Resource Adequacy Enhancements Straw Proposal - Part 2

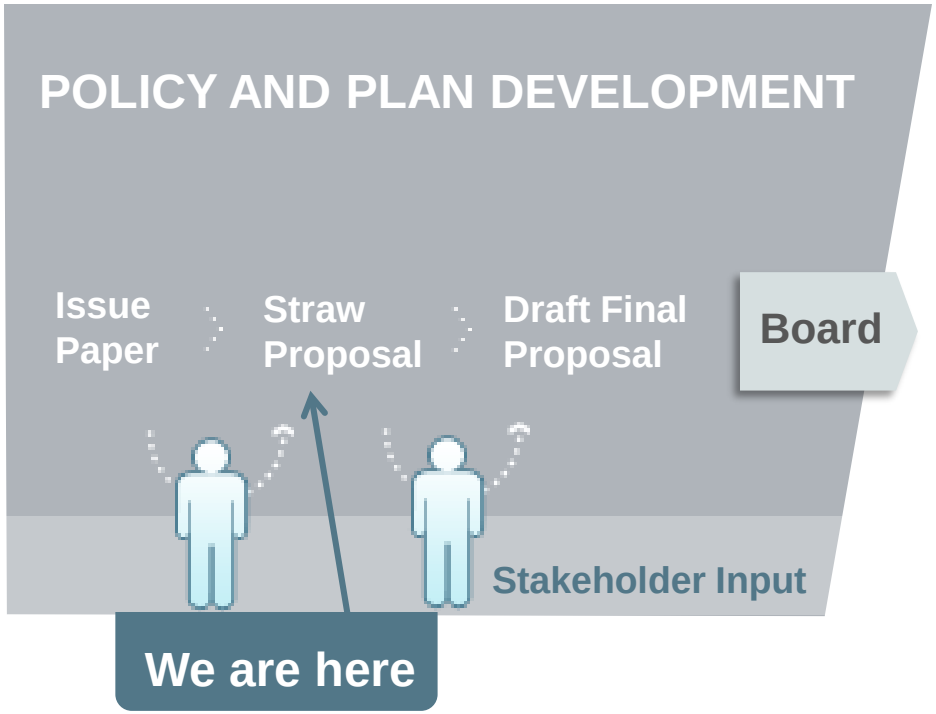
Stakeholder Meeting

March 6, 2019

Agenda

Time	Topic	Presenter
10:00 – 10:10AM	Welcome and introduction	Jody Cross
10:10 – 11:00AM	Review of counting rules in other ISO/RTOs & best practices	Lauren Carr
11:00AM – 12:30PM	RA counting rules and assessments	Karl Meeusen
12:30 – 1:30PM	LUNCH	
1:30 – 2:45PM	RA counting rules and assessments - Continued	Karl Meeusen
2:45 – 3:30PM	Backstop capacity procurement	Gabe Murtaugh
3:30 – 3:55PM	Review of RA Import Capability provisions	Chris Devon
3:55 – 4:00PM	Next steps and conclusion	Jody Cross

Stakeholder Process



Stakeholder Engagement Plan

Date	Milestone
Feb 27	Straw proposal (part two)
Mar 6	Stakeholder meeting on straw proposal (part two)
Mar 20	Stakeholder comments on straw proposal (part two) due
Apr 8-9	Working group meeting
Apr 22	Stakeholder comments on working group meeting due
May 20	Revised straw proposal
May 28-29	Stakeholder meeting on revised straw proposal
Jun 10	Stakeholder comments on revised straw proposal due
Jul 8	Second revised straw proposal
Jul 16-17	Stakeholder meeting on second revised straw proposal
Jul 31	Stakeholder comments on second revised straw proposal due
Sep 9	Draft final proposal
Sep 24-25	Stakeholder meeting on draft final proposal
Oct-9	Stakeholder comments on draft final proposal due
Nov 13	**Present proposal to ISO Board**

