday super off-peak TOU period to include 10 AM - 2 PM year-round. The super off-peak period is the time when SDG&E's retail electric rates are lowest. The current, weekday super off-peak TOU period is Midnight to 6 AM and 10

¹ Demand ramp is the upward or downward slope of the demand curve. It is used to describe how much supply will need to be added over a prescribed period of time. For flexible capacity it is measured in three-hour increments.

² SDG&E is presenting marginal flexible capacity costs pursuant to the 2019 General Rate Case (GRC) Phase 2 Settlement, as adopted by D.21-07-010 (Settlement Agreement), Appendix B, Section 2.2.12 Generation Commodity Cost Study Flexible Capacity at 16.

³ See generally Prepared Direct Testimony of Adam Pierce on Behalf of SDG&E (Chapter 1) (January 17, 2023).

1 AM - 2 PM during the months of March and April only. This testimony provides the results of
2 the Loss of Load Expectation (LOLE) analysis and Deadband Tolerance analysis supporting the
3 proposed TOU periods.

4 Finally, my testimony will present SDG&E's analysis of net energy metering (NEM) and
5 non-NEM energy and capacity costs as required by D.21-07-010.

6 My testimony is organized as follows:

- 7 • **Section II – Calculation of Marginal Energy Costs:** MEC are the projected
8 energy costs incurred to meet electricity consumption. Since SDG&E transacts in
9 the California Independent System Operator (CAISO) markets, the MEC are
10 based on forecasted prices from our Production Cost Model (PCM).⁴ A
11 Renewable Portfolio Standard (RPS) adder is also included since added load
12 requires added renewable energy under the RPS.⁵
- 13 • **Section III – Calculation of Marginal Generation Capacity Costs:** MGCC are
14 the added costs incurred to meet electric demand. MGCC are calculated based on
15 long-term considerations and are based on the net cost of new entry of an energy
16 storage unit, the long-term cost of adding new capacity. This amount is equal to
17 the fixed costs of an energy storage unit less expected revenues from energy and
18 ancillary service markets.
- 19 • **Section IV – Calculation of Marginal Flexible Capacity Costs:** Marginal
20 flexible capacity costs are the added costs of meeting the ramp. These costs can
21 be calculated as the cost of building a new unit to provide flexible capacity or the
22 cost of curtailing solar resources to reduce the ramp.⁶
- 23 • **Section V – Short-Term vs Long-Term Capacity Costs:** Capacity can either be
24 purchased in the market via short-term bilateral contracts or procured by building
25 or expanding resources which would be long term.
- 26 • **Section VI – Commodity Revenue Allocation:** Presents the proposal to use
27 marginal costs coupled with the Equal Percent of Marginal Costs (EPMC)

⁴ Settlement Agreement, Section 2.2.13 Marginal Energy Cost Study Methodology at 16.

⁵ Established in 2002 under Senate Bill (SB) 1078, accelerated in 2006 under SB 107 and expanded in 2011 under SB 2 1X. See SB 1078, Stats. 2001-2002, Ch. 516 (Cal. 2002); SB 107, Stats. 2005-2006, Ch. 464 (Cal. 2006); SB 2 1X.

⁶ SDG&E is presenting marginal flexible capacity costs pursuant to Settlement Agreement, Section 2.2.12 at 16.

1 methodology to allocate the authorized commodity revenue requirement to each
2 customer class based on the calculated MEC and MGCC in Sections II and III.

- 3 • **Section VII – CTC Revenue Allocation:** Presents an updated allocation for
4 CTC revenues.
- 5 • **Section VIII – Support of TOU Periods:** Presents the LOLE analysis
6 supporting the change to SDG&E’s TOU periods. SDG&E is proposing to extend
7 the weekday super off-peak TOU period to include 10 AM – 2 PM year-round
8 and to maintain the current on-peak period of 4 PM to 9 PM year-round.
- 9 • **Section IX – NEM vs Non-NEM:** Presents the analysis of the energy and
10 capacity cost comparison between Net Energy Metering customers and non-Net
11 Energy Metering customers.
- 12 • **Section X –Conclusion**
- 13 • **Section XI –Witness Qualifications**

14 My testimony also contains the following attachments:

- 15 • **Attachment A – Illustrative Commodity Marginal Costs (CONFIDENTIAL)**
- 16 • **Attachment B – Illustrative Commodity Revenue Allocations**
- 17 • **Attachment C – Illustrative CTC Revenue Allocations**
- 18 • **Attachment D – Illustrative Legacy TOU Marginal Energy Costs⁷**
- 19 • **Attachment E - Declaration of Jeff DeTuri Regarding Confidentiality of**
20 **Certain Data/Documents Pursuant to D.06-06-066, *et.al***

21 **II. CALCULATION OF MARGINAL ENERGY COSTS**

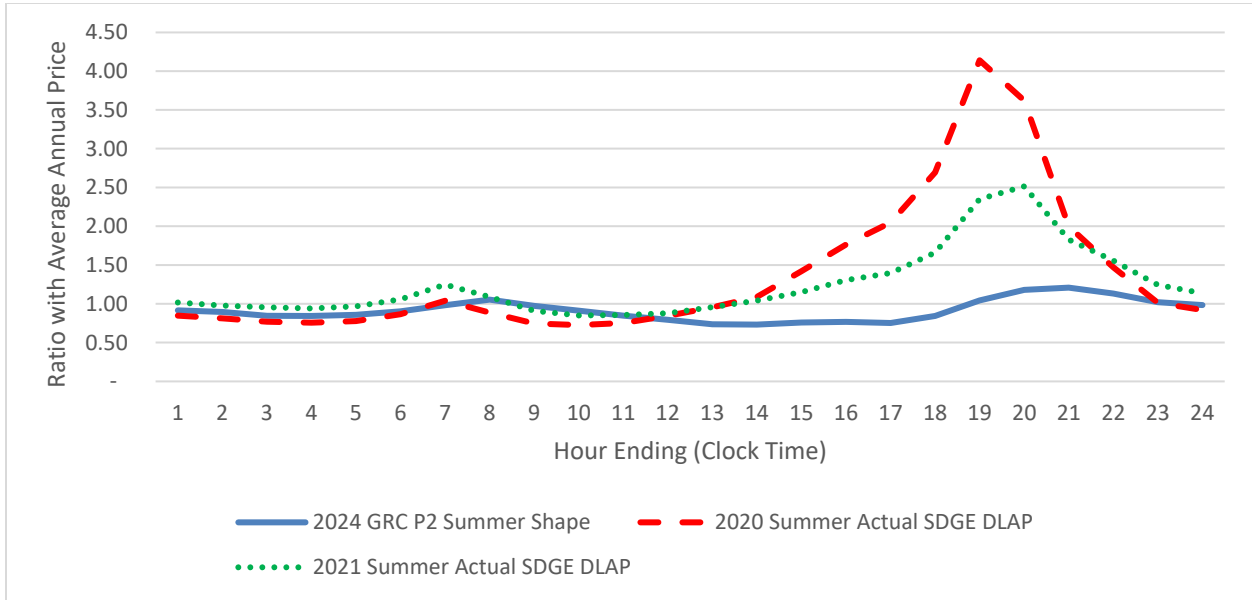
22 MEC reflect expected future energy market conditions and are developed by assessing
23 hourly electricity prices. Since the goal is to forecast future hourly prices, SDG&E used a PCM
24 to forecast hourly prices for 2024 through 2027. SDG&E agreed to consider using PCM in the
25 2019 GRC Phase 2 Settlement Agreement.⁸

⁷ Legacy TOU periods refer to TOU periods implemented prior to December 1, 2017.

⁸ Settlement Agreement, Section 2.2.13 at 16; *see also* Rulemaking (R.) 16-02-007, Order Instituting Rulemaking to Develop an Electricity Integrated Resource Planning Framework and to Coordinate and

1 The SDG&E forecasted 2024 hourly price shape, for summer and winter, respectively,
 2 based on the PCM, is illustrated in Chart JND-1 and Chart JND-2 for non-holiday weekdays and
 3 is compared to the actual SDG&E Default Load Aggregation Point (DLAP) prices observed in
 4 2020 and 2021, respectively.⁹

