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Public Advocates Office	:	Nathan Chau/Otto Nichols

PUBLIC ADVOCATES OFFICE
California Public Utilities Commission

Prepared Testimony
On
Rulemaking to Advance Demand Flexibility Through Electric Rates – Income Graduated Fixed Charge Rate Design

San Francisco, California
April 7, 2023

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CHAPTER 1 INCOME GRADUATED FIXED RATE DESIGN

(Witnesses: Nathan Chau and Otto Nichols)

I. INTRODUCTION AND SUMMARY OF RECOMMENDATIONS

This chapter provides the Public Advocates Office at the California Public Utilities Commission's (Cal Advocates) recommendations for Phase 1, Track A of the Demand Flexibility Rulemaking on income graduated fixed charge (IGFC) design. Cal Advocates proposes an IGFC framework that promotes affordability and encourages electrification by reducing volumetric rates, provides additional bill discounts for low-income customers, and recovers the electric utility's cost to serve in a more equitable manner than current rates. Absent an IGFC, persistently high volumetric rates will continue to exacerbate affordability issues over time and discourage electrification.[1]

Electricity rates have become increasingly less affordable for all households in California. Utility bills increasingly erode what little disposable income low- income customers have, making them particularly vulnerable to these trends. Even small movements in income and housing costs can have an outsized impact on a household's ability to pay for electric service when disposable income levels are low.[2]

High volumetric rates also hinder California's ability to meet greenhouse gas (GHG) reduction goals. If volumetric electricity rates are too high, the customer may not realize fuel cost savings when switching from fossil fuels like natural gas and gasoline to electricity. Achievement of California's GHG reduction goals increasingly require more

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[1] Designing Electricity Rates for An Equitable Energy Transition, P. 7. Professor Borenstein from the Energy Institute at HAAS expresses concern that the volumetric retail rates in California are multiples above social marginal costs. Social marginal costs include the "marginal costs of generation, transmission, distribution and greenhouse gas emissions that are associated with producing an additional unit of electricity. Adding the unpriced portion of pollution damages resulting from electricity yields the social marginal cost." The portion of volumetric rates above marginal costs include additional "system costs that do not scale with usage. These include fixed costs that range from regular maintenance to wildfire mitigation to cross-subsidies for CARE [California Alternate Rates for Energy] customers and rooftop solar." These are all costs that are being recovered through high volumetric prices. https://www.next10.org/publications/electricity-rates.

[2] 2019 Annual Affordability Report, p. 36. https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/affordability-proceeding/r1807006--2019-annual-affordability-report.pdf.

electricity consumption via building electrification and electric vehicle (EV) adoption. It is imperative that the Commission takes steps to reduce volumetric rates. IGFCs can reduce volumetric rates in a manner that eases affordability pressures on low-income customers and improve access to electrification, when done correctly.

Cal Advocates recommends the Commission adopt an IGFC based on Cal Advocates' proposed structure presented in Table 1 for ***all*** residential default and optional rate schedules. This structure consists of progressively higher fixed charges across three identical income brackets for California Alternative Rates for Energy (CARE) and non-CARE residential customers. The differentials (i.e., the difference in fixed charge levels between income brackets) are set higher between the second (i.e., customers making between $50,000/year and $100,000/year) and first (i.e., customers making less than $50,000/year) income brackets to provide more reductions to low-income customers whereas the differential is set lower between the third (i.e., customers making more than $100,000/year) and second brackets to facilitate implementation of the IGFC. Cal Advocates estimates that this proposal will reduce overall volumetric rates by 16%-22% depending on the investor-owned utility (IOU) compared to the same rate absent such a fixed charge.[3]

Finally, to mitigate impacts on low-income customers, Cal Advocates also proposes to redeploy the California Climate Credit (CCC) to offset fixed charges to the greatest extent possible for customers in the first income bracket. This is discussed in more detail in section II.E.

[3] Cal Advocates' estimated bill impacts from the IGFC proposal utilized a tier rate structure to better isolate the impact of implementing an income based fixed charge. Implementing the IGFC proposal with a TOU rate may provide customers with even more savings depending on the customer's ability to shift load outside of the peak hours.

Table 1: Cal Advocates' Proposed Income-Based Fixed Charge Utilizing the California Climate Credit

CARE	Income Bracket	Annual Income	Pacific Gas and Electric Company (PG&E)	Southern California Edison Company (SCE)	San Diego Gas & Electric Company (SDG&E)
Non-CARE	1	< $50,000	$0.00 ($22.79 without the CCC)	$0.00 ($21.82 without the CCC)	$0.00 ($26.70 without the CCC)
	2	$50,000 - $100,000	$31.91	$30.55	$36.42
	3	> $100,000	$36.69	$35.14	$41.88
CARE	1	< $50,000	$0.00 ($10.20 without the CCC)	$0.00 ($10.83 without the CCC)	$0.00 ($13.70 without the CCC)
	2	$50,000 - $100,000	$14.27	$15.17	$19.18
	3	> $100,000	$16.41	$17.44	$22.06

II. DISCUSSION OF RECOMMENDATIONS

A. Retail rates increased at a rate far outpacing inflation over the last decade and this trajectory is expected to continue.

Between January 2009 and January 2023, average residential rates have outpaced inflation over the same period. Over this period, residential average rates for PG&E, SCE, and SDG&E have increased by 95%, 107%, and 137% respectively, with no sign of slowing down, whereas inflation only increased by 42%.[4] In fact, the Commission's sponsored whitepaper, "Utility Costs and Affordability of The Grid of The Future" (the

[4] Inflation figures taken from https://www.bls.gov/data/inflation_calculator.htm. Utility average rates taken from annual electric true up (PG&E) and annual consolidated (SCE and SDG&E) advice letter filings going back to 2009.

Whitepaper) predicts that rates will continue to increase between 3.5% and 4.7% annually over this decade.[5] The Whitepaper posits that the growth in rates can be largely attributed to increases in capital additions driven by rising investments in transmission by PG&E and distribution by SCE and SDG&E. Further causes of rapidly increasing electric rates include the major financial commitments utilities have made for wildfire mitigation and transportation electrification.[6]

The increases in overall residential average rates even in just over the last 5 years is staggering. Since 2017, the average residential rate for California's IOUs have increased by 7%-9% annually.[7]

Moreover, the latest data shows that forecasted rate increases are underestimated. In 2023, rates for PG&E, SCE and SDG&E are already at the levels the Whitepaper forecasted for 2028, 2030, and 2029 respectively.[8]

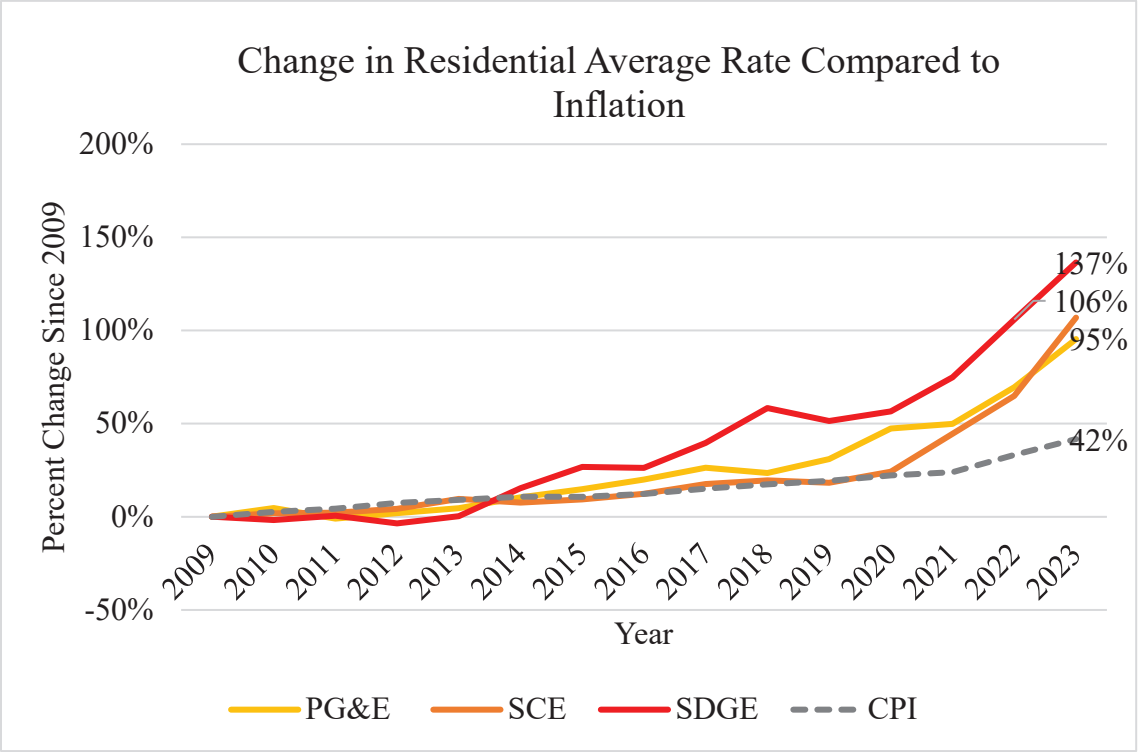
[5] Utility Costs and Affordability Of The Grid Of The Future An Evaluation Of Electric Costs, Rates And Equity Issues Pursuant To P.U. Code Section 913.1, dated May 2021, p. 8.

[6] Utility Costs and Affordability of The Grid Of The Future An Evaluation Of Electric Costs, Rates And Equity Issues Pursuant To P.U. Code Section 913.1, dated May 2021, p. 7.

[7] Utility average rates taken from annual electric true up (PG&E) and annual consolidated (SCE and SDG&E) advice letter filings going back to 2009.

[8] Utility Costs and Affordability of The Grid Of The Future An Evaluation Of Electric Costs, Rates And Equity Issues Pursuant To P.U. Code Section 913.1, dated May 2021, pp. 4-5.

Figure 1: Change in Residential Average Rates Compared to Inflation – All IOUs



In the foreseeable future, electric rates are expected to continue increasing. Simplistically, average electric rates are calculated by dividing the revenue requirement[9] by electric sales. In the average rate calculation, the revenue requirement is expected to increase, because utility fixed costs increase over time, while the sales base over which these increasing costs are recovered have either remained stagnant or are steadily decreasing. The combined effect of increasing revenue requirements and decreasing sales exacerbates upward rate pressures resulting in the equity concerns Cal Advocates proposes to mitigate with an IGFC. Furthermore, low-income customers, who are the most harmed by increasing rates and are financially unable to install rooftop solar or distributed energy resources (DERs) to lessen the burden, are forced to endure the continuously increasing utility rates. Pricing reform via an IGFC that better aligns cost

[9] The revenue requirement is the Commission approved amount of revenue that utilities are guaranteed to recover through rates. The revenue requirement consists of the utility's cost to serve customers and additional public purpose costs intended to meet the Commission's policy objectives.

recovery with cost causation will provide much needed rate relief to the most financially vulnerable customers. The bill impacts of Cal Advocates' IGFC on low-income customers are discussed in further detail in section II.D.

B. Collecting costs entirely in volumetric rates hinders vital electrification efforts.

High volumetric electricity rates pose challenges to achieving California's aggressive GHG reduction targets. To promote California's decarbonization goals, it will be necessary to encourage customers to switch from carbon-intensive fuels to electric devices which have a lower GHG intensity, especially as electricity production becomes increasingly supplied by renewable energy.

Widespread transportation electrification is crucial to reduce emissions of statewide GHGs "to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050."[10] As part of these goals, the state has set a target of five million zero emission vehicles on the road in California by 2030.[11] Widespread transportation electrification requires electrical corporations to increase access to the use of electricity as a fuel.[12]

But as the cost of electricity increases relative to the price of natural gas and gasoline, the financial incentive to adopt electrification becomes less favorable. For the widespread adoption required to reach the State's climate goals, at a minimum, volumetric electricity rates need to remain low to reduce the costs of electrification. A 2018 survey of diverse stakeholders in the commercial EV sector conducted by the

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[10] Public Utilities Code § 740.12(a)(1).

[11] Governor Brown Executive Order B-48-18. Office of Governor Edmund G. Brown, "Governor Brown Takes Action to Fund Zero-Emission Vehicles, Fund New Climate Investments," January 26 2018, accessed April 13, 2021 at https://www.ca.gov/archive/gov39/2018/01/26/governor-brown-takes-actionto-increase-zero-emission-vehicles-fund-new-climate-investments/index.html.

[12] According to Decision (D.) 20-08-045, p. 7, the Legislature also found that "[a]dvanced clean vehicles and fuels are needed to reduce petroleum use, to meet air quality standards, to improve public health, and to achieve greenhouse gas emissions reductions goals," and that widespread transportation electrification "requires electrical corporations to increase access to the use of electricity as a transportation fuel." corporations to increase access to the use of electricity as a transportation fuel."

Electric Power Research Institute (EPRI) found that the overall level of electric rates for fueling will be a key factor in commercial customers' EV adoption decisions over the next decade: "A common viewpoint was that when there is parity cost of vehicle, energy cost and operating/maintenance cost, electric rates will be a key determinant of long term EV viability."[13] Additionally, at the Commission's February 24, 2021 "En Banc on Energy Rates and Costs," David Rapson, Director of the Davis Energy Economic Program at the University of California, Davis, presented that "[e]ach $0.10/kWh increase in electricity prices [results in a] 15% decrease in EV demand" (in terms of EV miles driven).[14] Thus, lower volumetric rates produced by IGFCs are crucial in achieving GHG reductions via electrification adoption.

C. Cal Advocates' IGFC Proposal

Cal Advocates' income-based approach will provide bill reduction benefits to customers in the lowest income bracket when combined with Cal Advocates' proposal to offset fixed charges for these customers with a reallocation of the CA climate credit. This will allow customers who are not enrolled or eligible for CARE to benefit from the proposal. Additionally, CARE customers will receive a lower fixed charge across each income bracket compared to non-CARE customers.

As shown in Table 4, Cal Advocates proposes that fixed charges collect between $27-$35 from all residential customers in a progressive manner spanning three income brackets. In terms of overall size, it is also comparable to other electrical existing fixed charges in California.[15] The fixed charge amounts are collected across three income

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[13] Application (A.) 20-10-011, Exh. PG&E Testimony on its Commercial Day Ahead Real-Time Pricing (DAHRTP) Pilot, p. 1-Attachment A-29.

[14] February 24, 2021 En Banc on Energy Rates and Costs, Presentation of David Rapson Slide 36, https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/Rates%20En%20Banc_PANEL%201_Updated.pdf.

