

Comments on Transmission Service and Market Scheduling Priorities - Phase 2

Draft Tariff Language

Department of Market Monitoring

May 10, 2023

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Section 23

23. ~~Categories of~~ Transmission Capacity

23.1 Categories of Transmission Capacity

References to new firm uses shall mean any use of CAISO transmission service, except for uses associated with Existing Rights or TORs. Prior to the start of the Day-Ahead Market, for each Balancing Authority Area Transmission Interface, the CAISO will allocate the forecasted Total Transfer Capability of the Transmission Interface to four categories. This allocation will represent the CAISO's best estimates at the time, and is not intended to affect any rights provided under Existing Contracts or TORs. The CAISO's forecast of Total Transfer Capability for each Balancing Authority Area Transmission Interface will depend on prevailing conditions for the relevant Trading Day, including limiting operational conditions. This information will be posted on OASIS in accordance with this CAISO Tariff. The four categories are as follows:

- (a) transmission capacity that must be reserved for firm Existing Rights;
- (b) transmission capacity that must be allocated for use as CAISO transmission service, including Priority Wheeling Through transactions (i.e., "new firm uses");
- (c) transmission capacity that may be allocated by the CAISO for conditional firm Existing Rights; and
- (d) transmission capacity that may remain for any other uses, such as non-firm Existing Rights for which the Responsible PTO has no discretion over whether or not to provide such non-firm service.

23.2 Accessing Available Transfer Capability

This section applies to requests for Available Transfer Capability (ATC) that will be awarded for dates beginning June 1, 2024 and thereafter.

23.2.1 General Requirements to For Monthly or Daily Wheeling Through Priority Requests

Scheduling Coordinators may obtain a monthly or daily Wheeling Through Self-Schedule priority under the process in this Section 23. A Scheduling Coordinator can request a Wheeling Through priority for a given month(s) up to twelve (12) months before the month for which it seeks the priority and for a day(s) up to seven (7) days before the day for which it seeks a priority. To be eligible for a Wheeling Through priority for a month(s) or day(s), the Scheduling Coordinator must submit a Priority Wheeling Through request and attest to the following: (1) the Priority Wheeling Through request is supported by an executed firm power supply contract to serve external load, a firm power supply contract to serve external load where execution is contingent upon the availability of Wheeling Through scheduling priority on the CAISO system, or ownership of a resource to serve external load; (2) the MW quantity of the firm power supply contract with a Load Serving Entity supporting the request and the Scheduling Points to which the Energy will be imported to and exported from the CAISO Controlled Grid; (3) the start and end dates of the contract and the specific hours during the month or day covered by the power supply contract and for which the Scheduling Coordinator seeks a Wheeling Through priority; (4) all eligibility requirements to support a monthly or daily Wheeling Through priority have been met; and (5) whether the Scheduling Coordinator is willing to accept a pro rata allocation of capacity, or an award of only part of its request, if the result of the monthly or daily request window process in Sections 23.4 and 23.5, respectively, is that there is insufficient ATC to accommodate the entire request, because of a tie among competing requesters or for some other reason.

Scheduling Coordinators cannot seek, and the CAISO will not award, a monthly or daily Wheeling Through priority for a period greater than the hours of the underlying firm power supply contract. Thus, for any month or day, an awarded priority for Wheeling Throughs will only apply during the hours of the underlying power supply contract and no other hours. For example, if the supporting power supply contract is a six (6)-days-by-sixteen (16)-hours contract, the priority will only apply to Wheeling Through Self-Schedules that the Scheduling Coordinator schedules during those specified hours. The minimum

Commented [A1]: Are there clearly specified requirements in tariff beyond the attestations noted here?

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duration of any power supply contract that can support a monthly or daily Wheeling Through priority is specified in Sections 23.4 and 23.5, respectively. Wheeling Through Self-Schedules that obtain a priority will be considered Priority Wheeling Throughs. All other Wheeling Throughs without a priority will be considered non-Priority Wheeling Throughs. Priority Wheeling Throughs will have a priority equal to CAISO Demand as set forth in Sections 31.4, 34.12.1, and 34.12.2.

23.2.2 Nature of a Wheeling Through Priority

A Wheeling Through priority does not convey a physical transmission right and is not a physical reservation of transmission service. A Wheeling Through priority only accords a priority when a Scheduling Coordinator actually schedules a Wheeling Through transaction on a given day (as new firm use). If a Scheduling Coordinator does not actually schedule a Wheeling Through on a given day, the Wheeling Through priority is inapplicable.

23.2.3 Termination or Modification of Firm Power Supply Agreement Underlying a Monthly or Daily Priority Wheeling Through

If the firm power supply contract supporting the Wheeling Through priority is terminated for any reason or is modified such that the quantity, import point, or export point changes, the Scheduling Coordinator with a monthly or daily Wheeling Through priority must notify the CAISO immediately. If termination of the supporting firm power supply contract occurs before the priority has taken effect, the Wheeling Through priority will terminate. If the quantity of the supporting firm power supply contract is reduced, the MW amount of the Wheeling Through priority will be reduced correspondingly unless the Scheduling Coordinator can demonstrate a replacement contract for the same MW quantity, and can demonstrate a Scheduling Point where the energy is to be imported to the CAISO and a Scheduling Point where the energy is to be exported from the CAISO, as reflected in the original contract supporting the priority. If the supply contract supporting the Wheeling Through Priority is terminated after the priority has gone into effect, the Scheduling Coordinator will retain the priority and will continue to be charged for such priority for the term of the priority; however, it can resell the priority in accordance with Section 23.7.1.

23.2.4 Applicability to CAISO LSEs

Scheduling Coordinators for CAISO LSEs can compete to obtain ATC to support an import into the

Commented [A3]: Should this be "Priority Wheeling Through", as in the tariff defined term? General question applies throughout, about where the tariff defined term needs to be used.

