Attachment A – Clean Tariff (effective November 1, 2023)

Tariff Amendment Filing

Short-Term Wheeling Through Self-Schedule Priorities

California Independent System Operator Corporation

July 28, 2023

Section 23

23. 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 transmission capacity for CAISO Demand and Priority Wheeling Through and non-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

The provisions of Sections 23.2 through 23.9 apply to Wheeling Through Priorities and Priority Wheeling Through transactions that will be effective beginning June 1, 2024 and thereafter.

23.2.1 General Requirements For Monthly or Daily Requests for a Wheeling Through Priority

Scheduling Coordinators may obtain a monthly or daily Wheeling Through Priority to support Priority Wheeling Throughs under the process in this Section 23. A Scheduling Coordinator can submit a request

for 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 for an external load serving entity, or the Scheduling Coordinator for a seller of Energy to the external load serving entity, must submit a Wheeling Through Priority request and attest to the following: (1) the Wheeling Through Priority request is supported by an executed firm power supply contract to serve an external load serving entity's load, a firm power supply contract to serve an external load serving entity's load where execution is contingent upon the availability of a Wheeling Through Priority on the CAISO system, or the external load serving entity's ownership of an external resource to serve external load; (2) the MW quantity of the firm power supply contract with an external load serving entity supporting the request and the Scheduling Points 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) any information specified in the Business Practice Manual has been provided; 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. The same MW in a firm power supply contract cannot support a Wheeling Through Priority for both the seller and the buyer for the same period of time. Scheduling Coordinators cannot seek, and the CAISO will not award in the request window processes specified in Section 23.4 and 23.5, a monthly or daily Wheeling Through Priority for a MW quantity greater than the MW quantity in the underlying power supply contract or for a period greater than or non-coincident with the hours of the underlying firm power supply contract, or for a MW quantity or duration greater than the physical and operational capabilities of the external load serving entity's resource, whichever is applicable. Thus, for any month or day, an awarded Wheeling Through Priority 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 Priority Wheeling Throughs that the Scheduling Coordinator self-schedules during those

specified hours. The minimum 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. 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 and 34.12.1.

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 Priority Wheeling Through transaction on a given day (as new firm use in the CAISO markets). A Priority Wheeling Through accords the Scheduling Coordinator the highest scheduling priority of new firm use, equal to the priority of CAISO Demand. If a Scheduling Coordinator does not actually schedule a Priority Wheeling Through on a given day that it has the right, the Wheeling Through Priority is inapplicable.

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

(a) If the firm power supply contract supporting the Wheeling Through Priority is terminated for any reason or is modified such that the MW quantity, hours of service, import point, or export point changes, the Scheduling Coordinator with a monthly or daily Wheeling Through Priority must notify the CAISO by the earlier of (i) five (5) Business Days after the effective date of the termination or (ii) eleven (11) Business Days before the date any Priority Wheeling Through transaction would actually occur under the awarded priority. The Scheduling Coordinator will also attest to the circumstances surrounding and reason for termination or modification of the underlying firm power supply contract.

(b) If the supporting firm power supply contract is terminated eleven (11) or more Business Days before the date on which the Scheduling Coordinator with the Wheeling Through Priority can first schedule a Priority Wheeling Through transaction using its Wheeling Through Priority, the Wheeling Through Priority will terminate unless the Scheduling Coordinator can demonstrate an equivalent replacement power supply contract (including MW quantity, import and export points, and service hours) by the earlier of (i) sixty (60)

days from the date of termination, or (ii) eleven (11) Business Days before the date any Priority Wheeling Through transaction would actually occur under the awarded priority, provided the Wheeling Through Priority will be prorated if the replacement contract is for a lower MW quantity or for fewer hours than the original contract. If the Scheduling Coordinator decides it will not seek to replace the terminated power supply contract, it must notify the CAISO within five (5) Business Days of that decision, but no later than eleven (11) Business Days before the date any Priority Wheeling Through transaction would actually occur under the awarded priority. The CAISO will account for any capacity associated with a terminated Wheeling Through Priority in a revised ATC calculation.

(c) If the MW quantity or hours of service of the original supporting firm power supply contract are reduced eleven (11) or more Business Days before the date on which the Scheduling Coordinator with the Wheeling Through Priority can first schedule a Priority Wheeling Through transaction using its Wheeling Through Priority, the MW quantity or hours of the Wheeling Through Priority will be reduced correspondingly unless the Scheduling Coordinator demonstrates, by the earlier of (i) sixty (60) days from the date of the modification, or (ii) eleven (11) Business Days before the date any Priority Wheeling Through transaction would actually occur under the awarded priority, the following: (1) a replacement contract for a MW quantity or hours of service, that when added to the reduced MW quantity or hours of service of the revised supporting contract, equals the MW quantity or hours of service reflected in the original contract supporting the Wheeling Through Priority, provided that the Scheduling Coordinator can receive a priority for a total MW quantity or number of hours less than the MW quantity or number of hours in the original contract, but greater than the MW quantity or number of hours in the revised contract, and (2) the replacement contract has 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 identical to the Scheduling Points in the original contract supporting the priority. If the Scheduling Coordinator decides it will not seek any replacement contract if the original power supply contract has been modified, it must notify the CAISO within five

(5) Business Days of that decision, but no later than eleven (11) Business Days before the date any Priority Wheeling Through transaction would actually occur under the awarded priority. The CAISO will account for any capacity associated with a modified Wheeling Through Priority in a revised ATC calculation.

(d) If the Scheduling Coordinator seeks a priority in a replacement contract for a MW quantity greater than the MW quantity in the original contract, hours that are different than the hours in the hours in the original contract, or either the import or export Scheduling Point in the replacement contract is different than the import or export point in the original contract supporting the Wheeling Through Priority, the Scheduling Coordinator must re-apply for a Wheeling Through Priority for such deviations in a subsequent request window.

(e) If the supply contract supporting the Wheeling Through Priority is terminated or modified after eleven (11) Business Days before the Day-Ahead Market run for the date on which the Scheduling Coordinator can first schedule a Priority Wheeling Through transaction using the Wheeling Through Priority, the Scheduling Coordinator will retain the Wheeling Through Priority and will be charged for such Wheeling Through Priority for the term of the priority.

23.3 ATC Requirements Related to CAISO LSEs

23.3.1 ATC Request Window Applicability to CAISO LSEs

The CAISO will consider Native Load needs of its Load Serving Entities in determining ATC pursuant to Section 23.3 and Appendix L-1. In addition, Scheduling Coordinators for CAISO LSEs can compete to obtain ATC to support an import into the 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 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 information specified in the Business Practice Manual to support a daily ATC request has been provided; 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.

23.3.2 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 Appendix L-1, 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 firm import supply contracts that can be reported under this Section 23.3.1 must be contracts for a period greater than one month that includes the applicable month, monthly contracts for the month, or a portfolio of shorter-term contracts for the month. They cannot be contracts to replace other external capacity that becomes unavailable. 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 is imported.

23.3.3 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, Load Serving Entities must (1) notify the CAISO of any new firm contracts for imports to serve their load that are for a period greater than one month and include the applicable month, monthly contracts for the month, or a portfolio of shorter-term contracts for the month, and that are not reflected in the historical two (2) year period and (2) notify the CAISO of any import contracts reflected in the historical data that will be discontinued any time in the thirteen (13)-month horizon and will not be replaced with another import at the same Scheduling Point. The CAISO will consider these representations in establishing the initial ATC for the 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 by 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.

If the LSE intends the new contract to be incremental capacity, the LSE must attest that the capacity will be additive to the import capacity under contract during the historic period and will be shown as such in the monthly Resource Adequacy or non-Resource Adequacy contract showings. Upon request of the CAISO, Load Serving Entities should be ready to provide information to demonstrate the incremental nature of the capacity including, but not limited to: Load Serving Entity resource plans that include the contract; the LSE's expected load growth, incremental procurement ordered or approved by Local Regulatory Authorities, replacement of generation internal to the CAISO, or other relevant information demonstrating the additive nature of the new contract. The CAISO will use contracts that meet the requirements in this section to determine the existing transmission commitments (ETComm) component of the ATC calculation under Appendix L-1.

23.3.4 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 it has for the month that should be considered for inclusion in the existing transmission commitments (ETComm) component of the ATC calculation for the month under Appendix L-1. The contracts cannot be contracts to replace other external capacity that becomes unavailable. 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) at 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.

23.3.5 CPM Access to ATC

If the CAISO designates import capacity under the CPM for any reason other than to address an annual or monthly Resource Adequacy deficiency, the CAISO will first utilize the CPM import capacity under the TRM to the extent any TRM capacity is available. If insufficient TRM capacity is available, then the CAISO will utilize ATC for the term of the CPM designation, or for part of the term, only to the extent ATC is available at the time of the designation. If the CAISO designates import capacity under the CPM to address an annual or monthly RA deficiency, the CAISO will first utilize ATC to the extent any ATC is available for all or part of the term and, if no ATC is available, then it will utilize TRM.

