Docket		A.20-10-012
Exhibit Number	:	
Commissioner	:	Genevieve Shiroma
Admin. Law Judge	:	Patrick Doherty
Public Advocates Project Mgr.	:	
Public Advocates Witnesses	:	Alan M. Siebuhr
	:	Ashlyn Kong

PUBLIC ADVOCATES OFFICE
CALIFORNIA PUBLIC UTILITIES COMMISSION

PREPARED TESTIMONY

on

RESIDENTIAL RATE DESIGN

San Francisco, California
June 24, 2021

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CHAPTER 7: RESIDENTIAL RATE DESIGN

(Witnesses: Alan M. Siebuhr and Ashlyn Kong)

I. SUMMARY AND RECOMMENDATIONS

This chapter presents the Public Advocates Office at the California Public Utilities Commission's (Cal Advocates) analysis and recommendations regarding residential rate design in Southern California Edison Company's (SCE) 2021 General Rate Case (GRC) Phase 2.

Cal Advocates recommends that the California Public Utilities Commission (Commission):

- Adopt Cal Advocates' residential rate design calculations based on its marginal costs and revenue allocation proposals;
- Adopt SCE's proposal to continue capping the baseline usage at the statutory maximum of 60%, but work with parties to address changes to the baseline quantities before SCE's next GRC Phase 2 proceeding;
- Direct SCE to adopt an 11% line-item discount for medical baseline customers who choose to enroll in a non-tiered TOU rate that is eligible for the Self-Generation Incentive Program (SGIP);
- Reject SCE's proposal to remove the eligibility requirement in its TOU-D-PRIME rate;
- Adopt SCE's proposal to create a TOU-D-PRIME rate rider option for separately metered Electric Vehicle (EV) customers but direct SCE to track EV usage and potential revenue shortfalls under this rate rider option; and
- Reject SCE's proposal for an incremental baseline allowance for heat pump water heater customers because of the other available SCE rate schedules that encourage fuel switching and the bill savings already inherent in the efficiency of heat pump water heaters.

II. DISCUSSION

A. SCE's Proposal to Keep Baseline Allocation at 60% of Statutory Maximum

1. SCE should Retain the Statutory 60% Baseline Maximum, but it should work with Parties to Review the Baseline before the Next GRC Phase 2 Proceeding

SCE proposes to maintain the basic baseline allocation at the statutory maximum of 60% of average residential use in each climate zone.[1] This baseline allocation is provided to each residential customer. All-electric customers (households that do not have gas service) receive a larger baseline allocation of 70% of average residential use. The proposed baseline allocation for basic customers is codified in Public Utilities Code (PUC) Section 739, which requires that the investor-owned utilities and the Commission create a baseline quantity of electricity to provide a significant portion to meet reasonable electricity needs for the average residential customer.[2, 3]

SCE proposes to keep the baseline quantity at 60% of average residential use for basic customers and 70% for all-electric customers,[4] which is the statutory maximum as outlined in PUC Section739.[5] SCE's justification for maintaining the baseline quantity at the statutory maximum is that the average residential usage is decreasing. Because the baseline quantity is calculated as a percentage of average residential use, a reduction in the average residential usage would result in reduced baselines if the baseline allocation

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[1] Exhibit SCE-04, p. 36, lines 3 – 4.

[2] PUC Section 739(a)(1) defines the baseline quantity as a percentage of the average of residential consumption, and that this quantity range from 50% to 60% of average residential consumption. This percentage range increases to 60% to 70% for all-electric customers during the winter seasons.

[3] SCE calculates the average residential usage using the "Aggregate Percentage Usage methodology" applied across the entire residential rate class, adopted in Decision (D.)96-04-050. SCE uses data from 2010 – 2019 in order to account for climatic and seasonal variations. See SCE-04, Appendix F, p. F-1.

[4] The baseline quantity is set as a percentile of the total usage of all residential customers.

[5] SCE-04, p. 36, lines 8 – 9.

percentage remains constant.[6] SCE provided Table 7-1 (reproduced below) to illustrate this effect, where the average residential usage has been declining since 2008.[7]

Table 7-1
Average Monthly Residential Electricity Usage in Kilowatt-hours (kWh, bottom row), from 2006 to 2019 (top row)

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
601	590	604	589	561	570	591	573	574	573	559	567	555	552

In a data request, Cal Advocates asked SCE the reasons behind this decrease in average residential usage. In response, SCE provided two reasons:[8]

1. Efficiency gains from energy efficiency programs and increasing (building codes and (appliance) standards from both Federal and State Levels; and
2. Increasing penetration or adoptions of solar photovoltaic (PV) systems in SCE service territory.

To determine the impact of increasing solar penetration on baseline quantities, Cal Advocates sent a data request to SCE asking to assess the impact of rooftop solar PV adoption on the residential baseline quantity. SCE performed this analysis by estimating net energy metering customer's gross usage (i.e. usage as if the customer did not install solar PV generation).[9] That is, SCE estimated the impact of net energy metering (NEM) generation on baseline allocations by grossing up usage delivered to NEM customers to

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[6] SCE-04, p. 36, lines 10 – 11.

