

FERC Order 764 Comments – Round 2

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Company	Date	Submitted By
Bonneville Power Administration	January 8, 2013	Edison Elizeh, BPA Strategy Integration (egelizeh@bpa.gov)
Scheduling Comments		
<p>1.1 BPA is seeking clarification on CAISO curtailment process due to in-hour derates. If CAISO has a derate within the operational hour, will CAISO curtail e-tags to the "next schedule Interval" or curtail to the end of the operational hour? Example: If the COI was derated from 4800 to 2990MW at XX:10, will the CAISO curtail e-tags starting current time and end at XX:15 or will they curtail e-tags at current time and end at XX:00 (top of hour)? BPA suggests that the CAISO curtailment process follow the anticipated guidelines of the preemption sub-group of the WECC 764 task force.</p> <p>1.2 How does the CAISO see its new 15 min. market be impacted due to derates within the hour? BPA suggests that the ISO incorporate the most recent line ratings in its market optimization.</p> <p>1.3. Is CAISO expecting to make changes to its COI Master Operating Procedure 6110? BPA suggests that an evaluation of the COI Master Operating Procedure 6110 be conducted prior to finalization of the proposal process.</p>		
CAISO Response		
<p>CAISO will follow the curtailment process based upon the guidelines developed by the WECC 764 task force.</p> <p>If a line is derated in the hour, first economic bids will be curtailed, then hourly block schedules with a single intra hour curtailment, and then hourly block schedules. If the derate is known prior to the start of a 15-minute market optimization, the self-schedules of hourly blocks and VERs will be adjusted and the schedule changes will not be subject to deviations priced in RTD.</p> <p>The CAISO will review, and make any necessary changes to, all operating procedures during implementation of the market design resulting from this stakeholder process. If BPA has identified specific issues that need to be reviewed during the policy development process, please describe them in comments.</p>		

Company	Date	Submitted By
Comments of the California Municipal Utilities Association (CMUA)		Tony Braun (916) 326-4449 braun@braunlegal.com
Simplicity of Market and Consideration of Reforms		
<p>CMUA members and other stakeholders raised concerns with respect to the addition of scheduling and settlement functionality, and whether this additional burden in combination with existing settlement timelines was simply too complex and costly to administer, as compared with any benefits of retaining settlement intervals more granular than the 15-minute market. The CAISO responded that simplification was being considered in the context of this proposal.</p>		

CMUA would appreciate further discussion and explanation of why or why not elimination of settlement intervals sub-15 minutes, in conjunction with this proposal, can be implemented.

CAISO Response

By not settling the 15-minute interval, the ISO will not address fully the market inefficiencies that result from having inerties and internal generation imbalance energy settling in the same market optimization.

The ISO has been unable to identify any option that can replace settling the 15-minute market for all resources that does not result in market uplifts similar to what we have experienced with the HASP settlement of inerties. The ISO previously discussed in the Renewable Integration: Market and Product Review the establishment of 15-minute settlement with a new dispatch product between the 15-minute schedule and regulation. This would require more significant changes to the real time market optimization and settlement than using the existing RTD dispatch. These significant design changes would delay implementation of 15-minute scheduling and addressing the market inefficiencies highlighted above.

Regional Reforms

Several stakeholders raised concerns with respect to how the CAISO proposal would comport with efforts in the rest of the WECC. CMUA acknowledges that (1) the CAISO cannot control the actions of others; and (2) the CAISO proposal has merits with respect to internal operations. However, the interface with what is being proposed for Order No. 764 compliance by other entities is critical to meeting the market and policy objectives of the Order. At a minimum, greater transparency, perhaps along the line so what is being used for Order No. 1000 compliance for inter-regional compliance issues, should be considered.

CAISO Response

The ISO is actively participating in WECC's 764 taskforce and encourages stakeholders to also participate in WECC sub-groups. A subgroup of the WECC task force has reviewed the potential for seams issues, and to date has found no issues between the CAISO's proposal and the recommendations of the task force.

Affect on Intertie Supply

While the CAISO has taken steps to mitigate the impact of the proposal on the supply of import bids, the history of CAISO operations is rife with proposals that unraveled when market behavior of importers dried up supply bids, causing a reversal of design direction, with the attendant costs and disruption. As this proposal moves toward fruition, a more concrete effort to ascertain the potential impacts on supply bids from importers as a consequence of these reforms should be undertaken.

CAISO Response

FERC Order 764 requires the ISO to implement a 15-minute scheduling option on the interties. However, the intertie bidding options proposed by the ISO recognizes that hourly schedules will still be a large proportion of real-time intertie schedules. However, the ISO proposal also provides incentives to move to 15-minute economic schedules. In addition, to maintain consistency with existing hourly schedule curtailment procedures within WECC, the ISO’s proposal includes a single hourly curtailment option for hourly block schedules.

Company	Date	Submitted By
Department of Market Monitoring	January 10, 2013	
15-minute intertie resources		
The introduction of 15-minute intertie resources (as opposed to hourly block intertie resources) serve to “reserve” hourly intertie transmission capacity to accommodate fluctuations in intertie VERs’ 15-minute schedules. VERs scheduled at their 15-minute forecasts (some with decremental bids) will compete economically with these 15-minute intertie resources for the intertie capacity during each 15-minute market run. Therefore, the hour-ahead process needs only to determine the appropriate amount of intertie capacity to allocate to hourly-block intertie resources. Energy bids from 15-minute intertie resources can compete with the energy bids from hourly-block intertie resources in the hour-ahead optimization to limit the intertie capacity reserved for hourly-block intertie resources.		
CAISO Response		
The ISO agrees. The hourly process must only determine the appropriate quantity of hourly block schedules that are accepted and subsequently self-scheduled in the 15-minute markets. Economic bids in the 15-minute market can be used to allow increased VER imports. The economic bids can be provided by dynamic schedules, VERs with decremental bids, hourly block schedules that can be curtailed once per hour and conventional imports than can be re-scheduled every 15 minutes.		
Transmission Reservation bids		
There is no need to use Transmission Reservation bids to efficiently allocate hour-ahead intertie capacity between 15-minute and hourly-block intertie resources. However, there is a need for the ISO to propose an alternative to Transmission Reservations for determining how to manage the allocation of intertie capacity between: <ul style="list-style-type: none">• Economically bid hourly-block intertie resources (i.e, not self-scheduled); and• Excess flexible intertie capacity (beyond that secured by 15-minute intertie resources) to accommodate potential increases in intertie VERs’ 15-minute schedules over their hour-ahead forecasts.		
CAISO Response		
The transmission reservation has been eliminated from the revised straw proposal. The amount of hourly-block schedules accepted will be determined considering forecast amounts of intertie VERs.		
DMM supports eliminating BCR eligibility		
If the ISO is going to allow hourly-block intertie resources to bid economically (as opposed to only		

accepting self-schedules for hourly blocks), DMM supports eliminating BCR eligibility for those hourly block intertie resources. Making hourly-block intertie resources ineligible for BCR creates the proper market incentives for the hourly-block intertie resources to incorporate the 15-minute market price risk into their bids. To the extent this increases the cost of hourly-block intertie resources relative to 15-minute intertie resources. This will create appropriate price signals for these hourly-block resources to transition to providing 15-minute scheduling flexibility.

CAISO Response

The ISO agrees. Hourly blocks can bid economically in the hourly process to accept hourly block schedules. Block schedules whether economically bid or self-scheduled in the hourly process will not be eligible for bid cost recovery.

Finally, we encourage the ISO to start discussions as soon as possible on how it will create proper incentives for resources to follow their real-time dispatches. Allocating Flex Ramp no-pay and Flex Ramp costs to uninstructed deviations may provide some incentives to follow real-time dispatch. However, detailed analysis of these incentives will be required to determine if they are sufficient to motivate resources to follow dispatch instructions, or if another mechanism (such as an Uninstructed Deviation Penalty) is necessary.

CAISO Response

The ISO believes that the allocation of flexible ramping constraint, and ultimately flexible ramping product costs, will provide correct incentives for following dispatch. The ISO prefers to keep any implementation of an uninstructed deviation penalty outside the scope of this initiative, and believe it would best be considered after experience is gained with actual performance after this initiative’s changes are implemented.

Company	Date	Submitted By
The Large-scale Solar Association (LSA)	January 8th, 2013	
Elimination of PIRP		
<p>LSA agrees (and has stated before) that, in general, more granular scheduling and settlement provisions, and schedule submission closer to real time, should reduce or eliminate the need for PIRP. LSA’s prior comments stated that it is not clear without further analysis that reducing the schedule-submission deadline from 75 minutes to 37.5 minutes, and allowing 15-minute schedule changes in real time, will mitigate VER imbalance risks sufficiently to remove that significant protective element.</p> <p>In response to these concerns, the CAISO simply repeats its contention that the scheduling changes will “substantially limit” VER risks, “consistent with the intent” of Order 764. The CAISO does state that it “will consider this request for analysis,” but it is not clear how or when this request will be considered and what the response will be.</p> <p>LSA’s additional comments here cover two areas. First, LSA emphasizes the need for empirical analysis</p>		

to support the CAISO's claims, rather than an assertion without clear evidence. Assuming that forecasts continue to be provided 15 minutes before schedules are due, the Proposal would move the binding VER forecast horizon from T-90 (for the current T-75 submission) to 52.5 minutes (for the proposed T-37.5 submission and intra-hour updates). It makes sense that this change would improve forecasting accuracy, but the degree of potential improvement is a critical determinant of whether PIRP would still be needed.