CAISO Balancing Authority Area in the daily request window process set forth in Section 23.5. The Scheduling Coordinator must attest to the following: (1) its ATC request is supported by an executed firm power supply contract, a firm power supply contract to where execution is contingent upon the receipt of ATC, or ownership of a resource to serve the Load Serving Entity's load; (2) the MW quantity of the firm power supply contract with the Load Serving Entity supporting the request and the CAISO Scheduling Points to which the energy will be imported to the CAISO Controlled Grid; (3) the start and end dates of the power supply contract and the specific hours during the day(s) covered by the power supply contract for which the Scheduling Coordinator seeks ATC; (4) all eligibility requirements to support a daily ATC request have been met; and (5) whether the Scheduling Coordinator is willing to accept a pro rata allocation of capacity, or an award of only part of its request, if the result of the monthly or daily request window process in Sections 23.4 and 23.5, respectively, is that there is insufficient ATC to accommodate the entire request, because of a tie among competing requesters or for some other reason.

23.3 Miscellaneous ATC Requirements

23.3.1 Historical Contract Information Regarding Non-Resource Adequacy Resource Import

Supply

Under the process and by the deadline established in the Business Practice Manual, to enable the CAISO to calculate ATC on the Interties under Attachment L, each Scheduling Coordinator for a Load Serving Entity may attest to the CAISO and submit information regarding firm non-Resource Adequacy Resource import supply contracts the Load Serving Entity had in place to serve its load during the two (2) years prior to the month for which the CAISO is determining ATC. The import supply contracts that can be reported under this Section 23.3.1 must be monthly contracts or a portfolio of shorter-term contracts for the month. LSEs must attest to and provide: (1) the start and end dates of the contract; (2) the MW quantity; and (3) the CAISO Scheduling Point where the energy was delivered.

23.3.2 New Contract Information

Before the CAISO initially establishes ATC for a month that is thirteen (13) months away, under the process and deadlines established in the Business Practice Manual, CAISO Load Serving Entities may show to the CAISO any new contracts for imports to serve their load that are not reflected in the historical data the CAISO will consider in establishing the initial ATC for that month. The Load Serving Entity must

attest to whether the new import contract replaces capacity that the Load Serving Entity had under contract during the historical two (2)-year period or is incremental to that capacity. The Load Serving Entity must attest to and provide: (1) the start and end dates of the import contract; (2) the specific hours to which the contract applies; (3) the MW quantity of the contract each month; and (4) the CAISO Scheduling Point where the energy will be imported. If the new contract is intended as replacement capacity, the LSE must attest to and indicate the contract that is being replaced, the term of that contract, the MW quantity of the contract each month, and the CAISO Scheduling Point where the energy was imported under the contract. This information will inform the CAISO's determination regarding the existing transmission commitments (ETComm) component of the ATC calculation under Appendix L. If the LSE intends the new contract to be incremental capacity, i.e., capacity that is additive to the capacity under contract during the historical period, the LSE must attest to that fact and demonstrate that the capacity will be incremental. An LSE can make that demonstration by showing Load Serving Entity resource plans, its expected load growth, incremental procurement ordered or approved by Local Regulatory Authorities, or other relevant information demonstrating the additive nature of the new contract. A Load Serving Entity's demonstration that the new contract is additive will inform the CAISO's determination of the existing transmission commitments (ETComm) component of the ATC calculation under Appendix L. As indicated in Appendix L, any contract that is not shown to the CAISO by end of the Resource Adequacy cure period under Section 40 cannot count for purposes of setting aside native load capacity for the applicable month.

23.3.3 Monthly Non-Resource Adequacy Contract Showings

According to the process set forth in the Business Practice Manual, before the end of the Resource Adequacy cure period under Section 40 for the applicable month, a Load Serving Entity may show to the CAISO any firm non-Resource Adequacy contracts they have for the month that they desire to be considered for purposes of informing determination of the existing transmission commitments (ETComm) component of the ATC calculation for the month under Appendix L. The Load Serving Entity seeking to make such a showing must attest to and indicate the following: (1) it has an executed firm power supply contract to serve its load, a firm power supply contract to serve its load where execution is contingent upon the receipt of ATC, or ownership of a resource to serve the Load Serving Entity's load; (2) the MW

quantity of the firm power supply contract with the Load Serving Entity and the Scheduling Point(s) to which the energy will be imported to the CAISO Controlled Grid; and (3) the start and end dates of the power supply contract and the specific hours and days during the month covered by the power supply contract. Shown non-Resource Adequacy contracts must be monthly contracts or a portfolio of shorter-term contracts for the month.

23.3.4 CPM Access to ATC

If the CAISO designates import capacity under the CPM, the CAISO will first utilize the CPM import capacity under the TRM to the extent any TRM capacity is available; provided that if the CPM designation is for an annual or monthly RA deficiency, the CAISO will first utilize ATC to the extent any ATC is available and, if no ATC is available, then it will utilize TRM. If insufficient TRM capacity is available, and the CPM designation is not for an annual or monthly RA deficiency, such CPM capacity is eligible to be assigned ATC for the term of the designation, or for part of the term, only to the extent ATC is available at the time of the designation.

23.3.5 Annual Summer ATC and TRM Assessment Meeting with Stakeholders

Before the summer season (May-October) each year, the CAISO will hold a meeting with stakeholders to discuss ATC and its components and expected conditions for the upcoming summer. The CAISO will issue a Market Notice announcing the meeting in accordance with the timeline specified in the Business Practice Manual.

23.4 Obtaining a Monthly Wheeling Through Priority

On the date specified in the annual Wheeling Through priority request calendar, the CAISO will open a request window whereby Scheduling Coordinators can request a monthly priority for Wheeling Through Self-Schedules. Scheduling Coordinators can request a monthly Wheeling Through priority for any month(s) ATC is calculated and available, no sooner than twelve (12) months in advance and no later than one (1) month prior to the effective date of the priority. The CAISO will hold the request window open for fourteen (14) days. Closure of the request window each month will coincide with the closure of the monthly Resource Adequacy cure period under Section 40 for that month. At a minimum, Wheeling Through priority requests must be supported by a six (6)-days-by-four (4)-hours firm power supply contract for each full week during the month plus the relevant days in any partial week during the month.

