

# WESTERN ENERGY IMBALANCE MARKET

## Reporting and Analysis of Resource Sufficiency Tests in the Energy Imbalance Market

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General Session  
December 15, 2021



## DMM Reporting and Analysis

- Monthly reports covering July through November posted
- Two stakeholder calls to discuss reports/data issues
- Underlying 15-minute interval-level data for all metrics by balancing area now published (since Nov. 8)
- Additional metrics, data and explanation provided to address stakeholder requests/concerns:
  - Uncertainty component
  - Imbalance conformance
  - Available upward capacity
  - Unloaded capacity compared to EIM imports
  - Transfers and transfer limits following failures

Capacity test failures increased in summer 2021 due to corrections and changes in tests – but still represent small percent of intervals.

**Frequency of upward capacity test failures (number of 15 intervals)**

Arizona PS	—	—	—	9	5	10	—	—	8	—	5	8	5	—	9		
BANC	—	2	1	—	—	—	3	—	—	—	7	—	1	—	—		
California ISO	—	—	—	—	—	—	—	—	—	4	6	1	5	—	—		
Idaho Power	—	—	—	—	—	—	—	—	—	—	13	25	3	—	—		
LADWP	[Greyed out]								—	—	2	—	—	—	8	5	
NorthWestern	[Greyed out]								9	36	18	6	253	34			
NV Energy	—	3	6	—	—	9	—	1	14	22	15	6	7	8	—		
PacifiCorp East	—	—	4	—	—	—	—	—	—	10	9	4	6	4	—		
PacifiCorp West	—	—	4	—	—	—	2	—	1	4	7	2	3	2	14		
Portland GE	—	—	—	—	—	4	—	11	—	21	25	30	41	13	6		
Powerex	2	2	3	—	4	1	—	—	—	1	1	—	2	15	6		
PSC New Mexico	[Greyed out]								—	—	—	11	—	5	—	—	
Puget Sound En	—	—	—	—	—	2	17	29	18	45	16	21	17	29	18		
Salt River Proj.	—	3	2	—	—	215	—	2	4	19	90	76	56	3	20		
Seattle City Light	—	—	—	—	—	—	—	—	—	—	—	1	14	4	—		
Turlock ID	[Greyed out]								—	—	1	—	—	33	22	46	—
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
	2020				2021												

Average of 4 intervals = 1 hour/month

Caused by transmission outage

## Capacity test failures often caused by relatively small amount of capacity (in MW or percent of total load)

**Average capacity shortfall during upward capacity test failures (MW)**

Arizona PS	—	—	—	1387	2325	1443	—	—	48	—	92	45	97	—	80	
BANC	—	20	5	—	—	—	13	—	—	—	53	—	6	—	—	
California ISO	—	—	—	—	—	—	—	—	—	405	601	274	125	—	—	
Idaho Power	—	—	—	—	—	—	—	—	—	—	17	34	6	—	—	
LADWP	—								—	—	46	—	—	—	95	103
NorthWestern	—								—	—	25	24	61	9	38	31
NV Energy	—	23	15	—	—	26	—	15	27	82	55	25	42	57	—	
PacifiCorp East	—	—	1214	—	—	—	—	—	—	73	40	38	63	79	—	
PacifiCorp West	—	—	2228	—	—	—	12	—	4	10	26	16	36	2	15	
Portland GE	—	—	—	—	—	268	—	42	—	34	46	36	38	31	32	
Powerex	85	79	258	—	41	32	—	—	—	63	3	—	22	78	70	
PSC New Mexico	—								—	—	—	129	—	57	—	—
Puget Sound En	—	—	—	—	—	21	68	28	49	50	58	74	46	33	54	
Salt River Proj.	—	26	72	—	—	54	—	25	38	30	75	121	74	27	27	
Seattle City Light	—	—	—	—	—	—	—	—	—	—	—	4	151	53	—	
Turlock ID	—						—	—	1	—	—	7	7	8	—	
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
	2020				2021											

