



Final 2019 Flexible Capacity Needs Technical Study

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The purpose of this call is to explain why the ISO re-calculated the 2019 Flexible Capacity Needs

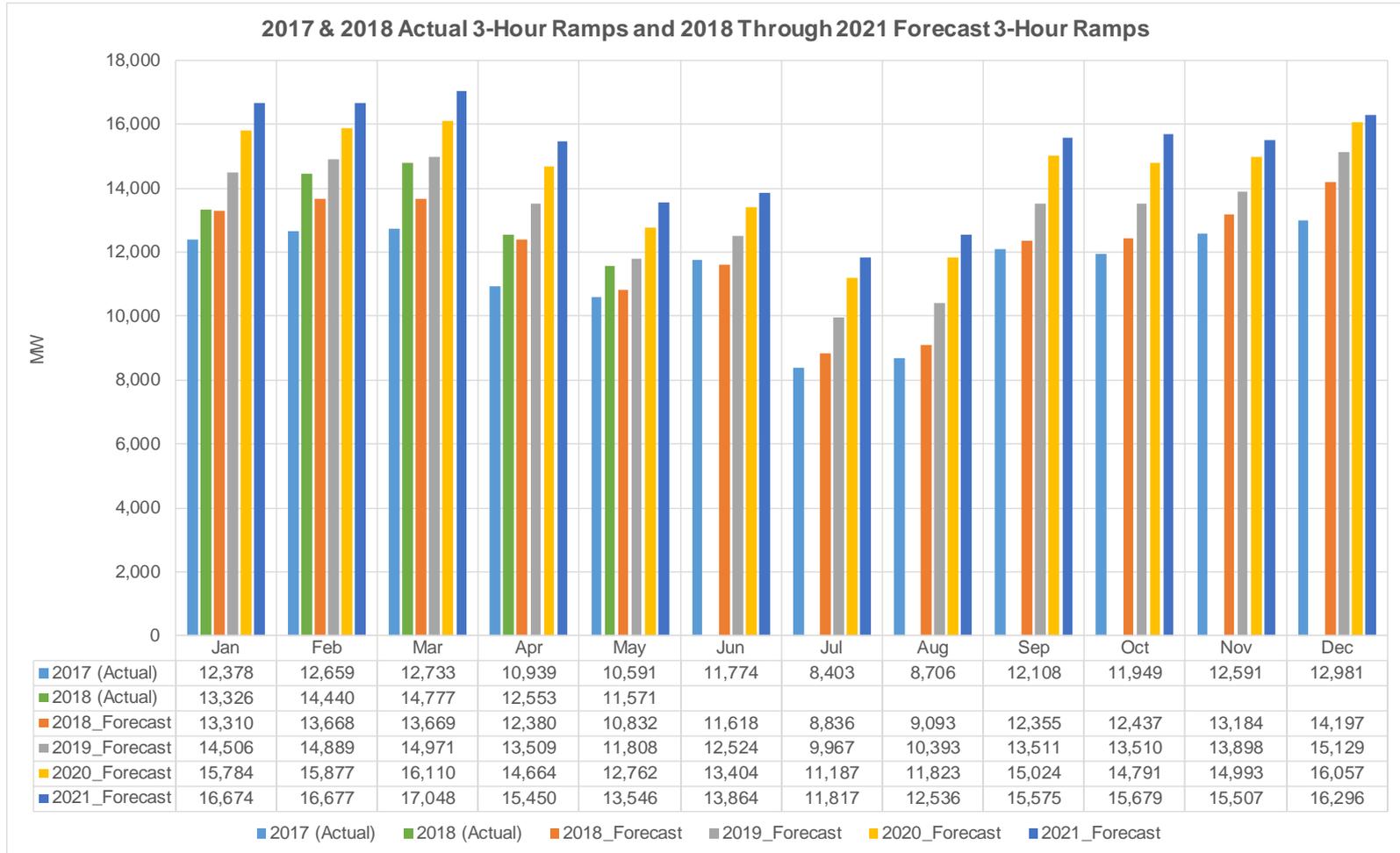
- The CPUC expressed concerns with the use of the CEC's hourly forecast data in determining the Flex RA requirements.
- Originally, the CEC provided a "1 in 2" Mid hourly load forecast for 2018 through 2021
- The CEC also provided the following
 - Hourly behind-the-meter hourly committed PV generation + avoided losses
 - Hourly Additional Achievable PV generation + avoided losses
 - Hourly AAEE
 - Hourly EV and Hourly TOU
- Following the concerns expressed, the CEC provided a "1 and 2" Mid Monthly load forecast for 2018 through 2021

