

# Vistra

## RSE Phase 3

### “Durable Framework”

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# What is the RSE and what is WEIM leaning?

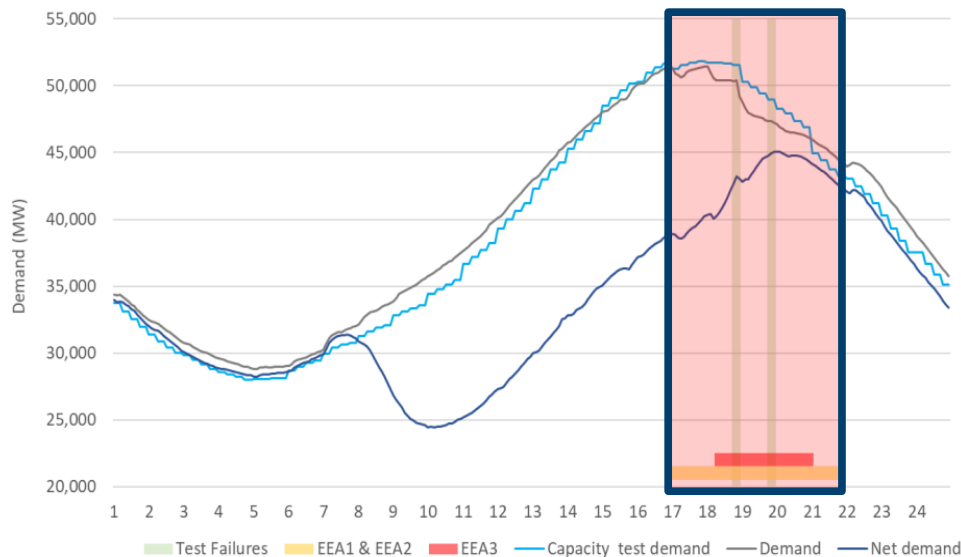


- At highest level, Resource Sufficiency Evaluation is set of different tests of whether a BAA is or is not leaning on other areas or resource owners
- Historically, in WEIM the need to mitigate against “leaning” was to limit the ability of entities to **“consume capacity at no charge”** under normal conditions
- ***Leaning is also relying on transfers for energy to avoid entering or to ride through shortages at a charge lower than that “emergency” energy’s value***
  - ***Avoiding leaning on other participants when leading up to and during emergencies has not been fully considered in the WEIM design***
- RSE tests for ***sufficient supply resources utility operated or third-party operated that bid-in to the fifteen-minute market, regardless of whether its contracted or not,*** to meet its expected real-time demand plus any uncertainty
- RSE is not and should not be a test on whether each BAA has sufficient resources secured to meet its resource adequacy obligations
  - RA capacity tests should be performed outside the energy & ancillary services markets and appropriate penalties applied by the local regulatory agencies.

- Across WEIM, BAAs are tested for resource sufficiency using the generation, load, and interchange base schedules and energy bids submitted by both utility-owned generation and third-party owned generation in:
  - **Balancing test (Hourly):** Must have sufficient *base schedules* from utility and third-party resources and BAA base transfers *to meet its real-time hourly demand* forecast within  $\pm 1\%$  bandwidth or else pay scheduling penalty at % of DLAP
  - **Capacity/Bid-Range test (Fifteen Minute):** Must have sufficient *bid-range* *above and below base schedules* from utility and third-party resources *to meet imbalance between hourly and each fifteen-minute demand forecasts*
  - **Flexibility/flexible ramping test (Fifteen Minute):** Must have sufficient ramping capability in *bid-range* submitted from utility and third-party resources *to meet demand change between FMM intervals plus uncertainty* within  $\pm 1\%$  bandwidth
- BAA failures of either capacity or flexibility test result in limiting FMM and corresponding 5MM net transfers to no more than the higher of base transfer schedule or prior FMM run's net transfer schedule as follows:
  - **Oversupply/down test failure** → net export transfers limited to cap
  - **Undersupply/up test failure** → net import transfers limited to cap

