Application: A.23-01-008

Exhibit No.: SDG&E
Witness: Samantha Pate

CHAPTER 1 PREPARED REBUTTAL TESTIMONY OF SAMANTHA PATE ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA



February 7, 2024

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1 PREPARED REBUTTAL TESTIMONY OF 2 **SAMANTHA PATE** 3 (CHAPTER 1) 4 I. INTRODUCTION AND PURPOSE 5 This rebuttal testimony chapter addresses the following testimony regarding Time-Of-6 Use (TOU) periods, references to Decision (D.) 17-09-035, bill presentment issues, and 7 proposals for future studies of solar customers and transmission costs from other parties: 8 The Public Advocates Office (Cal Advocates) of the California Public 9 Utilities Commission (CPUC or Commission), submitted by Nathan Chau 10 (Chapter 9) dated December 8, 2023 and Alejandro Marquez (Chapter 8) 11 dated January 19, 2024. 12 Solar Energy Industries Association (SEIA), as submitted by R. Thomas 13 Beach, dated January 8, 2024. 14 Small Business Advocates (SBUA), as submitted by Maureen L. Reno, 15 dated January 8, 2024. 16 The City of San Diego (City), as submitted by William A. Monsen, dated January 8, 2024. 17 18 The Federal Executive Agencies (FEA), as submitted by Maurice 19 Brubaker, dated January 8, 2024. 20 Specifically, my prepared rebuttal testimony provides the following conclusions 21 regarding recommendations from the aforementioned witnesses: 22 The Commission should adopt San Diego Gas and Electric Company's 23 (SDG&E) proposed standard base TOU periods that extend the super off-

- peak period from 10AM-2PM year-round for all customer classes, with no customer exclusions.
- The Commission should reject SBUA's proposal to shift the on-peak period from 4PM-9PM to 5PM-10PM, as there is little evidence to support this change.
- The Commission should adopt SDG&E's proposals for cost-based
 Monthly Service Fees (MSFs) and disregard any arguments predicated on
 D.17-09-035, as it does not hold precedential value outside its original proceeding.
- The Commission should reject San Diego Community Power's (SDCP) and Clean Energy Alliance's (CEA) (SDCP-CEA) proposals to change customer bills and the design of the Power Charge Indifference Adjustment (PCIA) rate, as bill presentment changes should be dealt with holistically, elsewhere.
- The Commission should reject the Utility Consumers' Action Network's (UCAN) proposals for SDG&E to include a study of solar customers' marginal costs in its next General Rate Case (GRC) Phase 2 application, as the Commission has already committed to studying Net Billing Tariff (NBT) customers and has already studied Net Energy Metering 2.0 customers in NEM/NBT-specific proceedings.
- The Commission should reject SEIA's suggestion that SDG&E be required to submit a marginal transmission cost study in its next GRC

Phase 2 application, as Transmission Marginal Cost are subject to FERC jurisdiction and being considered in other proceedings.

In this rebuttal testimony, failure to address any individual issue does not imply any agreement by SDG&E with the proposal made by these or other parties.

II. REBUTTAL TO PARTIES' PROPOSALS

A. SDG&E's Proposed TOU Periods Provide the Correct Price Signals to Customers and Support State Policy Goals

SDG&E proposed limited changes to its Standard Base TOU periods with the goals of encouraging customers to shift their usage to low-Greenhouse Gas (GHG) emissions hours, improving customer understanding by making TOU periods consistent throughout the year, and maintaining on-peak period hours so as not to cause customer confusion. Many parties support SDG&E's proposal to expand super off-peak hours from 10am-2pm year-round, as discussed below. However, SEIA opposes SDG&E's proposed change to extend the super off-peak period throughout the year, stating that it is a non-consequential change, that it will only have a marginal impact on bill savings for customers who adopt distributed energy resources, and have an adverse impact on Net Energy Metering (NEM) customers.¹

SBUA proposes both to shift SDG&E's on-peak period from 4pm-9pm to 5pm-10pm, and to create a novel morning on-peak period from 6am-10am, based on an analysis presented by Cal Advocates in Direct Testimony.²

Prepared Direct Testimony of R. Thomas Beach on Behalf of SEIA (January 8, 2024) (SEIA Opening Testimony), pp. i-ii.

Direct Testimony of Maureen L. Reno on behalf of the SBUA Regarding SDG&E Authority to Update Marginal Costs, Cost Allocation, and Electric Rate Design in Application 23-01-008 (January 8, 2024) (SBUA Opening Testimony), p. 4.

1. SDG&E's Proposed On-Peak TOU Period is Appropriate

SBUA proposes two changes to SDG&E's on-peak TOU period. First, to create a novel morning on-peak period from 6am-10am, and second, to shift SDG&E's on-peak TOU period from 4pm-9pm to 5pm-10pm.³ However, SBUA relies completely on the analysis presented by Cal Advocates,⁴ who did not propose to change SDG&E's TOU periods. SBUA's recommended change to the TOU periods would violate the 2019 GRC Phase 2 Settlement Agreement, adopted in D.21-07-010, that requires SDG&E to be consistent with the requirements set forth in D.17-01-006 Appendix 1 at page 84,⁵ which mandates that base TOU periods be based on utility-specific marginal costs.⁶ By relying solely on Cal Advocates' heat map, SBUA's proposal does not meet the requirements to change the base TOU periods.

a. A Morning Peak Period Is Not Warranted and Would Confuse Customers

SBUA's proposal for a morning on-peak period is based on a Cal Advocates' heat map chart in testimony showing that there are relatively high prices in the morning hours, as shown below in Figure 1.

