



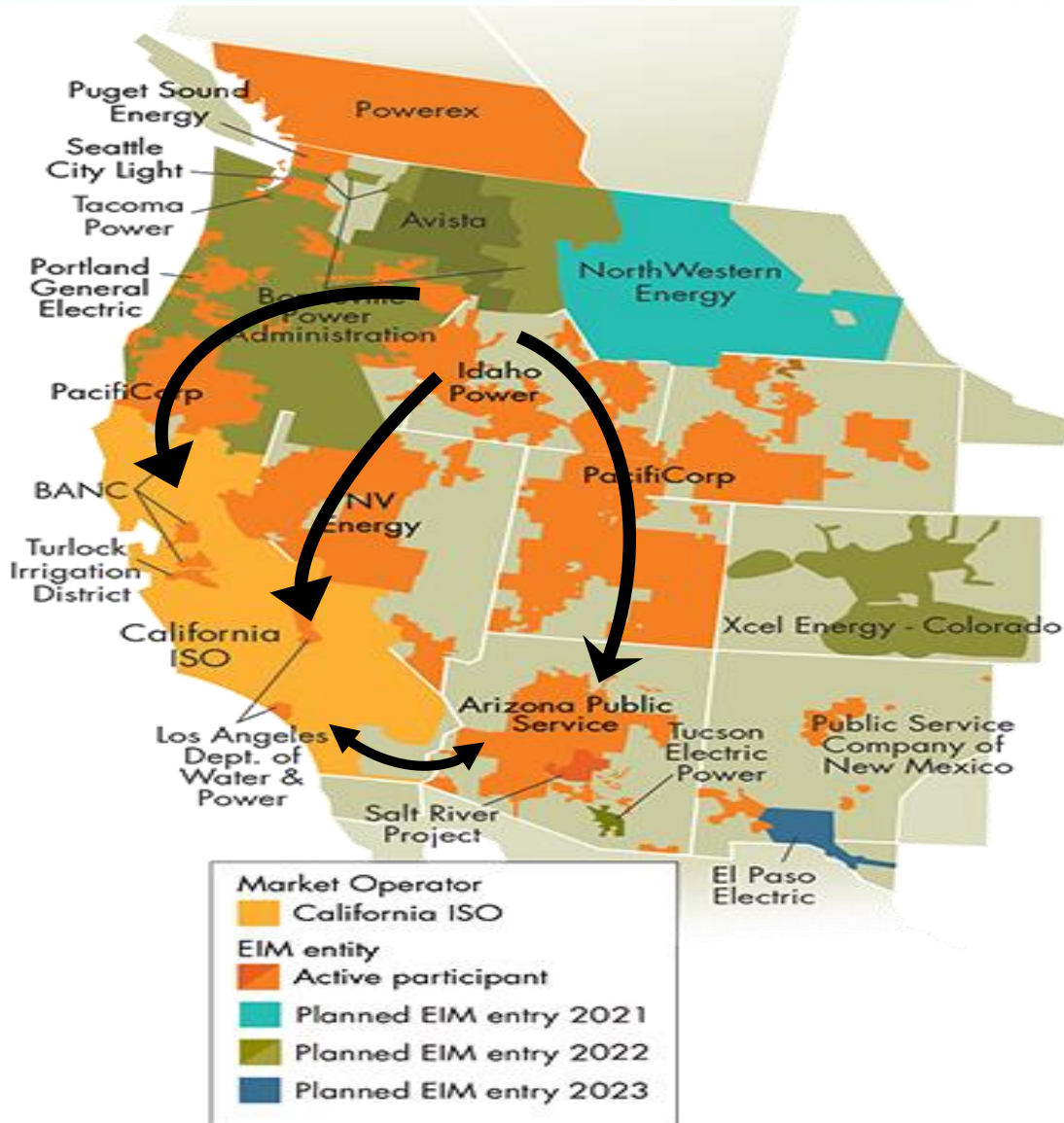
Role of Resource Sufficiency Tests in the Energy Imbalance Market

