

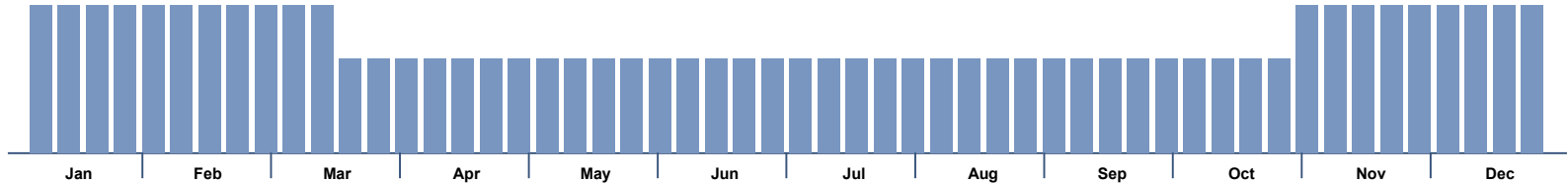
CPUC Import RA Workshop

Import RA Challenges

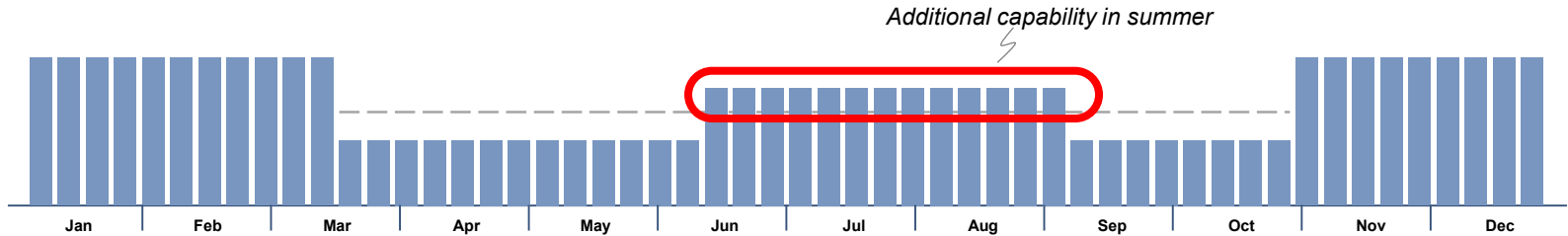
- Powerex **supports** CPUC, CAISO and DMM's concerns regarding speculative Import RA
- The fundamental problem is a lack of **real physical capacity** committed on a **forward** basis
- Physical forward commitments provide CAISO with additional capacity that would **not otherwise be available** in short term markets
- Without proper forward RA commitments of real physical supply, CAISO is forced to rely on short-term "residual" supply in day-ahead and real-time
 - Results in an increase in **reliability challenges** and **price spikes**

Myth 1: The Supply Available On A Given Day Cannot Be Changed (1)

Changes To Forward Operational Decisions Can Increase Available Supply In Specific Periods



