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

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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

- 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.
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.
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.

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

Incremental Costs Associated with High Electrification Scenario
Ongoing Development of Affordability Metrics

Affordability Ratio (AR)

\[
\text{AR} = \frac{\text{\$ essential services bill}}{\text{\$ household income} - \text{non-discretionary expenses (housing and other utilities)}}
\]

where utility services are least affordable for households at a particular point of the income distribution (e.g., AR 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.

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.