

**Pseudo-Ties of Shared Resources  
Response to Stakeholder Comments on Draft Final Proposal**

The following table summarizes the stakeholder comments received on or after Friday, July 31, on the Draft Final Proposal in the Pseudo-Ties of Shared Resources initiative, and provides CAISO’s response to the comments. The full comments are available at <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Pseudo-ties-shared-resources>. Where the comments have resulted in revisions to CAISO’s proposal in this stakeholder process, they have been reflected in the Final Proposal.

<b>Metering and Telemetry Requirements</b>		
Stakeholder	Stakeholder Comment	CAISO Response
Los Angeles Dept. of Water and Power	N/A	
Six Cities	No comments on this topic at this time	
Southern California Edison	No objections to the use of a Logical Metering Settlement Quality Data Plan inclusive of the meter data reporting requirements for SCs. In addition, SCE offers support for the limit imposed for uninstructed deviations allocated to shares of resources delivered to the CAISO BAA, as a reasonable proxy as the maximum uninstructed deviation possible for the share of the resource whose output is to be delivered to the CAISO BAA.	Thank you for the support

<b>Outage Management and Reporting Requirements</b>		
Stakeholder	Stakeholder Comment	CAISO Response
Los Angeles Dept. of Water and Power	N/A	
Six Cities	No comments on this topic at this time	
Southern California Edison	Supports individual owner responsibility for outage reporting. Although shares are individually scheduled by the respective SCs but outages and de-rates are proportionally allocated, the Shared Resource Allocation Protocol should clearly specify the terms and conditions for the proportional distribution of outages and de-rates, and should include the formula for calculating the	Thank you for the support. Adding to the content of the Draft Final Proposal, CAISO will require shared resource allocation protocols to include the formula for proportional

	<p>proportional outage allocation. In oversight for the Shared Resources Allocation Protocol, CAISO should provide oversight for the Shared Resource Allocation Protocol. Intermittent auditing for compliance may prove inadequate particularly if clearly specified and transparent rules for telemetry communications, outage management and bid cost recovery between the Sharing Protocol Administrator and the owners of individual shares offer little comfort with the terms and conditions contained in the Shared Resource Allocation Protocol and the individual existing contractual arrangements with which owners of shares are bound by contractual commitments. Should there be a default to self-monitoring for compliance, then the Shared Resource Allocation Protocol must include clauses for dispute resolution which may already exist within the contracts for the individual shares.</p>	<p>outage allocation. CAISO’s proposal provides that a shared resource allocation protocol will be effective only after CAISO review and approval. CAISO will maintain its existing review and auditing of resources, and self-monitoring for compliance will add to CAISO monitoring. The CAISO tariff provides dispute resolution processes, and a shared resource allocation protocol may refer to dispute resolution provisions in existing contracts among the shared resource parties subject to the protocol.</p>
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<b>Treatment of Minimum Load and Start-Up Costs</b>		
Stakeholder	Stakeholder Comment	CAISO Response
Los Angeles Dept. of Water and Power	N/A	
Six Cities	No comments on this topic at this time	
Southern California Edison	Supports the treatment of the shared resource’s minimum load and start-up costs, specifically where the default is that the “bid cost recovery will apply separately to each pseudo-tied share as a separate resource, based upon each share’s resource characteristics and costs, commitment, and bid-in costs”. If there are specific circumstances that warrant a different allocation, they can be submitted to the CAISO in the Shared Resource Allocation Protocol.	Thank you for the support