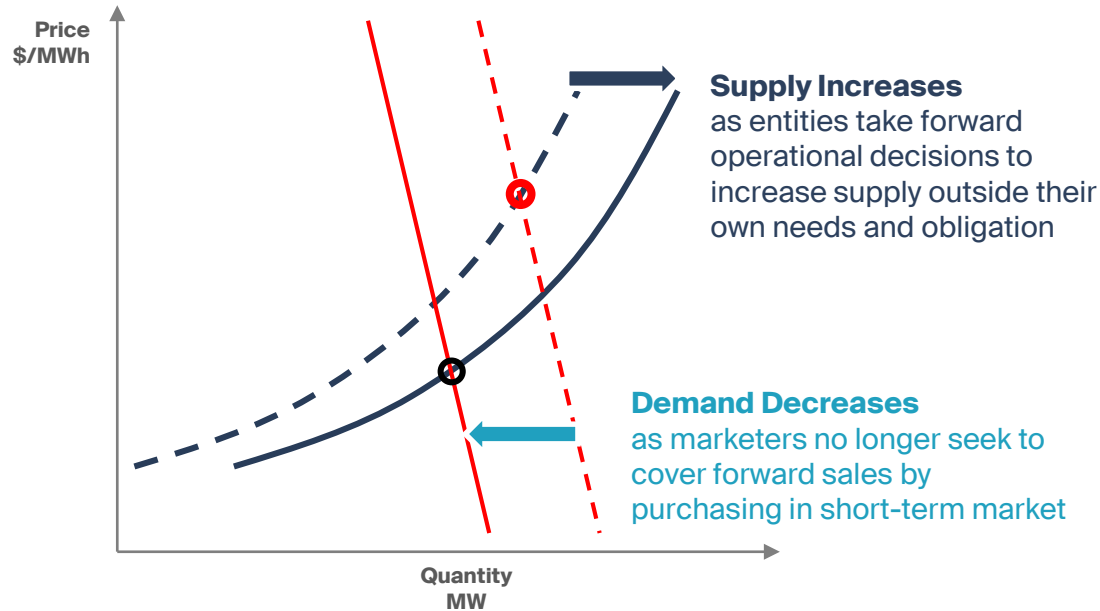
Winter-peaking systems typically manage water and schedule maintenance to maximize capability during their peak needs



Forward supply commitments can unlock additional capability to supply needs of summer-peaking customers through [changes to maintenance schedules and water management](#)

Myth 1: The Supply Available On A Given Day Cannot Be Changed (2)

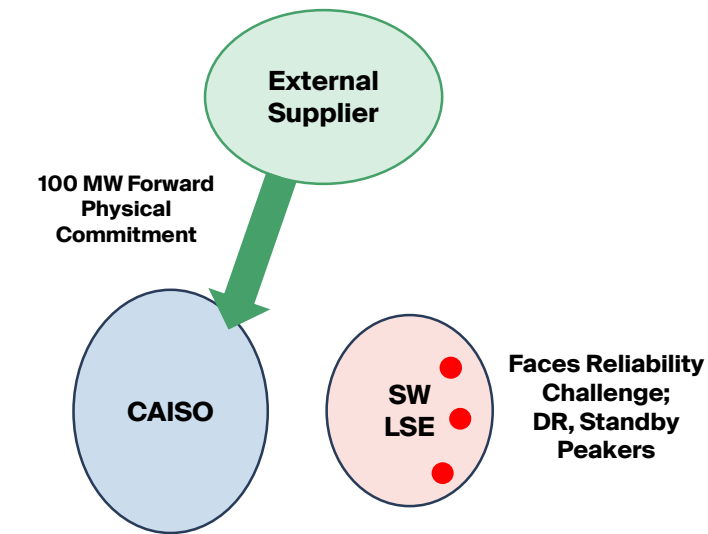
Forward Physical Commitments Increase Supply And Reduce Demand In Short-Term Markets



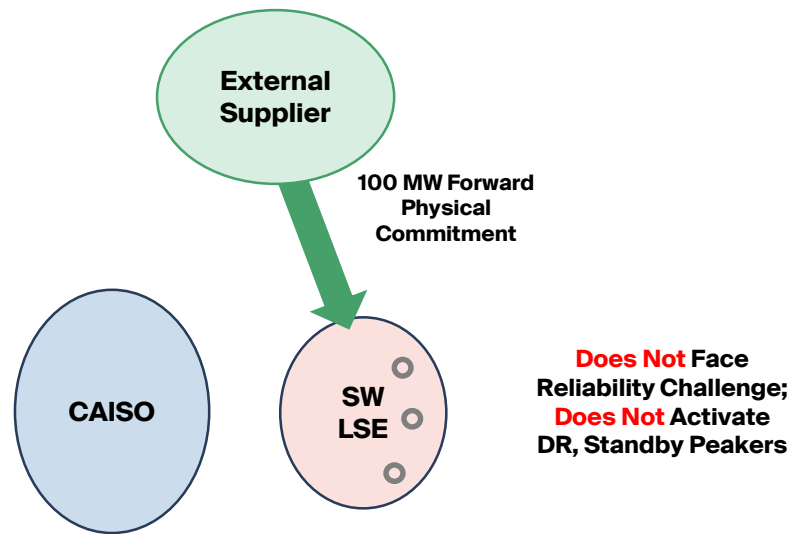
Myth 2: Short-Term Market Prices Are Enough To Ensure Capacity Is Available To Meet Peak CAISO BAA Needs