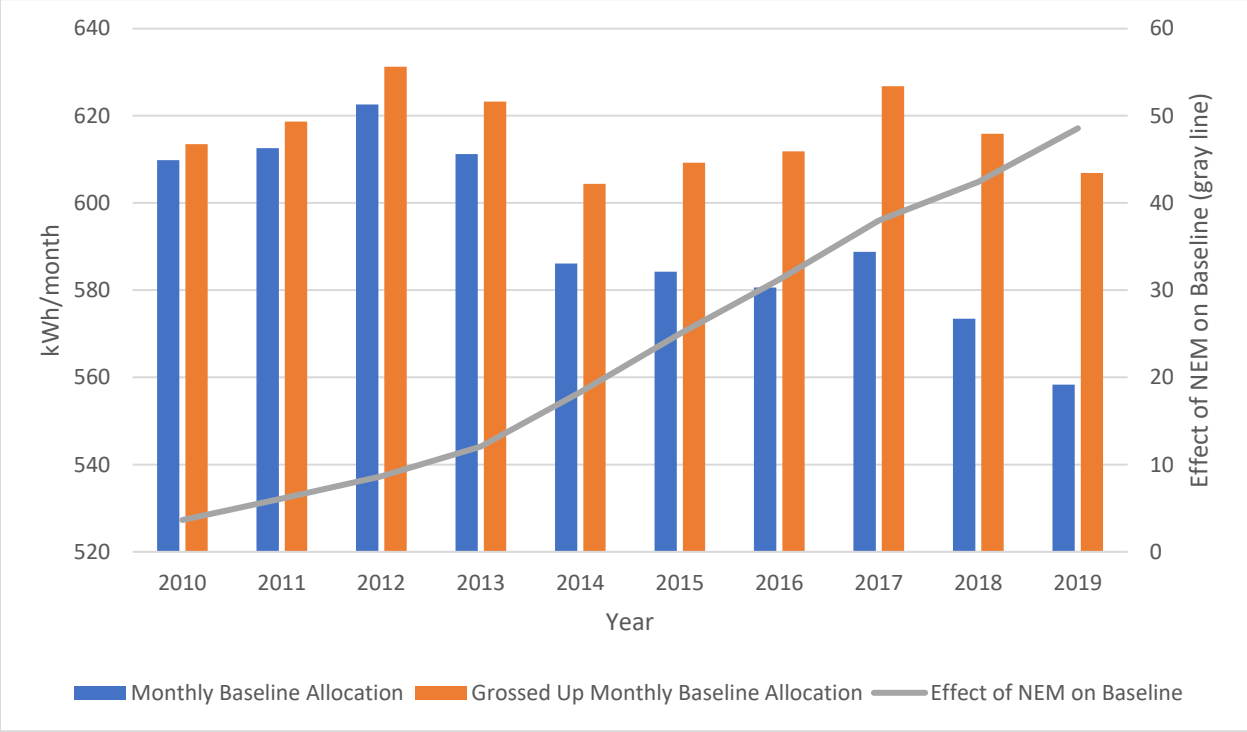
[7] This table is from SCE-04, Appendix F, table F-1. Since the average usage is decreasing, the baseline allowance will decrease despite the percentage baseline allocation being held constant.

[8] SCE response to data request A.20-10-012_CalAdvocates-SCE-005, Question 2.

[9] See SCE revised response to data request A.20-10-012_CalAdvocates-SCE-017, Question 1a. SCE used a proxy that assumed that 44.5% of a NEM customer's usage in the summer is offset due to onsite generation of solar, 35.8% in the winter, and 40% annually. SCE used these figures to "gross up" NEM customer's electricity consumption to simulate what their usage would look like if they never took service as a NEM customer. The figures were taken from SCE's version of the National Renewable Energy Laboratory's (NREL) System Advisor Model, or SAM (see SCE response to data request A.20-10-012_CalAdvocates-SCE-021, Question 1a). SCE stated that the data necessary for a more precise calculation was not available. This decrease in baseline allowance could slow based on the decreasing rate of adoption of NEM. The baseline allowance could also potentially *increase* as the electrification of appliances and residential buildings becomes more widespread, increasing the consumption of electricity.

account for the displaced behind-the-meter consumption due to on-site solar generation.[10] The effects of NEM due to self-generation on the monthly baseline allocation, for both basic and all-electric customers in all climate zones, are shown in the following Figures.

Figure 7-1: Effect of NEM on Monthly Baseline Allocation (Annually)



[10] See SCE revised response to data request A.20-10-012_CalAdvocates-SCE-017, Question 1a.

Figure 7-2: Effect of NEM on Monthly Baseline Allocation (Summer)

