E3 Fixed Charge Tool and Income Verification Follow-up Workshop
R.22-07-005, Phase 1, Track A

Energy Division | February 1, 2023

Virtual Housekeeping

Note: This session will be recorded.

Please keep yourself muted when not talking

3 ways to comment:

• Use the "raise hand" feature in WebEx (look for icon in lower right-hand corner of Webex window) and wait to be called on. Unmute yourself when you're ready.

• Over the telephone: ensure phone is unmuted and then dial *3 to "raise hand" and *6 to mute/unmute your phone line

• Type your question in the "Chat" window. Please give us time to get to your question.

Agenda

Time	Topic	Speakers
1pm – 1:15pm	Welcome and Administrative Notes	• ED Staff
1:15pm – 2:15pm	Overview of Fixed Charge Tool	• E3
2:15pm – 3pm	Questions/Feedback from Parties on Tool	• All
3pm – 3:45pm	Follow-up on December Income Verification Workshop Discussion • Review ideas discussed in December • Solicit additional feedback/questions from parties	• ED Staff
3:45pm – 4pm	Close	• ED Staff

Workshop Goals

- Ensure parties understand fixed charge tool's capabilities

- Ensure parties understand how to use fixed charge tool

- Gather party feedback on tool (during and after workshop):
  - Identify any errors in tool's methodology
  - Recommend improvements to the tool's functionality and outputs

- Give parties an opportunity to share any additional thoughts on income verification ideas generated at December workshop

Fixed Charge Tool – Goals

- Develop a common set of non-confidential IOU data for parties to use when formulating their proposals

- Provide a tool that will aid parties in designing a revenue neutral fixed charge design that complies with the AB 205 requirements

- Give parties the ability to understand the bill impacts of a given proposal for customers in different climate zones and income brackets

- Design the tool to be as flexible as possible, subject to time and data constraints

Fixed Charge Tool – Guidance

- To facilitate comparison of party proposals, all proposals should be grounded in the underlying data that is embedded in the tool

- To the extent possible, use the tool to design a revenue neutral fixed charge and estimate bill impacts for customers by climate zones and income categories

- If modification of final tool is needed to model proposal, describe and justify changes to model assumptions in testimony

Overview of Fixed Charge Tool

R.22-07-005, Phase 1, Track A

February 1, 2023

Energy+Environmental Economics

Snuller Price, Senior Partner
Ari Gold-Parker, Associate Director
Margo Bonner, Managing Consultant
Tara Katamay-Smith, Senior Consultant
Hannah Platter, Associate

Agenda

+ **Project Team**

+ **Policy background and context**

+ **Tool Design and Functionality**

  • Key considerations and limitations

+ **Detailed walk-through by function**

  • Function 1: Rate Design

  • Function 2: Bill Impacts

+ **Live Demo (if needed)**

+ **Stakeholder Feedback and Timeline**

+ **Discussion / Q&A**

Project Team

Partner

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Senior Partner

Project Lead

Ari Gold-Parker
Associate Director

Project Manager

Margo Bonner
Managing Consultant

Technical Lead

Tara Katamay-Smith
Senior Consultant

Analyst

Hannah Platter
Associate

Policy Background

+ Phase 1 Scoping Memo:

- "Track A will establish an income-graduated fixed charge for residential rates for all investor-owned electric utilities…

- Track B will streamline and expedite the adoption of demand flexibility rates for large investor-owned electric utilities."

+ Order Instituting Rulemaking lists the following objectives for this proceeding:

1. Enhance the reliability of California's electric system
2. Make electric bills more affordable and equitable
3. Reduce the curtailment of renewable energy and greenhouse gas emissions associated with meeting the state's future system load
4. Enable widespread electrification of buildings and transportation to meet the state's climate goals
5. Reduce long-term system costs through more efficient pricing of electricity
6. Enable participation in demand flexibility by both bundled and unbundled customers

Focus of model for Track A

Tool Objectives

1. **Help parties develop proposals for an income-graduated fixed charge**

   - Options to develop customer and demand-based charges

   - Volumetric charges are based on existing TOU rate structure(s)

2. **Calculate a standard set of metrics for each party proposal**

   - Overview of proposed rate design (income-differentiated customer charge, demand charge, TOU-based volumetric charge)

   - Comparison of customer bills on existing rates vs. proposed rates (by customer income, climate zone, and other categories)

   - Comparison of customer bill impacts of building and vehicle electrification (existing rates vs. proposed rates)

Tool Overview

1   Input Rate Design (one or all IOUs)

+ **Step 1:** Specify cost category percentages to be recovered through customer or demand charges.
+ **Step 2:** Assign weights to allocate the customer charge across income brackets
+ **Step 3:** Specify demand charge billing determinant (if revenue is allocated to the demand charge in Step 1)
+ **Step 4:** Specify the existing TOU rate to base the new volumetric charges on
+ **Step 5:** Review final rate design results and calculations

2   Tool Adjusts Charges to Recover Revenue Requirement by IOU

3   Standard Metrics Reported Based on Proceeding Objectives

+ Tool calculates bill impacts of new rate design on individual customers and customer subclasses