5 **Chart JND-1: Summer Weekday Average Hourly Shape**



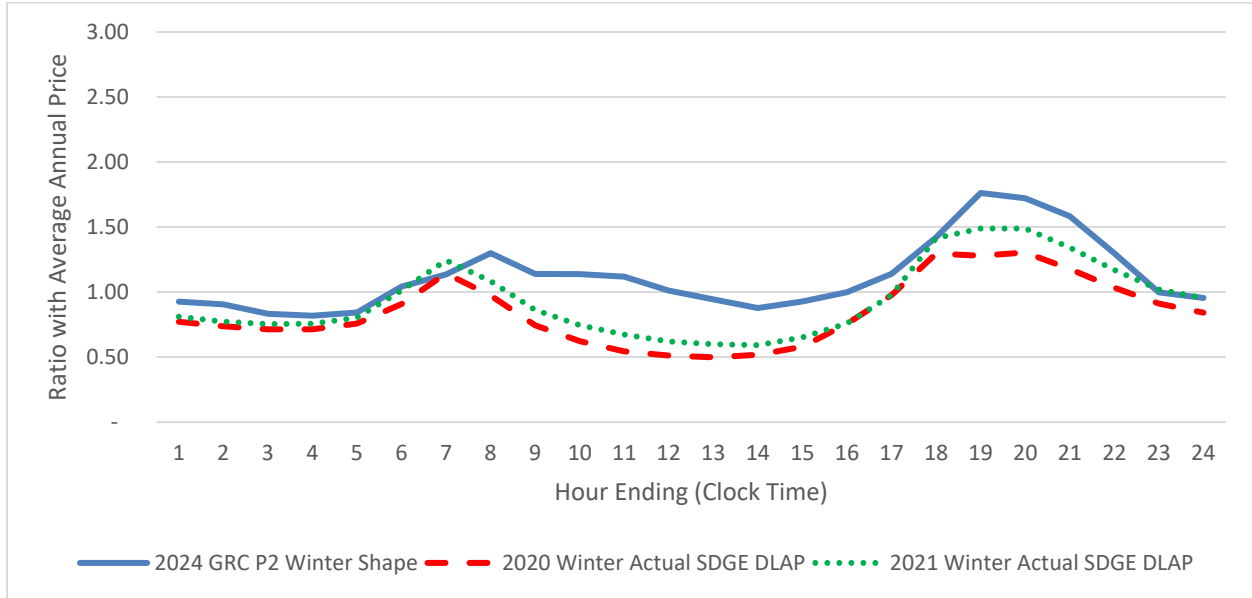
6
7

Refine Long-Term Procurement Planning Requirements (February 11, 2016) (using the same PCM model and many of the same inputs as used here for the Integrated Resource Plan (IRP)).

⁹ California ISO OASIS, *Locational Marginal Prices (LMP)*, available at <http://oasis.caiso.com/mrioasis/logon.do>. See Locational Marginal Prices, From 01/01/2020 To 12/31/2021, Market: DAM, Node: DLAP_SDGE-APND. Note that these prices are not weather adjusted.

1

Chart JND-2: Winter Weekday Average Hourly Shape



2

3

The hourly forecasted prices are then averaged into the appropriate TOU period. The average annual price is calculated to be \$39.45 per MWh, or 3.945 cents per kWh. The same calculation is done using legacy SDG&E TOU periods prior to 2017 to develop illustrative SDG&E legacy and two-period TOU marginal energy prices.

7

The PCM forward prices represent the forecasted wholesale cost of energy in 2024.

8

However, incremental energy will not be purchased entirely from the wholesale market because of California’s 44 percent RPS mandate—pursuant to legislation, forty-four percent of

10

incremental energy in 2024 is required to be provided by renewable generation.¹⁰ Thus, in order

11

to capture the full marginal cost of energy, an RPS adder is applied to the wholesale energy

12

prices after they are grouped by SDG&E Standard TOU period. The RPS premium, defined as

13

the “Green Value” and calculated by the California Public Utilities Commission’s (Commission

¹⁰ Established in 2002 under Senate Bill (SB) 1078, accelerated in 2006 under SB 107, and expanded in 2011 under SB 2 1X. *See* SB 1078, Stats. 2001-2002, Ch. 516 (Cal. 2002); SB 107, Stats. 2005-2006, Ch. 464 (Cal. 2006); SB 2 1X.

or CPUC) Energy Division, is multiplied by the RPS Target for 2024 of 44% ($\$0.0137/\text{kWh} \times 44\% = \$0.00603/\text{kWh}$) to determine the RPS adder. The RPS adder is a single value for all hours of the year, as the RPS requirement is an annual target (*i.e.*, it is a % of annual energy sales). The resulting total illustrative marginal energy prices by SDG&E Standard TOU period are shown in Table JND-1 below. The same calculation is done for Legacy TOU prior to 2017 and two-period TOU periods and the resulting total illustrative marginal energy prices of these SDG&E TOU periods are shown in Attachment D, attached herein.

Table JND-1: Total Marginal Energy Prices

SDG&E Proposed TOU Periods		A	B	A+B
		Wholesale	RPS Adder	Total
		(c/kWh)	(c/kWh)	(c/kWh)
Summer (June 1 - October 31)				
	On-Peak: 4 p.m. to 9 p.m. Everyday	3.9821	0.6028	4.5849
	Off Peak: All other hours	3.6916	0.6028	4.2944
	Super Off Peak: 12 a.m. to 6 a.m., 10 a.m. to 2 p.m. Weekdays and 12 a.m. to 2 p.m. Weekends/Holidays	3.2685	0.6028	3.8713
Winter (November 1 - May 31)				
	On-Peak: 4 p.m. to 9 p.m. Everyday	5.8193	0.6028	6.4221
	Off Peak: All other hours	4.2492	0.6028	4.8520
	Super Off-Peak: 12 a.m. to 6 a.m., 10 a.m. to 2 p.m. Weekdays and 12 a.m. to 2 p.m. Weekends/Holidays	3.4981	0.6028	4.1009
		RPS Premium	\$ 13.70	
		RPS %	44%	

The total marginal energy prices shown in Table JND-1 above are input values for the illustrative commodity cost allocation to customer classes presented in Section VI below. As discussed in the prepared direct testimony of SDG&E witness Adam Pierce, SDG&E is not proposing to use the results of its marginal commodity energy cost study to update its commodity rates.

1 **III. CALCULATION OF MARGINAL GENERATION CAPACITY COSTS**

2 The methodology employed by SDG&E in calculating MGCC can be viewed as a net
3 cost of new entry approach. Historically, MGCC has answered the question: What price would
4 be required to incent a new generator to enter the market and sell firm capacity? The answer is
5 calculated based on the cost of building the facility less anticipated revenues from California’s
6 energy markets. This methodology established the long-term MGCC. In this GRC Phase 2,
7 SDG&E computes MGCC by calculating the cost of building a new lithium-ion, four-hour,
8 energy storage system (ES), including all permitting, financing, and development costs, and
9 deducting expected earnings in California energy and ancillary service markets. SDG&E
10 evaluated a battery energy storage system per the 2019 GRC Phase 2 Settlement Agreement,¹¹
11 and is proposing to use the ES as its marginal resource. Additionally, SDG&E agreed to
12 evaluate, and if reasonable, consider battery/renewable hybrid as a marginal resource. SDG&E
13 determined that a hybrid energy storage and renewable system is an unreasonable marginal
14 resource option because, due to Effective Load Carrying Capability (ELCC) factors, renewables
15 are less effective at providing capacity. SDG&E uses publicly available information to provide a
16 transparent calculation.¹²

17 Using ES as a marginal resource is reasonable given the Integrated Resource Plan
18 Preferred System Plan shows the new cumulative resource buildout for 2024 having over half of
19 the new resource’s MW being battery storage.¹³ Thus, SDG&E will likely be procuring the
20 majority of any additional capacity via battery storage. Additionally, in the Commission’s

¹¹ Settlement Agreement, Section 2.2.11 at 16.

¹² CPUC, 2022 IRP Cycle Events and Materials, available at www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/long-term-procurement-planning/2022-irp-cycle-events-and-materials.

¹³ D.22-02-004 at 87, Table 2. New Resource Buildout of 38 MMT Core (Cumulative MW).

1 procurement order for mid-term reliability, which covers years 2023-2026, the Commission
2 expressly forbid fossil resources from counting towards capacity procurement.¹⁴ Based on these
3 recent Commission decisions, it is reasonable to switch from using the cost of building a new
4 combustion turbine to the cost of building a new battery storage resource.

5 To estimate an ES's fixed cost, SDG&E uses the 2022 Integrated Resource Plan
6 RESOLVE Candidate Resource Costs for new-build capacity for a storage lithium-ion battery
7 located in the San Diego region. The annual cost for ES new-build capacity with the energy
8 storage duration costs scaled up to 4 hours is \$96.55/kW-yr. The IRP provides the costs as
9 annual costs. Added to that are fixed IRP operations and maintenance costs and various
10 loaders.¹⁵ Finally, the cost is escalated to 2024 dollars using escalators developed in SDG&E's
11 2024 GRC Phase 1.¹⁶

12 To calculate the net cost of capacity, projected market earnings from California's energy
13 markets are deducted from the cost of an ES. SDG&E used the energy arbitrage and ancillary
14 service market profits for the San Diego/Imperial Valley local capacity area from the CAISO
15 Department of Market Monitoring Annual Report on Market Issues & Performance.¹⁷ Because
16 ES has diminishing returns, the ELCC factors must be applied.¹⁸ In addition, all capacity must

¹⁴ D.21-06-035 at 43 (“Therefore, for purposes of this order, we are not authorizing fossil-fueled resources to count toward the 11,500 MW of total capacity required by this order.”).

¹⁵ General Plant, Working Capital, and Administrative and General.

