

Managing Congestion Costs in the Miguel-Imperial Valley Region

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January 13, 2004

Summary

The California ISO's (CAISO) process for managing transmission congestion in the southeastern corner of the State (the Miguel-Imperial Valley Region) has become dysfunctional. This situation is the result of the confluence of several factors: (1) a physical congestion bottleneck (2) the entry of new generation units along the southern boundary of the CAISO control area with no accompanying increase in transmission capacity to deliver the energy produced by these units to Southern California load centers, (3) State of California long-term contracts that give these producers little or no incentive to submit feasible schedules in the forward market, and (4) an ineffective local market power mitigation mechanism. Since early 2003, CAISO operators have stated that managing this congestion through a process of accepting a substantial quantity of decremental energy (DEC) bids in real-time significantly degrades grid reliability.

Addressing any of the above factors should substantially reduce the costs associated with managing transmission congestion in the Miguel-Imperial Valley Region and increase the reliability of CAISO system. Transmission upgrades approved by the CAISO on October 23, 2003 will significantly limit the frequency and duration of this congestion, but the most optimistic estimates of the time to completion of what amounts to approximately 300 MW of additional transmission capacity is December 2004. An upgrade of more than 1000 MW of additional transmission capacity in this region was approved by the CAISO Board more than a year ago and is expected to be approved by the California Public Utilities Commission (CPUC) by April 2004. Because more transmission capacity is the only way energy from these new sources can get to where it is needed, we strongly endorse state regulatory agencies giving the approval of these upgrades the highest priority and allowing the strongest possible commitment of personnel to ensure they are completed as soon as possible.

In the interim, all market participants, state agencies and the Federal Energy Regulatory Commission (FERC) should work to eliminate the limited incentives suppliers have to self-manage congestion in advance of the real-time market. The problems are exacerbated by the structure of the state's long-term contracts and the inadequate local market power mitigation mechanism for DEC energy bids. Both of these factors unnecessarily increase the cost of managing congestion in the Miguel-Imperial Valley Region and reduce the overall efficiency of the California electricity market. We therefore recommend alternative procedures to determine decremental (DEC) bid reference prices and to schedule bilateral contracts through what are known as 'inter-SC' trades that enhance market efficiency.

The CAISO management has proposed a number of solutions to the reliability problems associated with managing congestion in the Miguel area. However, as we discuss below, the success of these options depends on addressing the state contracts issue and problems with the CAISO's local market power mitigation mechanism for DEC bids. Because these two factors have the potential to impose significant costs on California consumers in a wholesale market with locational marginal pricing (LMP), an integral part of the CAISO's proposed new market design, these issues should be addressed as soon as possible. Some proposals being considered for the Miguel problem would also result in a substantial reallocation of costs among market participants. Thus in the process of solving a congestion management problem, largely in the name of improving system reliability, it must be recognized that the solutions could also produce some big economic winners and losers relative to the status quo.

In summary, we have significant reservations about the potential adverse impacts of the new zone. For this reason, the option of creating a new zone at Miguel should only be adopted if the CAISO operators determine that it is the only option available to address the growing reliability concerns they have with the current procedures used to manage this intra-zonal congestion. We fully support the concept of a negotiated settlement that would allow for self-management of congestion in this region in advance of the day-ahead market. We would like to emphasize the importance to either solution of addressing both the state contracts issue and the inadequate local market power mitigation mechanism that has led to excessive congestion in the southeastern corner of the state. Our recommendations for addressing the state contracts and local market power mitigation issues are given below.

Background

Since early 2003, the CAISO operators have expressed reliability concerns with managing intra-zonal congestion at a substation in the southern portion of the SDG&E service territory (i.e. the Miguel substation area) as a result of a substantial amount of new generation it expected to come on line during the summer of 2003. These concerns materialized beginning in the latter part of July 2003 when approximately 1070 MW of new combined cycle gas turbine generation capacity located in Mexico (henceforth referred to as the Border generation) came on line¹. Coral Energy owns 470 MW of the 1070 MW that can sell into the CAISO control area. Sempra Energy owns the remaining 600 MW of capacity. As a result of market participants scheduling more output from these units in the day-ahead zonal congestion management process than can be transported out of the region in real-time, ISO operators have had to sell back to these unit owners substantial amounts of energy in real-time at prices substantially below the real-time zonal energy price.