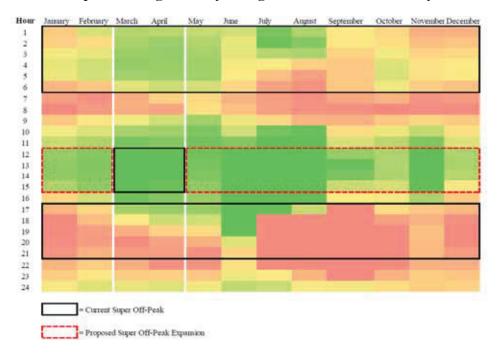
SDG&E Data Request to SBUA-02 (January 16, 2024), question 1, ("Ms. Reno relied on the analysis provided by Cal Advocates to provide the recommendations listed on page 29, lines 15-22. As stated beginning on page 27, line 8 to page 28, line 4, Cal Advocates used a heat map of hourly marginal generation costs to support its recommendation to extend the SDG&E's proposed extension of its super off-peak period of 10am – 2pm to all months of the year. Ms. Reno used the information shown in Figure 1 on page 28 and supporting confidential data to inform her recommendations listed on page 29.").

³ *Id.*, pp. 29-30.

D.21-07-010, Settlement Agreement, Appendix B, Section 2.2.19, Analysis of Base TOU Periods at 17-18.

⁶ D.17-01-006, Appendix 1, p. 84.

Figure 1 – Cal Advocates' Figure 2: Heatmap of Average Hourly Marginal Generation Costs by Month⁷



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At first glance, it may appear that there are consistently high prices during the morning hours throughout the year. However, when examining Cal Advocates' workpapers, it appears that the gradient chosen by Cal Advocates does not fully represent the actual range of values in the workpaper. In Figure 2 below, SDG&E shows the confidential forecasted prices on a standardized z-score.⁸

⁷ Cal Advocates' chart shows forecasted 2027 prices.

A z-score is calculated using the formula $z = (x-\mu)/\sigma$, where x is the raw score, μ is the population mean, and σ is the population standard deviation.

Figure 2 – Z Scores of Cal Advocates'
Heatmap of Average Hourly Marginal Generation Costs by Month

Hour	January	February	March	April	May	June	July	August	September	October	November	December
1	(0,1)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.2)	(0.1)	(0.1)	(0.0)	(0.0)
2	(0.1)	(0.1)	(0.3)	(0.3)	(0.2)	(0.2)	(0.3)	(0.3)	(0.1)	(0.1)	(0.0)	(0.0)
3	(0.1)	(0.2)	(0.3)	(0.3)	(0.3)	(0.2)	(0.2)	(0.2)	(0.1)	(0.1)	(0.1)	(0.1)
4	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.1)	(0.1)	(0.1)	(0.1)	(0.2)	(0.1)	(0.1)
5	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.1)	(0.0)	0.0	(0.1)	(0.2)	(0.1)	(0.1)
6	(0.0)	(0.1)	(0.2)	(0.2)	(0.2)	(0.1)	0.0	0.1	(0.1)	(0.2)	(0.1)	(0.0)
7	0.0	0.1	0.0	(0.1)	(0.1)	(0.0)	0.0	0.1	0.0	(0.0)	1.0	0.0
8	0.1	0.0	(0.0)	0.0	(0.1)	(0.0)	0.0	0.1	0.1	0.1	0.1	0.1
9	(0.1)	(0.1)	(0.1)	(0.2)	(0.3)	(0.2)	(0.1)	(0.0)	(0.0)	(0.0)	(0.1)	(0.1)
10	(0.1)	(0.2)	(0.3)	(0.3)	(0.3)	(0.2)	(0.3)	(0.4)	(0.1)	(0.2)	(0.2)	(0.1)
11	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.5)	(0.5)	(0.2)	(0.2)	(0.3)	(0.2)
12	(0.3)	(0.3)	(0.4)	(0.4)	(0.3)	(0.5)	(0.6)	(0.5)	(0.3)	(0.2)	(0.4)	(0,2)
13	(0.3)	(0.3)	(0.4)	(0.4)	(0.3)	(0.6)	(0.8)	(0.7)	(0.3)	(0.2)	(0.4)	(0.3)
14	(0.3)	(0.3)	(0.4)	(0.4)	(0.3)	(0.6)	(0.9)	(0.9)	(0.3)	(0.2)	(0,4)	(0.2)
15	(0.2)	(0.3)	(0.4)	(0.3)	(0.3)	(0.6)	(1.0)	(1.1)	(0.2)	(0.2)	(0.4)	(0.1)
16	(0.1)	(0.2)	(0.3)	(0.3)	(0.3)	(0.6)	(1.1)	(1.2)	(0.1)	(0.1)	(0.2)	(0.1)
17	(0.0)	(0.1)	(0.3)	(0.3)	(0.3)	(0.6)	(0.7)	(0.2)	2.4	(0.1)	(0.1)	(0.0)
18	0.1	(0.0)	(0.1)	(0.2)	(0.2)	(0.5)	0.7	2.8	9.2	0.0	(0.0)	0.1
19	0.1	0.0	(0.0)	(0.1)	(0.1)	(0.4)	0.9	1.8	7.8	0.3	(0.0)	0.1
20	0.1	0.0	0.1	0.0	(0.0)	(0.2)	0.7	2.5	8.0	0.4	(0.0)	0.1
21	0.1	(0.0)	0.0	0.0	0.1	(0.1)	0.8	1.5	5.1	0.2	(0.0)	0.0
22	(0.0)	(0.1)	0.0	0.1	0.1	(0.1)	0.4	0.7	1.8	0.1	(0.0)	(0.0)
23	(0.1)	(0.1)	(0.1)	(0.1)	(0.0)	(0.1)	(0.1)	(0.0)	0.2	(0.0)	(0.1)	(0.0)
24	(0.1)	(0.2)	(0.2)	(0.2)	(0.1)	(0.2)	(0.2)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)

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While the prices in the morning hours are slightly higher than 0, they are low compared to the high prices seen in the hot summer months. When looking at a more representative gradient of Cal Advocates' data, as shown in Figure 2, it is clear there is little justification to create a morning on-peak period at this time.

