

**Opinion on “Exceptional Dispatch: Options for Market Power Mitigation  
and Supplemental Pricing under MRTU”**

by

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## **1. Introduction**

The California Independent System Operator (CAISO) has asked the Market Surveillance Committee (MSC) to comment on its proposal for market power mitigation and pricing for exceptional dispatch instructions.<sup>1</sup> The current Market Redesign and Technology Upgrade (MRTU) tariff allows the ISO operators to issue Exceptional Dispatch (ED) instructions to move dispatchable resources that are necessary to maintain reliable real-time system operation that are not dispatched through the market software. Exceptional Dispatch instructions can be applied to all types of generation units in the CAISO Control Area, including those with a Resource Adequacy (RA) contract, an Interim Capacity Payment Mechanism (ICPM) designation, and a Reliability Must-Run (RMR) unit designation, as well as resources without one of these contracts or designations. For the purposes of this opinion, we will refer to this last group of dispatchable resources as non-RA resources. The rationale for an ED instruction is that there may be real-time operating constraints created by certain system conditions that are not currently embodied in the market software that require the CAISO operators to move certain generation units. An ED instruction is the mechanism used to accomplish this.

MSC members have discussed these issues with CAISO staff during several conference calls and in-person meetings over the past three months. At the April 11, 2008 joint MSC/Stakeholder meeting, several stakeholders provided comments on this topic and the MSC discussed these issues with stakeholders and CAISO staff. A joint MSC/Stakeholder conference call was held on April 17, 2008 so that two MSC members could hear more comments from stakeholders and CAISO staff on the CAISO’s ED proposal.

The current MRTU tariff allows resources dispatched for energy under an ED instruction to be paid the higher of: (1) their offer (Energy Bid price), whether submitted to the integrated forward market (IFM), the reliability unit commitment (RUC) process, or the real-time (RT) market, (2) their Default Energy Bid (DEB) price, if they have no offer in the markets, or (3) the real-time (RT) locational marginal price (LMP) at their node. This higher-of pricing rule is necessitated by the fact that the CAISO may need to issue an ED instruction to a unit with an offer price above the LMP at its location. Under the current MRTU tariff, ED instructions are not subject to the MRTU local market power mitigation mechanism or reliability requirement determination process. Consequently, the only limit on the price paid to an accepted ED

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<sup>1</sup> This proposal “White Paper: Options for Market Power Mitigation and Supplemental Pricing” is available at <http://www.caiso.com/1c89/1c89d76950e00.html>

instruction under the current MRTU tariff is the CAISO's energy bid cap. This has led to concerns among certain stakeholder groups and the CAISO's Department of Market Monitoring (DMM) that generation units with local market power that know they are needed for an ED instruction will submit an Energy Bid price equal to the CAISO's offer cap.

Although the CAISO expects to use ED instructions very rarely and unpredictably, there is still considerable uncertainty about the potential need to rely upon ED instructions, particularly during the initial phase of operation of the MRTU.<sup>2</sup> The primary concern of the CAISO is localized constraints that are not currently modeled in the CAISO's IFM, HASP, and RT market software. These can arise for a variety of reasons ranging from forced transmission and generation outages, voltage stability constraints, and 30-minute dispatched energy requirements in the South of Path 26 zone. It does not take too many hours of operation at a price equal to the \$500/MWh, \$750/MWh, or \$1000/MWh energy offer cap because of one of these unmodeled constraints for a generation unit owner to earn a substantial sum of money.

The CAISO is also concerned that the absence of a market power mitigation mechanism to ED instructions for non-RA units could provide an incentive for a supplier not to accept an ICPM designation. The unit owner could find that it earns more revenues through RUC availability payments, unmitigated ED instructions, and other energy and ancillary services market revenues than it would earn under an ICPM designation because, under such a designation, it no longer receives RUC availability payments and is subject to a must-offer obligation that makes it more costly for the unit to withhold energy and ancillary services from the CAISO's markets. Under the current CAISO tariff, a generation unit owner has less of an incentive to refuse an ICPM designation because the associated payments would be in addition to any revenue a supplier might receive from exercising substantial local market power under ED instructions. Although the supplier would still give up RUC availability payments and be subject to a must-offer obligation by accepting the ICPM designation, there may be circumstances where a supplier might refuse the ICPM designation under the current MRTU tariff. However, these circumstances are very unlikely to arise if the CAISO's resource adequacy program works as designed, because a non-RA unit is unlikely to receive significant revenues from RUC availability payments under a properly functioning resource adequacy program.

