



Maximum Import Capability Enhancements

Draft Final Proposal

September 13, 2021

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Maximum Import Capability Enhancements Draft Final Proposal

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1. Introduction

The purpose of this initiative is to explore perceived shortcomings and potential improvements to all aspects of the Resource Adequacy (RA) - Maximum Import Capability (MIC) calculation, allocation, and usage.

MIC represents the maximum simultaneous deliverability of all imports used in the RA process. It does not influence the real-time energy schedules that are driven by market energy prices. The ISO performs deliverability studies several times a year in its new Generation Interconnection Process (GIP) and in its Transmission Planning Process (TPP). These studies are conducted for the entire ISO controlled grid, to test both the deliverability of internal resources and the deliverability of imports, in order to ensure that all resources are simultaneously deliverable to the aggregate of load. Unlike the deliverability of internal resources, which is granted on an ongoing basis to the resource owner, the deliverability of imports is granted to Load Serving Entities (LSEs) on an annual basis through an assignment process. New changes to the Tariff and Reliability Requirements Business Process Manual (RR BPM), when approved, will allow LSEs to lock Remaining Import Capability (RIC) at the branch group level on a multi-year basis subject to certain conditions.

Stakeholders have requested the ISO review the MIC calculation, allocation and usage provisions. The ISO is listing herein some of the most common issues raised by stakeholders. However during this stakeholder process the ISO will also seek to explore other new issues and solutions raised during the stakeholder process itself.

1.1. Background

The ISO assesses the deliverability for imports using the established MIC calculation methodology. The ISO calculates the MIC MW amount mainly based on a historical methodology that utilizes the actual schedules into the ISO's BAA for highest net imports obtained simultaneously during peak system load hours over two years with highest imports among the last five years. The ISO examines the highest two years among the prior five years of historical import schedule data during high load periods. Sample hours are selected by choosing two hours in each year, and on different days within the same year, with the highest total import level when peak load was at least 90% of the annual system peak load. The ISO then calculates the historically-based MIC values based on the scheduled net import values for each intertie, plus the unused Existing Transmission Contract (ETC) rights and Transmission Ownership Rights (TOR), averaged over the four selected historical hours. This concept is an important fundamental principle of the MIC framework, intended to ensure that existing ownership rights and pre-existing RA commitments and contracts are recognized and respected.

MIC may be increased on a prospective basis at specific interties to meet state and federal policy goals with the completion of the related necessary policy-driven transmission upgrades. The ISO assures, through deliverability studies, that both the increased MIC and internal generation are deliverable to the aggregate of load. If necessary, through the ISO annual transmission planning process (TPP),

transmission upgrades are approved and subsequently built before the additional deliverability is made available to increased imports and new internal resources.

MIC values for each intertie are calculated annually for a one-year term and an annual 13-step process is used to allocate MIC to LSEs. MIC allocations are not assigned directly to external resources, rather they are assigned to LSEs who choose the portfolio of imported resources they wish to elect for utilization of their MIC allocations. This is also an important principle underlying the MIC framework. MIC is allocated to LSEs because LSEs pay for the cost of the transmission system as captive load and, thus, they should receive the benefits from it and choose which external resources are ultimately selected for providing RA capacity that relies on the import capability. Once the allocation process is complete, LSEs can use their MIC allocations on each intertie to support their procurement of RA capacity of external resources. The 13-step import capability allocation process is detailed further below.

Table 1 lists the 13 steps of the Available Import Capability Assignment Process.¹

Table 1: Available Import Capability Assignment process overview

Step	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	ISO posts Assigned and Unassigned Capability per Steps 1-5
Step 7	ISO 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	ISO notifies SCs of LSE Assignments & posts unassigned Available Import Capability
Step 11	Secondary SC Request to ISO to Assign Remaining Import Capability by Intertie

¹ See Section 40.4.6.2.1 of ISO Tariff.

Step 12	ISO Notifies SCs of LSE Assignments & posts unassigned Available Import Capability
Step 13	SCs may submit requests for Balance of Year Unassigned Available Import Capability

RA showings designating import MWs to meet RA obligations across interties using either Non-Resource-Specific System Resources, Pseudo-ties, or Dynamically Scheduled System Resources are required to be used in conjunction with a MIC allocation and are considered a firm commitment to deliver those MWs to ISO at the specified interconnection point with the ISO system.

Reference for Tariff and business practice manual (BPM) as follows:

1. ISO Tariff section 40.4.6.2: <http://www.caiso.com/Documents/Section40-ResourceAdequacyDemonstration-for-SchedulingCoordinatorsintheCaliforniaISOBalancingAuthorityArea-Oct1-2020.pdf>
2. Reliability Requirements BPM sections 6.1.3.5, 6.1.3.6 and Exhibit A-3: <https://bpmcm.caiso.com/BPM%20Document%20Library/Reliability%20Requirements/BPM%20for%20Reliability%20Requirements%20Version%2054.docx>

2. Issue Paper: Maximum Import Capability Enhancements

As a result of the 2020 stakeholder process related to the Maximum Import Capability stabilization and multi-year allocation, the calculation of MIC has a more constant value across years (starting RA year 2021) and the Load Serving Entities (LSEs) are permitted to lock MIC at the branch group level based on multi-year executed RA import contracts (starting RA year 2022) under certain conditions.

During the stakeholder process last year stakeholders raised additional concerns and suggestions for improvements to the calculation of MIC as well as its allocation and tracking through the entire RA process. The ISO is opening this stakeholder process in order to explore those stakeholder concerns and suggestions. The ISO is not open to completely eliminating MIC or its allocation process, because the sum of the Total Transfer Capability (TTC) of each individual intertie is about 44,400 MW whereas MIC (simultaneous deliverability for all imports) is around 15,500 MW and the ISO control area cannot physically receive imports beyond the simultaneous limit.

The following are descriptions of some of the stakeholder suggestions during the previous initiative.

