

Key Takeaways from the CPUC Rates and Costs En Banc Hearing and Update on Affordability Metrics

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California Public
Utilities Commission

Background

- CPUC's strategic directives include “assuring that essential services are available to all Californians at an affordable price”
- CPUC tracks and reports rate trends through the annual SB 695 report
 - Bundled residential rates began outstripping inflation in 2013
 - CA IOUs are climbing the national rankings relative to other utilities as their average residential bills increase year over year
- 2021 SB 695 report included a longer-term rate outlook, forecasting bundled residential rates out to 2030 for each of the three major IOUs
- Separately, the CPUC has been developing a set of metrics to objectively measure the affordability of utility rates (R.18-07-006)

Rate Forecast Highlights*

- The white paper describes a 10-year (2021 – 2030) bundled residential rate forecast that demonstrates increasing trends in costs and rates (derived from 2020 rates).
 - **PG&E:** \$0.240/kWh to \$0.329/kWh, or about an annual average increase of 3.7%
 - **SCE:** \$0.217/kWh to \$0.293/kWh, or about an annual average increase of 3.5%
 - **SDG&E:** \$0.302/kWh to \$0.443/kWh, or about an annual average increase of 4.7%
- There are several critical areas to actively manage over the next decade to ensure that rates and bills remain affordable for our most vulnerable customers.
 - Capital additions and rate base (transmission and distribution) are accelerating and need stringent review for reasonableness, prudence, and timelines for recovery.
 - Wildfire Mitigation Planning costs represent a significant rate impact.
 - The Distributed Energy Resources (DER) marketplace is rapidly maturing and can lead to cost shifts that harm non-participants if benefits are not fully realized and properly accounted for.

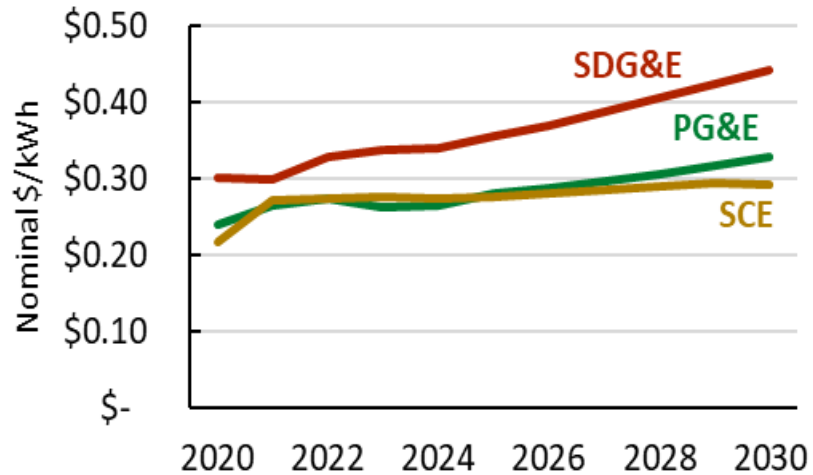
* Rate forecast included assumptions of future spending levels and electricity sales for each IOU. Projections were intended solely to facilitate discussion related to the white paper.

