

Resource Adequacy Framework Demand Forecast Considerations

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Resource Adequacy Load Forecast Adjustment Process and Framework Options

1. Develop reference forecast for IOU service areas
 - This requires disaggregating the TAC area forecast to CPUC v. non-CPUC jurisdictional; an hourly disaggregation may be needed.
2. LSEs submit noncoincident peak forecasts; CEC estimates coincidence factors for each LSE.
 - With no energy sufficiency check, forecasts could use the current format with CEC-determined peak/net peak forecasts
 - Energy sufficiency plus slices requires an hourly forecast of some duration:
 - 8760 forecasts provide most information about expected load shapes and can adapt to any slice.
 - 24-hour forecasts for LSE peak day of month or season would be less burdensome. CEC forecast adjustments would rely more on recorded loads.
3. Develop reference peak demand estimate for LSEs and evaluate need for forecast adjustments
 - More complex process for setting review criteria
4. Apply adjustments for incremental effects of shared demand side programs.
 - Hourly forecasts needed, but CEC already develops hourly forecasts for energy efficiency
5. Apply pro-rata adjustments to bring the total of the forecasts to within 1% of the CEC service area forecast.



Service Area Reference Forecast

- Reference forecast for CPUC-jurisdictional RA forecasts begins with forecasted monthly TAC coincident peaks from the Integrated Energy Policy Report mid-demand, mid-AAEE case demand forecast.
- IEPR SCE and PG&E TAC-area monthly coincident peak forecasts are then disaggregated to CPUC and non-CPUC jurisdictional using CEC service area annual peak forecast, and LSE forecasts and historic hourly loads.
- New framework could require hourly disaggregation of IEPR forecast
 - Staff is planning to develop data for and test-run the CEC hourly load model (HLM) model at the IOU distribution area level to develop an hourly forecast, but results will have to be evaluated. (2022)
 - Additional development and review time needed to determine the reference forecast.



Coincidence Adjustments with Slices plus Energy Sufficiency

- LSEs would likely still need to submit a monthly noncoincident peak forecast. Noncoincident peak drives CRR allocations.
- For a monthly showing this would be the LSE's monthly peak day, not peak on the day of the CAISO system peak
 - CEC determines coincidence adjustments for all CAISO LSEs based on LSE's recorded data to estimate LSE demand at the time of a 1-in-2 CAISO-wide system peak.
 - LSE-specific coincidence adjustments give LSEs an incentive to manage their load profile during high cost/stress hours; especially important as we decarbonize.
 - Multiple hour coincident adjustment is feasible, but
 - CEC forecasts based on CAISO system load; LSEs use settlement loads. Differences are small (transmission losses) at peak, but larger during other hours.
 - Coincident adjustments could be offset by larger pro-rata adjustment in shoulder periods.
 - Should energy allocations also be based on recorded only, or reflect forecasted load shape?



LSE-Specific Adjustments and Reference Forecast True-up

- Individual forecasts are reviewed to ensure fair cost allocation and minimize the size of the pro-rata adjustment.
 - Hourly forecasts introduce more room for reference forecast shortfall because of methodology and data differences.
 - CEC would need to develop additional benchmarks for forecast evaluation
 - Developing methods for new benchmarks before they are “critical” will give CEC time to evaluate results ex poste.
 - Some LSEs are incorporating forecasts of various load modifiers, but many do not. Load modifiers may not be relevant for some LSEs in a year-ahead framework.
 - IEPR forecast load shape likely to evolve as we add more load modifiers (i.e., PV, AES, transportation/building electrification).
 - In a multi-year regime, LSE load modifier forecast assumptions become more important.



Final Observations

- Current schedule (April-July) for preliminary forecast determinations may need to be reevaluated.
- If a multi-slice energy sufficiency framework is adopted, a dry-run forecast process could help identify technical challenges and resource needs
 - LSEs could submit an hourly version of their 2023 forecast sometime in 2022.
 - CEC could test forecast adjustment methods, and share results.
- Informal comments from LSEs on providing hourly forecasts would be helpful:
 - Peak day of month versus 8760?
 - Ability/interest in forecasting load modifiers or other forecast improvements?
 - Other technical challenges?