REVIEW OF COUNTING RULES IN OTHER ISO/RTOS AND BEST PRACTICES

Lauren Carr, Infrastructure and Regulatory Policy Developer
Markets and Infrastructure Policy

CAISO reviewed counting rules in other ISO/RTOs to determine if the CAISO's current RA rules are beneficial and necessary

- CAISO uses a combination of must offer obligations, substitution rules, and RAAIM to incentivize resource availability
- Most ISO/RTOs use the effective forced outage rate of demand (EFORd) to assess resource availability up front
- Some ISO/RTOs use a performance assessment to assess how a resource performs under stressed grid conditions

Common terminology and concepts

- **Installed Capacity (ICAP):** similar to CAISO's NQC, values based on summer net dependable rating of the unit
- **Unforced Capacity (UCAP):** installed capacity that is not on average experiencing a forced outage or derating
- **Effective Forced Outage Rate of Demand (EFORd):** The probability a resource will be unavailable due to forced outages or forced deratings when there is demand on the unit to operate

UCAP = ICAP x (1-EFORd)

UCAP Calculations- Thermal

ISO/RTO	Calculation	Details
NYISO	UCAP = ICAP * (1- EFORd)	
PJM	UCAP = ICAP * (1- EFORd)	
MISO	UCAP = ICAP * (1-XEFORd)	XEFORd excludes outages that are “outside management control” (e.g., extreme weather events, transmission line outages, etc.)
ISO-NE	N/A	ISO-NE relies on performance payments (credit or charge) to incentivize resource performance

UCAP Calculations- Solar and Wind

ISO/RTO	Calculation	Details
NYISO	UCAP = Nameplate capacity * production factor	Production factor averages 1 year of historical production during peak hours and months
PJM	UCAP = ICAP	ICAP determined based on 3 years of historical operating data during peak hours and months
MISO	Solar: UCAP = ICAP Wind: UCAP = ICAP * Wind Capacity Credit	Solar: ICAP determined based on 3 years of historical average output for peak hours and months Wind: Wind capacity credit determined by ELCC methodology
ISO-NE	N/A	ISO-NE relies on performance payments (credit or charge) to incentivize resource performance

UCAP Calculations- Hydro

ISO/RTO	Calculation	Details
NYISO	UCAP = Nameplate capacity * production factor	Production factor based on rolling average of hourly net energy during the 20 highest load hours for the previous 5 summer and winter capability periods
PJM	UCAP = ICAP	Tests performed annually to determine summer net capability
MISO	UCAP = ICAP	ICAP determined based on historical output for most recent 3-15 years for peak hours and months
ISO-NE	N/A	ISO-NE relies on performance payments (credit or charge) to incentivize resource performance

Additional details

	CAISO	NYISO	PJM	MISO	ISO-NE
Performance/ availability assessment mechanism	RAAIM	EFORd	EFORd & capacity performance assessment	EFORd	Pay-for-performance tool
Analysis interval	N/A	5 years	5 years	3 years	N/A
EFORd for new resources	N/A	Class average	Class average and outage data	Class average	N/A
RA value	NQC	UCAP	UCAP	UCAP	ICAP
MOO	NQC	ICAP	ICAP	ICAP	ICAP

CAISO has identified the following capacity counting and availability best practices

- Other ISO/RTOs assess availability of RA resources by considering historical forced outage rates
  - Determine forced outage rate using 3-5 years of historical data
  - Resources are generally required to provide NERC Generating Availability Data System (GADS) outage data
  - Class average data is used for new resources without sufficient historical forced outage data
- EFORd metric generally accounts for hours and months of greatest demand and excludes planned or maintenance outages
- ICAP planning reserve margins are set using the UCAP, and must offer obligations are set at ICAP values

RA COUNTING RULES AND ASSESSMENTS

Karl Meeusen, Senior Advisor, Infrastructure and Regulatory Policy
Markets and Infrastructure Policy