¹⁶ See Application (A.) 22-05-016, Prepared Direct Testimony of Scott R. Wilder (Cost Escalation) (May 2022).

¹⁷ California ISO, *2022 Annual Report on Market Issues & Performance* (July 27, 2022) at 89, Table 1.9 New battery energy storage net market revenues by LCA (Scenario 2) (2021).

¹⁸ CPUC, Energy Division Study for Proceeding R.21-10-002, *Loss of Load Expectation and Effective Load Carrying Capability Study Results for 2024* (February 18, 2022) at 26, Table 18.

1 be scaled up for the Planning Reserve Margin.¹⁹ The resulting MGCC calculation is shown in
 2 Table JND-2 below.

3 **Table JND-2: MGCC**

Marginal Generation Capacity Cost		2024 \$/kW-yr
Marginal Cost of a lithium-ion battery storage unit		\$ 136.18
Less: Energy market earnings	\$115.33	
Subtotal Generation Capacity Costs		\$ 20.85
Add: Effective Load Carrying Capacity	\$ 6.46	
Add: Planning Reserve Margin	\$ 4.64	
Total Marginal Generation Capacity Cost		\$ 31.95

4
 5 The MGCC is an input for the illustrative commodity cost allocation to customer classes
 6 presented in Section VI. The prepared direct testimony of SDG&E witness Ray C. Utama
 7 (Chapter 2) discusses SDG&E’s proposals for customer class revenue allocations.

8 SDG&E used LOLE results presented in Section VIII for illustrative generation capacity
 9 cost allocation. This LOLE approach is an accepted methodology to allocate generation capacity
 10 needs to months, days, and hours and is consistent with SDG&E’s previous approach in the 2019
 11 GRC Phase 2.²⁰ SDG&E proposes to continue basing commodity capacity allocation on the top
 12 100 hours of forecasted need. Using a weighting of the top 100 hours and forecasted load,

¹⁹ D.22-06-050, OP 8 at 125.

²⁰ A.19-03-002, Second Revised Prepared Direct Testimony of Benjamin A. Montoya on Behalf of SDG&E (Chapter 6) (January 15, 2020) at BAM-8.

1 SDG&E allocated capacity to seasons, days (weekdays/weekends), hours, and TOU periods as
 2 shown in Table JND-3 below.

3 **Table JND-3: Top 100 Hour Loss of Load Probability (LOLP)**

Weighted LOLP by TOU Period		
SDG&E Proposed TOU Periods	<u>Summer</u>	<u>Winter</u>
On-Peak: 4 p.m. to 9 p.m. Everyday	93.00%	0.00%
Off Peak: All other hours	7.00%	0.00%
Super Off Peak: 12 a.m. to 6 a.m., 10 a.m. to 2 p.m. Weekdays and 12 a.m. to 2 p.m. Weekends/Holidays	<u>0.00%</u>	<u>0.00%</u>
Total	100.00%	0.00%

4
 5 As discussed in the prepared direct testimony of SDG&E witness Adam Pierce (Chapter 1),
 6 SDG&E is not proposing to use its marginal generation commodity cost study to inform its
 7 commodity rate design.²¹

8 **IV. CALCULATION OF MARGINAL FLEXIBLE CAPACITY COSTS**

9 Pursuant to the 2019 GRC Phase 2 Settlement Agreement, SDG&E agreed to evaluate
 10 flexible capacity as a marginal cost component.²² Flexible capacity is the ability to provide
 11 needed capacity during 3-hour ramping periods. SDG&E uses the process provided by the
 12 CAISO’s Final Flexible Capacity Needs Assessment for 2023.²³ Marginal flexible capacity costs
 13 are the cost of providing an incremental unit of flexible capacity.

²¹ See Prepared Direct Testimony of Adam Pierce on Behalf of SDG&E (Chapter 1) (January 17, 2023) at Section VI.

²² Settlement Agreement, Section 2.2.12 at 16.

²³ CAISO, Final Flexible Capacity Needs Assessment for 2023 (May 17, 2022) at 2-4, available at <http://www.aiso.com/InitiativeDocuments/Final2023FlexibleCapacityNeedsAssessment.pdf>.

1 A flexible capacity need was calculated by comparing the 3-hour ramp for forecasted
2 load to the resources that can provide flexible capacity in the San Diego/Imperial Valley region.
3 When the 3-hour ramp exceeds the resources that can provide flexible capacity this would
4 indicate that there is a flexible capacity need. The cost of meeting that need would be the less
5 expensive of either building a new battery storage facility or curtailing solar. Solar curtailments
6 are calculated as the opportunity cost of losing that solar generation on the grid. This means
7 losing the Renewable Energy Credit (REC) value of the green energy and in addition, having to
8 replace the energy at market price with another resource.

9 In the 2024-2027 load forecast, the 3-hour ramp never exceeded the supply of resources
10 that were able to provide flexible capacity. Therefore, SDG&E values the marginal flexible
11 capacity cost as \$0.00.

12 **V. SHORT-TERM VS LONG-TERM CAPACITY COSTS**

13 Pursuant to the 2019 GRC Phase 2 Settlement Agreement, SDG&E agreed to consider
14 the mixed short-run and long-run cost methodology for marginal generation capacity.²⁴ Given
15 recent procurement orders from the Commission²⁵ and reliability concerns,²⁶ the need is to
16 procure new or incremental resources, not to contract with existing resources. As the
17 Commission states in the Administrative Law Judge’s Ruling on Staff Paper on Procurement
18 Program and Potential Near-Term Actions to Encourage Additional Procurement “the clear
19 collective trend points towards increasing demand for clean electricity and increasing need for
20 additional resources.”²⁷ In addition to the recent procurement orders, there is still a need to

²⁴ Settlement Agreement, Section 2.2.14 at 16.

²⁵ D.19-11-016 at 34, ordered 3,300 MW and D.21-06-35 at 43, ordered 11,500 MW.

²⁶ See D.21-12-015 at 2.

²⁷ R.20-05-003, Administrative Law Judge’s Ruling on Staff Paper on Procurement Program and Potential Near-Term Actions to Encourage Additional Procurement (September 8, 2022) at 8.

1 procure roughly 35,000 MW of new resources by 2030 statewide.²⁸ The recent procurement
2 orders account for almost half of the needed procurement by 2030. Again, the Commission says
3 it best, “Thus, it is imperative that LSEs continue to procure, both to meet these needs in the next
4 decade, in advance of any additional procurement requirements from the Commission, as well as
5 due to the potential for some projects currently in development not to reach commercial
6 operation.”²⁹

7 In the short term, after factoring in the Commission ordered procurement,³⁰ SDG&E is
8 long capacity due to load departure.³¹ There is no short-term capacity need (through 2027) so
9 there is no reason to calculate a short-term capacity cost.

10 **VI. COMMODITY REVENUE ALLOCATION**

11 SDG&E is proposing to use the System Average Percent Change (SAPC) methodology
12 for commodity revenue allocation purposes. SDG&E is not proposing to update its commodity
13 revenue allocations based on the commodity cost study presented here.³²

14 Under SDG&E’s illustrative cost-based commodity revenue allocation, the authorized
15 commodity revenue requirement is allocated among customer classes based on the illustrative
16 marginal generation capacity and energy revenue cost responsibilities by customer class. The
17 unit marginal generation capacity costs and marginal energy costs, presented in Sections II and

²⁸ D.22-02-004, at 87, Table 2, New Resource Buildout of 38 MMT Core (Cumulative MW).

²⁹ R.20-05-003, Administrative Law Judge’s Ruling on Staff Paper on Procurement Program and Potential Near-Term Actions to Encourage Additional Procurement (September 8, 2022) at 9.

³⁰ D.19-11-016 at 34, ordered 3,300 MW and D.21-06-35 at 43, ordered 11,500 MW.

³¹ By the end of 2023, SDG&E expects that more than 78% of its total electric customer meters will be served by a Community Choice Aggregation for their electric commodity.

³² See Prepared Direct Testimony of Adam Pierce on Behalf of SDG&E (Chapter 1) (January 17, 2023) at Section VI.

1 III above, are multiplied by the appropriate cost drivers to develop the illustrative marginal
2 commodity revenue allocations by customer class.

3 Illustrative marginal energy cost revenues by customer class are developed by
4 multiplying the applicable marginal energy prices (\$/kWh) by the 2024 forecasted TOU energy
5 usage in each SDG&E Standard TOU period for each customer class. The same is done for
6 legacy SDG&E TOU periods prior to 2017 and the two period TOU for each customer class.

7 Illustrative marginal generation capacity cost revenues by customer class are developed
8 by multiplying the unit MGCC (\$/kW-year) by each class's estimated contribution to total
9 bundled load based on the top 100 hours with the highest expected need for new resources, as
10 described in Section III above.