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Additionally, a new morning on-peak period could serve to confuse and frustrate customers. Residential customers were defaulted to TOU rates in 2019, and many customers are likely still getting used to the concept of TOU. The statewide Marketing, Education, and Outreach (ME&O) campaign to establish TOU rates for residential customers and educate them on the importance of shifting their usage outside the on-peak period was an extremely involved and complex undertaking. SBUA's testimony fails to acknowledge the complexity of educating customers on a new morning on-peak period, and offers no proposals or evidence to suggest that customers would accept a new morning on-peak period. A new on-peak period is not a minor change to TOU periods like the extension of the super-off peak period that SDG&E is proposing. If the Commission were to approve a new morning on-peak period, SDG&E would need to incur

significant ME&O costs to educate customers on the reasons for the change and the hours of high costs. It is possible that customers who do not work from home could perceive this as a punitive change, and believe that SDG&E is raising prices during all the hours in which they are home and awake. For all the foregoing reasons, SBUA's proposal for a morning on-peak period should be rejected at this time.

b. The Commission Should Maintain the Current On-Peak Period of 4PM-9PM

SBUA again relies on Cal Advocates' Prepared Direct Testimony to propose a change to SDG&E's existing evening on-peak period, stating that it should shift from 4PM-9PM to 5PM-10PM. However, SBUA offers no analysis of its own to show that the evening on-peak period should be shifted. As shown above in Figure 2, Cal Advocates' heatmap of 2027 hourly marginal generation costs is not truly representative of the costs found throughout the year, and the z-values shown for hour ending 17 (4PM-5PM) in September (the month of highest z-values, meaning the highest cost month and hour) is higher than that for hour ending 22 (9PM-10PM). Additionally, other parties, including FEA, support maintaining the current on-peak period. 10

Moving the evening on-peak period is unsupported by SDG&E's analysis, as shown in the Revised Prepared Direct Testimony of SDG&E witness DeTuri, 11 and should not be done lightly. SDG&E incurred over \$20 million on ME&O when residential customers were mass

SBUA Opening Testimony, p. 29.

Direct Testimony and Schedules of Maurice Brubaker on behalf of The Federal Executive Agencies (January 8, 2024) (FEA Opening Testimony), p. 6.

SDG&E's Revised Prepared Direct Testimony of Jeff DeTuri (September 29, 2023), pp. JDT-15 - JDT-19.

defaulted to TOU rates in 2019.¹² The communications necessary to change the on-peak period by one hour would again require significant customer ME&O, the cost of which has not been included in this application. For all the reasons stated, the Commission should not adopt SBUA's proposal and should maintain the evening on-peak period of 4PM – 9PM.

2. Parties Largely Support Expansion of Daytime Super Off-Peak Hours

Most parties support the extension of SDG&E's daytime super off-peak hours to all months. SBUA, ¹³ the City of San Diego, ¹⁴ and FEA¹⁵ agree with this proposal. Cal Advocates states that it does not oppose SDG&E's proposal. ¹⁶

a. SDG&E is Experiencing an Increasing Excess of Daytime Distributed Solar Exports

SEIA is the only party to outright oppose SDG&E's proposal for expansion of daytime super off-peak hours, stating that SDG&E's analysis does not meet the threshold to propose new Base TOU periods.¹⁷ Even if SDG&E's deadband tolerance has not been exceeded, SDG&E believes that the expansion of the super off-peak period hours to year-round will benefit all customers and will incentivize customers to use energy during periods with plentiful renewables, reducing GHG emissions in alignment with state policy goals.

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See, SDG&E Quarterly Report on Progress of Residential Rate Reform (August 3, 2020), Attachment A, p. 30, accessed at: https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M345/K150/345150932.PDF

¹³ SBUA Opening Testimony, p. 29.

Direct Testimony of William A. Monsen on behalf of the City of San Diego Regarding Marginal Costs, Revenue Allocation, and Rate Design in Application 23-01-008 (January 8, 2024) (City of San Diego Opening Testimony), p. 22.

¹⁵ FEA Opening Testimony, p. 6.

Cal Advocates Prepared Direct Testimony of Nathan Chau – Time of Use Periods, Chapter 9 (December 8, 2023) (Cal Advocates Opening Testimony – Ch. 9), p. 9-2:5-7.

SEIA Opening Testimony, p. 24:10-12.

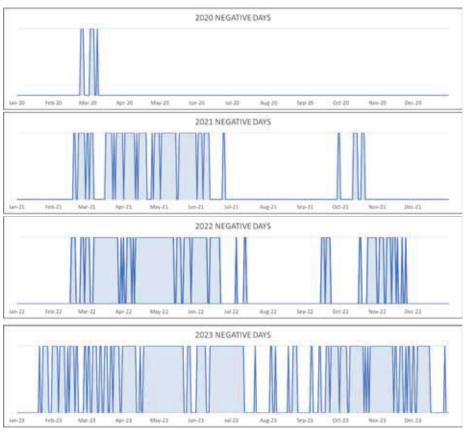
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days where the amount of exports onto the grid from distributed resources, namely solar, exceeds the amount of imports (*i.e.*, negative load or "negative days") for the residential customer class in one or more hours during a 24-hour period. This phenomenon historically only occurred in the spring months (namely March and April) when typically the sun is shining and the weather is cool, but as of 2023, it is now occurring during all months of the year and is no longer a rare occurrence. Because of this change, while the price signal to encourage energy consumption from 10AM-2PM was only needed in March and April in previous years, it now makes sense to send these price signals throughout the year.

As demonstrated by Figure 3 below, SDG&E has experienced an increase in the number of

Figure 3: Frequency of Days Where Residential Customer Class Exports Exceed Imports (2020-2023)¹⁸



Data adjusted for Daylight Saving Time.

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Figure 4 below quantifies the number of negative days and shows the general trend of increasing Residential Customer Class distributed solar adoption in both number of customers and installed capacity.

Figure 4: Growth of NEM Capacity, Projects and Residential Negative Load Days (2020-2023)¹⁹

Year	# Days Where at Least One Hour has Negative Load	% of Days of the Year	Projects - Residential Cumulative	Installed Capacity - Residential Cumulative (MW)
2020	9	2.5%	183,178	1,041
2021	87	23.8%	208,385	1,200
2022	149	40.8%	244,039	1,428
2023	215	58.9%	286,722	1,712

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In addition to the frequency of negative Residential load, the magnitude of these exports is also increasing as the solar population increases and more customers export to the grid. Using California DGStats data, as of December 31, 2023, approximately 21% of SDG&E's Residential customers had solar and were participating in either NEM or NBT.²⁰ Figure 5 below shows total number of hours where Residential load was negative from 2020-2023 (*i.e.*, where exports exceeded imports), over a 24-hour period. Most hours with net negative exports are concentrated in the middle of the day, when SDG&E is proposing to expand the super off-peak period.