2.1. Technical issues related to MIC

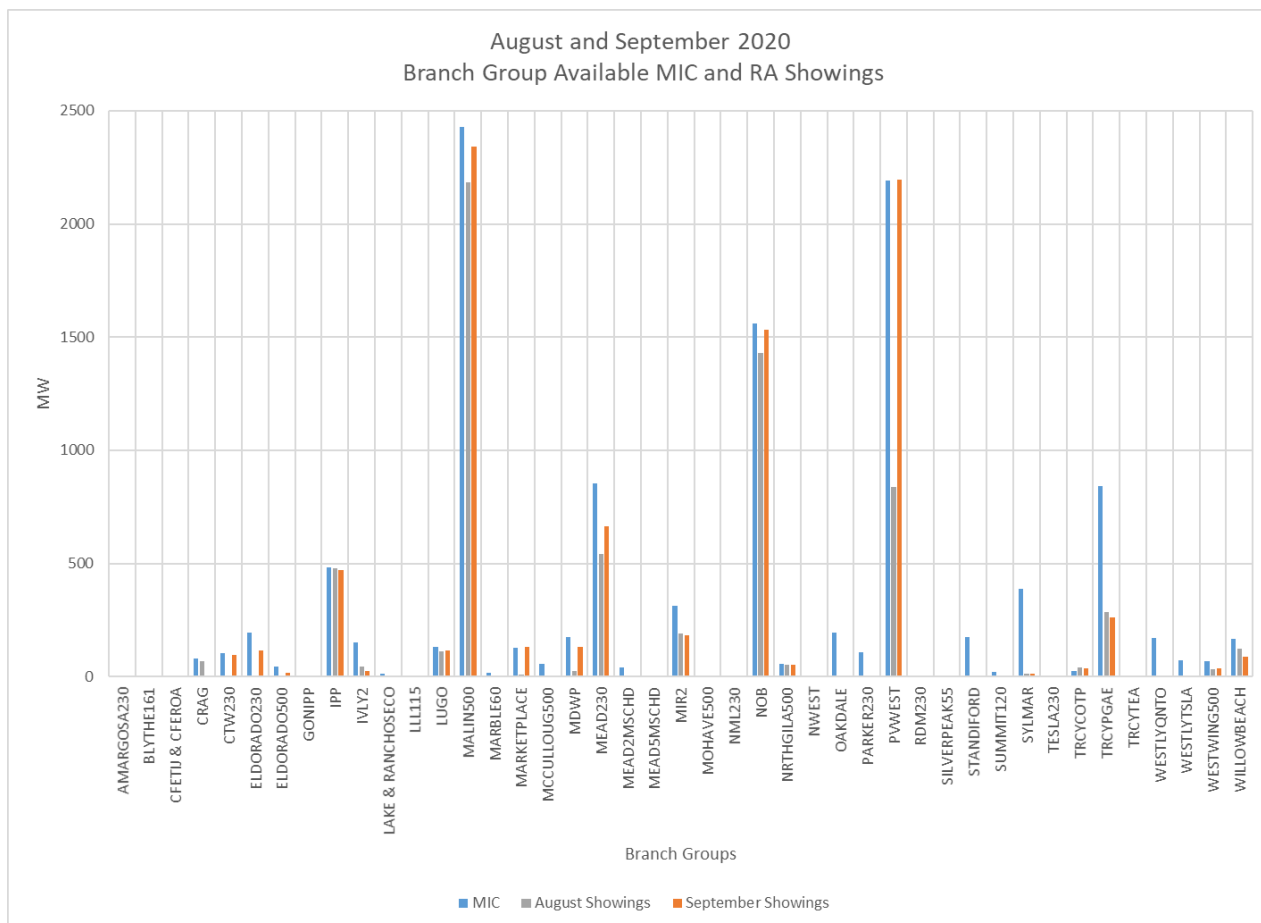
Change in methodology for calculating MIC:

Stakeholders suggested that there may be ways to improve the calculation by considering “liquidity” at certain branch groups (hubs) or considering the magnitude of RA showings. For example, branch groups

with high liquidity or high RA showings would be given additional MIC allocations in the next RA year and branch groups with low liquidity or low RA showings would have their allocations reduced in the next RA year. Figure 1 is a visual representation of the RA showings for the months of August and September 2020 in relation to the maximum import capability for each individual branch group and the discrepancy in RA showings usage between branch groups.

Challenges would arise from the fact that MIC is limited and if the allocation on a certain branch group is going up, another has to go down. Furthermore most branch groups have already reached their own deliverability limit, due to other ISO internal resources interconnecting in the same general area.

Figure 1: Highest RA showings in relation to MIC allocated to ISO internal LSEs



Conduct deliverability studies at the end of the RA showings process:

In order to avoid the MIC allocation process and to first allow LSEs to procure whatever RA imports they can, certain stakeholders suggested that the ISO should run deliverability studies at the end of the RA process after all RA import contracts are known.

Challenges would include leaving LSEs with stranded assets, requiring far more time for year-ahead showings validation and possibly having high ramifications on CPM back-stop costs allocations regarding

system RA. It is not possible to do these proposed deliverability studies in the month ahead process because deliverability studies take over one month to conduct.

2.2. Improve transparency

Enhance ownership transparency of Import Capability allocations and their usage as well as the provisions for reassignment, trading, or other forms of sales of Import Capability among LSEs:

The ISO remains open to changes that facilitate transparency regarding ownership of MIC allocations and its use, as well as increase LSE access to the trading of import capability.

The current process is transparent on each of the 13 steps of the MIC allocation process. The step by step data, including final allocation and bilateral trading, are published here:

<http://www.caiso.com/planning/Pages/ReliabilityRequirements/Default.aspx>

New Tariff language, as a result of the “Maximum Import Capability stabilization and multi-year allocation” stakeholder initiative, will also provide additional transparency by publishing relevant contractual data for resource contracts used to lock MIC at the branch group level on a multi-year basis.

Where transparency can be improved the most is during annual and monthly trading process and the actual usage after the showings are submitted and validated.

Improving the trading and usage aspect of the process may be necessary to better facilitate the transfer of Import Capability among LSEs and improve the efficient utilization of Import Capability.

2.3. MIC allocation issues

Incorporate an auction or other market based mechanism into the assignment process:

Stakeholders suggest that the ISO incorporate an auction or other market-based mechanism into the Available Import Capability Assignment process. They assert that this will provide alternatives or additional opportunities for LSEs to procure import capability greater than their pro-rata load ratio share of MIC on any given branch group/intertie to support a particular RA contract. Alternative mechanisms could allow for more efficient procurement of import capability by LSEs that place a greater value on the Import Capability for various reasons. The ISO could allocate all, or only a portion of the remaining Available Import Capability through a mechanism similar to the current process, but the ISO could retain all, or a portion of the remaining Available Import Capability, to be auctioned to or otherwise procured by LSEs. Additional auction revenues could potentially be used to reduce the TAC Transmission Revenue Requirement, or allocated back to LSEs on a pro-rata load share basis.