11 The sum of the illustrative marginal generation capacity costs and marginal energy cost
12 revenues is the marginal commodity cost revenues. This is used to determine the illustrative
13 commodity EPMC allocation factor, defined as the commodity revenue requirement divided by
14 the marginal commodity cost revenues. The EPMC allocation factor is then used to scale the
15 marginal commodity cost revenues to ensure that the sum equals the authorized commodity
16 revenue requirement.³³ The illustrative EPMC rates and resulting commodity class allocations
17 are shown in Attachment A and Attachment B, respectively.

18 **VII. CTC REVENUE ALLOCATION**

19 CTC revenues are historically allocated based on the "Top 100 hours" allocation
20 methodology, as adopted by the Commission in Decision 00-06-034. The prepared direct
21 testimony of SDG&E witness Ray C. Utama discusses SDG&E's revenue allocation proposal for

³³ Based on rates effective June 1, 2022 pursuant to Advice Letter (AL) 4004-E.

1 CTC.³⁴ Here, SDG&E presents illustrative allocations based on updated top 100-hour data
2 consistent with the method used in the previous GRC.³⁵ The most recent three years available,
3 2019-2021, were used to allocate the illustrative CTC revenue requirement. The “Top 100
4 hours” methodology allocates revenues based on each customer class’s contribution to the top
5 100 hours of system load during a given annual period. The resulting illustrative CTC class
6 allocations are shown in Attachment C.

7 **VIII. SUPPORT OF TOU PERIODS**

8 Current Standard TOU periods were approved in D.17-08-030 and implemented on
9 December 1, 2017. This section provides an evaluation of SDG&E’s TOU periods using two
10 different methods: a LOLE analysis, used to support the current TOU periods adopted in the
11 D.17-08-030, and the Deadband Tolerance methodology, approved through advice letter.³⁶

12 **LOLE Analysis:** This analysis identifies periods with the greatest likelihood of having a
13 loss of load event. Another way of looking at it is that it identifies periods with the greatest
14 likelihood of needing additional resources. LOLE is the probability of not meeting load in an
15 hour when key system variables are analyzed stochastically. The analysis provides the
16 expectation of the hours with the highest need for new resources given the variable nature of
17 customer demand due to weather and the variable nature of solar and wind energy production.

³⁴ Prepared Direct Testimony of Ray Utama on Behalf of SDG&E (Chapter 2) (January 17, 2023) at RU-6.

³⁵ A.19-03-002, Second Revised Prepared Direct Testimony of Benjamin A. Montoya on Behalf of SDG&E (Chapter 6) (January 15, 2020) at BAM-10.

³⁶ AL 3064-E/E-A, approved and effective January 2, 2019.

1 SDG&E determined the LOLE for the SDG&E system using the PLEXOS model, a
2 system dispatch model tailored to the SDG&E system.³⁷ In order to model real world
3 uncertainties, different load and variable renewable production levels are generated by a
4 stochastic process based on historical data. The PLEXOS model then performs an hourly
5 economic dispatch of generation resources against loads for each hour of the year. By running
6 multiple iterations of the model, a probability distribution of hours with relative expected loss of
7 load can be developed.

8 Available generation resources in the analysis include generation units (both new
9 renewable and conventional generation) that currently exist or are expected to be constructed by
10 2024 in the San Diego Greater Reliability area (both SDG&E service area and Imperial
11 Valley).³⁸ SDG&E is unique in that local capacity is defined in both the combined San Diego
12 Greater Reliability area, which includes generation from the Imperial Valley, and the San Diego
13 sub-area, which is included in the San Diego Greater Reliability area. The LOLE analysis for
14 San Diego Greater Reliability area was 0 across all hours of the test year. The LOLE for the San
15 Diego sub-area was positive. Accordingly, because the San Diego Greater Reliability area has
16 zero likelihood of not meeting load, no additional analysis was conducted, and the LOLE
17 analysis is limited to the San Diego sub area. Importantly, the resulting analysis is not a

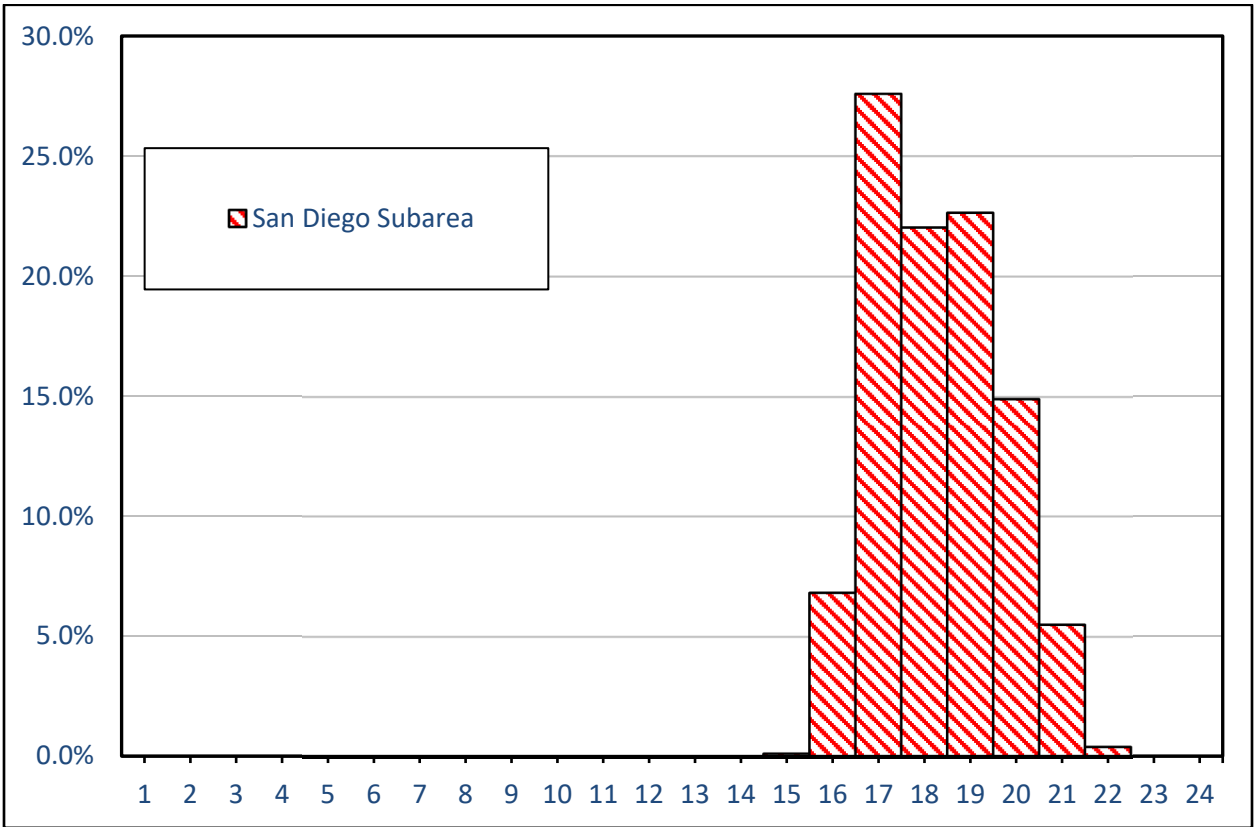
³⁷ The PLEXOS Model is the same production cost model used by SDG&E to forecast procurement costs in the Energy Resource Recovery Account (ERRA) proceeding. The focus in this analysis is on local capacity and the needs for local capacity that can be reduced through the use of appropriate consumer price signals in TOU periods and demand response availability periods to provide incentives for load modification. The PLEXOS model accommodates detailed hour-by-hour simulation of the operations of electric systems. It considers a complex set of generation operating constraints to simulate the least-cost operation of the system. The model's unit commitment and dispatch logic is designed to mimic "real world" power system hourly operation, minimizing system production cost, enforcing the constraints specified for the system, generation stations, associated transmission, fuel, etc.

³⁸ SDG&E used the same resource assumptions used in the IRP.

1 measure of need for new capacity, but rather an indication of which hours of the year would
2 experience the highest likelihood of a loss of load.

3 Chart JND-3 and Chart JND-4 below are a comparison of relative LOLE results for local
4 capacity in the San Diego sub-area for 2024 and 2027. The results show a relative need for
5 capacity or greater likelihood of loss of load during SDG&E's current and proposed on-peak
6 TOU period. Additionally, the results illustrate that the current TOU periods are in alignment
7 with the hours of relative capacity need.