LSA understands that such analyses might be difficult to conduct, and somewhat speculative at this point, but suggests that the CAISO consider an alternative approach. The CAISO could simply retain PIRP with the implementation of Order 764 compliance changes, observe forecast-accuracy improvements that actually occur, and then make an informed decision about PIRP continuation based on the facts. There is very little risk in testing the CAISO's claims in actual operation, under the final structure that is adopted.

Second, LSA notes the comments of several other stakeholders (BPA, Citigroup Energy, PG&E, SCE, SDG&E, and SMUD) that the proposed 2.5 minutes allowed under the Proposal between CAISO schedule issuance and e-tag submittal for intertie transactions would be insufficient for that task. If the CAISO pushes the schedule-submission timeline back in response to these comments, that change would increase LSA's concerns about VER scheduling accuracy and the need for PIRP retention, and increase the need for advanced analysis or observation in actual operation of any accuracy improvements.

CAISO Response

The ISO's proposal provides benefits to VERs beyond reduced forecast submission timelines. The primary benefit is that the majority of VERs output scheduled in real-time will be settled at a 15-minute price, rather than the 5-minute price. This 15-minute price will be substantially less volatile. Only forecast error beyond the forecast used for the 15-minute market run will be settled at the 5-minute prices. The reduced exposure to 5-minute prices should be an improvement for VERs compared to the existing market irrespective of any improved forecast accuracy due to reduced forecast submission lead time.

However, the ISO believes VER resource owners are in the best position to assess the financial benefits/risks under its proposed real-time market changes. We have provided pricing data for the Day Ahead, Advisory RTPD and weighted average RTD price when we posted the revised straw proposal. If the weighted average RTD price is insufficient for VER's analysis the ISO could provide the DA price, Advisory RTPD and actual 3 RTD prices for a trading hub.

The ISO believes it would be most efficient to conduct the analysis described above before conducting an analysis of the additional forecasting accuracy benefit. If this analysis shows financial benefit for VERs under the proposed market design assuming no change in accuracy than the amount of increased forecast accuracy would be moot. However, the ISO notes that improved accuracy is a fundamental premise advocated by VERs for years and of FERC Order 764. It is unclear as to what the results of this analysis would change with regards to compliance with FERC Order 764.

Also, as a clarification, the ISO's proposed design requires that VERs provide rolling forecasts every 15 minutes. The ISO will use the rolling forecast that is available at T-37.5, not T-52.5. This applies to VERs

using the ISO forecast service provider or their own forecast service provider.

The ISO will evaluate its market optimization solution time to determine if the 2.5 minute update to energy schedules can be extended. The ISO does not plan to start its market optimization earlier to accommodate update energy schedules. The ISO anticipates that as more and more inertia schedules are changed every 15 minutes that increased automation of tags will naturally occur.

PIRP grandfathering and/or transition mechanism

The CAISO continues to equivocate about grandfathering and/or transition mechanisms if PIRP is eliminated. LSA was encouraged by the CAISO's statements in the Written Responses and in the Meeting that CAISO will "consider limited grandfathering provisions with an explicit expiration following full stakeholder discussion." However, the Written Responses also stated that "the CAISO prefers not to provide grandfathering."

LSA's prior comments suggested a specific grandfather provision based on the CAISO's recent provisions in Technical Bulletins (TBs) related to generator-interconnection study methodology. These provisions would award Resource Adequacy (RA) deliverability in geographic areas impacted by the new methodology first to "existing" generation projects, i.e., those with Power Purchase Agreements (PPAs) executed by year-end 2012.

The CAISO selected this provision to avoid disrupting PPAs that were already executed or were in advanced stages of negotiation when the methodology change was made. LSA's recommendation that the CAISO use this provision also for PIRP continuation was based on the same rationale. LSA's comments explained that PIRP elimination would cause both financial and contractual problems that would be avoided through a reasonable grandfathering mechanism.

In LSA's additional comments here, LSA requests that the CAISO: (1) Respond to its specific grandfathering proposal; and (2) if it does not accept this proposal, explain why avoiding disruption of contracts was more important for the wide-ranging TB changes than for the more limited PIRP issues.

CAISO Response

The ISO believes that as the current proposal matures it will be appropriate to evaluate if the market design changes have significantly altered the need for PIRP. In addition, the discussion of grandfathering in the abstract is not productive.

Currently PIRP resources must submit the ISO hourly forecast generated 90-105 minute prior to the hourly to be eligible for monthly netting of uninstructed imbalance energy. This hourly forecast is then used to establish instructed energy in RTD by dividing the total hourly forecast by twelve. If the PIRP resource does not have a day-ahead schedule (which is very common), the resource's full output is settled at the RTD price. Instructed energy is settled at the 10-minute weighted average of the two RTD intervals, but since PIRP instructed energy is flat for the hour, the price is equal to the average price of the two RTD intervals. Uninstructed energy is settled at the 10-minute average price of the two RTD intervals. PIRP advocates have highlighted that PIRP reduces imbalance energy risk; however, as illustrated above all output is subject to RTD price variability. Only the uninstructed imbalance energy is netted over the month.

Under the 15-minute market settlement, VERs will now be able to secure a forward energy position in real-time based upon a forecast received 37.5 minutes prior to flow. The 15-minute price is less volatile than the RTD price because resource commitment decision can be made. The VER will only be subject to the RTD price for forecast error between the 15-minute schedule and RTD interval. With 5 minute metering, both instructed and uninstructed imbalance energy are settled at the same 5 minute LMP. The 15-minute market decreases the MWh subject to RTD prices more than the current PIRP design.

The ISO recommends that advocates of PIRP grandfathering propose in more detail the eligibility and PIRP design elements included for the grandfathering. For example, should PIRP only be grandfathered for resources that are their own SC or do not pass through uninstructed imbalance energy charges to their bilateral counterparty? Should PIRP grandfathering use only hourly forecast at T-90 for setting instructed energy? Are there contract provision which would prevent the PIRP resource from utilizing the 15-minute schedule?

Submission of 5-minute schedules

LSA's prior comments recommended that the CAISO allow optional submission of three 5-minute forecasts for each 15-minute scheduling interval, instead of the current plan to accept 15-minute forecasts and divide them into three equal amounts, for purposes of calculating real-time imbalances (and, if 5-minute settlements will be used for FRP, for that purpose as well). Many VERs have fairly predictable ramps throughout certain operating hours, and use of 5-minute schedule submissions will both provide the CAISO with more accurate schedules and reduce imbalance (and FRP) charges to VERs.

The Written Responses stated that:

- Submittals of 5-minute forecasts will be allowed, and the 5-minute Real Time Dispatch software will use the 5-minute submittals; but
- The 15-minute Real Time Pre-Dispatch (RTPD) software that will be used in the 15-minute market has a 15-minute interval and will use the average of any 5-minute forecasts submitted.

LSA appreciates the CAISO's apparent willingness to accommodate its suggestion to some degree but does not fully understand the CAISO's responses. Specifically, LSA requests that the CAISO clarify how 15-minute and 5-minute settlements would work with 5-minute schedule submittals, for both imbalance energy and the proposed Flexible Ramping Product (FRP).

CAISO Response

At T-37.5, the ISO will use the 5 minute forecast to establish the 15-minute schedule. Assume the forecast for the three 5 minute intervals is Interval 1 = 5 MWh, Interval 2 = 10 MWh, Interval 3 = 15 MWh. The 15-minute financially binding schedule will be 30 MWh or 10 MWh each 5 minutes.

At T-22.5, the ISO will use the 5 minute forecast to determine instructed energy in RTD. Assume Interval 1 is 6 MWh and the meter is 6.5 MWh. Instructed energy will be 6 MWh. Uninstructed energy will be 0.5 MWh. The resource will be charged the RTD price for 3.5 MWh.

Fifteen minutes later, the ISO will use the 5 minute forecast to determine instructed energy in RTD interval 2. Assume interval 2 is 9 MWh and the meter is 8 MWh. Instructed energy is 9 MWh.

Uninstructed energy is 1 MWh. The resource will be charged the RTD price for 2 MWh.

Fifteen minutes later, the ISO will use the 5 minute forecast to determine instructed energy in RTD interval 3. Assume interval 3 is 15 MWh and the meter is 15 MWh. Instructed energy is 15 MWh. Uninstructed energy is 0 MWh. The resource will be paid the RTD price for 5 MWh.

FRP payments would be settled the same as energy. Deviations in FRP awards between DA and 15-minute will be settled at the 15-minute price. Deviations in FRP awards between 15-minute and RTD will be settled at the RTD price.