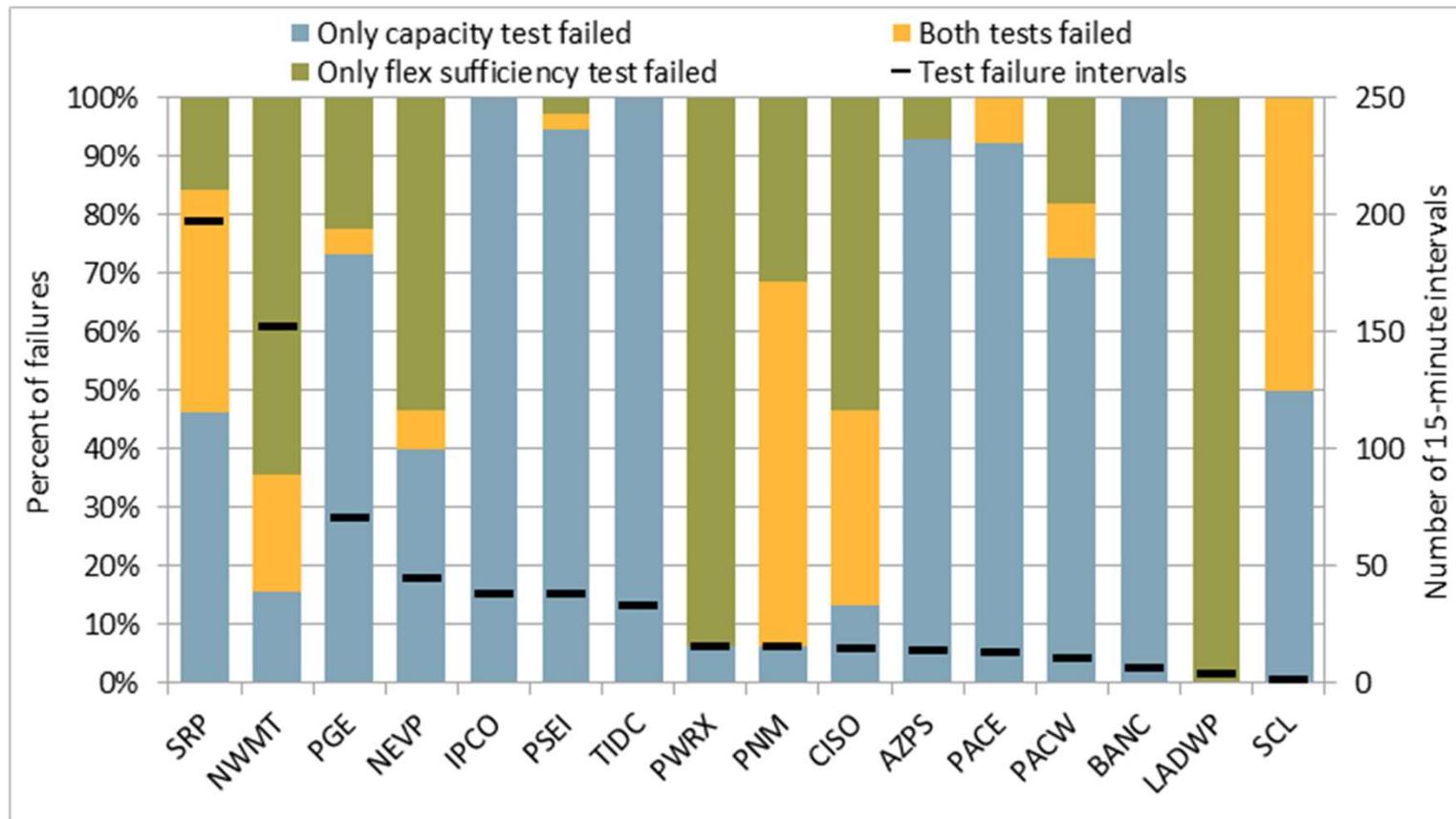
Flexible ramping capacity test failures are also relatively infrequent, but occur mainly during net peak ramping hours.