CAISO has drawn numerous conclusion on best practices from other ISOs and stakeholder comments

- Only ISO-NE is the only other ISO/RTO that relies strictly on an availability metric
  - Measures actual performance, not just availability
- PJM uses unforced capacity & performance assessments
- Review of other ISO provides evidence that there may be alternatives to RAAIM
- ICAP PRM set using the expected UCAP
- No clear consensus among stakeholders on this matter
  - There was a diverse group supporting further review

CAISO believes that a review of resources' forced outage rates and inclusion in RA valuation is warranted

Incorporating forced outages into RA assessment helps ensure procurement of most effective and reliable resources

- CAISO is proposing a new framework to:
  - Assess the forced outage rates for resources
  - Conduct RA adequacy assessment based on:
    - Resources' unforced capacity
    - RA portfolio's ability to ensure CAISO is able to serve load and meet reliability standards
- Intended to stay aligned with CPUC process
  - Additional enhancements are needed because solely relying on an installed capacity based PRM as basis for resource adequacy is not sustainable
- Transition to greater reliance on variable and energy limited resources requires evaluating the energy needs

NQC will continue to be an important aspect of the RA program and will still be utilized

- For example NQC will be important for:
  - Local RA assessments and studies
  - Must offer obligations
- CAISO is considering how to incorporate resource forced outage rates in RA assessments
- CAISO proposes to calculate and publish:
  - Installed capacity values (NQC) and
  - Unforced capacity values (UCAP)
- Both values will be utilized in the CAISO's RA processes

More specifically, CAISO proposes to develop the following seven step process

1. Calculate NQC, UCAP, and EFC values
2. Determine System, Local, and Flexible RA requirements
3. RA showings
    a) Conduct individual adequacy tests
    b) Conduct collective adequacy test
4. Planned outage assessment
5. Market participation and must offer obligations
6. Forced outage substitution
7. CPM authority

CALCULATION OF NQC, UCAP, AND EFC VALUES

General principles

- Resource deliverability is essential for determining a resource's ability to support reliable grid operations
- Develop RA rules that incentivize procurement of reliable resources rather than simply the cheapest
- Encourages showing all RA capacity that is under a RA contract
- RA requirements and obligations reflect CAISO's operational and reliability needs
- RA targets are clear, easily understood and based on stable criteria applied uniformly across all LSEs

CAISO proposes to use a generally accepted method for calculating UCAP

- CAISO will calculate and publish UCAP values for all resources each year
- UCAP limited at the resource's NQC value
- Will only consider forced outages
- Will apply to all resource types that do not rely ELCC methodology for determining QC values

UCAP = (NQC) * (1 - EFORd)

- CAISO is still examining alternative variations of this calculation

CAISO is assessing the time increments to be considered in each EFORd assessment

- CAISO is assessing the benefits of calculating the EFORd seasonally
- EFORd would be set for each season for the upcoming RA year
- Seasonal calculations may add complexity, but may better reflect availability during peak and off-peak seasons
- CAISO exploring three to five years of historic data to determine these calculations

CAISO plans to rely on CPUC ELCC methodology where applicable

CAISO's reliance on the ELCC calculation is two-fold:

1. Other ISOs equate wind and solar UCAP values with a statistical assessment of resources' output
2. ELCC already accounts for the probability of forced outages for wind and solar resources to an extent
   - i.e. QCs are already derated for forced outage rates of resource class/technology type in ELCC analysis

CPUC's ELCC methodology for VERs presents issues for further consideration

ELCC has two issues as currently applied for VER's capacity value determination:

1. CPUC calculates the average ELCC for the wind and solar fleet
   - Average ELCC value of the RA wind and solar fleet may differ from the average ELCC value of the entire fleet
2. CPUC calculates a diversity benefit that relies on the portfolios of wind and solar resources.
   - System wide diversity benefits may not be reflected in the RA fleet