Company	Date	Submitted By
NRG Energy, Inc. ("NRG")	January 8, 2013	Brian Theaker
Exempting full-hour schedules awarded in HASP from separate 15-minute congestion prices		
<p>First, the CAISO's Department of Market Monitoring (DMM) has raised a concern with exempting full-hour schedules awarded in HASP from separate 15-minute congestion prices, namely, that doing so could add to uplifts, as any 15-minute congestion prices not paid by parties with full-hour schedules will have to be recovered through uplift. The CAISO and other parties have previously used the amount of uplift costs as justification to impose restrictions on market functionality. NRG would be very concerned if such uplifts could be similarly used to restrict market functionality in the future, and, as such, shares DMM's concern.</p>		
CAISO Response		
<p>The transmission reservation has been eliminated in the revised straw proposal.</p>		
Uninstructed deviation penalties		
<p>Second, DMM has proposed that the CAISO consider uninstructed deviation penalties to discourage market participants from deviating from their 15-minute schedules to avoid eroding their profits.¹ NRG would hope that the 5-minute instructions would reflect a unit's incremental and decremental energy bids and that following CAISO instructions would reflect an economically optimal use of those resources and not degrade a unit's revenues. Spurious 5-minute prices are in no party's interest, and NRG urges the CAISO to take the steps necessary to ensure that prices are accurate. NRG would prefer the CAISO focus on getting the 15-minute and 5-minute prices right than to resurrect yet another discussion regarding uninstructed deviation penalties. However, if there must be another discussion about uninstructed deviation penalties in the light of this process, it must be a comprehensive discussion.</p>		
<p>¹From DMM comments (from the Stakeholder matrix): "First, internal resources may have the incentive to deviate from their 5-minute dispatch instruction in order to protect their profits in the 15-minute market from being eroded by revenue shortfalls in the 5-minute market. If a resource follows its 5-minute market dispatch instruction away from its 15-minute market schedule, spurious 5-minute market LMPs may create a revenue shortfall for the energy settled in the 5-minute market. This shortfall would net against the resource's profits from its 15-minute market schedules. Risk-averse resources content with their profits from the 15-minute market have incentives to deviate from the 5-minute dispatch instructions in order to operate at their 15-minute schedules and avoid exposure to 5-minute market prices."</p>		
CAISO Response		

RTD will use the same bids as used in the 15-minute market and will economically dispatch resources in RTD. Since RTD, like RTUC, looks several market intervals in to the future there may be instance where the binding interval price is lower than the resources bid because over the horizon it is economic. This can occur when a resource provide flexible ramping up. The resource is held back in the binding interval so that it can respond to higher LMPs in a future RTD dispatch.

The flexible ramping product will compensate the resource for their opportunity costs in the financially binding interval. If the resource does not follow its RTD dispatch is will be subject to no-pay for its awarded flexible ramping and allocated FRP costs for its uninstructed deviations.

The flexible ramping constraint already implemented will provide similar incentives to follow RTD dispatch, but the constraint applies to upward ramping.

Third, NRG shares LSA’s concerns about eliminating the Participating Intermittent Resource Program (PIRP) without first providing conclusive evidence that the proposed new scheduling timelines for Variable Energy Resources (VERs) will eliminate the need for market participants to use PIRP to manage balancing energy risk for those resources. NRG also shares LSA’s concern about the efficacy of producing three identical 5-minute forecasts from submitted 15-minute forecasts instead of using separate 5-minute forecasts.

CAISO Response

The minimum obligation of variable energy resources is to provide 15-minute forecast granularity updated every 15 minutes. The resource has the option of provide 5-minute forecast granularity updated every 5 minutes. The 5-minute forecast will be used to establish the 15-minute schedule and will be returned as instructed energy in RTD.

PIRP was a compromise. In return for providing meteorological data to allow production forecasting, PIRP resources were allowed to net over the month uninstructed imbalance energy if they submitted the ISO production forecast to establish their 5 minute instructed imbalance energy (hourly forecast divided by 12). The intent of PIRP was to minimize exposure to imbalance energy prices for uninstructed imbalance energy. Under the proposed 764 changes, VERs will now be able to secure a forward 15-minute schedule based upon their forecast 37.5 minutes prior to flow. If resources want to minimize exposure to 15 minute prices, mechanisms such as a day-ahead schedule or virtual bids could be used. (See also previous response on page 5.)

Company	Date	Submitted By
Olivine		
Elimination of the HASP		
Olivine understands that additional work is necessary to develop a construct to make this feasible, but to retain the HASP would seem to only retain market inefficiency in an initiative that is designed to eliminate market inefficiencies.		

It is not entirely clear to Olivine from the brief discussion during the stakeholder conference call if the CAISO has determined that it must retain the HASP in the interim to assure hourly TR for block schedules or if it contemplates that it can deliver the same TR service within the 15 minute construct.

Olivine encourages the CAISO to continue to work to eliminate the HASP and looks forward to additional clarification on the status of HASP in the revised straw proposal scheduled for release on February 8, 2013.

CAISO Response

The revised straw proposal has eliminated HASP and the transmission reservation bidding/settlement. The ISO has proposed an hourly market optimization which is used to accept hourly block schedules.

Company	Date	Submitted By
Pacific Gas & Electric Company (PG&E)	1/08/13	Bahaa Seireg - (415)-973-3731 Paul Gribik - (415)-972-6274

Design efforts should examine the efficiency implications of the alternative proposals to FERC Order 764 compliance at the interties, including potential structures and requirements for a single optimization of intertie and internal energy and ancillary service schedules on a 15 minute basis with no hour-long, hour-ahead Transmission Reservations.

CAISO’s Initial Transmission Reservation Proposal - The CAISO’s initial straw proposal highlighted one possible approach for FERC Order 764 compliance, an approach based on hourly Transmission Reservations allocated in HASP that are subsequently scheduled on a 15 minute basis in Real-time Pre-dispatch (“RTPD”). Given discussion and comments regarding the Transmission Reservation approach, the CAISO should detail key pros and cons with the method. Such a review will help stakeholders evaluate how this approach compares to other approaches.

Potential “pros” to be examined include:

- Provides increased price certainty related to congestion costs on the interties.
- Aligns reservation timelines with other areas of WECC.

Potential “cons” to be examined include:

- Uplifts may result from settling the congestion component of LMP in one market while settling the Energy component in another market.
 - Even if uplifts under the Transmission Reservation approach are lower than those of today’s HASP, the impacts and cost-allocation from uplifts should be considered.
 - Per the CAISO’s cost-allocation principles⁴, uplifts should be allocated based on cost-causation.
- The costs of stranded transmission, resulting from the allocation of transmission in HASP 45 minutes before the energy and ancillary service market (when market conditions face more uncertainty)

The CAISO should also explain its plan for allocating an “average” transmission reservation for the hour.

Per page 7 of the December 18th Presentation, the CAISO proposes to allocate a transmission reservation equal to the average of each resource’s 15 minute energy schedules for the hour on the intertie. The CAISO should clarify how the HA multi-interval optimization could determine the optimal hourly transmission reservation and how an average transmission reservation award supports or conflicts with this optimization. As PG&E understands it, this can result in a Transmission Reservation that is less than the transmission needed to support the peak energy deliveries over the 15 minute periods in the hour. This would happen even if resources were willing to buy additional capacity over the whole hour to support its peak 15-minute need, which is an inefficient outcome. To PG&E, it seems that an “optimized” Transmission Reservation based on a multi-interval HA RTPD run would be more efficient than an average award. The hourly transmission award should be constrained to be greater than or equal to the advisory energy schedule for the resource for each 15 minute interval in the hour as determined in HASP.⁵

Also, as currently proposed CAISO would set the price for transmission capacity on an intertie for the hour to the straight average of the 15-minute Intertie Scheduling Limit Constraint Shadow Price (“ITC”) shadow prices in HASP, which will likely result in payment anomalies if the nominal transmission awards in HASP could vary from one 15 minute period to another with the actual hourly award set to the average of the 15 minute awards. By requiring that the 15 minute awards be constant for the hour and greater than or equal to the advisory energy schedule in each 15 minute period in the hour, the anomalies arising from averaging the awards and prices over the hour would be eliminated. In addition, each resource would be able to buy additional rights that balance the cost of the rights and the value of its energy schedule in the peak period in the hour. This would also remove any pricing anomaly that could result from charging the average shadow price for ITC capacity over the hour.

Lastly, the definition of rights and obligations on page 8 of the December 18th Presentation results in treatment of transmission reservations in an asymmetric fashion. A Transmission Reservation consists of two awards. Transmission Reservation is awarded as a right in the direction that the party wants to purchase. If the resource does not schedule the flow, it does not receive the value that another party would pay to use the transmission. Transmission Reservation is awarded as an obligation in the opposite direction. If it is not scheduled, the party has to pay the ITC price in the market in that direction. This is an unnecessary asymmetry. The effect on market behavior from this approach should be considered in the stakeholder process.

⁴ <http://www.caiso.com/Documents/DraftFinalProposal-CostAllocationGuidingPrinciples.pdf>

⁵ (Let $TR(j, i)$ be the transmission right awarded to resource j in 15-minute period i). They could ensure that the $TR(j,1)=TR(j,2)=TR(j,3)=TR(j,4)$ for the each 15 minute period over the entire hour. Additionally, it could also ensure that the transmission right awarded in each period to resource j is at least as large as the advisory energy schedule for the resource in the period. That is $TR(j, i) \geq EN(j, i)$, $EN=$ HASP advisory schedule.

CAISO Response

The ISO has eliminated transmission reservations bidding and settlement in the revised straw proposal.

Alternative Treatments of Transmission Reservations - CAISO should consider alternate treatment of Transmission Reservations and consider the implications of different formulations of Transmission Reservations on participant behavior and market efficiency.

To provide a couple examples for consideration, the CAISO could:
i. Treat all reservations as obligations.

☐☐ If a resource does not schedule a flow on its Transmission Reservation, it receives the shadow price in the market.

☐☐ It would be paid for transmission not used in the direction purchased, or pay if the constraint were congested in the opposite direction.

ii. Modify the HASP so that every Transmission Reservation on an intertie is a right.

☐☐ To do this, it would not rely on Transmission Reservation awarded in one direction to provide counterflow that would allow it to sell more in the opposite direction.

☐☐ The party has the right to use the transmission in the direction it purchased. If it does not use it, it receives no payment and conversely it receives no charge.

iii. Eliminate the HASP and the HA Transmission Reservation altogether.

☐☐ In its October 23rd Straw Proposal, the CAISO proposed HASP transmission capacity award will be priced at the HASP ITC. Pricing HASP transmission capacity award at the HASP ITC will result in market uplifts due to differences in congestion shadow price between the HASP, the RTPD and the Real-time Dispatch (“RTD”).

☐☐ Allocating transmission in each RTPD run instead would result in a complete 15-minute market in which all binding price signals would be provided in one market run.