The CAISO will make its determination regarding monthly Priority Wheeling Through awards no later than three (3) Business Days after the request window closes. The CAISO will treat all requests for a monthly Wheeling Through priority submitted during the request window as having been submitted simultaneously. The CAISO will treat all requests for a monthly priority during the request window as confidential during the request window period and treat them in accordance with Section 20 thereafter. The CAISO will award ATC to support Priority Wheeling Through requests based on the total number of hours of the requested priority (which must be supported by a firm power supply contract supporting the priority request for those hours) over the entire thirteen (13)-month horizon. Thus, supported priority requests for more hours during the thirteen (13)-month period will be awarded ATC before requests for fewer hours. For example, a priority request supported by a six (6)-days-by-sixteen (16)-hours power supply contract for one (1) month will have priority over a request supported by a six (6)-days-by-eight (8)-hours power supply contract for the same month; a priority request supported by a six (6)-days-by-four (4)-hours power supply contract for five (5) months will have priority over a request supported by a six (6)-days-by-eight (8)-hours power supply contract for just one (1) of those months. If there is a tie among requests and insufficient remaining ATC to accommodate all such priority requests for the month, the CAISO will allocate Wheeling Through priorities on a pro rata MW basis, or grant part of the ATC request, to those Scheduling Coordinators that indicated they would accept a pro rata allocation or partial awards. Priority awards for Wheeling Throughs coming out of a monthly request window are unconditional and cannot be unwound by Wheeling Through priority awards in subsequent request windows. A Scheduling Coordinator for a Priority Wheeling Through does not lose an awarded scheduling priority if it does not schedule in the Day-Ahead Market.

23.5 Obtaining a Daily Wheeling Through Priority

The CAISO will open a request window each day whereby Scheduling Coordinators can request a daily priority for Wheeling Through Self-Schedules or ATC to support an import into the CAISO Balancing Authority Area by a CAISO LSE(s), to the extent ATC is calculated and available, no sooner than seven (7) days in advance and no later than one (1) day prior to the effective date of the priority. The CAISO will hold the request window open for five (5) hours during the hours specified in the Business Practice Manual. At a minimum, Wheeling Through priority requests in the Day-Ahead horizon must be supported

by a firm power supply contract of at least four (4) hours for each day during the seven (7)-day horizon for which the Scheduling Coordinator seeks a Wheeling Through priority. The CAISO will make its determination regarding daily Priority Wheeling Through awards no later than two (2) hours after the daily request window closes and before the Day-Ahead Market runs. The CAISO will treat all requests for a Wheeling Through priority for a day submitted during the request window as having been submitted simultaneously. The CAISO will treat all requests for a daily priority during the request window as confidential during the request window and in accordance with Section 20 thereafter. The CAISO will award ATC to support Priority Wheeling Through requests based on the total number of hours of the requested priority (which must be supported by a firm power supply contract for the priority request for those hours) over the entire seven (7)-day horizon. Thus, supported priority requests for more hours during the seven (7)-day period will be awarded ATC before requests for fewer hours. For example, a priority request supported by a six (6)-days-by-sixteen (16)-hours power supply contract for one (1) day will have priority over a request supported by a six (6)-days-by-eight (8)-hours power supply contract for the same day; a priority request supported by a six (6)-days-by-four (4)-hours power supply contract for five (5) days will have priority over a request supported by a six (6)-days-by-eight (8)-hours power supply contract for one (1) of those days. If there is a tie among requests and insufficient remaining ATC to accommodate all such priority requests for the day, the CAISO will allocate Wheeling Through priorities on a pro rata MW basis, or grant a part of the request, to those Scheduling Coordinators that indicated they would accept a pro rata allocation or a partial award. Priority awards for Wheeling Throughs coming out of a daily request window are unconditional and cannot be unwound by Wheeling Through priority awards in subsequent daily request windows. A Scheduling Coordinator for a Priority Wheeling Through does not lose an awarded scheduling priority if it does not schedule in the Day-Ahead Market.

23.6 Requests for a Long-Term Wheeling Through Priority

TO BE ADDED LATER

23.7 Sale or Assignment of a Wheeling Through Priority

23.7.1 Procedures for Reselling a Long-Term or Monthly Wheeling through Priority

A Market Participant with a long-term or monthly Wheeling Through priority may sell all or a portion of its priority (MW and/or term) to another Market Participant (the Assignee). The Market Participant that sells its Wheeling Through priority is hereafter referred to as a **Wheeling Through Priority Reseller**. The Wheeling Through Priority Reseller must notify the CAISO by the deadline specified in the Business Practice Manual, which will be before the effective date of any resale, and it cannot sell a priority MW amount for more MW or a longer term than it has. The compensation to Wheeling Through Priority Resellers for any sale of a Wheeling Through priority will be at rates established by agreement between the Wheeling Through Priority Reseller and the Assignee. The Assignee will be subject to all applicable terms and conditions of the CAISO Tariff, including having a Scheduling Coordinator with a Scheduling Coordinator Agreement. The Scheduling Coordinator for the Assignee will receive the same priority as the Wheeling Through Priority Reseller at the same Scheduling Points of import into and export out of the CAISO Balancing Authority Area. The CAISO will continue to charge the Wheeling Through Priority Reseller at the applicable Priority Wheeling Through rate for the term of its Wheeling Through priority. A Wheeling Through Priority Reseller will remain responsible for complying with all requirements of this Section 23. Resales of a Wheeling Through priority only allow the transfer of a Wheeling Through priority and do not convey to the Assignee any other rights, and the Assignee is not responsible to the CAISO for the Wheeling Through Priority Reseller's financial obligation to the CAISO for ultimate payment of the original priority, which obligation remains with the Wheeling Through Priority Reseller. A Wheeling Through Priority Reseller will not resell a Wheeling Through priority to enable avoidance of the firm power supply contract requirement of Section 23.2.1.

23.7.2 Information on Assignment or Transfer of a Wheeling Through Priority

All sales of Wheeling Through priorities must be conducted or otherwise posted on the CAISO's OASIS on or before the date the reassigned priority commences. Wheeling Through Priority Resellers may also use the CAISO's OASIS to post priorities available for resale.

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Commented [A4]: Is this a tariff defined term? It is capitalized like it is, but don't see it added to the list of tariff definitions.