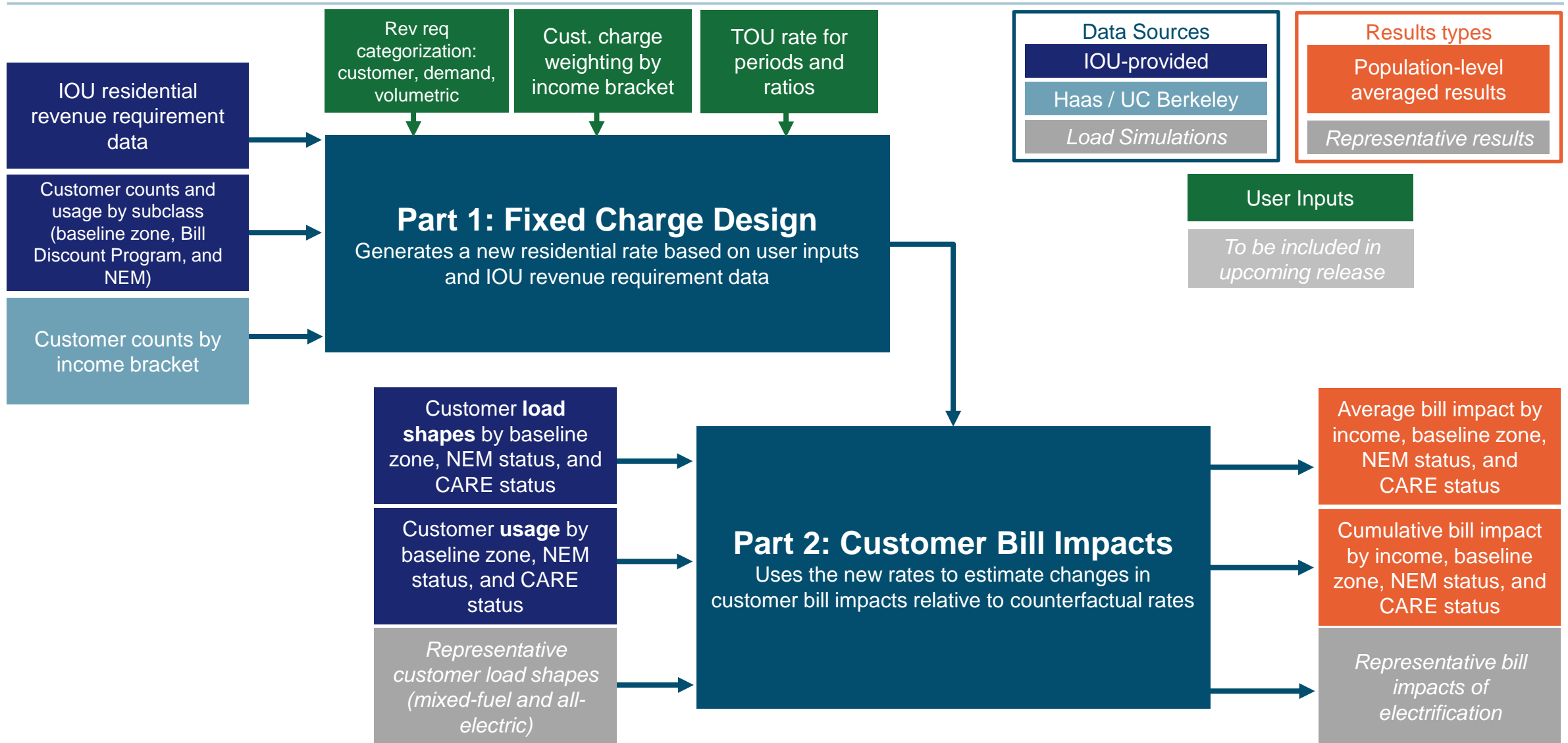Energy+Environmental Economics

Key considerations and limitations

+ Tool accommodates a range of rate design proposals, allowing user to specify:

- Revenue requirement cost allocations
- Customer charge differentiation by household income tiers
- Demand charge billing determinant
- TOU rate used for basis of volumetric charge ratios

+ There is currently limited flexibility in the ability to design different charges for Non-CARE vs. CARE customers (more details on future slide)

+ Outstanding items

- SDG&E and SCE data
  - Draft tool released on January 30th is only populated with PG&E's data due to timing constraints
- Representative bill impacts of electrification (building electrification and electric vehicles)
- Print-ready output tab for parties to include in opening testimony
- Other changes in response to party feedback

> **NOTE**
> Model uses manual calculations; Use **F9** to calculate

Model Overview – User Inputs

IOU residential revenue requirement data

Customer counts and usage by subclass (baseline zone, Bill Discount Program, and NEM)

Customer counts by income bracket

Rev req categorization: customer, demand, volumetric

Cust. charge weighting by income bracket

TOU rate for periods and ratios

Part 1: Fixed Charge Design
Generates a new residential rate based on user inputs and IOU revenue requirement data

Data Sources
- IOU-provided
- Haas / UC Berkeley
- *Load Simulations*

Results types
- Population-level averaged results
- *Representative results*

User Inputs

To be included in upcoming release

Customer load shapes by baseline zone, NEM status, and CARE status

Customer usage by baseline zone, NEM status, and CARE status

Representative customer load shapes (mixed-fuel and all-electric)

Part 2: Customer Bill Impacts
Uses the new rates to estimate changes in customer bill impacts relative to counterfactual rates

Average bill impact by income, baseline zone, NEM status, and CARE status

Cumulative bill impact by income, baseline zone, NEM status, and CARE status

Representative bill impacts of electrification

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Customer categories for Bill Impacts

+ **Average Annual Household Income Tiers:**

  • $0 - $25,000

  • $25,000 - $50,000

  • $50,000 - $75,000

  • $75,000 - $100,000

  • $100,00 - $150,000

  • $150,000 - $200,000

  • $200,000+

> Haas (UC Berkeley) population-level income data does not align with CARE and FERA eligibility requirements, which are based on both income and household size

+ **NEM Status**

+ **Bill Discount Status (CARE, FERA or No Bill Discount Program)**

+ **IOU Baseline Zone**

Function 1 Detail: Fixed Charge Rate Design Cost Allocation

Step 1: Specify the percentage of each cost category to be recovered through customer or demand charges.