For the reasons described above, the CAISO proposes to subject ED instructions from all generation resources to a local market power mitigation mechanism. In designing a local market power mitigation mechanism for ED instructions, the CAISO faces two sets of constraints: (1) allowing a resource owner the opportunity to recover at least the cost of accepting an ED instruction, and (2) limiting the revenues the resource owner receives for ED instructions and other CAISO markets sales within a one month time period so that the unit owner will accept an ICPM designation if one is offered. The CAISO's market power mitigation mechanism would not apply to ED instructions issued: (1) for system-wide energy requirements, or (2) to resolve congestion on transmission constraints that have been deemed to be competitive transmission

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<sup>2</sup> CAISO is also under FERC guidance to ensure that Exceptional Dispatch does "not become a frequent occurrence." See page 267 in "California Independent System Operator Corporation, Order Conditionally Accepting the California ISO's Electric Tariff Filing to Reflect Market Redesign and Technology Upgrade (Tariff Amendment No. 44 and Proposed MRTU Tariff) (September 21, 2006)", in Docket Nos. ER06-615-000 and ER02-1656-027, et al.

paths by the DMM (as defined in the automated local market power mitigation procedures for the IFM and real-time market). Because RA units typically have a contractual payment that provides fixed cost recovery, under the CAISO's proposal RA units subject to mitigation will receive the higher of their DEB and the LMP at their location for responding to an ED instruction.

The CAISO proposes two options for local market power mitigation of ED instructions to non-RA units. The first will cap the price a resource owner receives at the higher of the LMP at that unit's location and the DEB plus the \$24/MWh frequently mitigated unit (FMU) bid adder. Because ED instructions are issued outside any of the CAISO's formal markets, this DEB plus \$24/MWh adder will not set the LMP at that supplier's location. This adder would be paid for all energy provided by the unit above its minimum output level, what the CAISO tariff calls  $P_{\min}$ . Under this proposal, the bid adder would no longer be applied within any 30-day period beginning with an ED instruction where the total ED instruction revenues less the total MWh of ED instructions valued at the DEB price exceeds the ICPM monthly payment for the total ED MWh for the 30-day period. The second option would allow unmitigated ED instructions to non-RA units to be paid as-bid, but *also* be subject to this same monthly maximum payment. Specifically, in any 30-day period beginning with an ED instruction mitigation to the higher of the DEB or LMP at the resource owner's location would be applied for the remainder of the month as soon as total ED instruction revenues less total MWh of ED instructions valued at the DEB exceeds the monthly ICPM payment for the total ED MWh.

We divide our comments of the CAISO's proposal into two parts. First, we consider the question of whether ED instructions to non-RA units should be subject to local market power mitigation. We believe that there is a significant risk under the current MRTU tariff that a resource owner could exercise substantial local market power for a sustained period of time. For this reason, we favor subjecting ED instructions to a local market power mitigation mechanism. Second, we consider the appropriate form that mitigation should take. One major concern is that the market power mitigation mechanism may distort a unit owner's decision to accept a voluntary ICPM designation if one is offered. This is one reason why we support the 30-day cap on total ED payments in excess of the total MWh of ED instructions valued at the DEB.

We also strongly recommend that the CAISO minimize the frequency of ED instructions by including all constraints that are reasonably predictable and can be modeled in the full network model used to run the DA, RUC, HASP, and RT markets. Our understanding is that in other RTO markets, it is often the case that recurring constraints are not modeled and are instead handled as ED instructions by operators, and that such omissions frequently result in distortion of LMPs. A major purpose of locational marginal pricing is to provide signals that reflect the full economic value to the system of withdrawing energy at each location in the network, and a failure to include predictable constraints undermines this purpose. We strongly recommend that CAISO operations staff record and track the specific causes of every ED instruction at a level of detail that will allow the CAISO to ascertain whether the network model used in the market software includes all the network constraints that it should. If certain unmodeled constraints lead to persistent ED instructions, every effort should be made to modify the network model so that these constraints are either directly incorporated or satisfied as an indirect result of other constraints. For some constraints, it may also be appropriate for the CAISO operations staff to

undertake studies to assess the economic and reliability consequences of their omission upon LMPs.

Our support of the CAISO's market power mitigation proposal for non-RA units relies on ED instructions occurring infrequently and unpredictably. Although we expect that during the initial stages of market operation under MRTU, the CAISO may need to make more frequent use of ED instructions because of unexpected glitches in the market software, once this initial market start-up phase is completed, ED instructions should occur rarely.

## **2. Rationale for Local Market Power Mitigation Applied to ED Instructions**

On the need for a local market power mitigation mechanism for ED instructions, we refer to the Federal Energy Regulatory Commission's (FERC) standard for granting market-based pricing authority. This FERC policy states that in order for a supplier to have market-based pricing authority it must demonstrate that it does not possess the ability to exercise unilateral market power or that this ability to exercise unilateral market power has been adequately mitigated. The circumstances leading to an ED instruction will often result in one or a small number of suppliers able to provide the energy required by the ED instruction, which is equivalent to these suppliers possessing significant unilateral market power. Consequently, we believe that it is consistent with the FERC policy for the CAISO to subject ED offers to local market power mitigation.