[15] For example, SMUD residential fixed charge is $23.50 for all customers. https://www.smud.org/-/media/Documents/Rate-Information/Rates/1-R.ashx. Modesto Irrigation District's fixed charge is $30/month for all customers. https://www.mid.org/tariffs/rates/d_residential.pdf. City of Riverside features fixed charges ranging from $22.06/month to $72.06/month depending on the size of the home.

brackets for each IOU with a differential of 40% between the second and first (middle and lowest) income brackets and a differential of 15% between the third and second (highest and middle) income brackets. Across the entire ratepayer population for each IOU, these fixed charges will collect an amount that roughly covers the cost of grid access and non-bypassable charges.[16] Because these costs do not vary depending on a customer's usage, they should be recovered through the IGFC instead of volumetric rates. This method of cost recovery will provide more accurate price signals by reflecting true cost of service and provide rate relief for lower income customers.

1. Fixed charges should, at minimum, collect the cost of grid connection.

Cal Advocate's proposed fixed charge is designed to collect the cost of grid access. The cost of grid access is captured by marginal customer access costs (MCAC) which are typically modelled in a utility's General Rate Case Phase 2 (GRC 2) proceeding where marginal costs are developed to inform rate design and revenue allocation decisions.[17] MCAC represent the incremental cost of providing grid access to customers including ongoing costs associated with billing and customer services along with capital costs associated with physical connection equipment like meters, service drops and final line transformers (also known as hook up equipment). Since these costs have little correlation with kWh usage, they are more appropriately recovered in fixed charges.

Cal Advocates also proposes to scale MCAC by its equal percent marginal cost (EPMC) scaler. The EPMC scaler is used to bridge the numerical gap between marginal costs and the utilities' revenue requirement. It is derived by taking the revenue

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This includes combined a monthly flat charge of $12.06 and a "reliability charge" which accounts for residence size. https://riversideca.gov/utilities/sites/riversideca.gov.utilities/files/pdf/rates-electric/Electric%20Schedule%20D%20-%20Effective%2001-1-19.pdf

[16] D.16-01-044, p. 90.

[17] I.e. determine how much of a utility's revenue requirement is assigned to each customer class (residential, small commercial, large commercial, agriculture, etc.).

requirement divided by the marginal cost revenues (revenues that would result if the IOU were to charge its services at marginal costs only). The most recent PG&E 2020 GRC 2 ruled that any prior restrictions concerning the use of the EPMC scaler for determining a fixed charge is no longer binding.[18]

Inclusion of this EPMC scaler will also increase the reductions to volumetric rates from the IGFC and provide greater benefit to lower income customers under Cal Advocates' proposal. Table 2 shows the MCAC values used to construct Cal Advocates' IGFC. The EPMC scaler is used to determine the non-marginal distribution costs (i.e. EPMC-scaled MCAC) based on the share of total marginal cost revenues comprised by the MCAC revenues in the public Energy+Environmental Economics (E3) IGFC tool.[19] For example, if PG&E's MCAC revenues make up 32.5% of total marginal distribution revenues, then 32.5% of non-marginal distribution revenues would be included in the average residential fixed charge amount for PG&E. In the short-term for this IGFC proposal, Cal Advocates does not propose including all "non-marginal distribution costs"[20] for recovery in the IGFC even if such costs may not be related to usage. In the meantime, Cal Advocates proposes including only a portion of such costs in an IGFC so that fixed charge levels are not too high for initial implementation. The Commission could consider proposals for additional non-marginal distribution costs for inclusion in an IGFC in a future proceeding.

[18] D.21-11-019, Conclusion of Law (COL) 31, p. 164.

[19] Tool may be accessed via https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-costs/demand-response-dr/demand-flexibility-rulemaking.

[20] As provided in the Public E3 IGFC Tool.

Table 2: MCAC Estimates by IOU[21]

IOU	MCAC $/Customer/Month	EPMC-Scaled MCAC $/Customer/Month
PGE	$7.59	$17.53
SCE	$7.88	$15.88
SDGE	$11.26	$24.84

2. Fixed charges should collect non-bypassable charges

Non-bypassable Charges (NBC) should be included in the implemented IGFC. NBCs such as the public purpose program (PPP), the Wildfire Fund Charge, and the Wildfire Hardening Charge are products of policy initiatives.[22] These costs are not directly correlated to a customer's decision to use more or less electricity. The PPP charge includes, among other budget items, funds for electric rate discounts to low-income program participants,[23] and technological research related to CA's energy and climate goals.[24] The Wildfire Fund revenues pays liability claims submitted by victims of utility-caused wildfires.[25] Similarly, Wildfire Hardening costs include capital expenditures and other costs related to preventing and mitigating catastrophic wildfires.[26]

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[21] From the Public tool, values derived by taking the marginal customer access costs revenues for each IOU and dividing by the total billing months in compute a monthly value.

[22] As defined by the NEM 2.0 decision (D.16-01-044). A more expansive list was established for purposes of developing economic development rates.

[23] California Alternative Rates for Energy (CARE).

[24] Electric Program Investment Charge (EPIC).

[25] D.19-10-056, COL 31.

[26] https://www.pge.com/en_US/small-medium-business/your-account/your-bill/understand-your-bill/glossary/glossary.page "PG&E has been permitted to issue bonds that enable it to recover more quickly certain costs related to preventing and mitigating catastrophic wildfires, while reducing the total cost to its customers. Your bill for electric service includes a fixed recovery charge called the Wildfire Hardening Charge that has been approved by the CPUC to repay those bonds. The right to recover the Wildfire Hardening Charge has been transferred to a separate entity (called the Special Purpose Entity) that issued the bonds and does not belong to PG&E. PG&E is collecting the Wildfire Hardening Charge on behalf of the Special Purpose Entity."

These costs do not directly increase nor decrease because of changes to consumption levels. Thus, including such NBCs in volumetric rates would send the wrong price signal that a customer's consumption decision influences such costs. A customer who reduces consumption for example, would avoid paying such "non-bypassable" charges despite the fact that such costs have not actually decreased as a result of the customer's reduced usage. Consequently, because this amount of cost is avoided by the reduction in consumption and no longer collected from this customer, it would need to be collected from other customers in the form of rate increases the following year. Therefore, inclusion of such charges in the IGFC would ensure that a customer would not be able to avoid such charges by reducing usage and these costs would be truly non-bypassable.

The following table converts the current non-bypassable charges to a fixed dollar per customer per month charge. Cal Advocates understands that securitized costs like those related to Wildfire Hardening may not be collected in a fixed charge under securitization agreements.[27] To the extent these terms may not be amended, Cal Advocates recommends increasing the amount of distribution costs collected in a fixed charge by an amount equal to total securitized costs. This will produce the same overall IGFC that would result if such costs were collected in a fixed charge. Securitization does not change the fact that such costs are not incurred to meet changes in demand.

[27] Discussion with IOUs on March 13, 2023.

Table 3: Non-Bypassable Charges Converted to Monthly Fixed Charge ($/Customer-Month)

	PG&E	SCE	SDG&E
Public Purpose Program	$9.13	$9.67	$8.01
Wildfire Fund	$1.05	$1.91	$1.79
Wildfire Hardening	$1.15	$0.32	$0.00
Total	$11.33	$11.90	$9.80

Table 4 combines the MCAC and non-bypassable charges to form the basis for Cal Advocates' proposed fixed charges. The amounts listed in the "Total" row represent the average "cost-based" amounts to be collected from all customers.

Table 4: Proposed Average Fixed Charge ($/Customer-Month) by IOU

Component	PG&E	SCE	SDG&E
EPMC-Scaled MCAC	$17.53	$15.88	$24.84
Non Bypassable Charges	$11.33	$11.90	$9.80
Total	$28.86	$27.78	$34.64

3. Cal Advocates' proposal of three income brackets and flatter differentiation of fixed charges between income brackets will facilitate implementation of IGFCs and ease rate pressures for the most vulnerable customers.

a. The first income bracket of less than $50,000/customer/year sufficiently captures the most vulnerable Californians.

Cal Advocates proposes that the lowest income bracket (i.e., Bracket 1) captures customers with annual incomes up to $50,000, representing about a third of the population for each of the IOUs.[28] The $50,000 annual customer income threshold represents the average incomes of the most vulnerable census tracks as ranked by the CalEnviroScreen. The CalEnviroScreen ranks census tracks in different levels of vulnerability taking into consideration pollution exposure and its effects, as well as health

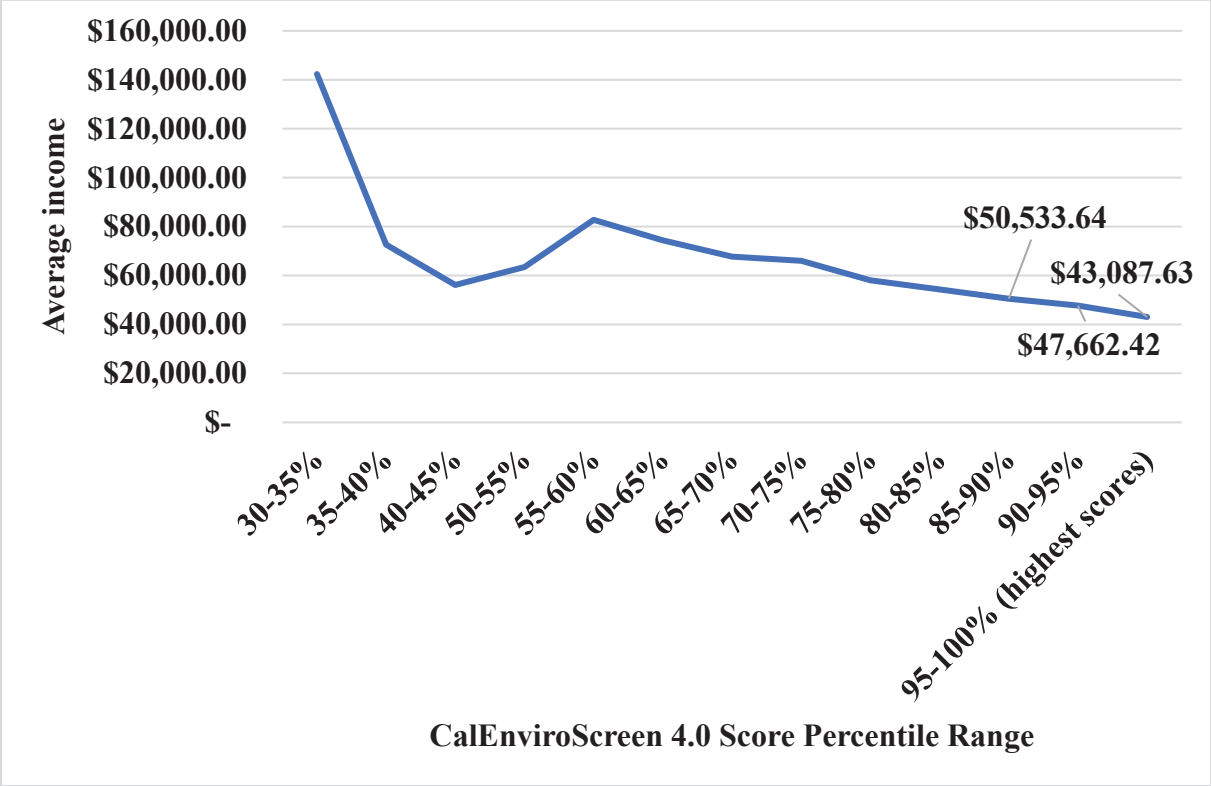
[28] Data taken from the IGFC tool.

and socioeconomic status (e.g., household income).[29] The test combines these elements to compute a composite score representing each community's vulnerability and exposure to environmental risks, with the most impacted and vulnerable tracts receiving higher scores. Because the data relies on household income data, there is a strong positive linear correlation between household income and cumulative risks to environmental stressors, as shown in Figure 2. Based on this data, the most vulnerable census tracks (i.e., "95%-100% highest scores" or the census tracks scoring in the top 5%) have average annual household incomes of $43,000.[30] Cal Advocates considers this 95%-100% score a starting point on which to build income brackets for assessing the IGFC. Since the IGFC tool does not include a function to set income thresholds at $43,000, Cal Advocates recommends a threshold of $50,000, which is the closest available income threshold included in the public tool, to facilitate easy comparison with other party proposals based on the IGFC tool. As shown in the following chart, a low-income bracket of less than $50,000 would include additional communities with CalEnviroScreen scores between 85% and 95%.

[29] CalEnviroScreen 4.0 Report, dated October 2021, p. 8. https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40

[30] CalEnviroScreen is a screening methodology that can be used to help identify California communities that are disproportionately burdened by multiple sources of pollution. https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40

Figure 2: **Average Income By CalEnviroScreen Census Track**



b. The determination of income thresholds for Brackets 2 and 3 considers consistency between IOUs and potential initial income verification challenges.

Fewer tiers and flatter differentials, like those in Cal Advocates' IGFC proposal, should make the IGFC proposal easier to implement and minimize the consequences of income verification errors during the earlier years of the IGFC roll out. These concerns are discussed in greater detail in Chapter 2. Cal Advocates anticipates that as the Commission and the IOUs gain more experience with implementing an IGFC, more tiers and differentiation could be introduced over time. Having more tiers and scaling in the early years could lead to revenue shortfalls if income verification is inaccurate. Further, steeper scaling between such tiers could increase the size of this undercollection if income verification errors are committed at a large enough scale.

Cal Advocates selected income thresholds for Brackets 2 and 3 (middle and highest-income brackets) with the aim of assigning the remaining customers (i.e., all customers not in Bracket 1) equally to Brackets 2 and 3 within the limitations of the IGFC tool. The second "middle-income" bracket (i.e., Bracket 2) captures customers with annual incomes between $50,000 and $100,000. This bracket captures between 26% and 30% of customers depending on the utility. Finally, Cal Advocates proposes a final third "high-income" bracket (i.e., Bracket 3) which captures customers with annual incomes above $100,000, comprising approximately 38%-43% of all customers depending on the utility. Perfectly assigning an equal number of customers to Brackets 2 and 3 was not possible given capabilities of the IGFC tool. Specifically, the IGFC tool income increments are not narrow and numerous enough to allow for more precise development of income brackets. Finally, Cal Advocates opted to implement the same thresholds for each IOU to achieve administrative consistency.

Cal Advocates established the income brackets so that the level of fixed charges in each would collect the equivalent amount of revenue to the amount that would be collected if all customers were charged the fixed charge amounts displayed in Table 4. Cal Advocates proposes a sizeable 40% differential between the Brackets 1 and 2 (lowest and middle-income brackets) to provide lower income customers more cost savings. Additionally, a flatter 15% differential between Brackets 2 and 3 (middle and highest-income brackets) would ease administration of the IGFC. Cal Advocates anticipates technical limitations on income verification processes, particularly in the early stages of IGFC roll out.[31] Given this, flatter differentiation between Brackets 2 and 3 will allow for a default of customers who do not qualify for Bracket 1 to initially default to Bracket 3 without the financial burdens that could result under higher differentiation. This process and other implementation details of the IGFC are discussed in greater detail in

[31] The inability to access FTB information in interim contributes to this challenge. Refer to chapter 2 for details on Cal Advocates' income verification method.

Chapter 2. The fixed charge levels resulting from these criteria are presented in Table 6 below.