- The cost of significant changes to forward operational decisions often far exceeds the sales revenues associated with a few days of very high prices
 - Concentrating maintenance work in spring/fall to avoid summer season
 - Conserving water at hydro facilities to enable generation during summer season
 - e.g., Foregoing sales and/or making purchases ahead of summer season
- Uncertainty that opportunities in short-term market will even materialized
- As a result:
 - Resource operators will generally not incur these costly changes in order to make sales in short-term markets
 - Marketers can currently sell speculative RA without incurring such costs

Myth 3: All Capacity That Is Available Will Be Offered In The Short-Term Market

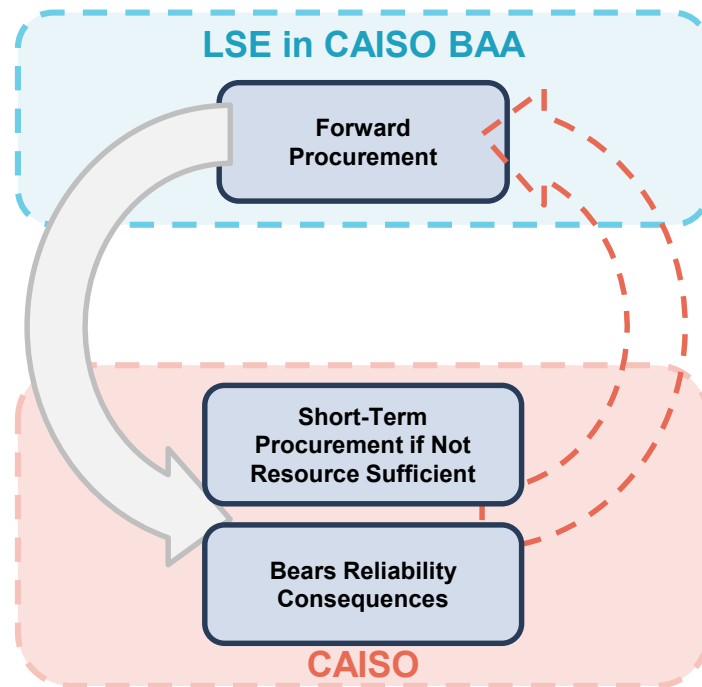
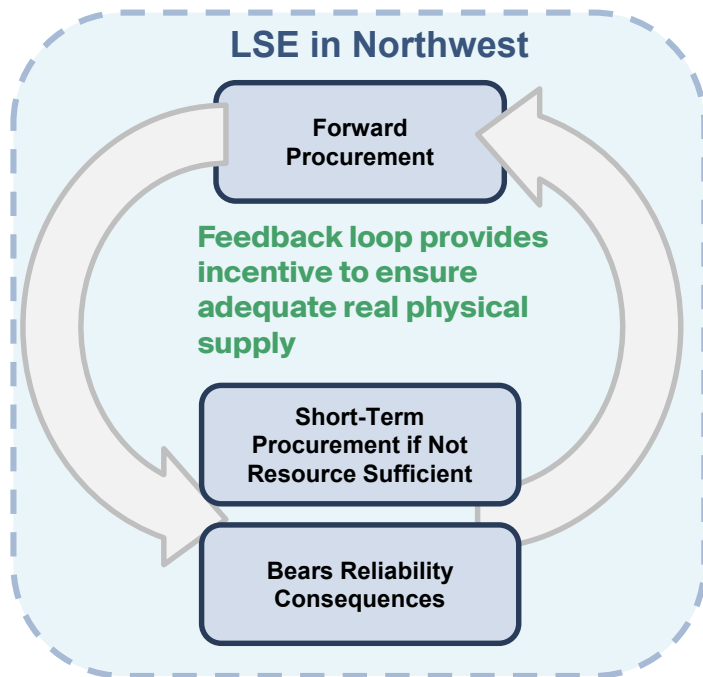


