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ITEM 5

Rate Equity

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California Public
Utilities Commission

Disadvantaged Communities Advisory Group Meeting July 2021

Affordability and Load Flexibility Management Proposals

Paul Phillips & Ankit Jain | Retail Rates | Energy Division, CPUC





California Retail Electricity Rate Trends and Equity Opportunities

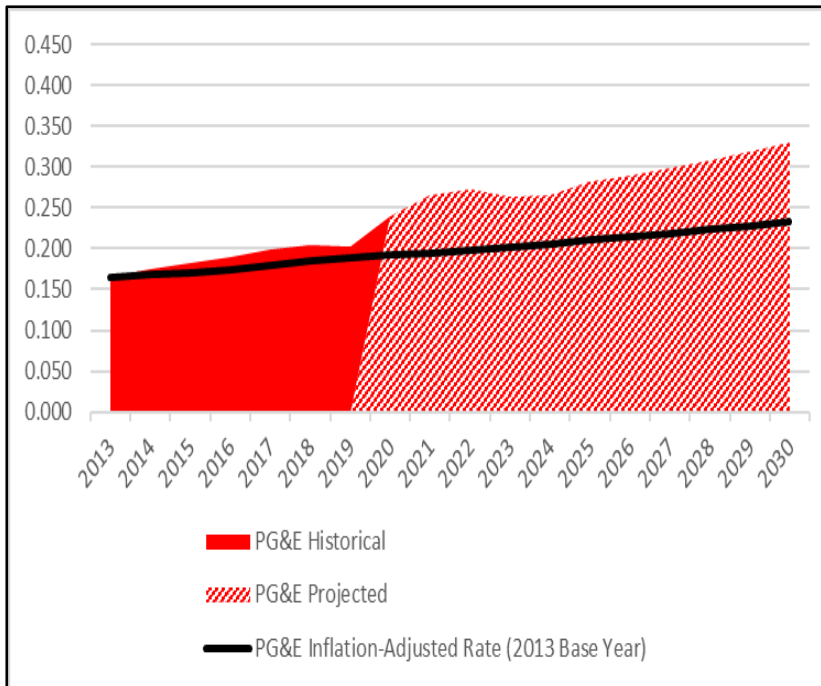
Electrification and Affordability: A Tale of Two States

- **Household energy costs and rates are rising and disproportionately impacting affordability** for low- to moderate-income Californians, particularly in hotter climate zones.
- **Bundled residential rates have long outstripped inflation:** our IOUs are gradually climbing the national rankings as their average residential bills increase year over year.
- **NEM and DER customers tend to be disproportionately wealthier homeowners** that can arbitrage advanced rate offerings and reduce bill impacts by investing in the DER trifecta: EVs, solar PV, storage technologies.
- **Conversely, lower-income customers may experience higher cost of service without the benefits:** they're less likely to participate in such BTM offerings and yet more likely to pay for incremental costs displaced by BTM customers.
- **Electrification should lead to lower household energy costs:** *however*, up-front investments in EVs and other DERs for lower-income Californians can be a barrier to participation.

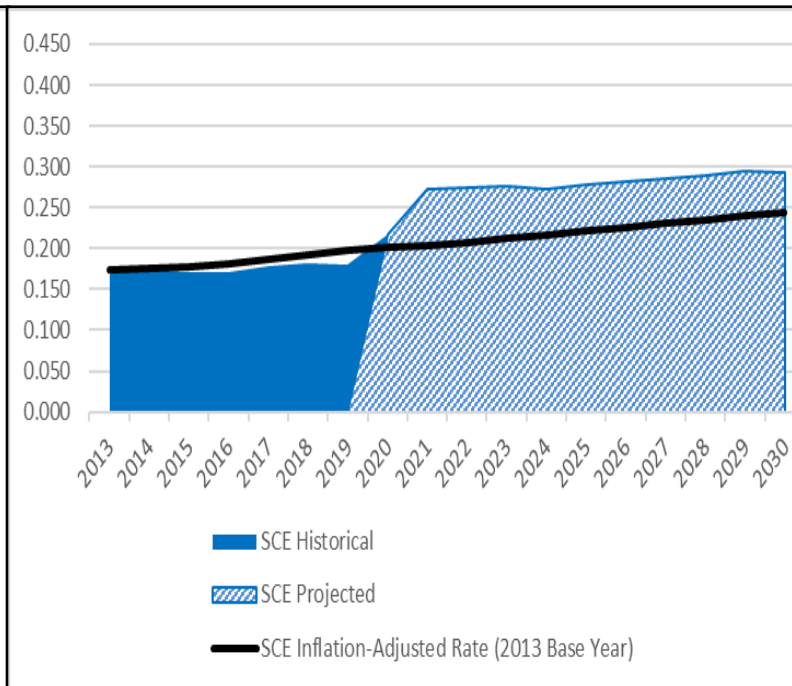
Historical and Projected Rate Trends Relative to Inflation