26. Transmission Rates and Charges

26.1 Access Charge

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26.1.4 Wheeling

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26.1.4.4 Information Required from Scheduling Coordinators

Scheduling Coordinators for Wheeling Out or Wheeling Through transactions to a Bulk Supply Point, or other point of interconnection between the CAISO Controlled Grid and the transmission system of a Non-Participating TO, that are located within the CAISO Balancing Authority Area, shall provide the CAISO, by eight (8) Business Days after the Trading Day (T+8B), details of such transactions (other than transactions submitted as Self-Schedules pursuant to Existing Contracts) sorted by Bulk Supply Point or point of interconnection for each Settlement Period (including kWh for each transaction). The CAISO shall use such information, which may be subject to review by the CAISO, to settle Wheeling Access Charges and payments. The CAISO shall publish a list of the Bulk Supply Points or interconnection points to which this Section 26.1.4.4 applies together with details of the electronic form and procedure to be used by Scheduling Coordinators to submit the required information on the CAISO Website.

26.1.4.5 Priority Wheeling Throughs

Scheduling Coordinators for customers with a monthly or daily Wheeling Through priority will pay the applicable Wheeling Access Charge based on the MW amount and total hours of the priority for the applicable period. For example, a Priority Wheeling Through customer with a monthly priority based on a (six) 6-day-by-sixteen (16)-hours power supply contract would pay Wheeling Access Charges associated with using a six (6)-day-by-sixteen (16)-hours contract for the entire month regardless of the Scheduling Coordinator's actual scheduled Priority Wheeling Throughs during that period; a Priority Wheeling Through customer with a daily priority based on an eight (8)-hour power supply contract would pay

Wheeling Access Charges for eight (8) hours regardless of the Scheduling Coordinator's actual scheduled Wheeling Throughs during that day. The CAISO will credit any monthly payment of Wheeling Access Charges toward satisfaction of the Wheeling Access charge prepayment amount required to obtain CRRs through the Out of Balancing Authority Area Load Serving Entity CRR allocation process in Section 36 to the extent a monthly Priority Wheeling Through customer pursues that option. To the extent a Priority Wheeling through customer schedules a Wheeling Through transaction in excess of its Priority Wheeling Through quantity or outside of the hours associated with its Wheeling through priority, such volumes are not covered by the Wheeling Through priority and will be separately charged at the applicable Wheeling Access Charge.

26.1.5 Unbundled Retail Transmission Rates

The Access Charge for unbundled retail transmission service provided to End-Users by a FERC-jurisdictional electric utility Participating TO shall be determined by the FERC and submitted to the CAISO for information only. For a Local Publicly Owned Electric Utility, retail transmission service rates shall be determined by the Local Regulatory Authority and submitted to the CAISO for information only.

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Section 30

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30.5 Bidding Rules

30.5.1 General Bidding Rules

- (a) All Energy and Ancillary Services Bids of each Scheduling Coordinator submitted to the DAM for the following Trading Day shall be submitted at or prior to 10:00 a.m. on the day preceding the Trading Day, but no sooner than seven (7) days prior to the Trading Day. All Energy and Ancillary Services Bids of each Scheduling Coordinator submitted to the RTM for the following Trading Day shall be submitted starting from the time of

publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day, and ending seventy-five (75) minutes prior to each applicable Trading Hour in the RTM. Scheduling Coordinators may submit only one set of Bids to the RTM for a given Trading Hour, which the CAISO uses for all Real-Time Market processes. The CAISO will not accept any Energy or Ancillary Services Bids for the following Trading Day between 10:00 a.m. on the day preceding the Trading Day and the publication, at 1:00 p.m. on the day preceding the Trading Day, of DAM results for the Trading Day;

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- (z) ~~[Not Used] For a Wheeling Through Self Schedule to be eligible as a Priority Wheeling Through for a given month, the Scheduling Coordinator must notify the CAISO of the MW quantity of the power supply contract MW supporting the export Self Schedule of the Priority Wheeling Through transaction and confirm it meets the eligibility requirements to support a Priority Wheeling Through. The Scheduling Coordinator must provide such information to the CAISO by 45 days prior to the applicable month.~~

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Section 34

34.12.3 Post-HASP Process

In the event an Intertie is constrained in the import direction by a scheduling limit or Path 26 is constrained in the north-south direction, ~~and when~~ HASP cannot meet CAISO Forecast of CAISO Demand or fully accommodate a Priority Wheeling Through transaction, the CAISO will perform a post-HASP process to pro rata allocate available transmission capacity between CAISO Demand and Priority Wheeling Through transactions, as described in the Business Practice Manual. The CAISO Demand pro rata share will be based on the lower of (1) the sum of the Real-Time Bid quantities of applicable each

Commented [A5]: This language is potentially inconsistent with the Final Proposal, which states on page 12:

"Applying the wheeling through high scheduling priorities and triggering the post-HASP process occurs only if two conditions are met: (1) there is a supply insufficiency in the ISO area such that there is a power balance infeasibility in the market, and (2) there is a transmission limitation on the intertie."

The Final Proposal and the ISO's presentations on the Final Proposal do not define the phrase "transmission limitation on the intertie". DMM understood that the ISO used this phrase in the final policy to be sufficiently general, allowing for a range of possible transmission limitations that may impact an intertie. However, the draft tariff language appears to create a more narrow definition of intertie transmission limitation: when there is a constrained intertie in the import direction, or Path 26 being constrained in the N-S direction.

DMM suggests the ISO revise this draft tariff language to better align with the more general language of the Final Proposal. So, the ISO should consider revising the first sentence to read: "In the event there is a transmission limitation on an intertie, or Path 26..."

~~applicable Resource Adequacy Resources's, shown non-Resource Adequacy Resources under contract, and, CPM imports with ATC or supported by TRM, resources supported by ATC awarded in the daily request window process, and imports supported by TRM Real-Time Energy Bid quantity or (2) the sum of~~ shown Resource Adequacy Capacity ~~and non-Resource Adequacy Capacity under contract that are supported by ATC, including resources supported by capacity awarded ATC in the daily request window process, CPM import capacity awarded ATC or supported by TRM, plus the remaining TRM quantity.~~