CAISO is still reviewing similar counting rules for other resource types or what other methods may need to be applied to develop UCAP values

- CAISO continues to explore options for DR, imports, hydro, QFs, and new resources
  - For example, other ISOs have established practices for hydro resources, but there is less consensus regarding the specific methodology
- CAISO is not offering specific proposals at this time
  - CAISO is seeking stakeholder feedback regarding methods for calculating UCAP values for these resource types
  - Will offer proposals in the revised straw proposal

CAISO proposes to use a variant of a UCAP methodology for flexible capacity counting purposes

- CAISO proposes to start with a general formula that incorporates economic bidding behavior into the UCAP calculations

EFC = UCAP * (Percent of available capacity economically bid into the CAISO's market)

- Provides similar incentives to procure reliable resources since it is a function of the resource's UCAP
- Calculation relies on actual demonstrations of resources' willingness to ramp

CAISO is exploring two potential data sources for calculating forced outage rates

- NERC's Generation Availability Data System (GADS)
  - Resource specific information is difficult to access and compile
  - Mandatory only for resources 20 MW and above
- CAISO Outage Management System (OMS)
  - Numerous outage cards in OMS designed to describe the nature of work for resource outages.
  - Current OMS outage cards and may not adequately cover the forced outages used in EFORd calculations

CAISO is seeking stakeholder input to determine how best to collect the forced outage data needed to implement a forced outage accounting methodology

CAISO proposes a 16-hour window for calculating forced outage rates for generic and flexible capacity

Initial proposal of 16-hour window from 5:00 AM to 9:00 PM

- Simplifies existing availability assessment hours
- Considered a 24-hour assessment interval
  - Reduces impact of forced outages during peak
- Mirrors the convergence between the hours of system, local, and flexible capacity needs
  - Flexibility needs defined in terms of ramping and uncertainty
- Allows CAISO to calculate the same forced outage rate for both generic and flexible capacity

DETERMINING SYSTEM, LOCAL, AND FLEXIBLE RA REQUIREMENTS

CAISO will continue working with LRAs to establish all RA requirements

- System RA with the following components:
  - System Planning Reserve Margin Requirement (based on NQC installed capacity and determined by LRAs)
  - System UCAP Requirement (based on Unforced Capacity needs and determined by CAISO)
- Flexible RA (based on EFC)
- Local RA

CAISO is not proposing changes to the frequency or timing of establishing these requirements

LRAs are responsible for establishing installed capacity requirements

- LRA can establish the appropriate NQC PRM and allocate that requirement to its jurisdictional LSEs
  - For example, the CPUC uses a minimum 15 percent PRM for all of its jurisdictional LSEs
- LRA can continue determining which CEC load forecast it will use for RA requirements (*i.e.*, 1:2, 1:5, or 1:10 year forecasted peak load peak)
  - CAISO notes that 1:2 forecasted peak load should be a minimum threshold to avoid backstop procurement risk

CAISO proposes to develop a minimum UCAP requirement that all LSEs must meet and show as RA

- Shown UCAP should be sufficient to serve forecasted peak load and ancillary services requirements
- CAISO must:
  - Carry reserves for three percent of load and three percent of generation or the Most Severe Single Contingency
  - Have sufficient capacity to provide regulation and flexible ramping product
- CAISO is considering an additional factor for observed forecast error

CAISO seeks stakeholder input about the need for appropriate way to calculate such a factor

CAISO will continue calculating flexible capacity requirements based on three-hour net load ramp until sufficient DA FRP data is available

- CAISO is developing a day-ahead flexible ramping product (DAFRP) in the DAME – Phase 2
  - Once there is sufficient data available, CAISO will incorporate all FRP products into calculation
- CAISO will eliminate existing flexible capacity categories
- CAISO still exploring need for greater levels of granularity (i.e. ramping speed and capabilities)

RA SHOWINGS AND ASSESSMENTS

CAISO is not proposing changes to the current annual and monthly LSE RA showings and resource supply plans