### Frequency of upward ramping test failures (number of 15-minute intervals)

Arizona PS	10	24	19	19	15	13	7	—	19	—	1	—	7	—	10		
BANC	1	4	—	4	—	—	—	—	—	—	—	—	—	—	—		
California ISO	14	13	14	—	—	—	—	—	—	1	10	3	11	—	3		
Idaho Power	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—		
LADWP									1	3	—	4	—	—	1	1	
NorthWestern									18	108	20	46	247	14			
NV Energy	74	41	24	—	4	13	11	12	20	27	12	15	4	8	1		
PacifiCorp East	2	14	1	—	4	2	4	4	1	2	1	—	4	—	2		
PacifiCorp West	4	3	1	3	1	5	3	4	1	—	1	2	—	—	16		
Portland GE	17	3	3	5	10	15	3	7	7	8	14	5	—	1	—		
Powerex	10	4	16	7	7	4	4	4	—	4	15	—	—	7	5		
PSC New Mexico									11	1	3	15	—	2	—	2	
Puget Sound En	—	5	—	—	—	—	—	—	4	2	1	1	—	—	2		
Salt River Proj.	33	49	25	8	5	192	8	15	6	26	57	49	24	5	36		
Seattle City Light	2	5	5	4	—	—	—	—	—	—	1	—	4	—	—		
Turlock ID									—	—	9	—	—	—	2	5	—
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
	2020								2021								

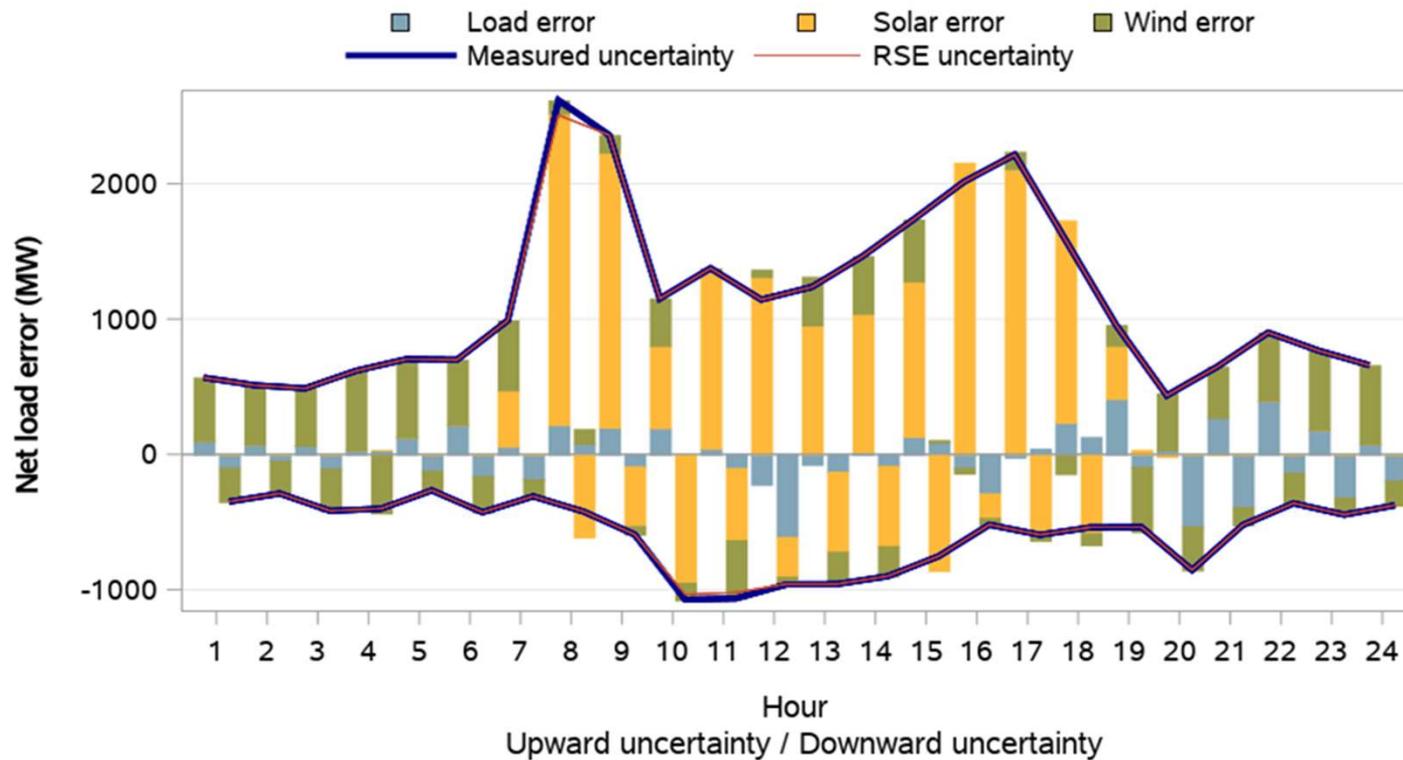
More detailed data and metrics help understand cause of test failures in different balancing area.

