



DAY 2: RA Enhancements Draft Final Proposal and Sixth Revised Straw Proposal

January 5-7, 2021

Agenda – Day 2

Draft Final Proposal & Sixth Revised Straw Proposal

Time	Topic	Presenter
9:00 – 9:10	Welcome and Introduction	Isabella Nicosia
9:10 – 9:30	UCAP (continued from day 1) (6 RSP)	Lauren Carr
9:30 – 10:30	Planned Outage Process Enhancements (Draft Final Proposal)	Karl Meeusen
10:30 – 12:00	RA Imports (Draft Final Proposal)	Milos Bosanac

*Agenda items may move times/days as time permits



UCAP (Continued from Day 1) Minimum Standards for QC Counting

The CAISO will ensure minimum standards for QC counting (1 of 2)

- Historically, the CAISO has deferred to the local regulatory authorities to establish the qualifying capacity values of RA resources
- If local regulatory authorities set different QC values, the CAISO has accepted the highest QC value submitted
- Finally, if the local regulatory authority does not establish a qualifying capacity counting methodology, the CAISO will apply the default qualifying capacity criteria defined in tariff section 40.8

The CAISO will ensure minimum standards for QC counting (2 of 2)

- The CAISO will continue to defer to LRAs and apply default criteria when no QC method is adopted, but the CAISO has identified a need to ensure the same resource ID is treated comparably among the LRAs when establishing the QC
 - For example, under today's rules, a solar resource that sold RA to two entities under different LRAs where one entity sets a QC value using ELCC and the other using Pmax, the CAISO would have to set the QC at Pmax under existing rules.
- The CAISO will not accept a QC value for a resource that is more than 10% greater than the lowest QC value adopted by any other LRA for the same resource ID
- The CAISO will enforce this for all resource types with default QC criteria in section 40.8 in the CAISO tariff

PLANNED OUTAGE PROCESS ENHANCEMENTS

CAISO proposes a two-phase approach to planned outage substitution

- Phase 1 (summer 2021)
 - All planned outages for RA resources must bring full substitute capacity for the outage to be approved
 - Very focused and easily implemented for summer 2021 and is included in the draft final proposal
- Phase 2 (RA year 2023)
 - CAISO will continue developing a longer-term proposal for a planned outage resource pool concept
 - CAISO will explore the possibility of allowing planned outages during the summer months, when and if operationally appropriate

Overarching objectives and principles for planned outage process modifications

- Encourage resources to enter outages early
- Avoid denial of any approved planned outages to the extent possible
- Identify specific replacement requirements for resources requiring replacement
- Include development of a CAISO system for procuring replacement capacity
- Minimize or eliminate the need to require substitute capacity to greatest extent possible

CAISO only provides notification of need to provide substitute capacity 20 days prior to the month

- RA resources allowed to submit planned outage requests months in advance
- Between planned outage request and CAISO's study, the resource does not know if substitution will be required
- Though infrequent, a resource may be required but unable to provide substitute capacity
 - Approved planned outages are subsequently denied less than two percent of the time
 - All subsequently denied planned outages were due to failure to provide substitute capacity

CAISO proposes to eliminate uncertainty by requiring all RA resources requesting planned outages to submit substitute capacity

- Specific timing of the substitute capacity submission depends on the timing of the planned outage request
 - Outages in long and mid-range outage windows will be conditionally approved subject to RA status and substitution obligation
 - Substitution must be made at the time of the RA showing or CAISO will automatically deny the planned outage request
 - May still be denied if the CAISO's reliability assessment shows the resource is needed
 - Outages requested in the short-range window must provide substitute capacity at the time the outage request is submitted
 - Otherwise, the CAISO will automatically deny the outage
 - May still be denied subject to a reliability assessment
 - All outage requests submitted after the short range study window will be treated as forced, urgent, or opportunity outages

The CAISO also proposes changes to how it handles requests for extending planned outages

- Currently, resources on planned outage that request an outage be extended are typically granted
 - The basis for this is that denying the outage does not change the fact that the resource will still be on outage
- This practice does not require substitution or provide adequate incentives to accelerate completion of the maintenance

The CAISO proposes that proposed policy changes must achieve the following objectives

- Objective 1: Classify planned/forced outage correctly because this classification gets posted publicly
- Objective 2: Encourage SCs to replace RA when they can still replace the RA Capacity

The CAISO reviewed two different planned outage scenarios to illustrate the potential outcomes of different options

- **Example**: Resource 1 has a planned outage that is scheduled for 3 weeks
 - **Scenario 1**: Once the outage starts, on the beginning of that outage, the SC identified that they cannot return the plant and will need extension of that outage for another 4 weeks
 - **Scenario 2**: The outage starts well, however, in the last day of the outage, the SC identified that they cannot return the plant and will need extension of that outage for another 4 weeks
- To address the requested outage extensions, the CAISO considered three different options

Option 1: Do not allow outage card extension – Require SC to always create a new outage card for extension

- **Consequence for Scenario 1:**
 - Outage extension will be classified as planned outage because they notify the CAISO ahead of time (beyond short term window)
 - Will have an RA substitution obligation
 - Extension will be denied if RA substitution is not provided
 - There is no guarantee that SC will submit Forced outage card on-time for the CAISO's pre-day ahead processes
- **Consequence for Scenario 2:**
 - Outage extension will be classified as Forced outage because they tell the CAISO at the last minute
 - Outage will have an RA substitution obligation

Option 2: Allow outage card extension (status quo)

- Consequence for both Scenario 1 and 2:
 - Outage extension will be classified as planned outage because the original card is a “Planned outage”
 - Outage will have a substitution obligation
 - Extension cannot be denied if RA substitution is not provided because it is one outage card

Option 3: Allow outage card extension – But extensions are only allowed if they provide substitution

- OMS will check if the units are shown as RA
- If the units are shown as RA, it will only allow the outage extension if there is substitution
- The mechanics of this are still not certain because an outage can extend beyond the RA showing time frame
 - i.e. SC can extend an outage for 4 weeks and it ended up extending to a month that has no RA showing timeline deadline yet

At this time, the CAISO proposes Option 1

- Is consistent with the rest of the CAISO's proposal to require substitution
- Provides the CAISO and resources with clear rules regarding how extensions will be handled
- Ensures the CAISO has adequate capacity to maintain reliability when resources cannot return to service consistent the originally approved outage

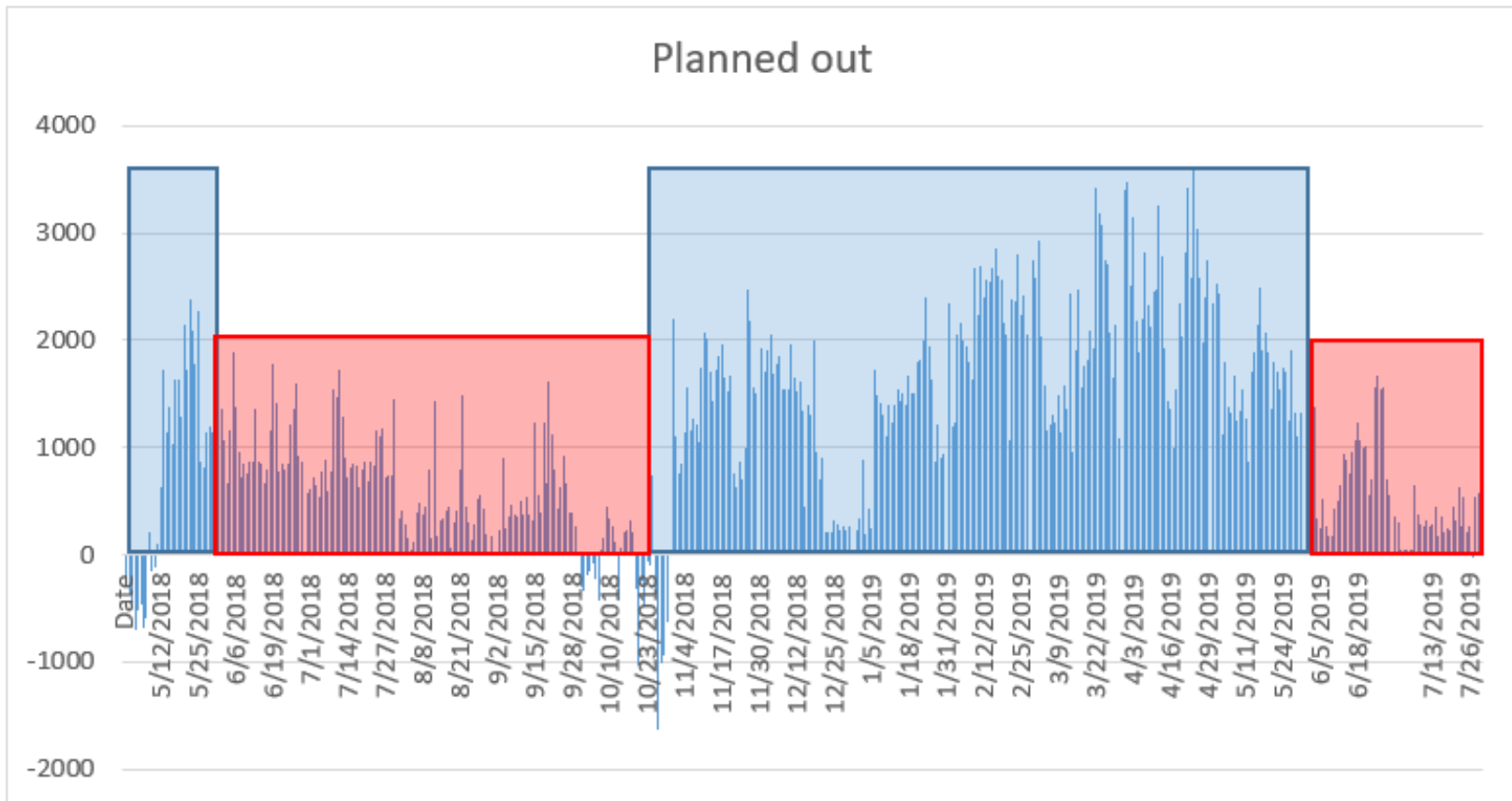
Phase two will focus on improving transparency and ensuring a pool of resources is available to provide substitute capacity