Revised methodology for calculating the ISO's monthly 3-hour flexible capacity needs

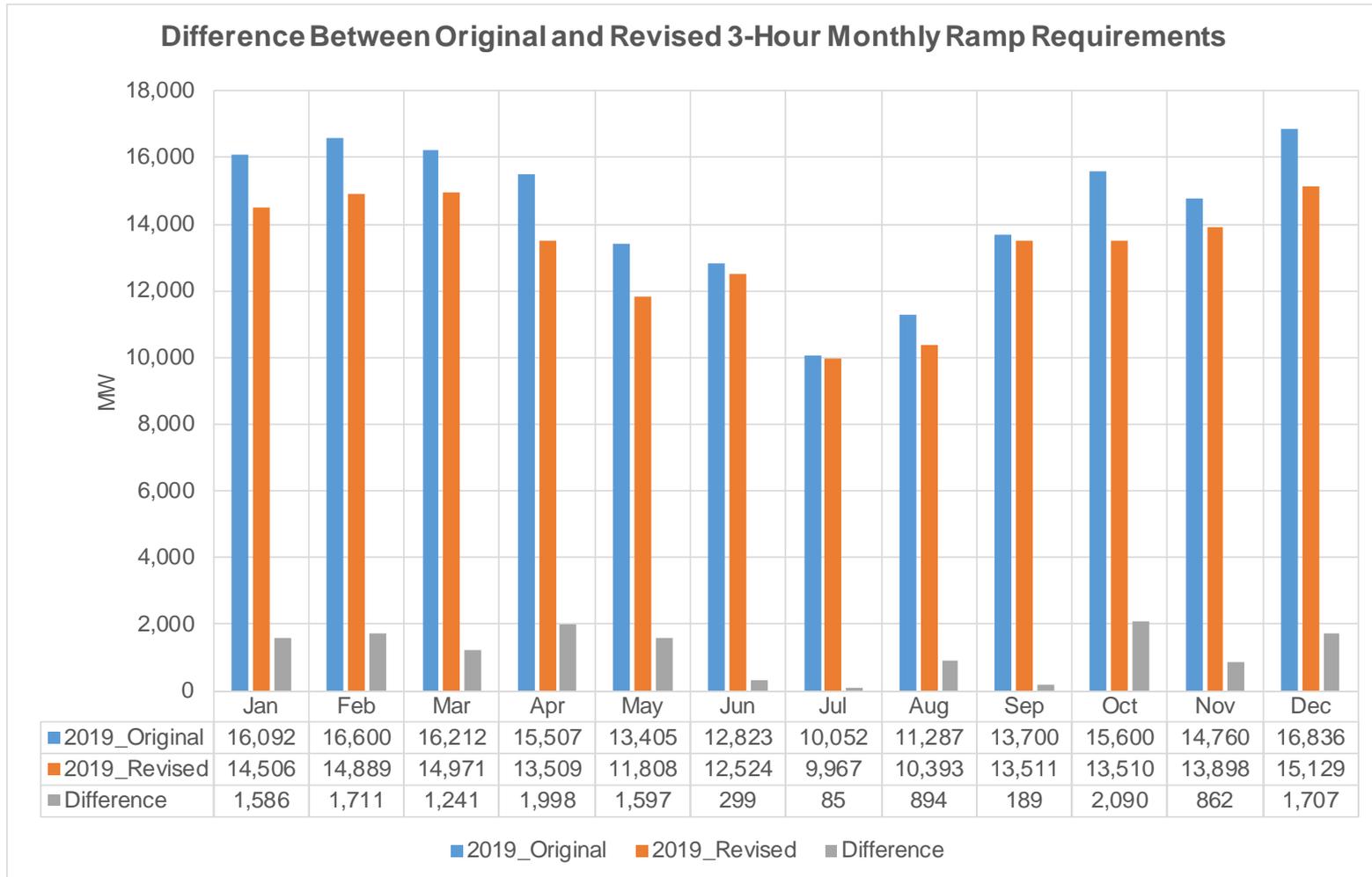
The ISO performed the revised analysis by:

- Using actual 2017 load data adjusted for 2019 monthly peak load growth forecasts instead of using hourly peak load growth forecast,
- Utilizing incremental growth of behind-the-meter solar PV instead of cumulative behind-the-meter solar PV,
 - This is consistent to the methodology used in developing the 2018 Flex RA Requirements.