<b>Additional Comments</b>		
<b>Stakeholder</b>	<b>Stakeholder Comment</b>	<b>CAISO Response</b>
Six Cities	<p>The Draft Final Proposal describes the proposed pseudo-tie arrangement for shared resources as an “option”, and states that “this initiative proposes broadening the options for market participants to use pseudo-ties, and has not proposed to limit the ability of market participants to dynamically schedule resources from EIM Entity BAAs.” The Six Cities support development of arrangements for pseudo-ties of shared resources on an optional basis, provided that market participants with shared resources continue to have the ability to dynamically schedule such resources located in an EIM Entity BAA, to count dynamically-scheduled shared resources as RA resources, and to submit economic bids for dynamically-scheduled shared resources located in an EIM Entity BAA in both the Day-Ahead Market and the Real-Time Market. The Six Cities understand and appreciate that the CAISO recommends pseudo-tie arrangements for shared resources located in EIM Entity BAAs on the grounds that pseudo-tie arrangements for such resources will mitigate accounting challenges that may arise when shared resources submit economic bids in the Real-Time Market. To facilitate a complete understanding of the risks and potential benefits associated with both dynamic scheduling of shared resources and pseudo-tie arrangements for such resources, the Six Cities request that the CAISO provide resource-specific examples illustrating how potential inconsistencies among bid prices, dispatch, and settlement prices might arise under continued dynamic scheduling and other resource-specific information as requested by the participants.</p>	<p>As the Six Cities note, CAISO has not proposed to limit the existing options available for dynamic schedules. CAISO’s Final Proposal in this stakeholder initiative will include a numeric example to elaborate on the Draft Final Proposal’s discussion of dynamic schedules from EIM Entity BAAs.</p>
Western Power Trading Forum (WPTF)	<p>WPTF was pleased to hear that the CAISO is no longer proposing that dynamic scheduled resources located in an EIM BAA can no longer submit economic offers. However, WPTF would like to receive additional clarification around the ability for dynamic scheduled resources to economically offer under the proposal. CAISO states that the preferred way to implement a dynamic transfer from EIM Entity BAAs is a pseudo-tie because economic offers from pseudo-ties do not have the same concerns as economic offers from dynamic schedules. The CAISO then includes a note that per</p>	<p>As stated in the Draft Final Proposal and in the subsequent stakeholder meeting, CAISO’s Issue Paper / Straw Proposal and Draft Final Proposal have not proposed to limit the options available for dynamic schedules. One option is to establish multiple dynamic system</p>

	<p>existing tariff only one dynamic schedule can be associated with one physical unit unless the CAISO approves an implementation plan. Given these two points raised by the CAISO, WPTF would like the CAISO to confirm that in the event a participant would like to establish a dynamic schedule resource from a physical unit that (1) is already associated with another dynamic schedule resource, (2) located in an EIM Entity BAA, and (3) would like the ability to economically offer, the CAISO will in good faith develop and approve an implementation plan and not only facilitate such a resource under the pseudo-tie model.</p>	<p>resources for a generating resource after CAISO approves an implementation plan, and CAISO has not proposed to change this option.</p>
<p>Los Angeles Dept. of Water and Power</p>	<p>CAISO states in the Draft Final Proposal that the purpose of this Initiative is “to create an option for real-time economic bidding by removing a current tariff-based limitation to only allow pseudo-ties from resources whose entire output is dedicated to the CAISO BAA and does not serve load in the native BAA”. LADWP agrees the Draft Final Proposal meets that objective, in part. However, it does not address the reliability and market concerns identified in the proposal related to the dynamic scheduling of shared resources into the CAISO’s markets when the market participant is not operating within the rules of EIM as expressed in the CAISO’s Open Access Transmission Tariff (OATT) and the EIM Entity’s OATT. These reliability concerns, in LADWP’s view, make dynamic scheduling from an EIM Entity’s BAA to the CAISO of shared resources that are bid into the market by a market participant completely untenable. To be clear, LADWP supports the dynamic scheduling of shared resources being bid into the market, but not until the reliability concerns are fully addressed. In LADWP’s view, the reliability concerns can be addressed either as part of the draft proposal or by broadening the Comprehensive Modeling Solution initiative to address these reliability concerns. If it is the latter, LADWP recommends that CAISO place limitations on dynamically scheduled resources being bid into the market until the market and reliability concerns are properly addressed.</p> <p>Additionally, the purpose of allowing dynamic schedules from a shared resource being bid into the market where all the parties are not part of the CAISO real time market beyond facilitating intra-interval regulation remains unclear to LADWP. If a portion of a shared resource is dynamically scheduled and bid into the CAISO’s markets</p>	<p>CAISO’s proposals have not identified reliability concerns for dynamic schedules from EIM Entity BAAs, and CAISO disagrees that there are reliability issues. When there are economic bids by dynamic schedules, CAISO has identified (1) possible differences among bid prices, dispatches, and settlement prices, which are economic risks to resource owners, and (2) possible charges in financial settlements to EIM Entities for uninstructed energy imbalances, which EIM Entities can manage through their net scheduled interchange. CAISO ensures that the overall market area maintains its energy balance, thus ensuring EIM’s reliable operation.</p> <p>When an EIM Entity participates in EIM, all load and resources are subject to EIM’s real-time market operations and settlements. It can</p>