Following this same logic, we do not believe it is necessary to subject ED offers to mitigation in cases where there is an *a priori* assumption that adequate competition exists to provide this energy. Under the current MRTU tariff, offers into the DA-IFM to satisfy a system-wide energy need or resolve congestion on a competitive transmission path are not subject to local market power mitigation. Thus, the CAISO's proposal not to mitigate ED for energy that is dispatched to meet system-wide energy needs or resolve congestion on competitive transmission paths is consistent with the CAISO's policy for supply offers into its energy markets.

We also question the logic incorporated in the current MRTU tariff for differential treatment of suppliers in terms of when they are subject to local market power mitigation depending on the circumstances under which an offer to supply energy is accepted. Attempts to pay substantially different prices for energy supplied at the same location in the transmission network during the same hour, but called upon for different reasons, creates incentives for suppliers to take actions to receive the higher of the two or more prices for their energy. In the present case, not subjecting ED energy to local market power mitigation, but subjecting energy taken from the CAISO's DA, HASP or RT markets to local market power mitigation, can create incentives for suppliers to bid and operate their units to cause the CAISO to require ED energy. Subjecting both ED energy and energy sold in the CAISO's markets to local market power mitigation limits this incentive.

This logic for subjecting ED offers to local market power mitigation applies regardless of how many times an individual unit is called to provide ED energy. Consistent with the FERC standard for granting market-based pricing authority, if a supplier possesses local market power, it should be subject to mitigation. That said, it is important to note that the exceptional dispatch

circumstance presents an unusual case for local market power mitigation. The conventional mitigation process mitigates the *offers* of units, but not necessarily the *prices* earned by those units. To the extent that prices reflect local or regional scarcity, mitigated units are able to earn revenues that reflect scarcity conditions. While units mitigated under exceptional dispatch can also earn the LMP, we are concerned that this LMP will not reflect the conditions or constraints that created the need for the exceptional dispatch. Because exceptionally dispatched units are, by definition, being called upon to meet constraints that are not modeled, or priced, it is reasonable to assume that the LMP for these units may often be biased downward relative to the hypothetical LMP that would include these constraints. It is also reasonable to assume that these same constraints bestow local market power on those same units. In other words, the fact that a unit is exceptionally dispatched implies that, first, its LMP may not reflect the true value of energy injected at that location in the network and, second, the unit possesses significant local market power. A market power mitigation mechanism needs to balance these two considerations.

As noted earlier, the CAISO expects that ED instructions will be infrequent and unpredictable. To the extent that ED instructions are persistent and predictable, the CAISO should examine the network model that it uses to operate the DA-IFM, HASP and RT markets and the constraints that it imposes on the RUC process and its ancillary services purchases. A number of stakeholders have noted that the CAISO could reduce the likelihood of calling ED instructions by purchasing more ancillary services, creating new ancillary services products (such as a 20-minute or 30-minute operating reserve), and by setting ancillary services requirements locationally. The CAISO is currently evaluating the ranking of these and other options in its roadmap for market enhancements. The MSC has long expressed a desire to give the CAISO operators greater discretion to purchase additional ancillary services and impose locational constraints in order to reduce the need to rely on ED instructions and other costs that are recovered through uplift payments rather than through market-clearing pricing mechanisms. In some cases, this greater discretion in ancillary services procurement may allow CAISO operators to eliminate the need to issue an ED instruction.

### **3. Payments for ED Energy**

A payment for providing ED energy should at the very least recover the supplier's variable cost and would ideally capture the market-value of the power supplied by that unit. Paying the maximum of the unit's DEB and the LMP at the unit's location meets these requirements as long as: (1) the resource owner does not have to bear some unexpected cost not included in the supplier's DEB to provide the ED energy and (2) the LMP is not biased downward to a significant degree because the reliability constraint that necessitated the ED instruction is not modeled in the IFM. The CAISO accounts for the former possibility in several ways. First, the cost-based option for setting DEBs for a generating unit equals its variable costs plus a 10 percent adder. Alternatively, generators may select an LMP-based option under which their DEB could be substantially higher than their cost-based DEB. Finally, any generator that feels either of these two options does not reflect the unit's actual variable cost (including potential opportunity costs) may select a negotiated DEB option, under which a special negotiated DEB is established through an independent entity contracted by the CAISO, currently Potomac Economics.