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Figure 5 – Total Residential Class Load Negative Hours by Interval (2020-2023)

YEAR	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H15	H16	H17	H18	H19	H20	H21	H22	H23	H24
2020	0	0	0	0	0	0	0	0	0	0	0	9	9	5	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	8	50	76	81	60	2	.0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	1	51	109	142	131	105	49	2	0	.0	0	0	.0	.0	0	0
2022	0	0	0	0	0	0	n	n	11	9.6	160	190	100	166	O.S.	13	0	-0	0	0	0	0	0	0

Number of cumulative projects and capacity source: https://www.californiadgstats.ca.gov/charts/ Accessed February 5, 2024.

²⁰ See id.

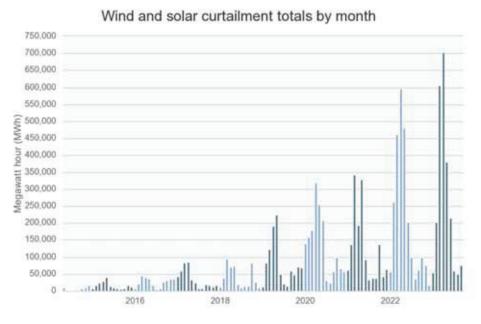
As the number of net negative hours has increased, so has the total amount of exports, as displayed below in Figure 6. In 2023, the hours in which SDG&E saw the most exports during negative hours were hours ending 11 through 14 (10AM-2PM).

Figure 6 – Gross Residential Exports (MWh) During Negative Hours by Interval (2020-2023)

YEAR	H1	H2	913	H4	HS-	HE	H7	HB.	.119	H10	HII	H12	H13	H14	#15	H16	H17	H18	H19	H20	H21	H22	H25	H24
2020	0	0	0	0.	0	.0	0	0	0	0	0	4,895	5.072	2,568	0	0	.0	.0	0	0	0	.0	. 0	0
2021	0	0	0	0.	Ð	. 0	0	0	0	4.633	30,140	43,737	42,520	30,487	1,157	0	0	.0	0	0	0	0	0	.0
2022	0	0	0	0	0	.0	0	0	123	20,858	62,235	96,658	95,564	78,578	35,792	1,272	0	0	0	0	0	0	. 0	. 0
2021	.0	. 0	0	0	0	.0	. 0	0	5,717	56,781	119,401	151,777	157,279	123,761	65,658	7,102	.0	. 0	. 0	0	0	0	0	0

This acceleration in surplus of renewable distributed generations has resulted in the California Independent System Operator (CAISO) needing to increasingly curtail utility-scale renewables, as illustrated in Figure 7 below:

Figure 7 – CAISO Wind and Solar Curtailment Totals by Month (2014-2023)²¹



Curtailing utility-scale renewables is counterproductive to California's environmental and economic goals – it is an inefficient use of clean energy resources as it reduces the output from

²¹ CAISO.com - Managing Oversupply, available at https://www.caiso.com/informed/Pages/ManagingOversupply.aspx.

available renewable resources that could be purchased at significantly lower prices.²² The Commission has prioritized reducing greenhouse gas emissions in an economically efficient manner.²³ A recent study quantifies the levelized cost of energy (LCOE) for utility-scale solar as ranging from \$24/megawatt-hour (MWh) to \$96/MWh, while the LCOE for residential distributed solar generation ranges from \$117/MWh to \$282/MWh.²⁴ Continuing to curtail a significant amount of less expensive utility-scale renewable generation is not an economically efficient means to reach the state's climate goals. Additionally, Residential customers will continue to adopt distributed solar in SDG&E's service territory, meaning that it is likely that exports will continue to increase, even with economic incentives to adopt solar paired with distributed storage. In order to reduce the amount of CAISO renewable energy curtailment, or at least not contribute to increases, SDG&E's customers should be encouraged to utilize more electricity during hours of excess exports. For these reasons, there is ample justification for extending the mid-day super-off-peak TOU period to year-round, when there is an excess of renewable generation being exported to the grid.

b. Electric Vehicles and Other Electrification Technologies Stand to Benefit from the Super Off-Peak Period Expansion

SEIA also argues that the Commission should reject SDG&E's proposed extension of the super-off-peak period because Electric Vehicle (EV) customers that are inattentive to the TOU period change would only see small bill savings, and therefore the change would not be worth

²² CAISO.com – Curtailment Fast Facts, Impacts of renewable energy on grid operations, available at https://www.caiso.com/Documents/CurtailmentFastFacts.pdf.

²³ D.23-04-040, Ordering Paragraph (OP) 1 (d).

Lazard 2023 Levelized Cost of Energy Analysis - Version 16.0 (April 2023), p. 2, Levelized Cost of Energy Comparison - Unsubsidized Analysis, available at https://www.lazard.com/media/2ozoovvg/lazards-lcoeplus-april-2023.pdf.

the potential confusion it could cause.²⁵ This claim runs contrary to SEIA's position in other proceedings, where they continue to argue for wider TOU differentials, stating that larger TOU differentials will incentivize electrification.²⁶ Default TOU rates are still relatively new, and customer understanding of times of day that are generally more or less expensive is also important to incentivizing behavior change. If customers do not respond to price signals, then wider TOU differentials will not incentivize electrification. SEIA cannot argue that customers *do* respond to price signals when it benefits their argument and argue that customers *do not* respond to price signals when it benefits SDG&E's argument.

Customers that own EVs are likely to be customers who are more attentive to TOU periods, as charging during the low-cost periods can help customers save substantially on their total energy spending. Expanding the super-off-peak period provides EV customers more opportunities for bill savings and more freedom to charge their vehicles during lower price hours, at times that may be more convenient for the average customer, because they will be able to charge both overnight and during the middle of the day. The proposed TOU periods would also not be applicable exclusively to EV rates, but to all rate schedules in all customer classes, and therefore all customers would have more opportunity to reduce their bill by shifting usage to the lower priced hours.

