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

San Francisco, California
June 2, 2023
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CHAPTER 1: INCOME GRADUATED FIXED RATE DESIGN

(Witnesses: Nathan Chau and Otto Nichols)

I. INTRODUCTION AND SUMMARY OF RECOMMENDATIONS

In this chapter, the Public Advocates Office at the California Public Utilities Commission’s (Cal Advocates) responds to other parties’ opening testimonies for Phase 1, Track A of the instant Demand Flexibility Rulemaking concerning income-graduated fixed charge (IGFC) rate design. Cal Advocates responds to Solar Energy Industries Association (SEIA), California Environmental Justice Alliance (CEJA), and Sierra Club’s proposals and assertions concerning IGFC design. Cal Advocates also provides responses to the testimony of the large Investor-Owned Utilities (IOU). In summary, the Commission should find;

- Both SEIA’s and CEJA’s fixed charge proposals hardly improve over the status quo as they would do little to encourage electrification or provide material rate relief for low-income customers.
- SEIA’s classification of fixed costs is too narrow as it ignores cost causation principles.
- SEIA’s reliance on existing electrification rates to encourage customer adoption of electrification technologies will not adequately incent electrification.
- Cal Advocates’ proposed fixed charge level collects the correct portion of fixed charges.
- Cal Advocates’ proposed IGFC fixed charges for PacifiCorp, Bear Valley Electric Service (BVES) and Liberty Utilities as illustrated in section II.E are reasonable and should be adopted.
- Sierra Club and CEJA propose differentials of IGFCs across income brackets that are too steep to implement given the challenges of initial income verification.

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1 Collectively Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE) and San Diego Gas & Electric Company (SDG&E). The testimony of the large IOUs is referred to as “Joint IOU”.
2 CEJA’s testimony is referred to as “CEJA”. SEIA’s testimony is referred to as “SEIA”.
3 Sierra Club’s testimony is referred to as “Sierra Club”.

1-1
• The Utility Reform Network and Natural Resources Defense Council’s (TURN/NRDC’s) proposal to collect information on multi-family and single-family classifications (as a proxy for size differentiation) is reasonable because it will allow for adoption of varied fixed charges based on customer size.4

• SDG&E’s proposal to institute a marginal cost price floor for EV-TOU-5 is a good example of how to reduce volumetric rates for non-default rates under an IGFC when off-peak rates are too low to apply equal cents/kWh reductions.

• A climate credit offset can be employed to enhance other parties’ IGFC proposals to provide more benefits for low-income customers.

II. DISCUSSION OF RECOMMENDATIONS

The Commission should evaluate the merits of IGFC proposals based on the new rate design principles adopted pursuant to Track B of this proceeding and policy priorities. The changes to statute implemented in Assembly Bill (AB) 205 and the rate design principles adopted in Decision (D.)23-04-040 indicate a policy shift away from overall conservation to encouraging increased consumption via electrification adoption in ways that will reduce greenhouse gases. Specifically, AB 205 removes the long-standing $10 cap5 on residential fixed charges and allows for adoption of income graduated fixed charges.6

As expressed in D.23-04-040, the Commission’s strategies for reducing GHG emissions have shifted from a focus on conserving electricity at all times to reducing

4 TURN/NRDC’s testimony is referred to as “TURN/NRDC”.

5 To see the $10 cap requirement, see AB 327 (2013) which added Public Utilities Code Sections 739.9(e) and (f) authorizing the Commission to adopt new residential fixed charges of up to $10 per month with adjustments for inflation.

6 See Committee on Budget and Fiscal Review, Senator Nancy Skinner, Chair, Agenda (June 27, 2022) three-sentence summary, “Public Utilities Fixed Charge: Repeals the existing $10 fixed charge cap for residential [IOU] customers. Authorizes the [Commission] to use fixed charges for any rate schedule for residential customers, as specified. The bill requires the fixed charge to be established on an income graduated basis with no fewer than three income thresholds, such that a low-income ratepayer would realize lower average monthly bills without any changes [sic] in usage, as specified.” (as of Jan. 12, 2023). The Senate’s summary was provided to the Assembly Budget committee.
usage during certain hours, and electrifying buildings and transportation rather than reducing overall electricity consumption. Under this new legislative direction, the Commission is required to balance both energy use reduction and energy use increases (where such increases would support GHG emissions reductions) by providing appropriate price signals. 

Unmitigated high volumetric rates will continue to stifle achievement of electrification goals, pose affordability and equity constraints on low-income customers, and distort price signals. Several diverse parties have served testimony that supports this point. The Joint IOUs observe that volumetric electricity rates in California are two to three times the marginal cost of providing electricity. Similarly, TURN/NRDC found that California’s retail price of electricity is much higher than both the short run social marginal cost (SRSMC) and the avoided costs in the Commission’s avoided cost calculator (ACC), showing current retail rates of $0.31-$0.46/kWh compared to SRSMCs of approximately $0.09/kWh. TURN/NRDC further argue that such a discrepancy is inefficient, and creates an economic disincentive for adoption of electrification technologies. TURN/NRDC claim high volumetric rates also exacerbate the affordability crisis for lower and middle-income Californians. They observe that lower income customers pay a much higher portion of their expendable income on

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2 D.23-04-040, p.14
8 Joint IOU, pp. 6-7.
9 Joint IOU, p. 7.
10 TURN/NRDC, p. 10.
11 TURN NRDC, p. 7.
12 TURN/NRDC, p. 7. “The idea economic efficiency is maximized when price reflects full SRSMC is a bedrock principle of microeconomics.”
13 Joint IOU, p. 12 and TURN/NRDC, p. 3.
14 TURN/NRDC, p. 2.
electricity than higher income customers. They correctly note that the recent increases in volumetric retail rates have only made the energy burdens increasingly inequitable.\footnote{TURN/NRDC, p, 11}

The Commission should evaluate IGFC proposals based on how well they improve incentives for electrification adoption and equity for low-income customers in addition to the other rate design principles concerning customer considerations and cost causation principles adopted in D.23-04-040. Finally, such aspects must also be balanced against the backdrop of early implementation challenges.\footnote{TURN/NRDC, p, 11. See also Cal Advocates Errata Testimony, Chapter 1, pp. 4-5. Since 2017, the average residential rate for California’s IOUs have increased by 7%-9% annually.}