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EIM Body of State Regulators Spring Meeting
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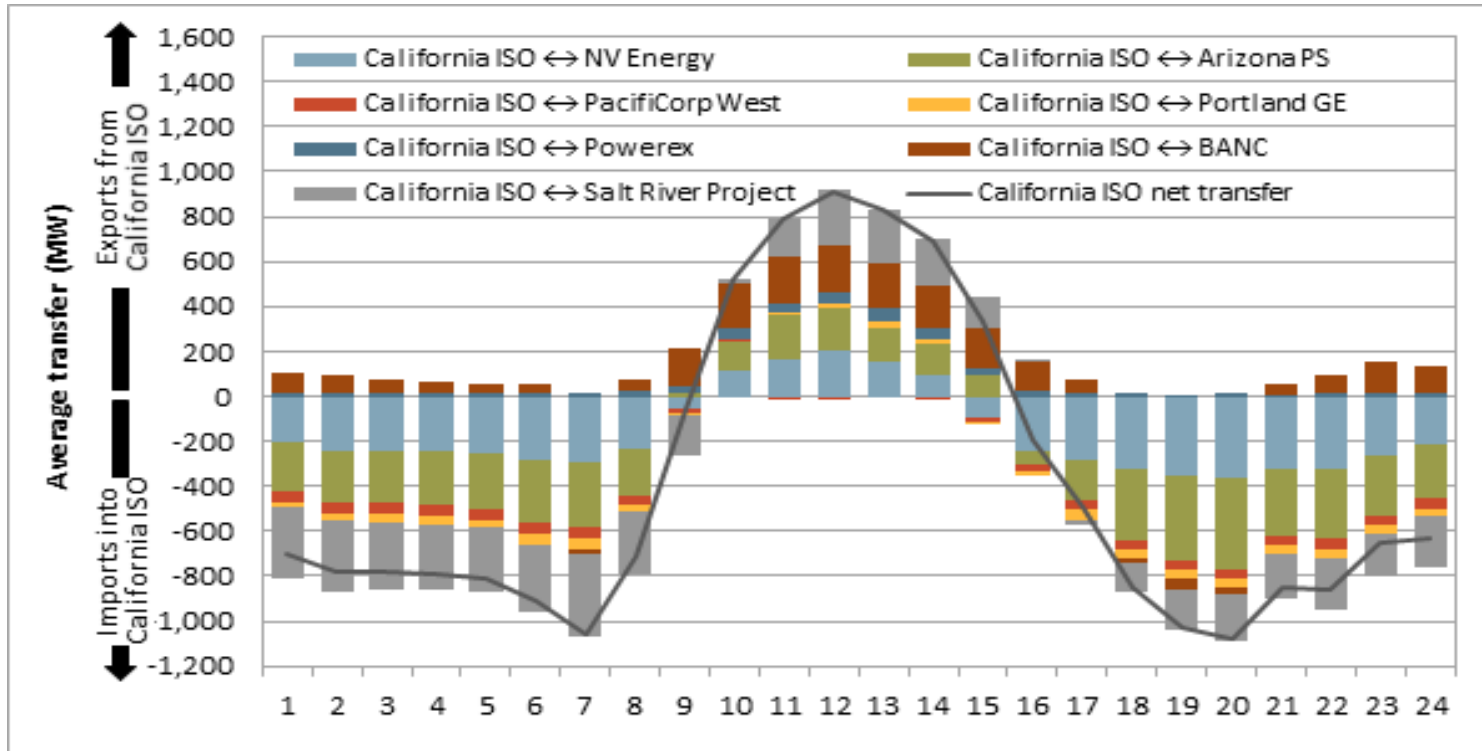
Background

- Resource adequacy vs resource sufficiency
- Two types of test performed as part of *resource sufficiency evaluation* each hour for each 15-minute interval:
 - Bid range capacity test (a.k.a. "*capacity test*")
 - Flexible ramping sufficiency test (a.k.a. "*sufficiency test*")
- If an EIM balancing area fails one of these tests, net EIM imports into the area cannot increase beyond level of net imports at that time.
- Purpose of tests:
 - Ensure sufficient resources are scheduled/offered in EIM to cover load forecast and ramping needs (plus some uncertainty.)
 - Deter excessive or intentional "leaning" by individual EIM areas for capacity needed to meet loads and uncertainty
 - Also viewed by FERC as a mechanism to help deter exercise of market power through physical withholding of resources.