Challenges include the diminishing availability of year ahead Available Import Capability that needs to be allocated to LSEs after each LSE potentially exercises their right to lock multi-year Remaining Import Capability at the branch group level due to new RA contracts as established per last year’s stakeholder

process. Furthermore, there are significantly higher start-up and maintenance costs associated with such auctions as well as challenges regarding allocations of auction revenues.

Recapture and then release the unused MIC allocations:

Each LSE receives MIC allocations commensurate with their load share ratio and currently LSEs get to use them as they see fit. Some use them in the year-ahead timeframe, some in the month-ahead timeframe and some hold it for unit substitution (avoid RAAIM penalty).

Certain stakeholders suggest that unused allocations (after the month-ahead showings) should be recaptured and released to other LSEs.

Challenges arise from the fact that MIC is a traded commodity and a right that, once allocated, deserves just compensation. Additionally, some LSEs will not be able to avoid RAAIM. Furthermore, all LSEs need to be RA compliant by T-45 days (monthly showing), and LSEs will have an incentive to come short (be deficient in the monthly showing) in order to see if MIC gets released; otherwise a new timeline for all RA showings needs to be considered when time is set aside for the release of MIC every month before the showings are final.

2.4. Reservation of import capability and transmission for wheel-through transactions

The ISO initially considered exploring development of a process for establishing market scheduling priorities in the market through this initiative. However, after further consideration and stakeholder feedback, the ISO decided to remove this initiative and has launched a new initiative titled “*External Load Forward Scheduling Rights Process*” to develop a long-term framework for establishing market scheduling priorities for load, wheel through transactions, and exports.

Other stakeholder proposed changes and improvements:

Please provide other suggestions related to the calculation of MIC or its allocation and tracking through the RA process.

Stakeholder Comments Received on the Issue Paper Topics

The ISO has received comments from Bonneville Power Administration (BPA), Brookfield Renewable Trading and Marketing LP (BRTM), California Community Choice Association (CalCCA), California Municipal Utilities Association (CMUA), California Department of Water Resources (CDWR), California ISO Department of Market Monitoring (DMM), Imperial Irrigation District (IID), Morgan Stanley Capital Group Inc. (MSCG), Pacific Gas & Electric (PG&E), Powerex Corp., Southern California Edison (SCE), Six Cities, Southwestern Power Group (SWPG), Salt River Project (SRP), Silicon Valley Power (SVP), Valley Electric Association (VEA) and Vistra Corporation.

The majority of comments are related to the import transmission scheduling priorities and wheel-through issues. Based on stakeholder feedback received, the ISO has started a new initiative titled “External Load Forward Scheduling Rights” to develop a long-term framework for establishing scheduling priorities in the market for different types of transactions.

Comments received for the Resource Adequacy Maximum Import Capability allocation process itself can be split into two groups.

First the majority of stakeholders agree that it would be beneficial to have additional transparency during the allocation and trading process and especially to the ownership and usage (after the allocation process ends). Furthermore there were general requests for education regarding the deliverability process in general and specifically regarding import deliverability and its interaction with deliverability of internal resources.

Second where the received comments diverge among stakeholder classes and also diverge even within the same class of stakeholders. These items include (improvements to trading of MIC allocations, potentially augmenting MIC calculation to account for “liquidity”, potential release of MIC allocations if not used in the month ahead process (assuming RAIM is eliminated), etc.).

3. Straw Proposal: Maximum Import Capability Enhancements

The ISO intends to move forward immediately with MIC items where the majority of comments are aligned including additional transparency during the allocation and trading process, and particularly regarding ownership and usage (after the allocation process ends) as well as additional education related to deliverability of imports and its interrelation to the deliverability of internal resources.

The ISO also intends to further explore other items that have received divergent comments among stakeholder classes and also divergent comments even within the same class of stakeholders. For these, the ISO currently does not have a specific proposal. The intent is to allow stakeholders to rally their efforts behind certain improvement suggestions that can later have enough stakeholder support in order to become concrete proposals.

3.1. Improve transparency

Enhance ownership transparency of Import Capability allocations and their usage as well as the provisions for reassignment, trading, or other forms of sales of Import Capability among LSEs:

The ISO will move forward with changes that facilitate transparency regarding ownership of MIC allocations and their use as well as increase in LSE access to the trading of import capability.

The current process is transparent in each of the 13 steps of the MIC allocation process. The, step by step data, including final allocation and bilateral trading are published here:

<http://www.caiso.com/planning/Pages/ReliabilityRequirements/Default.aspx>

New Tariff language, proposed under the MIC stabilization and multi-year allocation initiative, will provide additional transparency by publishing relevant contractual data for resource contracts used to lock MIC at the branch group level on a multi-year basis.

Transparency can be improved the most during annual and monthly trading process and the actual usage after the showings are submitted and validated.

Improving the trading and usage aspect of the process may be necessary to better facilitate the transfer of Import Capability among LSEs and improve the efficient utilization of Import Capability.

3.2. Education regarding deliverability of imports and internal resources

A better understanding of overall deliverability determination can facilitate future improvements:

Stakeholders suggest that providing additional insight into the deliverability process and the interaction between internal resources and imports will support future improvements to the MIC process.

The ISO will provide details regarding its deliverability methodology through this stakeholder process.

Deliverability is an essential element of any resource adequacy assessment. LSE compliance with resource adequacy procurement obligations will be affected by the ability of their procured supplies to serve load under peak conditions. Therefore, an effective deliverability study is essential in resource planning so that LSEs are able to ‘count’ their resources to determine if they are satisfying the required Reserve Margins. The deliverability of generation (internal and external) to the aggregate of load measures the capability of the transmission system to deliver power output from a particular generator (or import) to load in the ISO control area during peak demand conditions. Any resource (internal or external) whose output is not fully deliverable will have the capacity that it may offer for resource adequacy purposes reduced. Internal generation capacity and imports are often behind the same transmission constraint therefore increasing import flows would require the internal generation output to be curtailed to maintain system reliability and compliance with mandatory reliability standards.

Consequently, ISO has developed a deliverability study² to assess deliverability of generation to serve load in the ISO control area. This deliverability assessment of generation (internal and external) to the aggregate of load is performed through both annual assessments to measure general system changes and for new generating facilities through the Generator Interconnection Deliverability Allocation Procedures³.