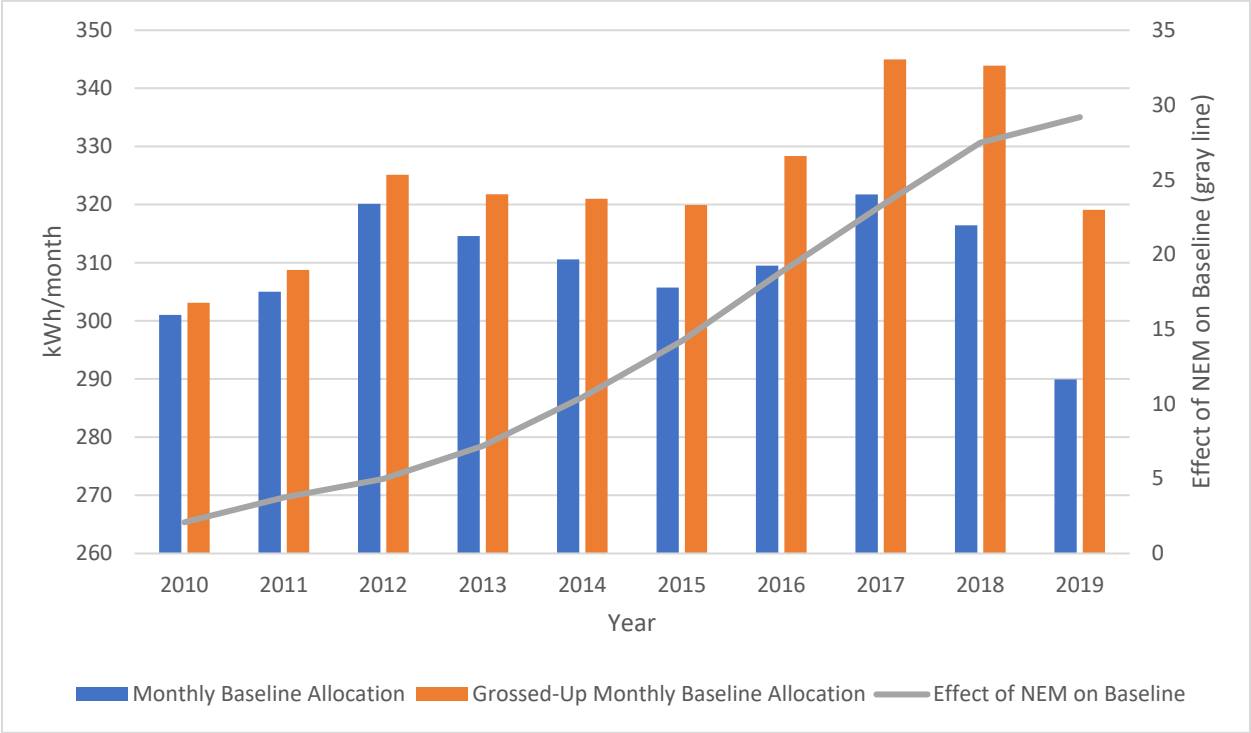
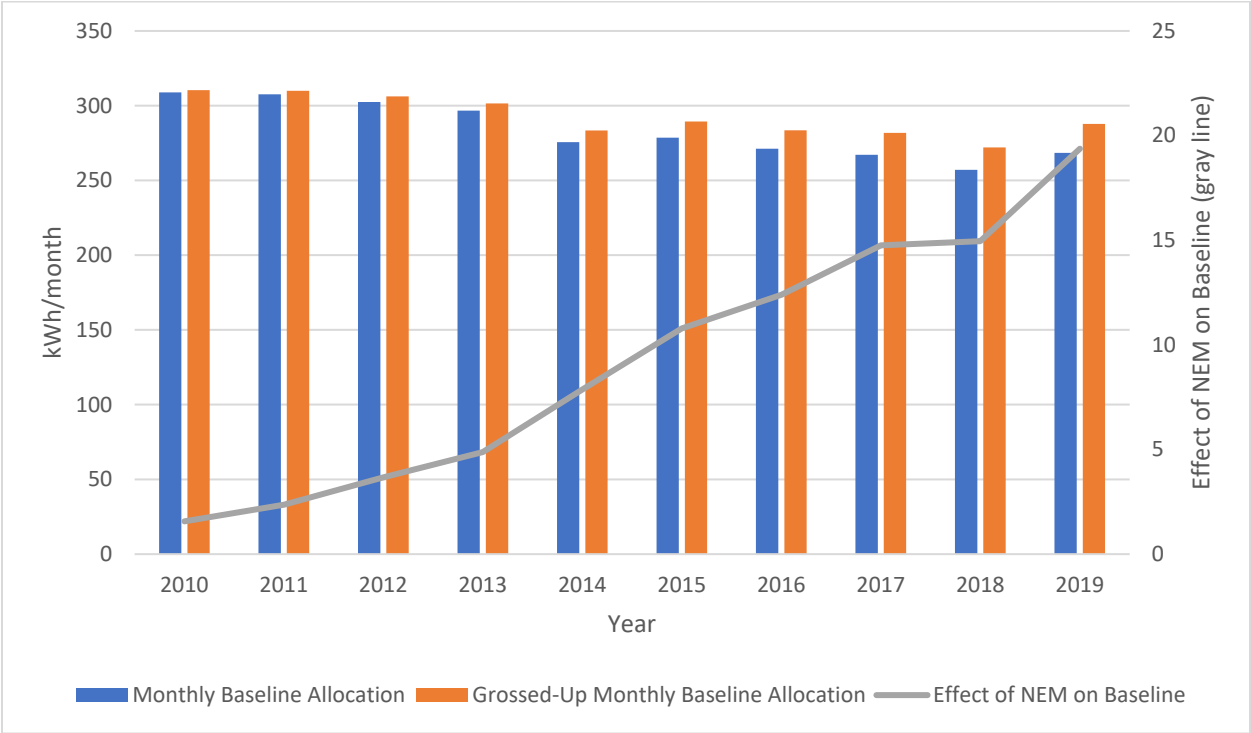


Figure 7-3: Effect of NEM on Monthly Baseline Allocation (Winter)



The Figures above show the growing impact of NEM on baseline allocations. Specifically, Figure 7-2 shows that the increased NEM penetration has had an

increasingly large effect in reducing monthly summer baseline allocations over time,[11] where the kWh decrease in the summer months due to NEM adoption increased by about 2 kWh in 2010 to almost 29 kWh by 2019.[12]

This decrease of the baseline allocation is concerning. Reduction to baseline quantities can amount to bill increases for many residential customers. However, the results of SCE's analysis of NEM on baseline allocation are not conclusive as SCE indicated that the data necessary for a more precise calculation was not available.[13] Further study is needed to determine why the residential baseline allocation is decreasing so that appropriate actions and recommendations can be taken to address the impact on customer's baselines and bills.