### Failures of bid capacity and flexible capacity (July-August 2021)

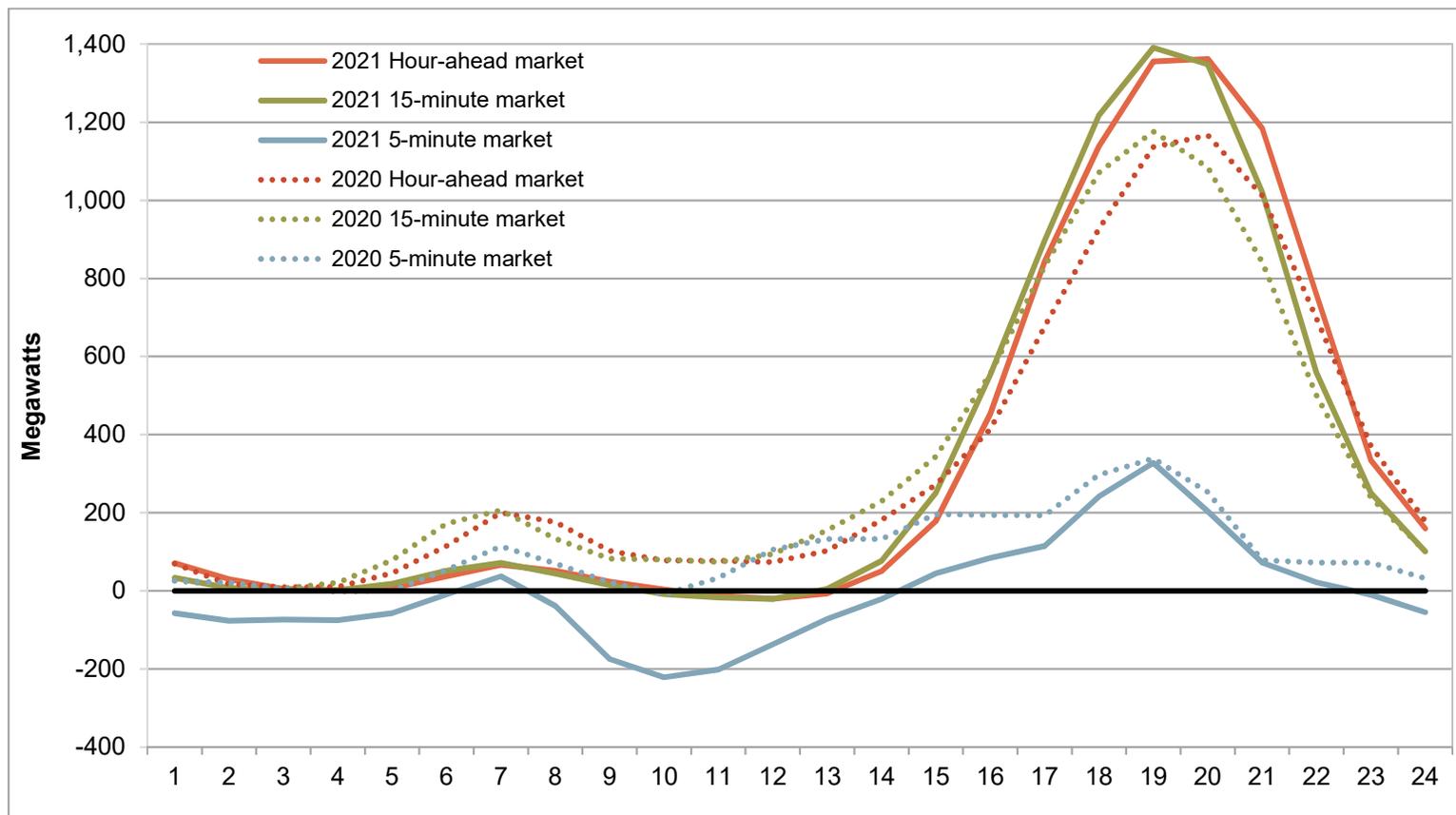


Detailed information on uncertainty component is now provided in reports and data files.