8 **Chart JND-3: 2024 Relative Loss of Load Expectation for the**
9 **San Diego Local Capacity Area by Hour**

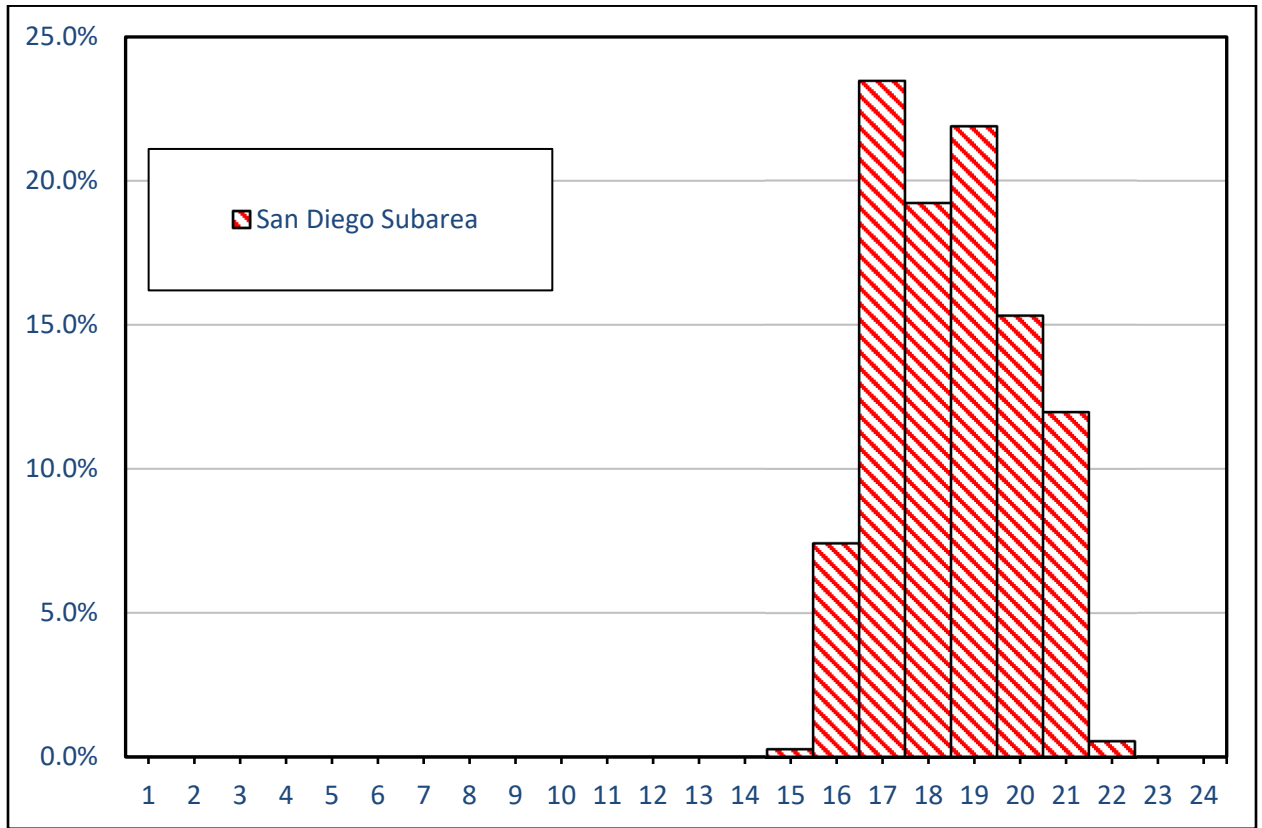


10

11

1
2

Chart JND-4: 2027 Relative Loss of Load Expectation for the San Diego Local Capacity Area by Hour



3

4

Deadband Tolerance Methodology: Per Resolution E-4948, SDG&E will utilize a Deadband

5

Tolerance methodology approved in AL 3064-E/E-A that compares its top 100 hours with

6

existing TOU periods to determine if a proposal to update TOU periods is warranted. This

7

analysis utilizes forecasted marginal energy and capacity costs. SDG&E's approved

8

methodology utilizes a 7.5 percent differential as a trigger; the deadband will be considered

9

exceeded when there is a decline of at least 7.5 percent in the number of top 100 hours that fall

10

within the summer peak and off-peak period, or a decline of at least 7.5 percent in the number of

11

100 lowest hours that fall within the winter off-peak and super-off-peak periods. When the

1 trigger is exceeded, then a change to the Base TOU periods and related rate designs prior to five
2 years since the last change in TOU periods will be deemed appropriate.³⁹

3 The top 100 hours based on the TOU periods from the 2019 GRC Phase 2 were compared
4 to the TOU periods proposed in this proceeding. In the analysis, all top 100 hours occurred
5 within the SDG&E summer on-peak TOU period of 4 PM to 9 PM. The 100 lowest hours were
6 also compared. All 100 lowest hours occurred within the SDG&E current standard super off-
7 peak period (midnight-to-6AM year-round *and* 10AM-to-2PM March and April) or the proposed
8 super off-peak period (current standard super off-peak + 10AM-to-2PM for the 10 remaining
9 months of the year). This supports SDG&E's proposal to extend the March/April 10AM to 2PM
10 weekday super off-peak period to all months of the year. For both the current and proposed
11 TOU periods, the trigger threshold was not met, therefore SDG&E's current and proposed TOU
12 periods are appropriate and reasonable.

13 **IX. NEM VERSUS NON-NEM**

14 Pursuant to the 2019 GRC Phase 2 Settlement Agreement, SDG&E agreed to study the
15 effects of solar customers' usage and generation profiles on SDG&E's marginal costs.⁴⁰ To
16 calculate cost impacts, SDG&E used three years of historical data to create a load profile for
17 NEM delivered energy, NEM received energy, and non-NEM delivered energy. Delivered
18 energy is energy that SDG&E delivers to a customer at the meter. Received energy refers to
19 energy that is exported to the grid by a customer generator. These profiles were then applied to
20 the 2024 load forecast to approximate 2024 NEM delivered, NEM received, and non-NEM
21 delivered energy. The forecasted costs from the marginal energy and marginal generation

³⁹ AL 3064-E/ E-A at 1-2.

⁴⁰ See Settlement Agreement, Section 2.2.6 at 13.

1 capacity, as developed in Sections II and III, was then multiplied by the forecasted load to
2 develop a 2024 forecasted cost study of NEM delivered, NEM received, and non-NEM delivered
3 energy. NEM received energy must be netted with NEM delivered energy to show an
4 aggregated NEM cost. This is appropriate since NEM received energy is providing a benefit to
5 the grid in that it is reducing capacity costs and energy costs, assuming that energy prices are
6 positive. When energy prices are negative by more than the capacity costs, NEM received
7 energy is not a benefit, but a cost.

8 As expected, NEM received energy, or customer generation that was exported to the grid,
9 provided a net benefit, *i.e.*, reduced costs to ratepayers. However, NEM delivered energy (*i.e.*,
10 energy imported by NEM customers) had higher costs to ratepayers than non-NEM delivered
11 energy (\$0.0682/kWh for NEM delivered compared to \$0.0599/kWh for non-NEM, see Table
12 JND-4) due to the time of day when the energy was imported by NEM customers (see Chart
13 JND-5). This is logical, as most of SDG&E's NEM customers are customer-generators with
14 behind-the-meter solar installations, which provide energy consumed on-site or exported to the
15 grid during daylight hours, but require customers to import energy during the evening and
16 nighttime hours. Netting the benefits from NEM customer's energy received and NEM
17 customer's energy delivered resulted in higher costs for NEM delivered energy than from non-
18 NEM delivered energy (net NEM received and delivered \$0.0726/kWh compared to
19 \$0.0599/kWh for non-NEM).

Table JND-4: Forecast 2024 Annual Costs for Bundled NEM and non-NEM Customers

	NEM Received	NEM Delivered	Non-NEM	Net NEM	% Diff
MEC/kWh	\$ 0.0574	\$ 0.0582	\$ 0.0512	\$ 0.0588	15%
MGCC/kWh	\$ 0.0047	\$ 0.0099	\$ 0.0087	\$ 0.0137	57%
Total Cost/kWh	\$ 0.0621	\$ 0.0682	\$ 0.0599	\$ 0.0726	21%

Chart JND-5 Forecasted 2024 Annual Hourly Cost/kWh for Bundled NEM and non-NEM Customers

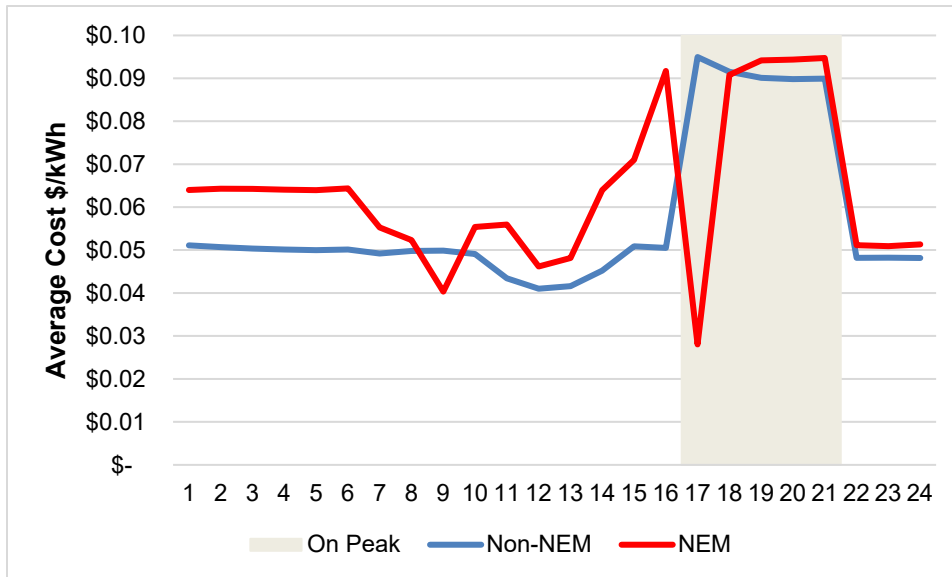


Chart JND-5 shows that NEM costs are typically higher with the exception of an hour in the morning and an hour in the early evening. During the 4-5 PM early evening hour, the average cost per kWh is lower than for non-NEM customers due to high solar generation during that period (on average), which corresponds to the beginning of the on-peak period.