² <http://www.caiso.com/Documents/On-PeakDeliverabilityAssessmentMethodology.pdf>

³ <http://www.caiso.com/Documents/AppendixDD-GeneratorInterconnectionDeliverabilityAllocationProcedures-asof-Sep9-2020.pdf>

Deliverability assessments conducted by the ISO:

- Generation Interconnection Deliverability Allocation Procedures (GIDAP)
 - Phase I
 - Phase II
 - Operational deliverability assessment including annual NQC study
- Transmission Planning Process (TPP)
 - Policy study
- Distributed Generation Deliverability (DGD)

The GIDAP and DG Deliverability studies focus on internal generation. During these studies the deliverability of imports, as available per latest MIC calculation, is preserved. If it is found that there is insufficient transmission to support both the internal generation deliverability and the deliverability for imports then either new transmission upgrades are proposed, new internal generators will not receive their requested deliverability status, imports will be reduced, or NQC cuts are imposed.

The TPP deliverability assessment tests the deliverability of portfolio resources identified as FCDS. The deliverability of imports could be expanded if the current MIC is not sufficient to support out-of-state renewable resources in the portfolio. If it is found that the transmission is insufficient to support the base portfolio deliverability for both internal and external resources then policy-driven upgrades could be identified.

Deliverability assessments methodology study assumptions:

- Highest system need (HSN) scenario (peak sale) HE18 ~ HE22 in the summer

Load	1-in-5 peak sale forecast by CEC
Non-Intermittent Generators	Pmax set to QC
Intermittent Generators	Pmax set to 20% exceedance level during the selected hours (high net sale and high likelihood of resource shortage)
Import	MIC data with expansion approved in TPP.

The net schedules obtained from the MIC calculation plus approved expansion is enforced in the deliverability assessment by branch groups and since these are schedules, the actual flows (per Ohm’s law) on the branch groups won’t match perfectly however the total import on all branch groups matches the preserved deliverability very well.

Unused ETC/TOR for each branch group is represented as a generator at the tie point. Under normal conditions this generator “un-used ETC/TOR” does not inject power, however during contingency conditions the deliverability software turns it on if it is located within the 5% effectiveness region, exactly the same way it turns on all the other ISO internal resources (not already previously on-line in the initial base case).

- Secondary system need (SSN) scenario (peak consumption) HE15 ~ HE17 in the summer

Load	1-in-5 peak sales forecast by CEC adjusted by the ratio of highest consumption to highest sale
Non-Intermittent Generators	Pmax set to QC
Intermittent Generators	Pmax set to 50% exceedance level during the selected hours (high gross load and likely of resource shortage), but no lower than the average QC ELCC factor during the summer months
Import	Import schedules for the selected hours

Currently known transmission impacts for deliverability of both internal resources and imports:

Deliverable capacity for both internal resources and imports is often behind the same transmission constraint. Increasing either import flows or internal generation output will require a curtailment from the other in order to maintain system reliability and compliance with mandatory reliability standards

Transmission Constraint	Branch Group	Generator Zone inside ISO
Desert Area Constraint: Lugo - Victorville, Lugo - Eldorado, Lugo - Mohave 500kV line overloads	NOB_BG SYLMAR-AC_MSL Lugo-Victorville_BG ELDORADO_MSL LAUGHLIN_BG MCCULLGH_MSL MEAD_MSL PARKER_BG PALOVRDE_MSL	VEA & GLW Mountain Pass Big Creek and Ventura
Desert Area Constraint: Valley - Alberhill - Serrano 500kV and West of Devers 230kV line overloads	PALOVRDE_MSL BLYTHE_BG IID-SCE_BG	Riverside East Palm Springs
Delevan 500KV Area constraint	COI_BG CASCADE_BG	North of Greater Bay Area PGE generation
Delevan 500KV Area constraint, Rio Oso and Davis Area Constraints	SUMMIT_BG	North of Greater Bay Area PGE generation
East of Miguel	PALOVRDE_MSL IID-SDGE_BG NGILABK4_BG	Imperial Arizona Baja Riverside East
Encina-San Luis Rey	CFE_BG PALOVRDE_MSL IID-SDGE_BG NGILABK4_BG	San Diego Arizona Baja
Imperial Valley transformer	IID-SDGE_BG	Imperial

San Luis Rey-San Onofre	CFE_BG PALOVRDE_MSL IID-SDGE_BG NGILABK4_BG	San Diego Arizona
San Diego Internal	CFE_BG IID-SDGE_BG	San Diego
Silvergate-Bay Boulevard	CFE_BG IID-SDGE_BG	San Diego Baja

Deliverability retention:

Deliverability is only maintained for internal resources and imports commensurate with their capability to serve aggregate of peak load. The deliverability retention is limited in duration.

Internal resources (3 years +):

A generating unit must operate or be capable of operating at the capacity level associated with its rated deliverability to retain its deliverability rights. To the extent a generating unit becomes incapable of operating at this level for any consecutive three-year period, the generating unit will lose its deliverability priority in an amount reflecting the loss of generating capability. The holder of the deliverability priority may retain its rights after the expiration of the three-year period if it can demonstrate that it is actively engaged in the construction of replacement generation to be connected at the bus associated with the deliverability priority. Under such circumstances, the generating unit developer and ISO will identify specific milestones to preserve the deliverability priority. The holder of the deliverability priority will retain only such rights that are commensurate with the size in megawatts of the replacement generation, not to exceed the amount associated with the prior generating unit’s deliverability priority.

Import deliverability (up to 5 years):

The current methodology for calculating MIC at the branch group level uses two years, with the highest import scheduled data, among the last five.

3.3. Other issues that require further exploration

Change in methodology for calculating MIC:

No specific stakeholder suggestion has been received that improves the calculation by, for example, the consideration of “liquidity” at certain branch groups (hubs) or considering the magnitude of RA showings. In order to move forward, a relative agreement should be reached on how “liquidity” is measured at each intertie and how it may be superior compared to the current use of “actual energy schedules”. Otherwise, a methodology may be proposed to look at actual RA showings for each branch group vs. the MIC allocations available on that same branch group and how would that be superior compared to the current use of “actual energy schedules”.

Conduct deliverability studies at the end of the RA showings process:

Stakeholder opinions are divergent on this issue even within the same stakeholder group.

Based on experience, the ISO tends to agree with certain stakeholders comments that, due to the length of studies required for RA validation and the financial challenges presented, including leaving LSEs with stranded assets and having high ramifications on CPM back-stop costs allocations regarding system RA, this change will not result in an overall improvement of the RA process.

Incorporate an auction or other market based mechanism into the assignment process:

Stakeholders' opinions are divergent regarding the incorporation of an auction or other market based mechanism into the Available Import Capability Assignment process.