Average Uncertainty Component for ISO  
Weekdays, October 2021

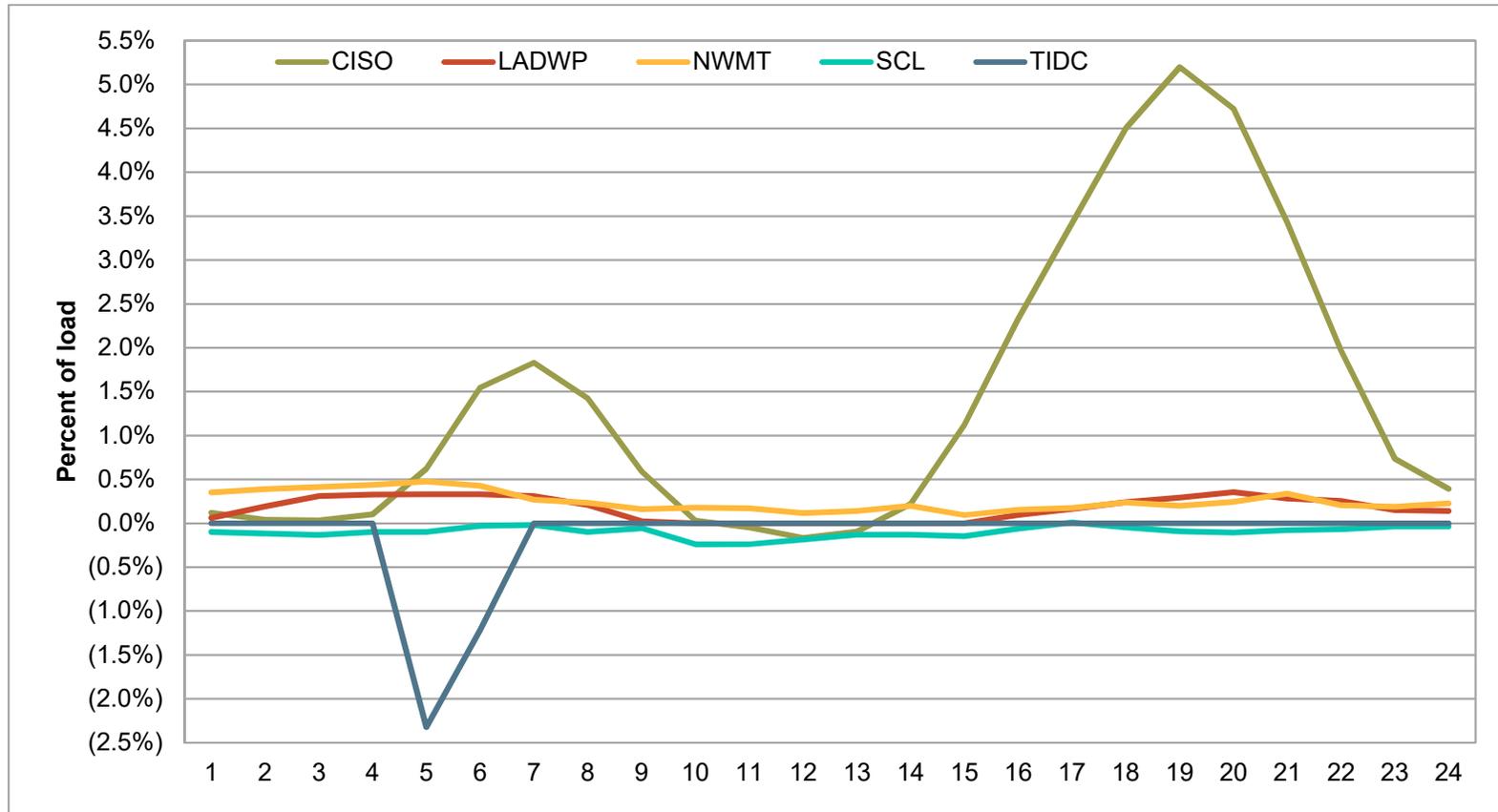


Detailed data now provided on imbalance conformance – which is routinely used in ISO to increase imports and unloaded capacity in ramping hours.