\textbf{A. SEIA’s and CEJA’s fixed charge proposals fail to encourage electrification or provide material rate relief for low-income customers.}

SEIA’s and CEJA’s fixed charge proposals hardly improve over the status quo as they will do little to reduce volumetric rates to encourage electrification or provide material rate relief for low-income customers. As discussed above, the issuance of AB 205 and the approval of new rate design principles in D.23-04-040 show that the status quo is not sufficient in helping to meet state policy goals and changes are necessary. Table 1 provides the average, lowest, and highest fixed charges of SEIA and CEJA’s IGFC proposals.\footnote{TURN/NRDC, p, 11. See Chapter 2 of Cal Advocates’ Opening Testimony.} Both parties propose low average fixed charges ranging between $7.49/customer-month to $15/customer-month.

\footnote{CEJA did not provide an average fixed charge in opening testimony, so Cal Advocates used the information provided in their testimony to infer an average. CEJA’s highest proposed fixed charge amount is approximated and sourced from their filed E3 printout, p.8. CEJA’s proposal using 10-brackets is likely to result in even higher actual fixed charges.}
Table 1: Comparison of SEIA and CEJA’s Average, Lowest and Highest Proposed Fixed Charge

<table>
<thead>
<tr>
<th></th>
<th>SEIA</th>
<th>CEJA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PGE</td>
<td>SCE</td>
</tr>
<tr>
<td>Average Fixed Charge ($/Customer-Month)</td>
<td>$7.49</td>
<td>$7.88</td>
</tr>
<tr>
<td>Lowest</td>
<td>$4.93</td>
<td>$5.32</td>
</tr>
<tr>
<td>Highest</td>
<td>$9.09</td>
<td>$9.41</td>
</tr>
</tbody>
</table>

These average fixed charges are barely above the recently removed residential fixed charge cap of $10/customer-month; a change which SEIA omitted from its review of the Commission’s fixed charge history.\(^19\) SEIA’s proposed fixed charge would not make meaningful reductions to the high volumetric rates as they merely reduce rates by around $0.02/kWh.\(^21\) This change in volumetric rates is not enough rate reduction to encourage electrification, nor provide any noticeable relief for low-income customers.

Additionally, under CEJA’s proposal modified to fit in the E3 tool, high income customers would see $60-$86/customer-month fixed charges with no noticeable corresponding volumetric rate reduction.\(^22\) Thus, fixed charges would take on the appearance of a punitive surcharge. CEJA’s proposal to concentrate collection of fixed

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\(^19\) See CEJA’s E3 tool printout, R2207005 (Flex) Att 2 CEJA Fixed Charge printout. CEJA proposes $0-$86 (rounded) fixed charges for all three IOUs (with PG&E and SDG&E in the $60-66 range and with SCE’s around $85 for each rate though the values vary by a few cents).


\(^22\) SEIA, p. 23.

\(^22\) See CEJA’s E3 tool printout, R2207005 (Flex) Att 2 CEJA Fixed Charge printout.
charge revenues from a small sliver of high-income customers may also pose revenue
collection stability issues. This issue is discussed in greater detail in section II.F.
SEIA’s proposal does not follow the principles adopted in D.23.04-040.\footnote{SEIA, pp. 5-6.}
Contrary to its claims, SEIA’s proposal would continue to perpetuate affordability issues
for low-income customers and frustrate electrification adoption as it fails to sufficiently
reduce volumetric rates to encourage greater electrification. Importantly, D.23-04-040
adopted a new rate design principle\footnote{D.23-04-040, p. 15.} which provides that rates “should encourage
economically efficient (i) use of energy, (ii) reduction of greenhouse gas emissions, and
(iii) electrification.”\footnote{SEIA, p. 23.} Overall, SEIA’s proposal would only reduce the volumetric
portion of the IOUs’ default rates by about $0.02 per kWh,\footnote{2 cents per kWh compared to 31-46 cent per kWh retail rate.} or by about 5%.\footnote{SEIA, p. 23.} This
hardly makes a dent in reducing the volumetric rate, especially in light of the fact that
rates in the last couple of years have increased by an annual rate of 7%-9%.\footnote{Cal Advocates Errata Testimony Chapter 1, pp. 4-5. Since 2017, the average residential rate for California’s IOUs have increased by 7%-9% annually.}
Considering this pace of increasing rates, SEIA’s proposal doesn’t even result in a
reduction in the volumetric rate compared to the average rate in place the previous year.
Thus, contrary to what SEIA claims, its proposal will provide little additional
encouragement to electrification.\footnote{SEIA, p. 30.} This conflicts with SEIA’s observation that the
“state’s electric rates are high, presenting a challenge to customers’ ability to afford this
essential commodity – especially given that customers also will be asked (or required) to
make new long-term investments in electrification technologies such as electric vehicles
(EVs) and heat pumps.”\footnote{SEIA, p. 3.} SEIA recognizes that high rates discourage electrification, yet
its proposal does little to encourage it since volumetric rates will remain high. Similarly,
CEJA’s proposal, using results from the E3 tool, reduces volumetric rates by only 5-7% depending on the IOU.\textsuperscript{30} By comparison, Cal Advocates’ IGFC proposal would substantially reduce volumetric retail rates by $0.06-$0.08/kWh, or by 16%-22% depending on the IOU.\textsuperscript{31} SEIA shows that the overall bill impacts of their proposal for low-income customers are modest, in a range of +1% to -2%.\textsuperscript{32} Cal Advocates’ proposal would reduce bills for low-income customers by a more substantial 16%.\textsuperscript{33} More volumetric rate reductions than those achieved by SEIA and CEJA’s proposals are required to meet electrification goals and provide rate relief to low-income customers.