Residential Energy Cost Calculator

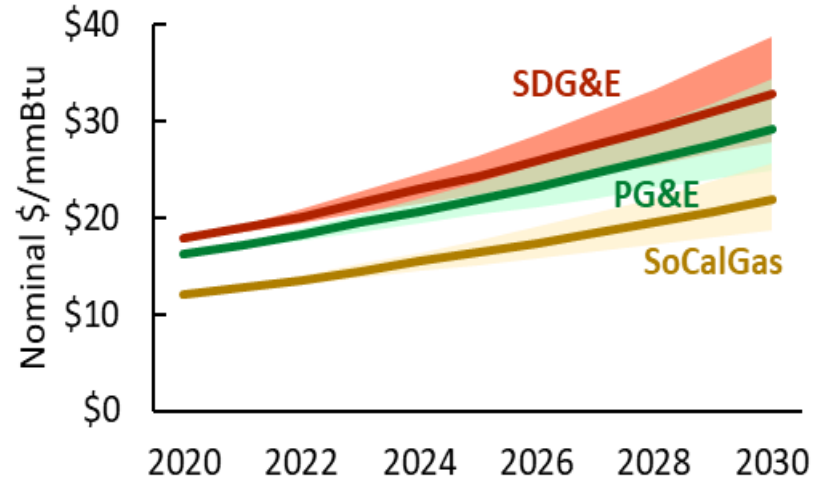
- Electric rate forecast was input into a household “total energy bill”* calculator for two different analyses:
 - Estimation of total energy bill growth from 2020 to 2030 for households under different levels of electrification for:
 - A base scenario
 - A stricter electric-sector GHG emissions target scenario
 - Cost-effectiveness of vehicle and home electrification
- Analyses focused on a representative high energy-use household in a hot climate zone
- Also estimated electric rate impact of a “high electrification” scenario

*Electricity, Natural gas, and Gasoline

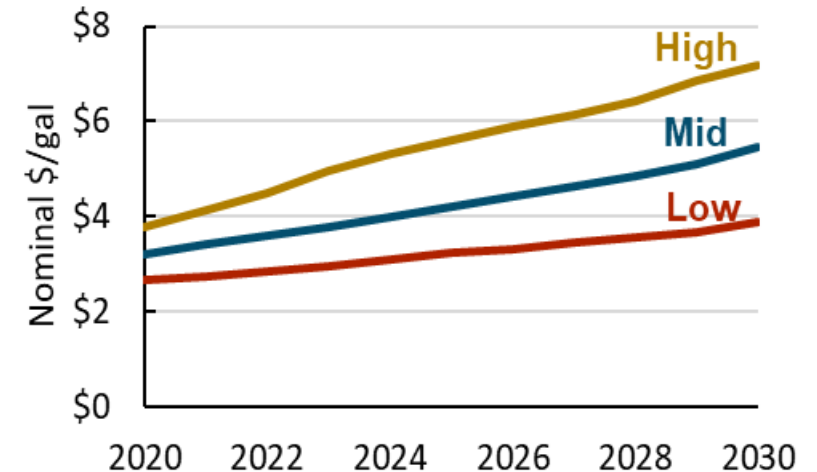
Electric & Gas Rates and Gasoline Prices