23.3.6 Annual Summer ATC and TRM Assessment Meeting with Stakeholders

Before the summer season (May-October) each year, the CAISO will meet with stakeholders to discuss ATC and its components and expected conditions for the upcoming summer and the following year's summer. The CAISO will issue a Market Notice announcing the meeting(s) 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 submit a request for a priority for Wheeling Throughs for a month(s). Scheduling Coordinators can request a monthly Wheeling Through Priority for any month or months 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 for a month(s) 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 Wheeling Through Priority 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 Wheeling Through Priority 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. Wheeling Through Priority awards 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 self-schedule the transaction 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 Wheeling Through Priority or daily ATC to support an import into the CAISO Balancing Authority Area by a CAISO LSE (LSE ATC), for any day or days in that request window 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

or LSE ATC. The CAISO will make its determination regarding daily Wheeling Through Priority awards no later than two (2) hours after the daily request window closes and one (1) hour before the Day-Ahead Market runs. The CAISO will treat all requests for a Wheeling Through Priority or LSE ATC 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 Wheeling Through Priority or LSE ATC 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. Awards of Wheeling Through Priorities or LSE ATC coming out of a daily request window are unconditional and cannot be unwound by Wheeling Through Priority or LSE ATC 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 [Not Used]

23.7 Use of ETC or TOR Capacity to Support a Wheeling Through Priority

A Scheduling Coordinator may use ETC or TOR capacity to support a Wheeling Through Priority. The Scheduling Coordinator may use ETC or TOR capacity for that portion of the Wheeling Through Priority from the import Scheduling Point to the export Scheduling Point that is covered by the ETC or TOR capacity the Scheduling Coordinator chooses to use. The Scheduling Coordinator must use transmission capacity on the CAISO Controlled Grid to support the balance of the Wheeling Through Priority. The

Scheduling Coordinator will pay the applicable Wheeling Through Priority charges pursuant to Section 26.1.4.5 for the MW quantity of the Wheeling Through Priority.

23.8 Sale or Assignment of a Wheeling Through Priority

23.8.1 Procedures for Reselling a Monthly Wheeling Through Priority

A Wheeling Through Priority Reseller Market Participant with a monthly Wheeling Through Priority may sell all or a portion of the MW quantity of its Wheeling Through Priority for the month, or remainder of the month or term, to another Market Participant (the assignee). 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 Wheeling Through Priority Reseller must also attest to the CAISO its reason for reselling or assigning the priority. Any resale or assignment must be at the same import Scheduling Point as the original Wheeling Through Priority, but it may be at a different export Scheduling Point if the CAISO can accommodate such change and maintain the status of the Wheeling Through Priority. 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 Scheduling Coordinator for the assignee will be subject to all applicable charges, terms, and conditions of the CAISO Tariff. 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 unless the CAISO has authorized a different export Scheduling Point to receive the Wheeling Through Priority. The CAISO will continue to charge the Wheeling Through Priority Reseller at the applicable Priority Wheeling Through rate for the term of its original 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 Wheeling Through Priority, which obligation remains with the Wheeling Through Priority Reseller. A Wheeling Through Priority Reseller cannot resell or assign a Wheeling Through Priority for the purpose of enabling avoidance of the firm power supply contract requirement of Section 23.2.1.

23.8.2 Information on Assignment or Transfer of a Wheeling Through Priority

All sales or transfers 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.

23.8.3 Resales or Transfers of Capacity Directly from a TOR and ETC Rights Holder to an Assignee

An ETC or TOR rights holder can resell or transfer ETC or TOR capacity if it is permitted to do so in the underlying contract and such sale or transfer is supported by any applicable TRTC instructions. If a holder of a TOR or ETC sells or transfers capacity that can support a Wheeling Through transaction, the assignee of such capacity will have the same rights and obligations as the holder of the TOR or ETC with respect to such capacity, including the associated scheduling priority and perfect hedge. 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 holder of the TOR or ETC must notify the CAISO of the sale, assignment, or transfer by the deadline specified in the Business Practice Manual. The holder of the TOR or ETC cannot sell, assign, or transfer more MW of capacity than it owns. The holder of the TOR or ETC must indicate the MW quantity sold, assigned, or transferred, the party to whom it sold, assigned, or transferred the capacity, and the start and end hours and dates of the transaction. The compensation from an assignee to the holder of a TOR or ETC for the sale or transfer of TOR or ETC rights to the assignee will be at rates established by the agreement between the holder of the TOR or ETC and the assignee and will occur outside of the CAISO's settlements systems and processes. The assignee will be responsible for all applicable CAISO charges associated with its use of the assigned capacity.

23.9 TOR Capacity Made Available to the CAISO

To the extent the holder of a TOR makes some or all of its TOR capacity available to the CAISO pursuant to a contract, the CAISO will implement the release of TOR capacity under the contract and reflect any released capacity in its ATC calculations as being available for new firm use and priority requests under Sections 23.4 and 23.5.

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Section 26

26. Transmission Rates and Charges

26.1 Access Charge

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26.1.4 Wheeling

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26.1.4.5 Charges for Wheeling Through Priorities

Scheduling Coordinators for customers with a monthly or daily Wheeling Through Priority awarded under Section 23 will pay the applicable Wheeling Access Charge, as illustrated in the Business Practice Manual, based on the MW amount and total hours of the priority for the applicable period of the Wheeling Through Priority. For example, a Scheduling Coordinator with a monthly Wheeling Through Priority based on a (six) 6-day-by-sixteen (16)-hours power supply contract would pay Wheeling Access Charges on a six (6)-day-by-sixteen (16)-hour basis for all applicable days during the entire month of the Wheeling Through Priority regardless of the Scheduling Coordinator's actual scheduled Priority Wheeling Throughs during that period. A Scheduling Coordinator with a one (1)-day Wheeling Through 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. To the extent a Scheduling Coordinator with a Wheeling Through Priority schedules a Wheeling Through transaction in excess of its Wheeling Through Priority 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 based on the amount of scheduled energy delivered.

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Section 36

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36.9.2 Prepayment of Wheeling Access Charge

36.9.2.1 Prepayment of Wheeling Access Charge for Allocated CRRs

An OBAALSE will be required to prepay relevant Wheeling Access Charges, to be calculated as described in this section and further specified in the Business Practice Manual, for the full term of the Monthly CRRs, Seasonal CRRs and Long Term CRRs it intends to nominate in order to participate in the CRR Allocation processes and be allocated CRRs. To be eligible for the allocation of Seasonal CRRs or Monthly CRRs the OBAALSE must submit the full required prepayment and have it accepted by the CAISO prior to the OBAALSE's submission of nominations for the relevant annual or monthly CRR Allocation, except as provided below in Section 36.9.2.2. To be eligible for nominations of Long Term CRRs, the OBAALSE must submit the full prepayment and have it accepted by the CAISO prior to the OBAALSE's submission of nominations of Long Term CRRs in Tier LT, except as provided below in Section 36.9.2.2. For each MW of Monthly CRR, Seasonal CRR or Long Term CRR to be nominated the nominating OBAALSE must prepay one MW of the relevant Wheeling Access Charge, which equals the per-MWh WAC that is associated with the Scheduling Point the OBAALSE intends to nominate as a CRR Sink and that is expected at the time the CRR Allocation process is conducted to be applicable for the period of the CRR nominated, times the number of hours comprising the period of the CRR nominated as further specified in the applicable Business Practice Manual. The CAISO will credit any monthly payment obligation for Wheeling Access Charges by an OBAALSE for a monthly Wheeling Through Priority obtained under Section 23.4, toward the OBAALSE's prepayment obligation in this section 36.9.2.1. Such OBAALSE must prepay the difference in accordance with the applicable prepayment timeline herein. The OBAALSE with a Wheeling Through Priority must prepay the difference in accordance with the applicable prepayment timeline. Any applicable credit check would be done based on the full value owed, including both the prepayment amount and the amount to be credited.

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Appendix A

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- Wheeling Through Priority

A Wheeling Through Priority allows a Scheduling Coordinator to self-schedule Priority Wheeling Throughs during the term and hours of the priority up to the MW quantity of the priority and at the import and export Scheduling Points authorized under the priority.

- Wheeling Through Priority Reseller

An entity that resells, assigns, or otherwise transfers a monthly or long-term Wheeling Through Priority. A Wheeling Through Priority Reseller can be the original priority rights holder or an assignee of a monthly Wheeling Through Priority.

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Appendix L-1

The provisions of this Appendix L-1 apply to the calculation of ATC to establish Wheeling Through Priorities that will be effective beginning June 1, 2024 and thereafter.

Appendix L-1 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.

For purposes of determining ATC in the market optimization, 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), 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 Wheeling Through Priorities, and (3) Native Load needs determined in accordance with this Appendix L-1, including Native Load growth in the applicable horizon and ATC Load Serving Entities acquire in the daily request window.

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* 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.1.3.1.1 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 Wheeling Through Priorities – ETComm include transmission capacity for Wheeling Through Priorities pursuant to Sections 23.4, 23.5, and 23.6 of the CAISO Tariff.