B. SEIA’s classification of fixed costs is too narrow and runs counter to cost causation principles.

SEIA claims that the only category of marginal costs that are not driven by customer usage (“the volume of electricity consumed”) is marginal customer access costs.\textsuperscript{34} This position contrasts with the positions of the majority of parties in this proceeding.\textsuperscript{35} SEIA’s exclusion of Non-Marginal Distribution costs from fixed charges is based on a false premise, that any additional delivery costs that are added to marginal customer and distribution costs when these marginal costs are scaled up to the delivery revenue requirement are distribution costs, and are not customer-related.\textsuperscript{36} This line of reasoning is equivalent to the reasoning the Commission previously used in D.17-09-035, which rejected inclusion of the equal percent of marginal cost (EPMC) scalar from

\textsuperscript{30} Comparing CEJA’s New Rates in their E3 printout, for each IOU’s default rate for Non-CARE customers, to the E3 tool’s analogous rates in the ‘Modeled Existing Rates’ tab rows 24-29.

\textsuperscript{31} Cal Advocates Errata Testimony Chapter 1, p. 2.
\textsuperscript{32} SEIA, p. 23.
\textsuperscript{33} Cal Advocates Errata Testimony Chapter 1, p. 18.
\textsuperscript{34} SEIA, p. 15.
\textsuperscript{35} A broad range of parties representing diverse interests including Cal Advocates, the Joint IOUs, Sierra Club, TURN/NRDC, and the small utilities. See Sierra Club pp. 8-15, TURN/NRDC pp. 19-22, Joint IOUs pp. 38-42, Cal Advocates Errata Testimony Chapter 1 pp. 7-12, PacifiCorp pp. 8-18, Liberty p. 3, BVES p. 3, and CEJA p. 3 (though CEJA doesn’t recommend any distribution costs).
\textsuperscript{36} SEIA, p. 18.
default residential fixed charges. These EPMC scaled revenues comprise the difference between the distribution revenue requirement and distribution marginal costs, or simply put, the revenues above marginal costs. In 2021, the Commission reversed its stance on the categories of costs that may be recovered in default residential fixed charges. Cal Advocates agrees with the Joint IOUs that there is no reason to limit fixed charges to a certain level or hold to prior precedent. Moreover, these EPMC revenues include wildfire mitigation and vegetation management, reliability improvements, safety and risk management distribution costs, ongoing distribution operations and maintenance, many regulatory balancing accounts, and various programs and policy mandates. These costs clearly do not vary with the quantity of energy consumed and so are eligible for inclusion in a fixed charge.

SEIA also falsely claims that certain NBCs should be excluded from fixed charges because they recover generation-related costs caused by customers’ use of energy (kWh) and capacity (kW). Specifically, SEIA alleges programs such as energy efficiency, demand response (DR), and the Self Generation Incentive Program (SGIP) can be viewed as state policy-driven programs designed to provide alternatives to utility-scale generation. However, these costs do not vary with generation. As Sierra Club correctly explains, even though energy efficiency programs provide alternatives to conventional generation, those program costs do not actually vary with electrical usage. Sierra Club also correctly states that energy efficiency program costs and incentives are annual expenditures that may be ramped up or down from year to year to meet the Commission’s

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37 D.17-09-035, p. 27.
39 Joint IOU, p. 27.
40 Joint IOU, p. 39.
41 SEIA, p. 18.
42 SEIA, p. 19.
43 Sierra Club, p. 15.
programmatic objectives, independent of whether load increases or decreases. This reasoning is also applicable to the SGIP and to DR programs. SEIA did not address the nature of other non-bypassable costs related to wildfire expenditures. Cal Advocates notes that though many costs are fixed in nature, Cal Advocates did not recommend including them all for policy considerations, as described in section II.D.

C. SEIA’s reliance on existing electrification rates to encourage customer adoption of electrification technologies will not adequately incent electrification.

SEIA claims that dynamic, time-varying, volumetric rates are far more important than fixed charges for maximizing demand flexibility and beneficial electric use by California consumers. SEIA posits that larger differentials between on-peak and off-peak rates in electrification rates, compared to the default rates, result in lower off-peak rates that are much more attractive (important) for incremental electric use such as electric vehicle (EV) charging. SEIA has not shown how the electrification incentives change when such rates include higher fixed charges.

Current electrification rate offerings are inadequate to encourage the level electrification needed to meet the State’s decarbonization goals. Volumetric rates in those offerings are themselves becoming too high in the absence of an IGFC. Indeed, electrification rates were developed with the goal of providing lower volumetric rates, recognizing that these lower volumetric rates better incent electrification than higher volumetric rates.

But simply increasing the differential, as SEIA recommends, is not the solution as it can create cost shifting. Charging less for off-peak energy than its marginal cost of service will impose costs on other customers. Increasing the differential only prolongs

\[44\] Sierra Club, p. 15.
\[45\] SEIA, p. 32.
\[46\] SEIA, p. 33.
\[47\] Decision Adopting Marginal Costs, Revenue Allocation, And Rate Designs for Pacific Gas And Electric Company D.21-11-016, p. 108.
the economic case for electrification until these differentials cannot be increased anymore without creating additional problems, especially if both variable and fixed costs continue to increase. Artificially inflating the peak period prices and reducing the off-peak period prices sends incorrect price signals of the cost of providing service, as TURN/NRDC state. Additionally, an all-volumetric rate that disproportionately recovers fixed costs during the on-peak period to artificially reduce the off-peak period distorts price signals, sends false scarcity signals, and may result in volatile fixed cost revenue recovery. Thus, on-peak prices can only be increased and off-peak prices decreased so much until other issues arise. Additionally, the creation of electrification rates was a way to bypass elements such as the baseline pricing requirements and fixed charge caps that kept volumetric rates high in default rates. These two elements placed restrictions on how volumetric rates could be reduced in default rates to incent electrification. This is a fact that SEIA admits in its statement that “the electrification rates are not tiered by usage to provide greater incentive for electrification.” Now that AB 205 removed fixed charge restrictions on default rates, the IGFC provides opportunities to improve the financial prospects of customers on electrification rates by reducing volumetric rates. However, the size of the IGFC will determine the relative reduction in volumetric rates and SEIA’s proposed IGFC is too small to have any material impact.