- Annual demonstrations – October 31 of each year
- Monthly demonstrations – 45 days prior to the RA month
- CAISO will continue notifying both LSE SC and resource SC of any discrepancies between the RA showings and supply plans

CAISO will conduct system NQC assessments of LSEs RA showings to ensure LRA's system planning reserve margin has been met

- This assessment based on resources' NQC and procurement requirements established by the LRA
  - CAISO will not conduct this assessment if an LRA does not establish a PRM
- CAISO will notify LSEs of any identified deficiency and give them an opportunity to cure all deficiencies
- If the deficiencies remain uncured, CAISO will notify the LSE and its LRA of the deficiency
  - CAISO will not undertake backstop procurement to resolve and enforce LRAs system PRM requirements based on NQC

CAISO will assess RA showings and supply plans to ensure sufficient UCAP is shown

- Assessment based on identified operational based need
- LSEs need only submit and show their resources' NQC
  - CAISO will convert each resource's UCAP
  - Partial RA resources will receive a proportional UCAP value
    - i.e. A 100 MW resource with a 10 percent forced outage rate shown for 50 MW of NQC will be assessed as being shown for 45 MW of UCAP RA
  - LSEs cannot procure only the unforced capacity from a resource
    - i.e. An LSE could not claim to buy 90 MW of both NQC and UCAP from a 100 MW resource with a 10 percent forced outage rate.
- Deficient LSEs will be notified of the deficiency and provided an opportunity to cure

CAISO will assess only RA portfolio to test if it is adequate under various load and net load conditions

- CAISO must assess how the shown RA fleet works collectively to meet system needs
  - Similar in concept to the collective deficiency test the CAISO conducts for local RA
  - Some resources may be more “effective” in ensuring reliable operations under different scenarios
- No additional action needed if portfolio is adequate
  - If not, then CAISO will conduct backstop procurement
  - Costs will be allocated based on load ratio share to all LSEs
  - It is not feasible to determine that a specific LSE’s RA portfolio contributed to the collective deficiency

PLANNED OUTAGE ASSESSMENT

CAISO continues exploring a new planned outage substitution concept

- Planned outages will not be required to provide substitute capacity if LSE's available unforced capacity exceeds the minimum UCAP threshold
- All planned outages submitted will be assessed based on the order in which they were received
- Once outages dip below a given threshold of required UCAP needs, substitution would be required
- SCs may procure the substitute capacity on its own or utilize CAISO's existing CSP

MARKET PARTICIPATION AND MUST OFFER OBLIGATIONS

Resources shown for RA capacity will continue to have a must offer obligation

- Resources' must offer obligations must be consistent with its NQC value
  - For example: A resource shown for 100 MW of NQC, must bid 100 MW of capacity into CAISO's markets
  - Bidding rule required to ensure the underlying UCAP availability is met
- Allows CAISO to simplify forced outage substitution
  - The RA fleet effectively provides its substitute capacity upfront
- CAISO is exploring eliminating the existing RA forced outage substitution rules

CAISO continues to review the must offer obligations for all capacity resource types

- CAISO requires RA resources to economically bid or self-schedule into the market
  - Supplemented with bid insertion provisions for
  - CAISO is preparing to implement the CCE3 policy
    - Allows Use Limited Resources (ULRs) to include opportunity costs in bids

CAISO is contemplating revisions to bid insertion rules

1. Bid insertion to all non-ULRs and ULRs with an opportunity cost per CCE3 policy
   - Reduces need for RAAIM
2. No bid insertion for any resources, but either;
   a) Apply RAAIM to RA resources or,
   b) Treat all intervals without bids as a forced outage for purposes of the UCAP calculation