Table 5: Illustrative Fixed Charge with Distribution of Customers by Income Tier

Distribution of Customers by Income Bracket				
Income Bracket	Annual Income	PG&E	SCE	SDG&E
1	< $50,000	32%	32%	28%
2	$50,000 - $100,000	26%	30%	29%
3	> $100,000	42%	38%	43%

Table 6: Resulting Income Graduated Fixed Charges

CARE	Income Bracket	Annual Income	PG&E	SCE	SDG&E
Non-CARE	1	< $50,000	$22.79	$21.82	$26.70
	2	$50,000 - $100,000	$31.91	$30.55	$36.42
	3	> $100,000	$36.69	$35.14	$41.88
CARE	1	< $50,000	$10.20	$10.83	$13.70
	2	$50,000 - $100,000	$14.27	$15.17	$19.18
	3	> $100,000	$16.41	$17.44	$22.06

In Table 6, the fixed charge amounts for both CARE and non-CARE customers in Bracket 1 (lowest-income) do not reflect Cal Advocates' proposal to use the CA climate credit (CCC) to offset such fixed charges, discussed further below. Thus, the amounts listed for such customers merely reflect the amounts that would apply absent such an offset. Under Cal Advocates' proposal to apply the CCC offset, such customers would still see the fixed charge amount on their bills accompanied by an additional "California Climate Credit" line item to reduce the fixed charge.

Finally, the size of the Cal Advocates' IGFCs for CARE customers are discounted to ensure compliance with Assembly Bill (AB) 205 which states that "the average effective discount determined by the Commission shall not reflect any charges for which CARE customers are exempted, discounts to fixed charges or other rates paid by non-

CARE customers." Therefore, Cal Advocates utilized the option in the IGFC model whereby the CARE exemptions are first removed prior to applying the CARE discount of 30-35%.

D. Bill impacts

Cal Advocates' proposal properly strikes a balance between conveying economically efficient price signals and providing low-income and high-usage customers with bill reductions, without exorbitantly high bill increases for other customers. The bill and rate impacts provided results from internal analysis (Tables 7-10) and from the IGFC tool outputs (Tables 11-12). Internal analysis uses data the IOU's have received from 3rd party vendors and provided to Cal Advocates. The data includes population distributions on 2021 usage levels and household incomes, from a sample of 5,000 customers per IOU. The IGFC tool also uses disparate IOU provided customer usage data and Haas (UC Berkeley) provided customer counts by income bracket, all of which is also from 2021.[32] While the data Cal Advocates used for internal analysis and the input data used in the IGFC tool result in different income distributions, the internal analysis allows for additional results. These results provide a sense of the distribution of bill impacts within income groups and by usage intervals. All bill impact results use the same IGFC inputs, which are calculated from the proposed cost allocation inputs,[33] and are then fed into the IGFC tool at default settings. Additionally, the IGFC tool's calculated Non-CARE and CARE IGFCs for customers making $50,000 or less are zeroed out to account for Cal Advocates' proposed CCC offset covering income-based fixed charges for all low-income customers[34] (Table 11). This step is already assumed in bill impact results from internal analysis (Tables 7-10).

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[32] See "IOU Data" and "Haas Data" in the E3 Fixed Charge Tool.

[33] See Section C, pp. 7-11, for Cal Advocates' proposed IGFC methodology. See Appendix A.1 for break out of proposed cost allocation inputs in the Tool.

[34] See Section E, p. 20, for explanation of proposal to use funds from the CCC to cover all IGFCs for low-income customers.

Tables 7-9 detail the bill impact distribution for the various income brackets between CARE and non-CARE customers for each of the IOUs. These tables show that Cal Advocates' proposal guarantees that all ratepayers placed in the first, and lowest, income bracket will see a decrease in monthly bills. Additionally, different subgroups (shown in the tables as CARE status and by income bracket with inputs from varying usage levels) see different bill decreases across each IOU. For example, in Table 7, 45% of non-CARE middle-income customers (i.e., placed in Bracket 2) for PG&E see average bill decreases from Cal Advocates' proposal, with 73% of those customers saving more than $10/month.[35] Around 44% of SCE's and 18% of SDG&E's same group of Bracket 2 customers also see bill reductions, with 52% and 50% of those customers, respectively, saving more than $10/month. Further, 27% - 52% of high-income customers (i.e., placed in Bracket 3) see bill reductions as well across the IOUs, with 30% - 78% of those customers saving more than $10/month.

Bill impact Table 10 shows the average bill impacts for each IOU by income group. Additionally, Table 10 further breaks down the bill impacts by usage levels, grouping Bracket 2 and Bracket 3 customers using less than 500 kWh per month on average as low usage and those using more than 500 kWh per month on average as high usage. The Table 10 column entitled "All Customers <$50" shows that all (CARE and non-CARE) Bracket 1 customers (<$50,000) have a California Climate Credit (CCC) covering their fixed charge resulting in a $17-$25, or approximately 16%, bill reduction across the IOUs. All low-income customers, regardless of usage, see similar bill reductions on a percentage basis. Low-income and high usage customers will see the largest bill reductions on a dollar basis due to having a larger counterfactual bill and by realizing more savings through the proposed reduced volumetric rate.

[35] Percentage of customers saving more than $10/month out of total seeing bill savings is calculated by dividing the percentage in the ">$10 decrease" row by the percentage in the "Subtotal (decrease)" row for Tables 6-8. In this example shown, that would be 33% of the non-CARE middle income customers divided by the 45% subtotal for non-CARE middle-income customers to reach approximately 73%.

Bill impact tables 11-12 display results from the E3 IGFC tool. Table 11 shows bill impact results similar to Table 10 across income and customer groups but instead of usage intervals, it provides results from the IGFC tool using its assumption of an average-usage customer.[36] Table 11 shows similar and significant average bill decreases for all Bracket 1 (lowest income) customers across each IOU, with $29-$37 and $15-$19 monthly bill reductions for non-CARE and CARE average-usage low-income customers, respectively. These significant bill reductions are realized by removing the non-CARE and CARE fixed charges to Bracket 1 customers from the Tool's bill impacts based on Cal Advocates proposal to use the CCC to offset the fixed charge for these customers. Additionally, Table 11 shows the relatively mild bill increases (about $1-$9/month) to higher-income customers resulting from the proposed IGFC.

Finally, Table 12 details the important average volumetric rate reduction gained from this proposal. New rates calculated with the proposed IGFC are 16%-22% lower than existing rates across all IOUs. Lastly, some universal bill impacts include: 1) average bill decreases for all low-income and all high-usage customers, and 2) average bill increases for all middle-to-high income customers with low usage accounts. On a dollar basis, Cal Advocates' bill impact tables show that these expected bill increases are reasonable. Thus, Cal Advocates' proposal equitably provides savings to the most vulnerable customers and improves the financial case for electrification compared to the status quo. Full results from the IGFC tool are available in Appendix A.

[36] The E3 Fixed Charge Tool calculates average monthly customer bill impacts for an average customer in each income interval aggregated from average consumption per baseline zone, net energy metering (NEM) status, and bill discount program (CARE or FERA) from 2021 data.

Table 7: Bill Impacts Resulting from Cal Advocates' Proposed Income Graduated Fixed Charge for PG&E Based on Internal Analysis Using IOU Population and Usage Data

	CARE			Non-CARE		
Fixed Charge Income Bracket ($000)	**<50**	**50-100**	**>100**	**<50**	**50-100**	**>100**
Share of Population	20%	15%	10%	12%	17%	27%
Bill Impact Distribution by Income Bracket						
>$10 decrease	68%	28%	22%	79%	33%	25%
$5 to $10 decrease	24%	12%	20%	15%	0%	8%
$0 to $5 decrease	8%	26%	10%	7%	12%	0%
Subtotal (decrease)	**100%**	**65%**	**52%**	**100%**	**45%**	**34%**
$0 to $5 increase	0%	24%	24%	0%	13%	11%
$5-$10 increase	0%	6%	19%	0%	13%	14%
>$10 increase	0%	4%	6%	0%	29%	40%
Subtotal (increase)	**0%**	**35%**	**48%**	**0%**	**55%**	**66%**

Table 8: Bill Impacts Resulting from Cal Advocates' Proposed Income Graduated Fixed Charge for SCE Based on Internal Analysis Using IOU Population and Usage Data

	CARE			Non-CARE		
Fixed Charge Income Bracket ($000)	**<50**	**50-100**	**>100**	**<50**	**50-100**	**>100**
Share of Population	18%	16%	3%	17%	30%	16%
Bill Impact Distribution by Income Bracket						
>$10 decrease	66%	16%	16%	90%	23%	35%
$5 to $10 decrease	27%	7%	17%	7%	9%	10%
$0 to $5 decrease	8%	20%	12%	2%	12%	0%
Subtotal (decrease)	**100%**	**43%**	**45%**	**100%**	**44%**	**45%**
$0 to $5 increase	0%	15%	29%	0%	15%	15%
$5-$10 increase	0%	30%	14%	0%	16%	14%
>$10 increase	0%	12%	12%	0%	25%	26%
Subtotal (increase)	**0%**	**57%**	**55%**	**0%**	**56%**	**55%**

Table 9: Bill Impacts Resulting from Cal Advocates' Proposed Income Graduated Fixed Charge for SDG&E Based on Internal Analysis Using IOU Population and Usage Data

	CARE			Non-CARE		
Fixed Charge Income Bracket ($000)	**<50**	**50-100**	**>100**	**<50**	**50-100**	**>100**
Share of Population	33%	12%	5%	12%	17%	22%
Bill Impact Distribution by Income Bracket						
>$10 decrease	49%	8%	8%	99%	9%	23%
$5 to $10 decrease	49%	5%	6%	1%	9%	0%
$0 to $5 decrease	3%	10%	13%	0%	0%	13%
Subtotal (decrease)	**100%**	**23%**	**27%**	**100%**	**18%**	**36%**
$0 to $5 increase	0%	38%	20%	0%	14%	0%
$5-$10 increase	0%	24%	23%	0%	24%	18%
>$10 increase	0%	16%	22%	0%	44%	46%
Subtotal (increase)	**0%**	**77%**	**65%**	**0%**	**82%**	**64%**

Table 10: Bill Impacts ($) for Each IOU by Income Group ($000) and Usage Levels[37] Based on Internal Analysis Using IOU Population and Usage Data

IOUs	**All Customers <$50**	**CARE $50-100 Low Usage**	**CARE >$50 High Usage**	**Non-CARE $50-100 Low Usage**	**Non-CARE >$100 Low Usage**	**Non-CARE >$50 High Usage**
PG&E	-22	5	-10	13	17	-21
SCE	-25	6	-9	12	15	-16
SDG&E	-17	7	-11	14	16	-20

[37] Bracket 2 and Bracket 3 customers using less than 500 kWh per month on average are categorized as low usage and those using more than 500 kWh per month on average as high usage.

Table 11: Average Monthly Customer Bill Impact for each IOU by Income Group from the E3 IGFC Tool[38]

Bill Impact ($/mo)	PG&E		SCE		SDG&E	
Income Bracket Upper Bound (1000$)	Non-CARE	CARE	Non-CARE	CARE	Non-CARE	CARE
$0 - $25,000	-29	-16	-32	-16	-37	-19
$25,000 - $50,000	-33	-17	-33	-15	-37	-19
$50,000 - $75,000	-1	-2	-3	-0	-0	+1
$75,000 - $100,000	-1	-2	-2	-0	-0	+1
$100,00 - $150,000	+5	+1	+3	+2	+6	+4
$150,000 - $200,000	+6	+1	+4	+3	+7	+7
$200,000+	+8	+2	+5	+3	+9	N/A

Table 12: Average Volumetric Rate Reduction (%) Comparing Existing and New Average non-TOU Rates (Non-CARE) [$/kWh] from the E3 IGFC Tool

IOUs (Rate Schedule)	Existing Average Rate	New Average Rate	Rate Reduction (%)
PG&E (E-1)	0.36	0.28	22%
SCE (D)	0.35	0.29	17%
SDG&E (DR)	0.48	0.40	16%

[38] Bill impacts for Bracket 1 customers making less than $50,000 are modified from the IGFC tool's results by removing the Non-CARE and CARE fixed charges to reflect offsetting of such charges with the CCC.

E. Reallocation of the California Climate Credit to offset low-income customers' fixed charge will provide rate relief for the most vulnerable customers.

To mitigate the impact of IGFCs on low-income customers, Cal Advocates proposes to offset to the greatest extent possible the fixed charge for low-income customers using the CCC. This will result in a more progressive allocation of the climate credit such that lower income customers will receive more of it per year than their higher-income counterparts. The climate credit is typically distributed to customers twice a year and represents the revenues the IOUs gain from GHG auctions.[39] Cal Advocates' proposal reallocates a larger share of it to low-income customers who disproportionately suffer from the effects of climate change and environmental degradation more than their higher-income counterparts.

Table 13 below shows that there is enough required climate credit funding to fully offset Cal Advocates' proposed fixed charges for Bracket 1 non-CARE and CARE customers for each IOU. To the extent that required revenues are higher than available climate credit, the full amount of climate credit would be exhausted to offset as much of the Bracket 1 fixed charge as possible.

[39] More information on the California Climate Credit can be found at https://www.cpuc.ca.gov/climatecredit/.

Table 13: Climate Credit Funding Availability

	PGE	SCE	SDGE
2022 Climate Credit	$79	$118	$128
Total Climate Credit 2022	$392,476,052	$533,294,972	$173,884,208
Climate Credit Required for Bracket 1 Non-CARE	$136,554,835	$165,703,007	$30,387,058
Climate Credit Required for Bracket 1 CARE	$134,397,987	$105,761,469	$46,775,584
Credit Climate (Shortfall)	$121,523,231	$261,830,496	$96,721,567

At some point the quantity of GHG allowances will decrease as the grid becomes more decarbonized. Discussion on how to reduce this offset or how to phase it out over time can be considered in future proceedings.

F. Any fixed charge proposal adopted in this proceeding must be applied to all residential rates.

Cal Advocates recommends that any IGFC adopted in this proceeding be applied to all default and optional residential rate schedules. Synchronization of fixed charges across all rate schedules is required to prevent fixed charge arbitrage. This will preclude wealthier customers from avoiding higher fixed charges by opting into rates without IGFCs. Over time, if IGFCs are not applied to optional rates, it could erode the income graduation attribute of the schedules that have IGFCs as there would be fewer customers left to pay the higher fixed charge amounts. This undercollection would inevitably lead to escalating fixed charges on lower income customers who have fewer financial incentives to opt-in to rates without income graduation.

G. Fixed charge over/undercollections should be allocated volumetrically.

Cal Advocates recommends that any fixed charge over/undercollections be allocated to volumetric rates, at least during the initial roll out of IGFCs. IGFCs will be challenging enough to implement given the substantial undertaking of income verification as discussed in Chapter 2. Having unexpected fluctuations in IGFC levels may cause customer confusion. Thus, by assigning revenue over and undercollections to

the volumetric rates, the expected fixed charge levels would be retained during the initial roll out of IGFCs. Once the IGFCs are rolled out en masse, parties may propose changes to annual rate adjustment policy and to costs recovered in the IGFCs in future GRCs.