# CAISO and DMM reports show CAISO passed capacity test under EEA2 and EE3

Figure 95: Demand used in capacity test relative to actual demand on September 6

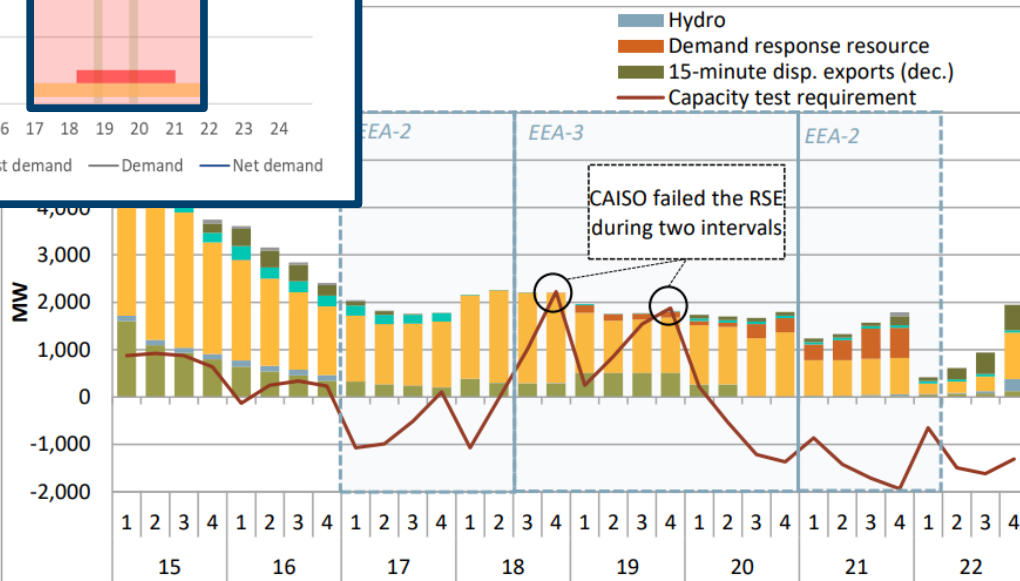


Overlay of EEAs to the pass or fail rate was only reported for CAISO EIM BAA by CAISO and DMM. We assume this may similarly have occurred elsewhere.

Source: Summer Market Performance Report, Sep. 2022, CAISO Market Analysis & Forecasting

Considering capacity test, tests for being able to meet energy requirements this seems odd...Should it be happening?

Incremental capacity (peak hours, September 6, 2022)



Source: WEIM Resource Sufficiency Evaluation Metrics Report September 2022, CAISO Department of Market Monitoring