☐☐ PG&E expects such a model to have benefits in lowering uplifts and in limiting potential market inefficiencies; however, it may result in potential seams issues with neighboring BAAs.

The CAISO should also request that if stakeholders have other potential solutions that they submit them in the form of more detailed “idea papers”.⁶ Understanding these concepts at a deeper level highlighting the potential pros and cons should aid in assessing the feasibility of possible approaches.

⁶ Per the December 18th call, Powerex may have one such idea which appears to amount to a modified Transmission Reservation approach with intra-hour cuts.

CAISO Response

The ISO has eliminated transmission reservations. The ISO has introduced an hourly process to accept blocks schedules and provided additional intertie bidding options to increase the quantity of schedules that can be curtailed intra-hour. In addition, the ISO will maintain a modified version of the HASP Schedules Decline Charge to mitigate against participation in the hourly block process, but then not tagging and being available in the 15-minute market. This will also be used to mitigate against VERs using their own forecast provided from overstating their expected output in order to crowd out hourly block schedules.

Perspectives from other Balancing Area Authorities (BAAs) and the status of WECC-wide collaboration should be discussed.

WECC-wide collaboration efforts will inform the feasibility of potential FERC Order 764 Compliance approaches, particularly those that involve changing the timelines in which etags are submitted or modified to schedule transmission reservations or energy flows. The CAISO should, to the extent possible, clarify the potential for certain FERC Order 764 Compliance approaches to be adopted throughout the WECC. Further, the CAISO should identify steps associated with moving forward with or without alignment of FERC Order 764 Compliance efforts by neighboring BAAs. The pros and cons of an activist role for CAISO stakeholders

should also be discussed.

CAISO Response

The ISO is actively participating in the WECC 764 taskforce and recommends stakeholder also participate in the process. The ISO has been providing regular updates on the progress of this initiative.

It remains unclear as to how the CAISO's proposal will impact the way load is settled.

PG&E asks that CAISO include greater detail in how it will handle real time load settlement when load forecasts in the RTPD period differ in direction from actual dispatch in the RTD.

Beyond the single spreadsheet example that was provided on Dec 18, a detailed discussion of the approach and underlying principles would aid in understanding the incentives that result and potential uplifts. We would also ask for details on how the real time inter-SC trade process would be priced.

CAISO Response

The settlement assumes load is continued to be settled based upon hourly meter values. The weighted average price by DLAP is used to determine the hourly price for load deviations to Day-ahead schedules. If load was metered on a five minute basis there would be no need to determine a weighted average price. Forecast errors would still need to be allocated based upon metered demand.

Inter-SC trade settlement is an area of consideration for Physical Trades, Converted Physical Trades, and Financial Trades currently being performed in HASP Market will have to be discussed in the Draft Final Proposal. Because these are strictly a financial mechanism, the ISO does not foresee a need for change other than the fact the HASP Prices are not binding. If we change this from a HASP Trade to RTUC and/or RTD Trade, then there are market system and Settlement changes. The question would be do we keep HASP Trades the same but settle at RTUC price, do we award RTUC Inter-SC trade which settle at RTUC Price, or leave as is. As for the other Inter-SC trade categories, Day Ahead Inter-SC trade, AS Trade, and RUC Obligation Trades, there is no impact.

Trade-offs between e-tagging timelines and between delaying market decisions until closer to real-time should be clearly defined and discussed.

PG&E hazards that 2.5 minutes may be insufficient for updating or completing e-tags required for energy flowing across an intertie, especially if this process is required up to four times an hour. The steps needed to allow a transition from today's 40 minute e-tagging period to a much shorter timeline should be developed and discussed. In addition to discussions of the time needed to craft e-tags for submission, WECC-wide changes to allow tagging closer to the binding interval, e.g. at fifteen minutes rather than twenty, should also be considered.

The CAISO's next proposal should detail tagging protocols, systems, and timelines for stakeholder discussion. Such details will be necessary for evaluation of any FERC Order764 Compliance plan and potential confusion around these practices may hinder discussions.

Specifically, the CAISO should detail the following:

1. What pieces of information are needed on an e-tag?
2. If transmission profiles change, how onerous is the e-tag update?

3. If only energy profiles change, how onerous is the e-tag update?
4. What systems govern tagging check-outs across BAAs?
5. Could these systems be upgraded to allow for less lead-time on both tag formation and on submission?
6. What reasons lead to the 20-minute tagging submission deadline?
7. What WECC or NERC governance structures should be involved in discussion of a move to a shorter tagging timeline?
8. Could a panel of power marketers discuss how to improve tagging protocols in order to facilitate FERC Order 764 compliance?

Accommodations to tagging time-lines are important, but so is the need to ensure accurate load and VER forecasting by allowing key input timelines. If the CAISO identifies timesaving measures in its pre-market runs or tagging timelines, it should use such time to delay market decisions while also considering tagging needs. Additional time should not, de facto, go to increase timelines for tagging given that uplifts and market inefficiencies often occur due to forecasting Real-Time conditions too far in advance of RT.

CAISO Response

The ISO is actively participating in the WECC taskforce and reviewing the ISO proposal as it evolve with other WECC members. It is important to note that the hourly process to accept block schedules will establish the transmission profile for e-tags at T-45 prior to the operating hour. On a fifteen minute basis, only the energy schedule of the tag will be changed for transactions participating in the 15-minute market (Economic Bid, Hourly Block with Single Curtailment, Dynamic Transfers). An hourly block schedule will tag by T-20 its transmission profile equal to it accepted block energy schedule.

In its design, the ISO is assuming that updating this energy portion of a tag for 15-minute schedule changes can be accomplished by automation and would be roughly similar in scope to an internal generator acknowledging its 5-minute RTD dispatch. Thus, although the ISO invites further stakeholder input, the ISO believes 2.5 minutes will be sufficient time but invites further stakeholder input.

Rules should discourage resources from willfully deviating from dispatch/schedules.

PG&E echoes concerns raised by the DMM that incentives to deviate from dispatch/schedules may exist under the proposed Transmission Reservation approach.⁷ As part of the overall FERC Order764 reforms, final designs should also reduce operational challenges by encouraging resources to honor fifteen minute energy schedules.

PG&E recommends the CAISO include proposals for such rules in upcoming straw proposals. A key goal of such rules is to limit using deviations from schedules/dispatch as implicit virtual bidding between the 15-minute and 5-minute settlement prices. Such rules should not, however, be punitive in situations where dispatch instructions were infeasible or in conflict with critical operating restrictions, e.g. hydro conditions necessitating certain operations. Accordingly, the use of dead-bands or certain flexibilities may be appropriate.

⁷ http://www.caiso.com/Documents/DMM-Comments-FERC_Order764MarketChangesStrawProposal.pdf

CAISO Response

The transmission reservation has been eliminated. The ISO proposes to review uninstructed imbalance penalties if the flexible ramping product cost allocation and no-pay provision are insufficient at following RTD dispatch. The FRP cost allocation does include a threshold to avoid punitive situation where dispatch instructions were infeasible.

Reactivation of virtual bidding at the interties should only be discussed after the market design issues have been finalized.

PG&E agrees with the CAISO that the implementation of a binding 15-minute market in RTPD with energy and ancillary service prices used in settlements will likely support better price convergence between day-ahead and real-time prices, this initiative should *not* focus on reactivation of virtual bidding on the interties. Such an expansion of scope would be problematic for a variety of reasons. Even with the proposed repairs to one of the major structural flaws of intertie virtual bidding⁸, its reactivation still requires resolutions to two design challenges, the dual-constraint problem and self-funding and cost-allocation issues.⁹ Additionally, the potential for of virtuals or implicit virtuals to structure bids that attempt to extract value via uplifts resulting from the composite Hour-Ahead congestion and RTPD intertie price requires assessment and perhaps development of safeguards that limit such a potential. Lastly, reactivation of intertie virtual bidding at the start of implementation of FERC Order 764 Compliance designs could mask market problems, delaying their discovery, reducing efficiency and increasing costs.

⁸ A market-wide energy and virtual bidding settlement every 15-minutes appears to resolve a key issue with intertie virtual bids under current designs, namely that intertie bids settle at HASP prices while internal bids settle at averages of the 5-minute prices.

⁹ PG&E notes that both of the potential ideas for resolving the dual-constraint problem face serious opposition from multiple stakeholders.

Moreover, the general effect of modeling of interties requires consideration, particularly since the CAISO has incurred \$125 million dollars in

Real-Time Congestion Offset uplift costs from July through October 2012 somewhat related to intertie modeling.

CAISO Response

The ISO has proposed to limit the acceptance of day-ahead tag to address the dual-constraint issue. In addition, the ISO notes that this issue was not a reason convergence at the interties was suspended and resolution should not necessarily be a condition for reinstatement.

Under the ISO's proposed real-time market design, virtual bids will be liquidated based on the same market run and price for both internal generation and interties at the 15-minute market prices. These two design elements will eliminate the mismatch that resulted in excessive uplifts under the existing market design and allow for convergence bidding to be reinstated when the Order 764 design changes are implemented, which is currently planned for Spring 2014.