APPENDIX A.1
Fixed Charge Tool Inputs and Outputs

Fixed Charge Tool Outputs - Cover Sheet

Purpose:
This section of the tool is formatted to be easily printed or saved as a PDF and filed as a part of testimony.

Instructions:
This worksheet automatically draws values from the rest of the tool.
This worksheet displays both rate design details and bill impacts for all three IOUs.
Please run the macro (button above) to re-generate model results using current inputs to ensure that the rate design details and bill impacts are aligned.
This macro can also be run from the Rate Design Dashboard worksheet. Please see the Rate Design Dashboard worksheet for further details.

How to Save as PDF:
Click "File", then "Print", then select "Microsoft Print to PDF". Click the large "Print" button to choose a file location and name.

How to Print:
Click "File", then "Print", then select your choice of printer.

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Energy+Environmental Economics

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Model Release Date: March 23, 2023

Revenue Requirement Allocations

PG&E

Cost Category	Cost Component (See "Glossary" tab for descriptions)	Residential Revenue Requirement	CARE-Exempt	Bundled Generation	Percent to Include in Customer Charge	Percent to Include in Demand Charge	Percent to Include in Volumetric Charge
		$	T/F	T/F	%	%	%
Generation	PCIA	$ 183,408,243	FALSE	FALSE	0%	0%	100%
Generation	Marginal Energy Cost	$ 538,263,216	FALSE	TRUE	0%	0%	100%
Generation	Marginal Generation Capacity Cost	$ 218,481,550	FALSE	TRUE	0%	0%	100%
Generation	Non-Marginal Generation	$ 865,996,766	FALSE	TRUE	0%	0%	100%
Distribution	Marginal Customer Access	$ 454,792,861	FALSE	FALSE	100%	0%	0%
Distribution	Marginal Distribution Capacity Cost - Primary	$ 439,382,040	FALSE	FALSE	0%	0%	100%
Distribution	Marginal Distribution Capacity Cost - New Business	$ 476,043,853	FALSE	FALSE	0%	0%	100%
Distribution	Marginal Distribution Capacity Cost - Secondary	$ 29,945,145	FALSE	FALSE	0%	0%	100%
Distribution	Non-Marginal Distribution	$ 1,833,578,625	FALSE	FALSE	32%	0%	68%
Transmission	Transmission	$ 1,447,654,612	FALSE	FALSE	0%	0%	100%
Line Items	Public Purpose Programs - SGIP	$ 58,854,252	TRUE	FALSE	100%	0%	0%
Line Items	Wildfire Fund Charge	$ 63,120,120	TRUE	FALSE	100%	0%	0%
Line Items	Wildfire Hardening Charge	$ 68,921,008	TRUE	FALSE	100%	0%	0%
Line Items	Recovery Bond Charge	$ 215,256,658	TRUE	FALSE	0%	0%	100%
Line Items	Recovery Bond Credit	$ (215,256,658)	TRUE	FALSE	0%	0%	100%
Line Items	Public Purpose Programs - Not CARE Exempt	$ 230,732,710	FALSE	FALSE	100%	0%	0%
Line Items	Nuclear Decommissioning	$ 37,938,712	FALSE	FALSE	0%	0%	100%
Line Items	New System Generation Charge	$ 96,956,158	FALSE	FALSE	0%	0%	100%
Line Items	Competition Transition Charge	$ 8,518,646	FALSE	FALSE	0%	0%	100%
Line Items	Energy Cost Recovery Account	$ (19,846,861)	FALSE	FALSE	0%	0%	100%
Line Items	Residential CARE Contribution		TRUE	FALSE	100%	0%	0%
	See "New Rates" Section (pg. 7 - 9)						
Line Items	2023 Total Estimated CARE Discount	$ (891,914,356)					
	Note: included for comparison to model-calculated values						
	Delivery RR - Before CARE Bill Discount	**$ 7,032,741,656**					

SCE

Cost Category	Cost Component (See "Glossary" tab for descriptions)	Residential Revenue Requirement	CARE-Exempt	Bundled Generation	Percent to Include in Customer Charge	Percent to Include in Demand Charge	Percent to Include in Volumetric Charge
		$	T/F	T/F	%	%	%
Generation	PCIA	$ 18,066,203	FALSE	FALSE	0%	0%	100%
Generation	Marginal Energy Cost	$ 606,708,166	FALSE	TRUE	0%	0%	100%
Generation	Marginal Generation Capacity Cost	$ 584,831,167	FALSE	TRUE	0%	0%	100%
Generation	Non-Marginal Generation	$ 1,378,829,544	FALSE	TRUE	0%	0%	100%
Distribution	Marginal - Customer	$ 427,567,610	FALSE	FALSE	100%	0%	0%
Distribution	Marginal - Grid	$ 888,543,196	FALSE	FALSE	0%	0%	100%
Distribution	Marginal - Peak	$ 503,372,326	FALSE	FALSE	0%	0%	100%
Distribution	Non-Marginal Distribution	$ 1,845,967,040	FALSE	FALSE	23%	0%	77%
Transmission	Base Transmission	$ 599,320,433	FALSE	FALSE	0%	0%	100%
Transmission	Transmission Balancing Accounts	$ (1,839,212)	FALSE	FALSE	0%	0%	100%
Line Items	Public Purpose Programs - SGIP	$ 23,619,309	TRUE	FALSE	100%	0%	0%
Line Items	Wildfire Fund Charge	$ 103,390,404	TRUE	FALSE	100%	0%	0%
Line Items	Wildfire Hardening Charge	$ 17,556,861	TRUE	FALSE	100%	0%	0%
Line Items	Recovery Bond Charge	$ -	TRUE	FALSE	0%	0%	100%
Line Items	Recovery Bond Credit	$ (40,575,857)	TRUE	FALSE	0%	0%	100%
Line Items	Public Purpose Programs - Not CARE Exempt	$ 313,291,510	FALSE	FALSE	100%	0%	0%
Line Items	Nuclear Decommissioning	$ 2,364,701	FALSE	FALSE	0%	0%	100%
Line Items	New System Generation Charge	$ 148,976,188	FALSE	FALSE	0%	0%	100%
Line Items	Residential CARE Contribution		TRUE	FALSE	100%	0%	0%
	See "New Rates" Section (pg. 7 - 9)						
Line Items	2023 Total Estimated CARE Discount	$ (660,034,291)					
	Note: included for comparison to model-calculated values						
	Delivery RR - Before CARE Bill Discount	**$ 6,995,933,045**					

SDG&E

Cost Category	Cost Component (See "Glossary" tab for descriptions)	Residential Revenue Requirement	CARE-Exempt	Bundled Generation	Percent to Include in Customer Charge	Percent to Include in Demand Charge	Percent to Include in Volumetric Charge
		$	T/F	T/F	%	%	%
Generation	PCIA	$ 180,005,950	FALSE	FALSE	0%	0%	100%
Generation	Marginal Energy Cost	$ 100,915,850	FALSE	TRUE	0%	0%	100%
Generation	Marginal Generation Capacity Cost	$ 57,547,258	FALSE	TRUE	0%	0%	100%
Generation	Non-Marginal Generation	$ 163,094,812	FALSE	TRUE	0%	0%	100%
Distribution	Marginal - Customer	$ 183,005,936	FALSE	FALSE	100%	0%	0%
Distribution	Marginal Demand - Non-Coincident Peak	$ 198,205,378	FALSE	FALSE	0%	0%	100%
Distribution	Marginal Demand - Coincident Peak	$ 26,974,391	FALSE	FALSE	0%	0%	100%
Distribution	Non-Marginal Distribution	$ 490,650,411	FALSE	FALSE	45%	0%	55%
Transmission	Base Transmission	$ 537,401,722	FALSE	FALSE	0%	0%	100%
Transmission	Transmission Balancing Accounts	$ (111,012,377)	FALSE	FALSE	0%	0%	100%
Line Items	Public Purpose Programs - SGIP	$ 8,781,000	TRUE	FALSE	100%	0%	0%
Line Items	Wildfire Fund Charge	$ 29,143,070	TRUE	FALSE	100%	0%	0%
Line Items	Public Purpose Programs - Not CARE Exempt	$ 61,433,000	FALSE	FALSE	100%	0%	0%
Line Items	Nuclear Decommissioning	$ 526,530	FALSE	FALSE	0%	0%	100%
Line Items	Local Generation Charge/New System Generation Cha	$ 81,949,029	FALSE	FALSE	0%	0%	100%
Line Items	Competition Transition Charge	$ 11,052,908	FALSE	FALSE	0%	0%	100%
Line Items	Total Rate Adjustment Component - Baseline adjustme	$ 1,000,000	FALSE	FALSE	0%	0%	100%
Line Items	Reliability Services	$ 177,809	FALSE	FALSE	0%	0%	100%
Line Items	Residential CARE Contribution		TRUE	FALSE	100%	0%	0%
	See "New Rates" Section (pg. 7 - 9)						
Line Items	2023 Total Estimated CARE Discount	$ (178,549,476)					
	Note: included for comparison to model-calculated values						
	Delivery RR - Before CARE Bill Discount	**$ 2,020,852,676**					

Rate Design Inputs

		PG&E	SCE	SDG&E
Customer charge option		Uniform Weights	Uniform Weights	Uniform Weights
Customer Charge Weighting is used when Customer Charge Option is set to "Uniform Weights"				
Customer Charge Weighting	[0,25]	$ 1.00	$ 1.00	$ 1.00
	[25,50]	$ 1.00	$ 1.00	$ 1.00
	[50,75]	$ 1.40	$ 1.40	$ 1.40
	[75,100]	$ 1.40	$ 1.40	$ 1.40
	[100,150]	$ 1.61	$ 1.61	$ 1.61
	[150,200]	$ 1.61	$ 1.61	$ 1.61
	200+	$ 1.61	$ 1.61	$ 1.61
Customer Charge Weighting is used when Customer Charge Option is set to "User-Defined CARE Charges"				
CARE Customer Charge ($/mo)	[0,25]	$ 5	$ 5	$ 5
	[25,50]	$ 5	$ 5	$ 5
	[50,75]	$ 5	$ 5	$ 5
	[75,100]	$ 5	$ 5	$ 5
	[100,150]	$ 5	$ 5	$ 5
	[150,200]	$ 5	$ 5	$ 5
	200+	$ 5	$ 5	$ 5
Non-CARE Customer Charge Weighting is used when Customer Charge Option is set to "User-Defined CARE Charges"				
Non-CARE Customer Charge Weighting	[0,25]	$ 1	$ 1	$ 1
	[25,50]	$ 1	$ 1	$ 1
	[50,75]	$ 1	$ 1	$ 1
	[75,100]	$ 2	$ 2	$ 2
	[100,150]	$ 2	$ 2	$ 2
	[150,200]	$ 2	$ 2	$ 2
	200+	$ 2	$ 2	$ 2
Average CARE Program Discount is used when Customer Charge Option is set to "User-Defined CARE Charges"				
Average CARE Program Discount	($/month)	$ 5	$ 5	$ 5
Demand Charge Options	Billing determinant to use	Billing Month	Billing Month	Billing Month
	No. of highest demand months to include	$ 3	$ 3	$ 3
Adjustments to distribution rate		Equal Cents	Equal Cents	Equal Cents
Include baseline credit from existing rate	(if applicable)	TRUE	TRUE	TRUE

Revenue Requirement Components

PG&E

Delivery - excluding CARE-exempt		
Rev Req - Customer	Rev Req - Demand	Rev Req - Volumetric
$ 1,281,097,610	$ -	$ 3,938,007,135

Delivery - CARE-exempt		
Rev Req - Customer	Rev Req - Demand	Rev Req - Volumetric
$ 450,344,831	$ -	$ -

Delivery - excluding CARE-exempt	
Volumetric Rev Req Breakdown	
Distribution	$ 2,183,377,624
NBCs	$ 46,457,358
Non-Dist	$ 1,708,172,152

Delivery - CARE-exempt	
Volumetric Rev Req Breakdown	
Distribution	$ -
NBCs	$ -
Non-Dist	$ -

SDG&E

Delivery - excluding CARE-exempt		
Rev Req - Customer	Rev Req - Demand	Rev Req - Volumetric
$ 464,417,090	$ -	$ 1,196,953,596

Delivery - CARE-exempt		
Rev Req - Customer	Rev Req - Demand	Rev Req - Volumetric
$ 37,924,070	$ -	$ -

Delivery - excluding CARE-exempt	
Volumetric Rev Req Breakdown	
Distribution	$ 495,852,025
NBCs	$ 11,579,438
Non-Dist	$ 689,522,133

Delivery - CARE-exempt	
Volumetric Rev Req Breakdown	
Distribution	$ -
NBCs	$ -
Non-Dist	$ -

SCE

Delivery - excluding CARE-exempt		
Rev Req - Customer	Rev Req - Demand	Rev Req - Volumetric
$ 1,174,650,289	$ -	$ 3,570,979,705

Delivery - CARE-exempt		
Rev Req - Customer	Rev Req - Demand	Rev Req - Volumetric
$ 144,566,574	$ -	$ (40,575,857)

Delivery - excluding CARE-exempt	
Volumetric Rev Req Breakdown	
Distribution	$ 2,804,091,392
NBCs	$ 2,364,701
Non-Dist	$ 764,523,612

Delivery - CARE-exempt	
Volumetric Rev Req Breakdown	
Distribution	$ -
NBCs	$ -
Non-Dist	$ (40,575,857)