# Should BAAs pass RSE under EEA2 or EEA3?

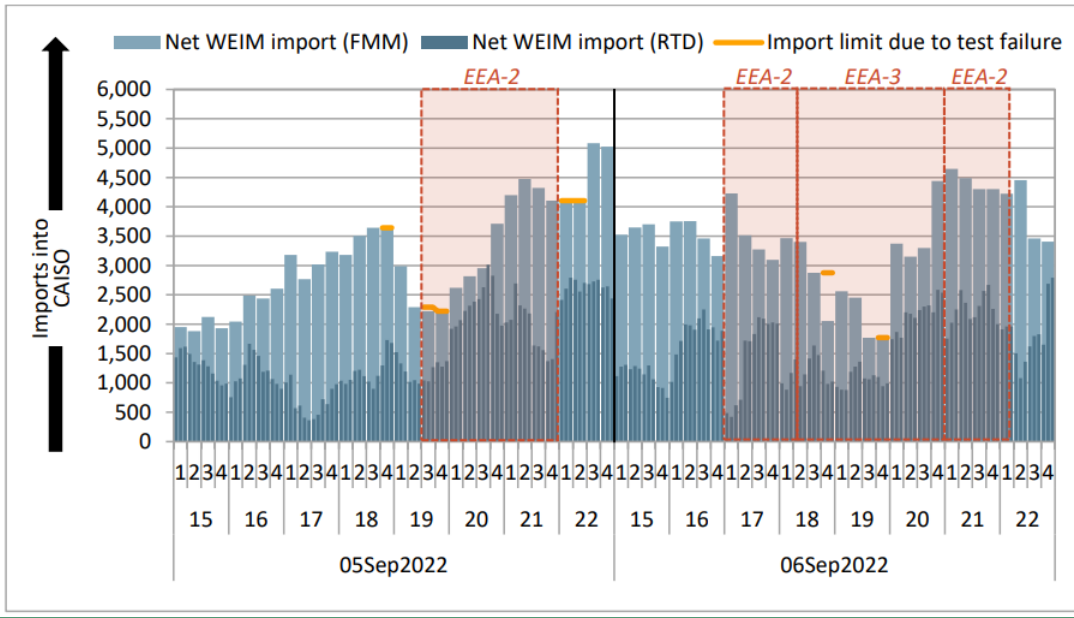


Current Codes	What this means	Capacity test is can I meet FMM demand?
Flex Alert	Consumer education and call for voluntary conservation	Depends on test results
Restricted Maintenance Operations	Restrict all pre-scheduled outages and/or planned maintenance within hours restricted	Depends on test results
Transmission Emergency	Emergency generation needed to relieve overloads	Depends on test results
EEA Watch	Expecting all resources will be in use	Depends on test results
EEA 1	Reflects that during one or more hours all available resources are in use and/or are committed to be in use	Depends on test results
EEA 2	All available resources are in use and BAA will no longer able to meet expected energy requirements but still able to meet min contingency reserve requirements.	No – Operator triggering EEA2 identifies the BAA is no longer able to meet its expected energy needs ie demand. Administrative result should apply.
EEA 3	Unable to meet minimum Contingency Reserve requirements and firm load interruption is imminent or in progress	No – Operator triggering EEA2 identifies the BAA is no longer able to meet its expected energy needs ie demand. Administrative result should apply.

# DMM and CAISO reports show at least CAISO EIM BAA failure consequence is not binding



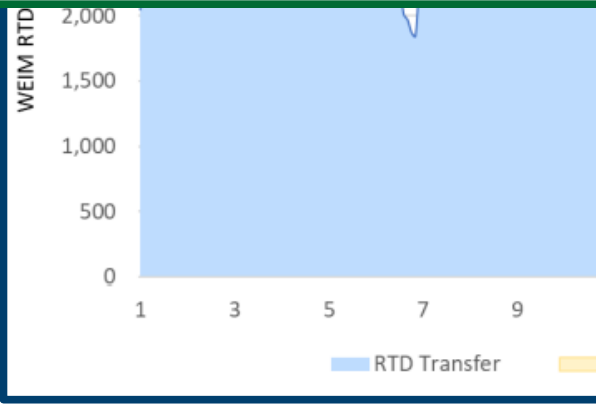
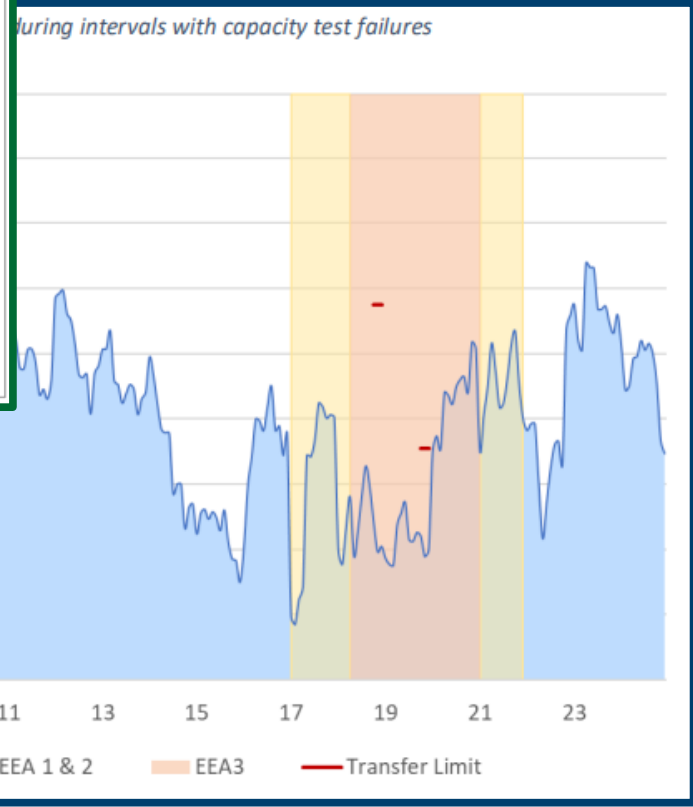
Figure 2.11 CAISO WEIM transfers and any import limit following resource sufficiency evaluation failure (peak hours, September 5-6)