The auction could provide alternatives or additional opportunities for LSEs to procure import capability greater than their pro rata load ratio share of MIC on any given branch group/intertie to support a particular RA contract in possibly more efficient and transparent manner. However its challenges are high and include the diminishing availability of year-ahead Available Import Capability that needs to be allocated to the LSEs (after each LSE may exercise its right to lock multi-year Remaining Import Capability at the branch group level), significant start-up and maintenance costs as well as allocations of auction revenues.

Recapture and then release the unused MIC allocations:

Most stakeholders agree that unused MIC allocations should be released or otherwise made available to other LSEs that want to use them. However, there is no stakeholder agreement of when and how the unused MIC allocations are released or made available and how another LSE may receive and use them.

Challenges, to be solved, arise from the fact that MIC is a traded commodity and a right that, once allocated, deserves just compensation. Furthermore, in the context of unused MIC that may be released to other parties, the implementation could only happen after the elimination of RAAIM and will require a new, longer than T-45, timeline for at least the RA import showings (if not all RA showings), else the released MIC allocations will be of no use to any other LSE. Nevertheless, there may be an opportunity for LSEs holding MIC to further consider making MIC available for bilateral trading to the extent they do not plan to fully utilize their MIC in particular monthly RA showings. The ISO can consider ways of further facilitating the ability of parties to identify and make available their MIC for bilateral trading.

Other stakeholder proposed changes and improvements:

Please provide other suggestions related to the calculation of MIC or its allocation and tracking through the RA process.

Stakeholder Comments Received on the Straw Proposal Topics

The ISO has received comments from Birch Infrastructure, California Community Choice Association (CalCCA), California Department of Water Resources (CDWR), California ISO Department of Market Monitoring (DMM), Large-scale Solar Association (LSA) and Solar Energy Industry Association (SEIA), Pacific Gas & Electric (PG&E), Southern California Edison (SCE), Six Cities, Southwestern Power Group (SWPG), Pattern Energy (Pattern) and Valley Electric Association (VEA) as well as Silicon Valley Power (SVP).

The majority of stakeholders agree that it would be beneficial to have additional transparency during the allocation and trading process and especially to the ownership and usage (after the allocation process ends). Furthermore there were general requests for education and potential improvements regarding expansion of maximum import capability (import deliverability) overall and at the branch group (BG) level. Stakeholder have also proposed improvements to step 13 of the allocation process as well as clarifications and clean-up of language in the Tariff and Business Practice Manual regarding the use of two decimal points for all RA requirements, transactions and showings.

Comments received regarding potentially augmenting MIC calculation to account for “liquidity” where mostly positive however they failed to improve the technical shortcomings required for implementation.

Comments received for introduction of an auction mechanism, potential release of MIC allocations if not used in the month ahead process and running deliverability studies at the end of the process where either divergent among stakeholders or mostly against their introduction.

4. Revised Straw Proposal: Maximum Import Capability Enhancements

The ISO intends to move forward immediately with MIC items where the majority of comments are aligned including additional transparency during the allocation and trading process, and particularly regarding ownership and usage (after the allocation process ends) as well as additional education related to deliverability of imports and its interrelation to the deliverability of internal resources.

The ISO intends to further explore other items that have received divergent comments among stakeholder classes and also divergent comments even within the same class of stakeholders. For these, the ISO currently does not have a specific proposal. The intent is to allow stakeholders to rally their efforts behind certain improvement suggestions that can later have enough stakeholder support in order to become concrete proposals.

4.1. Improve transparency

Enhance ownership transparency of Import Capability allocations and their usage as well as the provisions for reassignment, trading, or other forms of sales of Import Capability among LSEs:

The ISO will move forward with changes that facilitate transparency regarding ownership of MIC allocations and their use as well as increase in LSE access to the trading of import capability.

Beyond transparency already available during the allocation process the ISO proposes to provide additional transparency by:

- Making data publically available through a web interface (or publishing) by identifying the most-up-to-date owners of all MIC allocations at the branch group level – including MW quantity, contact person and other user friendly fields like “MWs available for trade”. If possible this improvement will be facilitated directly in Customer Interface for Resource Adequacy (CIRA).
- Making data publically available through a web interface (or publishing) aggregate usage by branch group level after validation of each month ahead and year ahead RA showing. (Question to stakeholders: Should the aggregation be by CPUC vs Non-CPUC jurisdictional LSEs or just a single aggregated number for all LSEs?)

Improving both the trading and the usage aspect of the process is necessary to better facilitate the transfer of Import Capability among LSEs and improve the efficient utilization of Import Capability.

4.2. Education regarding deliverability of imports and internal resources

A better understanding of overall deliverability determination can facilitate future improvements:

At stakeholders’ request, the ISO has provided additional insight into the deliverability process and the interaction between internal resources and imports in order to support future improvements to the MIC process (see chapter 3.2 above). Please include in your comments additional educational topics you would like covered.

4.3. Maximum Import Capability expansion

Based on stakeholder comments received during the call as well as in writing this is a major topic that needs to be further explained and improved upon. The ISO will list current and potential future ways to increase MIC.

Natural MIC expansion:

Because the MIC calculation includes actual schedules there is an imbedded (natural) MIC expansion. When the “new schedule” at a given intertie – part of one or both of the top two years – is higher than the “old schedule” from a previous high year that was removed from the calculation, then a natural MIC expansion is observed. The natural MIC expansion generally lags the actual schedules by minimum one year.

Policy driven MIC expansion:

Per ISO Tariff, every year the ISO takes the main portfolio provided by the California PUC and checks to assure that the state and federal policy goals are met by assuring that there is enough unlocked Remaining Import Capability (RIC) to account for all new projected import contracts. Since the portfolio is provided at the “state” and/or “renewable area” level (not at a branch group level) the ISO assumes that future import RA contracts will split among all the branch groups that can be scheduled on from those respective states and renewable areas as dictated by currently available and unlocked Remaining Import Capability.

If the currently available (unlocked) RIC has enough room for all the new (expected) import RA contracts identified as using existing transmission then no MIC increase is required for those resources. If there is not enough room for all the new import RA contracts identified as using existing transmission then MIC expansion is required. MIC expansion is also required for new import RA contracts identified as using new transmission. If MIC expansion is required then deliverability studies are run in order to validate that the new “expanded” MIC is deliverable to the ISO aggregate of load. If the deliverability studies show that there is enough deliverability available then MIC will be increased in the upcoming years in accordance with the CPUC base portfolio and guided by LSE contractual arrangements. If deliverability is not available then new transmission projects are proposed and approved in order for the MIC expansion to take place. In this case the expansion of MIC has to wait until after the transmission projects are in-service.