- CAISO prefers option 1 but seeks additional stakeholder feedback

FORCED OUTAGE SUBSTITUTION

CAISO believes it is possible to eliminate forced outage substitution

- UCAP values should provide incentives for timely maintenance and expeditious repairs
- CAISO will not allow for substitution of capacity for forced outages
  - Not allowed in other ISOs
  - More accurately reflects the true availability of resources
- In local capacity areas there may not be substitute capacity available
  - CAISO will rely on CPM designations to meet its capacity needs if additional capacity is available

CAISO is assessing the need for both the RAAIM and a UCAP assessment tool

- CAISO will not seek to modify RAAIM to include a performance aspect
- CAISO has identified certain instances when RAAIM may be helpful,
  - As a transitional tool and
  - New resources

The application of RAAIM as a transition tool and for new resources would be similar

- CAISO is contemplating a combination of RAAIM and UCAP for the first three years of implementation
  - CAISO would calculate a resource's UCAP inclining basis and RAAIM as declining

	Year 1	Year 2	Year 3	Year 4
UCAP	(100*100*100)/3 = 100MW	(67*100*100)/3 = 89 MW	(67*67*100)/3 = 78 MW	(67*67*67)/3 = 67 MW
RAAIM charges	1 * (RAAIM price)	0.67 * (RAAIM price)	0.33 * (RAAIM price)	0.0 * (RAAIM price)

- Ensures resource IDs not tied to a physical resource cannot avoid a UCAP reduction by creating new ID
- An alternative is using technology averages for both the transition to UCAP values and for new resources
  - Must still solve issues for IDs not tied to a physical resource

BACKSTOP CAPACITY PROCUREMENT

Gabe Murtaugh, Senior Infrastructure and Regulatory Policy Developer
Markets and Infrastructure Policy

CAISO is making changes to the RMR contract through the RMR-CPM enhancements initiative

- The RMR-CPM enhancements initiative is updating performance mechanisms currently in place for RMR resources to align with existing RA and CPM resources
  - RMR resources will be subject to RAAIM
- This initiative contemplates changes to RAAIM framework, including making only specific resources subject to mechanism

Options:

- Continue to make RMR resources subject to RAAIM
- Explore making RMR resources subject to seasonal availability targets

CAISO currently has authority to backstop for CPM for a number of scenarios

Existing CAISO CPM authority

1. System annual/monthly deficiency
2. Local annual/monthly deficiency
3. Local collective deficiency
4. Cumulative flexible annual/monthly deficiency
5. Significant event
6. Exceptional dispatch
7. Risk of retirement*

CAISO proposes 3 potential paths for new CPM authority for individual deficiencies

1. LSE specific UCAP test
   - CAISO will procure CPM capacity for any LSE that shows below UCAP requirements
   - Assign costs to specific LSEs with shortfalls
2. System UCAP test
   - System deficiencies would trigger CPM procurement and costs would be allocated to deficient LSEs
3. Capacity incentive mechanism
   - LSEs that show below requirements would be charged a penalty price
   - Penalties distributed to LSEs that show above requirements

CAISO will perform a portfolio analysis and flexible analysis to ensure reliable operation of the grid

- CAISO will study all shown RA capacity in an aggregated manner and may make additional CPM procurement based on the outcome of these studies
  - Timing for portfolio analysis would likely be after any procurement is made for individual deficiencies
  - Timing may have an impact on cost allocation
- Similarly, CAISO may also make CPM designations for deficiencies identified for shown flexible capacity

CAISO may modify the competitive solicitation process

- CAISO may allow SC to use backstop CSP for planned outages in the future
  - These procurements may occur when an LSEs shown UCAP is below requirements, after accounting for outages
- Currently the CSP is set up to handle bids for annual, monthly, and intra-monthly CPM designations
  - Because outages may be significantly less than one month, CAISO may consider implementing a CSP with as little as daily granularity

REVIEW OF RA IMPORT CAPABILITY PROVISIONS

Chris Devon, Senior Infrastructure and Regulatory Policy Developer
Markets and Infrastructure Policy