The Priority Wheeling Through pro rata share for each Self-Schedule will be based on the lowest of (1) ~~110 percent of the submitted Day-Ahead Market Self-Schedule of the Priority Wheeling Through transaction,~~ (2) the submitted Real-Time Market Self-Schedules of the Priority Wheeling Through transactions, or (3) the Priority Wheeling Through quantity ~~awarded ATC under Section 23. requested 45 days in advance of the month. The ATC for CAISO Demand and Priority Wheeling Throughs cannot exceed the Total Transfer Capability (TTC) of an Intertie.~~ The ATC the CAISO awards to Priority Wheeling Through transactions in the post-HASP process cannot exceed the Priority Wheeling Through quantity the CAISO calculates in this pro rata allocation, ~~provided that CAISO operators (1) will review the application of pro rata curtailments of Priority Wheeling Through transactions and in their discretion approve or disapprove such curtailments after considering the reliability impacts and (2) consistent with good utility practice should use reasonable efforts not to curtail Priority Wheeling Through transactions without also having to shed CAISO load proportionally. CAISO operators will consider overall system conditions and the reasons for the potential need for curtailment, including whether actual load is at risk of curtailment excluding load conformance, prior to issuing curtailments. In no event, will the CAISO reduce Priority Wheeling Through transactions solely in the event of a CAISO supply shortfall that triggers a power balance infeasibility.~~ Energy scheduled via the post-HASP process will be settled as Exceptional Dispatch Energy pursuant to Section 11.5.6.1, as applicable.

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Appendix A

ISO Public

- Priority Wheeling Through

A [Wheeling Through](#) Self-Schedule that ~~has obtained a priority under Section 23, is part of a Wheeling Through transaction consistent with Section 30.5.4 that is supported by (1) a firm power supply contract to serve an external Load Serving Entity's load throughout the calendar month and (2) monthly firm transmission the external Load Serving Entity has procured under applicable open access tariffs, or comparable transmission tariffs, for Hours Ending 07:00 through 22:00, Monday through Saturday excluding NERC holidays, from the source to a CAISO Scheduling Point.~~

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Appendix L

Appendix L Method to Assess Available Transfer Capability

L.1 Description of Terms

The following descriptions augment existing definitions found in Appendix A "Master Definitions Supplement."

- L.1.1 Available Transfer Capability (ATC)** is a measure of the transfer capability in the physical transmission network resulting from system conditions and that remains available for further commercial activity over and above already committed uses.

ATC is defined as the Total Transfer Capability (TTC) less the Transmission Reliability Margin (TRM), less the sum of any unused existing transmission commitments (ETComm) ~~(i.e., transmission rights capacity for ETC or TOR)~~, less the Capacity Benefit Margin (CBM) (which value is set at zero), less the Scheduled Net Energy from Imports/Exports, less Ancillary Service capacity from Imports.

- L.1.2 Total Transfer Capability (TTC)** is defined as the amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission system by way of all transmission lines (or paths) between those areas, under specified system conditions. In collaboration with owners of rated paths, the CAISO utilizes rated system path methodology to establish the TTC of CAISO Transmission Interfaces.

- L.1.3 Existing Transmission Commitments (ETComm)** include [\(1\) transmission capacity for Existing Contracts \(ETC\)](#) and Transmission Ownership Rights (TOR), [\(2\) transmission capacity for Priority Wheeling Throughs](#) and [\(3\) native load needs determined in accordance with this Appendix L, including native load growth in the applicable horizon.](#)

- L.1.3.1 Transmission Capacity for ETC and TOR –** The CAISO [uses the ETC Reservations Calculator \(see Section L.1.3.1.1\)](#) to reserve transmission capacity for each ETC and TOR based on TRTC Instructions the responsible Participating Transmission Owner or Non-Participating Transmission Owner submits to the CAISO as to the amount of firm transmission capacity that should be

reserved on each Transmission Interface for each hour of the Trading Day in accordance with Sections 16 and 17 of the CAISO Tariff. The types of TRTC Instructions the CAISO receives generally fall into three basic categories:

- The ETC or TOR reservation is a fixed percentage of the TTC on a line, which decreases as the TTC is derated (ex. -TTC = 300 MW, ETC fixed percentage = 2%, ETC = 6 MWs. TTC derated to 200 MWs, ETC = 4 MWs);
- The ETC or TOR reservation is a fixed amount of capacity, which decreases if the line's TTC is derated below the reservation level (ex. ETC = 80 MWs, TTC declines to 60 MW, ETC = TTC or 60 MWs; or
- The ETC or TOR reservation is determined by an algorithm that changes at various levels of TTC for the line (ex. Intertie TTC = 3,000 MWs, when line is operating greater than 2,000 MWs to full capacity ETC = 400 MWs, when capacity is below 2000 MWs ETC = $TTC/2000 \times ETC$).

Existing Contract capacity reservations remain reserved during the Day-Ahead Market and through the FMM. To the extent that the reservations are unused after the FMM has been run for a given fifteen-minute interval, then the capacity reservations are released for the three RTD intervals within that fifteen-minute interval.

Transmissions Ownership Rights capacity reservations remain reserved during the Day-Ahead Market and Real-Time Market. This capacity is under the control of the Non-Participating Transmission Owner and is not released to the CAISO for use in the markets.

L.1.3.1.14 ETC Reservations Calculator (ETCC). The ETCC calculates the amount of firm transmission capacity reserved (in MW) for each ETC or TOR on each Transmission Interface for each hour of the Trading Day.

- CAISO Updates to ETCC Reservations Table. The CAISO updates the ETC and TOR reservations table (if required) prior to Market Close of the DAM and prior to Market Close of the RTM. The amount of transmission capacity reservation for ETC and TOR rights is determined based on the TTC of each Transmission Interface and in accordance with the curtailment procedures stipulated in the existing agreements and provided to the CAISO by the responsible Participating Transmission Owner or Non-Participating Transmission Owner.
- Market Notification. ETC and TOR allocation (MW) information is published for all Scheduling Coordinators which have ETC or TOR scheduling responsibility in advance of the Day-Ahead Market and the Real-Time Market. This information is posted on the Open Access Same-Time Information System (OASIS).
- For further information, see CAISO Operating Procedure M-423, Scheduling of Existing Transmission Contract and Transmission Ownership Rights, which is publicly available on the CAISO Website.

L.1.3.2 High-Priority Wheeling Throughs – ETComm include transmission capacity for Priority Wheeling Throughs receiving ATC pursuant to Sections 23.4, 23.5, and 23.6 4 of the CAISO Tariff.

Commented [A6]: Should this be just "Priority Wheeling Throughs" to be consistent with tariff defined term?