Similar efforts are being conducted in other proceedings. In Pacific Gas and Electric Company's (PG&E) GRC Phase 2 proceeding (A.19-11-019), The Utility Reform Network (TURN) raised similar concerns about declining residential baseline quantities attributable to increasing NEM adoption. In that proceeding, parties agreed in an uncontested settlement[14] that "within one year after a final decision is issued in PG&E's 2020 GRC Phase II proceeding, PG&E will conduct a workshop on the topic of the treatment of net energy metering (NEM) customer load in baseline quantity calculations." The Commission has not made a decision on this settlement yet.

Additionally, the Commission has ordered the utilities, including SCE, to create an Essential Use Study to determine the amount of electricity that is essential for residential use to be available at reasonable cost.[15] The Essential Use Study will provide

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[11] This is likely due to the much lower production of solar power in the winter months compared to summer and annually overall.

[12] The impacts of NEM on 2019 baseline allowance is roughly 10% of the total summed daily baseline allowance.

[13] See SCE revised response to data request A.20-10-012_CalAdvocates-SCE-017, Question 1a.

[14] Motion Of Pacific Gas and Electric Company for Adoption of Residential Rate Design Supplemental Settlement Agreement dated March 29, 2021, attachment 1, p. 17. Cal Advocates was a settling party along with TURN.

[15] See D.18-11-027, Finding of Fact (FoF) 22 and Ordering Paragraph (OP) 14. The Essential Use Study methodology, data, and purpose were approved in D.20-09-021.

information on the amount of electricity that residential customers need for "essential," or necessary, activities. That information should be used to update how SCE calculates its baseline allocations in future proceedings.

The Commission should direct SCE to work with parties to determine the appropriate treatment of NEM customers in baseline quantities and how to incorporate information from the Essential Use Study before SCE's next GRC Phase 2 application.

B. SCE should offer a discount to Medical Baseline Customers who want to enroll in a non-tiered TOU, SGIP-Eligible Rate.

In Application (A.) 20-10-006, PG&E proposed a method to allow medical baseline customers to enroll on a non-tiered TOU rate and retain their medical baseline discount through a line-item discount.[16] Currently, medical baseline customers forego their discount if they transition to an SGIP eligible rate; SCE medical baseline customers face a similar constraint:[17] PG&E's method derives a line-item discount for all medical baseline customers using both the revenue recovered with the existing medical baseline program and the revenue recovered assuming there was no program. This difference is then divided by the revenues assuming there was no medical baseline program to derive an effective average discount.

Parties in A.20-10-006 that are parties in this GRC Phase 2[18] met and conferred with SCE to follow the same approach PG&E did to calculate a line-item discount for medical baseline customers. The results of SCE's analysis showed that medical baseline customers would receive a line-item discount of 10.9% were they to transition to an SGIP-eligible TOU rate, as shown in the table below.[19] This would allow SCE's medical baseline customers to keep their benefits while enrolling in an SGIP-eligible rate.

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[16] This proceeding is still ongoing, and parties have submitted a settlement agreement for Commission consideration.

[17] D.19-08-001, pp. 111 – 112, Ordering Paragraph 3. The rate described are non-tiered TOU ("time-varying") rates.

[18] These are the Center for Accessible Technology (CforAT), the Utility Reform Network (TURN), and Cal Advocates.

[19] See SCE response to data request A.20-10-012_CalAdvocates-SCE-0018, Question 1a.

Table 7-2
Calculation of Line-Item Discount for Medical Baseline Customers

1	Number of Customers	84,058
2	Revenue if No Medical Program ($/yr)	$144,909,353
3	Revenue With Medical Program ($/yr)	$129,122,157
4	Value of Medical Discount ($/yr)	$15,787,196
5	Value of Medical Discount (%)	10.9%
6	Average Bill if No Medical Program ($/cust-mo)	$143.66
7	Average Bill With Medical Program ($/cust-mo)	$128.01
8	Average Bill Discount ($/cust-mo)	$15.65
9	Average Bill Discount (%)	10.9%

Cal Advocates is working with the parties mentioned above to develop a full proposal for SCE that would use a similar method as the one proposed by PG&E. The Commission should require SCE to offer a line-item discount for medical baseline customers, following PG&E's approach. This would allow medical baseline customers to enroll in an SGIP eligible, non-tiered TOU rates while retaining their medical baseline benefit.

C. TOU-D-PRIME Eligibility Requirements and Rate Rider

1. TOU-D-PRIME Eligibility Requirements Should not be Lifted due to Lack of Incentive to Adopt Clean Technologies and the Potentially Large Revenue Shortfall.

The Commission should reject SCE's proposal to lift the eligibility requirement from SCE's TOU-D-PRIME rate because the proposal would not meaningfully incentivize customers to adopt additional clean energy technologies. Rather, it would incentivize those who would see lower utility bills on TOU-D-PRIME than their otherwise applicable tariff to switch without necessarily investing in clean technologies, while potentially creating a large revenue shortfall. SCE's TOU-D-PRIME rate is designed for higher usage customers who adopt technologies that promote greenhouse

gas (GHG) reductions, with a fixed monthly basic charge of $14.24/month, low Super Off-Peak (8am – 4pm) and Off-Peak rates (9pm – 8am), and high On-Peak (4pm – 9pm) rates.[20] This rate requires customers to have one or more of the following technologies to be eligible for the rate:[21]

1. Electric Vehicle (EV);
2. On-site behind-the-meter (BTM) storage system; and/or
3. Electric heat pump system for water and/or space heating.