The ATC for Wheeling Through Priorities is calculated based on the following formula which distinguishes it from ATC in the market optimization:

ATC = TTC – ETComm - TRM

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 for each calendar month equals the highest MW quantity of total Resource Adequacy and non-Resource Adequacy import supply under contract to Load Serving Entities (LSEs) dedicated to serving their load as demonstrated by Resource Adequacy showings, and non-Resource Adequacy contract showings under Section 23.3 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 ETComm to meet Native Load needs also includes transmission capacity to serve expected Native Load growth in the rolling thirteen (13)-month horizon. The amount of such transmission capacity at each Intertie set aside in ETComm to meet Native Load growth will be calculated by comparing the CEC load forecast for the applicable future period to the forecasts used to set CAISO Resource Adequacy 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 Resource Adequacy imports shown for that calendar month to total Resource Adequacy 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 will use applicable contract information provided in accordance with, and meeting the requirements of, Section 23.3 of the CAISO Tariff to update 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 Resource Adequacy cure period under Section 40 of the CAISO Tariff, the CAISO will update or “true up” the amount of transmission capacity set aside in ETComm to meet Native Load needs at each Intertie to include the sum of the most recent actual showings of (i) Resource Adequacy import supply contained in monthly Resource Adequacy Plans and (ii) non-RA import supply to be delivered at the Intertie reported to the CAISO for that same calendar month. The CAISO will also use the updated ATC values for native load following the month-ahead Resource Adequacy and non-Resource Adequacy contract showings to calculate daily ATC for Native Load during the applicable month, while also accounting for any applicable CPM designations that utilize ATC. Any contract that is not shown to the CAISO by the end of the

Resource Adequacy cure period under Section 40 cannot count for purposes of setting aside Native Load capacity for the applicable month.

If the amount of transmission capacity set aside at an Intertie to meet Native Load needs for a calendar month based on RA and non-RA import showings for that month under Sections L.1.1.1 and L.1.3.3.2 (and including transmission capacity to serve expected Native Load growth under Section L.1.3.3.1) is greater than the most recent actual showings of Resource Adequacy import supply contained in monthly Resource Adequacy Plans and non-Resource Adequacy import supply to be delivered at the Intertie for that same month, the resulting 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 Resource Adequacy and non-Resource Adequacy import showings for that month under Sections L.1.1.1 and L.1.3.3.2 (and including transmission capacity to serve expected Native Load growth under Section L.1.3.3.1) 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 Resource Adequacy import supply contained in monthly Resource Adequacy Plans and non-Resource Adequacy 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 Resource Adequacy and non-Resource Adequacy import showings at the Intertie that are unrelated to any change in the planning reserve margin. 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, and the TRM cannot accommodate all native load needs, 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 Resource Adequacy and non-Resource Adequacy import contract showings for the month exceed the amount of ATC the CAISO has set aside for Native Load in accordance with Sections L.1.3.3, L.1.3.3.1, and L.1.3.3.2. 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 under Sections L.1.3.3, L.1.3.3.1, and L.1.3.3.2 for a particular Intertie for the month of May is 1,000 MW, and only 900 MW of Resource Adequacy and non-Resource Adequacy 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 Through Priority for May through the request window that closed at the same time as the monthly Resource Adequacy and non-Resource Adequacy import showing deadline for May.

Also, for example, assume the following: the Native Load set-aside value under Sections L.1.3.3, L.1.3.3.1, and L.1.3.3.2 for the month of May is 1,000 MW; 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 Resource Adequacy and non-Resource Adequacy 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 100 MW assuming the 100 MW are not associated with an increase in the planning reserve margin for which an amount has been set aside in the load forecast uncertainty component of the TRM. If the 100 MW were associated with an increase in the planning reserve margin and not simply a difference between historic values and the monthly Resource Adequacy and non-Resource Adequacy contract values and assuming the CAISO had set aside 90 MW in the TRM load forecast uncertainty component to account for changes in the planning reserve margin, then ten (10) MW of the excess monthly showings will be supported by the TRM

component, 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 in prior monthly request windows, and no additional ATC will be available for the actual Resource Adequacy and non-Resource Adequacy showings above the historic values used to set ATC. If the excess Resource Adequacy and non-Resource Adequacy showings were associated with an increase in the planning reserve margin, 90 MW of the excess monthly showings will be supported by the TRM component that accounts for such load forecast uncertainty.

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 NERC-approved components of uncertainty as described in the Transmission Reliability Margin Implementation Document (TRM 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 will establish TRM in all applicable horizons, including monthly and daily, and may change (increase or decrease) TRM values across all such horizons, including prior to Market Close of the DAM and RTM. To the extent TRM values are decreased in a given horizon, additional ATC would become available in that horizon.

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 TRM Implementation Document, throughout 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 can change the TRM for any applicable horizon as circumstances

change.

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 TRM Implementation Document, across the rolling thirteen (13)-month 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) changes ordered by Local Regulatory Authorities in planning reserve margins or resource procurement requirements for Load Serving Entities, and (2) 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 hydroelectric 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 TRM Implementation Document, across the rolling thirteen (13)-month horizon and the rolling seven (7)-day 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 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:

CBM = (Demand + Reserves) - 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 for Market Optimization

The ATC algorithm in the market is a calculation used to determine the transfer capability remaining in the physical transmission network and available for further commercial activity and optimization 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 from Imports- Net Energy Flow - Hourly Unused TR Capacity.

ATC Calculation For Exports:

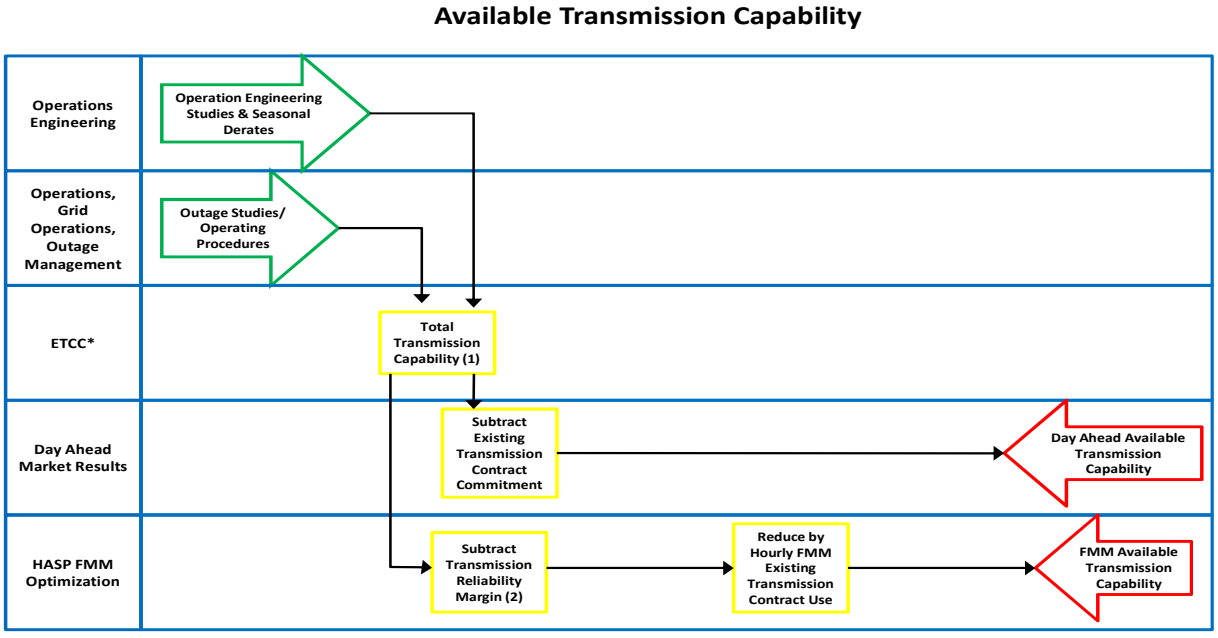
ATC = TTC - CBM - TRM - Net Energy Flow - Hourly Unused TR Capacity.

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



*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 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 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 horizon to reflect current information on the anticipated transfer

capability of the transmission network, including information on Outages affecting the transfer capability on Interties.

L.5 Developing a Power Flow Base-Case

L.5.1 **Base-cases** will be selected to model reality to the greatest extent possible including attributes like area Generation, area Load, Intertie flows, etc. At other times (e.g., studying longer range horizons), it is prudent to stress a base-case by making one or more attributes (Load, Generation, line flows, path flows, etc.) of that base-case more extreme than would otherwise be expected.

L.5.2 Update a Power Flow Base-Case

The selected base-case will be updated to represent the current grid conditions during the applicable season. The following will be considered to update the base-cases:

- Recent transmission network changes and updates
- Overlapping scheduled and Forced Outages
- Area Load level
- Major path flows
- Generation level
- Voltage levels
- Operating requirements

L.5.2.1 Outage Consideration

Unless detailed otherwise, the CAISO considers modeling Outages of:

- Transmission lines, 500 kV
- Transformers, 500/230 kV
- Large Generating Units
- Generating Units within the studied area
- Transmission elements within the studied area

At the judgment of the CAISO, only the necessary Outages will be modeled to avoid an unnecessarily burdensome and large number of base-cases.

L.5.2.2 Area Load Level

Base-case Demand levels should be appropriate to the current studied system conditions and customer Demand levels under study and may be representative of peak, off-peak or shoulder, or light Demand conditions. The CAISO estimates the area Load levels to be utilized in the peak, partial-peak and/or off-peak base-cases. The CAISO will utilize the current CAISO Load forecasting program (e.g., ALFS), ProcessBook (PI) or other competent method to estimate Load level for the studied area. Once the appropriate Load levels are determined, the CAISO may scale the base-case Loads to the area studied, as appropriate.

L.5.2.3 Modify Path Flows

The scheduled electric power transfers considered representative of the base system conditions under analysis and agreed upon by the parties involved will be used for modeling. As needed, the CAISO may estimate select path flows depending on the studied area. In the event that it is not possible to estimate path flows, the CAISO will make safe assumptions about the path flows. A safe assumption is more extreme or less extreme (as conservative to the situation) than would otherwise be expected. If path flow forecasting is necessary, if possible the CAISO will trend path flows on previous similar days.