L.1.3.3 Native Load Needs – ETComm include transmission capacity at the Interties that is set aside to meet native load needs. The amount of such transmission capacity (apart from the amount of transmission capacity to serve expected native load growth as described below) at each Intertie

Commented [A7]: typo

for each calendar month equals the highest quantity of total resource adequacy (RA) import supply under contract and non-Resource Adequacy import supply under contract to Load Serving Entities (LSEs) dedicated to serving their load as demonstrated by RA showings, and non-RA contract showings under Section 23.3.1, at the Intertie for that same calendar month during the previous two (2) years, as may be adjusted under Sections L.1.3.3.2 and L.1.3.3.3.

L.1.3.3.1 Native Load Growth – Transmission capacity at the Interties that is set aside in ETCComm to meet native load needs also includes transmission capacity to serve expected native load growth in the applicable horizon. The amount of such transmission capacity at each Intertie set aside in ETCComm to meet native load growth will be calculated by comparing the load forecast for the applicable future period to the forecasts used with the set of CAISO RA requirements applicable to that period for the previous two (2) years to determine an overall native load growth amount and then assigning a portion of this expected native load growth amount to each Intertie using the highest ratio of RA imports shown for that calendar month to total RA capacity shown for that calendar month during the previous two (2) years.

L.1.3.3.2 Adjustments to Native Load Needs Based on New Contract Information – The CAISO may use contract information provided in accordance with Section 23.3.3 of the CAISO Tariff to update or otherwise inform the historical RA import supply or non-RA import supply data described in this Section L.1.3.3 to improve the accuracy of the calculation of native load needs calculated thirteen (13) months before the applicable calendar month.

L.1.3.3.3 Monthly Update of Native Load Needs – Following the RA and non-RA import contract showings at the end of the RA cure period under Section 40 of the CAISO Tariff, the CAISO will update or “true up” the amount of transmission capacity set aside in ETCComm to meet native load needs at each Intertie to include the sum of the most recent actual showings of (i) RA import supply contained in monthly Resource Adequacy Plans and (ii) non-RA import supply delivered at the Intertie reported to the CAISO for that same calendar month.

If the amount of transmission capacity set aside at an Intertie to meet native load needs for a calendar month based on historical RA and non-RA import showings for that month (and including transmission capacity to serve expected native load growth) is greater than the most recent actual showings of RA import supply contained in monthly Resource Adequacy Plans and non-RA import supply to be delivered at the Intertie for that same month, the excess transmission capacity will be released as ATC and will be available for awarding as monthly Priority Wheeling Throughs pursuant to the monthly request window process in Section 23.4 of the CAISO Tariff. If the amount of transmission capacity set aside at an Intertie to meet native load needs for a calendar month based on historical RA and non-RA import showings for that month (and including transmission capacity to serve expected native load growth) plus the amount of TRM set aside to account for uncertainty associated with actual monthly Resource Adequacy and non-Resource Adequacy showings, is less than the most recent actual showings of RA import supply contained in monthly Resource Adequacy Plans and non-RA import supply to be delivered at the Intertie for that same month, the ATC at the Intertie that has not been awarded in a prior monthly request window, will be reduced to account for the additional RA and non-RA import showings at the Intertie. If no ATC remains at an Intertie because it has been awarded in prior months' request windows pursuant to Section 23.4 of the CAISO Tariff, then the amount of transmission capacity set aside at the Intertie to meet native load needs for a calendar month, including transmission capacity to serve expected native load growth, will remain as originally calculated by the CAISO even if the actual RA and non-RA import contract showings for the month exceed the amount of ATC the CAISO has set aside for native load in accordance with Section L.1.3.3.

Under these circumstances, the CAISO will continue to honor the scheduling priority of the Wheeling Through transactions for which ATC has been awarded. The examples below in this Section L.1.3.3.3 illustrate the aforementioned processes.

For example, if the native load set-aside value for a particular Intertie in the thirteen (13)-month rolling process for the month of May is 1,000 MW, and only 900 MW of RA and non-RA import capacity is actually shown on that Intertie in the monthly showing process for the month of May, the CAISO will release an additional 100 MW of ATC on that Intertie that can be awarded a monthly Wheeling Priority for May through the request window that closed at the same time as the monthly RA and non-RA import showing deadline for May.

Also, for example, assume the following: the native load set-aside value on the Intertie in the thirteen (13)-month rolling process for the month of May is 1,000 MW; the component of the TRM specifically to account for uncertainty between actual Resource Adequacy and non-Resource Adequacy showings; the amount set aside for native load based on historical showings is 10 MW at the Intertie; at the start of the monthly request window for May, there is 100 MW of ATC for the month of May that has not been awarded to Wheeling Throughs in prior months' request windows; and 1,100 MW of RA and non-RA import capacity is actually shown on the Intertie in the monthly showing process for the month of May. Under these circumstances, the CAISO will reduce the ATC on the Intertie by 90 MW (10 MW of the excess monthly showings will be supported by the TRM component that accounts for the uncertainty in actual monthly showings), and 10 MW of ATC will be available for awarding as monthly Priority Wheeling Throughs for May.

Finally, assume the circumstances in the prior example except there is zero MW of ATC available prior to the Resource Adequacy and non-Resource Adequacy showing deadline and the start of the request window for ATC for the month of May. The CAISO will continue to honor all of the ATC that has been previously awarded to Priority Wheeling Throughs through prior monthly request windows, and 10 MW of the excess monthly showings will be supported by the TRM component that accounts for the uncertainty in actual monthly showings.

L.1.4 [Not Used]

L.1.5 Transmission Reliability Margin (TRM) is an amount of transmission transfer capability reserved at a CAISO Intertie point that is necessary to provide reasonable assurance that the interconnected transmission network will be secure. TRM accounts for the inherent uncertainty in system conditions and the need for operating flexibility to ensure reliable system operation as system conditions change.

The CAISO uses TRM at Intertie points to account for the following NERC-approved components of uncertainty as described in the Available Transfer Capability Implementation Document, including:

- Forecast uncertainty in transmission system topology, including forced or unplanned outages or maintenance outages.
- Allowances for parallel path (loop flow) impacts, including unscheduled loop flow.