- Remainder is recovered through volumetric charges

Cost Category	Cost Component (See "Glossary" tab for descriptions)	Residential Revenue Requirement	CARE-Exempt	Bundled Generation		Percent to Include in Fixed 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	$ 34,113,076	FALSE	TRUE		0%	0%	100%
Generation	Non-Marginal Generation	$ 1,050,365,240	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%	50%	50%
Distribution	Marginal Distribution Capacity Cost - Secondary	$ 29,945,145	FALSE	FALSE		0%	50%	50%
Distribution	Non-Marginal Distribution	$ 1,833,578,625	FALSE	FALSE		0%	0%	100%
Transmission	Transmission	$ 1,447,654,612	FALSE	FALSE		0%	0%	100%
Line Items	Public Purpose Programs - Not CARE Exempt	$ 289,586,963	FALSE	FALSE		0%	0%	100%
Line Items	Nuclear Decommissioning	$ 37,938,712	FALSE	FALSE		0%	0%	100%
Line Items	Wildfire Fund Charge	$ 63,120,120	TRUE	FALSE		100%	0%	0%
Line Items	Recovery Bond Charge	$ 215,256,658	TRUE	FALSE		100%	0%	0%
Line Items	Recovery Bond Credit	$ (215,256,658)	TRUE	FALSE		100%	0%	0%
Line Items	Wildfire Hardening Charge	$ 68,921,008	TRUE	FALSE		100%	0%	0%
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	New System Generation Charge	$ 96,956,158	FALSE	FALSE		0%	0%	100%
Line Items	Residential CARE Contribution	$ 262,820,693	TRUE	FALSE		80%	0%	20%
	Note: this is calculated based on the rate design							
Line Items	Climate Credit & EITE	$ (415,158,461)						
	Note: currently not used in model							
	Delivery RR - Before CARE Bill Discount	$ 7,032,741,656						

Source: 'Cost Allocation' Tab

Screenshot depicts example allocation used solely for illustrative purposes

Function 1 Detail: Fixed Charge Rate Design Dashboard

+ Step 2: Provide weights to allocate the customer charge across the 7 income brackets

- Weighting describes the ratio between brackets. (i.e., a weight of 2 indicates twice the charge as a weight of 1)
- If no differentiation is desired between or among brackets, assign those brackets the same weight

Income Bracket ($1000)	Number of Customers - CARE	Number of Customers - Non-CARE	Customer Charge Weighting
[0,25]	673,622	110,687	1
[25,50]	400,806	390,390	1
[50,75]	143,375	560,034	2
[75,100]	54,089	536,934	2
[100,150]	56,024	774,152	2
[150,200]	25,776	470,184	3
200+	25,727	771,534	3

Screenshot depicts example rate design used solely for illustrative purposes

+ Step 3: Specify the billing determinant to use for a demand charge (if revenue is allocated to the demand charge)

- Demand measures the maximum hourly delivered (imported) or received (exported) non-coincident demand in each month for a given customer

+ Step 4: Specify the existing TOU rate to base the new volumetric charges on

- For PG&E, customer can choose from the following existing TOU rates: E-TOU-C, EV2-A, and E-ELEC
- For both Distribution and Generation charges, the ratios among periods in the new rate will match this rate
- The tool assumes the same TOU rate structure(s) in place today
- TOU rates can be adjusted to maintain the same multiples (e.g., 2:1) among periods

Source: 'Rate Design Dashboard' Tab

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CARE Program Treatment

> "The average effective CARE discount shall not be less than 30 percent or more than 35 percent of the _revenues that would have been produced for the same billed usage by non-CARE customers_. 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_, or bill savings resulting from participation in other programs…
>
> …This bill would instead require that the average effective discount, as determined by the PUC, not reflect any charges for which CARE customers are exempted, _discounts to fixed charges_ or other rates paid by non-CARE customers, or bill savings resulting from participation in other programs."   - AB 205

+ **For each rate component (customer, demand, and volumetric), the model calculates CARE vs. Non-CARE rates using the same process:**

  1. Develop "Base Rate" that recovers the full allocated revenue requirement, excluding CARE-exempt charges, from all residential customers (CARE and Non-CARE)

  2. CARE Rate: apply a 30-35% discount to the Base Rate

  3. Non-CARE Rate: add to the Base Rate a "Non-CARE" adder based on the CARE-exempt charges (including CARE program funding)

+ **The model calculates the total amount of CARE funding required for the input rate design and collects a portion of that funding through residential CARE-exempt charges**