Resource Adequacy Import Capability background

- Each year, CAISO establishes maximum import capability (MIC) values for import paths
  - Tariff defines MIC as “a quantity in MW determined by the CAISO for each Intertie into the CAISO Balancing Authority Area to be deliverable to the CAISO Balancing Authority Area based on CAISO study criteria”
- Once MIC values are calculated the capacity is allocated to CAISO LSEs for RA purposes through 13 step process

Resource Adequacy Import Capability background (continued)

- MIC values for each intertie are calculated annually for a one-year term and a 13-step process is used to allocate MIC to LSEs
  - MIC allocations are not assigned directly to external resources
  - LSEs choose the portfolio of imported resources they wish to elect for utilization of their MIC allocations

Resource Adequacy Import Capability background (continued)

- MIC calculation determines the maximum size/magnitude of simultaneous import capability
- No guarantee that all MIC will be used for RA import purposes in all months
- **DO NOT** assume all allocated MIC MWs will be used for imports shown on RA showings

Resource Adequacy Import Capability background (continued)

- RA showings designating import MWs to meet RA obligations across interties are:
- Required to be used in conjunction with a MIC allocation
- **Considered a firm monthly commitment to deliver those MWs to the CAISO at the specified interconnection point with the CAISO system**

MIC calculation background

- CAISO calculates MIC MW values based on a historic methodology
  - Utilizes actual schedules into CAISO's BAA for highest imports obtained simultaneously during peak system load hours over last two years
- Sample hours are selected by choosing two hours in each year:
  - On different days within the same year, with highest total import level when peak load was at least 90% of annual system peak load

Forward looking MIC studied and planned for state and federal policy goals

- CAISO also performs a power flow study in the CAISO's TPP to test MIC values to ensure each intertie's MIC can accommodate all state and federal policy goals
- If any intertie is found deficient, the CAISO establishes a forward looking MIC for that intertie
  - CAISO plans the system to accommodate this level of MIC in the TPP and RA

Historic MIC data

MIC / RA Year	2014	2015	2016	2017	2018	2019
Maximum Import Capability (MWs)	17,486	16,228	15,755	15,221	14,852	15,208
ETC and TOR held by non-CAISO LSEs (MWs)	4,090	4,090	4,090	4,211	4,511	5,015
Available Import Capability for CAISO Resource Adequacy purposes (MWs)	13,396	12,138	11,665	11,310	10,341	10,193
Total Pre-RA Import Commitments & ETC (MWs)	6,047	5,426	5,256	4,736	4,628	4,306
Remaining Import Capability - less all ETC and TOR (MWs)	**7,348**	**6,712**	**6,409**	**6,574**	**5,713**	**5,888**

Import Capability allocation process review

- After calculating total MIC, Existing Transmission Contracts (ETC) and Transmission Ownership Rights (TOR) amounts held by LSEs are protected for and removed from MIC figure
  - Determines remaining MIC that is available for allocation to LSEs
  - Remaining available MIC is referred to as the Available Import Capability
- Process for allocating this MIC to LSEs is referred to as the Available Import Capability Assignment process
  - 13 step allocation process detailed in the CAISO tariff, Section 40.4.6.2.1
  - Process and schedule further detail provided in straw proposal part 2 appendix: section 8.4 and section 8.5

Available Import Capability Assignment process steps

	Process description
Step 1	Determine Maximum Import Capability (MIC)
	- Total ETC
	- Total ETC for non-ISO BAA Loads
Step 2	Available Import Capability
	- Total Import Capability to be shared
Step 3	Existing Contract Import Capability (ETC inside loads)
Step 4	Total Pre-RA Import Commitments & ETC
	- Remaining Import Capability after Step 4
Step 5	Allocate Remaining Import Capability by Load Share Ratio
Step 6	CAISO posts Assigned and Unassigned Capability per Steps 1-5
Step 7	CAISO notifies SCs of LSE Assignments
Step 8	Transfer [Trading] of Import Capability among LSEs or Market Participants
Step 9	Initial SC requests to ISO to Assign Remaining Import Capability by Intertie
Step 10	CAISO notifies SCs of LSE Assignments & posts unassigned Available Import Capability
Step 11	Secondary SC Request to ISO to Assign Remaining Import Capability by Intertie
Step 12	CAISO Notifies SCs of LSE Assignments & posts unassigned Available Import Capability
Step 13	SCs may submit requests for Balance of Year Unassigned Available Import Capability