- [Allowances for simultaneous path interactions.](#)
- [Aggregate load forecast uncertainty.](#)
- [Variations in generation dispatch \(including, but not limited to, forced or unplanned Outages, maintenance Outages, and future resource conditions\).](#)

~~The CAISO may establish TRM in all applicable horizons, including prior to Market Close of the DAM and RTM. establishes hourly TRM values for each of the applicable components of uncertainty prior to the Market Close of the RTM. The CAISO does not use TRM (i.e., TRM values for Intertie points are set at zero) during the beyond day-ahead and pre-schedule (i.e., planning) time frame identified in R.1.3.3 of NERC Reliability Standard MOD-008-1. A positive TRM value for a given hour is set only if one or more of the conditions set forth below exists for a particular Intertie point. Where none of these conditions exist, the TRM value for a given hour is set at zero.~~

Commented [A8]: DMM supports making this section more general to align with TRM developed in the final policy. However, recommend that the tariff language be expanded to ensure sufficient flexibility in the TRM across different time horizons (eg, that it can be increased or decreased on different time horizons as needed to incorporate new information or changing levels of uncertainty).

The methodology the CAISO uses to establish each component of uncertainty is as follows:

The CAISO uses the transmission system topology component of uncertainty to address a potential ATC path limit reduction at an Intertie resulting from an emerging event, such as an approaching wildfire, that is expected to cause a derate of one or more transmission facilities comprising the ATC path. When the CAISO, based on existing circumstances, forecasts that such a derate is expected to occur, the CAISO may establish a TRM value for the affected ATC path in an amount up to, but no greater than, the amount of the expected derate. [The CAISO will set the transmission system topology component of uncertainty as a percentage of TTC pursuant to the CAISO Available Transfer Capability Implementation Document, across the rolling thirteen \(13\)-month horizon set forth in Section L.3, on Interties where the CAISO has historically relied upon import supply to serve load.](#)

The CAISO uses the parallel path component of uncertainty to address the impact of unscheduled flow (USF) over an ATC path that is expected, in the absence of the TRM, to result in curtailment of Intertie Schedules in Real Time as a result of the requirements established in WECC's applicable USF mitigation policies and procedures (WECC USF Policy). When the CAISO forecasts, based on currently observed USF conditions and projected scheduled flow for an upcoming Operating Hour(s), that in the absence of a TRM, scheduled flow will need to be curtailed in Real Time under the applicable WECC USF Policy, the CAISO may establish a TRM for the ATC path for the applicable hour(s) in an amount up to, but no greater than, the forecasted amount that is expected to be curtailed in Real Time pursuant to the WECC USF Policy.

The CAISO uses the simultaneous path interactions component of uncertainty to address the impact that transmission flows on an ATC path located outside the CAISO's Balancing Authority Area may have on the transmission transfer capability of an ATC path located at an Intertie. In the event of such path interactions, the CAISO uses a TRM value to prevent the risk of a system operating limit violation in Real Time for the CAISO ATC path. The amount of the TRM value may be set at a level up to, but not greater than, the forecasted impact on the CAISO ATC path's capacity imposed by expected flow on the non-CAISO ATC path.

[The CAISO uses the aggregate load forecast component of uncertainty to address load forecast uncertainty at selected Interties. The CAISO will set this component of uncertainty as a percentage of TTC pursuant to the CAISO Available Transfer Capability Implementation Document, across the rolling thirteen \(13\)-month time horizon and the rolling seven \(7\)-day horizon, on Interties where the CAISO has historically relied upon import supply to serve load. The load forecast component of the TRM may include sub-components to account for \(1\) the uncertainty that actual monthly Resource Adequacy and non-Resource Adequacy showings may differ from the historical values used in setting ETCOMM, \(2\) changes ordered by Local](#)

[Regulatory Authorities in planning reserve margins or resource procurement requirements for Load Serving Entities, and \(3\) load forecast changes.](#)

[The CAISO uses the variations in generation dispatch component of uncertainty to address variations in generation dispatch driven by resource outages or other conditions to recognize that, in some circumstances, supply may have to be replaced or additional supply may have to be brought into the system to meet the changing needs. For example, the TRM may account for the unavailability of solar energy during the net-peak load period, the unavailability of hydro-electric capacity during drought conditions, or wind capacity not performing at its Net Qualifying Capacity. The CAISO will set this component of uncertainty as a percentage of TTC pursuant to the CAISO Available Transfer Capability Implementation Document, across the rolling thirteen \(13\)-month time horizon and the seven \(7\)-day rolling horizon, on Interties where the CAISO has historically relied upon import supply to serve load.](#)

The CAISO uses the following databases or information systems, or their successors, in connection with establishing TRM values: the CAISO's outage management system pursuant to Section 9, Existing Transmission Contract Calculator (ETCC), PI, EMS, and CAS.

L.1.6 Capacity Benefit Margin (CBM) is that amount of transmission transfer capability reserved for [Load Serving Entities \(LSEs\)](#) to ensure access to Generation from interconnected systems to meet generation reliability requirements. In the Day-Ahead Market, CBM may be used to provide reliable delivery of Energy to CAISO Balancing Authority Area Loads and to meet CAISO responsibility for resource reliability requirements in Real-Time. The purpose of this DAM implementation is to avoid Real- Time Schedule curtailments and firm Load interruptions that would otherwise be necessary. CBM may be used to reestablish Operating Reserves. CBM is not available for non-firm transmission in the CAISO Balancing Authority Area. CBM may be used only after:

- all non-firm sales have been terminated,
- direct-control Load management has been implemented,
- customer interruptible Demands have been interrupted,
- if the LSE calling for its use is experiencing a Generation deficiency and its transmission service provider is also experiencing Transmission Constraints relative to imports of Energy on its transmission system.

The level of CBM for each Transmission Interface is determined by the amount of estimated capacity needed to serve firm Load and provide Operating Reserves based on historical, scheduled, and/or forecast data using the following equation to set the maximum CBM:

$$\text{CBM} = (\text{Demand} + \text{Reserves}) - \text{Resources}$$

Where:

- Demand = forecasted area Demand
- Reserves = reserve requirements
- Resources = internal area resources plus resources available on other Transmission Interfaces

The CAISO does not use CBMs. The CBM value is set at zero.