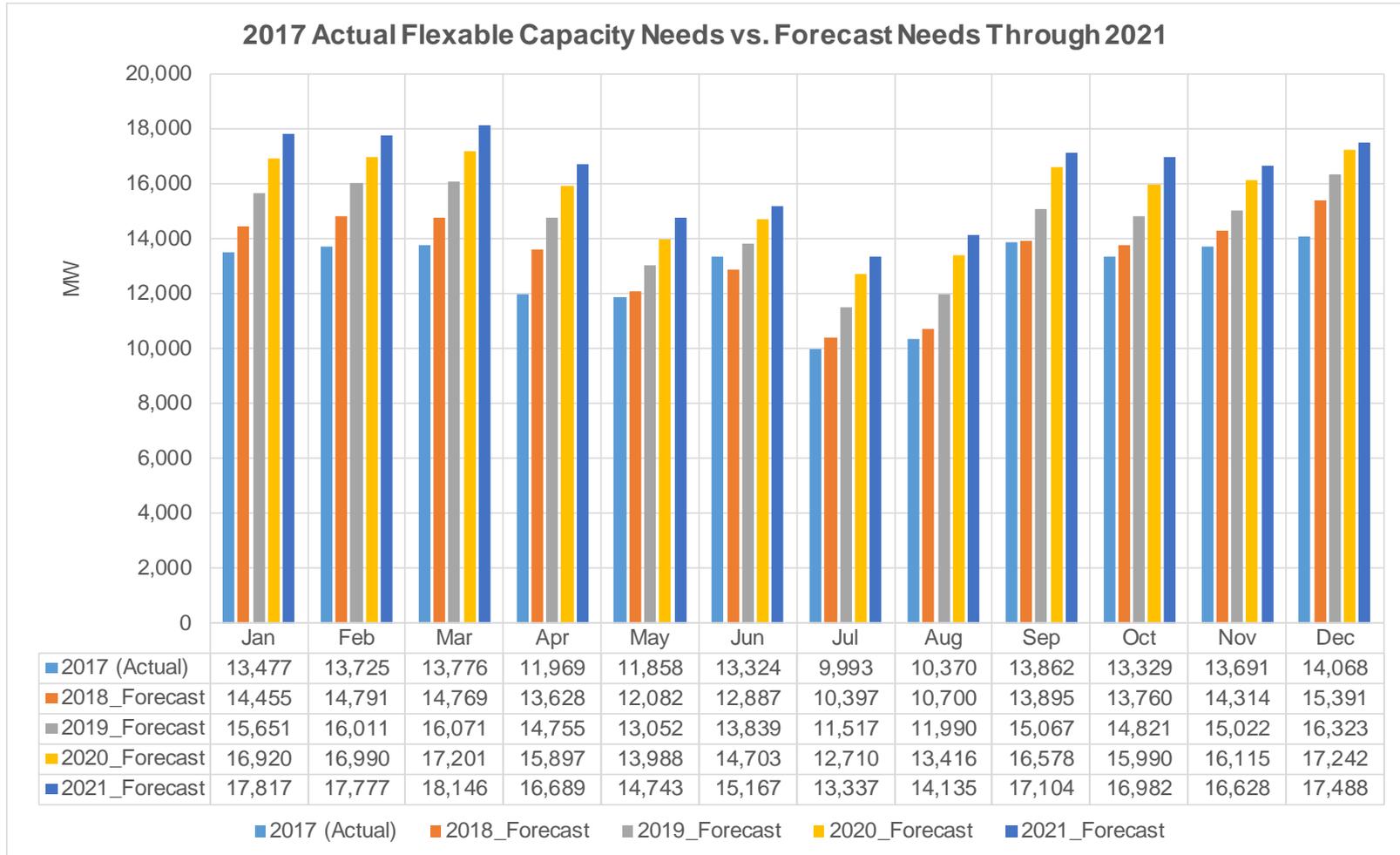
Maximum monthly three-hour upward net-load ramps for 2017 through 2019