Bundled Residential Average Electric Rates



Residential Natural Gas Rates



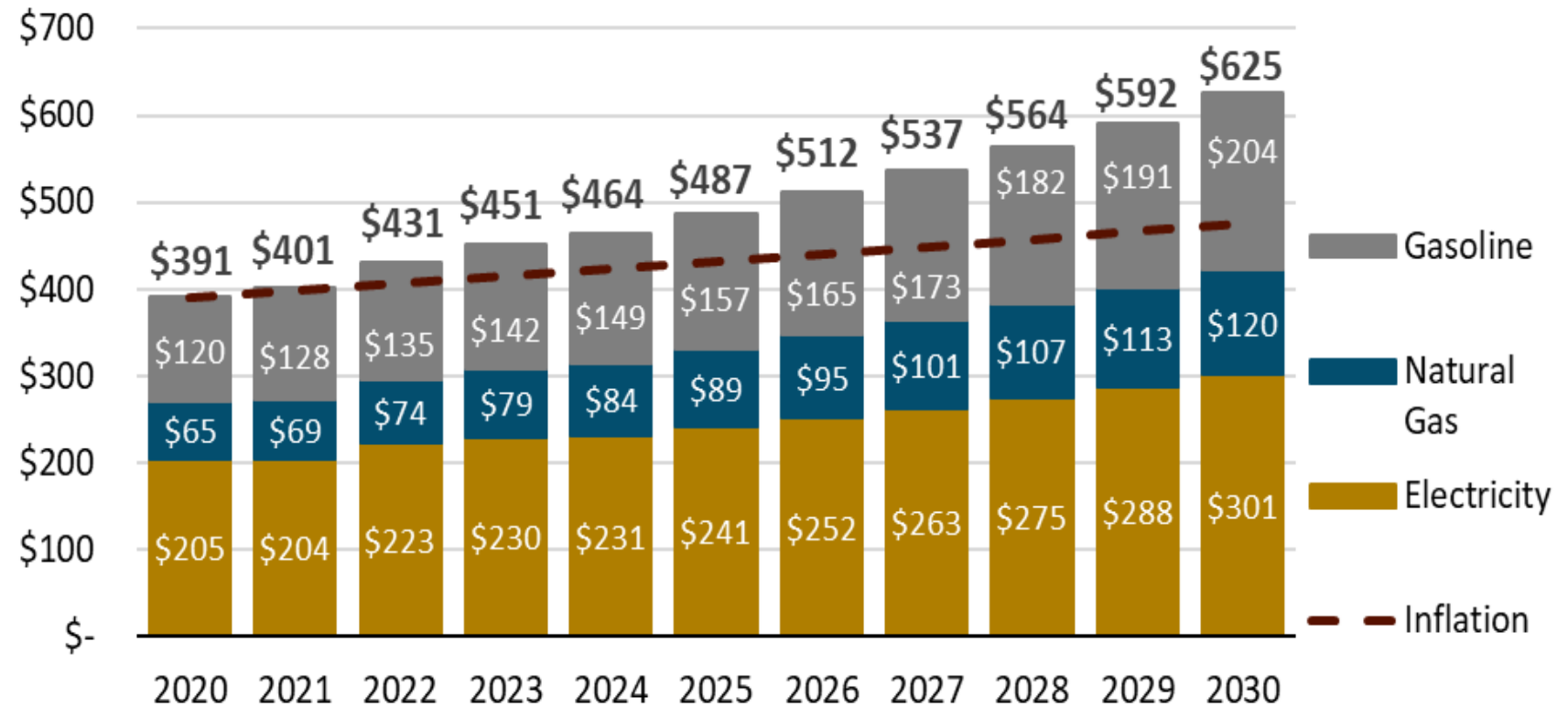
Gasoline Price Forecast

- An accelerating bundled residential electric rate forecast trend for all three IOUs.
- Gas rate forecasts composed of two components: the commodity rate, and the delivery rate.
- Gasoline price forecast composed of three components: a base price, an adder for California's Cap-and-Trade program, and an adder for the state's Low Carbon Fuel Standard (LCFS).

Household Energy Costs Are Projected to Increasingly Exceed Inflation Over the Next Decade