L.5.2.4 Generation Level

Utility and non-utility Generating Units will be updated to keep the swing Generating Unit at a reasonable level. The actual unit-by-unit Dispatch in the studied area is more vital than in the un-studied areas. The CAISO will examine past performance of select Generating Units to estimate the Generation levels, focusing on the Generating Units within the studied area. In the judgment of the CAISO, large Generating Units outside the studied area will also be considered.

L.5.2.5 Voltage Levels

Studies will maintain appropriate voltage levels, based on operation procedures for critical buses for the studied base-cases. The CAISO will verify that bus voltage for critical busses in within tolerance. If a bus voltage is outside the tolerance band, the CAISO will model the use of voltage control devices (e.g., synchronous condensers, shunt capacitors, shunt reactors, series capacitors, generators).

L.6 Contingency Analysis

Contingency analysis studies are performed in an effort to determine the limiting conditions, especially for scheduled Outages, including pre- and post-Contingency power flow analysis modeling pre- and post-Contingency conditions and measuring the respective line flows, and bus voltages.

Other studies like reactive margin and stability may be performed as deemed appropriate.

L.6.1 Operating Criteria and Study Standards

Using standards derived from NERC and WECC Reliability Standards and historical operating experience, the CAISO will perform Contingency analysis with the following operating criteria:

Pre-Contingency

- All pre-Contingency line flows shall be at or below their normal ratings.
- All pre-Contingency bus voltages shall be within a pre-determined operating range.

Post-Contingency

- All post-Contingency line flows shall be at or below their emergency ratings.
- All post-Contingency bus voltages shall be within a pre-determined operating range.

The CAISO simulates the appropriate Contingencies as required by applicable NERC and WECC Reliability Standards and criteria.

L.6.2 Manual Contingency Analysis

If manual Contingency analysis is used, the CAISO will perform pre-Contingency steady-state power flow analysis and determines if pre-Contingency operating criteria is violated. If pre-

Contingency operating criteria cannot be preserved, the CAISO records the lines and buses that are not adhering to the criteria. If manual post-Contingency analysis is used the CAISO obtains one or more Contingencies in each of the base cases. For each Contingency resulting in a violation or potential violation in the operating criteria above, the CAISO records the critical post-Contingency facility loadings and bus voltages.

L.6.3 Contingency Analysis Utilizing a Contingency Processor

For a large area, the CAISO may utilize a Contingency processor.

L.6.4 Determination of Crucial Limitations

After performing Contingency analysis studies, the CAISO analyzes the recorded information to determine limitations. The limitations are conditions where the pre-Contingency and/or post-Contingency operating criteria cannot be conserved and may include a manageable overload on the facilities, low post-Contingency bus voltage, etc. If no crucial limitations are determined, the CAISO determines if additional studies are necessary.

L.7 Traditional Planning Methodology to Protect Against Violating Operating Limits

After performing Contingency analysis studies, the CAISO next develops the transfer capability and develops procedures, Nomograms, RMR Generation requirements, or other Transmission Constraints to ensure that transfer capabilities respect operating limits.

L.8 Limits for Contingency Limitations

Transfer limits are developed when the post-Contingency loading on a transmission element may breach the element's emergency rating. The type of limit utilized is dependent on the application and includes one of the following limits:

- Simple Flow Limit - best utilized when the derived limit is repeatable or where parallel transmission elements feed radial Load.

- RAS - existing Remedial Action Schemes (RAS) may impact the derivation of simple flow limits. When developing the limit, the CAISO determines if the RAS will be in-service during the Outage and factors the interrelationship between the RAS and the derived flow limit. The CAISO will update the transfer limits in recognition of the changing status and/or availability of the RAS.

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Document Accession #: 20230728-5177 Filed Date: 07/28/2023

Attachment B – Marked Tariff (effective November 1, 2023)

Tariff Amendment Filing

Short-Term Wheeling Through Self-Schedule Priorities

California Independent System Operator Corporation

July 28, 2023

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 transmission capacity for CAISO Demand and Priority Wheeling Through and non-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

The provisions of Sections 23.2 through 23.9 apply to Wheeling Through Priorities and Priority Wheeling Through transactions that will be effective beginning June 1, 2024 and thereafter.

23.2.1 General Requirements For Monthly or Daily Requests for a Wheeling Through Priority

Scheduling Coordinators may obtain a monthly or daily Wheeling Through Priority to support Priority Wheeling Throughs under the process in this Section 23. A Scheduling Coordinator can submit a request

for 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 for an external load serving entity, or the Scheduling Coordinator for a seller of Energy to the external load serving entity, must submit a Wheeling Through Priority request and attest to the following: (1) the Wheeling Through Priority request is supported by an executed firm power supply contract to serve an external load serving entity's load, a firm power supply contract to serve an external load serving entity's load where execution is contingent upon the availability of a Wheeling Through Priority on the CAISO system, or the external load serving entity's ownership of an external resource to serve external load; (2) the MW quantity of the firm power supply contract with an external load serving entity supporting the request and the Scheduling Points 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) any information specified in the Business Practice Manual has been provided; 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. The same MW in a firm power supply contract cannot support a Wheeling Through Priority for both the seller and the buyer for the same period of time. Scheduling Coordinators cannot seek, and the CAISO will not award in the request window processes specified in Section 23.4 and 23.5, a monthly or daily Wheeling Through Priority for a MW quantity greater than the MW quantity in the underlying power supply contract or for a period greater than or non-coincident with the hours of the underlying firm power supply contract, or for a MW quantity or duration greater than the physical and operational capabilities of the external load serving entity's resource, whichever is applicable. Thus, for any month or day, an awarded Wheeling Through Priority 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 Priority Wheeling Throughs that the Scheduling Coordinator self-schedules during those

specified hours. The minimum 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. 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 and 34.12.1.

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 Priority Wheeling Through transaction on a given day (as new firm use in the CAISO markets). A Priority Wheeling Through accords the Scheduling Coordinator the highest scheduling priority of new firm use, equal to the priority of CAISO Demand. If a Scheduling Coordinator does not actually schedule a Priority Wheeling Through on a given day that it has the right, the Wheeling Through Priority is inapplicable.

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

(a) If the firm power supply contract supporting the Wheeling Through Priority is terminated for any reason or is modified such that the MW quantity, hours of service, import point, or export point changes, the Scheduling Coordinator with a monthly or daily Wheeling Through Priority must notify the CAISO by the earlier of (i) five (5) Business Days after the effective date of the termination or (ii) eleven (11) Business Days before the date any Priority Wheeling Through transaction would actually occur under the awarded priority. The Scheduling Coordinator will also attest to the circumstances surrounding and reason for termination or modification of the underlying firm power supply contract.

(b) If the supporting firm power supply contract is terminated eleven (11) or more Business Days before the date on which the Scheduling Coordinator with the Wheeling Through Priority can first schedule a Priority Wheeling Through transaction using its Wheeling Through Priority, the Wheeling Through Priority will terminate unless the Scheduling Coordinator can demonstrate an equivalent replacement power supply contract (including MW quantity, import and export points, and service hours) by the earlier of (i) sixty (60)

days from the date of termination, or (ii) eleven (11) Business Days before the date any Priority Wheeling Through transaction would actually occur under the awarded priority, provided the Wheeling Through Priority will be prorated if the replacement contract is for a lower MW quantity or for fewer hours than the original contract. If the Scheduling Coordinator decides it will not seek to replace the terminated power supply contract, it must notify the CAISO within five (5) Business Days of that decision, but no later than eleven (11) Business Days before the date any Priority Wheeling Through transaction would actually occur under the awarded priority. The CAISO will account for any capacity associated with a terminated Wheeling Through Priority in a revised ATC calculation.

(c) If the MW quantity or hours of service of the original supporting firm power supply contract are reduced eleven (11) or more Business Days before the date on which the Scheduling Coordinator with the Wheeling Through Priority can first schedule a Priority Wheeling Through transaction using its Wheeling Through Priority, the MW quantity or hours of the Wheeling Through Priority will be reduced correspondingly unless the Scheduling Coordinator demonstrates, by the earlier of (i) sixty (60) days from the date of the modification, or (ii) eleven (11) Business Days before the date any Priority Wheeling Through transaction would actually occur under the awarded priority, the following: (1) a replacement contract for a MW quantity or hours of service, that when added to the reduced MW quantity or hours of service of the revised supporting contract, equals the MW quantity or hours of service reflected in the original contract supporting the Wheeling Through Priority, provided that the Scheduling Coordinator can receive a priority for a total MW quantity or number of hours less than the MW quantity or number of hours in the original contract, but greater than the MW quantity or number of hours in the revised contract, and (2) the replacement contract has 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 identical to the Scheduling Points in the original contract supporting the priority. If the Scheduling Coordinator decides it will not seek any replacement contract if the original power supply contract has been modified, it must notify the CAISO within five

(5) Business Days of that decision, but no later than eleven (11) Business Days before the date any Priority Wheeling Through transaction would actually occur under the awarded priority. The CAISO will account for any capacity associated with a modified Wheeling Through Priority in a revised ATC calculation.