- CAISO will also seek to reduce any incentives to withhold capacity
- CAISO will develop a planned outage replacement pool
 - Help facilitate outage coordination
 - Provide the greatest certainty regarding the timing of planned outages to both the CAISO and resource SCs
- In response to stakeholder comments, CAISO will explore opportunities for summer months as well
 - The most significant challenge will be finding sufficient non-RA capacity to participate in the pool

The concept of a planned outage pool was generally supported by a broad range of stakeholders

- On an initial review of comments on Fifth Revised Straw Proposal, the CAISO determined there was insufficient support for the planned outage reserve margin
- In working group meeting CAISO foreclosed this option
- Several stakeholders' clarified comments noting that their opposition to the planned outage reserve margin was based, in part on the CAISO's proposed prohibition on planned outages during the summer months
 - Support: CalCCA, Calpine, Middle River Power, NRG
 - Support if planned outages were not prohibited in October: NCPA, National Hydropower Association and Yuba County Water Agency

Most planned outages occur during off-peak months



CAISO will continue developing a planned outage pool proposal in a future revised straw proposal

- Will use many of the elements of the planned outage reserve margin as a starting point
- There are several potential benefits to load from developing a planned outage resource pool
 - CAISO can eliminate all planned outage substitution
 - Removes incentive for LSEs to withhold capacity and the need for resources to include a risk premium in capacity contracts.
 - Supply of capacity in the bilateral market should increase and hidden costs included in the contracts should decrease
- Excess capacity should now be available in the bilateral capacity market, maximizing LSEs' opportunities to find capacity
- Eliminating substitution rules should free up additional capacity, increasing overall supply and lowering costs

CAISO seeks to offer greater visibility into how much resource adequacy capacity is shown relative to the resource adequacy requirements

- Try to provide greater transparency regarding available capacity well in advance of when they plan their outages
- CAISO will develop a calendar that shows in advance and on a daily basis, the potential availability of additional system RA headroom or capacity in the planned outage pool
- Allows resources to identify potentially superior calendar dates in advance of requesting planned outages

RA IMPORTS

Supply conditions across the Western Interconnection are tightening and needs are growing more coincident

- Recent August and September system conditions point to the need for reliable and dependable capacity, including RA imports
- CAISO capacity deficiencies place greater emphasis on imports to manage grid conditions, particularly during net load peak hours
- Capacity conditions are tightening across the Western Interconnection as states enact clean energy policy goals and retire older resources
- Severe west-wide climate events cause simultaneous tight system conditions across multiple BAAs, impacting once reliable supply diversity benefits

Current RA imports rules add reliability risk

- Non resource-specific RA imports do not assure dedicated physical supply at the time of the RA showings
 - Poses risk of supply not being committed to CAISO
- Lack of transmission delivery requirements supporting RA imports can further subject the CAISO to non-delivery when system needs are the tightest
 - Deliveries on low priority transmission pose risk to delivery
- Further limitations by Local Regulatory Authorities (LRA) on economic bidding of RA imports can limit market efficiency
 - Does not provide commensurate reliability benefits or guarantee physical supply

Objectives of RA import rule modifications

- Ensure RA imports are backed by physical capacity, not “double-sold” or committed elsewhere, and are dependable and reliable
- Treat RA imports more comparably to internal CAISO RA resources
- Ensure transmission service supporting RA imports is secured in advance and is of a priority that provides greater level of certainty of delivery under different conditions
- Create requirements that track and reasonably assimilate to provisions of other ISOs/RTOs and industry practice

RA Import Minimum Requirements

- The proposed rules represent the minimum requirements that must be met by RA imports
- The setting of minimum requirements is intended to ensure consistent quality and attributes of RA imports procured by LSEs
 - Ensures reliable and dependable RA imports
- Local Regulatory Authorities (LRA) will continue to have the ability to set additional requirements or restrictions, above and beyond these minimum requirement, applicable to their jurisdictional LSEs

RA Imports – Overview of Proposed Rules

- RA imports must be resource or BAA specific
- RA imports must be delivered on high priority transmission service
 - Firm service (7-F) on last transmission leg to CAISO
 - No lower than Monthly Non-Firm service (5-NM) on all other intervening transmission legs
- RA imports must meet attestation requirements
 - Ensures capacity has been committed solely to CAISO
- RA imports will be subject to a Day-Ahead (DA) market and an interim Real-Time (RT) market must offer obligation



California ISO

Dedicated Source Proposal

Qualifying Types of RA Imports

- Three types of RA imports:
 1. Pseudo-tie resources
 2. Dynamically scheduled resources
 3. Non-dynamic resource-specific resource adequacy (RA) imports:
 - Single resource;
 - A specified portfolio or aggregation of resources within and single balancing authority area; or
 - A balancing authority area's pool or system of resources
- Non-resource specific imports would no longer be eligible to provide RA import capacity

Source Specification requirements for RA imports

- RA imports will be required to provide the following information:
 - Name of resource(s) supporting the RA import(s) and source BAA e-tag identifier
 - Name of single source BAA
- *Note:* a RA import which is a BAA pool or system of resources is only required to identify the source BAA
- Source information will be required at the time of submission of the annual and monthly RA supply plans
 - Information will be provided by the Scheduling Coordinator (SC) submitting RA supply plan
 - RA supply plan template will provide a field for source information
 - CIRA will not accept a supply plan if information is not provided



Attestation Requirement

RA imports must meet attestation requirements at the time of submission of the supply plan

Attestation requirements:

- 1. The capacity shown is owned or contractually secured;*
- 2. The capacity shown has not been sold or otherwise committed to any other party;*
- 3. The capacity can only be interrupted for reliability reasons as determined under the host BAA's tariff, a transmission curtailment or plant outage; and*
- 4. Transmission service of proper firmness has been reserved for delivery of the identified import RA resource(s) to the CAISO system.*

Attestation elements #1 and #2 ensure RA import is dedicated to the CAISO

- The first two elements of the attestation ensure that the RA import is secured and committed to the CAISO at the time of RA supply plan submission
- If the RA import capacity being shown is also committed to another party, the attestation requirement is not met
- Example:
 - If same capacity that is committed to RA import is also part of a reserve sharing program, the capacity is committed to another party

Proposed enhancement to attestation element #2 to further ensure the capacity is committed to CAISO

- *The third party seller/supplier to the LSE identified on the plan, or alternatively the LSE where it is the owner, has committed that:*
 - a. It expects the capacity shown will be available to support delivery of the RA import resource(s) to the CAISO, and will not be dependent on securing additional capacity to make it available;*
 - b. It expects the capacity shown will be surplus to its obligations to serve load or meet other commitments in the host BAA; and*
 - c. The capacity shown has not been, and will not be, sold or otherwise committed to any other party than the LSE identified on the plan.*

Attestation element #3 further ensures the RA import is not interruptible for non-reliability reasons

- The third element of the attestation is intended to ensure that the RA import cannot be interrupted by the seller/supplier at their discretion or for non-reliability reasons
- Reliability reasons:
 - As determined by the host BAA (a directive from the host BAA);
 - A transmission curtailment across any of the transmission systems delivered to CAISO; or
 - An outage of a plant supporting the RA import
- Example:
 - Force majeure interruption provisions – OK. It either leads to BAA action as a result of the event, or a plant outage