Scenario 1: Physical Supply Committed to CAISO BAA

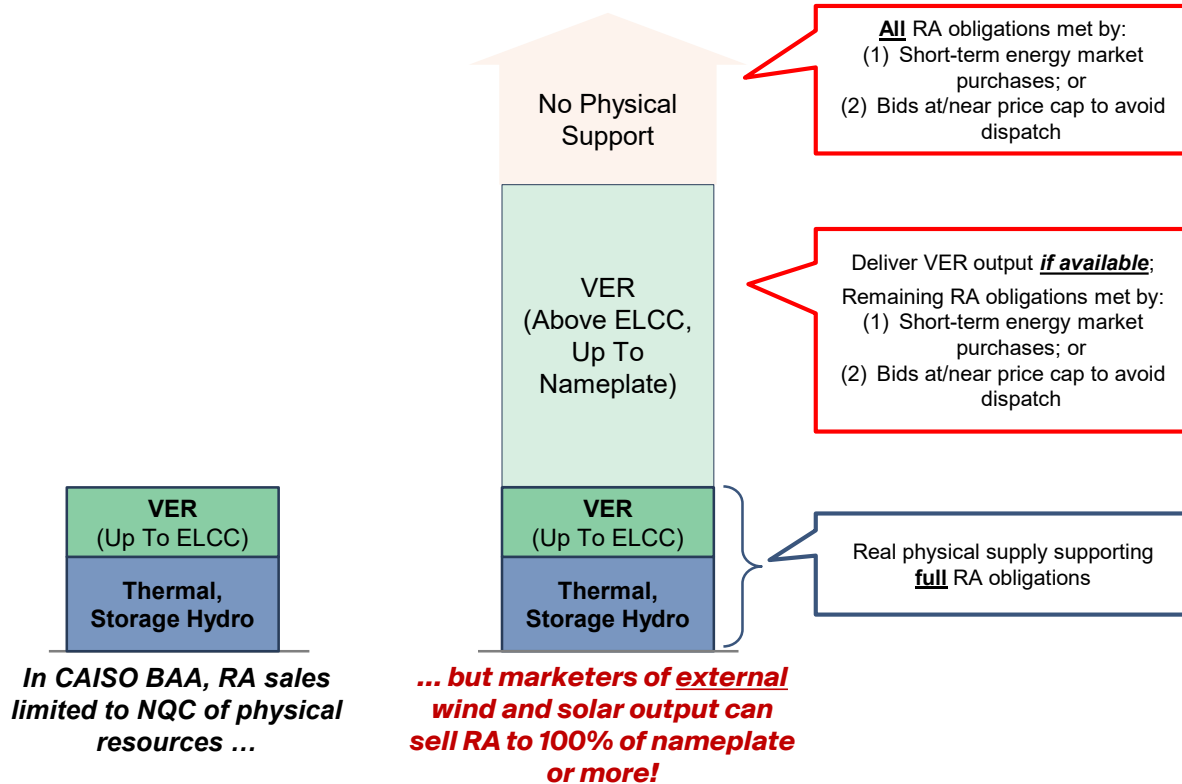


Scenario 2: Physical Supply Committed to LSE in Desert Southwest

Myth 4: LSEs Have Sufficient Incentives To Ensure RA Capacity Is Physical



Myth 5: Generic Assurance That RA Is “Backed By Physical Capacity” Is Enough



2020 ELCC		
Month	Solar	Wind
Jan	4%	14%
Feb	3%	12%
Mar	18%	28%
Apr	15%	25%
May	16%	25%
Jun	31%	33%
Jul	39%	23%
Aug	27%	21%
Sep	14%	15%
Oct	2%	8%
Nov	2%	12%
Dec	0%	13%