TOU-D-PRIME would encourage customers with the above technologies to use energy between 9:00pm and 4:00pm with lower Off-Peak and Mid-Peak prices, when there is an abundance of GHG-free electricity being generated from solar power. TOU-D-PRIME was established as part of the Residential and Small Commercial Rate Design Settlement Agreement in SCE's 2018 GRC Phase 2 proceeding.[22] These eligibility requirements prevent structural benefiters,[23] who may otherwise take service on the rate without adopting the specified technologies, from joining the rate and causing potential revenue shortfalls.

SCE's reasoning for removing the eligibility (and concurrently the attestation requirements) is that, due to the State of California's electrification goals and SCE's "pathway to 2045," the electrification of appliances is expected to increase in the coming years.[24] SCE further states that "[r]esidential customers who manage electricity bills by

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[20] SCE-04, p. 33, lines 14 – 17; and p. 34, line 1.

[21] These are based on Special Condition 5 in the TOU-D rate schedule (of which TOU-D-PRIME is an optional rate schedule) Link to the TOU-D rate schedule and its rate options are located here, with Special Condition 5 located on Sheet 17: https://library.sce.com/content/dam/sce-doclib/public/regulatory/tariff/electric/schedules/residential-rates/ELECTRIC_SCHEDULES_TOU-D.pdf.

[22] Application (A.), *Motion of Southern California Edison Company (U 338-E) and Settling Parties For Adoption Of Residential and Small Commercial Rate Design Settlement Agreement*, Attachment A, Residential and Small Commercial Rate Design Settlement Agreement ("Residential and Small Commercial Settlement Agreement"), p. A-17; filed July 30, 2018.

[23] Structural benefiters are those customers who, according to their most recent one-year historical use pattern, would experience monthly bill savings simply by opting into the TOU-D-PRIME rate relative to their otherwise applicable tariffs without considering any changes to their usage.

[24] SCE-04, p. 38, lines 4 – 10.

employing new technologies that allow shifting or shedding of load should have the same access to rate options that encourage this behavior as do non-residential customers."[25], [26]

Cal Advocates opposes SCE's proposal to remove the eligibility requirements for TOU-D-PRIME because of the lack of incentive to adopt clean energy technologies and the potential of high revenue shortfalls. SCE has not demonstrated how the removal of eligibility requirements would increase the adoption of clean energy technologies that reduce air pollution and greenhouse gas emissions compared to keeping the current eligibility requirements. The purpose of the TOU-D-PRIME rate was to reduce energy bills for customers who already adopted clean energy technologies. Removal of the eligibility requirements would allow structural benefiters to enroll in this rate without adopting clean energy technologies or changing their consumption, resulting in significant revenue shortfalls.[27]

In two separate data requests to SCE, Cal Advocates requested SCE calculate the revenue shortfalls assuming that all structural benefiters opt-in to the TOU-D-PRIME rate with no eligibility requirements: for non-TOU tiered rate customers.[28] SCE calculated a potential revenue shortfall of $428.2 million for tiered non-TOU rate customers,[29] and $364.4 million for TOU-D-4-9 customers.[30] While these revenue shortfalls are estimated assuming *all* structural benefiters opt in to the rate, even relatively small opt-in rates could cause tens of millions of dollars in revenue shortfalls, leading to severe bill impacts for ratepayers, especially small users. Additionally, structural benefiters have less incentive to shift usage in a manner that benefits the grid

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[25] SCE-04, p. 38, lines 10 – 11.

[26] SCE's small business customers have the option to enroll in Option D or E rates, which have no eligibility requirements. See SCE-04, p. 38, footnote 76.

[27] Cal Advocates voiced similar concerns in SCE's 2018 GRC Phase 2 (A.17-06-030), when SCE proposed a new TOU-D-C rate (that ended up becoming the TOU-D-PRIME rate in the Residential and Small Commercial Settlement Agreement). See Cal Advocates' opening testimony in A.17-06-030, p. 8-8, lines 5 – 14.

[28] SCE's non-TOU tiered rate schedules include Schedule D, D-CARE, and D-FERA.

[29] See SCE response to data request A.20-10-012_CalAdvocates-SCE-007, Question 1.

[30] See SCE response to data request A.20-10-012_CalAdvocates-SCE-013, Question 1.

(e.g. by reducing on-peak usage). In fact, these customers could increase on-peak usage and still end up paying less than they did on their old rate.

The Commission has also expressed preference in past proceedings to avoid opening non-tiered TOU rates to all residential customers due to the risk of large revenue shortfalls. In A.17-12-011,[31] SDG&E similarly proposed to open an non-tiered TOU rate to all customers that had been originally restricted to customers with qualifying technologies.[32] In that proceeding, Cal Advocates estimated a revenue shortfall of $146 million assuming all customers who benefit from opting in to this rate would select the rate.[33] Even under a conservative customer defection scenario, Cal Advocates forecasted a revenue shortfall of $89 million.[34] The Commission agreed with Cal Advocates' recommendation and rejected SDG&E's proposal.[35] The Commission should similarly reject SCE's proposal to remove the TOU-D-PRIME eligibility requirements as doing so can potentially generate large revenue shortfalls with little benefit.

2. TOU-D-PRIME Rate Rider is a Reasonable Solution to the Lack of Separately Metered EV Rates.

SCE proposes to create a TOU-D-PRIME rate rider option for separately metered EV customers.[36] Cal Advocates finds this proposal reasonable, since SCE's proposed rate rider option saves separately metered customers money on fuel costs when transitioning from a gasoline-powered vehicle, and the potential cost shifts would be

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[31] Application of San Diego Gas & Electric Company (U902E) for Authority to Update Electric Rate Design Regarding Residential Default Time-Of-Use Rates and Fixed Charges. [Proceedings A.17-12-011, A.17-12-012, and A.17-12-013 were consolidated by Ruling of January 25, 2018.]