Attestation element #4 provides high certainty RA imports are deliverable for the duration of showing

- The fourth element of the attestation requires transmission arrangements supporting RA import be in place by the time of RA supply plan showing
 - Provides CAISO with ability to rely and depend upon RA imports during the showing period
- RA imports not supported by transmission arrangements until closer to real-time pose risk to delivery due to potential unavailability of transmission
- This element of the attestation must be met only for the monthly showings, not annual RA supply plan showings

Attestation requirement - implementation

- The Scheduling Coordinator (SC) submitting the RA supply plan will be responsible for meeting the attestation requirements
 - SC will be bidding and representing the RA import in the market and is in the best position to be aware of the commitments and attributes of the capacity to attest
- The attestation requirement must be met for annual and monthly RA supply plan showings which include RA imports
 - Element #4 must be met only for monthly showings
- The attestation will consist of a checkbox in CIRA
 - Validations in place to not accept plan if attestation box not checked

Contractual arrangements supporting RA imports must meet the source and attestation requirements

- Contractual arrangements supporting RA imports must meet the identified minimum requirements:
 - Source specification
 - Attestation
 - Transmission delivery (high priority service)
- WSPP Schedule C Agreements
 - Must meet source specification and attestation requirement, and be delivered on high priority transmission
 - Cannot source from multiple BAAs
- Legacy Agreements
 - Should be reviewed to ensure they meet the minimum requirements



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Delivery Assurance

Proposed transmission delivery requirements for RA imports

- RA imports must be delivered on Firm transmission on the last transmission leg to the CAISO (last line of interest)
 - Firm transmission has a 7-F reservation priority and is the last type of transmission to be curtailed
- RA imports must be delivered on transmission service no lower than Monthly Non-Firm Point-to-Point service on all other transmission legs
 - Can be delivered on following types of transmission:
 - Monthly Non-Firm (5-NM priority)
 - Conditional Firm (6-CF priority)
 - Firm (7-F priority)
- RA imports delivered on transmission lower than Firm transmission, if curtailed, will be treated as an outage and considered for UCAP purposes
 - Curtailments of Firm transmission will not be considered for UCAP purposes

NERC Transmission Reservation Priorities

- Transmission curtailments occur in reservation priority order

Transmission Service Reservation Priorities		
Priority	Acronym	Name
0	NX	Next-hour Market Service
1	NS	Service over secondary receipt and delivery points
2	NH	Hourly Service
3	ND	Daily Service
4	NW	Weekly Service
5	NM	Monthly Service
6	NN	Network Integration Transmission Service from sources not designated as network resources
7	F	Firm Point-to-Point Transmission
	FN	Network Integration Transmission Service from Designated Resources

- Some Transmission Providers offer Conditional Firm service under their tariffs which is Firm service except for a certain number of hours throughout the year or under contractually pre-determined conditions it becomes Conditional Firm with a lower, level 6-CF, priority.

Firm transmission service requirement on last transmission leg to CAISO (last line of interest)

- Firm transmission (7-F priority) on the last transmission leg to the CAISO provides a high level of certainty that RA imports will be deliverable across paths which are typically constrained
- Considering, for example, the interties between California and the Northwest, in summer months flows tend to be at or near the limits of the path thus increasing the risk of curtailment
 - California Oregon Border (COB) intertie
 - Nevada Oregon Border (NOB) intertie
- To the extent there is a need to curtail transmission service across these interties, RA imports delivered on Firm transmission would be curtailed last
 - Often, curtailments of lower priority transmission service resolve the issues triggering a curtailment

Identifying the last lines of interest

- Reference Operating Procedures 2510A and 2510B

The image shows a side-by-side comparison of a document and a spreadsheet. On the left, a web browser displays the California ISO document 'Operating Procedure 2510A PORPOD-Scheduling Path Cross Reference'. The document includes a table with columns for ADJ BA, Scheduling Point Name, Physical Tie name, DER (Designation/Type), ISO 'Market' Tie Point, Interim Constraint, and Title. On the right, an Excel spreadsheet titled 'CISO Tagging Template' is open, showing 'IMPORT' and 'EXPORT' sections with columns for TA, TIP, MD, PSL, RWB, PWB, Scaled Inflows, Contract, Max Infs, and Links. A red arrow points to the bottom of the document, and a red bracket highlights the bottom tabs of the spreadsheet.

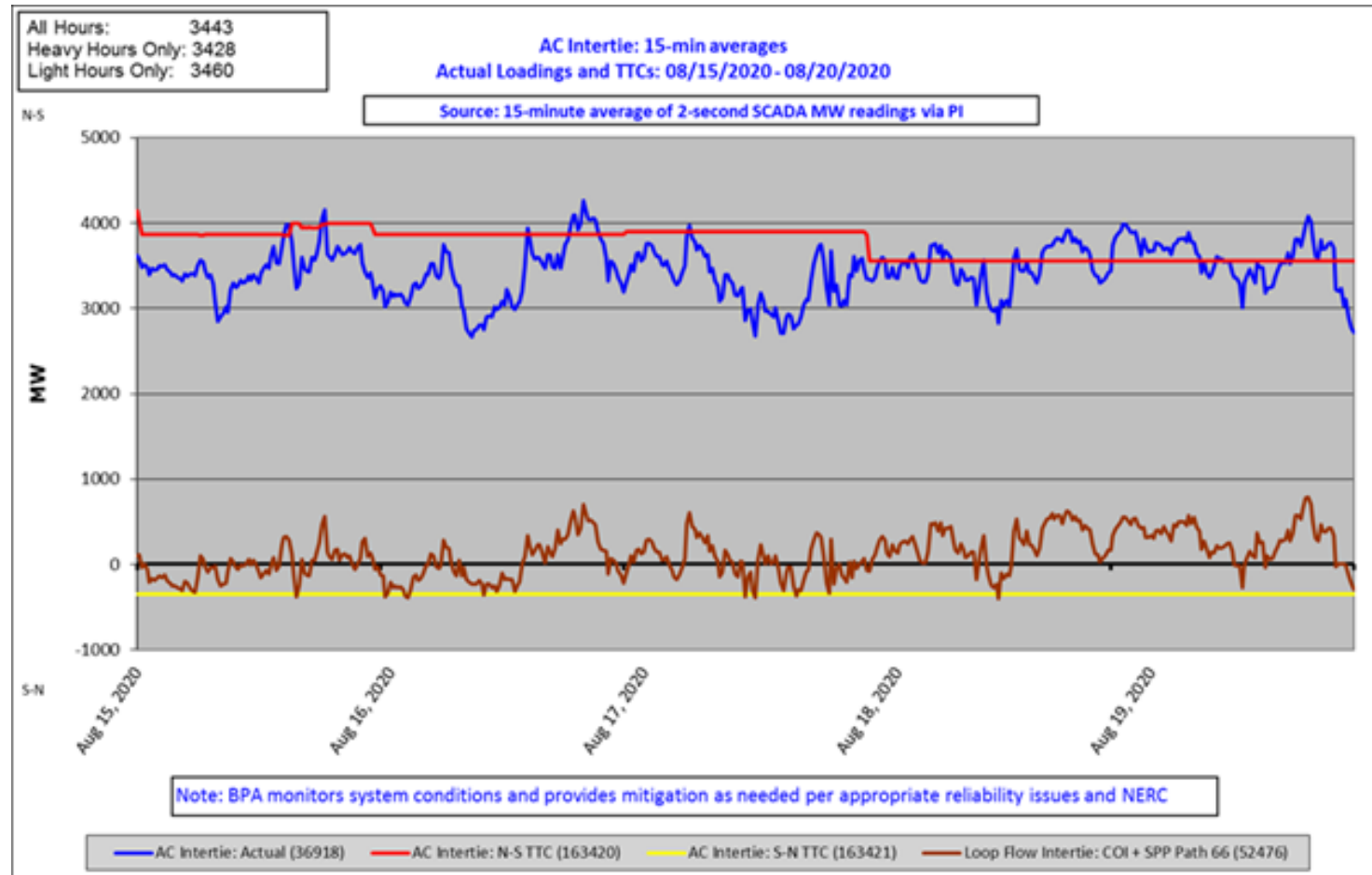
Tabular form of last lines of interest

Tabs show all last lines of interest in E-tag format

Link - <http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=D3AD0598-A5A8-4F6C-AE08-C700257915A2>

California-Oregon Interface (AC intertie)