The more difficult question is how much revenue a unit should receive in excess of variable cost in order to reflect its scarcity value and for purposes such as fixed cost recovery. As noted earlier, one consideration of the amount of revenue in excess of variable cost an ED instruction should receive is the potential for those revenues to distort the decision to accept an ICPM designation. If the unit owner expects to receive more benefits from not being subject to the CAISO's must-offer requirement and receiving RUC availability payments than it does under ICPM, the unit owner is likely to refuse this designation.

The CAISO's proposal to cap the monthly ED payments in excess of the DEB at the monthly ICPM payment is very likely to be sufficient to cause suppliers to accept the ICPM designation voluntarily. The CAISO's proposal of paying the higher of the LMP at the supplier's location and the DEB plus the FMU bid adder for each MWh called to provide ED energy from a non-RA unit will provide some fixed cost contribution. However, it is unclear if this mechanism provides sufficient fixed cost recovery for the unit to continue operation. This is an issue only if it is the mitigation, combined with any shortcomings in the pricing model, that is denying the unit that opportunity. Nevertheless, it is important to recognize that even non-RA resources have many other opportunities to earn fixed cost recovery from the CAISO market. These units can sell long-term energy and ancillary services contracts to loads both in and outside of California. They can sell energy in the CAISO's DA-IFM, HASP and RT markets, as well as the DA and HA ancillary services markets. Finally, if non-RA units do not earn sufficient fixed-cost recovery to remain in the market, they can always mothball the unit or make a cost-of-service filing with FERC to recover these costs through such mechanisms as an RMR contract.

As stated earlier, the problem here is to balance consideration of mitigation of local market power with the fact that the exceptional dispatch may reflect a distortion in the LMP earned by the dispatched units. On the one hand, we believe these units should have the opportunity to earn a market value that may not be reflected in the LMP, but on the other hand these units should not be allowed to excessively abuse their favorable local position. Last, it is at present unclear how common or predictable exceptional dispatch orders may be. A mitigation mechanism should be flexible enough to apply to both idiosyncratic and chronic circumstances.

Consequently, we support the proposal to leave unit offers unmitigated subject to the 30-day bound on payments in excess of the unit's DEB. If exceptional dispatch instructions turn out to be truly exceptional, then the mitigation cap is unlikely to be reached. If, however, some units are able to predict repeated exceptional dispatch conditions, the cap bounds the extent to which a unit can take advantage of its local market power. In the more extreme and chronic circumstances, a unit will likely be offered (and accept) an ICPM designation after its cap is reached. If the CAISO does adopt this proposal, we recommend the CAISO operators also incorporate economic considerations into their selection of units for ED instructions. Specifically, if there are two or more units able to satisfy an ED instruction, the CAISO operators should choose the one that can satisfy this ED need at least cost. To ensure that economic considerations are accounted for in ED instruction decisions, the CAISO management should require CAISO operators to record the price, quantity, and generation unit name for other available and effective ED offers that were not accepted.

The CAISO's market power mitigation mechanism for ED energy together with revenues from the ancillary services and energy markets should provide sufficient fixed cost recovery for the majority of non-RA units that provide ED energy during the year. RA units typically receive payment for providing RA capacity, so that a larger fraction of these units should earn enough revenues to remain financially viable. Non-RA units that are frequently subjected to ED instructions are also strong candidates for an ICPM designation or an RA contract in a future period, both of which will provide payments for fixed-cost recovery. However, those units that do not sell RA-contracts and are not frequently called for ED instructions should be able to mothball or retire unless the CAISO offers them an RMR contract. As we have noted in a number of previous opinions, there may be some circumstances where a cost-of-service contract may be the least cost (to consumers) remedy for a generation unit owner that possesses substantial local market power when providing ED energy but is not asked to provide ED energy frequently enough to achieve full cost recovery under the CAISO's market power mitigation mechanism.

#### **4. Concluding Comments**

For the reasons described above, we believe it is fully appropriate to apply a local market power mitigation mechanism to the supply offers of resources that receive ED instructions. There is no reason why non-RA units should be exempt from local market power mitigation of energy sales. Having said that, we also support a market power mitigation mechanism that provides an opportunity for units to earn revenues that reflect market values not necessarily contained in that unit's LMP. In order to balance these considerations, we support the proposal to leave unit offers unmitigated until the revenues earned by a unit exceed a threshold linked to the ICPM capacity payment. We do not believe it is necessary to set the price paid for ED instructions so high that all generation units can achieve fixed cost recovery from selling ED energy and energy and ancillary services in the CAISO's market. We also recommend that the CAISO make every effort to reflect all significant and predictable constraints in its network model so that ED instructions are truly that — exceptional — and not a significant and recurring source of revenue for generators.