[32] Specifically NEM customers.

[33] Cal Advocates Opening Brief in A.17-12-011, p. 7.

[34] Cal Advocates Opening Brief in A.17-12-011, p. 7.

[35] See D.18-12-004, p. 30.

[36] SCE-04, p. 37, lines 1 – 2. A rate rider option is an optional rate that allow a customer to take the volumetric charges for each TOU period, but with a different customer charge compared to the standard non-rider rate. In this case, the TOU-D-PRIME rate rider would apply a credit to the $14.24/month customer charge to create a monthly meter charge of $2.14/month.

insignificant due to the small population of separately metered EV customers, as detailed below.

Before this GRC Phase 2, SCE customers who had separate meters for EVs were taking service on an optional rate schedule TOU-EV-1. TOU-EV-1 was an optional two-period TOU rate that allowed customers in Single-Family Dwellings[37] to have a separately metered rate specifically for charging EVs. SCE closed TOU-EV-1 because SCE determined there was no economic benefit for customers to adopt the rate,[38] and also because the two TOU periods were inconsistent with the updated TOU periods proposed in A.16-09-003.[39, 40] As part of the Residential and Small Commercial Settlement Agreement in SCE's 2018 GRC Phase 2, SCE closed the TOU-EV-1 rate.[41] Following the EV-TOU-1 closure, SCE began receiving customer complaints that SCE did not offer a separately metered rate option for EV charging. Furthermore, statutes prevent SCE from denying homeowners the ability to install EV chargers in a dedicated parking space.[42] Thus, SCE asked parties involved in A.17-06-030 (SCE's 2018 GRC Phase 2) for their input regarding SCE temporarily reopening TOU-EV-1 as a stop gap until a permanent solution in this GRC Phase 2 is reached. The parties did not oppose SCE's request and SCE subsequently filed Advice Letter 4345-E to temporarily reopen EV-TOU-1.

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[37] SCE defines a Single-Family dwelling as "[a] house, an apartment, a flat, mobilehome, Qualifying Recreational Vehicle Unit, Qualifying Residential Unit, or any other permanent residential dwelling which contains cooking facilities (not necessarily electric) and which is used as a residence by a single family either in a Multifamily Accommodation or Single-Family Accommodation." See Advice Letter (AL) 4345-E, p. 1, footnote 1.

[38] AL 4345-E, p. 1.

[39] AL 4345-E, p. 1.

[40] A.16-09-003 was SCE's 2016 Rate Design Window proceeding. In this proceeding SCE proposed changing its TOU periods to align with its 2024 forecasted hourly marginal costs, which split its default TOU schedules into three, rather than two, periods See Exhibit SCE-0 in A.16-09-003, Section IV (a detailed explanation is found on p. 47, starting on line 1).

[41] AL 4345-E, p. 2.

[42] AL 4345-E, p. 3.

SCE proposes to have an optional TOU-D-PRIME rate rider replace the temporarily reopened TOU-EV-1 rate schedule. SCE's proposed rate structure for the TOU-D-PRIME rate rider option is to provide a monthly credit to reduce the $14.24/month customer charge on SCE's TOU-D-PRIME rate, making the reduced customer charge equal to the separately metered TOU-EV-1 monthly meter charge ($2.14/month).[43]

SCE does not propose restructuring the TOU-D-PRIME rate rider option to be revenue neutral (to reflect the lower meter charge).[44] For the sake of comparison, Cal Advocates examined the impacts of SCE's rate rider proposal compared to a rate that is revenue neutral. Cal Advocates considered a revenue neutral rate design, and compared the fuel savings EV customers would experience if these customers switched from an internal combustion engine (ICE)[45] vehicle to an EV. This analysis considered the fuel savings from switching during two scenarios: one charging during the day, the other charging during the night.[46] The results of this analysis, using Cal Advocates revenue neutral rate design and SCE's proposed TOU-D-PRIME rate rider, are shown below.[47] These results show that customers who transition from an ICE vehicle to an EV would save on average just about the same, if not slightly more, on fuel costs from taking service on SCE's TOU-D-PRIME rater rider option compared to Cal Advocates' separately metered, revenue neutral EV rate design.

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[43] SCE's reasoning to reduce the customer charge is that the meter charge is intended to recover the cost of the separate meter, while recognizing that the service point and other costs are recovered through the primary meter's customer charge. See SCE-04, p. 37, lines 16 – 18.

[44] See SCE response to data request A.20-10-012_CalAdvocates-SCE-005, Question 1.

[45] ICE vehicles have engines that are fueled by gasoline or diesel.

[46] See SCE response to data request A.20-10-012_CalAdvocates-SCE-022. SCE provided a model comparing the savings of transitioning from gasoline-powered vehicles (of various fuel efficiencies, in miles/gallon of gasoline) to EVs (of various efficiencies, in miles/kWh). This exercise assumed these customers would *not* be charging during the 4pm to 9pm On-Peak period.

[47] This assumes an EV efficiency of 3.3 miles/kWh.