Company	Date	Submitted By
Southern California Edison	January 9, 2013	Jeff Nelson (626) 302-4834 Sarah Van Cleve (626) 302-3255
The Transmission Reservation process provides limited price certainty while maintaining some of the market inefficiencies associated with the hour-ahead market. CAISO should explore alternatives.		
<p>To provide transactors with some price certainty, CAISO has introduced a complex Transmission Reservation process that preserves some financial settlement in the hour-ahead market. Given the numerous market inefficiencies associated with the disconnect between the hour-ahead and real-time markets, CAISO should consider alternatives to the hour-ahead Transmission Reservation process. The Transmission Reservation process and the “explicit” transmission-only reservations, in particular, have serious implications for market inefficiency, will continue causing uplift, and may create gaming opportunities.</p> <p>SCE does not support transmission-only reservations and has significant concerns with the Transmission Reservation process as a whole. Especially considering that there are other mechanisms available to hedge risk, discussed <i>intra</i>, the Transmission Reservation process and its associated costs may be unnecessary.</p> <p>The benefit provided by the energy sales portion of the Transmission Reservation process is that it offers some price protection in the form of hour-long fixed Intertie Scheduling Limit shadow costs. However, this price protection seems minimal as most of the Locational Marginal Price (“LMP”) will still be subject to 15-minute price fluctuation. Both the System Marginal Energy Component (“SMEC”) and the internal congestion shadow cost of the Marginal Congestion Component (“MCC”) will be subject to fluctuation on a 15-minute basis. If the Intertie Scheduling Limit shadow cost is, in fact, a significant portion of the LMP at the interties, then the CAISO should provide empirical evidence demonstrating that the Transmission Reservation process will provide substantial price protection.</p> <p>Rather than creating a complex new feature such as the Transmission Reservation process to offer, at best, partial price protection at the interties, transactors could use a combination of the proposed hourly block bids¹ in conjunction with 15-minute dispatchable bids to mitigate price risk. Transactors with hourly block schedules are price takers in the 15-minute market. To protect themselves against unfavorable and unexpected 15-minute outcomes, they could also submit a counterflow bid (subject to 15-minute dispatch) to hedge themselves against extraordinarily low 15-minute prices.</p> <p>For example, if an importer submits a \$40 bid for an hourly block sale and it clears the market, that importer may want the ability to avoid occasional 15 minute payments due to periodic negative prices. To do so, the importer could simultaneously submit a low priced export bid, for example -\$0.01, that is eligible for 15-minute dispatch. If any 15-minute prices drop to -\$0.01 or below, this 15-minute bid would be dispatched by the CAISO. The importer could then either (1) schedule a new flow associated with this export bid or, (2) simply reduce its import schedule associated with the hourly block \$40 bid.</p> <p>In sum, given the hourly block scheduling option in conjunction with the 15-minute dispatch option, the CAISO should consider abandoning the Transmission Reservation proposal entirely. Analysis would be helpful to show just how much price certainty the CAISO’s proposal offers, but we suspect it is low. Ultimately, market participants should let the CAISO know how comfortable they would be simply having the hourly block in conjunction with the 15-minute dispatch options.</p>		

¹ SCE strongly supports CAISO’s newly proposed hourly block scheduling practice in the 15-minute market, as it will provide the scheduling certainty necessary for many intertie transactors to participate in the CAISO market. “FERC Order 764 Compliance Technical Conference Presentation,” CAISO, 18 December 2012, page 14, http://www.caiso.com/Documents/Presentation-Agenda-FERCOrder764MarketChangesTechnicalWorkshopDec18_2012.pdf.

CAISO Response

The ISO has eliminated transmission reservation settlement and bidding in the revised straw proposal.

SCE does not support charging deviations the weighted average of the 15 and 5 minute prices. The uplift costs created by CAISO’s net load forecast error should be allocated based on cost-causation.

Changes in CAISO’s forecast of net load between the 15 and 5 minute markets may result in uplift. For example, if CAISO over-procures in the 15-minute market and sells the excess back in the 5-minute market at a loss then uplift is created. CAISO should not “bake” this uplift into the price charged to load deviations. Rather, there should be transparency over how much uplift the new design generates and CAISO should allocate the uplift based on cost-causation (e.g. proportionally allocate uplift to entities contributing to the errors in CAISO’s 15-minute forecast).

The use of CAISO’s proposed methodology of weighted average LMP of the 15 and 5 minute markets would disguise uplift costs and unfairly charge uplift costs only to those load serving entities that have deviated. To see this, assume that in the day-ahead market load procured 35,000 MW at \$43/MW. Then, in the 15-minute market, CAISO forecasts that load is 37,000 MW so it procures the extra 2,000 MW at a price of \$45. However, actual real-time load turns out to be 36,000 MW. Thus, the CAISO over-procured from the 15-minute market and has to sell back 1,000 MW at a loss at the 5-minute market price of \$44.

In this scenario, there is only 1,000 MW of net load that deviated between the day-ahead and the real-time markets. That deviation of 1,000 MW will be charged the weighted average real-time price, which is calculated as the difference between the cost of procuring 2,000 MW in the higher price 15-minute market (2,000 MW x \$45 = \$90,000) minus the revenue returned by reselling 1,000 MW in the lower price 5-minute market (1,000 MW x \$44 = \$44,000) divided by the 1,000 MW of net load deviation (\$46,000 / 1,000MW = \$46/MW). The resulting average weighted price is \$46/MW for each of the 1,000 MWs of deviation, even though the market price never went above \$45. See Table 1, below, for this example in table format.

Table 1. Example of uplift unfairly charged to deviators using weighted average LMP of the 15 and 5 minute markets.

Market	Price	Load	Change in load from previous market	Change in cost from previous market
Day-Ahead	\$43	35,000 MW	NA	NA
15-Minute	\$45	37,000 MW	+ 2,000 MW	+ \$90,000
5-Minute	\$44	36,000 MW	- 1,000 MW	\$44,000
			+ 1,000 MW	+ \$46,000

	/ 1,000 MW
Cost to deviators	= \$46 / MW

As a result, using the weighted average real-time price unfairly charges uplift costs only to load deviators. In extreme cases, market prices could be reasonable yet load deviators could be charged extraordinarily high prices for their deviation.²

The uplift created by discrepancies between the 15 and 5 minute markets should be charged to those entities whose variability and uncertainty caused CAISO’s inaccurate procurement. Using cost-causation principles, CAISO should explore the most equitable and transparent mechanism for both identifying and allocating these uplift costs.

² If, in the example introduced above, CAISO bought an extra 2,000 MW in the 15-minute market but then actual load came in only 1 MW over the day-ahead procurement, that 1 MW would be charged a price of \$2,044/MW.

CAISO Response

The SCE example above seems to assume net load (load – variable energy resource forecast) is settled at the weighted average price. However, only actual load that is settled hourly is done so at the weighted average price. This is to ensure that hourly load deviations initially settle based upon deviations to their day-ahead schedule. The load forecast error between RTPD and RTD is settled by metered demand.

In the SCE example above, the difference between the 37,000 MW load forecast for the 15-minute market and the 36,000 MW in actual load would be entirely attributable to load variability and/or forecast error. It would not include any contribution from variable energy resources. The forecast of variable energy resources is used to establish and settle their 15-minute schedule with deviations to their 15-minute schedules being settled at the RTD price.

CAISO should implement a “worse-of” settlement rule to discourage uninstructed deviation.

Given that Order 764 will result in even more frequent scheduling changes, CAISO should implement a mechanism to discourage uninstructed deviation from CAISO-instructed schedules. As presented by SCE in previous comments, CAISO should implement a “worse-of” settlement rule that would pay the least beneficial of the 15 or 5 minute settlement price for uninstructed deviations.³

Viewed another way, the philosophy of the design should be that a favorable 5 minute price is for *instructed* deviations.⁴ As managing flexibility becomes more and more crucial, our core market design should recognize and reward parties that closely follow CAISO instructions. However, parties acting against instructions are part of the flexibility problem, not part of the solution, and should not have incentives to seek financial gain by disregarding instructions.

The “worse of” settlement also eliminates incentives for implicit virtual bids between the 15-minute and 5-minute settlements accomplished by physical importers ignoring 15-minute dispatch instructions. A

“worse-of” mechanism would encourage inertie transactors to submit only feasible schedules and follow 15-minute dispatch instructions, and it would discourage entities from chasing higher price markets.

³ “FERC Order 764 Compliance 15-Minute Scheduling and Settlement Straw Proposal Stakeholder Comments,” Southern California Edison, 16 November 2012, page 3, http://www.caiso.com/Documents/SCE-Comments-FERC_Order764MarketChangesStrawProposal.pdf.

⁴ Typically load is not dispatchable and does not submit 15-minute schedules. Thus, load would not be subject to the “worse-of” pricing rule.

CAISO Response

The ISO does not believe worse of pricing is a preferable method to incentivize following RTD dispatch. The market optimization determines the correct replacement cost of uninstructed imbalance energy. The ISO is proposing the Hourly Block Process declines charge to address deviations that do not have financial settlement impacts. In addition, the implementation of the flexible ramping product compensation and cost allocation will further incentivize resources to follow ISO dispatch.

The ISO does note that if additional measures are needed beyond the FRP compensation and cost allocation, stakeholders should consider designing an uninstructed deviation penalty rather than introducing settlement rules that are inconsistent with the replacement cost derived from the LMP.

SCE does not support Intertie Convergence Bids (“ICBs”) until the new Order 764 market is implemented and shown to be working effectively.

The Order 764 market changes will be one of the most significant redesigns of the California electricity market since MRTU. Given this major change, and in light of the many unforeseen negative consequences caused by virtual bidding in the past, SCE urges CAISO to ensure that the newly redesigned physical market works effectively before reintroducing ICBs. CAISO should mirror the approach it took during its last major market redesign—MRTU began without virtual bids at all and only after the physical market was up and somewhat stable did CAISO allow virtual bids. If CAISO implements a major market redesign at the same time it reintroduces previously ICBs, an efficient physical market structure could be tarnished by problematic interplay with ICBs.