New Rates

	PG&E	PG&E	PG&E	PG&E	PG&E	PG&E
	E-1	E-1	E-TOU-C	E-TOU-C	EV2-A	EV2-A
	Non-CARE	CARE	Non-CARE	CARE	Non-CARE	CARE
Income Bracket (1000$):						
[0,25]	$ 22.79	$ 10.20	$ 22.75	$ 10.20	$ 22.73	$ 10.20
[25,50]	$ 22.79	$ 10.20	$ 22.75	$ 10.20	$ 22.73	$ 10.20
[50,75]	$ 31.91	$ 14.27	$ 31.86	$ 14.27	$ 31.83	$ 14.27
[75,100]	$ 31.91	$ 14.27	$ 31.86	$ 14.27	$ 31.83	$ 14.27
[100,150]	$ 36.69	$ 16.41	$ 36.63	$ 16.41	$ 36.60	$ 16.41
[150,200]	$ 36.69	$ 16.41	$ 36.63	$ 16.41	$ 36.60	$ 16.41
200+	$ 36.69	$ 16.41	$ 36.63	$ 16.41	$ 36.60	$ 16.41
Tier Credits/Charges ($/kWh)						
Baseline Credit	$ 0.063	$ 0.041	$ 0.066	$ 0.043	$ -	$ -
High Usage Charge	$ -	$ -	$ -	$ -	$ -	$ -
Demand Charges ($/kW)						
Billing Determinant	Billing Month	Billing Month	Billing Month	Billing Month	Billing Month	Billing Month
No. of Highest Demand Months	3	3	3	3	3	3
Demand Charge ($/kW-mo)	$ -	$ -	$ -	$ -	$ -	$ -
Energy Charges ($/kWh)						
Summer - Peak	$ 0.319	$ 0.207	$ 0.413	$ 0.269	$ 0.486	$ 0.316
Summer - Part-Peak	$ 0.319	$ 0.207	$ -	$ -	$ 0.375	$ 0.244
Summer - Off-Peak	$ 0.319	$ 0.207	$ 0.350	$ 0.227	$ 0.173	$ 0.113
Winter - Peak	$ 0.319	$ 0.207	$ 0.316	$ 0.206	$ 0.359	$ 0.233
Winter - Part-Peak	$ 0.319	$ 0.207	$ -	$ -	$ 0.342	$ 0.222
Winter - Off-Peak	$ 0.319	$ 0.207	$ 0.299	$ 0.194	$ 0.173	$ 0.113
Total CARE Program Funding - Modeled						
Customer		$ (100,396,401)		$ (100,396,401)		$ (100,396,401)
Demand		$ -		$ -		$ -
Volumetric - Delivery		$ (424,645,758)		$ (424,645,758)		$ (424,645,758)
Volumetric - Generation		$ (431,894,113)		$ (423,536,307)		$ (418,748,960)
Total CARE Credits		$ (956,936,272)		$ (948,578,466)		$ (943,791,119)
Residential CARE Funding		$ 259,449,452		$ 257,183,441		$ 255,885,471
Non-Res CARE Funding		$ 697,486,820		$ 691,395,026		$ 687,905,648
Total IOU forecast CARE program size						
2023 Forecast (Existing Rates)		$ (891,914,356)		$ (891,914,356)		$ (891,914,356)
Modeled Credits as % of Forecast		7%		6%		6%

PG&E	PG&E	SCE	SCE	SCE	SCE	SCE	SCE
E-ELEC	E-ELEC	D	D	TOU-D-4-9	TOU-D-4-9	TOU-D-PRIME	TOU-D-PRIME
Non-CARE	CARE	Non-CARE	CARE	Non-CARE	CARE	Non-CARE	CARE
$ 22.67	$ 10.20	$ 21.82	$ 10.83	$ 21.86	$ 10.83	$ 21.89	$ 10.83
$ 22.67	$ 10.20	$ 21.82	$ 10.83	$ 21.86	$ 10.83	$ 21.89	$ 10.83
$ 31.74	$ 14.27	$ 30.55	$ 15.17	$ 30.60	$ 15.17	$ 30.65	$ 15.17
$ 31.74	$ 14.27	$ 30.55	$ 15.17	$ 30.60	$ 15.17	$ 30.65	$ 15.17
$ 36.51	$ 16.41	$ 35.14	$ 17.44	$ 35.20	$ 17.44	$ 35.25	$ 17.44
$ 36.51	$ 16.41	$ 35.14	$ 17.44	$ 35.20	$ 17.44	$ 35.25	$ 17.44
$ 36.51	$ 16.41	$ 35.14	$ 17.44	$ 35.20	$ 17.44	$ 35.25	$ 17.44
$ -	$ -	$ 0.074	$ 0.050	$ 0.080	$ 0.054	$ -	$ -
$ -	$ -	$ 0.083	$ 0.056	$ -	$ -	$ -	$ -
Billing Month	Billing Month	Billing Month	Billing Month	Billing Month	Billing Month	Billing Month	Billing Month
3	3	3	3	3	3	3	3
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ 0.485	$ 0.315	$ 0.332	$ 0.226	$ 0.500	$ 0.339	$ 0.588	$ 0.398
$ 0.323	$ 0.210	$ 0.332	$ 0.226	$ 0.391	$ 0.266	$ 0.330	$ 0.224
$ 0.266	$ 0.173	$ 0.332	$ 0.226	$ 0.285	$ 0.194	$ 0.207	$ 0.141
$ 0.253	$ 0.165	$ 0.332	$ 0.226	$ 0.432	$ 0.293	$ 0.530	$ 0.359
$ 0.231	$ 0.150	$ 0.332	$ 0.226	$ 0.309	$ 0.210	$ 0.187	$ 0.127
$ 0.217	$ 0.141	$ 0.332	$ 0.226	$ 0.274	$ 0.186	$ 0.187	$ 0.127
	$ (100,396,401)		$ (83,516,155)		$ (83,516,155)		$ (83,516,155)
	$ -		$ -		$ -		$ -
	$ (424,645,758)		$ (298,897,740)		$ (298,897,740)		$ (298,897,740)
	$ (405,034,979)		$ (339,559,859)		$ (347,681,851)		$ (354,957,511)
	$ (930,077,138)		$ (721,973,754)		$ (730,095,746)		$ (737,371,406)
	$ 252,167,266		$ 185,545,184		$ 187,632,512		$ 189,502,336
	$ 677,909,872		$ 536,428,571		$ 542,463,233		$ 547,869,070
	$ (891,914,356)		$ (660,034,291)		$ (660,034,291)		$ (660,034,291)
	4%		9%		11%		12%

SDG&E	SDG&E	SDG&E	SDG&E	SDG&E	SDG&E	SDG&E	SDG&E
DR	DR	TOU-DR1	TOU-DR1	EV-TOU-5	EV-TOU-5	TOU-ELEC	TOU-ELEC
Non-CARE	CARE	Non-CARE	CARE	Non-CARE	CARE	Non-CARE	CARE
$ 26.49	$ 13.70	$ 26.43	$ 13.70	$ 26.44	$ 13.70	$ 26.39	$ 13.70
$ 26.49	$ 13.70	$ 26.43	$ 13.70	$ 26.44	$ 13.70	$ 26.39	$ 13.70
$ 37.09	$ 19.18	$ 37.00	$ 19.18	$ 37.02	$ 19.18	$ 36.94	$ 19.18
$ 37.09	$ 19.18	$ 37.00	$ 19.18	$ 37.02	$ 19.18	$ 36.94	$ 19.18
$ 42.66	$ 22.06	$ 42.55	$ 22.06	$ 42.57	$ 22.06	$ 42.48	$ 22.06
$ 42.66	$ 22.06	$ 42.55	$ 22.06	$ 42.57	$ 22.06	$ 42.48	$ 22.06
$ 42.66	$ 22.06	$ 42.55	$ 22.06	$ 42.57	$ 22.06	$ 42.48	$ 22.06
$ 0.099	$ 0.065	$ 0.097	$ 0.064	$ -	$ -	$ -	$ -
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Billing Month	Billing Month	Billing Month	Billing Month	Billing Month	Billing Month	Billing Month	Billing Month
3	3	3	3	3	3	3	3
$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
$ 0.481	$ 0.318	$ 0.742	$ 0.490	$ 0.782	$ 0.516	$ 0.717	$ 0.473
$ 0.481	$ 0.318	$ 0.428	$ 0.283	$ 0.447	$ 0.295	$ 0.348	$ 0.230
$ 0.481	$ 0.318	$ 0.264	$ 0.174	$ 0.193	$ 0.127	$ 0.299	$ 0.198
$ 0.481	$ 0.318	$ 0.545	$ 0.360	$ 0.478	$ 0.315	$ 0.476	$ 0.314
$ 0.481	$ 0.318	$ 0.461	$ 0.304	$ 0.414	$ 0.273	$ 0.335	$ 0.221
$ 0.481	$ 0.318	$ 0.436	$ 0.288	$ 0.185	$ 0.122	$ 0.291	$ 0.192
	$ (30,285,306)		$ (30,285,306)		$ (30,285,306)		$ (30,285,306)
	$ -		$ -		$ -		$ -
	$ (98,543,414)		$ (98,543,414)		$ (98,543,414)		$ (98,543,414)
	$ (100,157,376)		$ (96,179,165)		$ (96,851,978)		$ (93,461,884)
	$ (228,986,096)		$ (225,007,885)		$ (225,680,698)		$ (222,290,604)
	$ 65,757,594		$ 64,615,178		$ 64,808,388		$ 63,834,860
	$ 163,228,502		$ 160,392,708		$ 160,872,310		$ 158,455,744
	$ (178,549,476)		$ (178,549,476)		$ (178,549,476)		$ (178,549,476)
	28%		26%		26%		24%

Bill Impacts

PG&E

			Customer Average Bill Impact ($/mo)										
Income Bracket	Bill Discount		PG&E	P	Q	R	S	T	V	W	X	Y	Z
$0 - $25,000	None	1	$ (6.31)	$ (20.85)	$ (17.47)	$ (20.63)	$ (17.65)	$ 0.15	$ (11.17)	$ (18.31)	$ (8.69)	$ (9.37)	$ 4.12
$25,000 - $50,000	None	2	$ (9.96)	$ (20.57)	$ (17.45)	$ (20.73)	$ (17.47)	$ 0.22	$ (11.29)	$ (18.57)	$ (8.70)	$ (9.37)	$ 4.14
$50,000 - $75,000	None	3	$ (1.27)	$ (11.21)	$ (8.23)	$ (10.76)	$ (7.75)	$ 9.40	$ (2.18)	$ (8.36)	$ 0.53	$ (0.27)	$ 13.21
$75,000 - $100,000	None	4	$ (0.55)	$ (10.75)	$ (8.26)	$ (9.63)	$ (6.84)	$ 9.46	$ (2.07)	$ (6.77)	$ 0.63	$ (0.26)	$ 13.22
$100,00 - $150,000	None	5	$ 5.15	$ (5.45)	$ (3.18)	$ (3.52)	$ (1.06)	$ 14.30	$ 2.81	$ (0.10)	$ 5.59	$ 4.53	$ 18.02
$150,000 - $200,000	None	6	$ 6.32	$ (4.41)	$ (2.95)	$ (2.01)	$ 0.22	$ 14.35	$ 2.96	$ 2.03	$ 5.83	$ 4.54	$ 17.96
$200,000+	None	7	$ 7.92	$ (3.09)	$ (2.20)	$ 0.30	$ 2.06	$ 14.46	$ 2.99	$ 4.51	$ 6.53	$ 4.57	$ 17.96
$0 - $25,000	CARE	1	$ (6.06)	$ (12.99)	$ (9.41)	$ (10.22)	$ (8.55)	$ (0.32)	$ (3.56)	$ (9.69)	$ (3.58)	$ (10.55)	$ (5.65)
$25,000 - $50,000	CARE	2	$ (6.40)	$ (12.92)	$ (9.40)	$ (9.89)	$ (8.33)	$ (0.28)	$ (3.58)	$ (9.20)	$ (3.50)	$ (10.54)	$ (5.77)
$50,000 - $75,000	CARE	3	$ (1.82)	$ (8.70)	$ (5.02)	$ (5.47)	$ (4.07)	$ 3.82	$ 0.60	$ (4.57)	$ 0.61	$ (6.45)	$ (1.75)
$75,000 - $100,000	CARE	4	$ (1.63)	$ (8.68)	$ (4.44)	$ (5.34)	$ (3.83)	$ 3.85	$ 0.69	$ (4.05)	$ 0.61	$ (6.45)	$ (1.78)
$100,00 - $150,000	CARE	5	$ 0.80	$ (6.45)	$ (3.08)	$ (2.79)	$ (1.46)	$ 6.00	$ 2.68	$ (1.60)	$ 2.84	$ (4.30)	$ 0.31
$150,000 - $200,000	CARE	6	$ 1.31	$ (6.28)	$ (3.32)	$ (2.53)	$ (1.25)	$ 5.99	$ 2.67	$ (0.84)	$ 2.86	$ (4.30)	$ 0.51
$200,000+	CARE	7	$ 2.07	$ (5.75)	$ (3.32)	$ (2.04)	$ (0.90)	$ 6.00	$ 2.84	$ (0.53)	$ 2.95	$ (4.30)	$ (2.85)
$0 - $25,000	FERA	1	$ (10.64)	$ (24.37)	$ (17.61)	$ (18.54)	$ (15.80)	$ (0.87)	$ (6.81)	$ (17.49)	$ (6.79)	$ (20.07)	$ (10.76)
$25,000 - $50,000	FERA	2	$ (11.01)	$ (24.24)	$ (17.59)	$ (17.57)	$ (15.23)	$ (0.79)	$ (6.83)	$ (16.17)	$ (6.63)	$ (20.07)	$ (11.45)
$50,000 - $75,000	FERA	3	$ (2.72)	$ (16.55)	$ (9.43)	$ (9.19)	$ (7.35)	$ 6.72	$ 0.81	$ (7.33)	$ 0.91	$ (12.59)	$ (4.26)
$75,000 - $100,000	FERA	4	$ (2.43)	$ (16.52)	$ (8.14)	$ (8.85)	$ (6.78)	$ 6.78	$ 0.98	$ (6.17)	$ 0.90	$ (12.59)	$ (4.41)
$100,00 - $150,000	FERA	5	$ 1.91	$ (12.45)	$ (5.97)	$ (3.96)	$ (2.35)	$ 10.74	$ 4.62	$ (1.61)	$ 5.01	$ (8.67)	$ (0.69)
$150,000 - $200,000	FERA	6	$ 2.68	$ (12.18)	$ (6.55)	$ (3.40)	$ (1.91)	$ 10.71	$ 4.59	$ (0.17)	$ 5.05	$ (8.67)	$ 0.26
$200,000+	FERA	7	$ 3.80	$ (11.34)	$ (6.55)	$ (2.41)	$ (1.19)	$ 10.73	$ 4.91	$ 0.38	$ 5.23	$ (8.66)	$ (3.55)

New rate option	User-selected rate across all subclasses
Counterfactual rate option	User-selected rate across all subclasses
Use model-calculated counterfactual rates	TRUE

Select single new rate (if applicable)	E-TOU-C
Select single counterfactual rate (if applicable)	E-TOU-C