CAISO received stakeholder feedback on challenges presented by Import Capability Assignment process

- Some stakeholders indicated CAISO should consider how to modify process to improve fairness, efficiency, and ease of understanding and implementation
  - CAISO is open to reviewing current approach to determine if any enhancements could improve use and efficiency of Available Import Capability allocated to LSEs
- Concerns about possibility some LSEs may not fully utilize allocated MIC on each intertie during all RA months
  - Some LSEs may not make that MIC available for others to buy or trade
  - Some Stakeholders believe this amounts to hoarding some of the MIC that has been allocated

CAISO will evaluate if current allocation process timing causes barriers for new LSEs just beginning operations and commencing RA compliance

- Timing of the Available Import Capability Assignment process may need to updated if it presents any unnecessary barriers to new LSEs receiving shares of the Import Capability for use in RA compliance
  - CAISO plans to review the CPUC's RA guidelines for new LSEs in conjunction with evaluation of timing of Available Import Capability Assignment process

CAISO is considering including potential enhancements to the Available Import Capability Assignment process

Initial options for stakeholder consideration:

- Consider modifications to allow for release and reallocation, or transfer of unused import capability after initial monthly RA showings
- Incorporate an auction or other market based mechanism
- Enhance the provisions for reassignment, trading, or other forms of sales of import capability among LSEs

Consider modifications to allow release and reallocation of unused import capability after initial monthly RA showings

- Some stakeholders have suggested intertie capacity not used to support an RA contract within a respective RA procurement timeframe should be released and made available to support RA contracts
  - Could possibly address hoarding concerns
- CAISO hopes to maintain fundamental principle:
  - Entities funding embedded costs of CAISO interties should be given first opportunity to use that intertie capacity to support an RA contract in each RA procurement timeframe

Incorporate an auction or other market based mechanism into the Available Import Capability Assignment process

- Provide alternative or additional opportunities for procurement of import capability by LSEs
  - Some LSEs may need to secure more than their pro rata load ratio share of MIC on any given branch group/intertie to support a particular RA contract
- Alternative mechanism could allow for more efficient procurement of import capability by those LSEs that place a greater value on Import Capability for various reasons

Incorporate an auction or other market based mechanism (continued)

- Allocate only a portion of remaining Available Import Capability through a mechanism, similar to current process
- Retain a portion of the remaining Available Import Capability to be auctioned or otherwise procured by LSEs
  - Additional auction revenues could potentially be used to reduce the TAC Transmission Revenue Requirement
- Market based clearing mechanism for trading of import capability could address concerns regarding fairness

Enhance provisions for reassignment, trading, or sales of Import Capability among LSEs

- Modification of this aspect of process may be needed to provide alternative to current bilateral transfer process to better facilitate transfer of import capability among LSEs and improve the efficient utilization of import capability
- Market based trading or a market platform for MIC may provide greater efficiency and transparency
- CAISO seeks feedback on all of these potential options and any analysis suggestions regarding import capability issues

NEXT STEPS AND CONCLUSION

Jody Cross, Stakeholder Engagement and Policy Specialist
Stakeholder Affairs

Next steps

- Stakeholder written comments due March 20, 2018
  - Submit to initiativecomments@caiso.com
  - Comments template available at http://www.caiso.com/informed/Pages/StakeholderProcesses/ResourceAdequacyEnhancements.aspx
- Stakeholder Working Group meeting scheduled April 8 & 9, 2019