1 **X. SUMMARY AND CONCLUSION**

2 For the foregoing reasons, the illustrative marginal commodity costs presented herein as
3 well as the proposal to use the EPMC revenue allocation methodology to allocate the authorized
4 commodity revenue requirement to customer classes for rate design purposes are reasonable. In
5 addition, SDG&E recommends that the Commission adopt its proposal to update the current base
6 TOU periods.

7 This concludes my prepared direct testimony.

1 **XI. WITNESS QUALIFICATIONS**

2 My name is Jeff DeTuri. My business address is 8315 Century Park Court, San Diego,
3 CA 92123. I am employed by SDG&E in the Customer Pricing Department and my current title
4 is Real Time Pricing Manager. My responsibilities include oversight of development of real-time
5 pricing strategies and analysis for the development of electric rates. I joined SDG&E in August
6 2003 and have held various positions with increasing levels of responsibility within San Diego
7 Gas & Electric. Prior to joining SDG&E, I worked as an accounting professional for various
8 companies throughout San Diego County. I received a Bachelor of Accountancy degree and a
9 Master of Business Administration from the University of San Diego.

10 I have previously testified before the California Public Utilities Commission.

ATTACHMENT A

(CONFIDENTIAL)

Illustrative Commodity Marginal Costs

ATTACHMENT A.1

SAN DIEGO GAS & ELECTRIC
 2022 GENERAL RATE CASE (GRC) PHASE 2 - APPLICATION 23-01-XXX
 ILLUSTRATIVE COMMODITY MARGINAL COSTS AND EPMC RATES AND REVENUES, PROPOSED TOU - DE TURI (CH. 5)
 PRIVILEGED AND CONFIDENTIAL PURSUANT TO P.U.C. CODE 583, 454.5(g), GO 66-C AND D.06-06-066 as needed

Line No.	Description (A)	Unit (B)	Marginal Energy Rate (C)	Marginal Capacity Rate (D)	Marginal Energy Rate Revenue (E)	Marginal Capacity Rate Revenue (F)	Total Marginal Rate Revenue (G)	EPMC Energy Rate (H)	EPMC Capacity Rate (I)	EPMC Energy Rate Revenue (J)	EPMC Capacity Rate Revenue (K)	Total EPMC Rate Revenue (L)	Line No.
1	RESIDENTIAL												1
2	<i>Secondary</i>												2
3	Summer												3
4	On-Peak Demand	\$/kW		2.58528					15.09289				4
5	On-Peak Energy	\$/kWh	0.04864				0.28398						5
6	Off-Peak Energy	\$/kWh	0.04545	0.00421			0.26537	0.02456					6
7	Super Off-Peak Energy	\$/kWh	0.04089	0.00000			0.23872	0.00000					7
8													8
9	Winter												9
10	On-Peak Demand	\$/kW		0.00000					0.00000				10
11	On-Peak Energy	\$/kWh	0.06803				0.39718						11
12	Off-Peak Energy	\$/kWh	0.05125	0.00000			0.29917	0.00000					12
13	Super Off-Peak Energy	\$/kWh	0.04323	0.00000			0.25240	0.00000					13
14													14
15	SMALL COMMERCIAL												15
16	<i>Secondary</i>												16
17	Summer												17
18	On-Peak Demand	\$/kW		3.49025					20.37610				18
19	On-Peak Energy	\$/kWh	0.04864				0.28398						19
20	Off-Peak Energy	\$/kWh	0.04545	0.00462			0.26537	0.02696					20
21	Super Off-Peak Energy	\$/kWh	0.04089	0.00000			0.23872	0.00000					21
22													22
23	Winter												23
24	On-Peak Demand	\$/kW		0.00000					0.00000				24
25	On-Peak Energy	\$/kWh	0.06803				0.39718						25
26	Off-Peak Energy	\$/kWh	0.05125	0.00000			0.29917	0.00000					26
27	Super Off-Peak Energy	\$/kWh	0.04323	0.00000			0.25240	0.00000					27
28													28
29	<i>Primary</i>												29
30	Summer												30
31	On-Peak Demand	\$/kW		3.47341					20.27783				31
32	On-Peak Energy	\$/kWh	0.04841				0.28262						32
33	Off-Peak Energy	\$/kWh	0.04526	0.00460			0.26420	0.02684					33
34	Super Off-Peak Energy	\$/kWh	0.04073	0.00000			0.23779	0.00000					34
35													35
36	Winter												36
37	On-Peak Demand	\$/kW		0.00000					0.00000				37
38	On-Peak Energy	\$/kWh	0.06772				0.39536						38
39	Off-Peak Energy	\$/kWh	0.05104	0.00000			0.29797	0.00000					39
40	Super Off-Peak Energy	\$/kWh	0.04308	0.00000			0.25152	0.00000					40

ATTACHMENT A.1

SAN DIEGO GAS & ELECTRIC
 2022 GENERAL RATE CASE (GRC) PHASE 2 - APPLICATION 23-01-XXX
 ILLUSTRATIVE COMMODITY MARGINAL COSTS AND EPMC RATES AND REVENUES, PROPOSED TOU - DE TURI (CH. 5)

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

Line No.	Description (A)	Unit (B)	Marginal Energy Rate (C)	Marginal Capacity Rate (D)	Marginal Energy Rate Revenue (E)	Marginal Capacity Rate Revenue (F)	Total Marginal Rate Revenue (G)	EPMC Energy Rate (H)	EPMC Capacity Rate (I)	EPMC Energy Rate Revenue (J)	EPMC Capacity Rate Revenue (K)	Total EPMC Rate Revenue (L)	Line No.
41													41
42	MEDIUM COMMERCIAL												42
43	<i>Secondary</i>												43
44	Summer												44
45	On-Peak Demand	\$/kW		3.53583					20.64223				45
46	On-Peak Energy	\$/kWh	0.04864				0.28398						46
47	Off-Peak Energy	\$/kWh	0.04545	0.00530			0.26537	0.03094					47
48	Super Off-Peak Energy	\$/kWh	0.04089	0.00000			0.23872	0.00000					48
49													49
50	Winter												50
51	On-Peak Demand	\$/kW		0.00000					0.00000				51
52	On-Peak Energy	\$/kWh	0.06803				0.39718						52
53	Off-Peak Energy	\$/kWh	0.05125	0.00000			0.29917	0.00000					53
54	Super Off-Peak Energy	\$/kWh	0.04323	0.00000			0.25240	0.00000					54
55													55
56	<i>Primary</i>												56
57	Summer												57
58	On-Peak Demand	\$/kW		3.51878					20.54267				58
59	On-Peak Energy	\$/kWh	0.04841				0.28262						59
60	Off-Peak Energy	\$/kWh	0.04526	0.00528			0.26420	0.03080					60
61	Super Off-Peak Energy	\$/kWh	0.04073	0.00000			0.23779	0.00000					61
62													62
63	Winter												63
64	On-Peak Demand	\$/kW		0.00000					0.00000				64
65	On-Peak Energy	\$/kWh	0.06772				0.39536						65
66	Off-Peak Energy	\$/kWh	0.05104	0.00000			0.29797	0.00000					66
67	Super Off-Peak Energy	\$/kWh	0.04308	0.00000			0.25152	0.00000					67
68													68
69													69
70	LARGE C&I												70
71	<i>Secondary</i>												71
72	Summer												72
73	On-Peak Demand	\$/kW		3.62936					21.18828				73
74	On-Peak Energy	\$/kWh	0.04864				0.28398						74
75	Off-Peak Energy	\$/kWh	0.04545	0.00190			0.26537	0.01108					75
76	Super Off-Peak Energy	\$/kWh	0.04089	0.00000			0.23872	0.00000					76
77													77
78	Winter												78
79	On-Peak Demand	\$/kW		0.00000					0.00000				79
80	On-Peak Energy	\$/kWh	0.06803				0.39718						80

ATTACHMENT A.1

SAN DIEGO GAS & ELECTRIC
 2022 GENERAL RATE CASE (GRC) PHASE 2 - APPLICATION 23-01-XXX
 ILLUSTRATIVE COMMODITY MARGINAL COSTS AND EPMC RATES AND REVENUES, PROPOSED TOU - DE TURI (CH. 5)
 PRIVILEGED AND CONFIDENTIAL PURSUANT TO P.U.C. CODE 583, 454.5(g), GO 66-C AND D.06-06-066 as needed