July – September, 2020-2021

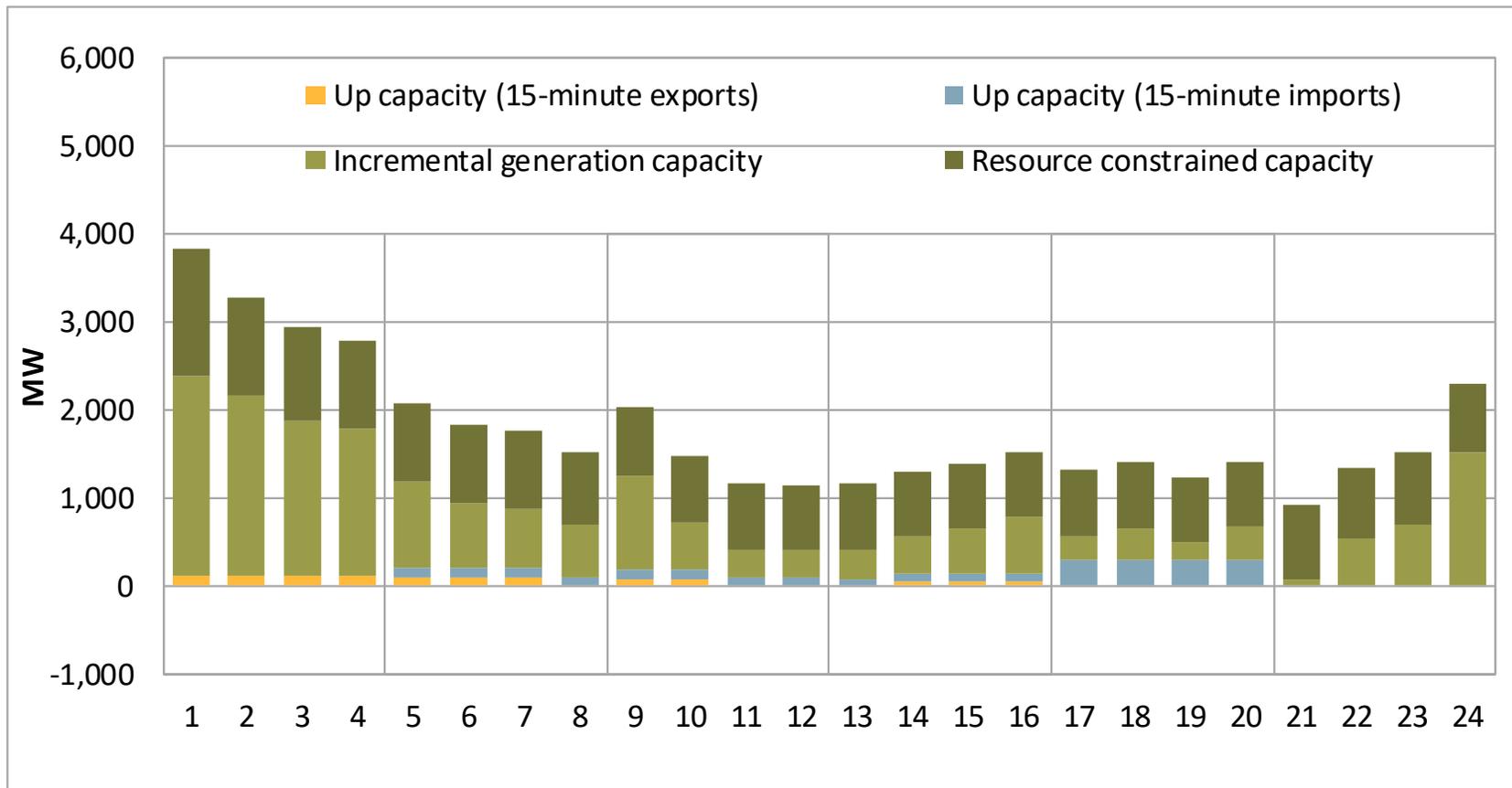
Imbalance conformance data files being provided include all other balancing areas – which tend to use imbalance conformance much less.