- Transfers in EIM vary a lot by hour-of-day and season.
- General flow of transfers in net peak hours is from northwest to CAISO and southwest.
- During peak solar hours, CAISO exports excess to other EIM areas.
- Flows can change quickly due to changes in short-term conditions.

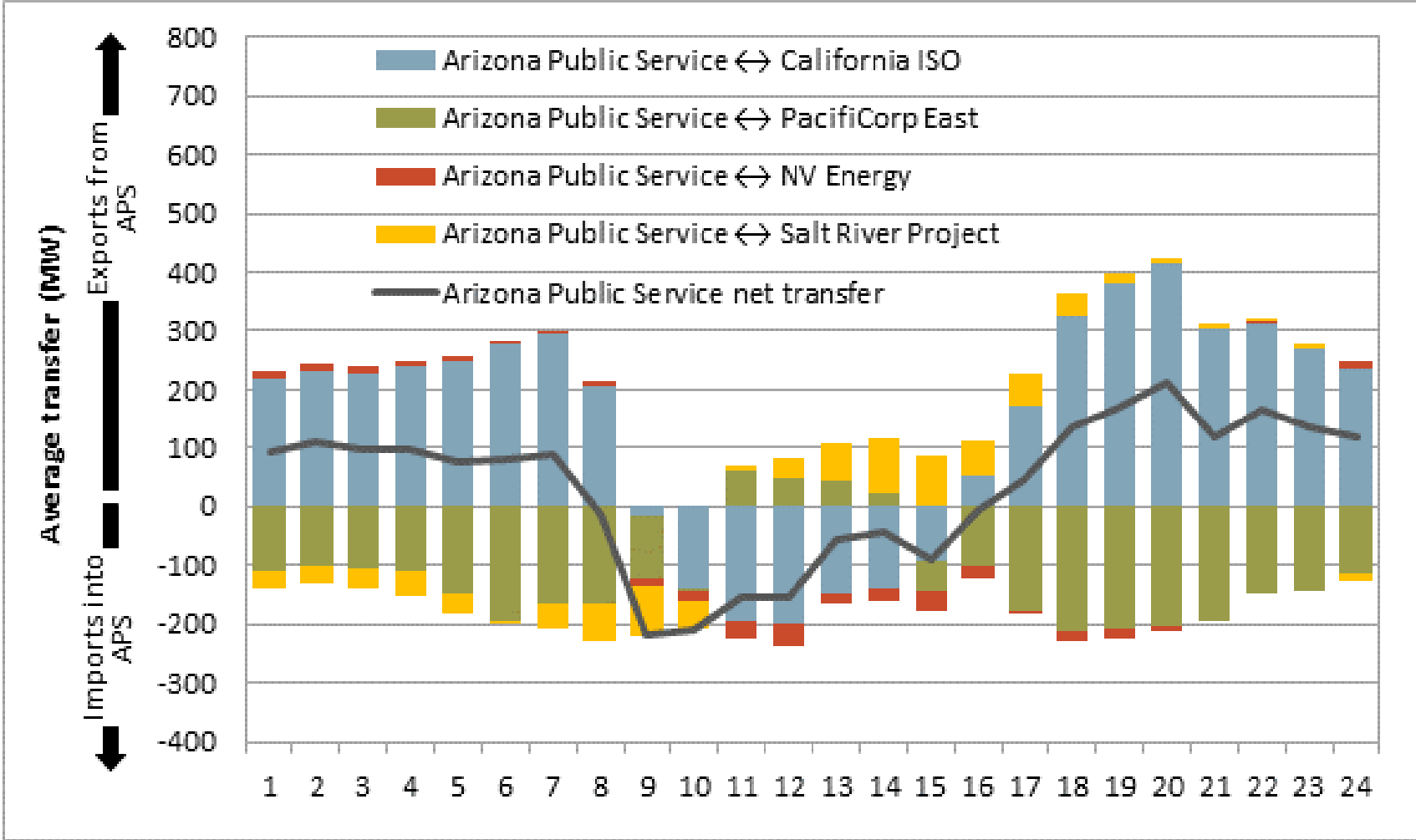
EIM transfers into and out of CAISO (Q4 2020)