²⁵ SEIA Opening Testimony, p.25-26.

Rulemaking (R.) 22-07-005, Opening Comments of SEIA of the Implementation Pathway for Income-Graduated Fixed Charges (July 31, 2023), p. 10, ("If the Commission wants to improve the ability of the default residential TOU rates to encourage electrification, it should focus on reductions to the off-peak rates in these 'TOU-lite' schedules. This is the best means to incentivize electrification without causing problematic increases in on-peak demand or producing off-peak rates that are below marginal costs.").

c. Consistent Price Signals Year-Round May Improve Customer Understanding and Utilization of Daytime Super Off-Peak Hours

SEIA is concerned about the potential confusion the proposed TOU period change could cause customers, ²⁷ but in reality, SDG&E's proposal is likely to lessen customer confusion, as it will provide consistent price signals throughout the year. Because the mid-day super off-peak hours currently exist only in March and April, it is possible that many customers are not aware of this super off-peak period and do not take advantage of it. A consistent year-round mid-day super off-peak period will be more understandable to customers. Customer understanding and the opportunity for bill reductions is a priority for the Commission, as demonstrated by the Rate Design Principle that states "[c]ustomers should be able to understand their rates and rate incentives and should have options to manage their bills." SDG&E's proposed TOU periods are consistent with this Rate Design Principle and should be adopted by the Commission.

d. New Solar Customers Are Not Significantly Impacted by SDG&E's Proposed TOU Period Change

SEIA also argues that SDG&E's proposed TOU period change would have adverse effects, particularly for standalone solar customers who cannot shift their output to more valuable TOU periods.²⁹ However, as demonstrated by Figure 6 and Figure 7 above, SDG&E and California are already seeing an excess of solar generation year-round that is leading to significant curtailment of renewable energy, an inefficient use of clean energy supplies. Again, the Commission has recognized the need to encourage economically efficient reductions in greenhouse gas emissions through its Rate Design Principles, and through D.22-12-056, where

²⁷ SEIA Opening Testimony, p.26.

²⁸ D.23-04-040, OP 1 (g).

²⁹ SEIA Opening Testimony, p.26.

the Commission aims to incentivize solar paired with storage so that customers store their daytime onsite generation and use it during the higher-cost on-peak period.³⁰

SDG&E's proposed extension of the year-round super-off-peak period into the mid-day hours is aligned with the Commission's goal of encouraging customers to pair solar installations with storage, as it would incentivize customers to avoid exporting their generation during hours that the grid experiences an excess of exports. Instead, customers with paired storage would be enabled to shift when they export their generation to peak hours, when the grid would most benefit from their exports, and when customers would receive the highest compensation for their exports.

SEIA further argues that the proposed expanded super-off-peak hours, compounded with other recent and proposed changes, would have significant adverse impacts to the value proposition for customers considering investing in solar.³¹ However, as demonstrated in Figures 8 and 9 below, NBT customers would not see significantly longer payback periods on their solar and solar + storage investments compared to present,³² when accounting for the proposed TOU periods along with SDG&E's other GRC Phase 2 proposals in its entirety. The Commission determined that a nine-year payback on investments provides customers with a reasonable return on their investment and will continue to encourage customers to adopt distributed energy generation.³³ Note that the paybacks shown are simple paybacks and do not account for rate increases over time. Further, ample evidence presented in R.20-08-020 shows that increased

³⁰ D.22-12-056, Conclusions of Law 16.

³¹ SEIA Opening Testimony, p. 27.

Using rates effective January 1, 2023.

³³ D.22-12-056, p.77.

payback periods resulting from NEM reform in other states did not inhibit the growth of the solar industry.³⁴ As Figure 8 illustrates, all of SDG&E's GRC P2 proposals combined, including its proposal to expand the super-off-peak TOU period, would not have significant adverse effects on solar customers as SEIA claims and are aligned with several of the State's goals, and for these reasons SDG&E's proposed TOU periods should be adopted.

Figure 8 – Net Billing Tariff Simple Payback Periods, Current and GRC Phase 2 Proposals Including Proposed TOU Periods³⁵

Payback Periods (years)								
	Current TOU	All GRC Phase 2 Proposals, with Proposed						
	Periods	TOU Periods						
Non-CARE: Standalone Solar	5.92	6.58						
Non-CARE: Solar + Storage	4.34	4.63						
CARE: Standalone Solar	8.40	9.25						
CARE: Solar + Storage	6.26	6.65						

In addition, solar customers in California receive significant subsidies that are embedded in retail rates and largely paid for by customers that either choose not to or are unable to adopt solar. This estimated cost shift has reached over \$1.2 billion in SDG&E's service territory alone and is expected to increase an average non-CARE non-solar customer's bill by approximately \$468 per year. SDG&E's proposed TOU periods combined with the rest of its GRC P2 proposals would decrease the cost shift created by NBT customers by 10% - 14% and decrease the cost shift created by NEM 2.0 customers by 7% to 10%, as presented in Figures 9 and 10

R.20-08-020, Ex. Joint-01 (Tierney) (June 18, 2021), pp. 32-36.

Figures 8 and 9 calculated using the Commission's NBT Model, updated for January 1, 2023 rates for the "current" payback period calculations, and updated for GRC Phase 2 proposed rates and TOU periods for the "proposed" payback period calculations. The NBT model can be found on the CPUC website: Net Billing Tariff (ca.gov).