D. Cal Advocates’ proposed fixed charge level collects the correct portion of fixed charges.

There are a variety of costs included in utility revenue requirements that can be categorized as “fixed” because the costs do not vary based upon customer usage. In addition to non-marginal distribution costs, wildfire fund, wildfire hardening, public

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48 TURN/NRDC, p. 7.
49 SEIA, p. 33.
purpose program (PPP), Cal Advocates agrees with TURN\textsuperscript{50}/NRDC\textsuperscript{51} and Sierra Club\textsuperscript{52} that the power charge indifference adjustment (PCIA), nuclear decommissioning (ND), and new system generation charge (NSGC) are also fixed. TURN/NRDC’s proposal notes that PCIA and NSGC are sunk costs, with PCIA associated with legacy generation resources including utility-owned generation and power purchase contracts, and NSGC associated with local capacity procured for reliability.\textsuperscript{53} Similarly, Sierra Club finds that PCIA, ND, and the Competition Transition Charge (CTC) are costs associated with generation resources that benefit all customers, regardless of which load serving entity is responsible for serving their energy requirements.\textsuperscript{54} These are generation cost components that no longer vary based on the volume of energy consumed and include stranded costs that became disconnected from the economics of generation supply.\textsuperscript{55} While these costs\textsuperscript{56} are fixed and may be considered in an IGFC, Cal Advocates reaffirms its stance on moderate fixed charge levels for initial implementation, and so declines to include such costs at this time. Declining to initially include these costs avoids excessively high fixed charges that could compromise implementation of IGFCs.\textsuperscript{57}

E. Cal Advocates’ Proposed Average Fixed Charges for the Small IOUs.

Cal Advocates proposes the following IGFCs (Table 2) to be collected from PacifiCorp’s, BVES’, and Liberty Utilities’ (collectively the “small IOUs”) customers.

\begin{table}[h]
\centering
\begin{tabular}{|l|l|}
\hline
\textbf{Company} & \textbf{IGFC} \\
\hline
PacifiCorp & I \\
BVES & I \\
Liberty Utilities & I \\
\hline
\end{tabular}
\caption{Cal Advocates’ Proposed Average Fixed Charges for the Small IOUs}
\end{table}

\textsuperscript{50} SEIA, p. 21.
\textsuperscript{51} SEIA, p. 21.
\textsuperscript{52} Sierra Club, p. 8-9.
\textsuperscript{53} TURN/NRDC, pp. 21-22.
\textsuperscript{54} Sierra Club, pp. 8-9.
\textsuperscript{55} Sierra Club, p. 9.
\textsuperscript{56} Still not an exhaustive list of costs that can be fixed.
\textsuperscript{57} Cal Advocates Errata Testimony Chapter 1, p. 9.
Table 2: Illustrative Proposed IGFCs for the Small IOUs

<table>
<thead>
<tr>
<th>Income Bracket</th>
<th>PacifiCorp Single Family</th>
<th>PacifiCorp Multi Family</th>
<th>BVES</th>
<th>Liberty Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-CARE</td>
<td>CARE</td>
<td>Non-CARE</td>
<td>CARE</td>
</tr>
<tr>
<td>&lt;$50,000*</td>
<td>$17.53</td>
<td>$9.15</td>
<td>$14.57</td>
<td>$7.60</td>
</tr>
<tr>
<td>$50,000 - $100,000</td>
<td>$24.54</td>
<td>$12.81</td>
<td>$20.39</td>
<td>$10.64</td>
</tr>
<tr>
<td>&gt;$100,000</td>
<td>$28.23</td>
<td>$14.73</td>
<td>$23.45</td>
<td>$12.24</td>
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</table>

BVES

<table>
<thead>
<tr>
<th>Income Bracket</th>
<th>Non-CARE</th>
<th>CARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;$50,000*</td>
<td>$11.69</td>
<td>$6.98</td>
</tr>
<tr>
<td>$50,000 - $100,000</td>
<td>$16.36</td>
<td>$9.77</td>
</tr>
<tr>
<td>&gt;$100,000</td>
<td>$18.82</td>
<td>$11.24</td>
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</table>

Liberty Utilities

<table>
<thead>
<tr>
<th>Income Bracket</th>
<th>Non-CARE</th>
<th>CARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;$50,000*</td>
<td>$12.57</td>
<td>$7.69</td>
</tr>
<tr>
<td>$50,000 - $100,000</td>
<td>$17.59</td>
<td>$10.77</td>
</tr>
<tr>
<td>&gt;$100,000</td>
<td>$20.23</td>
<td>$12.38</td>
</tr>
</tbody>
</table>

* $0 when CCC offset is applied

Cal Advocates designed the IGFCs in Table 2 to collect the average fixed charge amounts based on specific cost components shown in Table 3.

Table 3: Illustrative Proposed Average Fixed Charge and Components for the Small IOUs

<table>
<thead>
<tr>
<th>Fixed Charge Components (Average/Customer-Month)</th>
<th>PacifiCorp</th>
<th>BVES</th>
<th>Liberty</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCAC</td>
<td>$13.69</td>
<td>$14.79</td>
<td>$17.85</td>
</tr>
<tr>
<td>CARE</td>
<td>$3.33</td>
<td>$1.27</td>
<td>$0.99</td>
</tr>
<tr>
<td>PPP</td>
<td>$2.90</td>
<td>$0.15</td>
<td>$0.80</td>
</tr>
<tr>
<td>Wildfire(^58)</td>
<td>$0.15</td>
<td>N/A</td>
<td>$3.28</td>
</tr>
<tr>
<td>Total</td>
<td>$20.08</td>
<td>$16.22</td>
<td>$22.91</td>
</tr>
</tbody>
</table>

\(^58\) The large IOUs reported separate wildfire fund and wildfire hardening charges that Cal Advocates included in its IGFC proposal. The small IOUs report wildfire related costs differently so Cal Advocates simply shows a wildfire category that captures separately identifiable wildfire related charges.
Table 4 provides a comparison between Cal Advocates’ proposal, the small IOU’s proposals and the current average fixed charges for the small IOUs.\textsuperscript{52}