Source: [Final Net Qualifying Capacity Report for Compliance Year 2020](#)

Conclusion: RA Program Must Require Forward Commitment of Real Physical Capacity

- Physical supply commitments are necessary to “unlock” additional supply that otherwise will not be available
- Failure to commit physical supply on a forward basis merely re-packages reliance on whatever residual supply happens to be available, undermining reliability and causing price spikes
- California LSEs are not the entities responsible for reliability when RA capacity fails to deliver or be meaningfully available, so have little incentive to insist that import RA contracts be backed by real physical supply
- ***Real physical supply is not likely to be committed on a forward basis unless CPUC and CAISO explicitly require it***

Continued “Leaning” On Short-Term Energy Markets Is Not Workable

Reduction of System Requirements Based on Historical Imports

It is not clear that imports are flowing into California because of our RA program, or whether other areas in the West are simply selling their surplus energy on a consistent basis throughout the year. Moreover, **it is not clear that it makes sense to pay “capacity” prices for resources that may be fully paid for by vertically integrated utilities or otherwise subject to cost-of-service ratemaking.** We also note (see Figures 6 and 7), that on peak-load days, non-RA energy flows into California presumably because it is cost-effective to do so. Accordingly, one possibility is to **reduce system requirements for all CPUC-jurisdictional entities based on some estimate of the import energy flows** (excluding energy flows to non-jurisdictional entities) based on average energy flows on one-in-two weather year monthly peaks. This would obviate the need for LSEs to lock in energy contracts (presumably based on available 6x16 trading products) and allows resources to bid into the CAISO market and for CAISO to move these resources to meet the flexibility and reliability needs of the system.

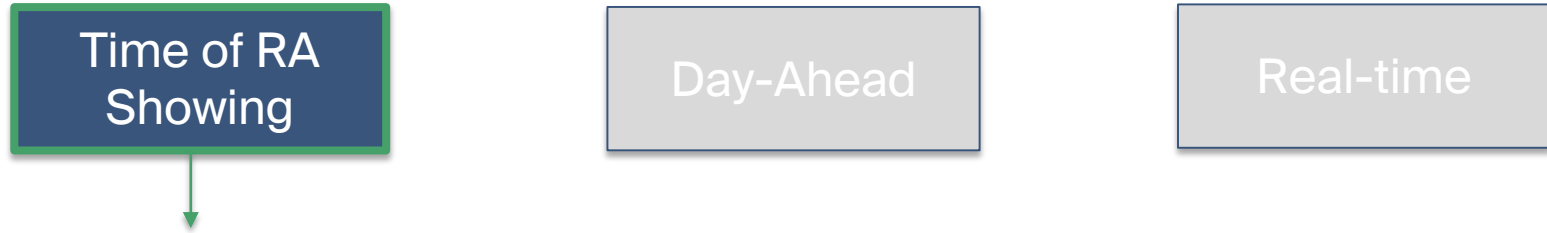
CPUC Energy Division Staff, *Report On Resource Adequacy Imports* (February 2020) at 32. (Emphasis added)

This perspective is fundamentally inconsistent with fair, efficient and competitive markets, and would present a significant barrier to regionalization