(d) If the Scheduling Coordinator seeks a priority in a replacement contract for a MW quantity greater than the MW quantity in the original contract, hours that are different than the hours in the hours in the original contract, or either the import or export Scheduling Point in the replacement contract is different than the import or export point in the original contract supporting the Wheeling Through Priority, the Scheduling Coordinator must re-apply for a Wheeling Through Priority for such deviations in a subsequent request window.

(e) If the supply contract supporting the Wheeling Through Priority is terminated or modified after eleven (11) Business Days before the Day-Ahead Market run for the date on which the Scheduling Coordinator can first schedule a Priority Wheeling Through transaction using the Wheeling Through Priority, the Scheduling Coordinator will retain the Wheeling Through Priority and will be charged for such Wheeling Through Priority for the term of the priority.

23.3 ATC Requirements Related to CAISO LSEs

23.3.1 ATC Request Window Applicability to CAISO LSEs

The CAISO will consider Native Load needs of its Load Serving Entities in determining ATC pursuant to Section 23.3 and Appendix L-1. In addition, Scheduling Coordinators for CAISO LSEs can compete to obtain ATC to support an import into the 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 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 information specified in the Business Practice Manual to support a daily ATC request has been provided; 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.

23.3.2 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 Appendix L-1, 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 firm import supply contracts that can be reported under this Section 23.3.1 must be contracts for a period greater than one month that includes the applicable month, monthly contracts for the month, or a portfolio of shorter-term contracts for the month. They cannot be contracts to replace other external capacity that becomes unavailable. 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 is imported.

23.3.3 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, Load Serving Entities must (1) notify the CAISO of any new firm contracts for imports to serve their load that are for a period greater than one month and include the applicable month, monthly contracts for the month, or a portfolio of shorter-term contracts for the month, and that are not reflected in the historical two (2) year period and (2) notify the CAISO of any import contracts reflected in the historical data that will be discontinued any time in the thirteen (13)-month horizon and will not be replaced with another import at the same Scheduling Point. The CAISO will consider these representations in establishing the initial ATC for the 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 by 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.

If the LSE intends the new contract to be incremental capacity, the LSE must attest that the capacity will be additive to the import capacity under contract during the historic period and will be shown as such in the monthly Resource Adequacy or non-Resource Adequacy contract showings. Upon request of the CAISO, Load Serving Entities should be ready to provide information to demonstrate the incremental nature of the capacity including, but not limited to: Load Serving Entity resource plans that include the contract; the LSE's expected load growth, incremental procurement ordered or approved by Local Regulatory Authorities, replacement of generation internal to the CAISO, or other relevant information demonstrating the additive nature of the new contract. The CAISO will use contracts that meet the requirements in this section to determine the existing transmission commitments (ETComm) component of the ATC calculation under Appendix L-1.

23.3.4 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 it has for the month that should be considered for inclusion in the existing transmission commitments (ETComm) component of the ATC calculation for the month under Appendix L-1. The contracts cannot be contracts to replace other external capacity that becomes unavailable. 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) at 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.

23.3.5 CPM Access to ATC

If the CAISO designates import capacity under the CPM for any reason other than to address an annual or monthly Resource Adequacy deficiency, the CAISO will first utilize the CPM import capacity under the TRM to the extent any TRM capacity is available. If insufficient TRM capacity is available, then the CAISO will utilize ATC for the term of the CPM designation, or for part of the term, only to the extent ATC is available at the time of the designation. If the CAISO designates import capacity under the CPM to address an annual or monthly RA deficiency, the CAISO will first utilize ATC to the extent any ATC is available for all or part of the term and, if no ATC is available, then it will utilize TRM.

23.3.6 Annual Summer ATC and TRM Assessment Meeting with Stakeholders

Before the summer season (May-October) each year, the CAISO will meet with stakeholders to discuss ATC and its components and expected conditions for the upcoming summer and the following year's summer. The CAISO will issue a Market Notice announcing the meeting(s) 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 submit a request for a priority for Wheeling Throughs for a month(s). Scheduling Coordinators can request a monthly Wheeling Through Priority for any month or months 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 for a month(s) 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 Wheeling Through Priority 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 Wheeling Through Priority 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. Wheeling Through Priority awards 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 self-schedule the transaction 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 Wheeling Through Priority or daily ATC to support an import into the CAISO Balancing Authority Area by a CAISO LSE (LSE ATC), for any day or days in that request window 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

or LSE ATC. The CAISO will make its determination regarding daily Wheeling Through Priority awards no later than two (2) hours after the daily request window closes and one (1) hour before the Day-Ahead Market runs. The CAISO will treat all requests for a Wheeling Through Priority or LSE ATC 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 Wheeling Through Priority or LSE ATC 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. Awards of Wheeling Through Priorities or LSE ATC coming out of a daily request window are unconditional and cannot be unwound by Wheeling Through Priority or LSE ATC 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 [Not Used]

23.7 Use of ETC or TOR Capacity to Support a Wheeling Through Priority

A Scheduling Coordinator may use ETC or TOR capacity to support a Wheeling Through Priority. The Scheduling Coordinator may use ETC or TOR capacity for that portion of the Wheeling Through Priority from the import Scheduling Point to the export Scheduling Point that is covered by the ETC or TOR capacity the Scheduling Coordinator chooses to use. The Scheduling Coordinator must use transmission capacity on the CAISO Controlled Grid to support the balance of the Wheeling Through Priority. The

Scheduling Coordinator will pay the applicable Wheeling Through Priority charges pursuant to Section 26.1.4.5 for the MW quantity of the Wheeling Through Priority.

23.8 Sale or Assignment of a Wheeling Through Priority

23.8.1 Procedures for Reselling a Monthly Wheeling Through Priority

A Wheeling Through Priority Reseller Market Participant with a monthly Wheeling Through Priority may sell all or a portion of the MW quantity of its Wheeling Through Priority for the month, or remainder of the month or term, to another Market Participant (the assignee). 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 Wheeling Through Priority Reseller must also attest to the CAISO its reason for reselling or assigning the priority. Any resale or assignment must be at the same import Scheduling Point as the original Wheeling Through Priority, but it may be at a different export Scheduling Point if the CAISO can accommodate such change and maintain the status of the Wheeling Through Priority. 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 Scheduling Coordinator for the assignee will be subject to all applicable charges, terms, and conditions of the CAISO Tariff. 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 unless the CAISO has authorized a different export Scheduling Point to receive the Wheeling Through Priority. The CAISO will continue to charge the Wheeling Through Priority Reseller at the applicable Priority Wheeling Through rate for the term of its original 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 Wheeling Through Priority, which obligation remains with the Wheeling Through Priority Reseller. A Wheeling Through Priority Reseller cannot resell or assign a Wheeling Through Priority for the purpose of enabling avoidance of the firm power supply contract requirement of Section 23.2.1.

23.8.2 Information on Assignment or Transfer of a Wheeling Through Priority

All sales or transfers 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.

23.8.3 Resales or Transfers of Capacity Directly from a TOR and ETC Rights Holder to an Assignee

An ETC or TOR rights holder can resell or transfer ETC or TOR capacity if it is permitted to do so in the underlying contract and such sale or transfer is supported by any applicable TRTC instructions. If a holder of a TOR or ETC sells or transfers capacity that can support a Wheeling Through transaction, the assignee of such capacity will have the same rights and obligations as the holder of the TOR or ETC with respect to such capacity, including the associated scheduling priority and perfect hedge. 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 holder of the TOR or ETC must notify the CAISO of the sale, assignment, or transfer by the deadline specified in the Business Practice Manual. The holder of the TOR or ETC cannot sell, assign, or transfer more MW of capacity than it owns. The holder of the TOR or ETC must indicate the MW quantity sold, assigned, or transferred, the party to whom it sold, assigned, or transferred the capacity, and the start and end hours and dates of the transaction. The compensation from an assignee to the holder of a TOR or ETC for the sale or transfer of TOR or ETC rights to the assignee will be at rates established by the agreement between the holder of the TOR or ETC and the assignee and will occur outside of the CAISO's settlements systems and processes. The assignee will be responsible for all applicable CAISO charges associated with its use of the assigned capacity.

23.9 TOR Capacity Made Available to the CAISO

To the extent the holder of a TOR makes some or all of its TOR capacity available to the CAISO pursuant to a contract, the CAISO will implement the release of TOR capacity under the contract and reflect any released capacity in its ATC calculations as being available for new firm use and priority requests under Sections 23.4 and 23.5.

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Section 26

26. Transmission Rates and Charges

26.1 Access Charge

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26.1.4 Wheeling

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26.1.4.5 Charges for Wheeling Through Priorities

Scheduling Coordinators for customers with a monthly or daily Wheeling Through Priority awarded under Section 23 will pay the applicable Wheeling Access Charge, as illustrated in the Business Practice Manual, based on the MW amount and total hours of the priority for the applicable period of the Wheeling Through Priority. For example, a Scheduling Coordinator with a monthly Wheeling Through Priority based on a (six) 6-day-by-sixteen (16)-hours power supply contract would pay Wheeling Access Charges on a six (6)-day-by-sixteen (16)-hour basis for all applicable days during the entire month of the Wheeling Through Priority regardless of the Scheduling Coordinator's actual scheduled Priority Wheeling Throughs during that period. A Scheduling Coordinator with a one (1)-day Wheeling Through 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. To the extent a Scheduling Coordinator with a Wheeling Through Priority schedules a Wheeling Through transaction in excess of its Wheeling Through Priority 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 based on the amount of scheduled energy delivered.