Once the new Order 764 physical market functions well, CAISO should approach the considerable task of reinstating ICBs. At that time, CAISO should explore remedies it has not frequently discussed in the past. While SCE supports CAISO’s decision to not pursue “Option A” as a solution to the dual-constraint issue given that it can be gamed, the day-ahead tagging limits remedy is not a sufficient solution either. As SCE has suggested in the past, CAISO should consider either a Physical Counterflow Feasibility Run⁵ or a Virtual Intertie Bids (“VIBs”)⁶ solution to the dual-constraint problem. Moreover, it appears the best place to focus on an ICB solution is in the structure of the integrated Day-Ahead Market (“iDAM”). That is, rather than a sequential Physical Counterflow Feasibility Run, the iDAM may be able to allow ICBs and ensure physical feasibility simultaneously.

SCE looks forward to continued work with CAISO on the Order 764 Market Changes Proposal.

⁵ A Physical Counterflow Feasibility Run would not impact physical liquidity and would place uplift risk

only on virtual counterflow parties based on cost-causation principles. See “Solving the Dual-Constraint – a Physical Counterflow Feasibility Run”, Southern California Edison, 30 April 2012, <http://www.caiso.com/Documents/SCEpresentation-PhysicalReplacementFeasibilityRun-IntertiePricingSettlement.pdf>.

⁶ A Virtual Intertie Bids (“VIBs”) solution achieves the goals of virtual bidding hedging, but avoids the structural problems related to revenue sufficiency and uplift. See “Framework to Reinstigate Virtual Bidding at the Interties,” Southern California Edison, 17 February 2012, http://www.caiso.com/Documents/SCEPresentation-IntertiePricing_Settlement.pdf.

CAISO Response

The ISO believes that with virtuals, load, internal generation, and interties all clearing in the same real time market, the fundamental reason convergence bidding was suspended will be resolved. This was a key driver of the ISO proposing this relatively comprehensive market design as part of FERC Order 764 compliance. In addition, the dual-constraint issue can be addressed initially by not accepting day-ahead tags in excess of intertie scheduling limits. While the ISO acknowledges that a more comprehensive and robust solution to the dual-constraint issue can be implemented as part of an integrated day-ahead market, it believes that not accepting day-ahead tags in excess of intertie scheduling limits is a workable solution until an integrated day-ahead market can be developed. Finally, with the re-instatement of convergence bidding, the ISO is proposing a position limit equal to 10% of the maximum intertie schedule point. This should limit any undesirable side effects.

Company	Date	Submitted By
Powerex Corp.	January 8, 2013	Gifford Jung - 604-891-6040
Transmission Reservation Process and Settlement		
<p>Powerex is concerned that the CAISO’s proposed approach to develop a transmission reservation process is unnecessary and will lead to significant unintended consequences that will reduce market efficiency. These include reducing the availability of intertie resources to deliver intra-hour energy and/or stranding intertie transmission capacity.</p> <p>Powerex believes the need for the CAISO to limit transmission rights on its interties in real-time should be for the sole purpose of deciding which e-tags to curtail. This should be limited to the instances where the CAISO has total implemented e-tags at its hourly check-out process with greater scheduled transmission rights than available CAISO transmission capacity for any 15-minute interval.</p> <p>Powerex believes the CAISO should consider the following approach:</p> <ol style="list-style-type: none"> 1. Accept and approve all e-tags that have transmission profiles that do not exceed the resource’s respective energy bids, independent of whether or not such resources have energy awards in the first 15-minute interval; and 2. If the CAISO has aggregate e-tagged transmission profiles which exceed the CAISO’s available transmission in any 15-minute interval, as determined at the hourly check-out process, the CAISO will reduce those e-tags which have transmission profiles that exceed the energy award quantity in the first 15-minute interval, based on the least economic, first-out principle. 		

This approach will ensure that the CAISO accepts the maximum e-tagged transmission possible; thereby enabling energy dispatches in future intervals - while at the same time not pro-rata curtailing e-tagged energy awards in the first interval to enable potential energy awards in a future interval from a different resource that may or may not be dispatched. It is essential that the CAISO allow resources that may be called upon to deliver energy in a future interval to e-tag their transmission profile prior to the hourly check-out process, as necessary on neighboring transmission systems, provided the transmission profile does not cause the CAISO to exceed CAISO transmission limits.

This approach is also consistent with the CAISO's current approach to e-tagging dynamically scheduled intertie resources. Any requirement to acquire limited CAISO transmission rights prior to submitting e-tags will create substantive seams issues and has the likely undesirable outcome of broadly restricting participants' ability to provide 15-minute energy in future intervals and/or to provide dynamically dispatched energy.

The CAISO also highlighted that one of the purposes of the transmission reservation process is to facilitate intra-hour changes in VER deliveries on the interties, including on congested interties, by allowing for procurement of transmission rights ahead of the hour. However, Powerex believes that enabling VER deliveries that change in quantity intra-hour can be most efficiently accomplished by encouraging DEC bids from system resources that can be dispatched intra-hour. This can be achieved with the following enhancements:

1. Enabling participants to select availability for 15-minute CAISO dispatch for intertie system resources, as contemplated in this stakeholder process
2. Enabling a new, once-in-the-hour CAISO "dispatch down" product on the interties, whereby participants could identify their willingness or ability to be curtailed for the balance of the hour and settled at the real-time price, when the CAISO expects that the resource will be in-merit for such dispatch for the balance of the hour.
3. Expanding the CAISO's current RUC process to include interties, and enabling a new RUC-down product on the interties to accommodate over-supply conditions.
4. Reviewing and modifying the CAISO's CRR clawback rule. The current rule discourages DEC bids, under clearly identifiable "false positive" conditions.

CAISO Response

The transmission reservation has been eliminated in revised straw proposal.

The ISO has included additional intertie bidding options to increase the amount of DEC bids available in the 15-minute market as Powerex proposed.

Changes to the CRR clawback rule are out of scope for this initiative.

Convergence Bidding on the Interties

Powerex supports the CAISO's approach to settle all convergence bids, both internal and on the interties, at the applicable IFM and 15-minute market LMPs. Further, Powerex believes the TR proposal would substantially increase the risk and complexity of re-introducing convergence bidding on the interties.

Powerex refers the CAISO to its previously submitted comments in which Powerex discusses issues that the CAISO needs to address before reinstating convergence bidding on the interties. To summarize these comments, Powerex believes that prior to reinstating convergence bidding on the interties the following issues must be addressed:

1. The CAISO reasonably expects that convergence bids will efficiently converge prices, increasing the efficient commitment and dispatch of physical resources.
2. The CAISO and DMM do not have any significant concerns that there is a potential for substantive undesirable outcomes.
3. The CAISO develops and enforces rules that clearly delineate virtual bidding activities (explicit and implicit) from physical activities, and applies costs consistent with cost causation (i.e. Day Ahead e-tagging requirement, appropriate disincentives for failures to deliver on physical awards, energy product type clarity and enforcement, etc.)
4. The CAISO expands its RUC market process to include RUC for non-RA system resources on the interties, and creates a new "DEC" RUC product to complement its existing "INC" RUC product, with appropriate allocation of costs, consistent with cost causation (including cost allocation to virtual bidding participants, VERs that displace firm resources, metered demand, etc.).
5. The CAISO addresses the dual pricing constraint in a manner that is symmetric in pricing, and treats virtual and physical bids as fully fungible.

In order to accommodate convergence bidding on the interties, Powerex notes that there must be a single set of prices for settlement on the interties so by necessity there can be no bid cost recovery. A bid cost recovery ("BCR") mechanism would produce multiple prices and create uplift.

CAISO Response

The ISO's proposed approach is consistent with these principles, with the exception of item 4., which the ISO does not believe is needed to reinstate convergence bidding on the interties. However, item 4, can be considered as part of an integrated IFM and RUC in the flexible ramping product stakeholder initiative subsequent to this initiative.

Addressing dual-constraint issue by day-ahead tagging limits

As Powerex has stated in previous comments, Powerex strongly believes that "Option A", is not a viable

option and supports the CAISO in removing Option A as a solution to the dual-constraint issue. Powerex continues to believe that its modified proposal to the dual pricing constraint presented in the last stakeholder process should be more thoroughly reviewed and discussed.

Nonetheless, Powerex believes that the CAISO approach to accepting a limited quantity of e-tags in the IFM may be workable, but only under circumstances where such identified awards that are allowed to e-tag are also required to e-tag. The following problems will arise if the CAISO continues to give participants the option of e-tagging IFM physical awards after the day ahead scheduling period:

1. Physical participants will continue to experience challenges and costs associated with “counter-flow” transmission check-out issues in the day ahead market – resulting from the same physical transmission limitation issues that are at the core of the dual constraint problem; and
2. The CAISO will be tacitly encouraging implicit virtual bidding and the by-passing of its own RUC process for reliability (and associated cost allocation) leading to substantive market inefficiencies with the potential for increased reliability risk.

The appropriate mechanism for encouraging additional liquidity in the IFM markets, that represents future real-time supply (that may or may not show-up) is to require such supply to be offered as virtual supply in the IFM, followed by physical supply in real-time. This ensures that the CAISO can properly identify such supply as virtual in the IFM process, and procure additional RUC to protect reliability. The resulting costs allocated to the respective participant, consistent with cost causation. This also sends the appropriate price signal to participants that do commit physical intertie resources in the day-ahead timeframe to continue to do so, particularly under conditions of tight supply (i.e., higher RUC clearing prices).