Line No.	Description (A)	Unit (B)	Marginal Energy Rate (C)	Marginal Capacity Rate (D)	Marginal Energy Rate Revenue (E)	Marginal Capacity Rate Revenue (F)	Total Marginal Rate Revenue (G)	EPMC Energy Rate (H)	EPMC Capacity Rate (I)	EPMC Energy Rate Revenue (J)	EPMC Capacity Rate Revenue (K)	Total EPMC Rate Revenue (L)	Line No.
81	Off-Peak Energy	\$/kWh	0.05125	0.00000				0.29917	0.00000				81
82	Super Off-Peak Energy	\$/kWh	0.04323	0.00000				0.25240	0.00000				82
83													83
84	<i>Primary</i>												84
85	Summer												85
86	On-Peak Demand	\$/kW		3.61186					21.08609				86
87	On-Peak Energy	\$/kWh	0.04841					0.28262					87
88	Off-Peak Energy	\$/kWh	0.04526	0.00189				0.26420	0.01103				88
89	Super Off-Peak Energy	\$/kWh	0.04073	0.00000				0.23779	0.00000				89
90													90
91	Winter												91
92	On-Peak Demand	\$/kW		0.00000					0.00000				92
93	On-Peak Energy	\$/kWh	0.06772					0.39536					93
94	Off-Peak Energy	\$/kWh	0.05104	0.00000				0.29797	0.00000				94
95	Super Off-Peak Energy	\$/kWh	0.04308	0.00000				0.25152	0.00000				95
96													96
97	<i>Transmission</i>												97
98	Summer												98
99	On-Peak Demand	\$/kW		3.45699					20.18196				99
100	On-Peak Energy	\$/kWh	0.04633					0.27050					100
101	Off-Peak Energy	\$/kWh	0.04336	0.00181				0.25313	0.01057				101
102	Super Off-Peak Energy	\$/kWh	0.03905	0.00000				0.22795	0.00000				102
103													103
104	Winter												104
105	On-Peak Demand	\$/kW		0.00000					0.00000				105
106	On-Peak Energy	\$/kWh	0.06487					0.37870					106
107	Off-Peak Energy	\$/kWh	0.04895	0.00000				0.28579	0.00000				107
108	Super Off-Peak Energy	\$/kWh	0.04133	0.00000				0.24130	0.00000				108
109													109
110	AGRICULTURE												110
111	<i>Secondary</i>												111
112	Summer												112
113	On-Peak Demand	\$/kW		5.61565					32.78428				113
114	On-Peak Energy	\$/kWh	0.04864					0.28398					114
115	Off-Peak Energy	\$/kWh	0.04545	0.00385				0.26537	0.02248				115
116	Super Off-Peak Energy	\$/kWh	0.04089	0.00000				0.23872	0.00000				116
117													117
118	Winter												118
119	On-Peak Demand	\$/kW		0.00000					0.00000				119
120	On-Peak Energy	\$/kWh	0.06803					0.39718					120

ATTACHMENT A.2

SAN DIEGO GAS & ELECTRIC
2022 GENERAL RATE CASE (GRC) PHASE 2 - APPLICATION 23-01-XXX

ILLUSTRATIVE COMMODITY MARGINAL COSTS AND EPMC RATES AND REVENUES, LEGACY TOU - DE TURI (CH. 5)

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

Line No.	Description (A)	Unit (B)	Marginal Energy Rate (C)	Marginal Capacity Rate (D)	Marginal Energy Rate Revenue (E)	Marginal Capacity Rate Revenue (F)	Total Marginal Rate Revenue (G)	EPMC Energy Rate (H)	EPMC Capacity Rate (I)	EPMC Energy Rate Revenue (J)	EPMC Capacity Rate Revenue (K)	Total EPMC Rate Revenue (L)	Line No.
1	RESIDENTIAL												1
2													2
3	SMALL COMMERCIAL												3
4	<i>Secondary</i>												4
5	Summer												5
6	On-Peak Demand	\$/kW		2.06658					10.46942				6
7	On-Peak Energy	\$/kWh	0.03884				0.19675						7
8	Semi-Peak Energy	\$/kWh	0.04971	0.02196			0.25185	0.11127					8
9	Off-Peak Energy	\$/kWh	0.04313	0.00229			0.21850	0.01160					9
10													10
11	Winter												11
12	On-Peak Demand	\$/kW		0.00000					0.00000				12
13	On-Peak Energy	\$/kWh	0.07560				0.38300						13
14	Semi-Peak Energy	\$/kWh	0.05365	0.00000			0.27181	0.00000					14
15	Off-Peak Energy	\$/kWh	0.04522	0.00000			0.22909	0.00000					15
16													16
17	<i>Primary</i>												17
18	Summer												18
19	On-Peak Demand	\$/kW		2.05571					10.41438				19
20	On-Peak Energy	\$/kWh	0.03863				0.19572						20
21	Semi-Peak Energy	\$/kWh	0.04948	0.02186			0.25067	0.11074					21
22	Off-Peak Energy	\$/kWh	0.04298	0.00228			0.21772	0.01156					22
23													23
24	Winter												24
25	On-Peak Demand	\$/kW		0.00000					0.00000				25
26	On-Peak Energy	\$/kWh	0.07523				0.38114						26
27	Semi-Peak Energy	\$/kWh	0.05342	0.00000			0.27061	0.00000					27
28	Off-Peak Energy	\$/kWh	0.04507	0.00000			0.22831	0.00000					28
29													29
30	MEDIUM COMMERCIAL												30
31	<i>Secondary</i>												31
32	Summer												32
33	On-Peak Demand	\$/kW		2.05172					10.39413				33
34	On-Peak Energy	\$/kWh	0.03884				0.19675						34
35	Semi-Peak Energy	\$/kWh	0.04971	0.13151			0.25185	0.66626					35
36	Off-Peak Energy	\$/kWh	0.04313	0.00244			0.21850	0.01236					36
37													37
38	Winter												38
39	On-Peak Demand	\$/kW		0.00000					0.00000				39

ATTACHMENT A.3

SAN DIEGO GAS & ELECTRIC
 2022 GENERAL RATE CASE (GRC) PHASE 2 - APPLICATION 23-01-XXX
 ILLUSTRATIVE COMMODITY MARGINAL COSTS AND EPMC RATES AND REVENUES, 2 PERIOD TOU - DE TURI (CH. 5)
 PRIVILEGED AND CONFIDENTIAL PURSUANT TO P.U.C. CODE 583, 454.5(g), GO 66-C AND D.06-06-066 as needed

Line No.	Description (A)	Unit (B)	Marginal Energy Rate (C)	Marginal Capacity Rate (D)	Marginal Energy Rate Revenue (E)	Marginal Capacity Rate Revenue (F)	Total Marginal Rate Revenue (G)	EPMC Energy Rate (H)	EPMC Capacity Rate (I)	EPMC Energy Rate Revenue (J)	EPMC Capacity Rate Revenue (K)	Total EPMC Rate Revenue (L)	Line No.
1	<u>SMALL COMMERCIAL</u>												1
2	<i>Secondary</i>												2
3	Summer												3
4	On-Peak Demand	\$/kW		3.49025					21.78839				4
5	On-Peak Energy	\$/kWh	0.04864					0.30367					5
6	Off-Peak Energy	\$/kWh	0.04276	0.00202				0.26694	0.01263				6
7													7
8	Winter												8
9	On-Peak Demand	\$/kW		0.00000					0.00000				9
10	On-Peak Energy	\$/kWh	0.06803					0.42471					10
11	Off-Peak Energy	\$/kWh	0.04650	0.00000				0.29030	0.00000				11
12													12
13	<i>Primary</i>												13
14	Summer												14
15	On-Peak Demand	\$/kW		3.47341					21.68331				15
16	On-Peak Energy	\$/kWh	0.04841					0.30220					16
17	Off-Peak Energy	\$/kWh	0.04259	0.00202				0.26585	0.01258				17
18													18
19	Winter												19
20	On-Peak Demand	\$/kW		0.00000					0.00000				20
21	On-Peak Energy	\$/kWh	0.06772					0.42277					21
22	Off-Peak Energy	\$/kWh	0.04633	0.00000				0.28922	0.00000				22
23													23
24	<u>AGRICULTURE</u>												24
25	<i>Secondary</i>												25
26	Summer												26
27	On-Peak Demand	\$/kW		5.61565					35.05659				27
28	On-Peak Energy	\$/kWh	0.04864					0.30367					28
29	Off-Peak Energy	\$/kWh	0.04276	0.00158				0.26694	0.00987				29
30													30
31	Winter												31
32	On-Peak Demand	\$/kW		0.00000					0.00000				32
33	On-Peak Energy	\$/kWh	0.06803					0.42471					33
34	Off-Peak Energy	\$/kWh	0.04650	0.00000				0.29030	0.00000				34
35													35
36	<i>Primary</i>												36
37	Summer												37
38	On-Peak Demand	\$/kW		5.58857					34.88751				38
39	On-Peak Energy	\$/kWh	0.04841					0.30220					39