Characteristics of a Workable Solution

- Import RA requirements should allow for **maximum participation** in the RA program by **real physical resources** while ensuring CAISO's reliability needs are **not compromised**
- Import RA requirements should be comparable to internal resources (where possible)
 - ✓ Cost verification for offers above \$1,000/MWh
 - ✓ Local market power mitigation (and DEB registration)
 - ✓ Available for Exceptional Dispatch in real-time in key hours
 - ✓ Data-sharing and monitoring
- Import RA rules should be flexible to enable multiple types of RA contracts
 - Flexible supply, fixed energy, standalone RA capacity
- Import RA rules should be flexible to accommodate **all genuine physical resources**
 - Single unit, multiple resources within a BAA , or multiple resources across multiple BAAs

Upfront RA Showing Must Address the Root Cause of the Problem



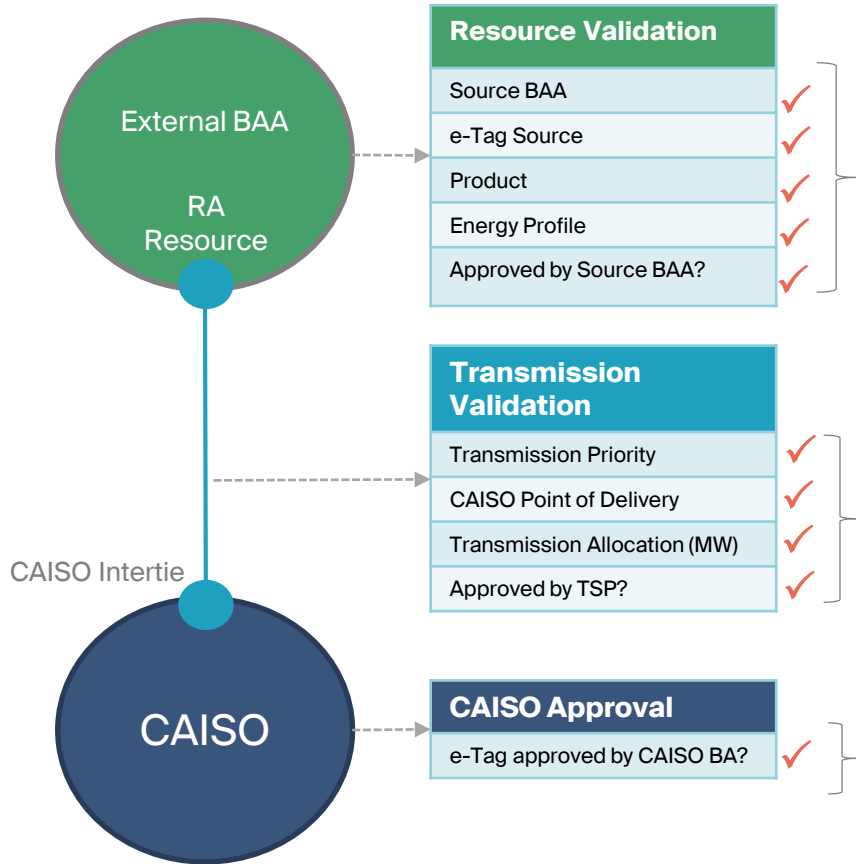
- CPUC and CAISO should explicitly require that all RA contracts are supported by **identified physical resource(s) at the time of the RA showing**
 - **No other rules** are effective substitutes for this critical upfront requirement
- Seller must also represent through contract (or attestation):
 1. Capacity is reasonably expected to be surplus to the needs of the Source BAA
 2. Energy will be supported by necessary operating reserves
 3. Commitment to arrange for delivery on firm transmission
- CAISO Tariff must include the same requirements to ensure seller performance

Day-Ahead Requirements



1. Day-Ahead Must-Offer Obligation for all hours of RA contract period
2. Day-Ahead e-Tag submitted for every hour of the operating day
3. Firm transmission from Source to CAISO intertie for full RA contract quantity