CAISO Response

The ISO’s current requirement to submit an e-tag before the hour-ahead process to enable an import or export to be bought- or sold-back at a profit provides a sufficient safeguard against “implicit virtual bidding.” This approach also reasonably balances the reliability need to assure supply with flexibility to procure transmission after a day-ahead tagging deadline. The ISO notes that its approach of accepting e-tags in the day-ahead timeframe in economic order of the applicable import/export bids will apply to situations with virtual bid counterflows as well as to situations with physical counterflow for which market participants have not submitted an e-tag in the day-ahead timeframe. This will represent an improvement to the process for curtailing e-tags in the event market participants do not submit day-ahead e-tags for counterflows.

Settlement rules or penalties to incentivize following dispatch

Powerex refers the CAISO to its previous comments where it has provided extensive discussion on this issue. In short, Powerex continues to support “worse-of” pricing to eliminate any incentive for non-delivery of physical awards, except under acceptable conditions as defined by the energy product type. Furthermore, Powerex believes the CAISO should re-define its energy product types as follows:

1. Firm energy – delivery will only be reduced due to:
 - a. Transmission curtailment.

2. Unit contingent energy – delivery will only be reduced due to:
 - a. Transmission curtailment, or
 - b. A qualifying contingency event that allows the CAISO to deploy its contingency reserve pool.
3. Variable resource contingent energy – energy may be reduced or increased due to:
 - a. Transmission curtailment,
 - b. A qualifying contingency event that allows the CAISO to deploy its contingency reserve pool, or
 - c. Forecasted change in output of the resource outside of the participants’ control or discretion.

It is imperative that the CAISO not design its market to allow for intertie deliveries that may be changed at the participants’ discretion after the close of the hourly bidding deadline, without ensuring that the participant bears the full cost to the market of such changes. More specifically, providing a discretionary opportunity to change delivery quantity, after the bidding window has closed, creates very troublesome opportunities for participants to change their delivery quantities based on their own portfolio’s net position and prevailing CAISO real-time prices. This can lead to substantive market efficiency and reliability consequences. Therefore, Powerex strongly recommends that sufficient clarity on energy product types as well as appropriate enforcement measures be instituted, including appropriate incentives for failures to deliver.

In addition, Powerex strongly recommends that entities wishing to deliver variable resource contingent energy (i.e., for VERs whereby the source Balancing Authority is not carrying sufficient balancing and/or contingency reserves to meet the Firm or Unit Contingent requirements), should be required to submit updated 15-minute quantities based solely on the CAISO’s forecasted change to the resources output.

Powerex believes it is imperative that uninstructed deviations that occur for reasons outside those defined under the applicable energy product type receive pricing that effectively discourages such behavior. Perhaps the worse-of the 5-minute, 15-minute or IFM price should be applied to any such deviations, ensuring that such failures are not profitable. Powerex believes that poorly defined or enforced energy product types, and insufficient incentives to encourage delivery on physical awards, will continue to produce unintended consequences in CAISO markets. These include increased uplift charges to metered demand due to physical re-dispatch in real-time and systemic price divergence, with the potential for reliability consequences.

CAISO Response

The ISO does not believe worse of pricing is a preferable method to incentivize following RTD dispatch. The market optimization determines the correct replacement cost of uninstructed imbalance energy. The ISO is proposing the Hourly Block Process declines charge to address deviations that do not have financial settlement impacts. In addition, the implementation of the flexible ramping product compensation and cost allocation will further incentivize resources to follow ISO dispatch.

The ISO does note that if additional measures are needed beyond the FRP compensation and cost allocation, stakeholders should consider designing an uninstructed deviation penalty rather than introducing settlement rules that are inconsistent with the replacement cost derived from the LMP.

Company	Date	Submitted By
San Diego Gas & Electric	January 8, 2013	Victor Kruger - VKruger@SempraUtilities.com
Additional examples		
SDG&E appreciates the settlement examples included in the current iteration of the proposal, and believes the CAISO's written answers to stakeholders' initial round of questions as well as discussion at the recent Technical Workshop helped clarify a number of issues. That said, additional examples and discussion will be required as the proposal is refined over time.		
CAISO Response		
The ISO has provided updated settlement models without the transmission reservation.		
Magnitude of real-time congestion offset uplift		
SDG&E remains concerned that the magnitude of real-time congestion offset uplift is still largely unknown. Whether the CAISO proposal may be fixing one large problem while creating others cannot be known until the CAISO can quantify the magnitude of the uplift created. The Department of Market Monitoring (DMM) has many of the same concerns as SDG&E:		
Exempting 15-minute tie schedules with HASP transmission reservations from the 15-minute ITC congestion price may cause significant real-time congestion offset uplift. Uplift will occur when:		
<ol style="list-style-type: none"> 1. The 15-minute import ITC shadow price exceeds the HASP import ITC shadow price; and 2. Imports with transmission reservations displace day-ahead physical or virtual imports (or net against 15-minute export schedules) that settle on the full 15-minute LMP." 		
... intertie virtual schedules could cause or exacerbate the uplift described above while providing little to no market efficiency benefits. ... virtual supply could be used strategically to cause the 15-minute ITC shadow price to exceed the HASP ITC shadow price and profit from this difference.		
CAISO Response		
The transmission reservation has been eliminated in the revised straw proposal.		
CAISO's proposed framework may offer a new opportunity for gaming		
SDG&E is concerned the CAISO's proposed framework may offer a new opportunity for gaming, and like the DMM opposes intertie virtual bids under the proposed framework.		

The DMM also identified another SDG&E concern, stating that “the proposed 2 real-time market structure creates several new incentives for internal generation resources to deviate from their 5-minute dispatch instructions. These deviation incentives are not related to inflating BCR or RIE.”

The CAISO has indicated that “this discussion should more broadly consider the need to implement an uninstructed deviation penalty for all resources.” SDG&E agrees that deviations from instructions must be discouraged and not encouraged in any CAISO proposal. Either the current proposal needs to be changed (features such as implementing a “worse-of” the 15-minute or 5-minute price for the interties that deviate from CAISO instructions) or a broader solution for all deviations needs to be implemented (that could also discourage un-tagged tie schedules that create benefits).

SDG&E looks forward to the CAISO providing estimates of expected annual uplift charges after refining their proposal to minimize gaming opportunities. This will allow a comparison of all the benefits of the proposal (there are many) with the expected costs

CAISO Response

The ISO will maintain a modified version of the HASP Schedules Decline Charge to mitigate against hourly block schedules not being tagged.

The ISO does not believe worse of pricing is a preferable method to incentivize following RTD dispatch. The market optimization determines the correct replacement cost of resources with uninstructed imbalance energy.

The ISO does note that if additional measures are needed beyond the FRP compensation and cost allocation, stakeholders should consider designing an uninstructed deviation penalty rather than introducing settlement rules that are inconsistent with the replacement cost derived from the LMP.

Company	Date	Submitted By
Six Cities	January 8, 2013	Bonnie S. Blair - 202-585-6905 bblair@thompsoncoburn.com
Uplift costs and/or encourage deviations from the ISO’s dispatch instructions or tagging requirements		
<p>The ISO’s Department of Market Monitoring (“DMM”) identified several features of the 15-minute scheduling framework that could result in uplift costs and/or encourage deviations from the ISO’s dispatch instructions or tagging requirements. The Six Cities urge the ISO to take steps both to minimize adverse incentives and to mitigate the cost impact on other market participants. In particular, the Six Cities support suggestions by the DMM and SCE that “worse of” pricing should apply to intertie deviations from ISO instructions. In its responses to stakeholder comments, the ISO indicated that it was considering development of generally applicable penalties for uninstructed deviations. The Six Cities support consideration of deviation penalties on a comprehensive basis, but that initiative should proceed in parallel with development of the 15-minute scheduling framework, and measures to avoid adverse incentives should be implemented prior to or at the same time as 15-minute scheduling. In</p>		

addition, the ISO should establish damage control mechanisms (*e.g.*, reinstating suspension of convergence bidding at the interties) if uplift costs reach a predefined triggering level.

CAISO Response

The ISO does not believe worse of pricing is a preferable method to incentivize following RTD dispatch. The market optimization determines the correct replacement cost of resources with uninstructed imbalance energy.

The ISO does note that if additional measures are needed beyond the FRP compensation and cost allocation, stakeholders should consider designing an uninstructed deviation penalty rather than introducing settlement rules that are inconsistent with the replacement cost derived from the LMP.

LSEs be allowed the opportunity to adjust Demand schedules

In their November 19, 2012 comments, the Six Cities recommended that LSEs be allowed the opportunity to adjust Demand schedules in the 15-minute market, providing LSEs the same opportunity to mitigate costs and manage exposure to allocated charges as the ISO proposes to make available to other market participants. The ISO's response indicated that because the 15-minute process is part of the Real-Time market, allowing adjustment of Demand schedules would undermine reliability of service. Even if the ISO's load forecast is the correct target against which to balance supply in Real-Time, however, it does not necessarily follow that allowing adjustments to Demand schedules in the 15-minute process would be inappropriate. Allowing adjustments to Demand as part of the 15-minute process could create favorable incentives and enable allocation of cost responsibility that aligns better with cost causation.

CAISO Response

In real-time, the ISO clears the market against ISO forecast. This applies to both the 15-minute market and RTD. If load did bid in the 15-minute market, the market design would need to consider a real-time RUC process and if virtual bidding should be allowed between the 15-minute market and RTD.

Developing the details of the 15-minute scheduling process

More generally, in developing the details of the 15-minute scheduling process, the ISO should strive to apply cost allocation mechanisms that both encourage desired behaviors (*e.g.*, compliance with dispatch instructions and approved schedules) and comport with the cost causation principle. The ISO should minimize "peanut butter" treatment of undifferentiated uplift costs to the maximum extent possible

CAISO Response

The ISO agrees.