Table 4: Comparison of Average Fixed Charge Proposals for the Small IOUs

<table>
<thead>
<tr>
<th></th>
<th>PacifiCorp</th>
<th>BVES</th>
<th>Liberty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cal Advocates Proposal</td>
<td>$20.08</td>
<td>$16.22</td>
<td>$22.91</td>
</tr>
<tr>
<td>IOU Proposals</td>
<td>$62.83</td>
<td>$35.00</td>
<td>$105.65</td>
</tr>
<tr>
<td>Current Average Fixed Charges</td>
<td>$8.13</td>
<td>$10.00</td>
<td>$11.68</td>
</tr>
</tbody>
</table>

Cal Advocates developed its average fixed charge proposal for each of the small IOUs by employing the same criteria\textsuperscript{60} used to develop the average fixed charges for the large IOUs to uphold methodological consistency across all proposals. Like those for PG&E, SCE and SDG&E, these proposed fixed charges are designed to collect the costs of customer access (i.e., Marginal Customer Access Costs or “MCAC”), the cost of providing CARE discounts, PPP charges, and Wildfire-related charges.

PacifiCorp seemingly designed its fixed charge to collect its entire distribution revenue requirement which includes costs of transformers, service drops, meters, customer accounting, substations, poles, and conductor.\textsuperscript{61} While transformers, service drops, meters and customer accounting are easily identifiable equivalents to MCAC, it is not clear what portion of the other included costs are incurred to meet kW demand (i.e., equivalent to marginal distribution demand costs or “MDDC”). Inclusion of MDDCs, which are incurred to meet increases in customer kW, would be inappropriate for recovery in a fixed charge. Therefore, Cal Advocates recommends excluding such costs from PacifiCorp’s fixed charge. The Commission should include PPP, CARE and

\textsuperscript{52} The proposed and current amounts for BVES and Liberty were derived using information provided in opening testimony and workpapers provided to Cal Advocates via data requests.

\textsuperscript{60} Cal Advocates Errata Testimony Chapter 1, Section II.C, pp. 7-12. See Tables 3 and 4.

\textsuperscript{61} See PacifiCorp Exhibit PAC/102 and also based on workpapers PacifiCorp provided to Cal Advocates.
Wildfire Catastrophic Electric Memorandum Account (CEMA) costs as they do not vary with usage.

BVES proposes to collect in its fixed charge all distribution costs allocated to the residential customers in the General Rate Case (“GRC”) process, including costs of delivering power on the distribution system, costs of providing customer bills, and costs of responding to customer inquiries.\footnote{BVES, p. 3.} Consistent with the concern raised with PacifiCorp’s proposed fixed charge design, BVES’ inclusion of all distribution costs of delivering power on the distribution system, such as costs that are incurred to meet increases in distribution demand capacity constraints, would be inappropriate for recovery in a fixed charge. Cal Advocates recommends only including distribution costs that do not vary by usage and recommends the addition of PPP and all of BVES’ surcharges that do not vary by usage, such as its CARE surcharge.

Lastly, Liberty designs its fixed charge to collect distribution customer charges, distribution base revenues, generation base revenues, and any related distribution surcharges that are amortized under-collections due to sales differences or regulatory lags for setting GRC base revenues.\footnote{Liberty, pp. 2-3.} Liberty argues that its generation-related costs should be included in a fixed charge as it includes the costs for Liberty’s two solar facilities to reduce the overall amount of energy Liberty must purchase.\footnote{Liberty, p. 3.} These costs should be excluded from fixed charge recovery as they related to kWh generation and so are related to usage, rather than fixed costs. Moreover, Liberty did not provide any indication whether such facilities are historic sunk costs and/or stranded regulatory assets similar to PCIA costs.

Cal Advocates also recommends excluding what appears to be Energy Cost Adjustment Clause (ECAC) costs from Liberty’s fixed charge. While Liberty did not expressly mention in testimony that ECAC be included in fixed charge recovery, Liberty
includes it in their fixed charge workpapers. Upon investigation, ECAC costs cover the current cost associated with fuel and power purchases. Liberty uses such purchases to produce power with its generating plants, purchase power from wholesale suppliers, and deliver that power to customers. This description of ECAC seems to indicate that these are variable costs associated with generation and therefore should be excluded from fixed cost recovery. Finally, Liberty’s fixed charge workpapers do not provide clear indications as to what costs are marginal and what can be considered “non-marginal distribution costs.” But based on Liberty’s testimony, General Rate Case Memorandum Account (“GRCMA”) and its Base Revenue Requirement Balancing Account (“BRRBA”) can be considered non-marginal distribution equivalent costs. Such costs are surcharges that are amortized under-collections due to sales differences, or regulatory lags for setting GRC base revenues. Cal Advocates recommends such costs be included for recovery in Liberty’s fixed charge.

Consistent with the discussion in Section II.D, there are additional fixed costs that could be considered for recovery in a fixed charge. Nevertheless, the “Cal Advocates Proposed” amounts in Table 2 are designed to collect a reasonable portion of such costs to avoid adopting excessively high fixed charges upon implementation.

Due to the absence of available income data on the small IOUs’ customer base, Cal Advocates employed the income distribution available in the E3 tool to estimate an income distribution for the small IOUs. The number of customers from each of the large

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66 https://california.libertyutilities.com/uploads/CalPeco%20Residential%20Explanation%20of%20Charge s%202020%20-%20rev.pdf accessed on May 22, 2023. This document is a sample billing statement that includes a “charge explanation” section which provides details on each rate component a customer is billed.
67 https://california.libertyutilities.com/uploads/CalPeco%20Residential%20Explanation%20of%20Charge s%202020%20-%20rev.pdf accessed on May 22, 2023. This document is a sample billing statement that includes a “charge explanation” section which provides details on each rate component a customer is billed.
68 Liberty, p. 3.
69 Liberty, p. 3.
IOUs for each income bracket were summed up to develop a statewide income distribution. The shares of customers in each income bracket were then applied to each of the small IOUs’ customer bases to develop the IGFC amounts in Table 2. Cal Advocates used these shares (Table 5) as a proxy for the income distribution of the small IOUs’ customer base.

