RA 2025 Demand Forecasting Update

Lynn Marshall, Energy Assessments Division, CEC

March 27, 2024

RA 2025 Reference Forecast

- CED 2023 Planning Scenario forecast
  - Significant changes to the hourly load forecast, leading to changes in peak and shape.
- CPUC-Jurisdictional forecast shown below is draft.

CED 2023 Planning Scenario, IOU Service Area Peaks coincident with CAISO system peak												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
PGE	11,698	11,586	11,588	12,541	14,867	18,596	19,128	18,672	17,842	14,422	11,794	12,085
SCE	11,854	11,634	11,845	12,573	13,900	16,658	19,600	18,656	20,073	15,814	13,160	11,947
SDGE	3,007	2,901	2,799	2,885	2,551	3,104	3,416	3,391	4,131	3,526	3,259	2,967
Total	26,558	26,121	26,232	27,999	31,318	38,358	42,144	40,719	42,046	33,761	28,213	26,999
Change from RA 24 at system peak												
PGE	(2,041)	(1,661)	(537)	(807)	(1,008)	202	189	72	(161)	(405)	(741)	(2,038)
SCE	(919)	(896)	(538)	(1,251)	(1,155)	(439)	391	(904)	(799)	(1,021)	(313)	(1,421)
SDGE	(304)	(373)	(306)	(240)	(747)	(275)	(175)	(654)	(220)	(233)	(136)	(475)
Total	(3,265)	(2,930)	(1,381)	(2,298)	(2,910)	(511)	404	(1,486)	(1,181)	(1,658)	(1,190)	(3,934)

RA 2025 Load Forecast Process

1) **Determine noncoincident reference peaks and profiles**:
   a) Develop benchmark monthly peak demand and peak-day energy estimates for LSEs to evaluate the need for LSE-specific adjustments.
      a) Weather normalized recorded loads plus load migration data to estimate monthly peaks
      b) Historical hourly loads to estimate peak day energy.
      - May estimate separate AM and PM peak and energy benchmarks where needed to make more targeted adjustments.
      - Account for incremental load modifier impacts

   b) Apply curve-fitting formula to fit LSEs' submitted load shape to the target noncoincident monthly peak and energy from 1).

      This a linear transformation of the submitted forecast:

      $a * Submitted\ Hourly_t + b = Y_t$

      so that $\max_t Y_t = target\ monthly\ peak$ and $mean_t\ Y_t = target\ mean\ peak\ day\ energy$.

      - Evaluate stretched shape compared to historic loads
        - Refine curve-fitting process for direct access or other LSEs with nonconventional load shapes if needed
        - Consider expected load modifier impacts on shape.

RA 2025 Load Forecast Process

2) Adjust for hourly coincidence with system peak

a) Select days to use for coincidence analysis: recent CAISO high load days with hourly profiles (BTM PV impacts) generally consistent with CEC forecast.

b) Calculate LSE hourly coincidence factor statistics (median and percentile distribution)

CF in hour(t)=LSE load in hour(t) on system peak day/LSE load in hour(t) on noncoincident peak day.

c) Apply selected coincidence statistic (i.e., median) to peak day shape. Noncoincident shape has within-day coincidence accounted for; hourly coincidence adjustment reflects across-month.

- LSEs that peak earlier in the day than system, but typically on the same day may therefore have an hourly CF =1. A CF>1 is also possible in some hours.

d) Evaluate forecasted monthly coincident peak against historic monthly coincident peaks.

RA 2025 Load Forecast Process

3) Final adjustments

a) Apply demand-side credits. This includes incremental public goods charge impacts, eligible LMDR, and in SCE, utility-owned storage.

b) Apply pro-rata adjustment to within 1% of 2023 IEPR Planning Scenario 1-in-2 hourly forecast for the day of the monthly system peak day, by TAC.

c) Review final adjusted forecasts for reasonableness, including sum of direct access forecasts relative to DA cap or recent loads.

LSE Forecast Distribution

- CEC plans to distribute draft individual adjusted demand forecasts to LSEs in early July:
  - Monthly coincident adjusted peaks
  - Hourly adjusted forecast detail

  Hourly shapes should be considered preliminary; LSEs are encouraged to review and provide feedback to CEC

Also to be posted in July:

- Final reference forecast
- Dates used for coincidence analysis
- Description of methodology
- Draft composite hourly coincidence/adjustment factors by LSE type (DA, CCA, bundled), for use in month-ahead load migration template.