Cost shift estimates as of December 31, 2023.

below. Decreasing the cost shift created by solar subsidies is aligned with the Commission's goal to avoid cross-subsidies and creating unintended cost shifts.³⁷

Figure 9 – NBT New Customer First Year Cost Shift, Current and GRC Phase 2 Proposals Including Proposed TOU Periods³⁸

\$/Customer Annual Cost Shift							
	Current TOU Periods	All GRC Phase 2 Proposals, with Proposed TOU Periods					
Non-CARE: Standalone Solar	\$1,305	\$1,132					
Non-CARE: Solar + Storage	\$2,045	\$1,840					
CARE: Standalone Solar	\$794	\$682					
CARE: Solar + Storage	\$1,018	\$881					

Figure 10 – NEM 2.0 New Customer First Year Cost Shift, Current and GRC Phase 2 Proposals Including Proposed TOU Periods

\$/Customer Annual Cost Shift								
	Current TOU Periods	All GRC Phase 2 Proposals, with Proposed TOU Periods						
Non-CARE: Standalone Solar	\$3,349	\$2,995						
Non-CARE: Solar + Storage	\$3,331	\$3,113						
CARE: Standalone Solar	\$2,222	\$1,975						
CARE: Solar + Storage	\$2,231	\$2,081						

Approximately 21% of SDG&E's residential customers are NEM or NBT customers, and this number continues to increase. As the number of NEM and NBT customers increases, so will the cost shift to nonparticipating ratepayers. For all these reasons, the Commission should adopt SDG&E's proposed expansion of the super off-peak period from 10AM-2PM year-round, with

no customer exclusions.

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³⁷ D.23-04-040, OP 1, (h) and (i).

Figures 9-12 Calculated using the NBT Model developed by E3, updated for January 1, 2023 rates for the "current" cost shift calculations, and updated for GRC proposed rates and TOU periods for the "proposed" cost shift calculations. The NBT model can be found on the CPUC website: https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/customer-generation/nem-revisit/net-billing-tariff.

SEIA agrees that the change in TOU periods that SDG&E is proposing is not significant enough to warrant the complexity of legacy TOU periods,³⁹ but still opposes the change, saying that the change in TOU periods should be delayed until cumulative effect of other Commission actions on solar customers is clear.⁴⁰ However, the market is always changing and the Commission may take other actions that impact all customers, including solar customers. It does not make sense to wait until the results of other changes are apparent, because things are always changing, and this would result in a perpetual delay.

SEIA claims that the cumulative impact of recent changes or proposed changes to the economics of customer-sited solar and solar + storage appear to have a substantial adverse impact on the growth of Distributed Energy Resources (DERs), stating that "[i]nitial data on solar sales since the NBT took effect show a steep drop in distributed solar and storage adoption in California," using this data point as a reason not to expand the daytime super off-peak period hours.⁴¹ However, when looking more closely at the data, it is clear that decrease in customer adoption is not solely caused by the Commission's adoption of the NBT.

It is important to note that there was a "gold rush" of customers applying for the NEM 2.0 tariff before it closed in April 2023. As seen in Figure 11 below, SDG&E received an unprecedented number of NEM applications from January through April 2023. Applications for new solar installations have dropped off significantly, but the starting data point used by solar advocates for this claim is an all-time high that was five times the typical historic volume. It is likely that most customers who were considering adopting solar in the near future were

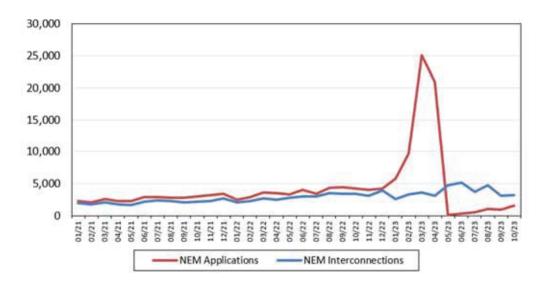
³⁹ SEIA Opening Testimony, p.27:1-2.

⁴⁰ *Id.*, pp. 27-28.

⁴¹ *Id.*, p. 27.

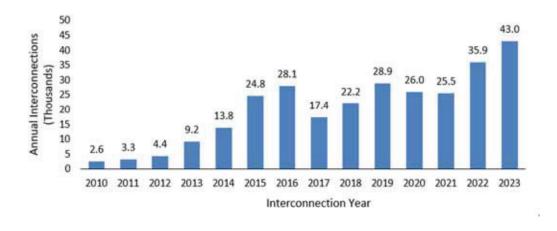
encouraged to apply in order to qualify for NEM 2.0 instead of NBT, leaving the pool of potential NBT customers smaller than it might otherwise have been.

Figure 11 – Monthly SDG&E NEM/NBT Applications and Completed Interconnections (January 2021-October 2023)



While there has been a decrease in applications, the number of customers who are interconnecting under NEM or NBT has not decreased year-over-year. In fact, as shown in Figure 12 below, SDG&E had 20% more interconnections in 2023 than in 2022.

Figure 12 – Annual SDG&E NEM/NBT Interconnections⁴²



⁴² California DGStats, Statistics and Charts, available at www.californiadgstats.ca.gov/charts/.

Additionally, macroeconomic factors may be affecting the solar market that SDG&E and the Commission have no control over. For instance, interest rates are higher than they have been in recent years, which may be impacting customer adoption. It is unreasonable to use a drop-off in solar customer applications as a reason to not expand the super off-peak period. The Commission should not delay making a change to TOU periods because of macroeconomic factors, or because the change could marginally impact the customer-sited solar market. SEIA is clearly attempting to delay implementation of proposals that may have an impact on the customer value proposition of solar, even if the change would benefit the majority of customers and be aligned with the state's policy goals, as evidenced by the numerous parties who agree with SDG&E's proposal. Therefore, the Commission should adopt SDG&E's daytime super off-peak period expansion as proposed.

B. References to D.17-09-035 Should Be Disregarded

Cal Advocates, SBUA, and SEIA reference D.17-09-035 in an attempt to argue against SDG&E's proposed MSFs for Small Commercial Customers. As a threshold matter, the Commission should disregard all arguments predicated on D.17-09-035, as more recent decisions have stated that findings from D.17-09-035 hold no precedential value outside the context of its originating proceeding. Firstly, as pointed out by SDG&E in its 2019 GRC Phase 2 proceeding (A.19-03-002), in response to Cal Advocates' testimony claiming in that proceeding that D.17-09-035 holds precedential value, D.17-09-035 only applied to default residential fixed charges, not non-residential fixed charges. Advocates concedes that D.17-09-035 considers the

SEIA Opening Testimony, p. 38; SBUA Opening Testimony, p. 13; and Cal Advocates Errata Prepared Direct Testimony of Alejandro Marquez – Small Commercial Rate, Chapter 8 (January 19, 2024) (Cal Advocates Opening Testimony – Chapter 8), p. 8-7.