If a consequence is not binding, is it a consequence and have you paid a charge for that capacity as intended?

Source: WEIM Resource Sufficiency Evaluation Metrics Report September 2022, CAISO DMM

Lack of practical consequences may unwind RSE check on leaning and merit discussion



Source: Summer Market Performance Report, Sep. 2022, CAISO MAF, Figure 129

# DMM report shows that non-binding limits in multiple WEIM BAA areas



CAISO, LADWP, PSC New Mexico, and Seattle City Light had 100% of their failures result in intervals with non-binding limits on its net transfers.

Only CAISO on average net imported where the RSE failure consequence appears to have no practical impact to mitigate leaning. The rest of those with non-binding were net exporting.

**(September 5 – 8, 2022)**

BAA	Resource Sufficiency	Market transfers below the imposed import limit			Market transfers at the imposed import limit		
		Percent of RTD failure intervals	Average RTD dynamic import limit	Average RTD dynamic net WEIM import	Percent of RTD failure intervals	Average RTD dynamic import limit	Average RTD dynamic net WEIM import
BANC	9	41%	84	56	59%	65	65
BPA	7	10%	24	-65	90%	13	13
California ISO	14	100%	3,238	1,572	0%	—	—
Idaho Power	11	11%	78	63	89%	18	18
LADWP	2	100%	0	-59	0%	—	—
NorthWestern En.	5	27%	27	-67	73%	29	29
PacifiCorp East	2	33%	0	-69	67%	186	186
PacifiCorp West	3	33%	0	-260	67%	1	1
PSC New Mexico	1	100%	0	-153	0%	—	—
Puget Sound Energy	7	48%	17	-26	52%	16	16
Seattle City Light	9	100%	26	-7	0%	—	—
Salt River Project	11	42%	71	-20	58%	0	0
Turlock Irrig. Dist.	3	89%	2	-20	11%	0	0

Source: WEIM Resource Sufficiency Evaluation Metrics Report covering November 2022, CAISO Department of Market Monitoring

# DMM and CAISO reports show larger load biases in FMM led to non-binding RSE consequences

## DMM Report Insights:

- “During the September heat wave, failure of the resource sufficiency evaluation did not have a significant impact on limiting transfers into the CAISO...import limit was binding in 57 percent of 15-minute market intervals, but none of the 5-minute market intervals.” (Pg 11)
- “The drop in WEIM imports into the CAISO between the 15-minute and 5-minute markets is driven by the significant imbalance conformance adjustments (or bias) entered by CAISO operators in the hour-ahead and 15-minute markets.” (Pg 10)