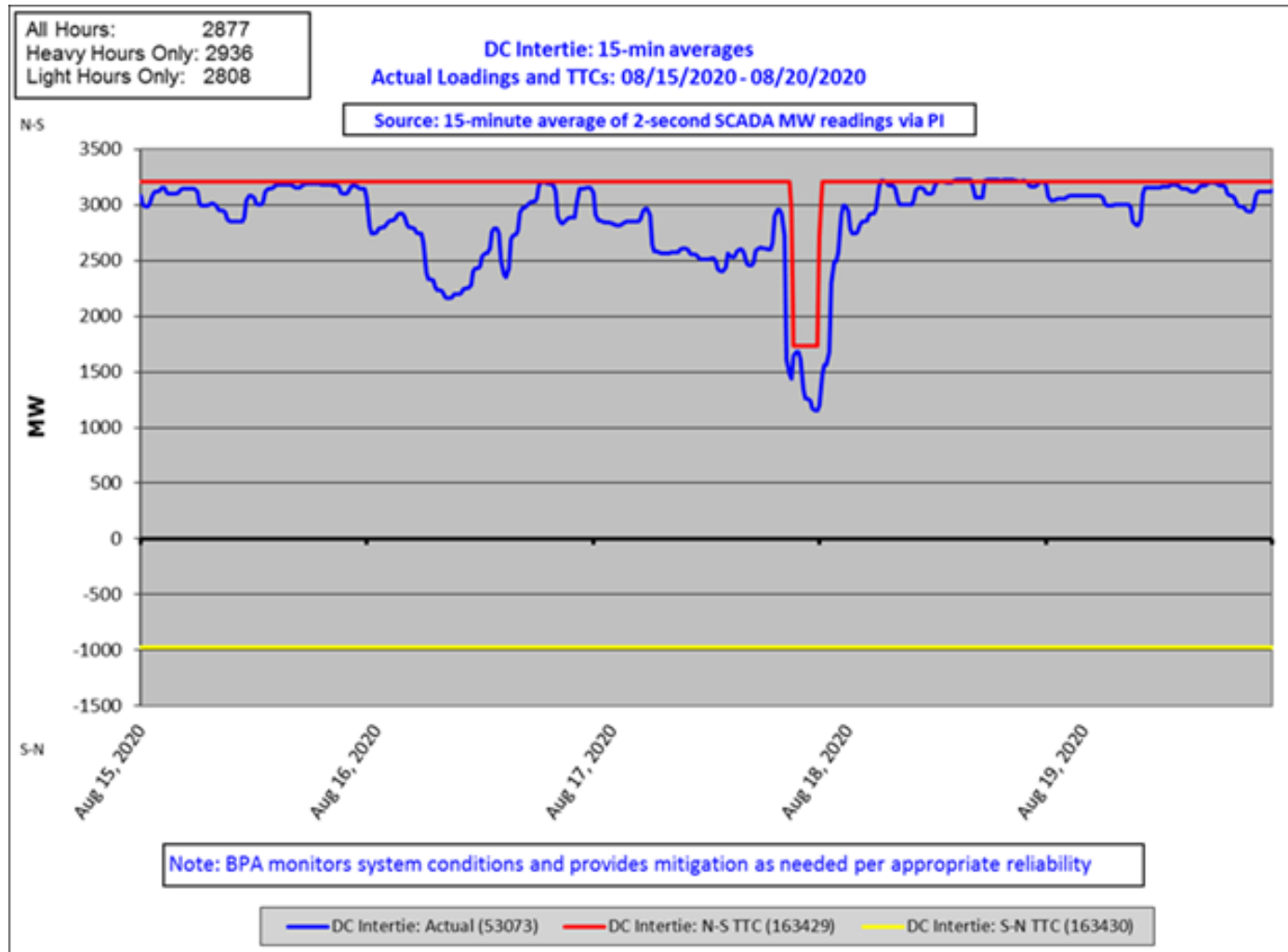
Courtesy of Morgan Stanley



Underlying 15-min interval data averaged into hourly values from BPA website, found here: <https://transmission.bpa.gov/Business/Operations/Paths/>

Nevada – Oregon Border (NOB or DC Intertie)

Courtesy of Morgan Stanley



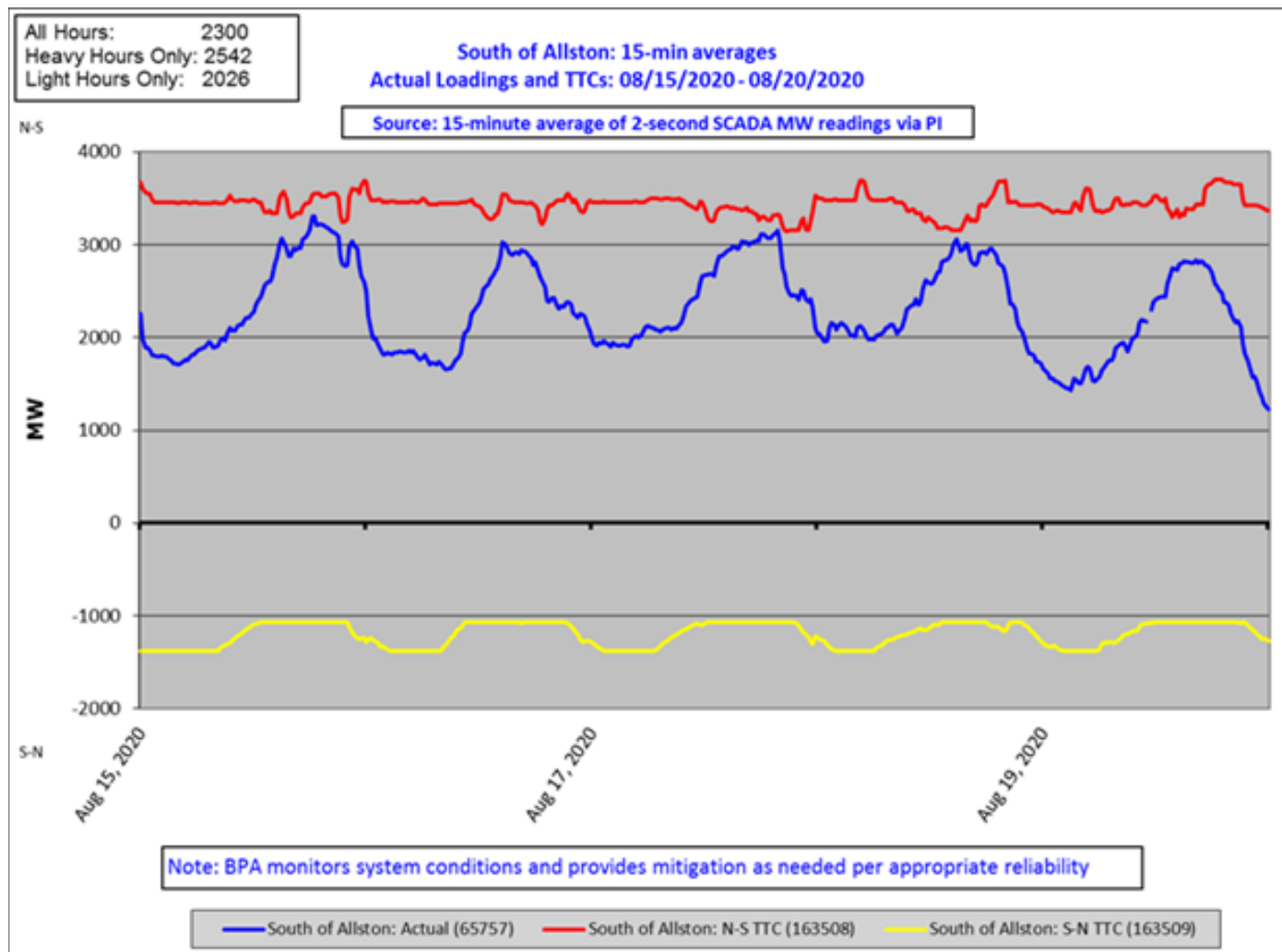
Underlying 15-min interval data averaged into hourly values from BPA website, found here: <https://transmission.bpa.gov/Business/Operations/Paths/>

Monthly Non-Firm transmission service, or higher priority, requirement on intervening transmission legs

- Transmission flows across paths or flowgates on different BAA networks generally tend not to be as constrained as across the COB/NOB interties
 - Generally, this is reflected in a lower risk of curtailment
- CAISO will permit RA imports to be delivered on Monthly Non-Firm transmission (5-NM priority) across upstream transmission systems
 - Can also be delivered on higher priority Conditional Firm (6-CF) or Firm (7-F) transmission