SDG&E

			Customer Average Bill Impact ($/mo)				
Income Bracket	Bill Discount		SDG&E	Inland	Coastal	Desert	Mountain
$0 - $25,000	None	1	$ (10.12)	$ (12.06)	$ (9.04)	$ (13.21)	$ (28.48)
$25,000 - $50,000	None	2	$ (10.31)	$ (12.67)	$ (9.05)	$ (13.68)	$ (26.69)
$50,000 - $75,000	None	3	$ (0.14)	$ (2.16)	$ 1.59	$ (1.74)	$ (15.57)
$75,000 - $100,000	None	4	$ (0.05)	$ (1.87)	$ 1.69	$ 0.09	$ (14.79)
$100,00 - $150,000	None	5	$ 6.11	$ 4.67	$ 7.57	$ 4.47	$ (7.20)
$150,000 - $200,000	None	6	$ 7.07	$ 6.12	$ 7.98	$ 13.92	$ (4.41)
$200,000+	None	7	$ 8.70	$ 8.14	$ 9.08	$ 4.00	$ (0.89)
$0 - $25,000	CARE	1	$ (4.98)	$ (7.18)	$ (2.45)	$ (25.28)	$ (28.54)
$25,000 - $50,000	CARE	2	$ (5.07)	$ (7.12)	$ (2.45)	$ (26.30)	$ (28.13)
$50,000 - $75,000	CARE	3	$ 0.54	$ (1.56)	$ 3.06	N/A	$ (22.72)
$75,000 - $100,000	CARE	4	$ 0.98	$ (1.52)	$ 3.17	N/A	$ (23.22)
$100,00 - $150,000	CARE	5	$ 4.15	$ 1.29	$ 6.00	N/A	N/A
$150,000 - $200,000	CARE	6	$ 6.50	N/A	$ 6.50	N/A	N/A
$200,000+	CARE	7	N/A	N/A	N/A	N/A	N/A
$0 - $25,000	FERA	1	$ (7.54)	$ (10.56)	$ (3.51)	$ (35.94)	$ (43.38)
$25,000 - $50,000	FERA	2	$ (7.66)	$ (10.45)	$ (3.50)	$ (38.17)	$ (42.48)
$50,000 - $75,000	FERA	3	$ 1.22	$ (1.64)	$ 5.21	N/A	$ (33.96)
$75,000 - $100,000	FERA	4	$ 1.89	$ (1.55)	$ 5.40	N/A	$ (35.02)
$100,00 - $150,000	FERA	5	$ 6.89	$ 2.86	$ 9.87	N/A	N/A
$150,000 - $200,000	FERA	6	$ 10.65	N/A	$ 10.65	N/A	N/A
$200,000+	FERA	7	N/A	N/A	N/A	N/A	N/A

New rate option	User-selected rate across all subclasses
Counterfactual rate option	User-selected rate across all subclasses
Use model-calculated counterfactual rates	TRUE
Select single new rate (if applicable)	TOU-DR1
Select single counterfactual rate (if applicable)	TOU-DR1

SCE

			Customer Average Bill Impact ($/mo)									
Income Bracket	Bill Discount		SCE	5	6	8	9	10	13	14	15	16
$0 - $25,000	None	1	$ (10.40)	$ (12.58)	$ (4.57)	$ (6.41)	$ (13.23)	$ (14.40)	$ (20.95)	$ (18.70)	$ (24.47)	$ (8.08)
$25,000 - $50,000	None	2	$ (11.58)	$ (12.58)	$ (4.54)	$ (6.51)	$ (13.63)	$ (15.44)	$ (20.40)	$ (18.35)	$ (25.40)	$ (8.01)
$50,000 - $75,000	None	3	$ (2.62)	$ (3.84)	$ 4.25	$ 2.23	$ (4.91)	$ (6.56)	$ (10.68)	$ (9.18)	$ (16.03)	$ 0.79
$75,000 - $100,000	None	4	$ (2.28)	$ (3.84)	$ 4.28	$ 2.31	$ (4.77)	$ (6.12)	$ (9.92)	$ (8.53)	$ (15.46)	$ 0.99
$100,00 - $150,000	None	5	$ 2.87	$ 0.75	$ 8.95	$ 7.02	$ 0.02	$ (0.74)	$ (4.38)	$ (3.27)	$ (10.34)	$ 5.79
$150,000 - $200,000	None	6	$ 3.54	$ 0.75	$ 9.04	$ 7.21	$ 0.38	$ 0.01	$ (3.70)	$ (2.52)	$ (9.73)	$ 6.02
$200,000+	None	7	$ 4.70	$ 0.75	$ 9.22	$ 7.62	$ 0.93	$ 0.95	$ (2.27)	$ (1.58)	$ (8.67)	$ 6.18
$0 - $25,000	CARE	1	$ (4.76)	N/A	$ 0.26	$ (1.21)	$ (3.61)	$ (7.50)	$ (9.09)	$ (9.34)	$ (11.24)	$ (5.72)
$25,000 - $50,000	CARE	2	$ (4.57)	N/A	$ 0.27	$ (1.19)	$ (3.59)	$ (7.40)	$ (8.86)	$ (9.11)	$ (10.90)	$ (5.63)
$50,000 - $75,000	CARE	3	$ (0.13)	N/A	$ 4.61	$ 3.15	$ 0.76	$ (2.92)	$ (4.36)	$ (4.64)	$ (6.39)	$ (1.31)
$75,000 - $100,000	CARE	4	$ (0.11)	N/A	$ 4.62	$ 3.16	$ 0.76	$ (2.83)	$ (4.17)	$ (4.61)	$ (6.22)	$ (1.31)
$100,00 - $150,000	CARE	5	$ 2.33	N/A	$ 6.91	$ 5.45	$ 3.05	$ (0.40)	$ (1.88)	$ (2.08)	$ (3.83)	$ 1.10
$150,000 - $200,000	CARE	6	$ 2.63	N/A	$ 6.93	$ 5.48	$ 3.09	$ (0.12)	$ (1.67)	$ (1.81)	$ (3.56)	$ 1.27
$200,000+	CARE	7	$ 3.06	N/A	$ 6.93	$ 5.51	$ 3.13	$ 0.09	$ (1.35)	$ (1.61)	$ (3.05)	$ 1.46
$0 - $25,000	FERA	1	$ (8.31)	N/A	$ (0.26)	$ (2.66)	$ (6.76)	$ (12.92)	$ (15.33)	$ (15.94)	$ (19.25)	$ (10.48)
$25,000 - $50,000	FERA	2	$ (8.11)	N/A	$ (0.23)	$ (2.64)	$ (6.74)	$ (12.70)	$ (14.72)	$ (15.43)	$ (18.43)	$ (10.31)
$50,000 - $75,000	FERA	3	$ (0.81)	N/A	$ 6.94	$ 4.56	$ 0.46	$ (5.22)	$ (7.15)	$ (7.97)	$ (10.86)	$ (3.17)
$75,000 - $100,000	FERA	4	$ (0.79)	N/A	$ 6.96	$ 4.58	$ 0.47	$ (5.04)	$ (6.71)	$ (7.92)	$ (10.48)	$ (3.17)
$100,00 - $150,000	FERA	5	$ 3.22	N/A	$ 10.75	$ 8.37	$ 4.25	$ (0.94)	$ (2.90)	$ (3.63)	$ (6.47)	$ 0.84
$150,000 - $200,000	FERA	6	$ 3.69	N/A	$ 10.77	$ 8.42	$ 4.31	$ (0.40)	$ (2.45)	$ (3.11)	$ (5.89)	$ 1.14
$200,000+	FERA	7	$ 4.36	N/A	$ 10.78	$ 8.49	$ 4.38	$ (0.01)	$ (1.80)	$ (2.75)	$ (4.87)	$ 1.47

New rate option	User-selected rate across all subclasses
Counterfactual rate option	User-selected rate across all subclasses
Use model-calculated counterfactual rates	TRUE
Select single new rate (if applicable)	TOU-D-4-9
Select single counterfactual rate (if applicable)	TOU-D-4-9

APPENDIX A.2
Bill Impact Heat Maps – Tiered Rates

Bill Impacts

PG&E

			Customer Average Bill Impact ($/mo)										
Income Bracket	Bill Discount		PG&E	P	Q	R	S	T	V	W	X	Y	Z
$0 - $25,000	None	1	$ (5.69)	$ (19.92)	$ (16.61)	$ (19.74)	$ (16.82)	$ 0.65	$ (10.46)	$ (17.47)	$ (8.03)	$ (8.67)	$ 4.55
$25,000 - $50,000	None	2	$ (9.28)	$ (19.65)	$ (16.59)	$ (19.84)	$ (16.65)	$ 0.72	$ (10.57)	$ (17.73)	$ (8.04)	$ (8.67)	$ 4.57
$50,000 - $75,000	None	3	$ (0.57)	$ (10.29)	$ (7.36)	$ (9.88)	$ (6.93)	$ 9.91	$ (1.45)	$ (7.54)	$ 1.21	$ 0.45	$ 13.65
$75,000 - $100,000	None	4	$ 0.14	$ (9.85)	$ (7.38)	$ (8.78)	$ (6.04)	$ 9.97	$ (1.35)	$ (6.00)	$ 1.30	$ 0.46	$ 13.66
$100,00 - $150,000	None	5	$ 5.83	$ (4.55)	$ (2.30)	$ (2.70)	$ (0.28)	$ 14.81	$ 3.54	$ 0.63	$ 6.27	$ 5.25	$ 18.47
$150,000 - $200,000	None	6	$ 6.97	$ (3.54)	$ (2.08)	$ (1.24)	$ 0.96	$ 14.86	$ 3.68	$ 2.70	$ 6.50	$ 5.26	$ 18.41
$200,000+	None	7	$ 8.54	$ (2.27)	$ (1.36)	$ 1.00	$ 2.75	$ 14.96	$ 3.71	$ 5.11	$ 7.17	$ 5.29	$ 18.42
$0 - $25,000	CARE	1	$ (5.53)	$ (12.22)	$ (8.76)	$ (9.56)	$ (7.94)	$ 0.03	$ (3.12)	$ (9.05)	$ (3.12)	$ (9.86)	$ (5.14)
$25,000 - $50,000	CARE	2	$ (5.86)	$ (12.15)	$ (8.75)	$ (9.24)	$ (7.72)	$ 0.06	$ (3.13)	$ (8.58)	$ (3.05)	$ (9.86)	$ (5.26)
$50,000 - $75,000	CARE	3	$ (1.30)	$ (7.94)	$ (4.38)	$ (4.84)	$ (3.48)	$ 4.16	$ 1.04	$ (3.96)	$ 1.06	$ (5.77)	$ (1.24)
$75,000 - $100,000	CARE	4	$ (1.11)	$ (7.92)	$ (3.82)	$ (4.71)	$ (3.24)	$ 4.19	$ 1.13	$ (3.46)	$ 1.06	$ (5.77)	$ (1.27)
$100,00 - $150,000	CARE	5	$ 1.31	$ (5.69)	$ (2.43)	$ (2.17)	$ (0.88)	$ 6.35	$ 3.13	$ (1.03)	$ 3.29	$ (3.62)	$ 0.82
$150,000 - $200,000	CARE	6	$ 1.81	$ (5.53)	$ (2.66)	$ (1.93)	$ (0.68)	$ 6.34	$ 3.11	$ (0.30)	$ 3.31	$ (3.62)	$ 1.02
$200,000+	CARE	7	$ 2.54	$ (5.02)	$ (2.66)	$ (1.45)	$ (0.34)	$ 6.34	$ 3.28	$ 0.01	$ 3.39	$ (3.61)	$ (2.27)
$0 - $25,000	FERA	1	$ (10.01)	$ (23.44)	$ (16.82)	$ (17.77)	$ (15.08)	$ (0.43)	$ (6.26)	$ (16.75)	$ (6.23)	$ (19.23)	$ (10.14)
$25,000 - $50,000	FERA	2	$ (10.38)	$ (23.32)	$ (16.79)	$ (16.83)	$ (14.53)	$ (0.36)	$ (6.28)	$ (15.46)	$ (6.07)	$ (19.23)	$ (10.81)
$50,000 - $75,000	FERA	3	$ (2.10)	$ (15.62)	$ (8.65)	$ (8.46)	$ (6.65)	$ 7.16	$ 1.37	$ (6.65)	$ 1.47	$ (11.75)	$ (3.60)
$75,000 - $100,000	FERA	4	$ (1.81)	$ (15.58)	$ (7.39)	$ (8.13)	$ (6.10)	$ 7.22	$ 1.54	$ (5.52)	$ 1.47	$ (11.75)	$ (3.74)
$100,00 - $150,000	FERA	5	$ 2.52	$ (11.51)	$ (5.17)	$ (3.26)	$ (1.67)	$ 11.18	$ 5.19	$ (0.97)	$ 5.57	$ (7.82)	$ (0.01)
$150,000 - $200,000	FERA	6	$ 3.28	$ (11.26)	$ (5.73)	$ (2.72)	$ (1.25)	$ 11.16	$ 5.16	$ 0.43	$ 5.62	$ (7.82)	$ 0.91
$200,000+	FERA	7	$ 4.37	$ (10.44)	$ (5.73)	$ (1.75)	$ (0.54)	$ 11.17	$ 5.47	$ 0.96	$ 5.78	$ (7.82)	$ (2.81)

New rate option	User-selected rate across all subclasses
Counterfactual rate option	User-selected rate across all subclasses
Use model-calculated counterfactual rates	TRUE
Select single new rate (if applicable)	E-1
Select single counterfactual rate (if applicable)	E-1

SDG&E

			Customer Average Bill Impact ($/mo)				
Income Bracket	Bill Discount		SDG&E	Inland	Coastal	Desert	Mountain
$0 - $25,000	None	1	$ (10.38)	$ (12.33)	$ (9.30)	$ (13.50)	$ (28.91)
$25,000 - $50,000	None	2	$ (10.57)	$ (12.96)	$ (9.30)	$ (13.98)	$ (27.10)
$50,000 - $75,000	None	3	$ (0.38)	$ (2.42)	$ 1.36	$ (1.99)	$ (15.96)
$75,000 - $100,000	None	4	$ (0.29)	$ (2.13)	$ 1.46	$ (0.14)	$ (15.16)
$100,00 - $150,000	None	5	$ 5.89	$ 4.44	$ 7.36	$ 4.23	$ (7.54)
$150,000 - $200,000	None	6	$ 6.86	$ 5.90	$ 7.77	$ 13.79	$ (4.73)
$200,000+	None	7	$ 8.50	$ 7.94	$ 8.89	$ 3.76	$ (1.17)
$0 - $25,000	CARE	1	$ (5.14)	$ (7.35)	$ (2.59)	$ (25.60)	$ (28.89)
$25,000 - $50,000	CARE	2	$ (5.22)	$ (7.30)	$ (2.59)	$ (26.63)	$ (28.48)
$50,000 - $75,000	CARE	3	$ 0.39	$ (1.74)	$ 2.92	N/A	$ (23.07)
$75,000 - $100,000	CARE	4	$ 0.83	$ (1.69)	$ 3.03	N/A	$ (23.57)
$100,00 - $150,000	CARE	5	$ 3.99	$ 1.11	$ 5.86	N/A	N/A
$150,000 - $200,000	CARE	6	$ 6.37	N/A	$ 6.37	N/A	N/A
$200,000+	CARE	7	N/A	N/A	N/A	N/A	N/A
$0 - $25,000	FERA	1	$ (7.75)	$ (10.79)	$ (3.68)	$ (36.39)	$ (43.89)
$25,000 - $50,000	FERA	2	$ (7.87)	$ (10.69)	$ (3.68)	$ (38.65)	$ (42.99)
$50,000 - $75,000	FERA	3	$ 1.03	$ (1.85)	$ 5.06	N/A	$ (34.45)
$75,000 - $100,000	FERA	4	$ 1.71	$ (1.76)	$ 5.25	N/A	$ (35.51)
$100,00 - $150,000	FERA	5	$ 6.73	$ 2.66	$ 9.73	N/A	N/A
$150,000 - $200,000	FERA	6	$ 10.51	N/A	$ 10.51	N/A	N/A
$200,000+	FERA	7	N/A	N/A	N/A	N/A	N/A