ATTACHMENT B

Illustrative Commodity Revenue Allocations

ATTACHMENT B

**SAN DIEGO GAS & ELECTRIC
2022 GENERAL RATE CASE (GRC) PHASE 2 - APPLICATION 23-01-XXX
ILLUSTRATIVE COMMODITY REVENUE ALLOCATIONS - DE TURI (CH. 5)**

**Commodity Marginal Cost Allocation by Customer Class
GRC P2 Proposed TOU**

Line No.	Customer Class (A)	MARGINAL ENERGY COSTS		MARGINAL CAPACITY COSTS		Line No.
		% Allocation (B)	\$ Allocation (C)	% Allocation (D)	\$ Allocation (E)	
1	RESIDENTIAL	53.40%	\$ 85,393,720	63.80%	\$ 16,539,906	1
2	SMALL COMMERCIAL	10.47%	\$ 16,752,046	10.37%	\$ 2,689,319	2
3	MEDIUM COMMERCIAL	11.93%	\$ 19,086,577	13.09%	\$ 3,394,620	3
4	LARGE C&I	22.84%	\$ 36,530,697	11.45%	\$ 2,967,317	4
5	AGRICULTURAL	0.89%	\$ 1,422,248	1.12%	\$ 291,308	5
6	LIGHTING	0.46%	\$ 739,446	0.16%	\$ 42,043	6
7	TOTAL	100.00%	\$ 159,924,734	100.00%	\$ 25,924,513	7

Current TOU versus Proposed TOU

Line No.	Customer Class (A)	CURRENT		PROPOSED				Line No.
		% Allocation (B)	\$ Allocation (C)	% Allocation (D)	\$ Allocation (E)	\$ Change (F)	% Change (G)	
8	RESIDENTIAL	49.91%	\$ 541,478,900	54.85%	\$ 595,090,035	\$ 53,611,134	9.90%	8
9	SMALL COMMERCIAL	11.81%	\$ 128,093,459	10.46%	\$ 113,498,983	\$ (14,594,477)	-11.39%	9
10	MEDIUM COMMERCIAL	0.00%	\$ -	12.10%	\$ 131,245,564	\$ 131,245,564	N/A	10
11	LARGE C&I	35.38%	\$ 383,880,161	21.25%	\$ 230,589,995	\$ (153,290,166)	-39.93%	11
12	AGRICULTURAL	2.38%	\$ 25,826,079	0.92%	\$ 10,003,764	\$ (15,822,314)	-61.26%	12
13	LIGHTING	0.53%	\$ 5,712,086	0.42%	\$ 4,562,344	\$ (1,149,741)	-20.13%	13
14	TOTAL	100.00%	\$ 1,084,990,685	100.00%	\$ 1,084,990,685	\$ -	0.00%	14

ATTACHMENT C

Illustrative CTC Revenue Allocations

ATTACHMENT C

**SAN DIEGO GAS & ELECTRIC
2022 GENERAL RATE CASE (GRC) PHASE 2 - APPLICATION 23-01-XXX
ILLUSTRATIVE CTC REVENUE ALLOCATIONS - DE TURI (CH. 5)**

CTC Allocation by Customer Class

Line No.	Customer Class (A)	CURRENT		PROPOSED		\$ Change (F)	% Change (G)	Line No.
		% Allocation (B)	\$ Allocation (C)	% Allocation (D)	\$ Allocation (E)			
1	Residential	43.24%	\$ 8,353,928	63.94%	\$ 12,354,229	\$ 4,000,301	47.89%	1
2	Small Commercial	11.93%	\$ 2,304,295	11.87%	\$ 2,293,912	\$ (10,382)	-0.45%	2
3	Medium Commercial	0.00%	\$ -	12.21%	\$ 2,360,106	\$ 2,360,106	N/A	3
4	Large Commercial & Industrial	43.54%	\$ 8,413,237	10.39%	\$ 2,007,101	\$ (6,406,136)	-76.14%	4
5	Agricultural	1.10%	\$ 212,831	1.50%	\$ 289,022	\$ 76,191	35.80%	5
6	Lighting	0.20%	\$ 37,765	0.09%	\$ 17,685	\$ (20,081)	-53.17%	6
7	Total	100.00%	\$ 19,322,055	100.00%	\$ 19,322,055	\$ -	0.00%	7

ATTACHMENT D

Illustrative Legacy TOU Marginal Energy Costs

ATTACHMENT D.1

SAN DIEGO GAS & ELECTRIC
 2022 GENERAL RATE CASE (GRC) PHASE 2 - APPLICATION 23-01-XXX
 ILLUSTRATIVE LEGACY TOU MARGINAL ENERGY COSTS - DE TURI (CH. 5)

Legacy TOU

SDG&E Legacy TOU Periods		A	B	A+B
		Wholesale	RPS Premium	Total
		(¢/kWh)	(¢/kWh)	(¢/kWh)
Summer (June 1 - October 31)				
	On-Peak: 11 a.m. to 6 p.m. Weekdays	3.0473	0.6028	3.6501
	Semi Peak: 6 a.m. to 11 a.m., 6 p.m. to 10 p.m. Weekdays	4.0861	0.6028	4.6889
	Off Peak: 10 p.m. to 6 a.m. Weekdays; all hours Weekends/Holidays	3.4874	0.6028	4.0902
Winter (November 1 - May 31)				
	On-Peak: 5 p.m. to 8 p.m. Weekdays	6.5226	0.6028	7.1254
	Semi Peak: 6 a.m. to 5 p.m., 8 p.m. to 10 p.m. Weekdays	4.4672	0.6028	5.0700
	Off-Peak: 10 p.m. to 6 a.m. Weekdays; all hours Weekends/Holidays	3.6894	0.6028	4.2922
		RPS Premium \$	13.70	
		RPS %	44%	

ATTACHMENT D.2

SAN DIEGO GAS & ELECTRIC
 2022 GENERAL RATE CASE (GRC) PHASE 2 - APPLICATION 23-01-XXX
 ILLUSTRATIVE LEGACY TOU MARGINAL ENERGY COSTS - DE TURI (CH. 5)

Two-Period TOU

SDG&E Two-Period TOU Periods		A	B	A+B
		Wholesale (¢/kWh)	RPS Premium (¢/kWh)	Total (¢/kWh)
Summer (June 1 - October 31)				
	On-Peak: 4 p.m. to 9 p.m. Everyday	3.9821	0.6028	4.5849
	Off Peak: 12 a.m. to 4 p.m., 9 p.m. to 12 a.m. Everyday	3.4421	0.6028	4.0449
Winter (November 1 - May 31)				
	On-Peak: 4 p.m. to 9 p.m. Everyday	5.8193	0.6028	6.4221
	Off Peak: 12 a.m. to 4 p.m., 9 p.m. to 12 a.m. Everyday	3.8049	0.6028	4.4077
		RPS Premium \$	13.70	
		RPS %	44%	

ATTACHMENT E

Declaration of Jeff DeTuri Regarding Confidentiality Of Certain Data/Documents
Pursuant To D.06-06-066, *et al.*

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

**DECLARATION
OF JEFF DE TURI**

Application 23-01-008
2024 General Rate Case Phase 2

I, Jeff DeTuri, declare as follows:

1. I am a Real Time Pricing Manager for San Diego Gas & Electric Company (“SDG&E”). As the Real Time Pricing Manager, 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), as modified by D.07-05-032, D.08-04-023, and D.20-07-005. In addition, the Commission has made clear that information must be protected where “it matches a Matrix category exactly... or consists of information from which that information may be easily derived.”¹ 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;

¹ See *Administrative Law Judge’s Ruling on San Diego Gas & Electric Company’s April 3, 2007 Motion to File Data Under Seal*, issued May 4, 2007 in R.06-05-027, p. 2.

- 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 the Prepared Direct Testimony of Jeff DeTuri Chapter 5 Marginal Commodity Cost Attachment A to Application 23-01-008 constitutes material, market sensitive, electric procurement-related information that is within the scope of Section 454.5(g) of the Public Utilities Code.² As such, the Protected Information is allowed confidential treatment in accordance with the Matrix, as follows:

Confidential Information	Matrix Reference	Reason for Confidentiality and Timing
Cells highlighted in yellow in the Attachment A.1, A.2, and A.3	V.C	LSE Total Energy Forecast – Bundled Customer, confidential for the front three years

4. I am not aware of any instances where the Protected Information is available to the public. To my knowledge, no party, including SDG&E, has publicly revealed any of the Protected Information, with the exception of an inadvertent disclosure as part of this proceeding. The information is no longer publicly available and all parties notified of its initial availability have been instructed to destroy the inadvertently disclosed 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.

² 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.

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

Executed this 2nd day of February, 2023, at San Diego, California.

/s/ Jeff DeTuri _____
Jeff DeTuri
Real Time Pricing Manager
San Diego Gas & Electric Company