Company	Date	Submitted By
Sacramento Municipal Utility District (SMUD)	January 8, 2013	Gary Lawson - (916) 732-5802 Gary.Lawson@smud.org
Penalties		
<p>The CAISO has indicated it is considering implementing settlement penalties to incentivize following dispatch instructions. SMUD supports a penalty system that fosters a more efficient and equitable market. To this end, SMUD proposes the CAISO provide a grace period following the start of the 15-minute scheduling at the ties before penalties kick-in to allow participants to develop an adequate scheduling and settlement system to address a 15 minute market. This new 15 minute market will create a significant amount of additional work for participants and, as with any new system, adjustments and fine-tuning will surely be needed. We assume there will be opportunities to run tests and mock bid and dispatch scenarios before 15 minute scheduling takes effect in the Spring of 2014; however,, there is no substitute for the real market. Accordingly, the CAISO and all participants would benefit from a grace period.</p> <p>In addition, SMUD recommends the CAISO also implement a threshold limit for deviations before penalties are triggered. Instead of penalizing participants for any level of deviation, a pre-determined threshold could be established and if a participant passes this limit, penalties would be assessed. Moreover, participants should only be penalized if their deviations negatively affect the system. If a deviation actually benefits the system, a participant should not be penalized. SMUD is open to discuss with the CAISO and other stakeholders an appropriate threshold limit.</p>		
CAISO Response		
<p>The ISO believes if additional measures are required to incentivize following RTD dispatch should be considered by developing uninstructed imbalance energy penalties. The current FRP market design compensates resources based upon their opportunity costs and allocates costs based upon uninstructed energy. The cost allocation does include a threshold limit. Any UDP design should also include thresholds.</p>		
E-Tags		
<p>SMUD appreciates the CAISO's acknowledgement that 2.5 minutes is tight for updating e-tags and that it will work with WECC to improve the timeline. Such a short time period for e-tagging could result in restricted activity at the ties.</p>		
CAISO Response		
<p>The ISO is actively participating in the WECC 764 taskforce and recommends that interested stakeholders also participate. The hourly process to accept block schedules will determine the hourly transmission profile to be tagged. Only updated energy schedules from resources participating in the 15-minute market will be changed in the 2.5 minute window.</p>		

Company	Date	Submitted By
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Vitol Inc	January 7, 2013	Kolby Kettler
Continue with both its DAM and HASP markets with enhancements		
<p>The CAISO would continue with both its DAM and HASP markets with enhancements that allow scheduling coordinators, who can be flexible on a 15 minute basis, the ability to “flag” their schedules for 15 minute intertie redispatch.</p> <ul style="list-style-type: none"> o The CAISO should remove the “transmission” procurement process, therefore removing the “uneconomical” scenarios related to mixing market settlements. <ul style="list-style-type: none"> ☐ Vitol continues to disagree with the “transmission” procurement process and the split settlement of congestion, within one market run, and energy and losses, within a separate market run, for a final import/export settlement calculation. It is clear from the examples and discussions that mixing settlements can and will lead to uneconomic dispatch of imports and exports at the interties. o The CAISO should allow for virtual bidding at the interties o The CAISO should allow for *BCR of both imports and exports until <ul style="list-style-type: none"> ☐ WECC has a fully functional 15 minute market that is liquid in participation <p>*It should be noted that market participants have been entering into contracts based on the existing market structure that currently allows for BCR. Removing BCR adds an element of risk to transactions that need to be reasonably managed. The CASIO should make every effort in phasing out BCR over time versus removing a risk management tool that has been established prior to MRTU’s existence.</p>		
CAISO Response		
<p>The transmission reservation process has been eliminated.</p> <p>The ISO will only allow BCR for resources that can be dispatched in the 15-minute market.</p> <p>The ISO recognizes that market participants contracts make assumptions regarding the market structure. The ISO is planning to bring the final 764 design to the Board for approval in May 2013. This will allow approximately one year until implemented of the new market structure.</p>		
Phased in approach into the implementation of a new market structure		
<p>Vitol would request the CAISO consider taking a phased in approach into the implementation of a new market structure in an effort to limit impacts on liquidity, operational uncertainty, unnecessary out of market solutions, and WECC wide disruptions in wholesale power trading.</p> <p>Phase 1</p> <ul style="list-style-type: none"> • Continue with the HASP block hour-ahead schedules – no changes <ul style="list-style-type: none"> o At a minimum - Allow for continued BCR for 18 full months after implementation of 15 minute scheduling within CAISO o Prior to the removal of BCR the CAISO should analyze both CAISO’s and WECC’s participation in the 15 minute market to 		

determine:

- CAISO needed enhancements
- Depth of liquidity (participation) in an effort to

understand any hurdles and/or successes

- Reliability consequences
- Impacts of increased self-schedules
- Cost shifting

*The CAISO should make every effort to determine if 15 minute scheduling, within the region, is widely accepted and will allow for the successful management of interchange and reliability within CAISO AND WECC

- Allow market participants to “flag” their specific intertie transactions

based on their willingness to be dispatched on a 15 minute basis

- Reinstate virtual bidding at the interties

Phase 2

- Continue with the HASP block hour-ahead schedules – removing BCR

– Settlement based on the 15 minute intervals

With WECC still within their “fact finding” taskforce process, and not expected to make recommendations until March of 2013, it would be inappropriate for the CAISO to implement new market structure changes that would limit WECC wide liquidity in trading. The CAISO should be sensitive to the WECC timeline and the need for potential WECC stakeholder processes.

Vitol believes that a 15 minute traded market is on the horizon however, it will only reach success when WECC and the CAISO are seamless on all operational logistics, a coordinated implementation timeline is established, and BAs, IPPs and marketers provide the necessary liquidity.

CAISO Response

The ISO believes that providing BCR to hourly block schedules would undermine incentives to submit economic bids to the 15-minute market. As the Department of Market Monitoring pointed out, participants will incorporate any 15-minute market price risk into their hourly block bids. To the extent

this increases the cost of hourly-block intertie resources relative to 15-minute intertie resources, this will create appropriate price signals for these hourly-block resources to transition to providing 15-minute scheduling flexibility.

The ISO has proposed to allow hourly blocks to be economically curtailed once per hour for the remainder of the hour. This transition mechanism would be eligible for bid cost recovery and is consistent with existing WECC curtailment protocols.

Company	Date	Submitted By
Western Power Trading Comments	January 8, 2013	Ellen Wolfe - 916 791-4533 ewolfe@resero.com
The proposed transmission reservation aspect of the proposal may be more harmful than beneficial.		
Whereas the proposed transmission reservation process offers some conceptual benefits for certain parties under certain circumstances, the burden of the complexity of the reservation and its possible adverse impacts on the efficiency of the balance of the market mechanisms may render it more harmful than beneficial. Should the ISO wish to retain this proposal element, WPTF requests that the ISO begin to characterize the advantages and disadvantages of the reservation mechanism and to again seek stakeholder feedback about the relative benefits. WPTF is particularly concerned that the complexity of the mechanism will create additional uplifts and that the ability of this mechanism to support convergence bidding is in question.		
CAISO Response		
The ISO has removed transmission reservations from the revised straw proposal.		
The price-taker design shifts significant risks to importers and exporters.		
The CAISO's proposal to have HASP bidders take the risk should the real-time prices settle off of their offers accepted in HASP is a significant shift in philosophy from pre-existing market structures that make importers and exporters at the interties whole when the ISO markets create an award in the hour-ahead that is inconsistent with its real-time market outcomes. Such a design change will cause either a reduction in liquidity at the ties or will cause bidders to internalize the perceived risks into their offers (an approach that may likely be less efficient than bid cost recovery). Whereas WPTF sees the benefits of settling the ties and the internal generators consistently, offering no guarantee to those that offer at the interties that they will not be settled off of their bid curves creates a new risk unique to intertie transactions. WPTF opposes this aspect of the ISO proposal that requires such parties to bear all of the risks of the price inconsistencies between HASP and RT.		
CAISO Response		
Bid cost guarantee is available to intertie transactions that participate in the 15-minute market. Hourly block schedules will not be eligible for BCR.		

The ISO believes that providing BCR to hourly block schedules would undermine incentives to submit economic bids to the 15-minute market. As the Department of Market Monitoring pointed out, participants will incorporate any 15-minute market price risk into their hourly block bids. To the extent this increases the cost of hourly-block intertie resources relative to 15-minute intertie resources, this will create appropriate price signals for these hourly-block resources to transition to providing 15-minute scheduling flexibility.

Concerns about convergence bidding at the ties have not been resolved.

One driver for the development of a new market design is to create consistent markets that allow for convergence bidding at all pricing points and not just the internal price points. Yet several concerns have been raised about the efficacy of convergence bidding with the proposed ISO intertie pricing design. The ISO should address these issues head on, and if convergence bidding at the ties will not be successful under the current ISO proposal then the proposed market design is insufficient. WPTF strongly encourages the ISO to address DMM's concerns about intertie convergence bidding as well as concerns of others to determine if the ISO's proposed design is robust enough to support reinstatement of full convergence bidding functionality.

CAISO Response

Without transmission reservations the full LMP for intertie schedules and virtuals on interties settle at the same 15-minute full LMP.

Coordination with WECC wide efforts to address Order 764 remain imperative.

WPTF appreciates that the presentation provided for the 12-18-12 web conference noted the importance of ensuring that its implementation of Order 764 must be coordinated with the tagging timelines used throughout WECC. WPTF also notes that the impact of Order 764 on dynamic scheduling protocols must also be fully evaluated and resolved as well.

CAISO Response

The ISO continues to participate in the WECC 764 taskforce and recommends others to participate in the task force. There are no apparent revisions needed to the current dynamic transfer protocols. If WPTF is aware of specific issues that need to be addressed, please identify them.