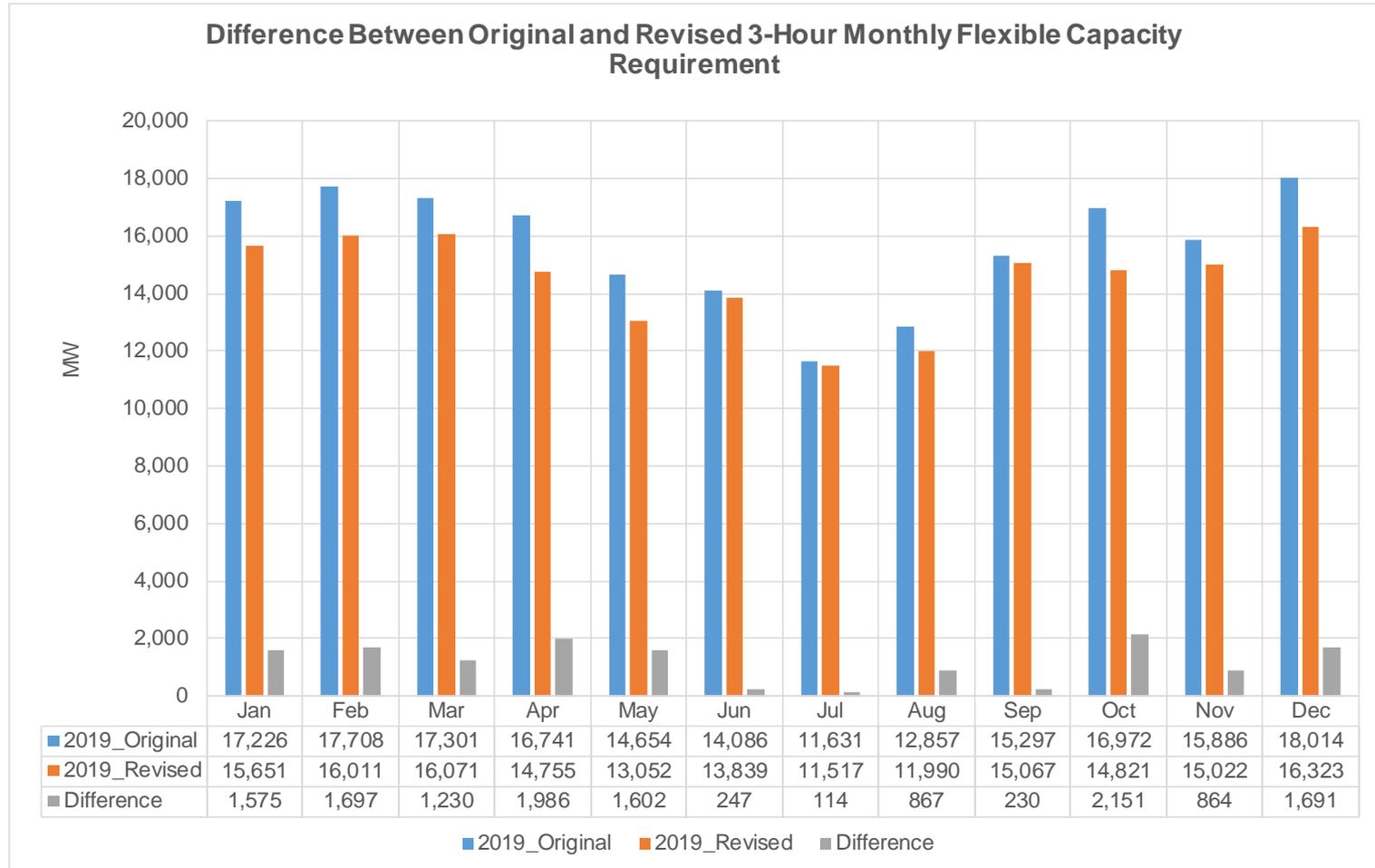
The difference between the original and revised 3-hour monthly ramp requirements



Maximum monthly three-hour upward flexible capacity needs for 2017 through 2021



The difference between the original and revised 3-hour monthly flexible capacity requirements



Components of the flexible capacity needs based on the 3 hour change in load, wind, solar, and BTM

Month	Average of Load contribution 2019	Average of Solar contribution 2019	Average of BTM Inc contribution 2019	Average of Wind contribution 2019	Total percent 2019
January	32.67%	-59.39%	-6.08%	-1.86%	100%
February	42.28%	-48.61%	-6.58%	-2.53%	100%
March	35.82%	-60.34%	-5.37%	1.53%	100%
April	38.04%	-70.43%	-4.41%	12.88%	100%
May	23.41%	-66.81%	-5.97%	-3.82%	100%
June	20.34%	-59.89%	-2.83%	-16.94%	100%
July	18.57%	-75.70%	-8.43%	2.70%	100%
August	7.97%	-80.65%	-10.34%	-1.04%	100%
September	22.25%	-71.27%	-6.17%	-0.31%	100%
October	20.58%	-67.65%	-7.48%	-4.28%	100%
November	36.76%	-54.90%	-3.30%	-5.04%	100%
December	36.30%	-53.61%	-3.77%	-6.32%	100%

Final Total flexible capacity needed in each category – seasonally adjusted

Total Flexible Capacity Needed in Each Category – Adjusted