	<p>there remains a need for a Base Schedule at T-57 for the Intertie Resource which will not be provided by EIM Entity BAA to which the resource is located, and to the extent any dynamic deviation of the schedule occurs there remains a need to settle the imbalance in the Market. However, a contractual mechanism to settle with the market participant does not exist because the market participant is operating outside the EIM. There seem to be a lot of hurdles to clear to essentially net out the tie Gen and Intertie resource export under this arrangement, which hurdles seem unnecessary and risky to both the Participating Resource Scheduling Coordinator and the EIM Entity. Base Scheduling the expected bilateral use through a static schedule and offering the resource into the market seem like a more appropriate construct when both parties are in the market footprint.</p> <p>Generation Shares: Each owner should be required to separately register their dynamically scheduled share of the generation resource if the share is expected to be bid into the market. It appears that the importing Scheduling Coordinator would be registering the same capacity twice, as a Tie Gen System Resource within CISO and then as a Generation Resource within the EIM Entity. The transfer at the EIM boundary presumably will net the Tie Gen out, but this adds to EIM Entities' management responsibilities, which can drive additional operational risk.</p> <p>Intertie Resources: If Dynamic schedules continue, there should be some sort of dedicated Registered Export Tie that can be dynamic to CAISO from the EIM Entity side that allows CAISO to utilize the Telemetry and match the output of the Generator to the export of the Intertie Resource and to the Area Control Error of the EIM Entity. There needs to be a registered tie for each share of the generation resource that is not included in the normal CAISO Mirror Intertie Resource at that location. A manual ETSR adjustment is untenable, particularly given the complexity around a shared resource such as IPP, the impact on Intertie Constraints, as well as the impact on ETSRs on the IPP DC Line, and LADWP's approach to maintain minimum operating limits on the IPP DC line. LADWP does not understand the purpose of all output dispatched in the Market on a Participating Resource being scheduled to the specific load of the</p>	<p>determine which types of resources in its BAA are eligible to participate in EIM, such as whether a resource can use a dynamic schedule. A resource may be an EIM Participating Resource or a non-participating resource. An EIM Participating Resource is represented by a Scheduling Coordinator, which has a contractual relationship with CAISO including market settlements, submits its base schedule to a market system where the EIM Entity has visibility, and can submit economic bids for dispatch from its base schedule.</p> <p>Generation Shares: The EIM Entity identifies all resources as part of the market model for its BAA. To become an EIM Participating Resource, its Scheduling Coordinator must also register it, but this does not duplicate the EIM Entity's part of the market model. This registration process <u>avoids</u> operational risk.</p> <p>Intertie Resources: The use of mirror resources to track the output of dynamic schedules is outside the scope of this initiative, which is to broaden the options for pseudo-ties as an alternative to dynamic schedules. However, CAISO is separately</p>
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	<p>Participating entity. However, if this must occur, we believe the creation of a mechanism such as the registered Tie described above is a more palatable option.