New rate option	User-selected rate across all subclasses
Counterfactual rate option	User-selected rate across all subclasses
Use model-calculated counterfactual rates	TRUE
Select single new rate (if applicable)	DR
Select single counterfactual rate (if applicable)	DR

SCE

			Customer Average Bill Impact ($/mo)									
Income Bracket	Bill Discount		SCE	5	6	8	9	10	13	14	15	16
$0 - $25,000	None	1	$ (10.32)	$ (12.59)	$ (4.52)	$ (6.34)	$ (13.13)	$ (14.30)	$ (20.81)	$ (18.54)	$ (24.36)	$ (8.05)
$25,000 - $50,000	None	2	$ (11.49)	$ (12.59)	$ (4.49)	$ (6.44)	$ (13.52)	$ (15.33)	$ (20.27)	$ (18.19)	$ (25.29)	$ (7.99)
$50,000 - $75,000	None	3	$ (2.55)	$ (3.87)	$ 4.28	$ 2.29	$ (4.83)	$ (6.47)	$ (10.56)	$ (9.04)	$ (15.93)	$ 0.81
$75,000 - $100,000	None	4	$ (2.21)	$ (3.87)	$ 4.31	$ 2.36	$ (4.68)	$ (6.03)	$ (9.81)	$ (8.39)	$ (15.37)	$ 1.01
$100,00 - $150,000	None	5	$ 2.93	$ 0.72	$ 8.97	$ 7.07	$ 0.10	$ (0.66)	$ (4.29)	$ (3.15)	$ (10.26)	$ 5.80
$150,000 - $200,000	None	6	$ 3.60	$ 0.72	$ 9.06	$ 7.25	$ 0.46	$ 0.09	$ (3.61)	$ (2.40)	$ (9.65)	$ 6.03
$200,000+	None	7	$ 4.75	$ 0.72	$ 9.24	$ 7.66	$ 1.00	$ 1.01	$ (2.19)	$ (1.46)	$ (8.60)	$ 6.19
$0 - $25,000	CARE	1	$ (4.73)	N/A	$ 0.25	$ (1.19)	$ (3.59)	$ (7.45)	$ (9.04)	$ (9.27)	$ (11.22)	$ (5.69)
$25,000 - $50,000	CARE	2	$ (4.54)	N/A	$ 0.27	$ (1.18)	$ (3.58)	$ (7.35)	$ (8.81)	$ (9.03)	$ (10.88)	$ (5.60)
$50,000 - $75,000	CARE	3	$ (0.10)	N/A	$ 4.61	$ 3.16	$ 0.77	$ (2.87)	$ (4.31)	$ (4.57)	$ (6.38)	$ (1.28)
$75,000 - $100,000	CARE	4	$ (0.08)	N/A	$ 4.61	$ 3.17	$ 0.78	$ (2.79)	$ (4.12)	$ (4.54)	$ (6.21)	$ (1.28)
$100,00 - $150,000	CARE	5	$ 2.36	N/A	$ 6.91	$ 5.46	$ 3.06	$ (0.35)	$ (1.83)	$ (2.01)	$ (3.82)	$ 1.13
$150,000 - $200,000	CARE	6	$ 2.66	N/A	$ 6.92	$ 5.49	$ 3.10	$ (0.08)	$ (1.62)	$ (1.74)	$ (3.55)	$ 1.29
$200,000+	CARE	7	$ 3.08	N/A	$ 6.93	$ 5.52	$ 3.14	$ 0.13	$ (1.31)	$ (1.54)	$ (3.04)	$ 1.49
$0 - $25,000	FERA	1	$ (8.26)	N/A	$ (0.26)	$ (2.64)	$ (6.73)	$ (12.84)	$ (15.22)	$ (15.81)	$ (19.19)	$ (10.41)
$25,000 - $50,000	FERA	2	$ (8.05)	N/A	$ (0.24)	$ (2.61)	$ (6.71)	$ (12.62)	$ (14.62)	$ (15.30)	$ (18.37)	$ (10.24)
$50,000 - $75,000	FERA	3	$ (0.77)	N/A	$ 6.93	$ 4.57	$ 0.48	$ (5.15)	$ (7.06)	$ (7.86)	$ (10.81)	$ (3.11)
$75,000 - $100,000	FERA	4	$ (0.75)	N/A	$ 6.94	$ 4.59	$ 0.49	$ (4.97)	$ (6.63)	$ (7.80)	$ (10.43)	$ (3.11)
$100,00 - $150,000	FERA	5	$ 3.25	N/A	$ 10.73	$ 8.37	$ 4.26	$ (0.88)	$ (2.83)	$ (3.52)	$ (6.43)	$ 0.90
$150,000 - $200,000	FERA	6	$ 3.72	N/A	$ 10.76	$ 8.43	$ 4.33	$ (0.35)	$ (2.38)	$ (3.00)	$ (5.85)	$ 1.20
$200,000+	FERA	7	$ 4.39	N/A	$ 10.76	$ 8.50	$ 4.39	$ 0.04	$ (1.74)	$ (2.64)	$ (4.84)	$ 1.53

New rate option	User-selected rate across all subclasses
Counterfactual rate option	User-selected rate across all subclasses
Use model-calculated counterfactual rates	TRUE
Select single new rate (if applicable)	D
Select single counterfactual rate (if applicable)	D

APPENDIX A.3
Bill Impact Heat Maps – EV Rates

Bill Impacts

PG&E

			Customer Average Bill Impact ($/mo)										
Income Bracket	Bill Discount		PG&E	P	Q	R	S	T	V	W	X	Y	Z
$0 - $25,000	None	1	$ (6.25)	$ (21.34)	$ (17.68)	$ (20.51)	$ (17.51)	$ 0.18	$ (10.51)	$ (18.16)	$ (8.53)	$ (10.28)	$ 3.64
$25,000 - $50,000	None	2	$ (9.90)	$ (21.07)	$ (17.66)	$ (20.61)	$ (17.33)	$ 0.25	$ (10.61)	$ (18.42)	$ (8.54)	$ (10.27)	$ 3.66
$50,000 - $75,000	None	3	$ (1.21)	$ (11.71)	$ (8.46)	$ (10.66)	$ (7.64)	$ 9.42	$ (1.52)	$ (8.24)	$ 0.68	$ (1.17)	$ 12.71
$75,000 - $100,000	None	4	$ (0.49)	$ (11.25)	$ (8.48)	$ (9.56)	$ (6.76)	$ 9.48	$ (1.41)	$ (6.69)	$ 0.78	$ (1.16)	$ 12.73
$100,00 - $150,000	None	5	$ 5.21	$ (5.95)	$ (3.41)	$ (3.48)	$ (1.01)	$ 14.32	$ 3.46	$ (0.06)	$ 5.73	$ 3.63	$ 17.52
$150,000 - $200,000	None	6	$ 6.37	$ (4.90)	$ (3.20)	$ (2.01)	$ 0.23	$ 14.37	$ 3.59	$ 2.02	$ 5.96	$ 3.65	$ 17.47
$200,000+	None	7	$ 7.97	$ (3.59)	$ (2.47)	$ 0.24	$ 2.02	$ 14.48	$ 3.62	$ 4.45	$ 6.64	$ 3.71	$ 17.47
$0 - $25,000	CARE	1	$ (5.99)	$ (13.09)	$ (9.43)	$ (10.05)	$ (8.45)	$ (0.30)	$ (3.37)	$ (9.47)	$ (3.57)	$ (10.67)	$ (5.47)
$25,000 - $50,000	CARE	2	$ (6.32)	$ (13.02)	$ (9.42)	$ (9.73)	$ (8.24)	$ (0.26)	$ (3.38)	$ (9.01)	$ (3.49)	$ (10.67)	$ (5.55)
$50,000 - $75,000	CARE	3	$ (1.75)	$ (8.81)	$ (5.06)	$ (5.33)	$ (3.99)	$ 3.84	$ 0.79	$ (4.40)	$ 0.62	$ (6.57)	$ (1.51)
$75,000 - $100,000	CARE	4	$ (1.57)	$ (8.79)	$ (4.51)	$ (5.20)	$ (3.76)	$ 3.86	$ 0.88	$ (3.90)	$ 0.62	$ (6.58)	$ (1.53)
$100,00 - $150,000	CARE	5	$ 0.85	$ (6.56)	$ (3.11)	$ (2.67)	$ (1.40)	$ 6.02	$ 2.88	$ (1.46)	$ 2.85	$ (4.42)	$ 0.58
$150,000 - $200,000	CARE	6	$ 1.35	$ (6.40)	$ (3.34)	$ (2.43)	$ (1.21)	$ 6.01	$ 2.86	$ (0.74)	$ 2.87	$ (4.42)	$ 0.71
$200,000+	CARE	7	$ 2.09	$ (5.90)	$ (3.34)	$ (1.96)	$ (0.87)	$ 6.02	$ 3.03	$ (0.44)	$ 2.95	$ (4.41)	$ (1.46)
$0 - $25,000	FERA	1	$ (10.46)	$ (24.24)	$ (17.24)	$ (18.31)	$ (15.56)	$ (0.74)	$ (6.42)	$ (17.27)	$ (6.66)	$ (19.94)	$ (11.18)
$25,000 - $50,000	FERA	2	$ (10.85)	$ (24.12)	$ (17.22)	$ (17.37)	$ (15.02)	$ (0.66)	$ (6.44)	$ (15.99)	$ (6.51)	$ (19.94)	$ (11.88)
$50,000 - $75,000	FERA	3	$ (2.58)	$ (16.45)	$ (9.13)	$ (9.03)	$ (7.16)	$ 6.84	$ 1.20	$ (7.20)	$ 1.02	$ (12.46)	$ (4.69)
$75,000 - $100,000	FERA	4	$ (2.30)	$ (16.41)	$ (7.97)	$ (8.71)	$ (6.62)	$ 6.90	$ 1.38	$ (6.08)	$ 1.01	$ (12.46)	$ (4.84)
$100,00 - $150,000	FERA	5	$ 2.02	$ (12.35)	$ (5.63)	$ (3.86)	$ (2.21)	$ 10.85	$ 5.01	$ (1.54)	$ 5.11	$ (8.54)	$ (1.12)
$150,000 - $200,000	FERA	6	$ 2.79	$ (12.10)	$ (6.16)	$ (3.32)	$ (1.80)	$ 10.82	$ 4.98	$ (0.15)	$ 5.15	$ (8.53)	$ (0.17)
$200,000+	FERA	7	$ 3.89	$ (11.30)	$ (6.16)	$ (2.36)	$ (1.10)	$ 10.84	$ 5.30	$ 0.38	$ 5.32	$ (8.52)	$ (4.00)

New rate option	User-selected rate across all subclasses
Counterfactual rate option	User-selected rate across all subclasses
Use model-calculated counterfactual rates	TRUE
Select single new rate (if applicable)	EV2-A
Select single counterfactual rate (if applicable)	EV2-A

SDG&E

			Customer Average Bill Impact ($/mo)				
Income Bracket	Bill Discount		SDG&E	Inland	Coastal	Desert	Mountain
$0 - $25,000	None	1	$ (10.64)	$ (12.34)	$ (9.89)	$ (13.43)	$ (20.96)
$25,000 - $50,000	None	2	$ (10.77)	$ (12.50)	$ (9.89)	$ (13.46)	$ (20.47)
$50,000 - $75,000	None	3	$ (0.51)	$ (1.94)	$ 0.69	$ (2.80)	$ (9.74)
$75,000 - $100,000	None	4	$ (0.53)	$ (1.86)	$ 0.70	$ (2.69)	$ (9.52)
$100,00 - $150,000	None	5	$ 5.14	$ 3.94	$ 6.29	$ 2.79	$ (3.41)
$150,000 - $200,000	None	6	$ 5.40	$ 4.31	$ 6.34	$ 3.38	$ (2.64)
$200,000+	None	7	$ 5.85	$ 4.82	$ 6.47	$ 2.76	$ (1.67)
$0 - $25,000	CARE	1	$ (5.28)	$ (6.24)	$ (4.20)	$ (13.50)	$ (14.91)
$25,000 - $50,000	CARE	2	$ (5.32)	$ (6.22)	$ (4.20)	$ (13.90)	$ (14.83)
$50,000 - $75,000	CARE	3	$ 0.20	$ (0.72)	$ 1.29	N/A	$ (9.36)
$75,000 - $100,000	CARE	4	$ 0.38	$ (0.70)	$ 1.33	N/A	$ (9.46)
$100,00 - $150,000	CARE	5	$ 3.39	$ 2.15	$ 4.19	N/A	N/A
$150,000 - $200,000	CARE	6	$ 4.34	N/A	$ 4.34	N/A	N/A
$200,000+	CARE	7	N/A	N/A	N/A	N/A	N/A
$0 - $25,000	FERA	1	$ (8.01)	$ (9.72)	$ (5.80)	$ (22.69)	$ (25.74)
$25,000 - $50,000	FERA	2	$ (8.12)	$ (9.71)	$ (5.80)	$ (23.43)	$ (25.50)
$50,000 - $75,000	FERA	3	$ 0.61	$ (1.02)	$ 2.88	N/A	$ (16.87)
$75,000 - $100,000	FERA	4	$ 0.93	$ (1.01)	$ 2.89	N/A	$ (17.15)
$100,00 - $150,000	FERA	5	$ 5.78	$ 3.53	$ 7.44	N/A	N/A
$150,000 - $200,000	FERA	6	$ 7.50	N/A	$ 7.50	N/A	N/A
$200,000+	FERA	7	N/A	N/A	N/A	N/A	N/A

New rate option	User-selected rate across all subclasses
Counterfactual rate option	User-selected rate across all subclasses
Use model-calculated counterfactual rates	TRUE

Select single new rate (if applicable)	EV-TOU-5
Select single counterfactual rate (if applicable)	EV-TOU-5