Day-Ahead e-Tag Allows for Validation

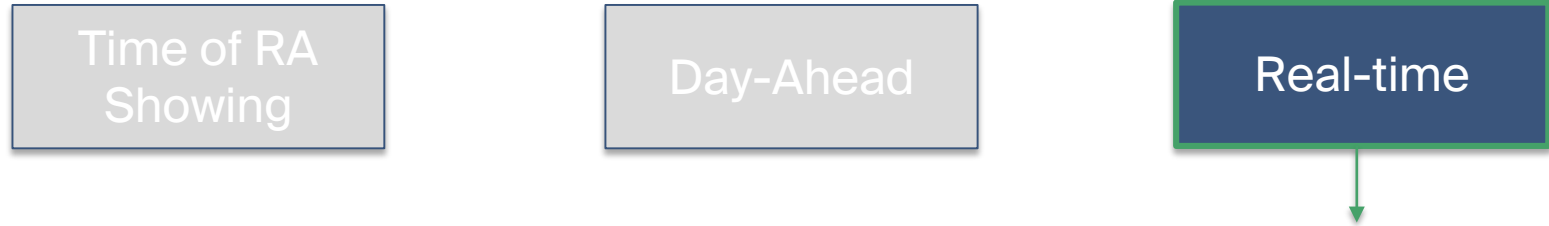


Resource validation confirms that the RA resource identified at time of RA showing is actually being made available

Transmission validation confirms firm service from source to CAISO intertie

CAISO approval confirms RA e-Tag validation complete

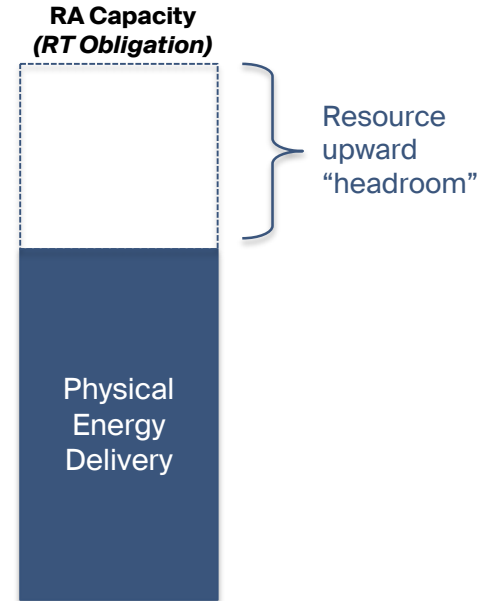
Real-Time Requirements



1. Real-Time must-offer obligation for all hours with a day-ahead market award
2. Exceptional Dispatch obligation during **AAH hours**
 - Ensures availability in hours when most needed by CAISO BAA
 - Enables hydro resources to manage water in other non-critical hours (if no DA energy award)
 - Exceptional Dispatch obligation could be removed if inertia is import constrained on a DA basis
3. e-Tags will be required (DA) for each hour and for full amount of the real-time obligations
 - Including firm transmission from source to CAISO inertia for full RT obligation

Data-Sharing Can Enable CAISO to Monitor Performance

- Operational monitoring can verify capacity remains available in hours with a real-time must offer or Exceptional Dispatch obligation, even if it is not dispatched or is not delivered (e.g., transmission outage)
- CAISO should have access to telemetry or other real-time data that allows verification that the designated resource has upward “headroom” equal to any undischarged / undeliverable RT obligation for RA capacity
- May consider phased approach to allow time to establish necessary data connectivity



Firm Transmission Requirements

- Transmission requirements should be designed to ensure maximum participation of deliverable physical resources without undermining reliability objectives
- A firm transmission requirement is necessary to ensure RA capacity cannot be displaced by a higher priority transmission schedule
 - Non-firm can be displaced by higher priority rights delivering **to BAAs other than the CAISO BAA**
- A balance may be to delay demonstration of firm transmission until day-ahead
 - DA showing requirement provides flexibility to suppliers to arrange for firm up until the day-ahead timeframe
 - Some transmission contract renewals and redirects not available until closer to delivery period
 - Support with both:
 - Contract requirement that commits to use of firm transmission and
 - CAISO tariff requirement



Thank You

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