CARE Program Treatment

Example Customer Charge ($/mo.)
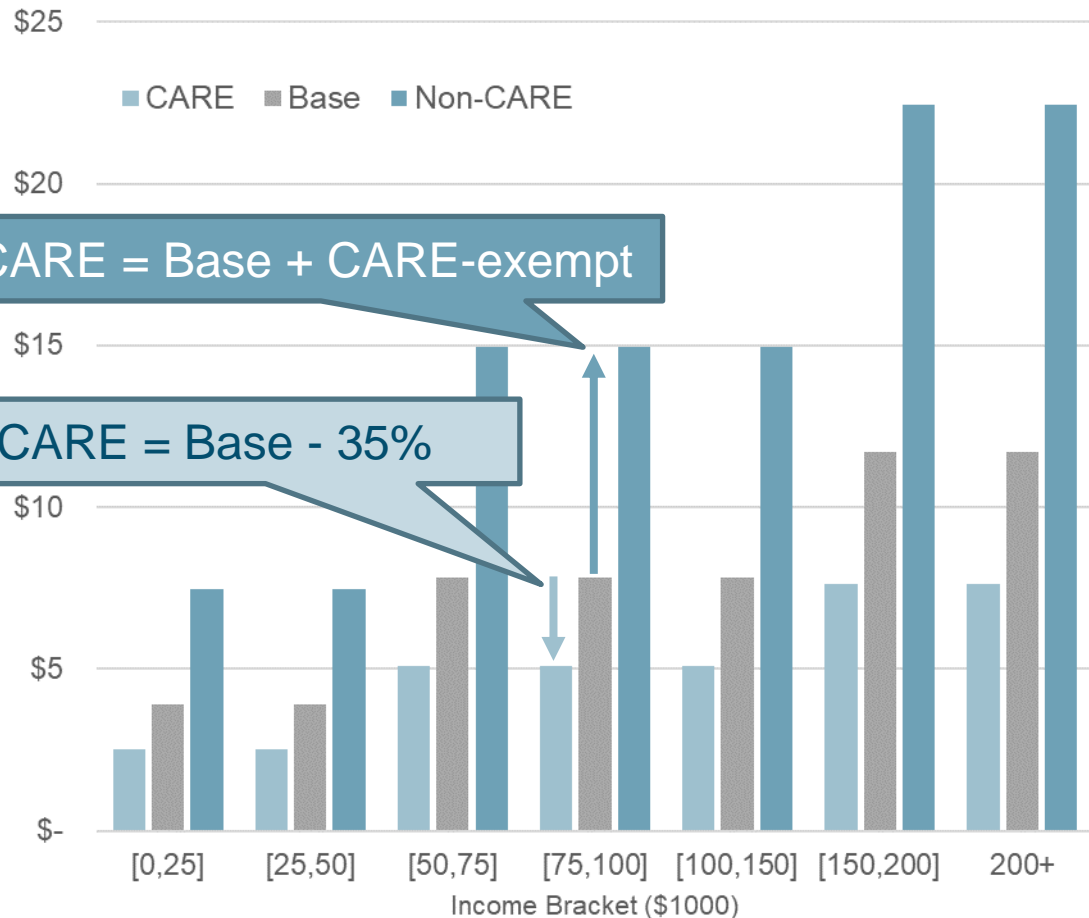
- **+ This approach clearly meets the requirements of AB205:**
  - The CARE discount is 35% on top of both CARE-exempt charges and any other "discount to fixed charges"

- **+ However, we recognize that parties may want to independently set CARE and Non-CARE customer charges**
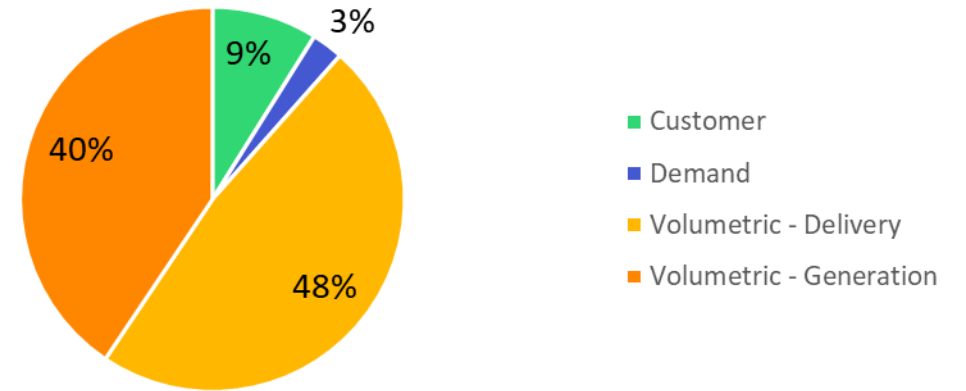
- **+ If this is your feedback, please be specific about your needs:**
  - Would CARE and Non-CARE (and FERA?) be used as categories instead of income tiers?
  - Would there be multiple income tiers within the CARE category? Within the Non-CARE category?

Function 1 Result: Final Rate Design

Step 5: Review the final fixed charge rate design results and adjust inputs if desired

Total Cost Recovery by Rate Component

- Customer — 9%
- Demand — 3%
- Volumetric - Delivery — 48%
- Volumetric - Generation — 40%

Customer Charge by Income and CARE Status [$/mo]

Income Bracket ($1000): [0,25], [25,50], [50,75], [75,100], [100,150], [150,200], 200+