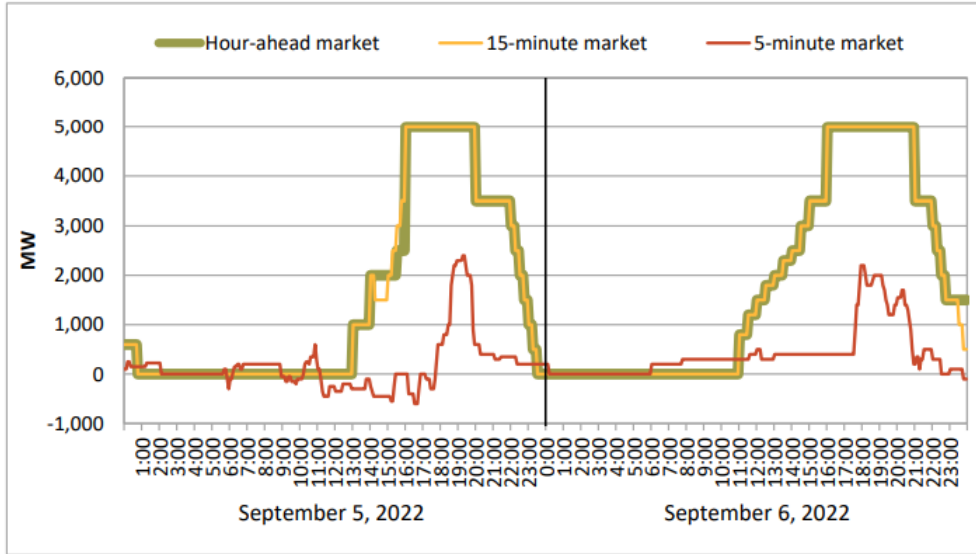
## MAF Report Insights:

- “[O]perators observed tight supply conditions that realized until the operation of the five-minute market. This was largely driven by changing conditions from the HASP process towards the RTD market at which time system conditions changed primarily due to additional procurement of ancillary services, outages, and realization of VER uncertainty. Some of these changes happened not only in the ISO area but also in other WEIM BAAs. They resulted in significantly lower transfers levels realized in RTD than the projected advisory transfers cleared in HASP and FMM.” (Pg 122)



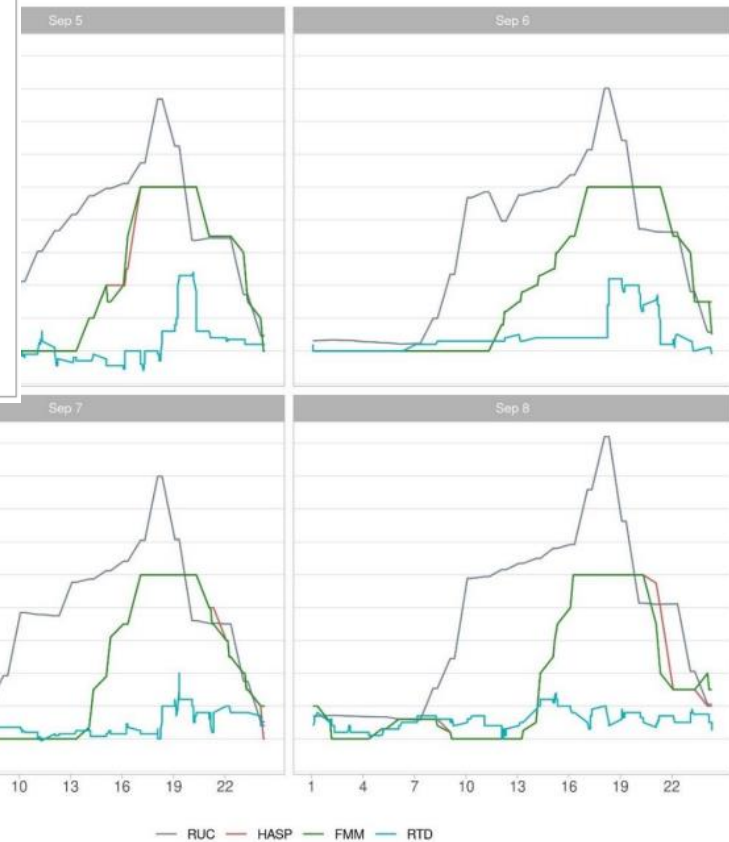
# CAISO and DMM reports showed FMM loads systemically higher than 5MM net transfers

Figure 2.15 California ISO imbalance conformance adjustments (September 5-6)



We need to reexamine role of bias in RSE framework

Profile of load adjustment across markets during the September heat wave



Source: WEIM Resource Sufficiency Evaluation Metrics Report September 2022, CAISO DMM

Maybe biases should be removed from physical consequence MW?

Maybe we should consider moving to financial consequences as the consequence level more appropriately limits leaning?

Source: Summer Market Performance Report, Sep. 2022, CAISO Market Analysis & Forecasting