Table 7-3
Monthly Fuel Savings from Transitioning from Gasoline Vehicle to EV

	Nighttime Charging (10 p.m. - 8 a.m.)		Daytime Charging (8 a.m. - 4 p.m.)	
Gasoline Car (mpg)	**SCE TOU-D-PRIME Rate Rider**	**Cal Advocates' Separately Metered EV Rate**	**SCE TOU-D-PRIME Rate Rider**	**Cal Advocates' Separately Metered EV Rate**
10	267	262	267	262
15	166	162	166	162
20	115	110	115	110
25	85	80	85	80
30	65	60	65	60
35	50	46	50	46
40	39	34	39	34
45	31	26	31	26
50	24	19	24	19
55	18	14	18	14

The TOU-EV-1 meter charge of $2.14/month would be a separate customer charge from the customer charge the customer pays at the primary meter. Since the TOU-D-PRIME rate rider would be an optional rate, customers would still pay their full customer charge on their primary meter connected to their home. The customer charge at the primary meter would recover the full customer costs at the service point that would not need to be recovered through the rate rider option.[48] Furthermore, the population of EV customers is quite small[49] so potential revenue shortfalls should be insignificant.[50]

Therefore, since the monthly fuel savings from Cal Advocates revenue neutral rate design and SCE's rate rider option are so similar, and since the population of separately

[48] See SCE-04, p. 37, lines 16 – 18.

[49] As of February 2021, SCE has 778 separately metered EV customers. See SCE response to data request A.20-10-012_CalAdvocates-SCE-005, Question 1.

[50] As part of the Small Commercial and Residential Rate Design Settlement Agreement in SCE's 2018 GRC Phase 2, TOU-D-PRIME would have a revenue differential trigger of $50 million (the difference between SCE's default TOU-D-4-9PM rate schedule and TOU-D-PRIME). Cal Advocates sent a data request to SCE to calculate the revenue differential between the TOU-D-PRIME rate rider option and TOU-D-4-9PM, which came out to $178,980. See SCE response to data request A.20-10-012_CalAdvocates-SCE-005, Question 1.

metered EV customers is so small, Cal Advocates finds SCE's TOU-D-PRIME rate rider option to be a reasonable proposal in this GRC Phase 2. To analyze EV usage and potential revenue shortfalls in future proceedings the Commission should direct SCE to track separately metered EV customers separately in SCE's billing system.

D. SCE's Proposal to Increase the Baseline Allocation for HPWH Customers should be Rejected Because TOU-D-PRIME Exists for Customers who Adopt Clean Energy Technologies. (Witness: Ashlyn Kong)

SCE proposes to provide residential customers with heat pump water heaters (HPWH) who take service on either schedules TOU-D-4-9PM or TOU-D-5-8PM with an incremental baseline allowance.[51] The provision of this incremental baseline allowance is intended to keep the customer's average volumetric rate approximately unchanged by the additional HPWH load.[52] The proposed incremental allowance is intended to "provide consistent bill savings for HPWH adopters without increasing bill volatility,"[53] with the alleged broader intent to support California's building decarbonization goals by buffering against rising electricity bills as a result of switching from gas to electric water heating.[54] The Commission should reject SCE's HPWH incremental baseline proposal. The incremental baseline is unnecessary given the existence of other SCE rates that encourage fuel switching and the bill savings already inherent in the efficiency of HPWHs.

SCE further proposes to provide the HPWH incremental baseline allowance "only as an interim solution until a rate more suitable for the increased electricity consumption of GHG-reducing fuel switching is available."[55] However, such a rate is already

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[51] SCE rates TOU-D-4-9PM and TOU-D-5-8PM include a credit based on the customer's baseline allowance, which is a fixed monthly kWh allowance (varying by climate zone) that meets a significant amount of an average customer's reasonable energy usage that must be priced lower than additional usage. See also https://www.cpuc.ca.gov/general.aspx?id=12186.

[52] SCE GRC Phase 2 Testimony, SCE-04 (Rate Design), p. 40.

[53] SCE-04, p. 40.

[54] *See generally* R.19-01-011 Phase II Staff Proposal, Section 4, pp. 47-62.

[55] SCE-04, p. 41.

available to SCE customers in the form of TOU-D-PRIME, which SCE describes as an example of a rate that would be more suitable for fuel switching.[56] SCE notes that "these type of rates that are technology agnostic […] would be a better long-term strategy for building electrification."[57] However, SCE then goes on to say that the HPWH baseline is an appropriate interim solution "until such a rate is developed," despite TOU-D-PRIME already being available to customers with HPWHs.[58] An interim incremental baseline specifically for HPWHs is therefore unnecessary and should be rejected given the existence of the technology-neutral TOU-D-PRIME rate, which supports electrification without arbitrary constraints to a single specific technology.

The underlying premise that an incremental baseline is needed to ensure customer bill savings[59] is also flawed. In cases of fuel switching from gas to electric heat pump water heating, a customer's electricity bill would logically and necessarily increase as they take on new electric load. However, the customer's gas bill would decrease in tandem. Therefore, any analysis of the need for electric rate modifications to support fuel switching must consider overall energy costs (gas and electricity) rather than electricity costs alone.

The Water Heater Technology Assessment conducted by DNV GL on behalf of the Commission estimates that a typical single-family home in Southern California Gas Company (SoCalGas) territory uses 166 therms of natural gas per year for water heating.[60] Utilizing 2021 average baseline SoCalGas residential rates through May

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[56] SCE-04, p. 41.

[57] SCE-04, p. 41.

[58] SCE Schedule TOU-D, Sheet 17, available at https://library.sce.com/content/dam/sce-doclib/public/regulatory/tariff/electric/schedules/residential-rates/ELECTRIC_SCHEDULES_TOU-D.pdf.