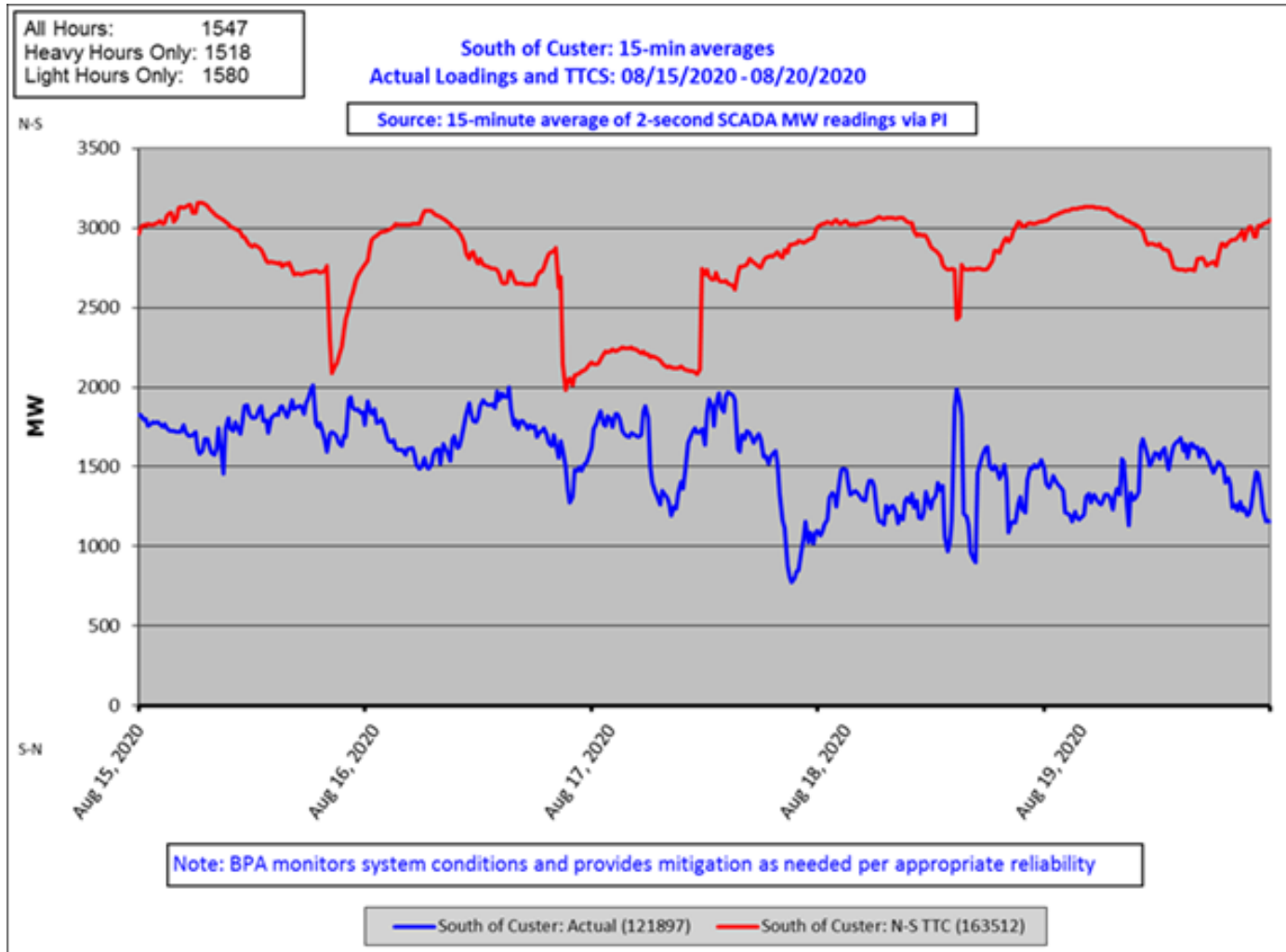
South of Allston Flowgate (BPA System)

Courtesy of Morgan Stanley



Underlying 15-min interval data averaged into hourly values from BPA website, found here: <https://transmission.bpa.gov/Business/Operations/Paths/>

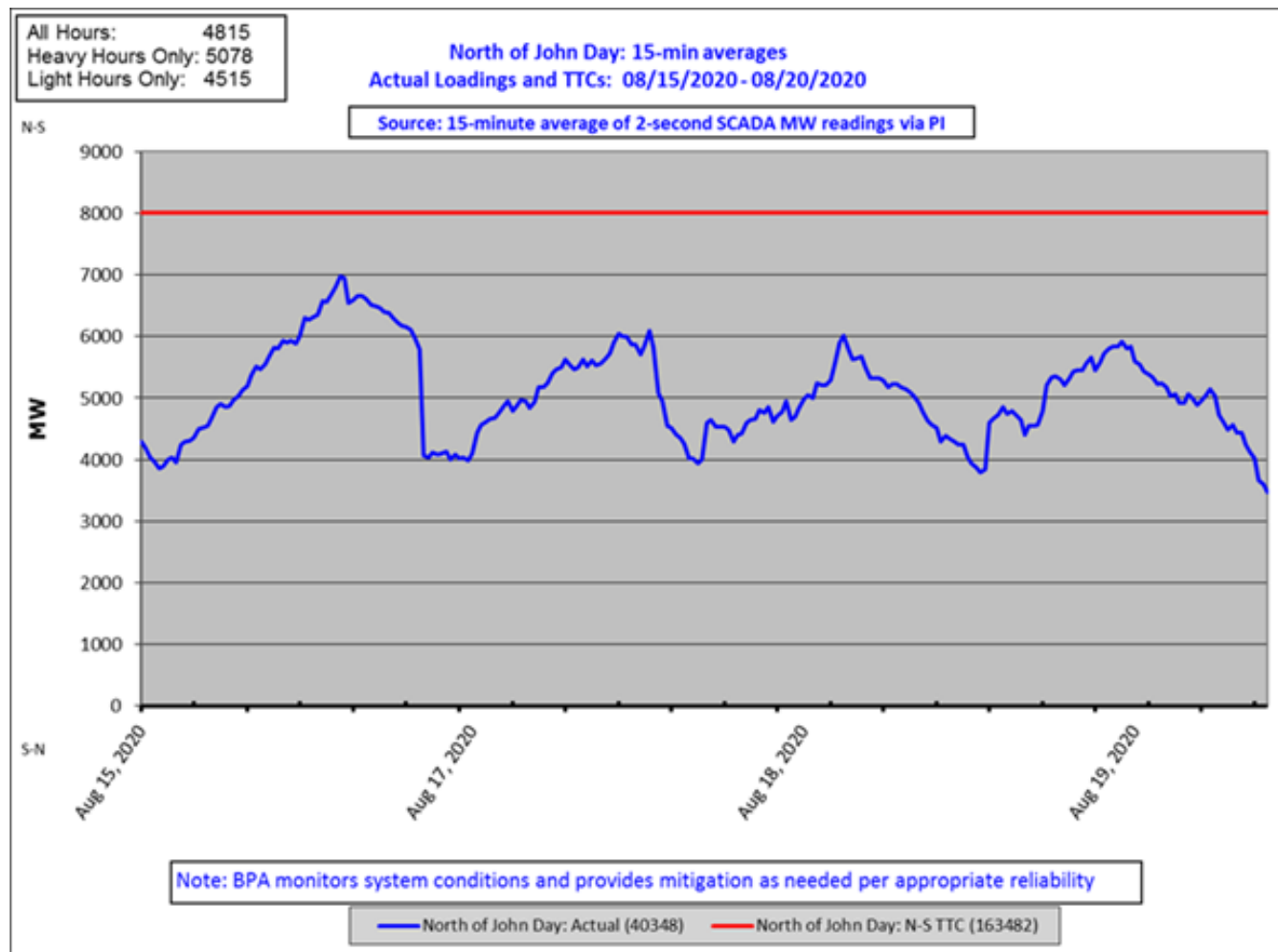
South of Custer Flowgate (Northern Intertie/Puget Sound Area) (BPA System) *Courtesy of Morgan Stanley*



Underlying 15-min interval data averaged into hourly values from BPA website, found here: <https://transmission.bpa.gov/Business/Operations/Paths/>

North of John Day Flowgate (BPA System)

Courtesy of Morgan Stanley



Underlying 15-min interval data averaged into hourly values from BPA website, found here: <https://transmission.bpa.gov/Business/Operations/Paths/>

RA import tagging requirements

- Prior initiatives developed the following tagging deadlines which will be implemented in 2021 for all imports:
 - T-40 minutes: submission of valid e-tags with transmission profile equal to economic bid or self-schedule
 - T-20 minutes: revision of energy profile of e-tag
- However, the CAISO is considering the potential inclusion of a DA tagging requirement for RA imports