Table 5: Statewide Share of Non-CARE and CARE Population by Income Bracket

<table>
<thead>
<tr>
<th>Income Bracket</th>
<th>Number of Customers</th>
<th>Share of Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-CARE</td>
<td>CARE</td>
</tr>
<tr>
<td>[0,25]</td>
<td>289,645</td>
<td>1,322,162</td>
</tr>
<tr>
<td>[25,50]</td>
<td>940,114</td>
<td>871,570</td>
</tr>
<tr>
<td>[50,75]</td>
<td>1,331,607</td>
<td>332,164</td>
</tr>
<tr>
<td>[75,100]</td>
<td>1,252,659</td>
<td>127,311</td>
</tr>
<tr>
<td>[100,150]</td>
<td>1,757,719</td>
<td>130,188</td>
</tr>
<tr>
<td>[150,200]</td>
<td>989,619</td>
<td>56,120</td>
</tr>
<tr>
<td>200+</td>
<td>1,417,829</td>
<td>48,949</td>
</tr>
<tr>
<td></td>
<td>7,979,192</td>
<td>2,888,462</td>
</tr>
</tbody>
</table>

Notwithstanding these data limitations, Cal Advocates continues to recommend the same income brackets, bracket differentials, and CARE discount methodology for the Small IOUs’ IGFCs.\(^70\) That is, a flat differential of 1.15 should be applied between the highest and middle-income brackets and a higher differential of 1.4 should be applied between the lowest and middle-income brackets. Cal Advocates maintains that the fixed

\(^{70}\) Cal Advocates Errata Testimony Chapter 1, Section II.C, pp. 12-17.
charges for the lowest income bracket be offset using GHG allowance revenues consistent with Cal Advocates’ proposal for the large IOUs.\textsuperscript{21}

Lastly, Cal Advocates proposes to preserve PacifiCorp’s proposal\textsuperscript{22} to provide a separate set of fixed charges for single-family and multi-family customers. As described in section II.G such a differentiation is a reasonable proxy to convey different costs of service between small and large customers. Cal Advocates employed a factor of 1.20 which assigns single-family customers fixed charges that are 20% higher than those for multi-family customers. This factor was derived from PacifiCorp’s method\textsuperscript{23} of differentiating MCACs between single-family and multi-family customers.

F. Sierra Club and CEJA propose high differentiation of IGFCs across proposed income brackets that are too high for early implementation given new application of income verification methods for IGFCs.

Sierra Club’s proposed income graduation has steep increases in the fixed charge amounts from one income bracket to the next compared to other party proposals with similar average fixed charges. For SCE, Sierra Club proposes fixed charges ranging between $0 and $189\textsuperscript{24} to collect an average of $37 per month from each customer.\textsuperscript{25} By contrast, Cal Advocates’ proposal is slightly above $40/customer-month for the highest income bracket and TURN/NRDC’s proposal tops out at around $62/customer-month, despite proposing similar average fixed charge levels. CEJA also proposes steep income graduation, with fixed charges ranging between $0 and $86,\textsuperscript{26} on reduced income brackets to fit with the E3 tool; collecting an average of $15 per month from each customer.

\textsuperscript{21} Cal Advocates Errata Testimony Chapter 1, Section II.E, pp. 23-24.
\textsuperscript{22} PacifiCorp, p. 10.
\textsuperscript{23} “Income Grad Basic Charge Workpaper,” tab “Exh PAC 102 - Basic Chg Calc”, row 34. PacifiCorp’s proposal uses a different factor closer to 1.70 because it is based on a composite of marginal distribution demand costs and MCAC. Cal Advocates’ factor of 1.20 is only based on MCAC differences.
\textsuperscript{24} Sierra Club, p. 44.
\textsuperscript{25} Sierra Club, p. 3.
\textsuperscript{26} CEJA, Attachment 2, p. 8.
customer. Figure 1 compares average, minimum and maximum fixed charges associated with parties’ IGFC proposals.
Figure 1: Comparison of IGFC Proposals
The steep income graduation characteristic of Sierra Club and CEJA’s top-heavy fixed charge revenue collection proposals can create problems when combined with limited income verification capabilities early on. Under such proposals, even relatively small deviations between the number of high-income customers forecasted in the E3 tool and the number of high-income customers identified by income verification methods may create large, unintended swings in fixed charge revenue collection. Such deviations in revenue would then need to be collected in rates the following year via the form of higher fixed charges and/or volumetric rates. Table 6 provides a comparison of the percentage of total fixed charge revenues collected by income bracket for Sierra Club’s, CEJA’s, and Cal Advocates’ IGFC proposals. Sierra Club’s and CEJA’s proposals aim to collect 80% of all fixed charge revenues from customers with annual incomes above $150,000/year. These customers comprise only 20% of customers. On the other hand, Cal Advocates’ proposals aim to collect 26% of revenues from such customers.

Table 6: Percentage of Fixed Charge Revenue Collected by Income Bracket

<table>
<thead>
<tr>
<th>Income Bracket ($000)</th>
<th>% of Customers based on E3 Tool</th>
<th>Sierra Club</th>
<th>CEJA</th>
<th>Cal Advocates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Revenue Collected (Millions)</td>
<td>Revenue Collected (%)</td>
<td>Revenue Collected (Millions)</td>
</tr>
<tr>
<td>[0,25]</td>
<td>15%</td>
<td>$0</td>
<td>0%</td>
<td>$0</td>
</tr>
<tr>
<td>[25,50]</td>
<td>18%</td>
<td>$0</td>
<td>0%</td>
<td>$0</td>
</tr>
<tr>
<td>[50,75]</td>
<td>17%</td>
<td>$57</td>
<td>3%</td>
<td>$0</td>
</tr>
<tr>
<td>[75,100]</td>
<td>13%</td>
<td>$51</td>
<td>3%</td>
<td>$0</td>
</tr>
<tr>
<td>[100,150]</td>
<td>18%</td>
<td>$190</td>
<td>11%</td>
<td>$8</td>
</tr>
<tr>
<td>[150,200]</td>
<td>9%</td>
<td>$352</td>
<td>20%</td>
<td>$3</td>
</tr>
<tr>
<td>200+</td>
<td>11%</td>
<td>$1,101</td>
<td>63%</td>
<td>$24</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>$1,751</td>
<td>100%</td>
<td>$34</td>
</tr>
</tbody>
</table>