- By 2030, bundled residential rates are forecasted to be approximately **40% (PG&E), 20% (SCE), and 70% (SDG&E) higher** than they would have been if 2013 rates for each IOU had grown at the rate of inflation.
- Rates tracked inflation historically, but this changed starting in 2013 as rate increases accelerated for PG&E and SDG&E.

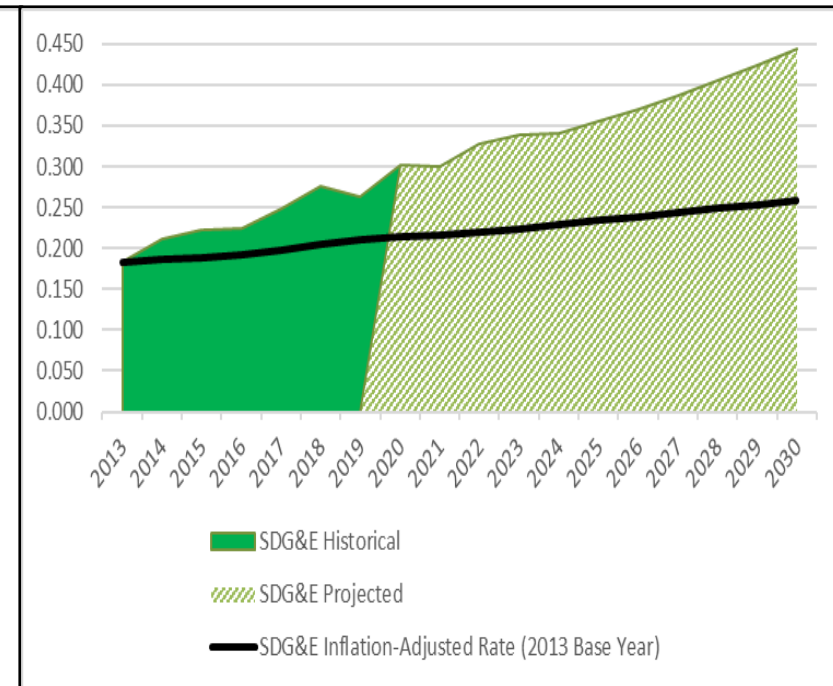
PG&E Bundled Residential Rates



SCE Bundled Residential Rates



SDG&E Bundled Residential Rates

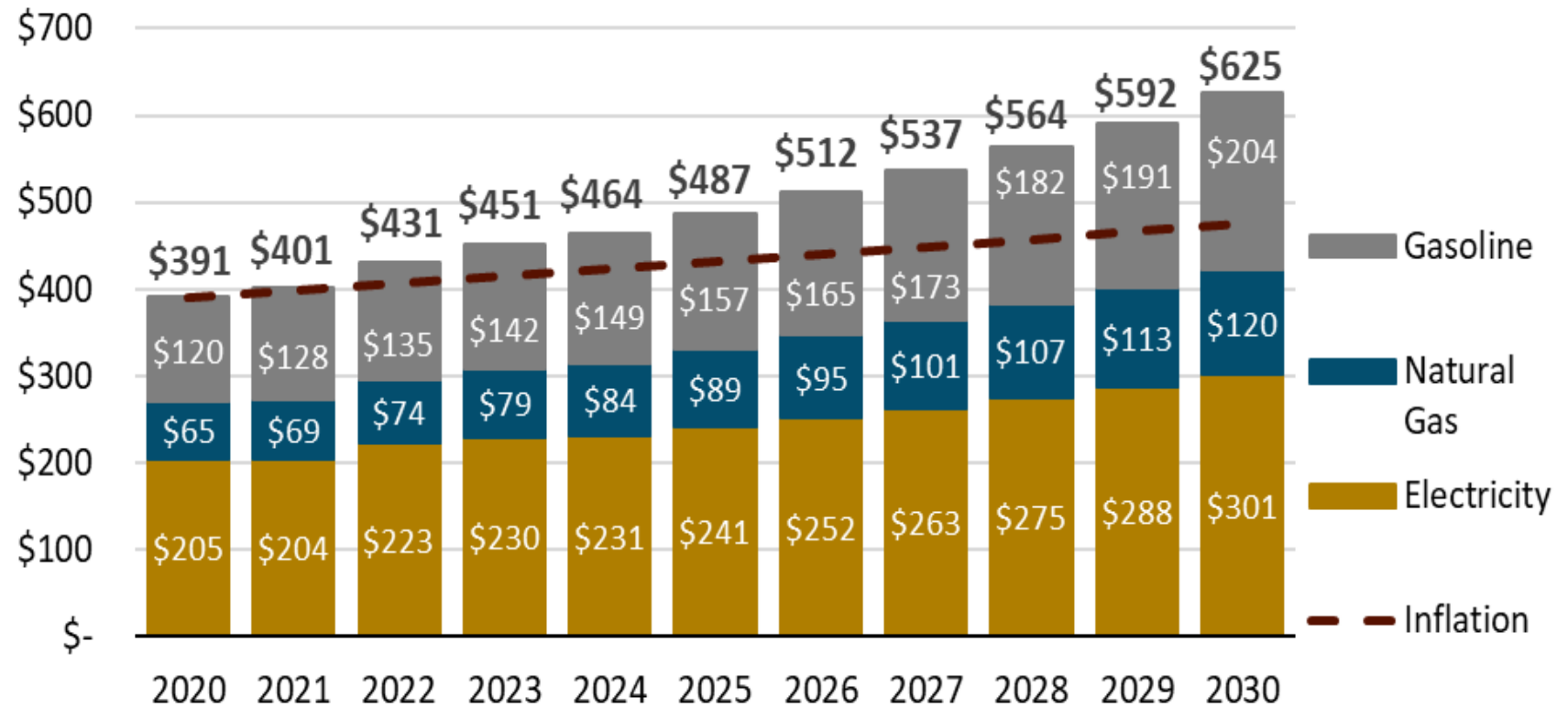


- 2013 – 2019 rates effective January 1 include California Climate Credit
- 2020 actual and 2021 – 2030 projected rates as of yearend and do not include California Climate Credit

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

- An accelerating trend for all three major IOUs.
- **Main drivers:**
 - **kWh sales decline**, behind-the-meter resources; load departure.
 - Rate sensitivity to large capital investments due to smaller customer base and lower economies of scale.
- Increased electrification and decreasing natural gas and gasoline will stabilize this trend.

SDG&E – Household Energy Costs 2020-2030



Staff Proposal: Leveraging Advanced Rate Designs and Integrated Load Management Strategies

- **Vision:** A staff white paper and rulemaking that leverages a menu of opt-in and opt-out advanced rates and demand response strategies to effectuate a more robust, dynamic, transactive DER marketplace and widespread load management.
- More effective demand response (DR) and retail rate design strategies that leverage opportunities enabled by long term electrification.
- To better address a steep evening ramp and other grid issues associated with the growth of renewables, electrification, and DER adoption to support and accelerate California's clean energy goals.
- To promote fair and secure compensation mechanisms and automation technologies in an increasingly transactive bidirectional grid.

Rate Designs Must Not Overlook Customer Equity in Addressing Grid Management Challenges

- **Challenging landscape of wealthier participants in behind the meter solutions versus non-participants.**
- Increasing reliability and stability challenges, both in terms of resource management and IOU revenue stability.
 - Steep evening ramp and renewable curtailment issues accelerating over the next 10-15 years.
 - Siloed and somewhat inefficient custom rate designs and load-modifying DR programs require scalable design and integration.
- **Increasing affordability challenges are already upon us.**
 - How do we protect vulnerable customer populations while encouraging their participation in a more dynamic distributed energy resources (DER) marketplace?
 - How might increased enrollment in dynamic and real time pricing (RTP) + electrification help lower system costs incrementally?
 - Learnings from rate pilots and affordability metrics and evaluation tools can provide insights into targeted relief strategies.