Potential DA tagging requirement

- CAISO is proposing submission of RA import e-tags in DA to provide further visibility of the transmission service supporting RA imports
 - Only the transmission profile will be required in DA tags
 - Subsequent tagging deadlines for adjustments (T-40, T-20) remain as noted previously
- Tagging deadline: by 3pm on DA
- DA tagging requirement would:
 - Provide operational visibility into the RA imports that could flow and the associated transmission priority supporting those imports
 - Support Day-Ahead planning for the BAA and RC West, improved interchange forecasting
- Change will be reflected in the Final Proposal

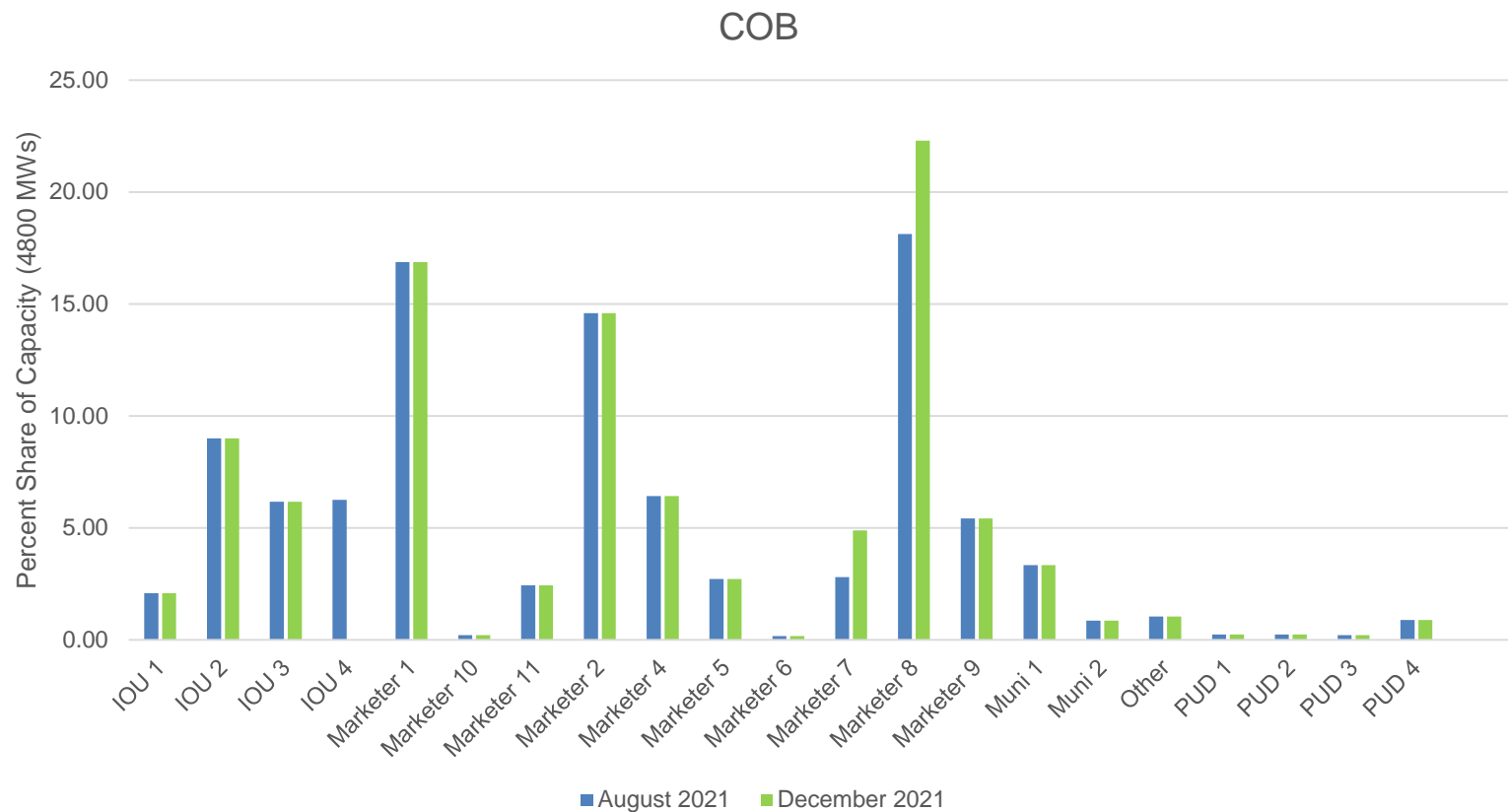
Stakeholder concerns – potential for exercise of transmission market power on the interties

- A number of stakeholder have expressed concern that entities holding transmission rights on COB/NOB interties can exercise transmission market power
 - Perception that two or three entities hold the vast majority or all the Long-Term (Yearly) Firm transmission rights
- Concern that these entities can control or limit access to Firm transmission of Yearly or Monthly duration
- Concern that holders can seek high prices for resale of Firm transmission rights
- Those stakeholders recommend Non-Firm transmission be sufficient to support RA imports across the interties

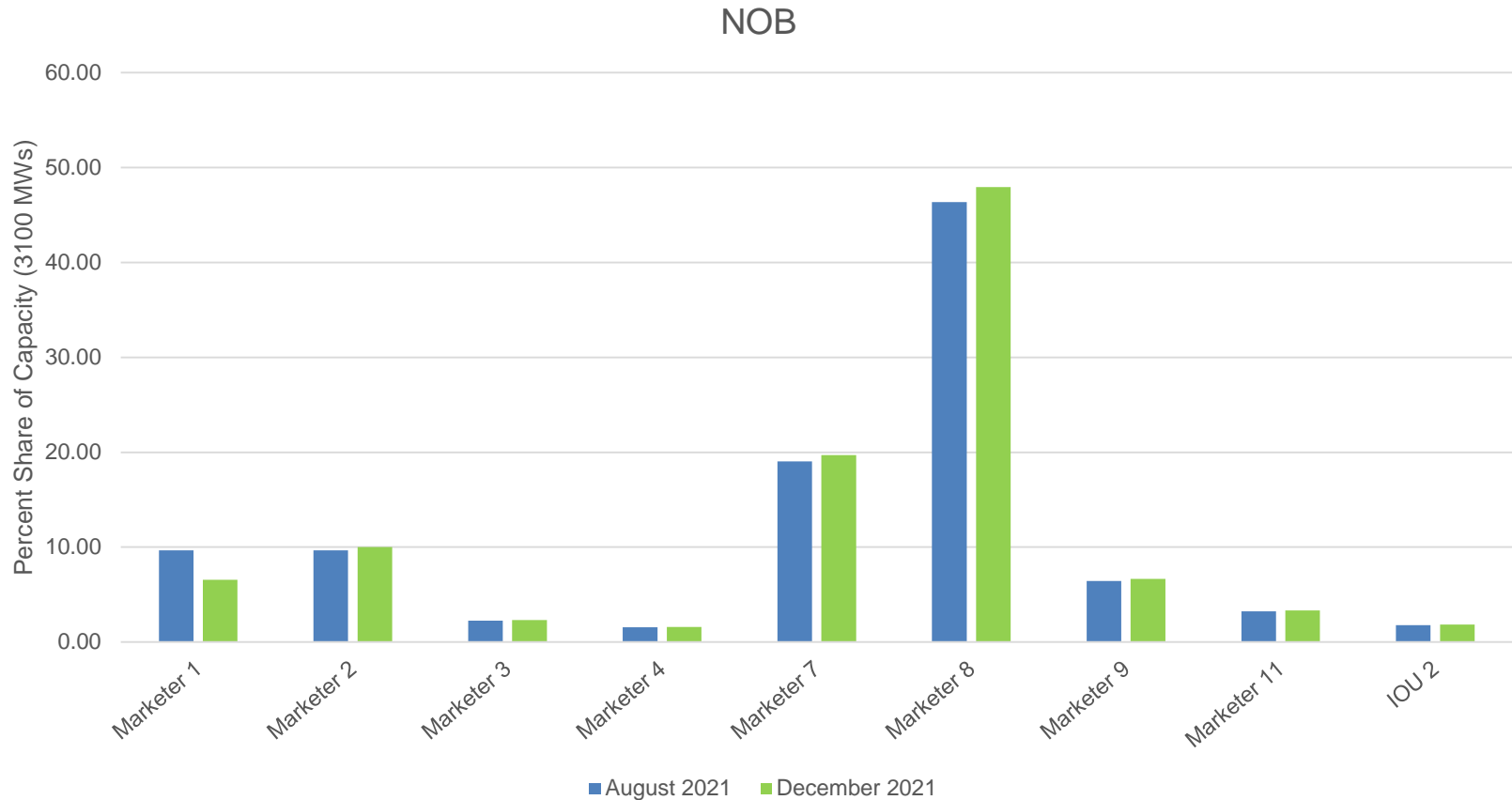
Addressing stakeholder concerns

- There is a broad pool of entities holding Yearly Firm transmission rights on the COB/NOB interties
 - Twenty one (21) different entities hold Yearly Firm rights on the COB intertie
 - Nine (9) different entities hold Yearly Firm rights on NOB intertie
 - Holders include a mix of marketers and LSEs
- Suppliers seeking Monthly or Yearly Firm transmission rights on the interties, can seek to procure these via resale from existing holders to support RA imports
 - Resale information, including prices, is posted on the relevant Transmission Provider OASIS