☐ CARE   ☐ Non-CARE

Source: 'Rate Design Dashboard' Tab
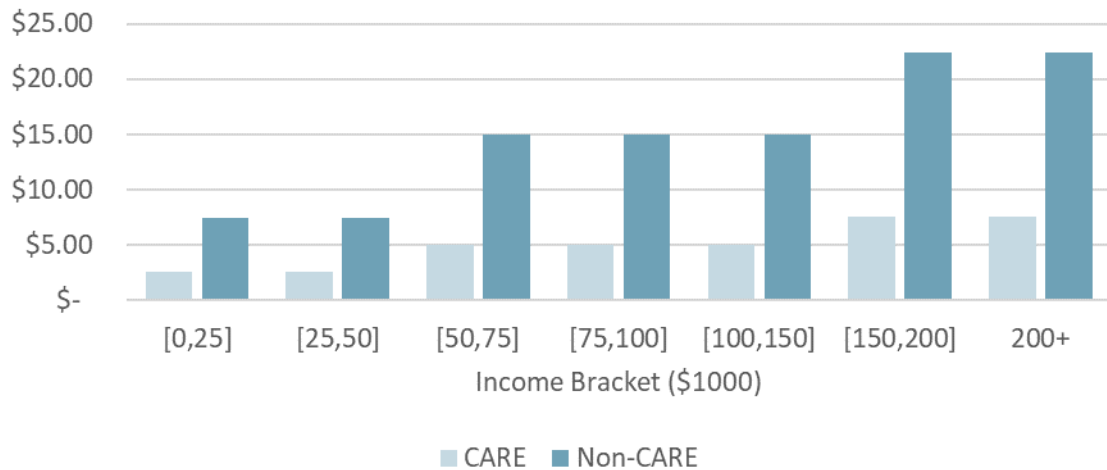
Existing and New Volumetric Rates (Non-CARE) [$/kWh]
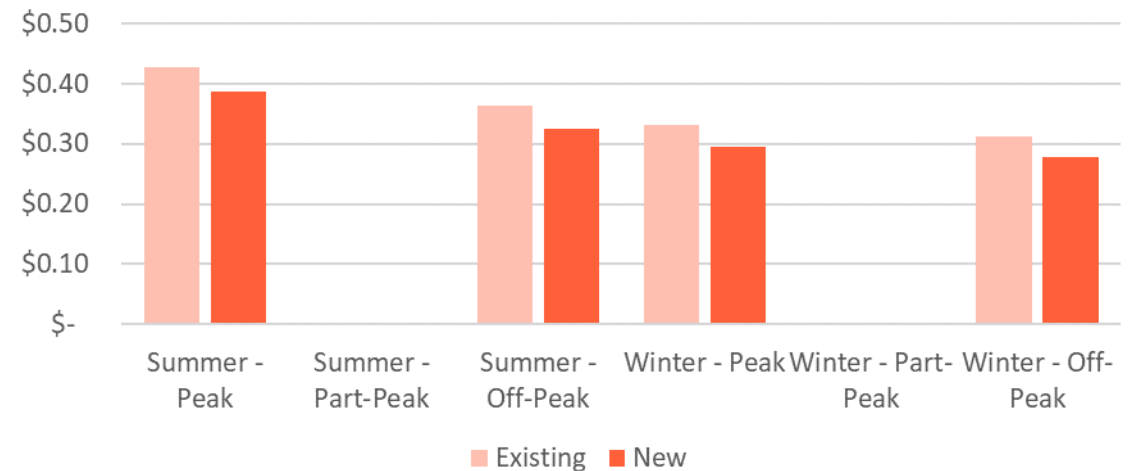
Summer - Peak, Summer - Part-Peak, Summer - Off-Peak, Winter - Peak, Winter - Part-Peak, Winter - Off-Peak

☐ Existing   ☐ New

Screenshots depict example rate design used solely for illustrative purposes

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Function 2 Detail: Bill Impacts Heat Map Results

Average Monthly Customer Bill Impact by Baseline Zone

Change in average bill from existing rate to new rate. Positive values show an increased average bill.