Section 36

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36.9.2 Prepayment of Wheeling Access Charge

36.9.2.1 Prepayment of Wheeling Access Charge for Allocated CRRs

An OBAALSE will be required to prepay relevant Wheeling Access Charges, to be calculated as described in this section and further specified in the Business Practice Manual, for the full term of the Monthly CRRs, Seasonal CRRs and Long Term CRRs it intends to nominate in order to participate in the CRR Allocation processes and be allocated CRRs. To be eligible for the allocation of Seasonal CRRs or Monthly CRRs the OBAALSE must submit the full required prepayment and have it accepted by the CAISO prior to the OBAALSE's submission of nominations for the relevant annual or monthly CRR Allocation, except as provided below in Section 36.9.2.2. To be eligible for nominations of Long Term CRRs, the OBAALSE must submit the full prepayment and have it accepted by the CAISO prior to the OBAALSE's submission of nominations of Long Term CRRs in Tier LT, except as provided below in Section 36.9.2.2. For each MW of Monthly CRR, Seasonal CRR or Long Term CRR to be nominated the nominating OBAALSE must prepay one MW of the relevant Wheeling Access Charge, which equals the per-MWh WAC that is associated with the Scheduling Point the OBAALSE intends to nominate as a CRR Sink and that is expected at the time the CRR Allocation process is conducted to be applicable for the period of the CRR nominated, times the number of hours comprising the period of the CRR nominated as further specified in the applicable Business Practice Manual. The CAISO will credit any monthly payment obligation for Wheeling Access Charges by an OBAALSE for a monthly Wheeling Through Priority obtained under Section 23.4, toward the OBAALSE's prepayment obligation in this section 36.9.2.1. Such OBAALSE must prepay the difference in accordance with the applicable prepayment timeline herein. The OBAALSE with a Wheeling Through Priority must prepay the difference in accordance with the applicable prepayment timeline. Any applicable credit check would be done based on the full value owed, including both the prepayment amount and the amount to be credited.

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Appendix A

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- Wheeling Through Priority

A Wheeling Through Priority allows a Scheduling Coordinator to self-schedule Priority Wheeling Throughs during the term and hours of the priority up to the MW quantity of the priority and at the import and export Scheduling Points authorized under the priority.

- Wheeling Through Priority Reseller

An entity that resells, assigns, or otherwise transfers a monthly or long-term Wheeling Through Priority. A Wheeling Through Priority Reseller can be the original priority rights holder or an assignee of a monthly Wheeling Through Priority.

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NOTE: Changes from language in current Appendix L are shown in yellow highlighting.

Appendix L-1

The provisions of this Appendix L-1 apply to the calculation of ATC to establish Wheeling Through Priorities that will be effective beginning June 1, 2024 and thereafter.

Appendix L-1 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.

For purposes of determining ATC in the market optimization, 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), 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 Wheeling Through Priorities, and (3) Native Load needs determined in accordance with this Appendix L-1, including Native Load growth in the applicable horizon and ATC Load Serving Entities acquire in the daily request window.

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* 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.1.3.1.1 **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 **Wheeling Through Priorities** – ETComm include transmission capacity for Wheeling Through Priorities pursuant to Sections 23.4, 23.5, and 23.6 of the CAISO Tariff.

The ATC for Wheeling Through Priorities is calculated based on the following formula which distinguishes it from ATC in the market optimization:

ATC = TTC – ETComm - TRM

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 for each calendar month equals the highest MW quantity of total Resource Adequacy and non-Resource Adequacy import supply under contract to Load Serving Entities (LSEs) dedicated to serving their load as demonstrated by Resource Adequacy showings, and non-Resource Adequacy contract showings under Section 23.3 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 ETComm to meet Native Load needs also includes transmission capacity to serve expected

Native Load growth in the rolling thirteen (13)-month horizon. The amount of such transmission capacity at each Intertie set aside in ETComm to meet Native Load growth will be calculated by comparing the CEC load forecast for the applicable future period to the forecasts used to set CAISO Resource Adequacy 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 Resource Adequacy imports shown for that calendar month to total Resource Adequacy 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 will use applicable contract information provided in accordance with, and meeting the requirements of, Section 23.3 of the CAISO Tariff to update 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 Resource Adequacy cure period under Section 40 of the CAISO Tariff, the CAISO will update or "true up" the amount of transmission capacity set aside in ETComm to meet Native Load needs at each Intertie to include the sum of the most recent actual showings of (i) Resource Adequacy import supply contained in monthly Resource Adequacy Plans and (ii) non-RA import supply to be delivered at the Intertie reported to the CAISO for that same calendar month. The CAISO will also use the updated ATC values for native load following the month-ahead Resource Adequacy and non-Resource Adequacy contract showings to calculate daily ATC for Native Load during the applicable month, while also accounting for any applicable CPM designations that utilize ATC. Any contract that is not shown to the CAISO by the end of the Resource Adequacy cure period under Section 40 cannot count for purposes of setting aside Native Load capacity for the applicable month.

If the amount of transmission capacity set aside at an Intertie to meet Native Load needs for a calendar month based on RA and non-RA import showings for that month under Sections L.1.1.1 and L.1.3.3.2 (and including transmission capacity to serve expected Native Load growth under Section L.1.3.3.1) is greater than the most recent actual showings of Resource Adequacy import supply contained in monthly Resource Adequacy Plans and non-Resource Adequacy import supply to be delivered at the Intertie for that same month, the resulting 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 Resource Adequacy and non-Resource Adequacy import showings for that month under Sections L.1.1.1 and L.1.3.3.2 (and including transmission capacity to serve expected Native Load growth under Section L.1.3.3.1) 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 Resource Adequacy import supply contained in monthly Resource Adequacy Plans and non-Resource Adequacy 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 Resource Adequacy and non-Resource Adequacy import showings at the Intertie that are unrelated to any change in the planning reserve margin. 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, and the TRM cannot accommodate all native load needs, 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 Resource Adequacy and non-Resource Adequacy import contract showings for the month exceed the amount of ATC the CAISO has set aside for Native Load in accordance with Sections L.1.3.3, L.1.3.3.1, and L.1.3.3.2. 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 under Sections L.1.3.3, L.1.3.3.1, and L.1.3.3.2 for a particular Intertie for the month of May is 1,000 MW, and only 900 MW of Resource Adequacy and non-Resource Adequacy 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 Through Priority for May through the request window that closed at the same time as the monthly Resource Adequacy and non-Resource Adequacy import showing deadline for May.

Also, for example, assume the following: the Native Load set-aside value under Sections L.1.3.3, L.1.3.3.1, and L.1.3.3.2 for the month of May is 1,000 MW; 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 Resource Adequacy and non-Resource Adequacy 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 100 MW assuming the 100 MW are not associated with an increase in the planning reserve margin for which an amount has been set aside in the load forecast uncertainty component of the TRM. If the 100 MW were associated with an increase in the planning reserve margin and not simply a difference between historic values and the monthly Resource Adequacy and non-Resource Adequacy contract values and assuming the CAISO had set aside 90 MW in the TRM load forecast uncertainty component to account for changes in the planning reserve margin, then ten (10) MW of the excess monthly showings will be supported by the TRM component, 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 in prior monthly request windows, and no additional ATC will be available for the actual Resource Adequacy and non-Resource Adequacy showings above the historic values used to set ATC. If the excess Resource Adequacy and non-Resource Adequacy showings were associated with an increase in the planning reserve margin, 90 MW of the excess monthly showings will be supported by the TRM component that accounts for such load forecast uncertainty.

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 NERC-approved components of uncertainty as described in the Transmission Reliability Margin Implementation Document (TRM 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 will establish TRM in all applicable horizons, including monthly and daily, and may change (increase or decrease) TRM values across all such horizons, including prior to Market Close of the DAM and RTM. To the extent TRM values are decreased in a given horizon, additional ATC would become available in that horizon.

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 TRM Implementation Document, throughout 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 can change the TRM for any applicable horizon as circumstances change.

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 TRM Implementation Document, across the rolling thirteen (13)-month 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) changes ordered by Local Regulatory Authorities in planning reserve margins or resource procurement requirements for Load Serving Entities, and (2) 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 hydroelectric 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 TRM Implementation Document, across the rolling thirteen (13)-month horizon and the rolling seven (7)-day 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 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:

CBM = (Demand + Reserves) - 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 for Market Optimization

The ATC algorithm in the market is a calculation used to determine the transfer capability remaining in the physical transmission network and available for further commercial activity and optimization 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 from Imports- Net Energy Flow - Hourly Unused TR Capacity.

ATC Calculation For Exports:

ATC = TTC - CBM - TRM - Net Energy Flow - Hourly Unused TR Capacity.