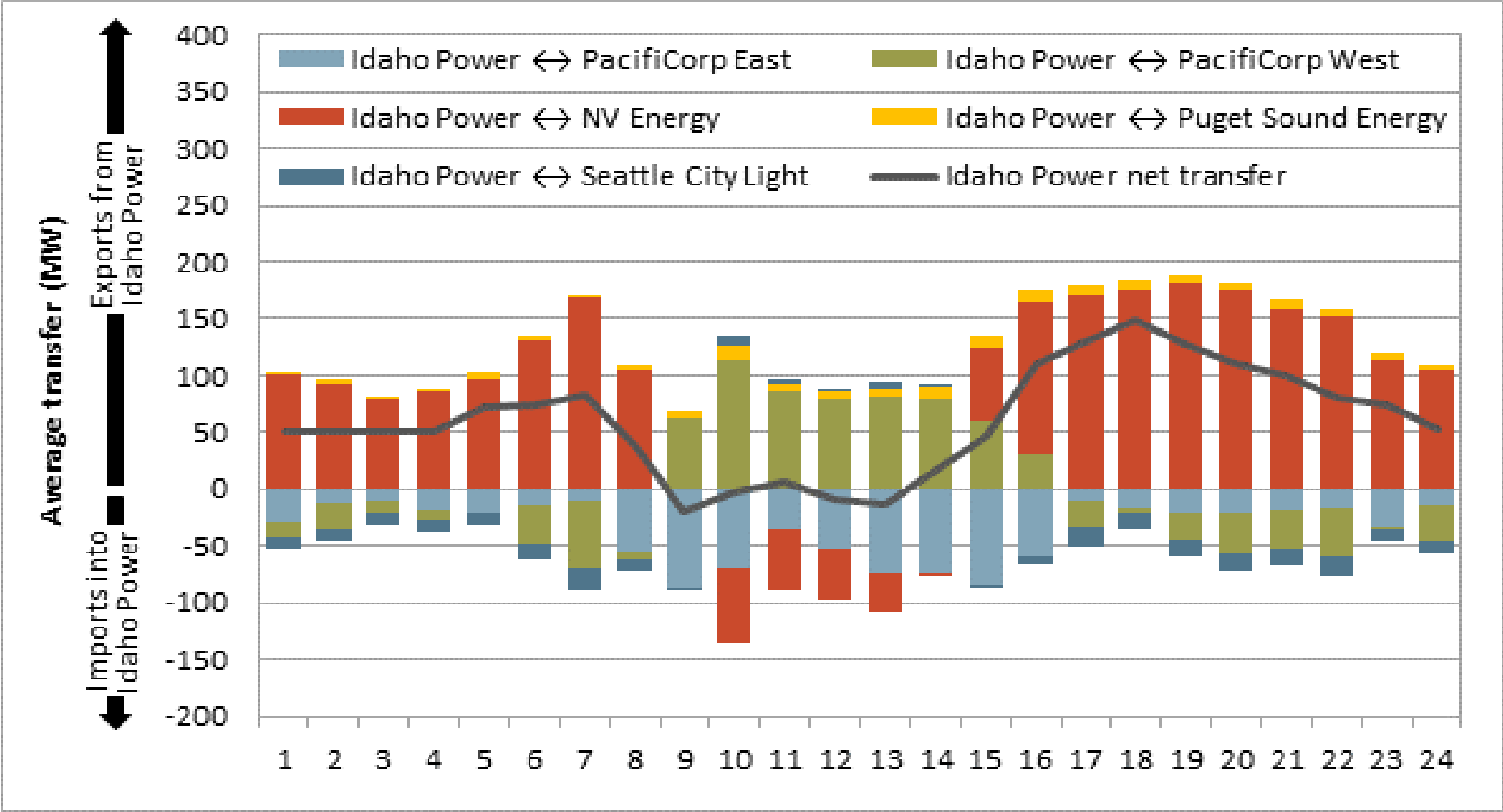
A complete set of charts for all EIM areas is provided in the Department of Market Monitoring's quarterly and annual reports. e.g.