Income Bracket Upper Bound (1000$)	Bill Discount	Income Septile	PG&E	P	Q	R	S	T	V	W	X	Y	Z
$0 - $25,000	None	1	(3.47)	(10.98)	(14.26)	(13.17)	(11.77)	0.81	(10.60)	(12.79)	(4.95)	(1.85)	3.94
$25,000 - $50,000	None	2	(5.96)	(10.77)	(14.22)	(13.18)	(11.66)	0.80	(10.70)	(12.69)	(4.96)	(1.85)	3.95
$50,000 - $75,000	None	3	1.08	(3.09)	(6.53)	(5.66)	(3.80)	8.27	(3.21)	(5.62)	2.67	5.65	11.40
$75,000 - $100,000	None	4	1.43	(2.74)	(6.57)	(5.62)	(3.25)	8.27	(3.12)	(6.20)	2.77	5.66	11.42
$100,00 - $150,000	None	5	1.97	(2.34)	(6.03)	(5.56)	(2.65)	8.26	(3.03)	(6.91)	2.97	5.67	11.44
$150,000 - $200,000	None	6	10.26	5.93	1.86	1.98	5.61	15.73	4.58	(0.21)	10.71	13.19	18.87
$200,000+	None	7	11.60	6.92	3.19	2.07	6.71	15.72	4.60	(1.13)	11.46	13.25	18.87
$0 - $25,000	CARE	1	(8.89)	(17.82)	(16.95)	(12.99)	(11.67)	(2.96)	(7.36)	(12.25)	(5.96)	(15.85)	(12.75)
$25,000 - $50,000	CARE	2	(9.26)	(17.66)	(16.94)	(12.76)	(11.42)	(2.92)	(7.37)	(12.18)	(5.87)	(15.84)	(13.41)
$50,000 - $75,000	CARE	3	(6.23)	(14.83)	(14.00)	(9.99)	(8.69)	(0.36)	(4.82)	(9.56)	(3.29)	(13.29)	(11.19)
$75,000 - $100,000	CARE	4	(6.08)	(14.78)	(13.21)	(9.90)	(8.42)	(0.33)	(4.81)	(9.48)	(3.29)	(13.29)	(11.38)
$100,00 - $150,000	CARE	5	(5.81)	(14.59)	(14.26)	(9.62)	(8.17)	(0.31)	(4.82)	(9.43)	(3.19)	(13.28)	(11.66)
$150,000 - $200,000	CARE	6	(2.73)	(11.71)	(12.05)	(6.90)	(5.41)	2.22	(2.29)	(6.78)	(0.62)	(10.75)	(7.99)
$200,000+	CARE	7	(1.84)	(10.59)	(12.05)	(6.57)	(5.01)	2.23	(2.27)	(6.73)	(0.52)	(10.74)	(26.50)
$0 - $25,000	FERA	1	(7.22)	(19.45)	(11.48)	(11.58)	(10.90)	(0.88)	(6.52)	(10.62)	(4.37)	(17.49)	(6.44)
$25,000 - $50,000	FERA	2	(7.39)	(19.20)	(11.44)	(11.10)	(10.39)	(0.81)	(6.51)	(10.56)	(4.20)	(17.47)	(6.34)
$50,000 - $75,000	FERA	3	(0.70)	(12.63)	(4.27)	(4.51)	(3.87)	5.38	(0.44)	(4.36)	2.01	(11.24)	(0.16)
$75,000 - $100,000	FERA	4	(0.52)	(12.55)	(2.35)	(4.34)	(3.36)	5.43	(0.51)	(4.30)	2.00	(11.26)	(0.14)
$100,00 - $150,000	FERA	5	(0.21)	(12.26)	(4.95)	(3.86)	(2.90)	5.47	(0.40)	(4.27)	2.19	(11.19)	(0.12)
$150,000 - $200,000	FERA	6	6.47	(5.60)	0.33	2.55	3.63	11.58	5.75	1.93	8.37	(5.05)	5.89
$200,000+	FERA	7	7.34	(3.96)	0.33	3.04	4.29	11.60	5.63	1.96	8.54	(5.00)	6.42

Bill Impact ($/mo)

Other included heatmaps:
- Average bill impact (%)
- Change in total revenue collected from subclass / income tier

Key:
- Greatest Savings
- No Change
- Greatest Increase

Source: 'Heat Map Results' Tab

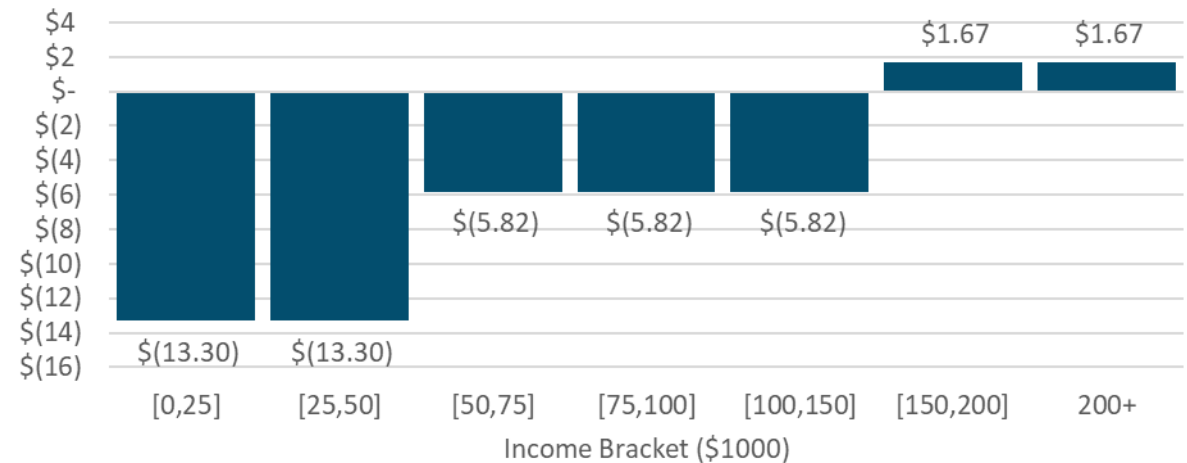*Screenshots depicts example rate design used solely for illustrative purposes*

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Function 2 Detail: Bill Impacts Across Income Tiers

Customer Selection and Information

Customer Type		
Utility	PG&E
Baseline Zone	S
NEM Status	Non-NEM
Bill Discount Program	None
Subclass Code	PG&ESNon-NEMNone
Bill Discount Program Status	No Bill Discount
Subclass Customer Count - Total	399,276
1 $0 - $25,000	8,635
2 $25,000 - $50,000	52,104
3 $50,000 - $75,000	83,239
4 $75,000 - $100,000	73,987
5 $100,00 - $150,000	95,770
6 $150,000 - $200,000	44,205
7 $200,000+	41,337
Most Common Rate in Subclass	E-1

User selects customer categories in yellow cells

Automatically updates based on selected inputs

Bill Impact by Income (New - Existing) [$/mo]

Income Bracket ($1000)	Value
[0,25]	$(13.30)
[25,50]	$(13.30)
[50,75]	$(5.82)
[75,100]	$(5.82)
[100,150]	$(5.82)
[150,200]	$1.67
200+	$1.67