Based on stakeholder input and discussions the current process has at least three distinct areas that need improvement:

1. Inclusion of contractual data from non-CPUC jurisdictional LSEs:

The CPUC use of macroeconomic and renewable information data to estimate future contractual development may not coincide with actual contracts signed by LSEs, resulting in disconnect between the main portfolio studied and actual contracts. This information seems to be of little consequence for CPUC jurisdictional LSEs for two reasons – CPUC can approve or deny accepting new contractual arrangements and when accepted the new contracts can immediately be accounted for in the next release of the main CPUC portfolio. However this discrepancy is exacerbated for non-CPUC jurisdictional LSEs because the CPUC does not have direct visibility into non-jurisdictional contractual arrangements and the non-jurisdictional LSE are reluctant to make such data available directly to the CPUC.

Proposed solution is to have the ISO collect such data and to make it available to the CPUC for preparation of the main portfolio. This approach is preferred over ISO “changing” or “augmenting” of the CPUC main portfolio since the ISO does not have visibility on what part of the main portfolio needs to be subtracted to make room for the actual non-CPUC jurisdictional contracts.

2. Future “state” and/or “renewable area” totals vs branch group split of actual RA import contracts:

The CPUC main portfolio is prepared years ahead of actual compliance and as such the exact scheduling branch groups are not known. The ISO assumes that LSEs will use the currently available (unlocked) RIC for all branch groups coming from the respective state or renewable area.

A few years later the RA import contracts do not split in the same manner as assumed and that results in certain branch groups being oversubscribed and other being undersubscribed. Currently the ISO cannot increase a single branch group unless specifically required by the main CPUC portfolio.

Starting this year the LSEs have an opportunity to obtain multi-year reservation of their MIC allocations at certain branch groups based on their new contracts. This problem should be avoided and/or self-correcting on a going forward basis if the LSEs first get the unlocked RIC at the desired branch group before signing new RA import contracts with dynamic scheduled or pseudo-tie resources. Then with the two in place they can obtain a multi-year reservation on that branch group and since this information is public the rest of the LSEs will have to adjust their procurement (or schedules) to other branch groups where unlocked RIC is still available.

3. LSE requests to increase import capability at specific branch groups:

Based on current Tariff, the ISO does not take individual or collective LSE requests for increase in import capability at any given branch group. (See next paragraph.)

MIC expansion requests:

As demonstrated by the stakeholder comments received herein, the ISO has received inquiries from LSEs, generation and transmission developers with projects in other BAAs about processes to increase MIC to support internal and external LSEs long-term capacity and transmission contracts to deliver generation to serve load and meet the Resource Adequacy obligations as such there is a need to provide an avenue for such requests. If implemented such requests should be made available to the entire stakeholder community. This process will require new Tariff language and should include an opportunity for the requesting party to pay for required upgrades.

In order to limit the amount of studies and queued requests, the ISO envisions that only stakeholders with legitimate reasons will be allowed to make such requests for MIC expansion. Some of the legitimate reasons could be:

- Existing RA import contract (internal LSEs).
- Owners of new transmission connecting to the ISO grid from an external Balancing Authority Area (BAA) – if not already covered under policy driven MIC expansion.

The request to study a potential MIC increase does not convey any special rights during market scheduling, market operation or during the annual MIC allocation process. After studies are complete these requests can result in an increase in MIC if and when deliverability is available.

If studies show that deliverability is not available, the request for MIC expansion is denied. When a request is denied the original requestor may choose to pay for a facility study that will specify what upgrades, including their cost, are required in order to facilitate the requested MIC expansion. After the release of the facility study, the ISO will have the first choice of moving the project forward if it considers it economic or in the best interest of the ISO ratepayers and in this case it will reimburse the

facility study cost to the original requestor, else the requestor will be given the choice to pay for the upgrades required for MIC expansion. If the requestor chooses to pay for the upgrades, without reimbursement, then the increase in MIC will be assigned to the requestor after the required facilities are in-service.

Any MIC expansion paid for by ISO ratepayers will be allocated to all LSEs based on the allocation methodology available.

The framework and process to submit request for customer-paid transmission upgrades, when MIC expansion at ratepayer cost is denied, as well as the rights conveyed to the paying customer related to the increase in transmission system capabilities to support transactions into and across the ISO will be considered in the larger context of other current initiatives or potentially a new stakeholder initiative.

4.4. Step 13 - Give priority to existing RA contracts

Same day priority to remaining unallocated Remaining Import Capability for LSEs with existing RA contracts:

Based on stakeholder comments received during the call as well as in writing the ISO moves forward with the proposal to give LSEs with existing RA contracts priority vs. all other stakeholder requests during step 13 of allocation process among all requests received during the same day. The priority relates only to the BG where the existing RA contract is being scheduled.

The RA contract shown for step 13 may not be the same as a contract already “fully utilized” as Pre-RA Import Commitment or New Use Import Commitment. An LSE may use a Pre-RA Import Commitment or New Use Import Commitment if it did not receive a “full allocation” under those terms and it may use it only for the part (MWs) that was denied the Pre-RA Import Commitment or New Use Import Commitment status. Example: For one reason or another only 40 MW of a 50 MW contract was approved as New Use Import Commitment. The remaining 10 MW can be submitted as RA contract for step 13 priority.

The MW assignment under step 13 may not exceed the amount left after step 12 regardless of the amount of the RA contracts shown. If two or more LSEs have RA contracts that exceed the amount left after step 12 on any given BG, then the assignment will go to the request received first (earliest) and so on until all MWs have been assigned.

4.5. Tariff and Reliability Requirements BPM alignment of terms

Update Tariff and Reliability Requirements BPM language to be consistent with current FERC approved practice – all RA requirements, transactions and showings are done to two decimal places:

ISO will go through the Tariff and Reliability Requirements BPM language in order to eliminate inconsistencies with current practice of using two decimal places for all RA requirements, transactions

and showings. One example is language in section 40.4.6.2.2.2 that appears to limit bilateral MIC transfers to MW increments.

4.6. Other issues that require further exploration

Change in methodology for calculating MIC:

ISO is willing to further explore improvements to the calculation of maximum import capability. For example, the consideration of “liquidity” at certain branch groups (hubs) or considering the magnitude of RA showings. However, in order to move forward, a relative agreement should be reached on how “liquidity” is measured at each intertie. Else, a different methodology could be considered in order to improve the MIC calculation that looks at actual RA showings for each branch group vs. the MIC allocations available on that same branch group. Either methodology needs to be proven superior to the current use of “actual energy schedules”.