15-minute market (October 2021)

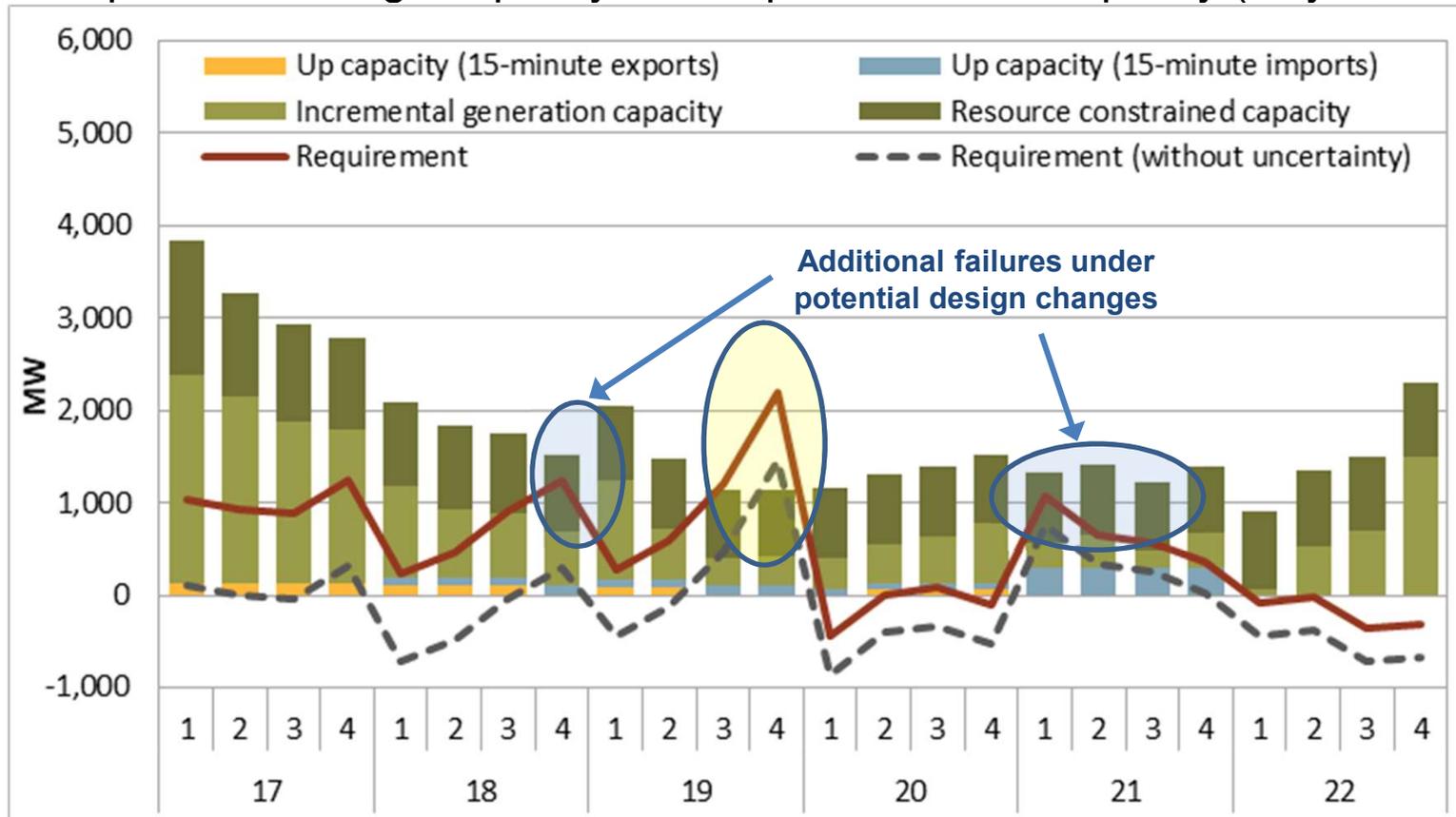
Currently, a significant portion of capacity counted toward meeting the bid capacity test is constrained so that it may not be fully available that hour.