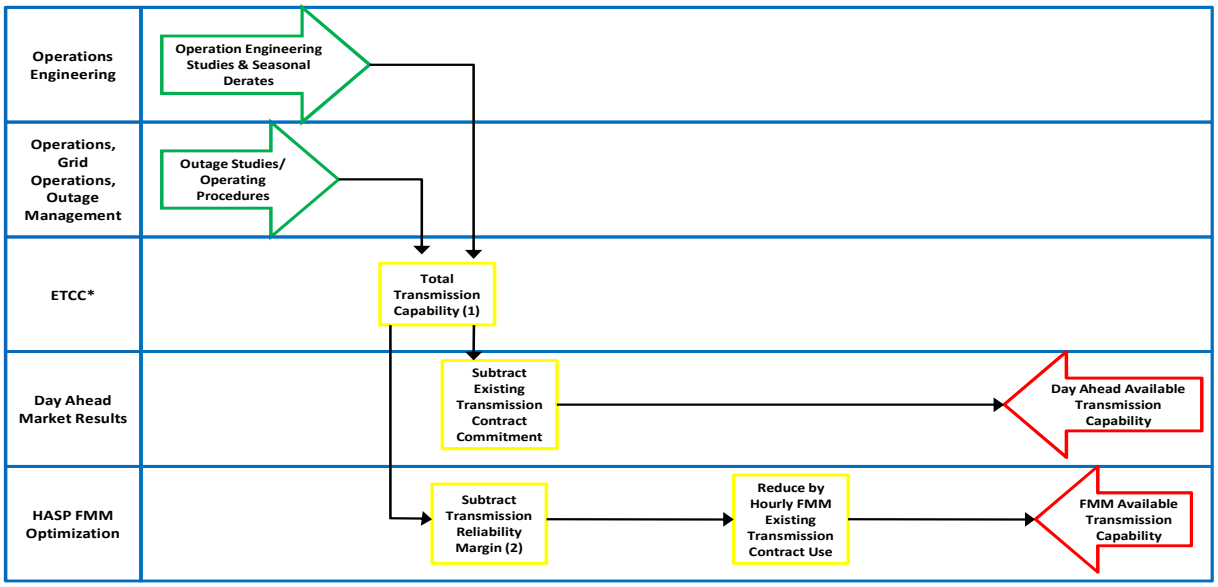
The specific data points used in the ATC calculation are each described in the following table.

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 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 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 horizon to reflect current information on the anticipated transfer capability of the transmission network, including information on Outages affecting the transfer capability on Interties.

L.5 Developing a Power Flow Base-Case

L.5.1 Base-cases will be selected to model reality to the greatest extent possible including attributes like area Generation, area Load, Intertie flows, etc. At other times (e.g., studying longer range horizons), it is prudent to stress a base-case by making one or more attributes (Load, Generation, line flows, path flows, etc.) of that base-case more extreme than would otherwise be expected.

L.5.2 Update a Power Flow Base-Case

The selected base-case will be updated to represent the current grid conditions during the applicable season. The following will be considered to update the base-cases:

- Recent transmission network changes and updates
- Overlapping scheduled and Forced Outages
- Area Load level
- Major path flows
- Generation level
- Voltage levels
- Operating requirements

L.5.2.1 Outage Consideration

Unless detailed otherwise, the CAISO considers modeling Outages of:

- Transmission lines, 500 kV
- Transformers, 500/230 kV
- Large Generating Units
- Generating Units within the studied area
- Transmission elements within the studied area

At the judgment of the CAISO, only the necessary Outages will be modeled to avoid an unnecessarily burdensome and large number of base-cases.

L.5.2.2 Area Load Level

Base-case Demand levels should be appropriate to the current studied system conditions and customer Demand levels under study and may be representative of peak, off-peak or shoulder, or light Demand conditions. The CAISO estimates the area Load levels to be utilized in the peak, partial-peak and/or off-peak base-cases. The CAISO will utilize the current CAISO Load forecasting program (e.g., ALFS), ProcessBook (PI) or other competent method to estimate Load level for the studied area. Once the appropriate Load levels are determined, the CAISO may scale the base-case Loads to the area studied, as appropriate.

L.5.2.3 Modify Path Flows

The scheduled electric power transfers considered representative of the base system conditions under analysis and agreed upon by the parties involved will be used for modeling. As needed, the CAISO may estimate select path flows depending on the studied area. In the event that it is not possible to estimate path flows, the CAISO will make safe assumptions about the path flows. A safe assumption is more extreme or less extreme (as conservative to the situation) than would otherwise be expected. If path flow forecasting is necessary, if possible the CAISO will trend path flows on previous similar days.

L.5.2.4 Generation Level

Utility and non-utility Generating Units will be updated to keep the swing Generating Unit at a reasonable level. The actual unit-by-unit Dispatch in the studied area is more vital than in the un-studied areas. The CAISO will examine past performance of select Generating Units to estimate the Generation levels, focusing on the Generating Units within the studied area. In the judgment of the CAISO, large Generating Units outside the studied area will also be considered.

L.5.2.5 Voltage Levels

Studies will maintain appropriate voltage levels, based on operation procedures for critical buses for the studied base-cases. The CAISO will verify that bus voltage for critical busses in within tolerance. If a bus voltage is outside the tolerance band, the CAISO will model the use of voltage control devices (e.g., synchronous condensers, shunt capacitors, shunt reactors, series capacitors, generators).

L.6 Contingency Analysis

Contingency analysis studies are performed in an effort to determine the limiting conditions, especially for scheduled Outages, including pre- and post-Contingency power flow analysis

modeling pre- and post-Contingency conditions and measuring the respective line flows, and bus voltages.

Other studies like reactive margin and stability may be performed as deemed appropriate.

L.6.1 Operating Criteria and Study Standards

Using standards derived from NERC and WECC Reliability Standards and historical operating experience, the CAISO will perform Contingency analysis with the following operating criteria:

Pre-Contingency

- All pre-Contingency line flows shall be at or below their normal ratings.
- All pre-Contingency bus voltages shall be within a pre-determined operating range.

Post-Contingency

- All post-Contingency line flows shall be at or below their emergency ratings.
- All post-Contingency bus voltages shall be within a pre-determined operating range.

The CAISO simulates the appropriate Contingencies as required by applicable NERC and WECC Reliability Standards and criteria.

L.6.2 Manual Contingency Analysis

If manual Contingency analysis is used, the CAISO will perform pre-Contingency steady-state power flow analysis and determines if pre-Contingency operating criteria is violated. If pre-Contingency operating criteria cannot be preserved, the CAISO records the lines and buses that are not adhering to the criteria. If manual post-Contingency analysis is used the CAISO obtains one or more Contingencies in each of the base cases. For each Contingency resulting in a violation or potential violation in the operating criteria above, the CAISO records the critical post-Contingency facility loadings and bus voltages.

L.6.3 Contingency Analysis Utilizing a Contingency Processor

For a large area, the CAISO may utilize a Contingency processor.

L.6.4 Determination of Crucial Limitations

After performing Contingency analysis studies, the CAISO analyzes the recorded information to determine limitations. The limitations are conditions where the pre-Contingency and/or post-Contingency operating criteria cannot be conserved and may include a manageable overload on the facilities, low post-Contingency bus voltage, etc. If no crucial limitations are determined, the CAISO determines if additional studies are necessary.

L.7 Traditional Planning Methodology to Protect Against Violating Operating Limits

After performing Contingency analysis studies, the CAISO next develops the transfer capability and develops procedures, Nomograms, RMR Generation requirements, or other Transmission Constraints to ensure that transfer capabilities respect operating limits.

L.8 Limits for Contingency Limitations

Transfer limits are developed when the post-Contingency loading on a transmission element may breach the element's emergency rating. The type of limit utilized is dependent on the application and includes one of the following limits:

- Simple Flow Limit - best utilized when the derived limit is repeatable or where parallel transmission elements feed radial Load.

- RAS - existing Remedial Action Schemes (RAS) may impact the derivation of simple flow limits. When developing the limit, the CAISO determines if the RAS will be in-service during the Outage and factors the interrelationship between the RAS and the derived flow limit. The CAISO will update the transfer limits in recognition of the changing status and/or availability of the RAS.

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Attachment C – Clean Tariff (effective June 1, 2024)

Tariff Amendment Filing

Short-Term Wheeling Through Self-Schedule Priorities

California Independent System Operator Corporation

July 28, 2023

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]

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Section 34

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34.12.3 Post-HASP Process

In the event there is a transmission limitation on an Intertie in the import direction and 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 Resource Adequacy Resources, shown non-Resource Adequacy Resources under contract, CPM imports with ATC or supported by TRM, resources supported by ATC awarded in the daily request window process, and imports supported by TRM 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 lower of (1) the submitted Real-Time Market Self-Schedules of the Priority Wheeling Through transactions, or (2) the Priority Wheeling Through quantity awarded ATC under Section 23. The ATC for CAISO Demand and Priority Wheeling Throughs cannot exceed the Total Transfer Capability (TTC) of an Intertie. The amount of capacity considered for pro rata allocation in the post-HASP Process cannot exceed the TTC of the 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. 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

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- Priority Wheeling Through

A Wheeling Through Self-Schedule that has obtained a priority under Section 23.

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Appendix L

[Not Used]

Attachment D – Marked Tariff (effective June 1, 2024)

Tariff Amendment Filing

Short-Term Wheeling Through Self-Schedule Priorities

California Independent System Operator Corporation

July 28, 2023

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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

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34.12.3 Post-HASP Process

In the event there is a transmission limitation on 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 ~~Load and~~ CAISO ~~Balancing Authority~~ Demand and Priority Wheeling Through transactions, as described in the Business Practice Manual. The CAISO Demand pro rata share ~~of Load within the CAISO Balancing Authority Area~~ will be based on the lower of (1) the sum of the Real-Time Bid quantities of~~each~~ applicable Resource Adequacy Resource~~s's~~, shown non-Resource Adequacy Resources under contract, 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~~its~~ 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 lowe~~st~~ 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 (2~~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 amount of capacity considered for pro rata

allocation in the post-HASP Process cannot exceed the TTC of the Intertie. The ~~available transmission capacity~~ATC the CAISO awards to Priority Wheeling Through transactions in the post-HASP P~~p~~rocess cannot exceed the Priority Wheeling Through quantity the CAISO calculates in this pro rata allocation. 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

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- 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.~~

Appendix L

[Not Used]

~~**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 Existing Contracts and Transmission Ownership Rights (TOR). The CAISO reserves 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* 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.1.4 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.1.5 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:

- 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.