L.2 ATC Algorithm

The ATC algorithm is a calculation used to determine the transfer capability remaining in the physical transmission network and available for further commercial activity over and above already committed uses. The CAISO posts the ATC values in megawatts (MW) to OASIS in conjunction with the Market Close for the Day-Ahead Market and Real-Time Market process.

The following OASIS ATC algorithms are used to implement the CAISO ATC calculation for the ATC rated path (Transmission Interface):

ATC Calculation For Imports:

$$ATC = TTC - CBM - TRM - AS \text{ from Imports} - \text{Net Energy Flow} - \text{Hourly Unused TR Capacity.}$$

ATC Calculation For Exports:

$$ATC = TTC - CBM - TRM - \text{Net Energy Flow} - \text{Hourly Unused TR Capacity.}$$

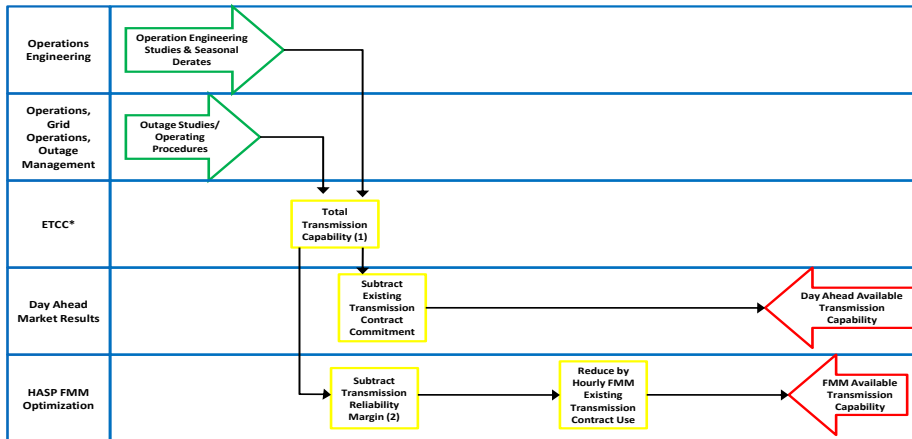
The specific data points used in the ATC calculation are each described in the following table.

ATC	ATC MW	Available Transfer Capability, in MW, per Transmission Interface and path direction.
Hourly Unused TR Capacity	USAGE_MW	The sum of any unscheduled existing transmission commitments (scheduled transmission rights capacity for ETC or TOR), in MW, per path direction.
Scheduled Net Energy from Imports/Exports (Net Energy Flow)	ENE_IMPORT MW	Total hourly net Energy flow for a specified Transmission Interface.
AS from Imports	AS_IMPORT MW	Ancillary Services scheduled, in MW, as imports over a specified Transmission Interface.
TTC	TTC MW	Hourly Total Transfer Capability of a specified Transmission Interface, per path direction, with consideration given to known Transmission Constraints and operating limitations.
CBM	CBM MW	Hourly Capacity Benefit Margin, in MW, for a specified Transmission Interface, per Path Direction.
TRM	TRM MW	Hourly Transmission Reliability Margin, in MW, for a specified Transmission Interface, per path direction.

Actual ATC mathematical algorithms and other ATC calculation information are located in the CAISO's ATC Implementation Document (ATCID) posted to the CAISO Website.

L.3 ATC Process Flowchart [and Calculation Periods](#)

Available Transmission Capability



*ETCC – Existing Transmission Contract Calculator
 (1) – WECC rated path methodology
 (2) - See TRMID posted on OASIS

The CAISO will calculate ATC on the Interties each calendar month across a rolling thirteen (13)-month time horizon. The CAISO will also calculate ATC on the Interties each day prior to the close of the Day-Ahead Market across a rolling seven (7)-day time horizon, and will publish the resulting ATC values daily on OASIS.

L.4 TTC Determination

All transfer capabilities are developed to ensure that power flows are within their respective operating limits, both pre-Contingency and post-Contingency. Operating limits are developed based on thermal, voltage and stability concerns according to industry reliability criteria (WECC/NERC) for transmission paths. The process for developing TTC also requires the inclusion or exclusion of operating Transmission Constraints based on system conditions being studied.

L.4.1 Transfer capabilities for studied configurations may be used as a maximum transfer capability for similar conditions without conducting additional studies. Increased transfer capability for similar conditions must be supported by conducting appropriate studies.

L.4.1.2 At the CAISO, studies for all major inter-area paths' (mostly 500 kV) TTC are governed by the California Operating Studies Subcommittee (OSS), which provides detailed criteria and methodology. For transmission system elements below 500 kV the methodology for calculating these flow limits is detailed in Section L.4.3 and is applicable to the operating horizon.

L.4.2 Transfer capability may be limited by the physical and electrical characteristics of the systems including any one or more of the following:

- Thermal Limits - Thermal limits establish the maximum amount of electric current that a transmission line or electrical facility can conduct over a specified time-period as established by the Transmission Owner.

- Voltage Limits - System voltages and changes in voltages must be maintained within the range of acceptable minimum and maximum limits to avoid a widespread collapse of system voltage.
- Stability Limits - The transmission network must be capable of surviving disturbances through the transient and dynamic time-periods (from milliseconds to several minutes, respectively) following the disturbance so as to avoid generator instability or uncontrolled, widespread interruption of electric supply to customers.

L.4.3 Determination of transfer capability is based on computer simulations of the operation of the interconnected transmission network under a specific set of assumed operating conditions. Each simulation represents a single "snapshot" of the operation of the interconnected network based on the projections of many factors. As such, they are viewed as reasonable indicators of network performance and may ultimately be used to determine Available Transfer Capability. The study is meant to capture the worst operating scenario based on experience and good engineering judgment.

L.4.3.1 System Limits – The transfer capability of the transmission network may be limited by the physical and electrical characteristics of the systems including thermal, voltage, and stability consideration. Once the critical Contingencies are identified, their impact on the network must be evaluated to determine the most restrictive of those limitations. Therefore, the TTC becomes:

TTC = lesser of {Thermal Limit, Voltage Limit, Stability Limit} following contingencies consistent with requirements of the NERC Reliability Standards

L.4.4 [The CAISO may update the determination of TTC to be used in the calculation of daily ATC across a rolling seven \(7\)-day time horizon to reflect current information on the anticipated transfer capability of the transmission network, including information on Outages affecting the transfer capability on Interties.](#)

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