Affordability Rulemaking Update

Review of Phase 1

- Adopted affordability metrics and methodologies
- Ordered IOUs to submit quarterly cost and rate tracker tools
- Ordered issuance of an Annual Affordability Report

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)



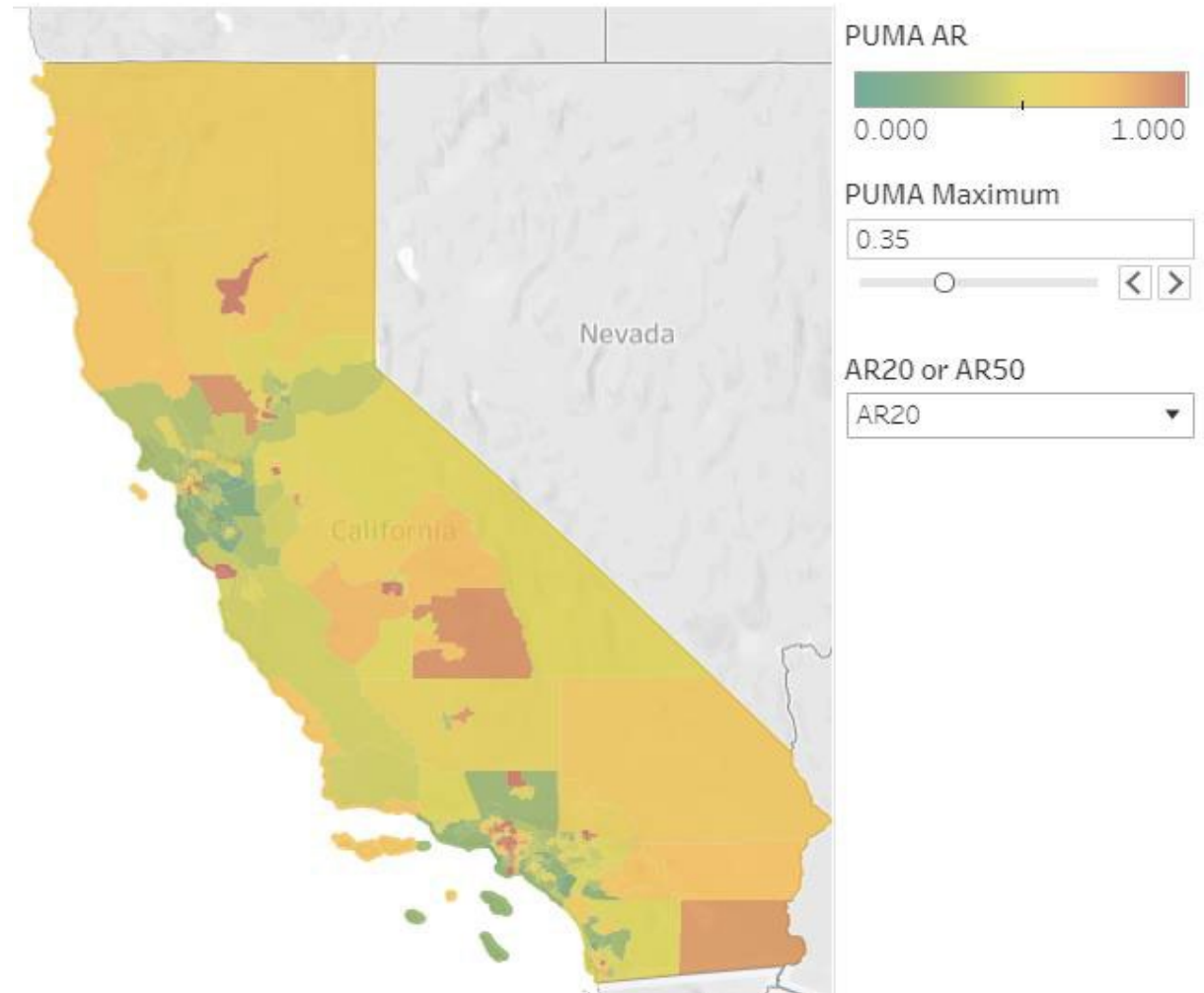
relative socioeconomic standing of a community (census tract) based on:

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

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

Geographic Spatial Scales

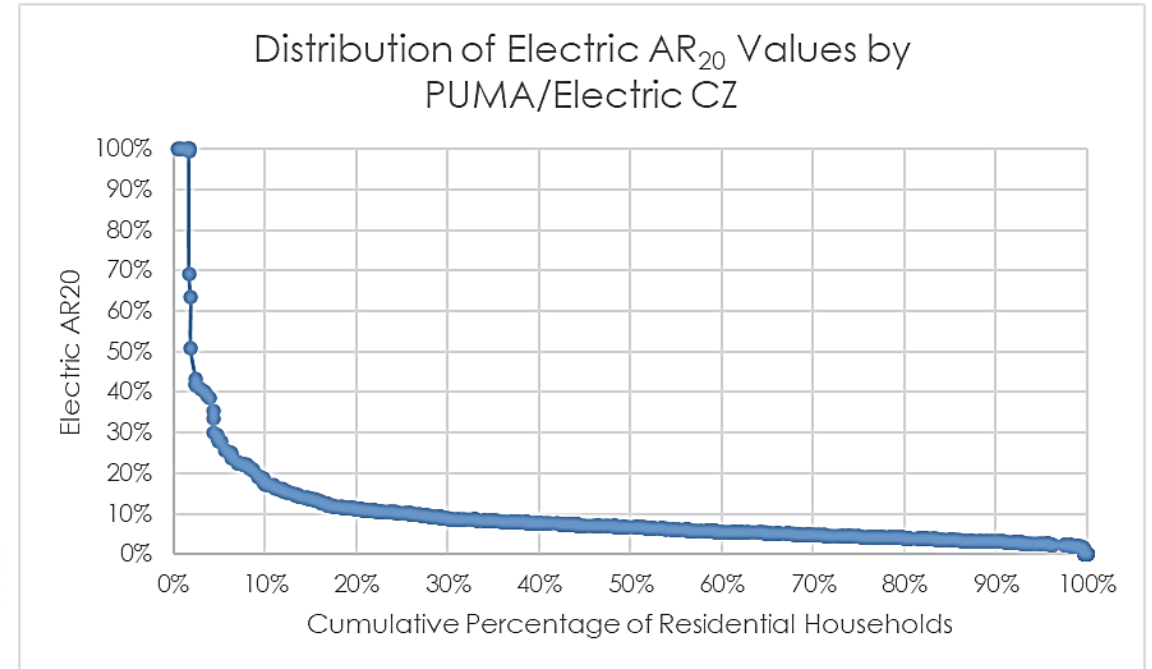
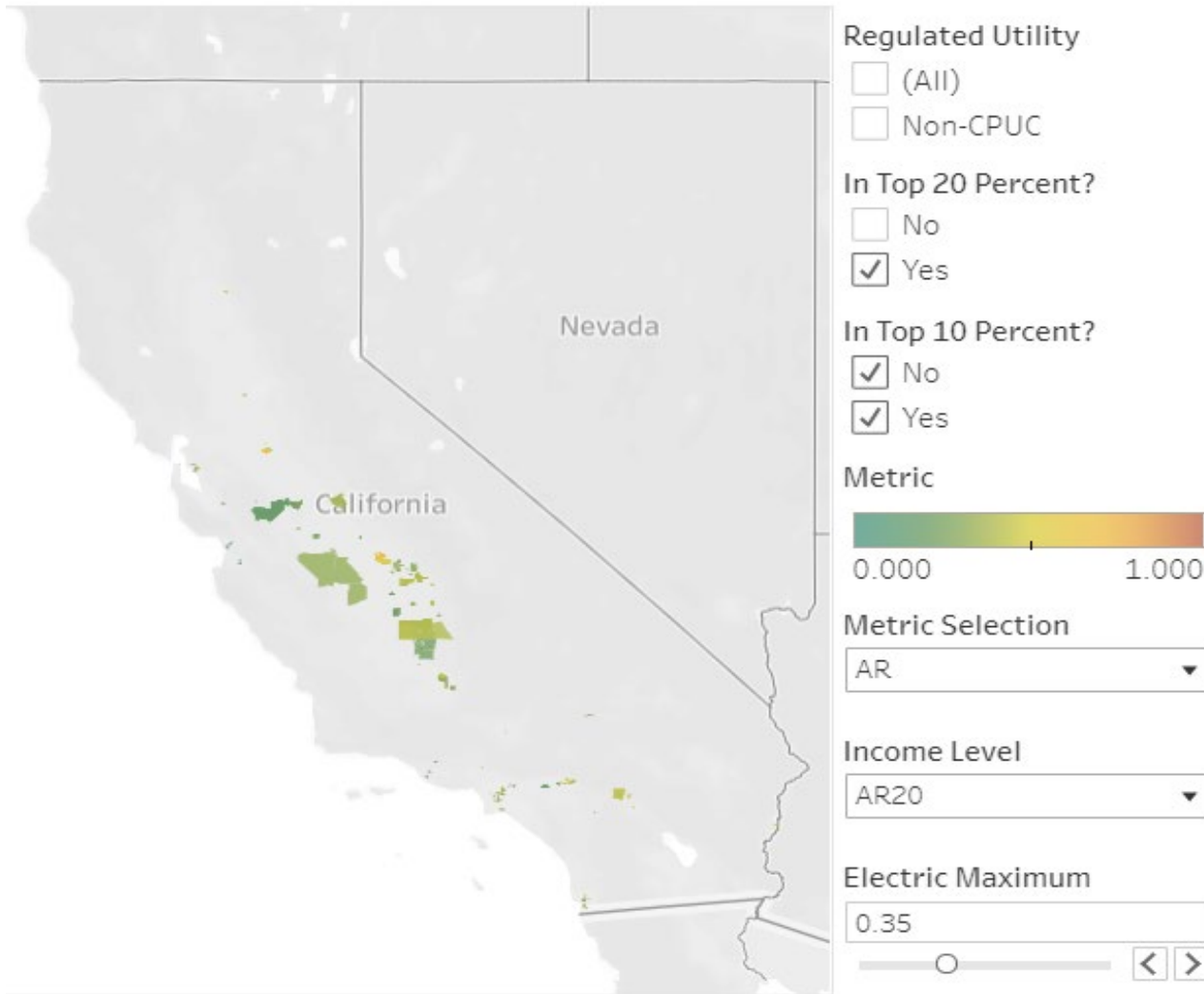
- Utility service territory
- Climate zone
- Census geography
 - Blocks
 - Block group
 - Tract (8000+ in California)
 - **PUMA**
(public use microdata area, 265 in CA)