<http://www.caiso.com/Documents/2020ThirdQuarterReportonMarketIssuesandPerformance-Feb4-2021.pdf>

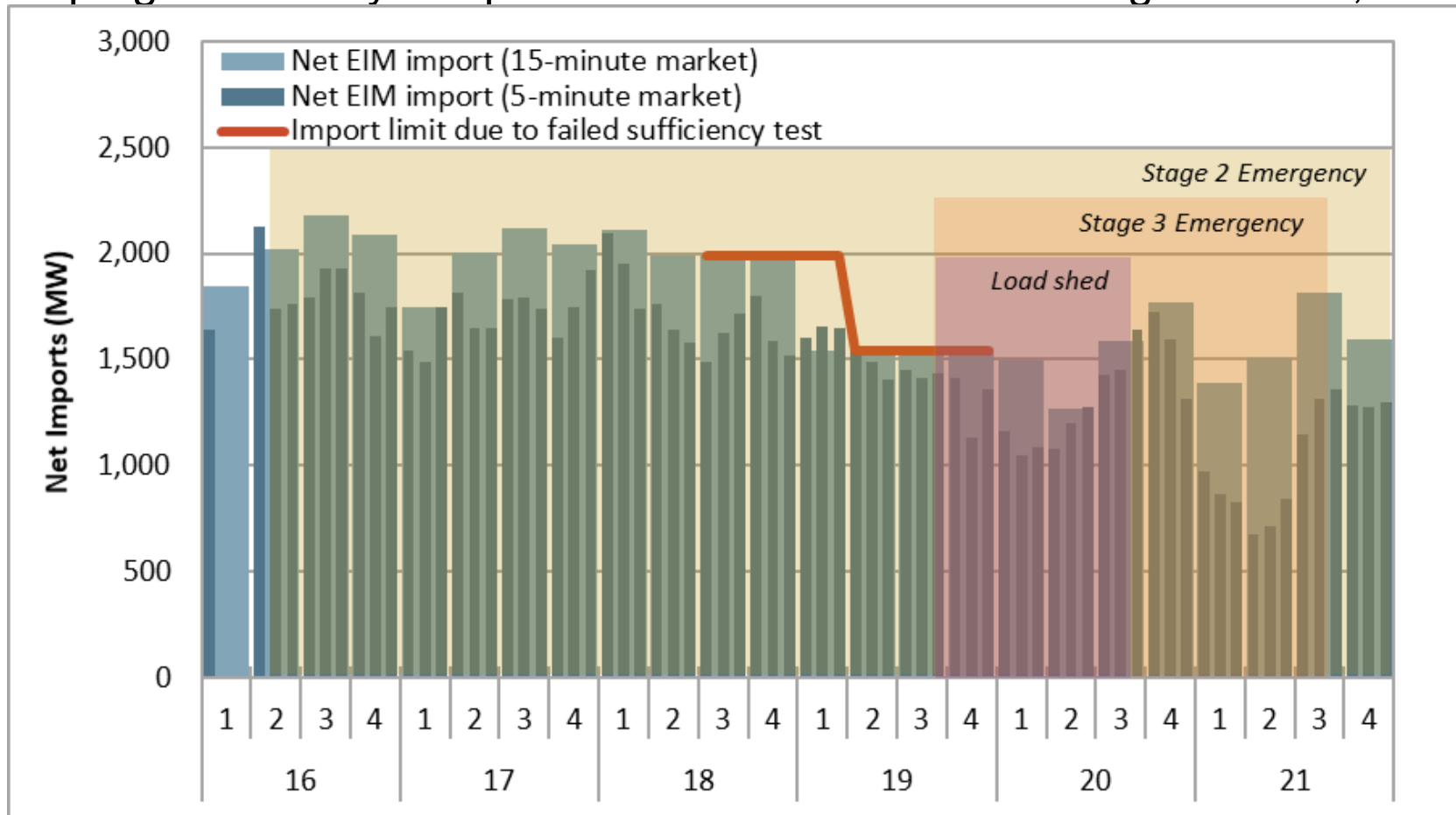
EIM transfers into and out of APS (Q4 2020)



EIM transfers into and out of Idaho Power (Q4 2020)