COB intertie - Long-Term Firm transmission rights holders



NOB intertie – Long-Term Firm transmission rights holders



Addressing stakeholder concerns

- To the extent there is evidence of transmission market power on the interties, those concerns should be raised under the relevant Transmission Provider's tariff (under which the transmission is sold) and with FERC
 - Firm transmission rights on interties are valuable and are used to support load service and other business needs
- Low priority Non-Firm transmission does not provide the needed reliability or dependability for delivery of RA imports (on the interties or on the different networks)
 - Demand for Non-Firm transmission does not drive transmission expansion
- Demand for Long-Term Firm transmission sends signals to Transmission Providers for system expansion
 - Provides the revenue and duration needed to drive transmission expansion

Transmission delivery requirements – implementation aspects

- As part of the attestation requirement, transmission arrangements supporting RA imports will need to be in place by the time of the submission of monthly RA supply plan
- CAISO will monitor the transmission reservation priority supporting RA imports through e-tags
 - RA imports delivered on transmission of lower firmness than required will be flagged:
 - Lower than Firm transmission (7-F priority) on last transmission leg to CAISO (last line of interest)
 - Lower than Monthly Non-Firm transmission (5-NM priority) on all other transmission legs
 - CAISO may refer the instance of RA imports delivered on lower transmission priority to DMM for investigation



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Must Offer Obligation

RA imports will be subject to a DA and an interim RT must offer obligation

- Currently, RA imports are only subject to a Day-Ahead (DA) market must offer obligation
 - If no award in DA, no obligation to bid in RT
 - If bid not provided in DA, CAISO inserts bids
- CAISO proposes extending the must offer obligation into the Real-Time (RT) market on an interim basis
 - Must bid full RA capacity in RT, regardless of whether awarded in DA
 - Bid insertion applies in RT to the extent a bid is not submitted
- RT must offer obligation will remain in place through the transition period proposed in the Day Ahead Market Enhancements (DAME) initiative
 - DAME initiative will determine the scope and applicability of a RT must offer obligation

Summary of RA Import must offer obligations by import type (pre-DAME initiative)

	Day Ahead Market	Real Time Market (Interim)
<i>Pseudo-Tie and Dynamically Scheduled resources</i>	<p>Bid full RA capacity (status quo).</p> <p>*Bid insertion applies.</p>	<p>Short and medium start units – bid full RA capacity.</p> <p>All other units – bid full RA capacity for any hour in which receive DA award.</p> <p>*Bid insertion applies</p>
<i>Non-Dynamic Resource Specific RA Imports</i>	<p>Bid full RA capacity (status quo).</p> <p>*Bid insertion applies.</p>	<p>Bid full RA capacity regardless of DA award.</p> <p>*Bid insertion applies.</p>

- Pseudo-Tie and Dynamically Scheduled RA imports, of a specific technology type, will continue to have a must offer obligation associated with that technology type consistent with CAISO internal resources.