SCE

			Customer Average Bill Impact ($/mo)									
Income Bracket	Bill Discount		SCE	5	6	8	9	10	13	14	15	16
$0 - $25,000	None	1	$ (10.03)	$ (11.73)	$ (6.63)	$ (7.65)	$ (11.55)	$ (12.53)	$ (15.86)	$ (14.57)	$ (18.52)	$ (8.83)
$25,000 - $50,000	None	2	$ (10.65)	$ (11.73)	$ (6.62)	$ (7.68)	$ (11.70)	$ (12.97)	$ (15.63)	$ (14.42)	$ (18.88)	$ (8.82)
$50,000 - $75,000	None	3	$ (1.78)	$ (2.98)	$ 2.15	$ 1.08	$ (2.95)	$ (4.15)	$ (6.46)	$ (5.49)	$ (9.88)	$ (0.05)
$75,000 - $100,000	None	4	$ (1.62)	$ (2.98)	$ 2.16	$ 1.10	$ (2.90)	$ (3.97)	$ (6.14)	$ (5.21)	$ (9.66)	$ (0.03)
$100,00 - $150,000	None	5	$ 3.24	$ 1.62	$ 6.78	$ 5.73	$ 1.78	$ 0.96	$ (1.14)	$ (0.34)	$ (4.86)	$ 4.60
$150,000 - $200,000	None	6	$ 3.57	$ 1.62	$ 6.80	$ 5.79	$ 1.92	$ 1.27	$ (0.85)	$ (0.03)	$ (4.62)	$ 4.63
$200,000+	None	7	$ 4.15	$ 1.62	$ 6.85	$ 5.92	$ 2.12	$ 1.66	$ (0.25)	$ 0.36	$ (4.21)	$ 4.66
$0 - $25,000	CARE	1	$ (4.45)	N/A	$ (2.53)	$ (3.05)	$ (4.03)	$ (5.50)	$ (6.11)	$ (6.12)	$ (7.17)	$ (4.82)
$25,000 - $50,000	CARE	2	$ (4.38)	N/A	$ (2.52)	$ (3.05)	$ (4.03)	$ (5.47)	$ (6.04)	$ (6.05)	$ (7.06)	$ (4.80)
$50,000 - $75,000	CARE	3	$ (0.01)	N/A	$ 1.81	$ 1.29	$ 0.30	$ (1.10)	$ (1.66)	$ (1.68)	$ (2.66)	$ (0.47)
$75,000 - $100,000	CARE	4	$ (0.01)	N/A	$ 1.81	$ 1.29	$ 0.30	$ (1.07)	$ (1.60)	$ (1.68)	$ (2.61)	$ (0.47)
$100,00 - $150,000	CARE	5	$ 2.32	N/A	$ 4.09	$ 3.57	$ 2.58	$ 1.25	$ 0.68	$ 0.67	$ (0.30)	$ 1.84
$150,000 - $200,000	CARE	6	$ 2.42	N/A	$ 4.09	$ 3.57	$ 2.58	$ 1.32	$ 0.74	$ 0.74	$ (0.21)	$ 1.88
$200,000+	CARE	7	$ 2.57	N/A	$ 4.09	$ 3.58	$ 2.59	$ 1.38	$ 0.84	$ 0.80	$ (0.04)	$ 1.92
$0 - $25,000	FERA	1	$ (8.12)	N/A	$ (3.64)	$ (4.91)	$ (7.31)	$ (10.73)	$ (12.05)	$ (12.23)	$ (14.62)	$ (9.22)
$25,000 - $50,000	FERA	2	$ (8.03)	N/A	$ (3.63)	$ (4.90)	$ (7.31)	$ (10.65)	$ (11.78)	$ (12.02)	$ (14.23)	$ (9.16)
$50,000 - $75,000	FERA	3	$ (0.81)	N/A	$ 3.55	$ 2.28	$ (0.13)	$ (3.34)	$ (4.42)	$ (4.72)	$ (6.86)	$ (1.99)
$75,000 - $100,000	FERA	4	$ (0.81)	N/A	$ 3.56	$ 2.29	$ (0.13)	$ (3.27)	$ (4.23)	$ (4.70)	$ (6.68)	$ (1.99)
$100,00 - $150,000	FERA	5	$ 3.06	N/A	$ 7.33	$ 6.06	$ 3.64	$ 0.63	$ (0.44)	$ (0.72)	$ (2.80)	$ 1.86
$150,000 - $200,000	FERA	6	$ 3.27	N/A	$ 7.34	$ 6.07	$ 3.64	$ 0.85	$ (0.25)	$ (0.51)	$ (2.52)	$ 1.95
$200,000+	FERA	7	$ 3.62	N/A	$ 7.34	$ 6.09	$ 3.64	$ 1.00	$ 0.04	$ (0.36)	$ (2.04)	$ 2.06

New rate option	User-selected rate across all subclasses
Counterfactual rate option	User-selected rate across all subclasses
Use model-calculated counterfactual rates	TRUE
Select single new rate (if applicable)	TOU-D-PRIME
Select single counterfactual rate (if applicable)	TOU-D-PRIME

APPENDIX A.4
Bill Impact Heat Maps – Electrification Rates

Bill Impacts

PG&E

			Customer Average Bill Impact ($/mo)										
Income Bracket	Bill Discount		PG&E	P	Q	R	S	T	V	W	X	Y	Z
$0 - $25,000	None	1	$ (7.44)	$ (15.29)	$ (13.11)	$ (15.20)	$ (13.64)	$ (3.96)	$ (9.53)	$ (14.16)	$ (8.69)	$ (9.44)	$ (2.11)
$25,000 - $50,000	None	2	$ (9.43)	$ (15.21)	$ (13.11)	$ (15.23)	$ (13.58)	$ (3.95)	$ (9.56)	$ (14.26)	$ (8.69)	$ (9.44)	$ (2.10)
$50,000 - $75,000	None	3	$ (0.67)	$ (6.06)	$ (4.00)	$ (5.89)	$ (4.30)	$ 5.15	$ (0.49)	$ (4.80)	$ 0.42	$ (0.38)	$ 6.95
$75,000 - $100,000	None	4	$ (0.36)	$ (5.92)	$ (4.01)	$ (5.52)	$ (3.99)	$ 5.16	$ (0.46)	$ (4.24)	$ 0.44	$ (0.40)	$ 6.96
$100,00 - $150,000	None	5	$ 4.82	$ (0.99)	$ 0.85	$ (0.33)	$ 1.12	$ 9.94	$ 4.33	$ 1.18	$ 5.26	$ 4.35	$ 11.73
$150,000 - $200,000	None	6	$ 5.38	$ (0.67)	$ 0.91	$ 0.15	$ 1.56	$ 9.95	$ 4.37	$ 1.93	$ 5.32	$ 4.32	$ 11.70
$200,000+	None	7	$ 6.16	$ (0.27)	$ 1.14	$ 0.89	$ 2.19	$ 9.98	$ 4.37	$ 2.80	$ 5.52	$ 4.25	$ 11.70
$0 - $25,000	CARE	1	$ (4.20)	$ (6.11)	$ (5.02)	$ (5.44)	$ (4.96)	$ (2.52)	$ (3.39)	$ (5.33)	$ (3.44)	$ (5.46)	$ (4.18)
$25,000 - $50,000	CARE	2	$ (4.32)	$ (6.10)	$ (5.01)	$ (5.38)	$ (4.91)	$ (2.52)	$ (3.39)	$ (5.23)	$ (3.42)	$ (5.46)	$ (4.20)
$50,000 - $75,000	CARE	3	$ (0.12)	$ (2.00)	$ (0.89)	$ (1.24)	$ (0.80)	$ 1.57	$ 0.71	$ (1.04)	$ 0.66	$ (1.39)	$ (0.13)
$75,000 - $100,000	CARE	4	$ (0.07)	$ (2.00)	$ (0.79)	$ (1.21)	$ (0.76)	$ 1.57	$ 0.74	$ (0.94)	$ 0.66	$ (1.39)	$ (0.13)
$100,00 - $150,000	CARE	5	$ 2.14	$ 0.16	$ 1.22	$ 1.01	$ 1.43	$ 3.72	$ 2.84	$ 1.26	$ 2.82	$ 0.75	$ 2.00
$150,000 - $200,000	CARE	6	$ 2.28	$ 0.18	$ 1.18	$ 1.05	$ 1.46	$ 3.72	$ 2.83	$ 1.40	$ 2.82	$ 0.75	$ 2.03
$200,000+	CARE	7	$ 2.51	$ 0.25	$ 1.18	$ 1.15	$ 1.53	$ 3.72	$ 2.88	$ 1.47	$ 2.84	$ 0.75	$ 1.47
$0 - $25,000	FERA	1	$ (8.67)	$ (15.34)	$ (11.64)	$ (13.03)	$ (11.51)	$ (3.53)	$ (6.39)	$ (12.65)	$ (6.51)	$ (13.30)	$ (9.35)
$25,000 - $50,000	FERA	2	$ (8.98)	$ (15.31)	$ (11.63)	$ (12.71)	$ (11.32)	$ (3.50)	$ (6.40)	$ (12.19)	$ (6.46)	$ (13.31)	$ (9.67)
$50,000 - $75,000	FERA	3	$ (1.18)	$ (7.83)	$ (4.00)	$ (4.97)	$ (3.74)	$ 3.95	$ 1.12	$ (4.27)	$ 1.00	$ (5.92)	$ (2.36)
$75,000 - $100,000	FERA	4	$ (1.07)	$ (7.82)	$ (3.64)	$ (4.86)	$ (3.56)	$ 3.97	$ 1.20	$ (3.87)	$ 1.00	$ (5.91)	$ (2.43)
$100,00 - $150,000	FERA	5	$ 2.99	$ (3.88)	$ (0.22)	$ (0.63)	$ 0.52	$ 7.89	$ 4.97	$ 0.26	$ 4.96	$ (2.04)	$ 1.38
$150,000 - $200,000	FERA	6	$ 3.41	$ (3.83)	$ (0.38)	$ (0.45)	$ 0.66	$ 7.88	$ 4.96	$ 0.76	$ 4.98	$ (2.04)	$ 1.82
$200,000+	FERA	7	$ 4.01	$ (3.65)	$ (0.38)	$ (0.12)	$ 0.90	$ 7.89	$ 5.11	$ 0.95	$ 5.03	$ (2.06)	$ 0.04

New rate option	User-selected rate across all subclasses
Counterfactual rate option	User-selected rate across all subclasses
Use model-calculated counterfactual rates	TRUE
Select single new rate (if applicable)	E-ELEC
Select single counterfactual rate (if applicable)	E-ELEC

SDG&E

			Customer Average Bill Impact ($/mo)				
Income Bracket	Bill Discount		SDG&E	Inland	Coastal	Desert	Mountain
$0 - $25,000	None	1	$ (10.61)	$ (12.30)	$ (9.87)	$ (13.37)	$ (20.77)
$25,000 - $50,000	None	2	$ (10.74)	$ (12.45)	$ (9.87)	$ (13.40)	$ (20.29)
$50,000 - $75,000	None	3	$ (0.49)	$ (1.91)	$ 0.69	$ (2.77)	$ (9.59)
$75,000 - $100,000	None	4	$ (0.52)	$ (1.84)	$ 0.70	$ (2.68)	$ (9.39)
$100,00 - $150,000	None	5	$ 5.13	$ 3.95	$ 6.28	$ 2.80	$ (3.30)
$150,000 - $200,000	None	6	$ 5.39	$ 4.30	$ 6.32	$ 3.29	$ (2.56)
$200,000+	None	7	$ 5.83	$ 4.79	$ 6.44	$ 2.78	$ (1.63)
$0 - $25,000	CARE	1	$ (5.27)	$ (6.21)	$ (4.21)	$ (13.33)	$ (14.71)
$25,000 - $50,000	CARE	2	$ (5.31)	$ (6.19)	$ (4.21)	$ (13.72)	$ (14.64)
$50,000 - $75,000	CARE	3	$ 0.21	$ (0.69)	$ 1.28	N/A	$ (9.17)
$75,000 - $100,000	CARE	4	$ 0.39	$ (0.68)	$ 1.31	N/A	$ (9.26)
$100,00 - $150,000	CARE	5	$ 3.39	$ 2.18	$ 4.18	N/A	N/A
$150,000 - $200,000	CARE	6	$ 4.33	N/A	$ 4.33	N/A	N/A
$200,000+	CARE	7	N/A	N/A	N/A	N/A	N/A
$0 - $25,000	FERA	1	$ (7.99)	$ (9.67)	$ (5.81)	$ (22.44)	$ (25.43)
$25,000 - $50,000	FERA	2	$ (8.09)	$ (9.66)	$ (5.81)	$ (23.16)	$ (25.20)
$50,000 - $75,000	FERA	3	$ 0.62	$ (0.99)	$ 2.85	N/A	$ (16.58)
$75,000 - $100,000	FERA	4	$ 0.93	$ (0.98)	$ 2.86	N/A	$ (16.85)
$100,00 - $150,000	FERA	5	$ 5.76	$ 3.55	$ 7.40	N/A	N/A
$150,000 - $200,000	FERA	6	$ 7.46	N/A	$ 7.46	N/A	N/A
$200,000+	FERA	7	N/A	N/A	N/A	N/A	N/A

New rate option	User-selected rate across all subclasses
Counterfactual rate option	User-selected rate across all subclasses
Use model-calculated counterfactual rates	TRUE
Select single new rate (if applicable)	TOU-ELEC
Select single counterfactual rate (if applicable)	TOU-ELEC

APPENDIX B

WITNESS STATEMENT OF QUALIFICATIONS

PREPARED TESTIMONY AND QUALIFICATIONS
OF
NATHAN CHAU

Q.1. Please state your name, business address, and position with the Public Advocates Office.

A.1. My name is Nathan Chau 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.

Q.2. Please describe your educational and professional experience

A.2. I hold a Bachelor of Science degree in Applied Economics from the University of the Pacific. My degree included coursework in finance, economics, and econometrics that I find relevant to this case. Since joining the Commission in April 2015, I have actively participated in a number of rate cases such as SDG&E's General Rate Case Phase II (A.15-04-012), PG&E's General Rate Case Phase II (A.16-06-013), the Time-of-Use Order Instituting Rulemaking (R.15-12-012), and the Residential Rate Reform proceeding (R.12-06-013). I also worked as project coordinator and witness in PG&E's General Rate Case Phase II (A.19-11-019).

Q.3. What is your area of responsibility in this proceeding?

A.3. I am the project coordinator for Phase I, Track A of this proceeding. I am also acting as a witness sponsoring all areas of Chapter 1 on Income Graduated Fixed Charge Rate Design except section II.D.

Q4. Does this conclude your prepared direct testimony?

A4. Yes, it does.

PREPARED TESTIMONY AND QUALIFICATIONS
OF
OTTO NICHOLS

Q.1. Please state your name, business address, and position with the Public Advocates Office.

A.1. My name is Otto Nichols 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.

Q.2. Please describe your educational and professional experience

A.2. I graduated from the University of San Francisco with a Master of Science degree in Energy Systems Management and hold a Bachelor of Science degree in Business Management and Economics from DePaul University in Chicago, Illinois. I joined the Electricity Pricing section of Cal Advocates in October 2021 as a Public Utilities Regulatory Analyst and my work is focused on utility electric rate design. I have experience conducting analyses related to rate design, sales forecasting, and affordability issues. My previous professional experience includes a decarbonization analyst position for the renewable energy consulting firm, Apala Group.

Q.3. What is your area of responsibility in this proceeding?

A.3. I am responsible for the Bill Impacts (i.e., Section II.D) section in Chapter 1 on Income Graduated Fixed Charge Rate Design.

Q4. Does this conclude your prepared direct testimony?

A4. Yes, it does.