See, A.19-03-002, Prepared Rebuttal Testimony of Gwendolyn Morien (May 4, 2020), pp. 7-9.

EPMC scalar solely for *residential* fixed charges, but then goes on to state that "this determination should be applied broadly to all classes." However, in various subsequent decisions, the Commission has clearly stated its support for including the EPMC scalar in fixed charges.

In Pacific Gas and Electric Company's (PG&E) 2017 GRC Phase 2 decision, the Commission agreed with using EPMC as a basis for both revenue allocation and rate design, stating:

... the history of Commission decisions considering EPMC shows that it is a cost-based and appropriate way to allocate revenues and design retail rates. We therefore reiterate that the findings of these previous decisions and find that the EPMC-based rate design is:

• Cost-based;

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- A reasonable balance between equity and efficiency in revenue allocation and ratesetting; and
- The Commission's preferred starting point for evaluating the reasonableness of revenue allocation and rate design. 46

Then again in PG&E's most recent 2020 GRC Phase 2 decision, where Cal Advocates was an active participant, the Commission stated that it "wholeheartedly supports the EPMC method" and that,

D.17-09-035 does not hold precedential value outside of the context of its originating proceeding (A.16-06-013) ... This decision therefore finds that any future proposals for a default

⁴⁵ Cal Advocates Opening Testimony - Chapter 8, p.8-7.

⁴⁶ D.18-08-013, pp.19-20.

⁴⁷ D.21-11-016, p. 113.

residential fixed charge or optional residential fixed charge (as in this case) should be able to proceed without the need to comply with cost category and EPMC determinations made in a since-closed proceeding that failed to make a determination concerning a residential fixed charge on the merits.⁴⁸

The Commission has more recently reiterated this position in its Phase 1 Track A: Income-Graduated Fixed Charge Guidance Memo when discussing which cost categories would be appropriate to recover through a fixed charge, stating "While prior Commission decisions have determined which cost categories were appropriate to include in residential fixed charges, those decisions do not have precedential value and do not limit what parties may propose in this proceeding."

Given the ample support the Commission has expressed for the EPMC method and the Commission's clear determination that D.17-09-035 does not hold precedential value, the Commission should disregard any argument based on D.17-09-035, as it has previously stated all parties should, and reject proposals where MSFs exclude the EPMC scalar. Further discussion on MSFs can be found in SDG&E's Rate Design Rebuttal Testimony.

C. Bill Presentment Issues Should Be Addressed Elsewhere

1. Presentation of Customer Discounts on Bills That Do Not Include Rate Design Changes Fall Outside the Scope of This Proceeding

SDCP and CEA argue that SDG&E should be required to include discounts that apply to delivery and generation charges, such as the CARE and FERA programs, as well as SDG&E's proposed medical baseline discount, on customer bills as a total bill reduction similar to the

Id., p. 114 (citation omitted).

⁴⁹ R.22-07-005, Administrative Law Judge's Ruling Providing Guidance for Phase 1 Track A Proposals [...] (January 17, 2023), Attachment - Phase 1 Track A: Income-Graduated Fixed Charge Guidance Memo, p.4 (citation omitted).

California Climate Credit.⁵⁰ SDG&E first notes that the California Climate Credit is structurally different than any of the mentioned discounts; the Climate Credit is a fixed-dollar *credit* that is applied to the total bill and not a *discount* that reduces other charges. In other words, the credit is able to be placed at the end of the bill under "other" because it is not calculated or dependent upon charges presented elsewhere on the bill. SDG&E calculates the CARE discount based on all of the charges that are shown under "electric details" and any customer that would want to calculate the discount on their own would have to reference this section directly.

That said, SDG&E also maintains that this issue would not involve a proposed rate design change, and would only change the presentation of the discount on a customer's bill. For this reason, SDG&E believes this issue to be outside the scope of the 2024 GRC Phase 2.⁵¹ SDG&E believes that the Commission should avoid addressing different sub-categories of bill presentation issues in various different proceedings.

2. The Commission Should Avoid Dealing With Bill Presentation Issues in a Piecemeal Manner

SDCP and CEA also propose that SDG&E be required to separate Power Charge
Indifference Adjustment (PCIA) rates from other commodity rates in its Electric Energy
Commodity Cost (EECC) tariffs.⁵² EECC rates are SDG&E's bundled commodity rates. While

Prepared Direct Testimony of Carlo Bencomo-Jasso on Behalf of SDCP-CEA in SDG&E's 2024 GRC Phase 2 Proceeding (January 8, 2024) (SDCP-CEA Opening Testimony), p. 2.

The Scoping Memo in this proceeding includes three "issues to be determined or otherwise considered." The Assigned Commissioner's Scoping Memo and Ruling (June 5, 2023) at 2-3. Those issues are revenue allocation, marginal costs, and rate design. *Id.* Indeed, the scoping memo details various rate design issues, including changes to tariffs, that are within scope, but nowhere is bill presentment addressed. In fact, SDG&E acknowledges herein that certain bill presentment issues may be within scope of the GRC Phase 2 to the extent they're impacted by rate design changes or require rate design changes, but this is not the proper forum to address any or all bill presentment issues that parties seek.

⁵² SDCP-CEA Opening Testimony, p. 2.

all customers pay a PCIA rate, bundled customer's commodity rate does not have PCIA listed separately. Instead, the PCIA charge is currently presented as an informational item on bundled customer bills, with explanations of the PCIA charge in a manner that was approved by the Commission in the PCIA rate proceeding. Additionally, SDG&E undertook changes requested by the CCAs in 2023, to add a dollar per kWh value to the line item that shows the PCIA charge on unbundled bills, which is decidedly less complicated since it can be shown as a simple dollar per kWh value, where the bundled PCIA cannot.

