Comments on Draft Flexible Capacity Requirements Study

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The draft results of CAISO's 2019 flexible capacity requirements (FCR) study resulted in monthly requirements that were significantly higher than the 2018 requirements (see below). Despite expected growth in solar of only about 2,000 MW, ramps and requirements increased by as much as 4,000 MW in some months.

	2017 FCR		2018 FCR		Draft 2019 FCR	
	2017 Forecasted Ramp	2017 Forecasted Requirement	2018 Forecasted Ramp	2018 Forecasted Requirement	2019 Forecasted Ramp	2019 Forecasted Requirement
January	12,970	14,110	12,282	13,415	16,092	17,226
February	11,729	12,840	13,313	14,409	16,600	17,708
March	12,364	13,456	12,352	13,435	16,212	17,301
April	12,054	13,220	11,111	12,272	15,507	16,741
May	10,737	12,044	11,803	13,095	13,405	14,654
June	9,464	10,939	10,039	11,497	12,823	14,086
July	8,397	9,994	9,326	10,908	10,052	11,631
August	8,295	9,918	9,617	11,219	11,278	12,857
September	9,918	11,525	12,660	14,248	13,700	15,297
October	10,196	11,514	12,954	14,271	15,600	16,972
November	13,835	14,977	13,376	14,505	14,760	15,886
December	13,399	14,588	14,567	15,743	16,836	18,014

In order to understand the large and unexpected increase in forecasted ramps, Energy Division reviewed the CAISO FCR workpapers received under our subpoena with the CAISO. Two significant technical flaws were identified, both resulting from the CAISO's use of the new CEC 8760 forecast rather than a monthly peak forecast as had been used in the past.

Stacking Separate TAC Area Peaks

The CEC generated separate 8760 forecasts for the PG&E, SCE and SDG&E TAC areas which are average shapes and uncorrelated with one another. Since, in actuality, there is weather correlation between the three TACs, when CAISO added the three profiles together, it resulted

in unrealistic load shapes with peak loads well below the CEC's peak load forecast for 2019. The August peak was only 41,013 MW compared to the CEC's peak load forecast for 2019 of 45,429 MW. The end result was a small underestimation of the 3 hour net load ramps.

Loss of Weather Correlation between Load and Intermittent Resources

Additionally, summing average shapes for the TAC areas rather than scaling historical load, as had been done in the past, meant that the weather correlation between load, solar, wind and behind-the-meter (BTM) solar was lost, skewing the calculations of net load ramp. The impact of this change was particularly great for BTM solar.

In past studies, actual load from the previous year (which includes impacts of existing BTM solar correlated with weather) was scaled to a future load forecast and an incremental amount of BTM solar based on actual production in the previous year was subtracted off of that in net load calculations. In the 2019 draft study, a CEC estimate of existing and achievable BTM solar was added to hourly load estimates to produce consumption figures. A projection of total BTM solar for 2019 based on the LSE data request was then subtracted after scaling to the 8760 shapes that resulted from adding the TAC areas. This method was problematic because it was scaled to inaccurate load shapes and because the addition and subtraction resulted in loss of weather correlation. The end result was an overestimation of maximum 3 hr net load ramps.

Conclusion

For these reasons, Energy Division staff determined the methodological changes led to a significant overestimation of net load ramps and that we could not recommend adoption of the FCR, and we requested that CAISO revise their analysis using the methodology specifically discussed in their 2019 study plan[1] and used in prior years. The final FCR study filed by CAISO on May 21, 2018, reflects the revised results when the methodology employed in previous FCR studies and detailed in the CAISO tariff is used.

[1] See http://www.caiso.com/Documents/AgendaandPresentation-FlexibleCapacityNeedsTechnicalStudyProcess.pdf