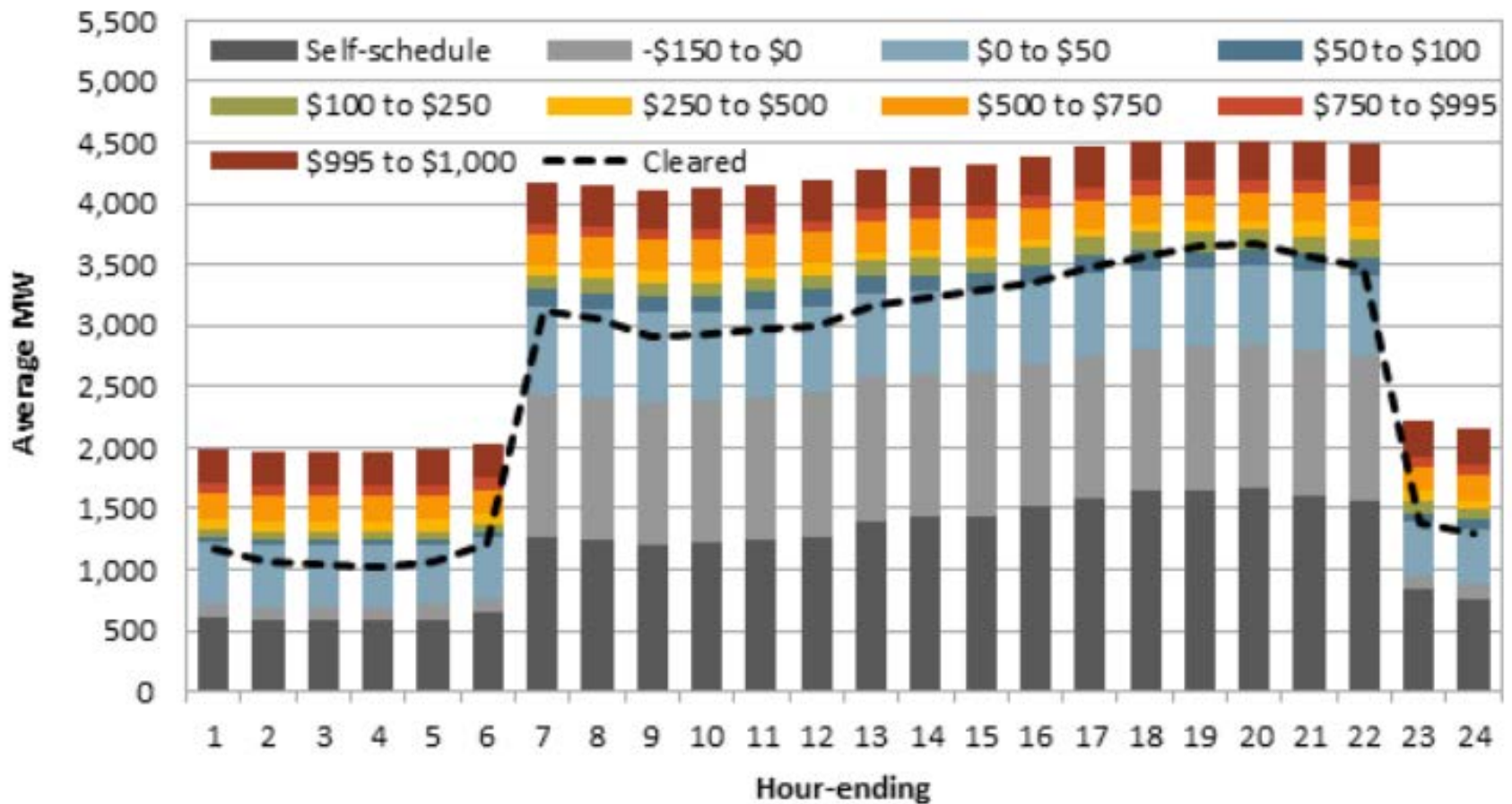
California ISO

Miscellaneous Items

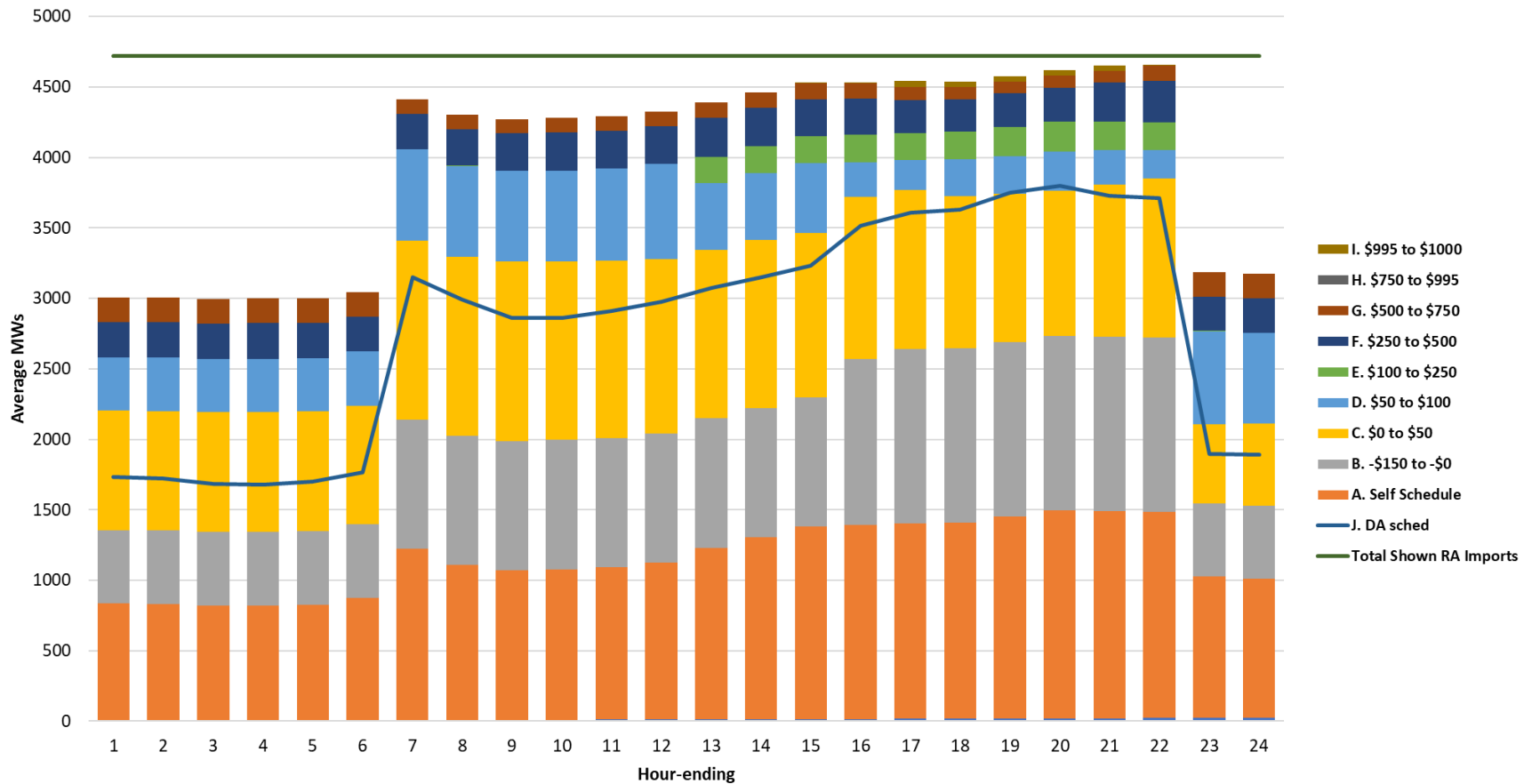
RA Import Bidding Practices

- Stakeholders expressed concerns with the ability of RA imports to submit high bids in DA to avoid an award from CAISO, and selling the energy elsewhere
- DMM shared data on RA import bidding practices for August 2018
 - Data indicates that 13.8% of non-resource specific RA import average hourly bids were above \$500/MWh
- CAISO gathered data for August 2019 and August 2020 for non-resource specific RA import bids
 - Data indicates a significant decrease in average hourly bids above \$500/MWh
 - August 2019 – 2.8%
 - August 2020 – 2.0%

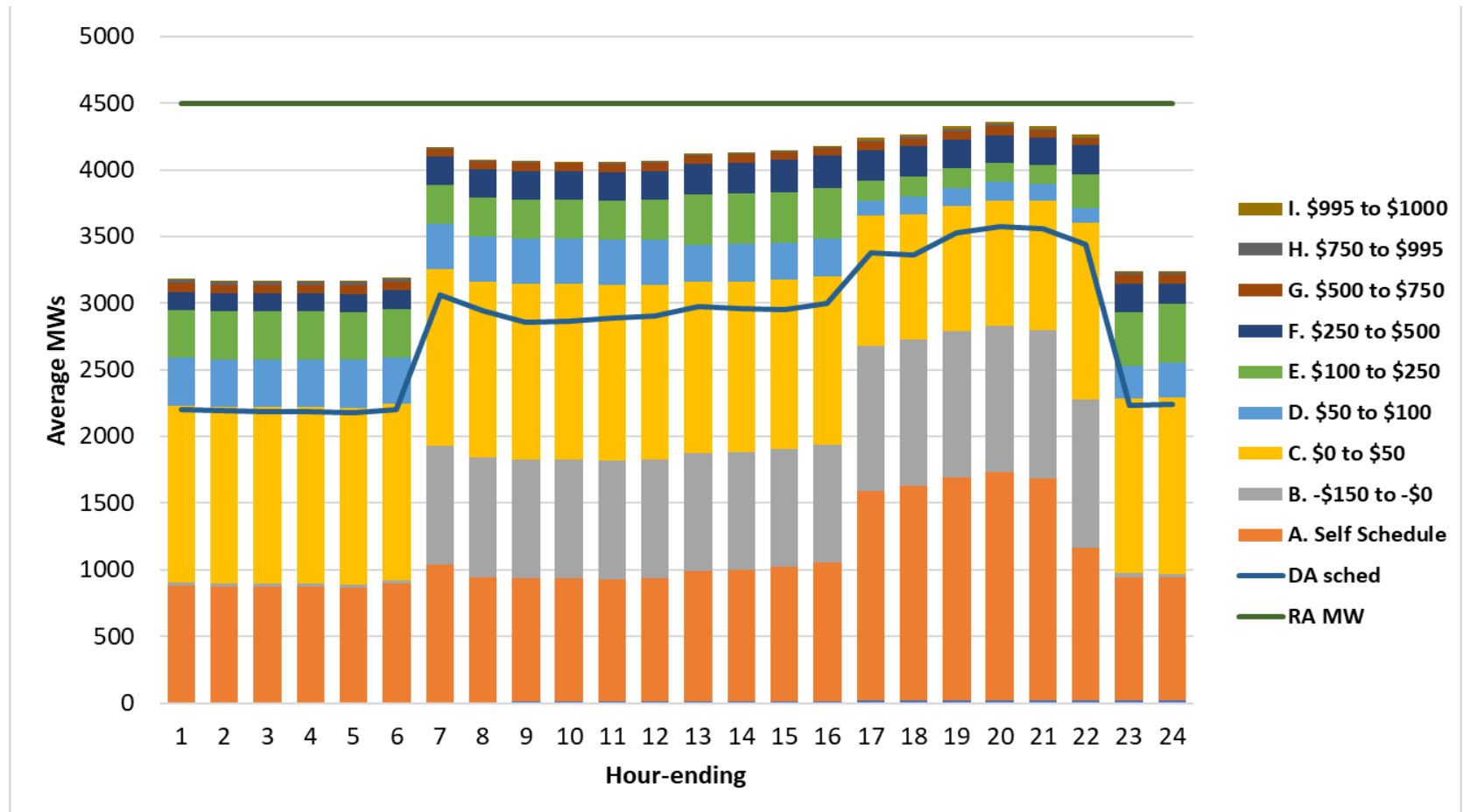
In August 2018, 13.8% of average hourly non-resource specific RA import bids were above \$500/MWh



In August 2019, average hourly non-resource specific RA import bids above \$500/MWh decreased to 2.8%



In August 2020, average hourly non-resource specific RA import bids above \$500/MWh decreased to 2.0%



RA Imports proposed rule changes add further protections and incentives for competitive bids

1. Introduction of a RT must offer obligation ensures RA imports remain available through RT, regardless of whether awarded in DA
2. Attestation requires RA import capacity not be committed to any other party for the duration of the showing
 - Incentivizes competitive economic bidding since capacity is only committed to CAISO, cannot make it available elsewhere
3. Suppliers have to utilize existing, or procure new, high priority transmission service to deliver RA imports
 - Incentivizes competitive economic bidding to recover associated transmission costs
4. CAISO will cost-verify and reduce RA imports bids above \$1000/MWh
 - Implementation of FERC Order 831

RA import policy implementation timeline

- Proposed RA import policy structure will be implemented through a 2-step process
 - *Step 1* – RA compliance year 2022 will be a bridge year with suppliers encouraged, but not required, to meet the identified policy requirements for RA imports
 - Allows for review of contracts to ensure compliance with requirements
 - Allows for acquisition or development of a strategy for transmission acquisition to support RA imports
 - *Step 2* – Mandatory compliance with RA import rules starts with RA compliance year 2023

Next Steps

- Join us for the next call tomorrow, January 7, from 1 p.m. – 4 p.m. Topics include:
 - *RA Imports*
 - *Operationalizing Storage (Draft Final Proposal)*
 - *Backstop Capacity Procurement (Draft Final Proposal and 6 RSP)*
- Meeting details are available on the RA Enhancements initiative webpage at <http://www.caiso.com/StakeholderProcesses/Resource-adequacy-enhancements>.

END DAY 2