Breaking out PCIA separately from EECC rates on the bill for bundled customers would require a rate design change to SDG&E's EECC rates and would complicate the TOU differential design and calculations. While the PCIA rate design issue is in scope because it involves rate design changes (which change should be denied), SDG&E notes that it cannot update bill presentment until the fundamental structure of the rate is addressed, SDG&E continues to believe that the Commission should attempt to address bill presentation issues and bill simplification in a holistic, measured manner, rather than continue to add requirements in a piecemeal fashion that result in longer and more confusing customer bills.

There are many directives that SDG&E is required to comply with in regard to bill presentation. Certain Public Utilities Code Statutes require inclusion of the types of charges shown to customers on the bill, as well as numerous Commission decisions over the years that are included in SDG&E's Electric Rules.⁵⁴ Still more complication arises when considering different types of customers, i.e., different customer classes (Residential or Non-Residential),

SDG&E Advice Letter 3600-E, San Diego Gas & Electric Proposed Bill and Tariff Changes Showing a Power Charge Indifference Adjustment Pursuant to Decision 20-03-019, approved July 12, 2021, and effective May 6, 2021.

See, for example, Public Utilities (P.U.) Code § 392(a)(1)(B), P.U. Code § 394.4(e), P.U. Code § 739(e)(4), D.98-03-072, and SDG&E Electric Rule 9.

low-income programs, whether a customer is bundled or departing load, whether a customer participates in a NEM tariff or NBT, and so on. The Commission has already adopted a process to review challenges relating to bill presentment for NEM and NBT customers, which will include public workshops. Additionally, SDG&E expects that inclusion of a residential fixed charge that the Commission will adopt in R.22-07-005 will result in significant bill changes as well. For these reasons, SDG&E believes the GRC Phase 2 is not the place to address issues related to bill presentment. Instead, the Commission should consider addressing bill presentment issues in a more holistic manner and ensures that the costs to implement the requested changes are appropriately recovered from the benefitting customers.

D. Additional Solar Customer Studies Are Unnecessary

UCAN states that SDG&E's proposed treatment of NEM customers is unreasonable, but fails to acknowledge that SDG&E does not have the ability to change the NEM program. The Commission has determined that NEM 1.0 and 2.0 customers receive NEM treatment for 20 years. The Commission recently revised the NEM program in R.20-08-020 and adopted the Net Billing Tariff. While SDG&E does not disagree with UCAN's statements that NEM customers cause a significant cost shift to non-NEM customers, UCAN's proposed solution of reallocating revenue among customer classes will likely only increase the complications of the NEM program and its cross-subsidies.

⁵⁵ D.23-11-068, *passim*.

⁵⁶ D.14-03-041, OP 1, and D.16-01-044, Conclusions of Law 14-15.

⁵⁷ D.22-12-056.

Additionally, UCAN proposes that SDG&E be required to conduct a "full evaluation" of NEM cost-of-service cross-subsidies in its 2028 GRC Phase 2.⁵⁸ However, the Commission is already planning to do a full evaluation of the NBT, as stated in its decision adopting the tariff.⁵⁹ Additionally, as UCAN points out, the Commission completed the NEM 2.0 Lookback Study, which quantified the NEM subsidies, similar to UCAN's request. The Commission has traditionally addressed NEM tariffs in a proceeding where all regulated electric utilities, namely PG&E and SCE, can also participate to ensure consistent treatment of solar customers statewide.⁶⁰ UCAN's proposed solution of revenue reallocation could be fraught with complications, and would only apply to SDG&E. Therefore, the Commission should reject UCAN's proposal that SDG&E be required to complete another NEM cost-of-service study in its 2028 GRC Phase 2.

E. Studies of Transmission Marginal Cost Are Subject to FERC Jurisdiction and Being Considered in Other Proceedings

SEIA states that SDG&E should be required to include a calculation of marginal transmission costs in future GRC Phase 2 proceedings.⁶¹ SDG&E disagrees that it should be required to complete a marginal transmission cost study in the 2028 GRC Phase 2, as there are multiple forums where analyses of transmission costs are being considered among the investor-owned utilities (IOUs).

Direct Testimony of Mary Neal on Behalf of UCAN Concerning SDG&E's Application for Authority to Update Marginal Costs, Cost Allocation, and Electric Rate Design (January 8, 2024), p. 8.

⁵⁹ D.23-11-068, OPs 19-24.

⁶⁰ See, R.14-07-002 and R.20-08-020.

⁶¹ SEIA Opening Testimony, p. 49.

Within the Customer DER Rulemaking (R.22-11-013), the Commission has indicated that it will conduct an analysis on transmission and distribution costs. Transmission and distribution cost studies are also being addressed in the Demand Flexibility Order Instituting Rulemaking (DFOIR) Track B that is exploring design and implementation of dynamic pricing rates. For this reason, SDG&E believes it would be premature to change transmission rate design at this time, considering other CPUC proceedings are examining transmission rate design. SDG&E currently does not calculate marginal transmission costs, and the development of a transmission marginal cost study would likely have its methodology contested as SDG&E's other marginal cost studies tend to be, further expanding the scope of an already comprehensive GRC Phase 2. Therefore, SDG&E recommends that the CPUC disregard SEIA's proposal for SDG&E to be required to include a calculation of marginal transmission costs in SDG&E's next GRC Phase 2 (SDG&E's 2028 GRC Phase 2), since this analysis is being done elsewhere and it would not produce results that would be authorized in a CPUC proceeding.

III. CONCLUSION

For the reasons stated above, the CPUC should: (1) adopt SDG&E's proposed standard base TOU Periods that extend the super off-peak period from 10AM-2PM year-round for all customer classes, with no customer exclusions; (2) reject SBUA's proposals to shift the on-peak period from 4PM-9PM to 5PM-10PM, and add a morning on-peak period as there is little evidence to support this change; (3) adopt SDG&E's proposals for cost-based Monthly Service Fees (MSFs) and disregard any arguments predicated on D.17-09-035, as it does not hold precedential value outside its original proceeding; (4) find bill present arguments are out of scope of this proceeding and address all bill presentment issues holistically for all IOUs in another

⁶² D.22-05-002, OP 8(d).

1	venue, (5) disregard SEIA's proposal for SDG&E to include a transmission cost study in its next
2	GRC Phase 2.
3	This concludes my prepared rebuttal testimony.