The CAISO 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.

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 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 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:

CBM = (Demand + Reserves) – 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 from Imports - Net Energy Flow – Hourly Unused TR Capacity.

ATC Calculation For Exports:

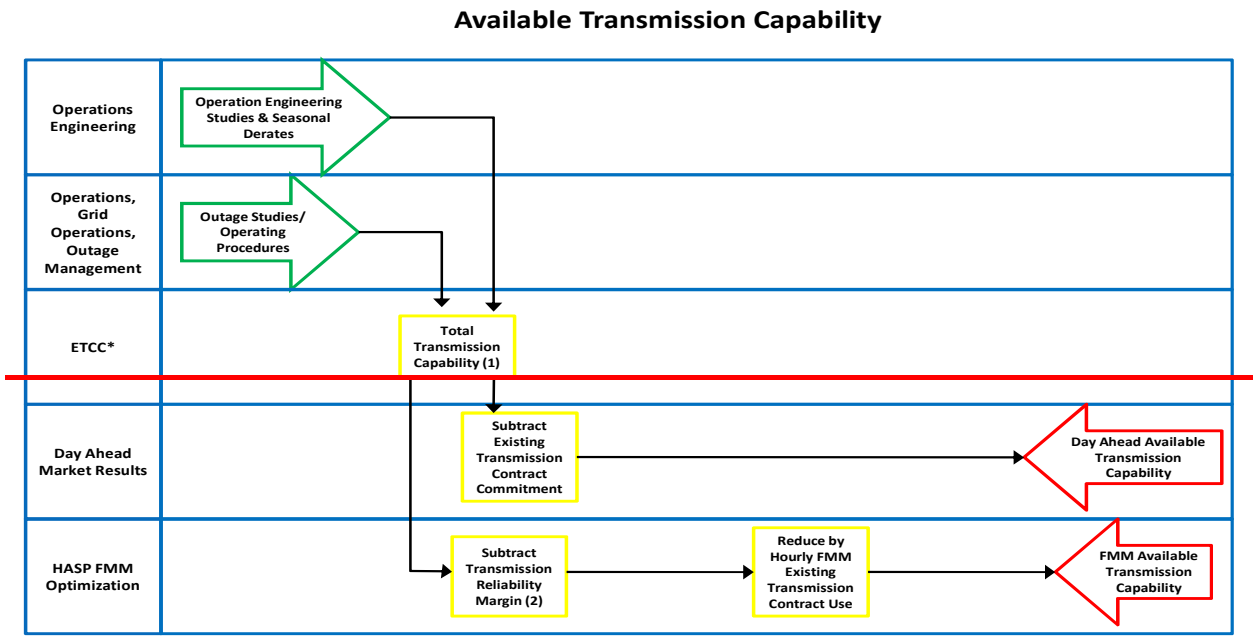
ATC = TTC – CBM – TRM – Net Energy Flow – Hourly Unused TR Capacity.

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 tr**ansmission 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 Inter**face, 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~~



*ETCC – Existing Transmission Contract Calculator
(1) – WECC rated path methodology
(2) - See TRMID posted 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.5 Developing a Power Flow Base-Case

L.5.1 Base-cases will be selected to model reality to the greatest extent possible including attributes like area Generation, area Load, Intertie flows, etc. At other times (e.g., studying longer range horizons), it is prudent to stress a base-case by making one or more attributes (Load, Generation, line flows, path flows, etc.) of that base-case more extreme than would otherwise be expected.

L.5.2 **Update a Power Flow Base-Case**

The selected base-case will be updated to represent the current grid conditions during the applicable season. The following will be considered to update the base-cases:

- Recent transmission network changes and updates
- Overlapping scheduled and Forced Outages
- Area Load level
- Major path flows
- Generation level
- Voltage levels
- Operating requirements

L.5.2.1 **Outage Consideration**

Unless detailed otherwise, the CAISO considers modeling Outages of:

- Transmission lines, 500 kV
- Transformers, 500/230 kV
- Large Generating Units

- Generating Units within the studied area
- Transmission elements within the studied area

At the judgment of the CAISO, only the necessary Outages will be modeled to avoid an unnecessarily burdensome and large number of base-cases.

L.5.2.2 Area Load Level

Base-case Demand levels should be appropriate to the current studied system conditions and customer Demand levels under study and may be representative of peak, off-peak or shoulder, or light Demand conditions. The CAISO estimates the area Load levels to be utilized in the peak, partial-peak and/or off-peak base-cases. The CAISO will utilize the current CAISO Load forecasting program (e.g., ALFS), ProcessBook (PI) or other competent method to estimate Load level for the studied area. Once the appropriate Load levels are determined, the CAISO may scale the base-case Loads to the area studied, as appropriate.

L.5.2.3 Modify Path Flows

The scheduled electric power transfers considered representative of the base system conditions under analysis and agreed upon by the parties involved will be used for modeling. As needed, the CAISO may estimate select path flows depending on the studied area. In the event that it is not possible to estimate path flows, the CAISO will make safe assumptions about the path flows. A safe assumption is more extreme or less extreme (as conservative to the situation) than would otherwise be expected. If path flow forecasting is necessary, if possible the CAISO will trend path flows on previous similar days.

L.5.2.4 Generation Level

Utility and non-utility Generating Units will be updated to keep the swing Generating Unit at a reasonable level. The actual unit-by-unit Dispatch in the studied area is more vital than in the un-studied areas. The CAISO will examine past performance of select Generating Units to estimate the Generation levels, focusing on the Generating Units within the studied area. In the judgment of the CAISO, large Generating Units outside the studied area will also be considered.

L.5.2.5 Voltage Levels

Studies will maintain appropriate voltage levels, based on operation procedures for critical buses for the studied base-cases. The CAISO will verify that bus voltage for critical busses in within tolerance. If a bus voltage is outside the tolerance band, the CAISO will model the use of voltage control devices (e.g., synchronous condensers, shunt capacitors, shunt reactors, series capacitors, generators).

L.6 Contingency Analysis

Contingency analysis studies are performed in an effort to determine the limiting conditions, especially for scheduled Outages, including pre- and post-Contingency power flow analysis modeling pre- and post-Contingency conditions and measuring the respective line flows, and bus voltages.

Other studies like reactive margin and stability may be performed as deemed appropriate.

L.6.1 Operating Criteria and Study Standards

Using standards derived from NERC and WECC Reliability Standards and historical operating experience, the CAISO will perform Contingency analysis with the following operating criteria:

Pre-Contingency

- All pre-Contingency line flows shall be at or below their normal ratings.

- All pre-Contingency bus voltages shall be within a pre-determined operating range.

Post-Contingency

- All post-Contingency line flows shall be at or below their emergency ratings.

- All post-Contingency bus voltages shall be within a pre-determined operating range.

The CAISO simulates the appropriate Contingencies as required by applicable NERC and WECC Reliability Standards and criteria.

L.6.2 Manual Contingency Analysis

If manual Contingency analysis is used, the CAISO will perform pre-Contingency steady-state power flow analysis and determines if pre-Contingency operating criteria is violated. If pre-Contingency operating criteria cannot be preserved, the CAISO records the lines and buses that are not adhering to the criteria. If manual post-Contingency analysis is used the CAISO obtains one or more Contingencies in each of the base cases. For each Contingency resulting in a violation or potential violation in the operating criteria above, the CAISO records the critical post-Contingency facility loadings and bus voltages.

L.6.3 Contingency Analysis Utilizing a Contingency Processor

For a large area, the CAISO may utilize a Contingency processor.

L.6.4 Determination of Crucial Limitations

After performing Contingency analysis studies, the CAISO analyzes the recorded information to determine limitations. The limitations are conditions where the pre-Contingency and/or post-Contingency operating criteria cannot be conserved and may include a manageable overload on the facilities, low post-Contingency bus voltage, etc. If no crucial limitations are determined, the CAISO determines if additional studies are necessary.

L.7 Traditional Planning Methodology to Protect Against Violating Operating Limits

After performing Contingency analysis studies, the CAISO next develops the transfer capability and develops procedures, Nomograms, RMR Generation requirements, or other Transmission Constraints to ensure that transfer capabilities respect operating limits.

L.8 Limits for Contingency Limitations

Transfer limits are developed when the post-Contingency loading on a transmission element may breach the element's emergency rating. The type of limit utilized is dependent on the application and includes one of the following limits:

- Simple Flow Limit – best utilized when the derived limit is repeatable or where parallel transmission elements feed radial Load.

- RAS – existing Remedial Action Schemes (RAS) may impact the derivation of simple flow limits. When developing the limit, the CAISO determines if the RAS will be in-service during the Outage and factors the interrelationship between the RAS and the derived flow limit. CAISO will update the transfer limits in recognition of the changing status and/or availability of the RAS.