Conduct deliverability studies at the end of the RA showings process:

ISO will not move forward with moving deliverability studies at the end of the RA process because of the length of studies required for RA validation and the financial challenges presented, including leaving LSEs with stranded assets and having high ramifications on CPM back-stop costs allocations regarding system RA, this change will not result in an overall improvement of the RA process.

Incorporate an auction or other market based mechanism into the assignment process:

The ISO will not move forward with incorporation of an auction into the assignment process because the diminishing availability of year-ahead Available Import Capability that needs to be allocated to the LSEs (after each LSE may exercise its right to lock multi-year Remaining Import Capability at the branch group level), significant start-up and maintenance costs as well as allocations of auction revenues.

Recapture and then release the unused MIC allocations:

ISO believes that improved trading facilitated by the items proposed under improved transparency should mitigate most of the concerns around unused and untraded import capability, therefore it will not move forward with recapture and release of unused MIC allocations at this time.

Other stakeholder proposed changes and improvements:

Please provide other suggestions related to the calculation of MIC or its allocation and tracking through the RA process.

Stakeholder Comments Received on the Revised Straw Proposal Topics

The ISO has received comments from ACP-California, California Community Choice Association (CalCCA), California Department of Water Resources (CDWR), California ISO Department of Market Monitoring (DMM), Northern California Power Association (NCPA), Pacific Gas & Electric (PG&E), Salt River Project

(SRP), Shell Energy, Southern California Edison (SCE), Six Cities, Southwestern Power Group (SWPG), Pattern Energy (Pattern) and Valley Electric Association (VEA) as well as Silicon Valley Power (SVP).

The majority of stakeholders agree that it would be beneficial to have additional transparency during the allocation and trading process and especially to the ownership and usage (after the allocation process ends).

The majority of the comments received are in favor of allowing expansion requests of maximum import capability (import deliverability) overall and at the branch group (BG) level. The ISO will provide further details to the MIC expansion process in the draft final proposal.

Overwhelming majority of stakeholders prefer MW requested vs. MW available to be the tiebreaker among LSEs with RA contracts if there is more than one LSE with RA contracts at any remaining branch group under step 13.

Majority of stakeholders agree that clarifications and clean-up of language in the Tariff and Business Practice Manual should be undertaken for the appropriate sections.

5. Draft Final Proposal: Maximum Import Capability Enhancements

The ISO intends to move forward immediately with MIC items where the majority of comments are aligned including additional transparency regarding ownership of MIC allocations and their usage (after the allocation process ends) as well as maximum import capability expansion requests, improvements to step 13 requests and Tariff and Business Process Manual clean-up items.

The ISO will not move forward with items that have received divergent comments among stakeholder classes and also divergent comments even within the same class of stakeholders. These items could be revisited in future years especially if the current improvements do not yield the expected results.

5.1. Improve transparency

Enhance ownership transparency of Import Capability allocations and their usage as well as the provisions for reassignment, trading, or other forms of sales of Import Capability among LSEs:

The ISO will move forward with changes that facilitate transparency regarding ownership of MIC allocations and their use in RA showings. The ISO believes this will increase all market participants' access to the trading of import capability and that in turn would result in more trades.

Beyond transparency already available during the allocation process the ISO proposes to provide additional transparency by:

- Making data publically available through a web interface (or publishing) by identifying the most-up-to-date owners of all MIC allocations at the branch group level, including:

- LSE name and LSE ID
- MW quantity of MIC allocation by branch group
- MW quantity available for trade by branch group – the SC will be able to change this
- Contact data (name, e-mail, phone number) – the SC will be able to change this

If possible this improvement will be facilitated directly through a public interface for Customer Interface for Resource Adequacy (CIRA) else OASIS or another publically available space on the ISO website will be used.

- Making data publically available through a web interface (or publishing) aggregate usage by branch group level after validation of each month ahead and year ahead RA showing. The aggregation will show 3 values:
 - Total overall RA showings for all ISO internal LSEs plus totals by each branch group
 - Same data for CPUC jurisdictional LSEs
 - Same data for non-CPUC jurisdictional LSEs

Improving both the trading and the usage aspect of the process is necessary to better facilitate the transfer of Import Capability among LSEs and improve the efficient utilization of Import Capability.

5.2. Inclusion of contractual data from non-CPUC jurisdictional LSEs into the policy portfolio used for MIC expansion

As required by the ISO Tariff, the CPUC currently provides the policy portfolios required for policy driven MIC expansion. The portfolios contain enough new resources to meet the needs of both CPUC as well as non-CPUC jurisdictional LSEs. Because the portfolios are mainly driven by macroeconomic and renewable information data to estimate future contractual development they may not coincide with actual contracts signed by LSEs, resulting in disconnect between the portfolios studied and actual contracts.

This discrepancy is exacerbated for non-CPUC jurisdictional LSEs because the CPUC does not have direct visibility into non-jurisdictional contractual arrangements and the non-jurisdictional LSE are reluctant to make such data available directly to the CPUC.

Non-CPUC jurisdictional LSEs have raised concerns about confidentiality of data shared by the ISO with the CPUC. The ISO will collect such data from RA contracts that are not already publically available every year in the list of ETCs, TORs, Pre-RA Import Commitments and New Use Import Commitments. For example: <http://www.caiso.com/Documents/Step6-2022ContractualData.xlsx>

The ISO is planning to share with the CPUC (not publically post) the same type of data: Name of the LSEs, branch group, MWs under RA contract, expiration date. Question to stakeholders: is confidentiality a concern regarding this data? What can be done to minimize or eliminate confidentiality concerns?

5.3. Maximum Import Capability expansion requests

The ISO is proposing herein to allow individual LSEs and other stakeholders to request the increase in import capability at any given branch group.

Ratepayer funded expansions or upgrades:

In order to limit the amount of studies and queued requests, only stakeholders with legitimate reasons and financial commitments towards serving ISO internal load will be allowed to make such requests for MIC expansion. Legitimate reasons to make MIC expansion request:

- Existing RA import contract (internal LSEs), not already fully accounted for as Pre-RA import Commitment or New Use Import Commitment.
- Owners of new transmission connecting to the ISO grid from an external Balancing Authority Area (BAA) or connecting into the neighboring BAA immediately adjacent to the ISO grid.
- Other stakeholders that can contractually demonstrate financial commitments towards serving ISO internal load.

The ISO will coordinate these MIC expansion requests with the policy driven MIC expansion and they will affect all branch groups that do not have enough Remaining Import Capability to cover the stakeholder requests along with the policy driven MIC expansion requests.