Source: 'Subclass Bill Comparison' Tab

Screenshots depict example rate design used solely for illustrative purposes

Function 2: Bill Impacts, Individual Customers

Customer Selection and Information

Customer Type		
	Utility	PG&E
	Baseline Zone	R
	NEM Status	Non-NEM
	Bill Discount Program	None
	Select an Income Bracket	$0 - $25,000
	Bill Discount Program Status	No Bill Discount
	Subclass Customer Count - Total	202,051
	Most Common Rate in Subclass	E-1
Electric Rates	Rate Name	PG&E_User_Input
	TOU Period Definition	E-TOU-C
	Counterfactual Rate	E-1

User specifies income bracket

Model treats all customers of a subclass as being on the most subscribed rate for that subclass

Annual Bill Breakdown ($/year)

■ Customer Charge ■ Demand Charge ■ Volumetric Charge

Monthly Bill [$/mo]

■ New Rate ■ Existing Rate
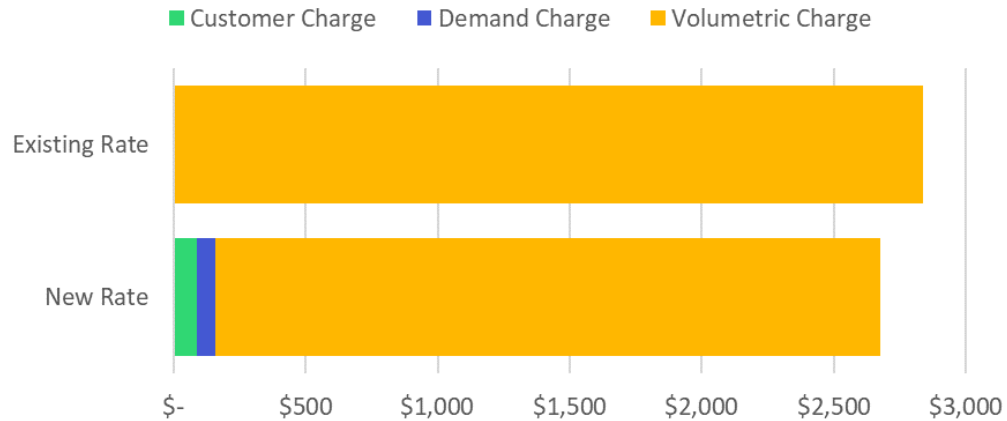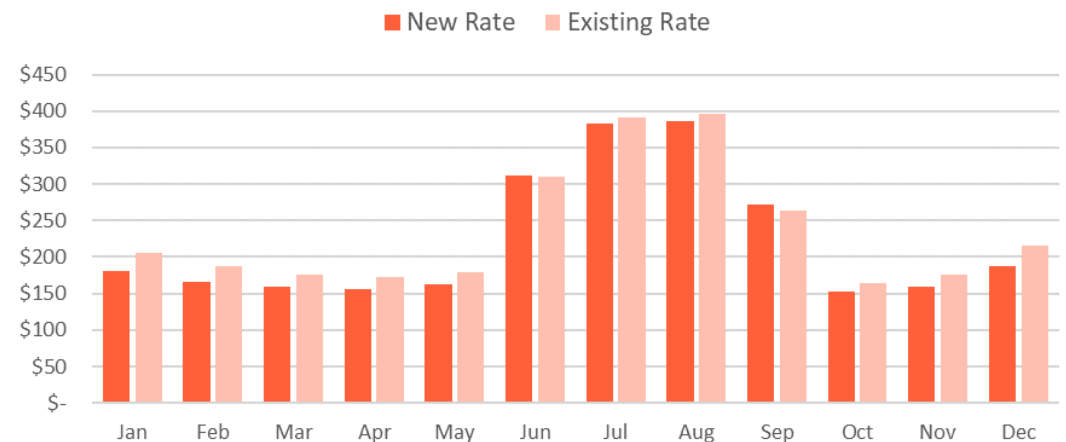
Source: 'Indiv. Customer Bill Comparison' Tab

Screenshots depict example rate design used solely for illustrative purposes

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Timeline for Stakeholder Feedback

+ *January 30th: Draft tool released*

+ **February 6th: Feedback related to tool design**

  • Please focus feedback on the design and capabilities of the tool (keeping in mind what is within the scope of Phase 1, Track A)

  • Bug / error identification is also welcome

  • Parties can submit comments through the following link (this will take you to brief survey where you can input your feedback): https://forms.office.com/r/83rUkq0k9W

+ **February 10th: Draft revised tool released**

  • This version will include all outstanding items (see Slide 13), as well as any changes made in response to party feedback

+ **February 15th: Feedback on tool bugs or errors**

+ *(if updates required based on previous step)* **February 17th: Final Phase 1, Track A tool released**

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Specific Feedback Requested

+ **Issues, errors, or bugs with how the model is working**

+ **Feedback on specifying customer charge by CARE/Non-CARE**

  - If this is your feedback, please be specific about your needs:

    – Would CARE and Non-CARE (and FERA?) be used as categories instead of income tiers?

    – Would there be multiple income tiers within the CARE category? Within the Non-CARE category?