See also Chapter 2 of Cal Advocates’ Opening Testimony and Chapter 2 of Cal Advocates’ Rebuttal Testimony.
Equally striking is Sierra’s Club’s and CEJA’s proposals to collect 63%-69% of revenues from customers with annual incomes above $200,000/year, which is only 11% of all customers. Note that the table above only breaks out revenue collection amounts for CEJA using the E3 tool, which has a maximum income cut off at $200,000. CEJA proposes income brackets approaching $5,000,000 with 50% of fixed charge revenues collected from customers with incomes above $1,000,000 but these could not be modeled with the E3 tool. Such disproportionate reliance on revenue collection from a small segment of customers increases the risk of revenue collection volatility and increases the consequences of customers being assigned to the incorrect income bracket.

Table 7 compares percentage revenue shortfall estimates associated with fixed charge revenues resulting from Sierra Club’s, CEJA’s and Cal Advocates’ IGFC proposals. It focuses on scenarios where the number of customers who earn greater than $150,000/year forecast deviate by 10%, 15% and 20% using the E3 tool. Even a 10% deviation would produce revenue shortfalls around 8% under Sierra Club’s and CEJA’s proposals and only 1% under Cal Advocate’s proposal. Such revenue shortfall statistics would be worse under CEJA’s more aggressive income segmentation proposal. The Commission should avoid excessively steep fixed charge differentials to mitigate the risk of revenue shortfalls and related rate volatility. When income verification is tested and proven to provide a reasonable level of accuracy, it may be appropriate for the Commission to consider utilizing larger fixed charge differentials between income brackets.

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28 CEJA, p. 22. Bases revenue collection on share of income tax liability.
Table 7: Estimates of Revenue Shortfall (%)

<table>
<thead>
<tr>
<th>Deviation of 150k+ Customer Count Estimates</th>
<th>Sierra Club</th>
<th>CEJA</th>
<th>Cal Advocates</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>8%</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td>15%</td>
<td>12%</td>
<td>11%</td>
<td>2%</td>
</tr>
<tr>
<td>20%</td>
<td>16%</td>
<td>15%</td>
<td>3%</td>
</tr>
</tbody>
</table>

G. Collecting information on single- and multi-family homes will allow for differentiation based on size and application of varied fixes charges by customer size.

Cal Advocates supports TURN/NRDC’s recommendation to direct the utilities to improve their collection of customer data to include single-family and multi-family identifiers. Once available, utilities can use this information to establish separate single-family and multi-family fixed charges in appropriate rate design proceedings. Single and multi-family identifiers could be reasonable proxies to convey different fixed costs of service between small and large customers. Additionally, using such identifiers to differentiate fixed charges would be simple to administer once the data is available and easier for customers to understand compared to a demand charge approach. PacifiCorp already uses single-family and multi-family fixed charges. If the Commission rejects fixed charge differentiation based on dwelling type (i.e. single-family vs multi-family), Sierra Club’s proposal to base the fixed charge amount on residential units with a dedicated service stop and a discount on units that share service drops to differentiate the

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29 TURN/NRDC, p. 16.
30 TURN/NRDC, p. 16.
31 Joint IOU, p. 52. As an alternative, the Joint IOUs suggest that the Commission could explore the concept of a threshold-based demand charge.
32 PacifiCorp, p. 10.
fixed costs of service between small and large customers is also worth exploring in the future.\textsuperscript{83}

H. Liberty lacks data supporting that their proposal reduces bills for low-income households.

The Guidance Memo asks parties to address the question: “How will the proposal guarantee that low-income ratepayers pay a lower average monthly bill without any change in usage, as required by AB 205.”\textsuperscript{84} Liberty states that its IGFC proposal will reduce low-income customers’ overall bill but their response on how the proposal will guarantee such a reduction is lacking.\textsuperscript{85} Specifically, Liberty’s testimony does not provide evidence that its proposal achieves the requirement in AB 205 as Liberty provides no bill impacts of its proposal in its testimony\textsuperscript{86} nor in subsequent data requests from Cal Advocates.\textsuperscript{87} The Commission should require Liberty provide bill impacts showing low-income customers benefit from their proposal as required by AB 205.

I. Volumetric adjustments to non-default rates.

Cal Advocates supports SDG&E’s proposal to adjust volumetric rates for its optional rate, EV-TOU-5, in the case where an IGFC proposal is applied to EV-TOU-5\textsuperscript{88}. Cal Advocates agrees with most parties’ determinations that non-default rates should at minimum have the same IGFC as the Commission-adopted IGFC for the default rates to prevent bypass of IGFCs. But there are various ways to reduce volumetric pricing in such rates to account for IGFCs, either on an equal cents per kWh basis, a similar proportionality basis, or some other method. SDG&E proposes to take an alternative approach with a limit on how low EV-TOU-5’s rates may be reduced. Specifically,

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\textsuperscript{83} Sierra Club, p. 38.
\textsuperscript{84} R.22-07-005, Phase 1 Track A: Income-Graduated Fixed Charge Guidance Memo, p. 6.
\textsuperscript{85} Liberty, p. 3.
\textsuperscript{86} Liberty, p. 5.
\textsuperscript{87} Cal Advocates to Liberty 1 and 2.
\textsuperscript{88} SDG&E-01 - Prepared Opening Testimony of Gwendolyn R. Morien on Behalf of San Diego Gas & Electric Company Chapter 1 -- Rate Design & Cost Recovery, p. GRM-12.
SDG&E sets its distribution rates at least equal to SDG&E’s marginal distribution demand costs in all TOU periods (keeping in mind that SDG&E’s proposed IGFC collects all MCAC). SCE and PG&E should adopt SDG&E’s proposal for their own non-default rates, so that they both also impose a marginal cost floor for all TOU periods.