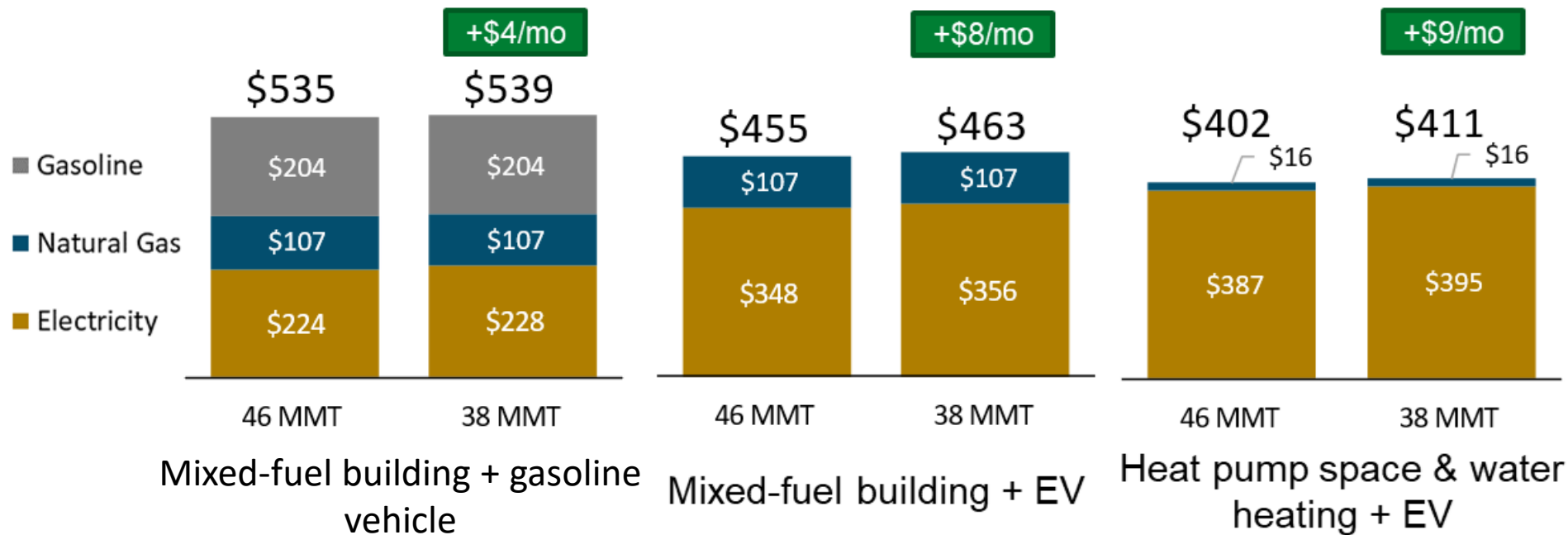
- An accelerating trend for all three major IOUs.
- SDG&E bundled residential rates and bills are expected to rise more quickly than PG&E and SCE.
- **Main drivers:**
 - kWh sales decline.
 - Impacts of behind-the-meter resources; load departure away from IOUs.
 - Rate sensitivity to large capital investments due to smaller customer base and lower economies of scale.