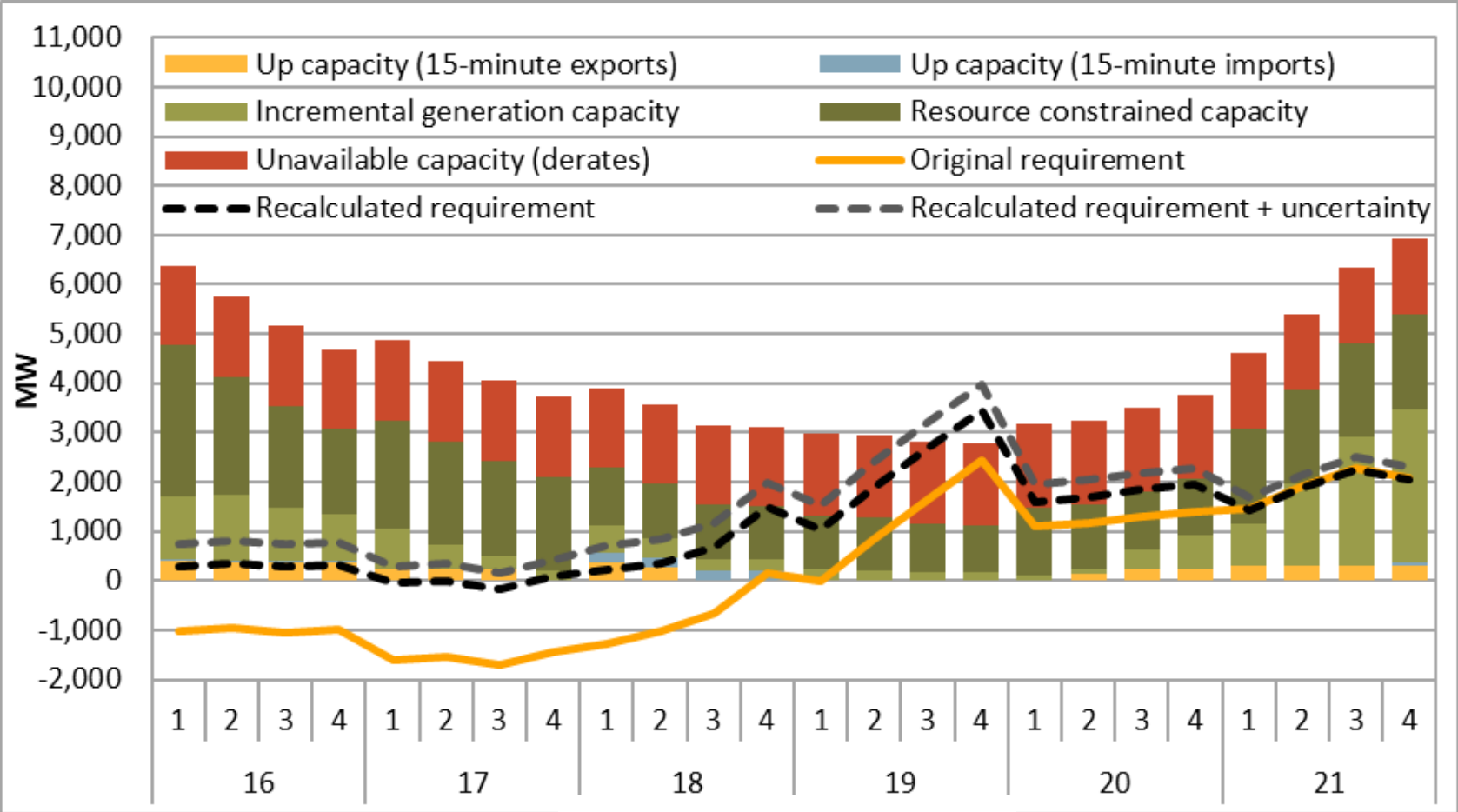
EIM transfers into CAISO system were capped after CAISO failed flexible ramping sufficiency test prior to load curtailments on August 14-15, 2020.



Aug 14, HE 16-21

*Details of analysis will be included in DMM's forthcoming report on Q4 market performance and issues.

Errors in calculation of capacity test for CAISO system prevented capacity test failures prior to load curtailments on August 14-15, 2020



Aug 14, HE 16-21

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Future issues

- Errors in capacity test calculations corrected.
- High participant interest in increased transparency about details of tests.
- Changes in calculation of available bid range capacity and flexible ramping being considered.
- CAISO proposing to add uncertainty component to bid range capacity test.
- Changes to consequence of failing tests?
 - e.g. instead of limiting imports impose capacity charge?
- Extending bid range capacity and flexible ramping sufficiency tests to a day-ahead market for EIM