The request to study a potential MIC increase does not convey the requestor any special rights during market scheduling, market operation or during the annual MIC allocation process. All ratepayer funded expansions are allocated to ISO internal LSEs based on the Tariff approved methodology.

After deliverability studies are complete these requests can result in an increase in MIC if and when deliverability is available. Deliverability increase for imports (MIC increase) needs to be coordinated and queued in with internal generation deliverability requests that come through the queue. The same way internal generation can have “Interim Deliverability” status, import deliverability can be increased temporarily on certain branch groups before other higher queued resources become operational.

The ISO may choose to move forward with upgrades required to make these MIC expansion requests deliverable given that the project is either economic and/or required to meet other reliability or policy reasons as currently authorized by the ISO Tariff.

If studies show that deliverability is not available, and the ISO does not find the required upgrade to be economic or otherwise needed for policy or reliability then the request for MIC expansion is denied.

Customer funded expansions or upgrades – NOT PART OF THIS INITIATIVE:

ISO agrees in principle that it could provide an opportunity for the requesting party to pay for required studies and upgrades.

When a request is denied the original requestor may choose to pay for a facility study that will specify what upgrades, including their cost, are required in order to facilitate the requested MIC expansion. After the release of the facility study, the ISO will have the first choice of moving the project forward if it considers it economic or required to meet policy/reliability for all ISO ratepayers and in this case it will reimburse the facility study cost to the original requestor, else the requestor will be given the choice to pay for the upgrades required for MIC expansion. If the requestor chooses to pay for the upgrades, without reimbursement (and without TAC recovery), then the increase in MIC will be assigned to the requestor after the required facilities are in-service.

The framework and process to submit request for customer-paid transmission upgrades, when MIC expansion at ratepayer cost is denied, as well as the rights conveyed to the paying customer related to the increase in transmission system capabilities to support transactions into and across the ISO will be considered in the larger context of other current initiatives or potentially a new stakeholder initiative.

5.4. Step 13 – Same day priority to existing RA contracts

The ISO moves forward with the proposal to give LSEs with existing RA contracts priority vs. all other stakeholder requests during step 13 of the MIC allocation process among all requests received during the same day. The priority relates only to the branch group where the existing RA contract is being scheduled.

The RA contract shown for step 13 may not be the same as a contract already “fully utilized” as Pre-RA Import Commitment or New Use Import Commitment. An LSE may use a Pre-RA Import Commitment or New Use Import Commitment if it did not receive a “full allocation” under those terms and it may use it only for the part (MWs) that was denied the Pre-RA Import Commitment or New Use Import Commitment status. Example: For one reason or another only 40 MW of a 50 MW contract was approved as New Use Import Commitment. The remaining 10 MW can be submitted as RA contract for step 13 priority.

The requesting LSE must submit proof of the RA contract by filling in the appropriate fields of a New Use Import Commitment template (already available on the ISO web site), along with the step 13 request.

The MW assignment under step 13 may not exceed the amount left after step 12 regardless of the amount of the RA contracts shown. If two or more LSEs have RA contracts that exceed the amount left after step 12 on any given BG, then the assignment will be split among the applicable contracts on a MW requested vs. MW available bases.

Example: LSE A has an RA contract on the requested branch group for 200 MW and LSE B has an RA contracts for the same branch group of 50 MW. The remaining MWs total 100 MW. The ratio of MW available vs. MW requested is $100/250$ or 0.4 . Each LSE will get 40% of what they have requested: LSE A $200 \times 0.4 = 80$ MW and LSE B $50 \times 0.4 = 20$ MW.

5.5. Tariff and Reliability Requirements BPM alignment of terms

Update Tariff and Reliability Requirements BPM language to be consistent with current FERC approved practice.

The ISO will go through the Tariff and Reliability Requirements BPM language in order to eliminate inconsistencies with current practice.

One example is language in section 40.4.6.2.2.2 that appears to limit bilateral MIC transfers to MW increments, when in fact all RA requirements, transactions and showings (including transfers) are done using two decimal places.

Another example is in the same section 40.4.6.2.2.2 of the Tariff that suggest the ISO submits quarterly trading data directly to FERC when in fact trading data is publically posted for all stakeholders to see and use.

5.6. Other issues

At this time the ISO is not moving forward with other items discussed in the previous iteration of this stakeholder engagement. Future stakeholder engagements regarding Maximum Import Allocation may address some or all the items not addressed herein.

6. Stakeholder Engagement and EIM Governing Body Role

Stakeholder input is critical in both identifying potential shortcoming in the current calculation of maximum import capability, its allocation and tracking as well as improvements to the process. The schedule proposed below allows opportunity for stakeholder involvement and feedback.

This initiative will not require a briefing to EIM Governing Body. The real-time priority of RA imports and wheel-through schedules has been moved into a new and separate ISO stakeholder process. The changes to the MIC calculation methodology requires changes to the Reliability Requirements Business Process Manual (RRBPM) whereas changes to the allocation process will need to be approved by the ISO Board of Governors before changes to the ISO Tariff need to be approved by the Federal Energy Regulatory Commission (FERC).

6.1. Schedule

Table 3 lists the proposed schedule for the updates to the Maximum Import Capability enhancements process.

Table 3: Schedule for Maximum Import Capability enhancements process

Item	Date
Post Issue Paper	March 11, 2021
Stakeholder Call	March 18, 2021
Stakeholder Comments Due	April 1, 2021
Post Straw Proposal	May 6, 2021
Stakeholder Meeting	May 13, 2021
Stakeholder Comments Due	May 27, 2021
Post Revised Straw Proposal	August 4, 2021
Stakeholder Meeting	August 11, 2021
Stakeholder Comments Due	August 25, 2021
Post Draft Final Proposal and Draft Tariff Language	September 13, 2021
Stakeholder Call	September 20, 2021
Stakeholder Comments Due	October 4, 2021
Post Final Proposal	October 11, 2021
Stakeholder Call	October 18, 2021
ISO Board of Governors Meeting	November 3-4, 2021

The ISO proposes to present its proposal to the ISO Board of Governors in November 2021. The ISO is committed to providing many opportunities for stakeholder input into its market design, policy development, and implementation activities. Stakeholders should submit written comments using the ISO’s commenting tool.

6.2. Next Steps

The ISO will discuss the Draft Final Proposal during the stakeholder call on September 20, 2021. The ISO requests stakeholders submit written comments in response to the Maximum Import Capability enhancement process draft final proposal and stakeholder call by October 4, 2021.