2019 Annual Affordability Report Key Findings

- California households face significant disparities in their ability to afford essential utility services, even among households at similar points of the income distribution for a given area.
- Income, more than housing costs, drives whether essential utility services are affordable for families and individuals.
- Certain areas of California face greater burdens to affording essential utility services.

Electricity Affordability Findings



| Utility/Climate Zone | Min AR20 | Max AR20 | Weighted Avg AR20 |
|--|-------------|--------------|-------------------|
| Los Angeles Dep of Water & Power | 5.7% | 100.0% | 37.1% |
| Shelter Cove Resort Improvement District | 33.5% | 33.5% | 33.5% |
| City of Glendale | 3.7% | 19.2% | 19.2% |
| SCE 15 | 9.1% | 22.1% | 15.8% |
| Kirkwood Meadows Public Utility District | 10.3% | 14.7% | 14.7% |

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

Phase 2 Scope

- Develop forecasting methodology so they can be used in forward-looking analyses, including ratesetting proceedings
 - Planning on using Department of Finance regional economic forecasts for inflation and housing cost escalators
- Refine metrics to include impact of assistance programs
- Determine how to best implement metrics
 - Bill and affordability analysis of revenue requests (calculator tool to be released publicly)
 - Geographic targeting of grants, assistance programs, ME&O efforts, etc.
- Consider providing context to metrics through affordability threshold or some other label for specific values of affordability metrics
- Develop user-friendly Affordability Metrics Calculator

Example Calculator Output: SCE GRC Track 3

| Climate Zone | 2019 AR ₂₀ | 2021 SCE GRC Track 3 AR ₂₀ |
|--------------|-----------------------|---------------------------------------|
| SCE 13 | 10.2% | 13.5% |
| SCE 16 | 7.6% | 10.1% |
| SCE 9 | 7.6% | 10.1% |
| SCE 6 | 5.5% | 7.4% |
| SCE 5 | 11.6% | 15.4% |
| SCE 14 | 12.0% | 15.9% |
| SCE 15 | 15.8% | 20.7% |
| SCE 10 | 7.0% | 9.3% |
| SCE 8 | 6.2% | 8.3% |

Note: Forecasted 2021 results presented here use 2019 socioeconomic data (income and housing costs). Final version of tool will use forecasted values of socioeconomic data to generate affordability metrics for future years.