The Commission should take precautions in reducing volumetric rates for electrification rates as there are additional considerations that impact cost recovery. As PG&E and SDG&E correctly note, equal cents/kWh adjustments across all time periods may produce negative rates in the lowest price periods, which can create cost shifting. Obviously, a negative distribution rate is nonsensical and would send signals to customers that their consumption reduces costs when it does not. For this reason, PG&E proposed to apply proportional adjustments instead. PG&E’s is rational, providing an improvement over negative distribution rates that would result from the equal cents method, but SDG&E’s proposal is preferable and should be applied as it is more cost based. If the Commission decides not to evaluate costs for electrification rates at this level of detail in this proceeding, then PG&E and SCE should explore such an option in a future rate design window (RDW) or general rate case (GRC) phase 2 (P2) proceeding.

J. A climate credit offset may be employed to enhance other parties’ IGFC proposal to provide more benefits for low-income customers.

Cal Advocates recommends applying the CCC to offset fixed charges for low-income customers in other parties’ proposals. This can be applied either in the short term

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91 PG&E-01, pp. 1-6 and 1-7. “Further, having such large implicit subsidies for off-peak usage conflicts with both PG&E rate design practice and the CPUC’s proposed Rate Design Principles No. 8 (Rates should avoid cross-subsidies that do not transparently and appropriately support explicit state policy goals) and No. 9 (Rate design should not be technology-specific and should avoid creating unintended cost-shifts).”

92 PG&E-01, p. 1-6.
to ease implementation of IGFCs or over a longer time horizon to provide ongoing
benefits. For example, the credit could be applied to offset the IOUs proposed fixed
charges on low-income customers ranging between $15 and $34 dollars per customer-
month to the extent CCC funds are available. The offset will ensure that more or all
low-income customers will benefit from IGFCs, consistent with AB 205.

III. CONCLUSION
Cal Advocates’ proposed IGFC proposal collects the optimal level of fixed costs
in a manner that provides bill reductions and electrification opportunities without
overburdening any single group of customers. These are appropriate considerations for
the initial implementation of IGFCs. Additionally, Cal Advocates’ fixed charges are
configured with the correct level of differentiation to minimize the impact of possible
income verification challenges and ensures stable revenue collection. These are
important aspects that the Commission should consider in its evaluation of IGFC
proposals.

Joint IOUs, p. 5. Includes the IOU’s 2 lowest proposed income brackets, encompassing all
CARE/FERA customers.
APPENDIX A

SUPPORTING ATTACHMENTS
May 10, 2023

DATA REQUEST RESPONSE
LIBERTY UTILITIES (LIBERTY)
R.22-07-005

Data Request No.: Cal Advocates 01
Requesting Party: Public Advocates
Originator: Otto Nichols ottot.nichols@cpuc.ca.gov
Date Received: April 19, 2023
Due Date: May 1, 2023

REQUEST NO. 1:

Please provide all workpapers, calculations, and Excel spreadsheets prepared in support of Liberty's income graduated fixed charge proposal and bill impacts.

RESPONSE TO REQUEST NO. 1:

Please see file attachment “Fixed Charge Proposal” for the requested information.

REQUEST NO. 2:

Please note where in the provided workpapers you provide the following:

a. Marginal customer access costs (MCAC) revenues
   i. MCAC equal percent marginal cost (EPMC) scaler
b. All Non-bypassable Charges (NBC) and their revenues
   i. Please provide Liberty’s overall Public Purpose Program (PPP) revenues
      1. Please include the residential share of the CARE discount.
   ii. Please include any wildfire related NBCs if applicable.
c. Number of billing months for each of Liberty’s income graduated fixed charge income bracket or tier.

RESPONSE TO REQUEST NO. 2:

a. Liberty does not have Marginal customer access costs (MCAC).
b. Liberty does not have Non-bypassable Charges (NBC).
c. Liberty’s fixed charge proposal is for 12 billing months.

REQUEST NO. 3:

Please explain and provide cell references of the categories of costs and associated revenue requirements used to develop the overall revenue Liberty’s proposed fixed charge is designed to collect.

RESPONSE TO REQUEST NO. 3:

Please see file attachment “Fixed Charge Proposal” for the requested information.
APPENDIX A.2
Liberty Response to Data Request Cal Advocates-02
DATA REQUEST RESPONSE
LIBERTY UTILITIES (LIBERTY)

R.22-07-005

Data Request No.: Cal Advocates 02
Requesting Party: Public Advocates
Originator: Otto Nichols otto.nichols@cpuc.ca.gov
Date Received: May 13, 2023
Due Date: May 23, 2023

REQUEST NO. 1:
In Liberty’s Opening Testimony, Liberty states that low-income customers will see a reduction to their overall bill (p. 3, Part II.A.2). However, later in testimony on page 5, Part II.D.1, in response to the question, “How will the proposal guarantee that low-income ratepayers pay a lower average monthly bill without any change in usage, as required by AB 205?”, Liberty does not state explicitly that this IGFC proposal complies with this AB 205 requirement. Further, Liberty does not provide bill impacts in testimony.

1. Does Liberty's IGFC proposal reduce bills for low-income customers without any change in usage, as required by AB205? Please state a yes or no answer.
   a. If yes, please provide bill impact examples showing how the proposed IGFCs reduce bills for low-income customers.
   b. If no, please provide bill impact examples showing how the proposed IGFCs do not reduce bills for low-income customers.
RESPONSE TO REQUEST NO. 1:

Yes, the average low-income customer's bill will be lower than their current bill. Liberty is in the process of implementing recently approved GRC rates and will provide bill impact examples once this process is complete.
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 except section II.H in Chapter 1 of Rebuttal Testimony on Income Graduated Fixed Rate Design.

Q4. Does this conclude your prepared rebuttal 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 contributed to the Cal Advocates Proposed Average Fixed Charges for the Small IOUs (i.e., Section II.E) section and to the discussion section on Liberty lacks data supporting that their proposal reduces bills for low-income households (i.e., Section II.H) in Chapter 1 of Rebuttal Testimony on Income Graduated Fixed Rate Design.

Q4. Does this conclude your prepared rebuttal testimony?

A4. Yes, it does.