</p> <p>Transmission Service Issues: In the case of IPP at least, participant contracts include both generation and transmission provisions for the joint owners. The transmission utilized for the Dynamic Schedules is not under the LADWP OATT. The Intertie Resources are registered to the EIM Entity Scheduling Coordinator. If the service utilized for the export is not under the OATT, there is no mechanism to pass through Imbalance Settlement charges for inherent imbalance created from a Dynamic schedule. LADWP believes a dynamic schedule should be prohibited between two EIM Entity Areas if the service is not under EIM or agreements are not in place for the EIM Entity to pass through these charges to the Transmission Owner/Customer. This issue would be mitigated with the implementation of TSP modeling. This approach seems to continue the specific usage of the transmission service acquired to deliver the resource specifically to the load rather than the Market. As such LADWP believes if the transmission utilized is curtailed, the Generation Resource should also be curtailed. This seems inefficient for the Market as a whole and negatively impacts the Scheduling Coordinator of the share.</p> <p>Dispatches: As dispatch of tie adjusts, output from generation resource adjusts accordingly. This would only be possible if the Intertie Resource is connected directly with the Generation Resource.</p> <p>Settlement: Settlement of generation and any non-OATT transmission needs to be addressed by owners in the Shared Protocol Agreement before a Dynamic Schedule approach can be utilized. The proposal cannot have a scenario where Generation share owners are potentially not kept “whole” financially. If the Transmission is curtailed and registered to the EIM Entity with no mechanism to pass through imbalance settlement charges, the EIM Entity would be credited for the curtailment of the Export and the Scheduling Coordinator would be assessed imbalance for both the Tie Gen and the Resource Registered within the EIM Entity Area. As such, the EIM Entity would get a credit and the Participating Resource Scheduling Coordinator</p>	<p>exploring whether the use of mirror resources as described by LADWP could be beneficial in LADWP’s EIM implementation. Concerning the delivery to load serving entities within the CAISO BAA, a dynamic schedule into CAISO represents interchange to the CAISO BAA as the sink, and while some market participants register specific Points of Delivery for use in e-tags, in CAISO operations that is simply for the convenience of their business processes.</p> <p>Transmission Service Issues: Although the modeling of areas within a BAA is outside the scope of this initiative, LADWP’s description raises the question of whether LADWP should create a sub-area for IPP in the EIM model. This would be similar to the non-participating areas of Burbank and Glendale, particularly if LADWP uses e-tags to track schedules between sub-areas such as from IPP to entities elsewhere within its BAA.</p> <p>Dispatches: See the discussion above concerning Intertie Resources.</p> <p>Settlement: The proposal in this initiative for a shared resource allocation protocol is specific to pseudo-ties, but owners of</p>
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	<p>would seemingly be charged twice. SP-tie pricing could impact the normal net effect of the settlement of the Tie Gen and the Export Intertie Resource. If the EIM Area or CISO has a Power Balance constraint, these prices will separate. Again, we believe the Participating Resource Scheduling Coordinator should be responsible for the Generation Resource, Export Intertie Resource and the Tie Gen under this construct to eliminate exposure to the EIM Entity. Pseudo-tying would eliminate this issue.</p> <p>Final comments: Ultimately, LADWP is very supportive and appreciative of CAISO's recognition of various challenges faced by LADWP and other utilities in effectively and efficiently participating in the EIM. CAISO's initiative on Pseudo-Ties of Shared Resources is a significant step in the right direction in continuing to improve the mechanics of EIM participation.</p>	<p>a shared resource could use a similar concept when using dynamic schedules. In this initiative, CAISO has not proposed changes to EIM's imbalance settlement charges, and accounting among shared resource owners may choose to address these details in a shared resource allocation protocol. As noted above, CAISO is separately exploring whether the use of mirror resources as described by LADWP could be beneficial in LADWP's EIM implementation.</p>
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