[59] *See* SCE-04, pp. 38-39 (emphasis added): "The agreement to study the application of All-electric baseline allowances to HPWHs emerged from a desire by SCE and settling parties *to find an appropriate rate that would encourage the use of HPWHs* as an energy-efficient, GHG-reduction technology." *See also* SCE-04, p. 40: "This incremental allowance […] would provide consistent bill savings for HPWH adopters…"

[60] Water Heater Technology Economic Assessment, DNV GL, 2017, Table 3-6, p. 11.

2021,[61] 166 therms of gas would cost the customer at minimum approximately $196 for a year of water heating. On the other hand, the incremental annual electricity cost of a HPWH would be approximately $166 on SCE's existing TOU-D-4-9PM rate with existing baseline quantity allowances.[62] TOU-D-PRIME would offer a similar annual cost of approximately $169.[63] In both cases, the customer's overall water heating energy cost is lower with a HPWH than with a gas storage water heater. Therefore, the incremental baseline allowance is unnecessary for ensuring energy bill savings from water heater fuel switching as the technical efficiency of HPWHs combined with SCE's existing rates already provides opportunity for overall energy bill savings.

For the reasons stated above, the Commission should reject SCE's proposed HPWH incremental baseline allocation.

III. CONCLUSION

The Commission should keep the baseline allocation at the statutory baseline of 60% of average usage for residential customers and direct SCE to work with parties to address changes to the baseline quantities before the next GRC Phase 2 Application. The Commission should reject SCE's proposal to eliminate the TOU-D-PRIME eligibility requirements due to the potential for extremely high revenue shortfalls. The Commission should adopt SCE's proposal to create a TOU-D-PRIME optional rate rider for separately metered EV customers, but direct SCE to keep track of separately metered EV customers to study in future proceedings. Finally, the Commission should reject SCE's proposal to create an increased baseline allowance for HPWH customers given the existence of other

[61] See SoCalGas 12-month Residential Rate Summary for 2021, available at https://www.socalgas.com/sites/default/files/RES2021.xlsx. The calculation assumes the baseline rate; use of the non-baseline rate or a blended average would result in a higher gas bill.

[62] Calculated using SCE's WP 2021 GRC Phase 2 HPWH Baseline Model provided in response to Data Request CalAdvocates-SCE-003-HPWH, Question 2. The calculation assumes climate zone 9 and basic baseline allocation (no modifications to existing baseline allowances).

[63] Calculated using SCE's WP 2021 GRC Phase 2 HPWH Baseline Model provided in response to Data Request CalAdvocates-SCE-003-HPWH, Question 2. The calculation assumes climate zone 9 and basic baseline allocation (no modifications to existing baseline allowances).

SCE rates that encourage fuel switching and the bill savings already inherent in the efficiency of HPWHs.

APPENDIX A

Witness Statements of Qualifications

PREPARED TESTIMONY AND QUALIFICATIONS
OF
ALAN M. SIEBUHR

Q1. Please state your name, business address, and position with the Public Advocates Office (Cal Advocates).

A1. My name is Alan M. Siebuhr and my business address is 505 Van Ness Avenue, San Francisco, CA 94102. I work in the Electricity Pricing and Customer Programs Branch of Cal Advocates as a Regulatory Analyst.

Q2. Please summarize your education background and professional experience.

A2. I graduated from the University of California, Berkeley with a Bachelor of Science in Environmental Economics and Policy in 2016. My coursework revolved around topics such as microeconomic analysis, electricity market design, and quantitative analysis. My position prior to working at Cal Advocates was as a 2018-2019 CivicSpark AmeriCorps Fellow at Moreno Valley Utility, where I researched and analyzed the impacts of the "duck curve" that the utility had experienced, and the effects it had on residential non-solar customers. Most recently, I have served as an expert witness in PG&E's 2020 GRC Phase 2, where I worked on marginal generation capacity costs. I have worked at Cal Advocates since August 2019.

Q3. What is your responsibility in this proceeding?

A3. I am responsible for testimony in Chapter 1, "Marginal Customer Access Costs," and in Chapter 7, "Residential Rate Design," sections I, II.A-C, and III.

Q4. Does this conclude your prepared direct testimony?

A4. Yes, it does.

PREPARED TESTIMONY AND QUALIFICATIONS
OF
ASHLYN KONG

Q1. Please state your name, business address, and position with the Public Advocates Office.

A1. My name is Ashlyn Kong and my business address is 505 Van Ness Avenue, San Francisco, California. I work in the Electricity Pricing and Customer Programs Branch of the Public Advocates Office as a Regulatory Analyst.

Q2. Please summarize your education background and professional experience.

A2. I received my Master in Public Policy (MPP) degree from the John F. Kennedy School of Government at Harvard University in May 2020. I received my Bachelor of Arts in Political Science from the University of California, Berkeley in May 2013. I have been employed by the Public Advocates Office in my current position since June 2020. In my experience at the Commission, I have conducted analysis and prepared filings for several proceedings including Energy Efficiency (R.13-11-005), Distributed Energy Resources Financing (R.20-08-022) and Building Decarbonization (R.19-01-011). My previous work experience includes analyzing utility rates and supporting go-to-market strategy as part of the Product and Pricing team at residential solar installer Sunrun, and conducting financial analysis as a Project Finance Analyst at utility-scale solar developer First Solar and as an Investment Banking Analyst at J.P. Morgan.

Q3. What is your responsibility in this proceeding?

A3. I am responsible for testimony in Chapter 7, "Residential Rate Design," Section II(D).

Q4. Does this conclude your prepared direct testimony?

A4. Yes, it does.