SDG&E – Household Energy Costs, 2020-2030



Household Energy Bill Impact Associated With Higher GHG Target

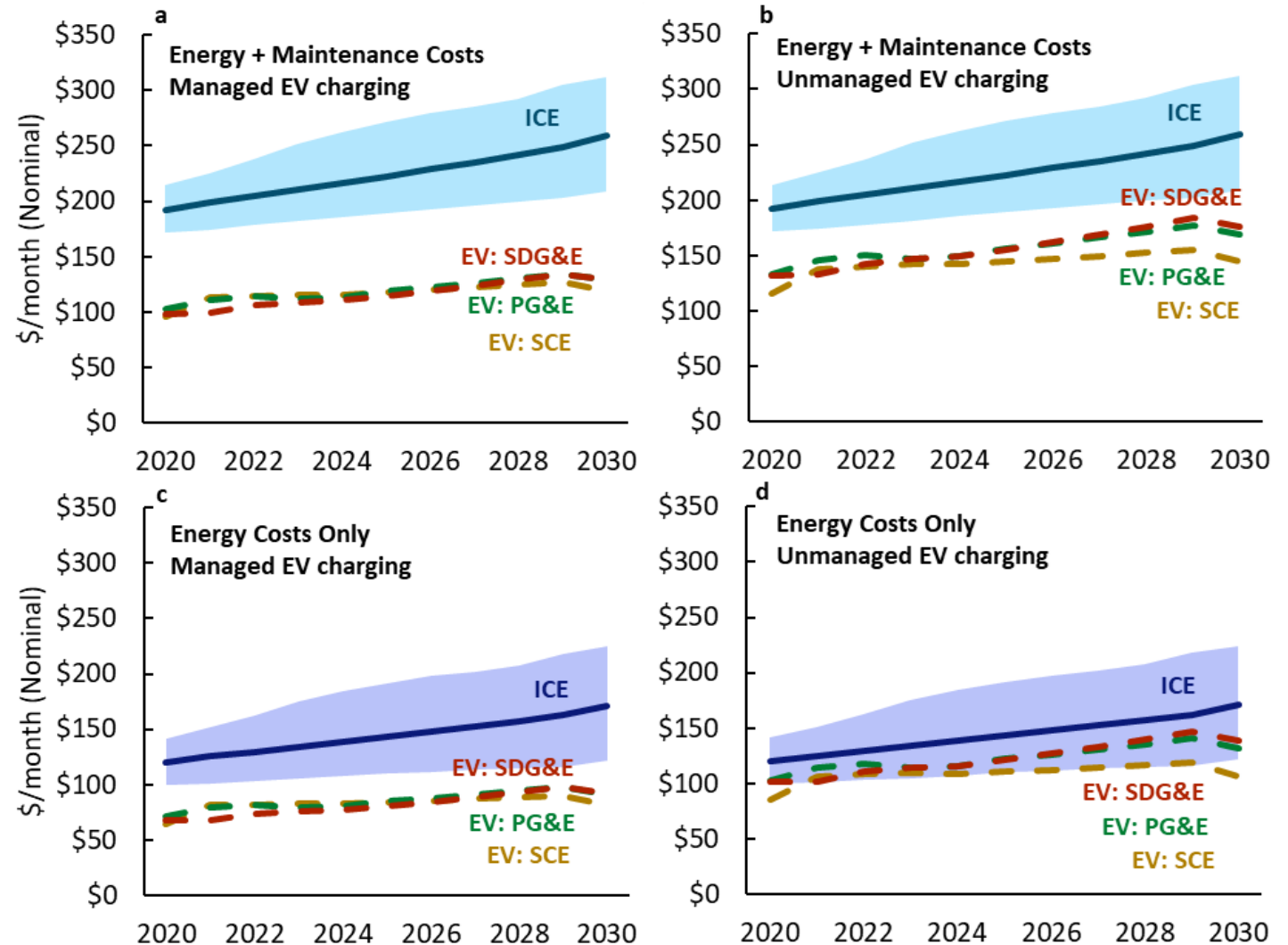
- In the current Integrated Resource Planning (IRP) cycle, CPUC is considering resource plans for two different 2030 electric sector emissions targets: 46 MMT and 38 MMT.
- A 2030 rate impact of +0.6-0.8 c/kWh** as a result of the stricter GHG target.
 - As a result, a relatively small bill impact associated with the stricter GHG target for all three major IOUs.
- While the impact is larger for the electrified customers, their overall energy costs are considerably lower.



2030 Monthly Energy Costs for a Representative Household With Above Average Energy Use in a Hot Climate Zone on PG&E rates, Comparing 46 MMT and 38 MMT Electric Sector Emissions Targets and With Different Levels of Electrification

Customer Cost-Effectiveness of Vehicle Electrification

- EV owners see cost savings throughout the decade in all four frameworks under a mid gasoline price forecast.
- Managed charging would enable EV owners to see the highest amount of cost savings.
- In 2030 and compared to a gasoline vehicle owner (mid gasoline price forecast):
 - EV owners who manage charging are forecast to save \$130-\$140/month in operating costs (energy plus maintenance costs).
 - Energy cost savings alone:
 - \$80-\$90/month for EV owners using managed charging.
 - \$35-65/month for EV owners using unmanaged charging.



Operating Costs for an ICE Under a Range of Gasoline Price Forecasts and for EVs Assuming Managed and Unmanaged Charging

Impact of High Electrification Scenario on Electric Rates

- The high electrification scenario adds 4.7-5.8 percent to the 2030 revenue requirement (relative to the Reference scenario based on the IEPR Mid Demand case).
- The system average rates would fall by 0.6-0.9c/kWh.
 - 18 TWh of increased retail sales in 2030, corresponding to an 8.5 percent increase in sales.
 - Larger increase in retail sales compared to the increase in costs.
- Residential rates for the three IOUs would fall by 1.4-2.1c/kWh under the *High Electrification* scenario.