+ **Other suggestions for increased flexibility with model inputs**

+ **Model outputs: additional categories for heat maps, other bill impacts, other outputs?**

  - Note: electrification cost impacts are pending

+ **Model outputs to include in "printable" results for incorporation into opening testimony**

Fixed Charge Tool Demo (if needed)

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Thank You

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Income Verification Follow-up

Recap of Options/Data Sources

OPTION	DETAIL	PROS	CONS
Leverage existing CARE/ FERA Data	• Customers self-certify that they meet income requirements • Utilize existing processes for income verification • Annual post-enrollment verification process confirms income data from a random sample of participants	• Does not require any additional legislation • A process is already in place and would just need to be expanded	• Onus on Customer; customer non-response • Concern over accuracy of self-reporting
Predictive Data Modeling from Customer Info	• Utilize data sources to model which income tier customers should be placed in	• Does not require any additional legislation • Opportunity to refine as needed	• Accuracy dependent on initial data source • Transparency/ understandability of model • Potential for incomplete data
Reported Income Data (FTB, CalFresh)	• Work with a government agency to determine which income tier customers should be placed in	• Likely most accurate • For FTB, existing data for a great share of customers	• Concern on completeness of data, which would require an extra process to fill the gaps • Requires legislative action and customer permission if leveraging FTB data • CalFresh may have little incremental data beyond what IOUs already have

Recap of Options/Data Sources

Option[1]	Detail	Pros	Cons
Other third parties (ex- IRS)			• Could be equity issues with opting-in customers
Geographic Data	Census data, American Community Service, also used to determine CARE/FERA potential and for Affordability metrics	• Could allow for more granular defaulting of customer groups to different income brackets rather than assigning all customers to either the middle or high brackets as a default. • Could be used as a complement to other, more accurate measures.	• Could be equity issue with opting-in customer • Critique of ACS is under collection of DAC data, estimates of urban areas are more accurate as compared to rural.
Electricity or Gas Usage	Correlation between usage and income. Would need to also account for storage.	Correlation could be improved with other factors (e.g. age of house)	• May not be the best indicator, since a comparison showed higher earners • Could be equity issue with opting-in customer • Relying on unclear correlation between different factors such as electricity, housing, & income could be an obstacle to public acceptance
Credit Data (Equifax)	Use with predictive modeling.	• It would be easier than requesting IEVS information from the CalFRESH program that may have some federal data-sharing restrictions & would require only a customers signature • Past success (Covered California)	• Could be equity issue with opting-in customer • PGE test (Residential Base) was less than 10% return of customer match. • If someone doesn't file taxes, where would they default?

[1] Equity of charges should be added as a consideration/constraint when evaluating data sources. For example, to the extent we're confident in the accuracy of the bucketing, there could be greater differences in the amount of the fixed charge for each bucket. If bucketing is less accurate, we may need to have fixed charge amounts that are not as different between the buckets to avoid someone placed in the wrong bucket overpaying by a significant amount.

Recap of Options/Data Sources

Option[1]	Detail	Pros	Cons
Using Multiple Data Sources (Geo, CARE/FERA, DMV Data, Assessor/Rent [Zillow, County], Other sources from Severin)	DMV: if someone drives a tesla, shouldn't be in lower. Assessor: value of home; square footage and year built	• That it would also be able to identify high income.	• Assessor: would need to think through multi-family (buildings and multi-generational). Not sure if there is a good resource for rent. • All: There may be a difference between assets and income (e.g. a retired person with assets but fixed income)
IEVS (Income Eligibility and Verification System)			Federal data restrictions that could allow but may be a stretch.
Self Attestation (with audit)	Customers would attest to what income level bucket they should be put.		• Customer may not respond to request (PGE has seen 30% response rate for CARE – Random Sample).
Start with Everyone in High Bucket (except CARE/FERA	Customers would be defaulted and then need to provide proof that they should be in a lower bucket. Do this before revenue collection, so there is a good lead time to appeal.		• Appeals process may not be quick (and customers may be overcharged) • Income qualified may have a lower response rate
Other Third Parties	FTB/IRS	Best data with up to date income	Data restrictions, require statutory changes

[1] Equity of charges should be added as a consideration/constraint when evaluating data sources. For example, to the extent we're confident in the accuracy of the bucketing, there could be greater differences in the amount of the fixed charge for each bucket. If bucketing is less accurate, we may need to have fixed charge amounts that are not as different between the buckets to avoid someone placed in the wrong bucket overpaying by a significant amount.

Income Verification Option #1

- Directly accessing verified income data:
  - Data either from government agency (FTB, IEVS, etc.) or third-party source (credit agency)

  - Pros – would be accurate for customers who can be matched

  - Cons – high administrative cost, data privacy restrictions; potentially difficult to match all customers

Income Verification Option #2

- Using proxy for income data to default customers:
  - Some combination of Census, electricity usage, credit, and other data sources would be used to default customers onto appropriate fixed charge

  - Pros – easier to access than verified income data

  - Cons – will not be as accurate as verified income data and will need a robust appeals process; potential equity concerns for low-income customers

Income Verification Option #3

- Self-attestation of income level:
  - Similar to CARE program; would likely be combined with some post-enrollment verification for a portion of population

  - Pros – most straightforward to implement (depending on how burdensome the post-enrollment verification system is); could also be aligned with existing program eligibility requirements

  - Cons – incentive for misrepresentation of income; verification process would also likely suffer from high non-response

Additional Input

- Additional thoughts on options discussed at December workshop?

- Additional options or data sources that parties would like to share?

- Thoughts on how to mitigate some of the concerns with any of the options presented?