ISO upward bid range capacity (July 9, 2021)



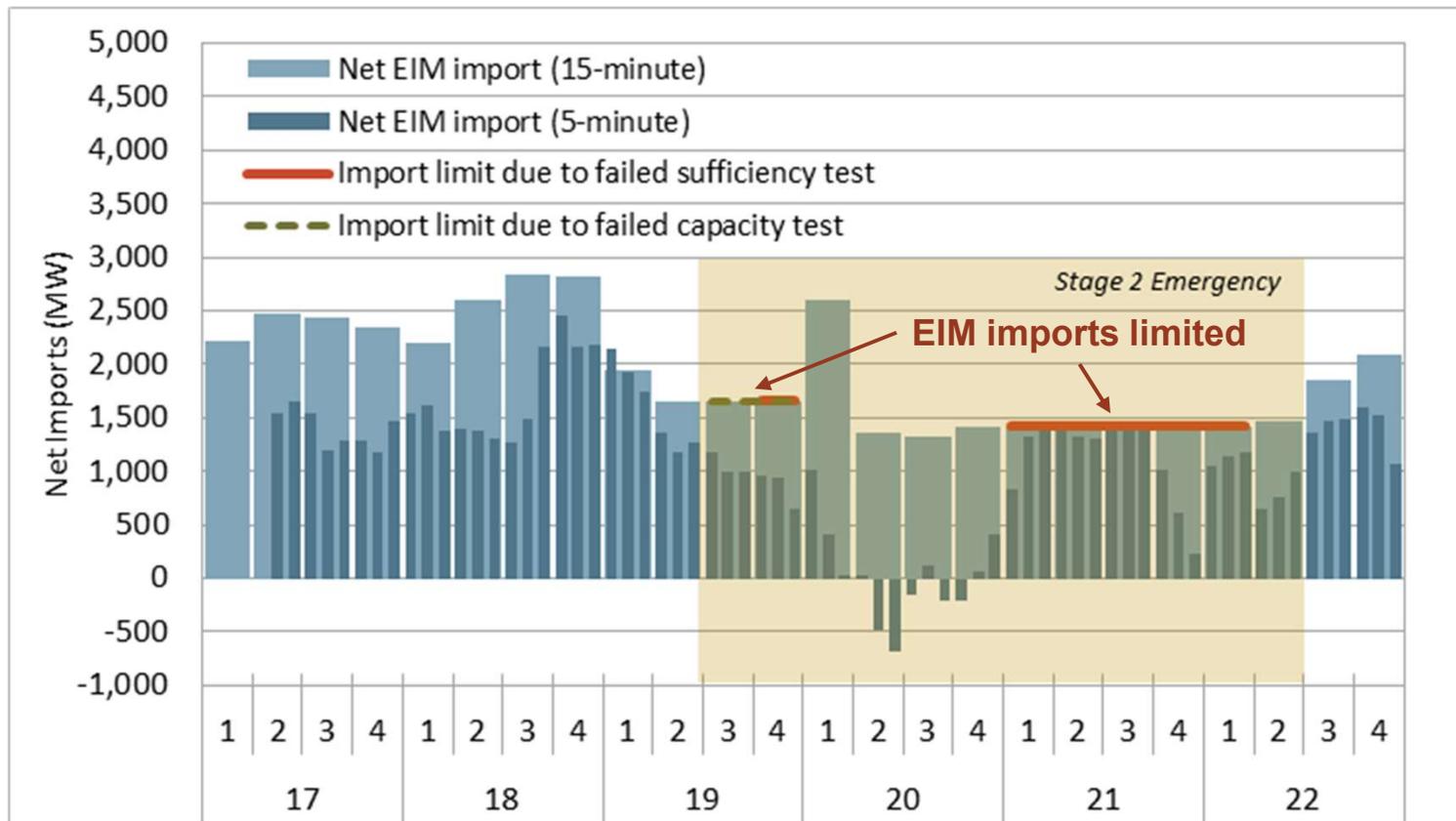
Analysis designed to be helpful in assessing design changes being discussed in stakeholder process.

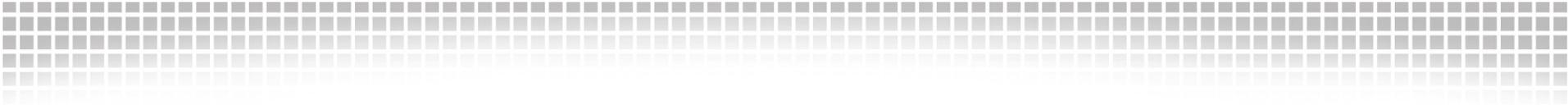
### ISO upward bid range capacity test requirement and capacity (July 9, 2021)



Detailed analysis of key days such as July 9 has helped to illustrate and understand sufficiency test issues.

### ISO upward bid range capacity test requirement and capacity (July 9, 2021)





Questions and comments.