Cost component	Unitized cost	Source	2030 Mid cost (Low-High)	% of 2030 Rev Req (Low-High)
Resource procurement	NA	RESOLVE model	\$1.96B	3.8%
Electrification programs	\$30/MWh (annual rev req impact)	IOU baseline forecast	\$540M (\$360M-\$720M)	1.1% (0.7%-1.4%)
T&D infrastructure	\$60/kW-yr	CA Avoided Cost Calculator, BLS	\$110M (\$55M-\$340M)	0.2% (0.1%-0.7%)
Total	--	--	\$2.61B (\$2.38B-\$2.96B)	5.1% (4.7%-5.8%)

Incremental Costs Associated with High Electrification Scenario

Ongoing Development of Affordability Metrics

Affordability Ratio (AR)



where utility services are least affordable for households at a particular point of the income distribution (e.g., AR₂₀ is households at the lowest 20th percentile of income)

Hours at Minimum Wage (HM)



hours of earned employment at the local minimum wage needed to pay for essential services.

= **HM** where low-income households will have the most difficulty paying for essential services, regardless of the socioeconomic condition of the neighbors.

Socioeconomic Vulnerability Index (SEVI)

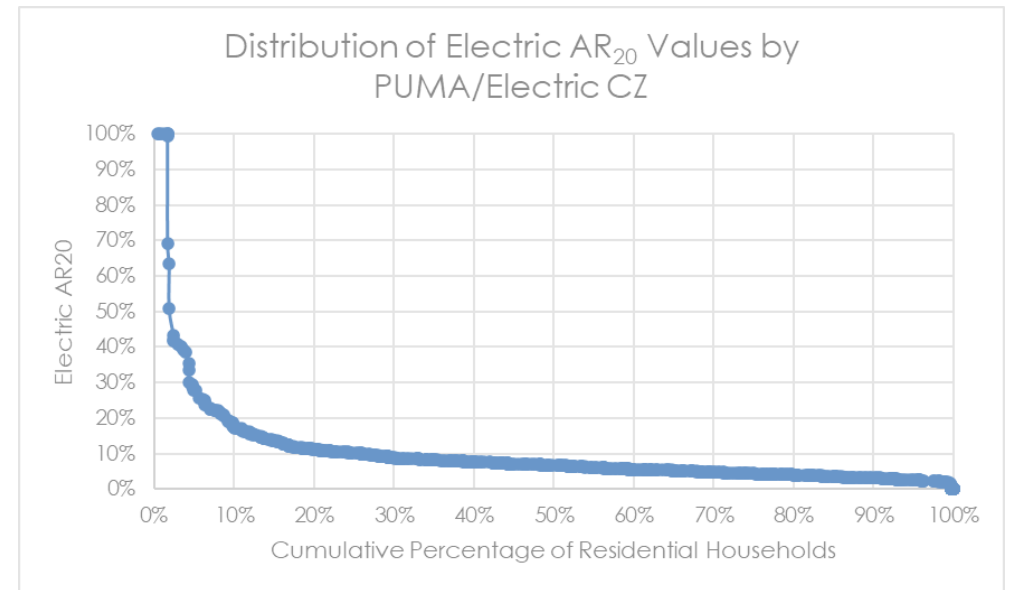
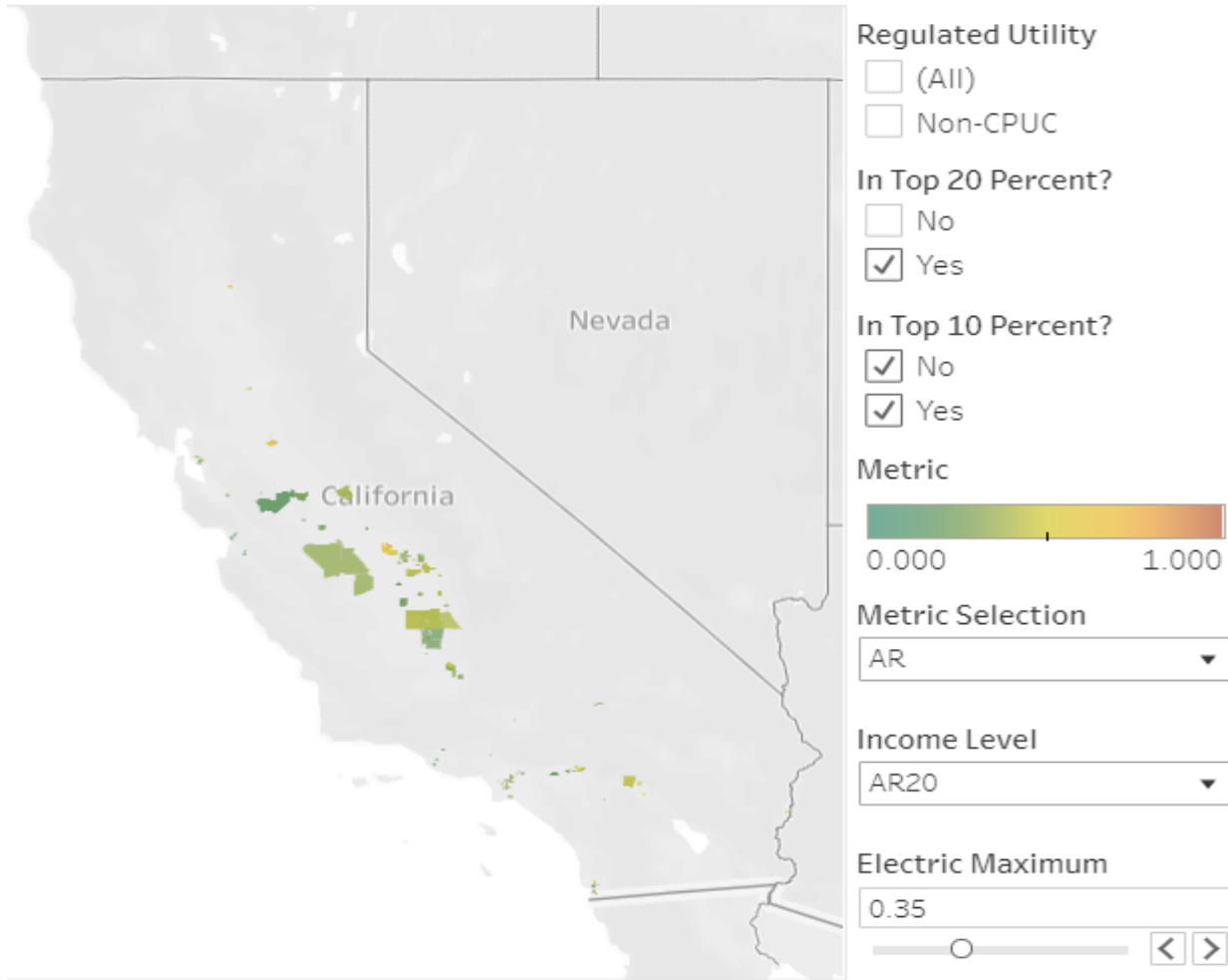


relative socioeconomic standing of a community (census tract) based on:

- poverty
- unemployment
- education
- percent of income spent on housing
- linguistic isolation

= **SEVI** identifies communities least able to afford increases in essential services charges

Electric Affordability Results Summary



Graph and table include areas that are not CPUC-jurisdictional; map only shows jurisdictional areas

Affordability and Equity Implications

- Household energy costs and rates are rising and disproportionately impacting affordability for low- to moderate-income Californians in hotter climate zones.
- NEM cost shift and equity concerns being reviewed in the NEM revisit rulemaking. By investing in solar PV, storage technologies, electric vehicles, and other behind-the-meter (BTM) solutions, NEM and DER customers can benefit from advanced rate offerings and reduce bill impacts. NEM customers are disproportionately more affluent.
- Electrification can lead to lower household energy costs, however, the up-front investments in EVs and other DERs for lower-income Californians may be a barrier to participation.
- Phase 2 of Affordability Proceeding will focus on methodology to forecast future values of metrics as well as how metrics will be incorporated into Commission decision making.