As a consequence of these actions, the costs of managing intra-zonal congestion at the Miguel Substation amounted to more than \$2 million dollars during the months August and September of 2003. These increased intra-zonal congestion costs have continued to the present time. Although the reduction in the hourly demands relative to

¹ The total capacity of new generation in this location is in fact 1,640 MW, but only 1,070 MW are connected directly to the CAISO controlled grid (the remaining 570 MW are connected to the CFE grid).

levels during the peak summer months have reduced the total cost of managing intra-zonal congestion, the reliability problems have remained. In particular, the CAISO continues to issue significant quantities of decremental instructions to the new generation units located in Mexico during more than 50 percent of the hours each day. Moreover, when these Border generation units are decremented to their minimum operating level without resolving the transmission congestion, the CAISO operators must then turn to suppliers at the Palo Verde intertie for more decremental energy to relieve the intra-zonal congestion. Although recourse to Palo Verde DEC energy occurs only during approximately 10 percent of the hours, the bids the CAISO operators typically accept have been substantially below the real-time zonal price. This further adds to the cost of resolving congestion caused by the Border generation.

Because the Border generation is currently treated as if it is located in the SP15 congestion zone, some costs associated with managing intra-zonal congestion are expected because of insufficient transmission capacity to deliver the energy from these units to Southern California load centers. However, these congestion costs have been greatly increased because of the structure of the state contracts and the ineffectiveness of CAISO's local market power mitigation mechanism. State contracts have increased the incentive for Border generation unit owners to schedule their contract quantity in day-ahead and hour-ahead zonal market, because the contracts deem the energy as "delivered" if at least this amount of energy is in the unit's final hour-ahead (HA) energy schedule, even if most of the energy has to be DEC'ed in real time because of congestion within the SP15 congestion zone. Ineffective mitigation of local market power in the real-time market means that the Mexican generator units can achieve mitigated DEC bids well below the incremental cost of their units². These very low DEC bids inflate the cost of resolving this congestion and increase the financial incentive of these unit owners to cause it.

Since May of 2003, the CAISO operators have proposed a number of remedies to the deal with these intra-zonal congestion costs. All of them are aimed at limiting the amount of energy that must be purchased and sold in real-time to manage this congestion. The two major proposed solutions that have emerged from this process are: (1) managing intra-zonal congestion before real-time within the context of the CAISO's existing three-zone network model, and (2) creating a new zone that contains the Border generation units. This second solution has been further sub-divided into the option of modeling the resulting four-zone network as a radial network or as a looped network.³ At the December 4, 2003 ISO Board Meeting, the ISO management ultimately settled on the second solution of creating a new Miguel-Imperial Valley (MIV) zone based on a radial network model. However, ISO Management refrained from seeking Board action due to concerns raised by a number of affected parties.

² Only one of the suppliers in this area has agreed on "cost-based" DEC reference prices, a more meaningful reflection of avoided cost than DEC reference prices based on accepted "in sequence" DEC bids, the methodology used to determine DEC reference prices for the other supplier in this region.

³ The implementation details associated with these options are discussed in California ISO the White Paper "Whitepaper on Methodology for Miguel Nomogram and Generation Sensitivity Development, December 17, 2003, available from <http://www.caiso.com/docs/09003a6080/2a/e9/09003a60802ae906.pdf>.

More recently, and in response to stakeholder concerns with creating a new zone without a satisfactory solution to the state contracts and local market power mitigation problems, Terry Winter, President and Chief Executive Officer of the CAISO, issued a letter on December 18, 2003 proposing that market participants negotiate a solution to this problem. In particular, this letter proposed that the relevant entities craft a congestion management procedure that would use the CAISO's publicly available market information to submit feasible day-ahead schedules to the CAISO that can be accommodated in real-time by the existing transmission network. This letter stated that ISO management felt that this type of solution was preferable to creating a new zone, but it needed specific written commitments from the relevant market participants to reduce infeasible forward market scheduling over the Miguel bank before January 10, 2004. Failing such commitments from market participants, the ISO would need to re-propose a Miguel-Imperial Valley (MIV) zone as the most effective way to remedy this problem. Finally, this letter acknowledged that this new zone has the potential to increase substantially wholesale energy costs to California consumers under the current market rules and mechanism for settling the state contracts.

The impacts of the process used to schedule long-term contracts and the mechanism used to mitigate local market power on intra-zonal congestion costs in the Miguel area cannot be over-emphasized. The current process for settling the state contracts and generation owner local market power combine to allow suppliers in this region to earn significant profits from causing intra-zonal congestion through their scheduling behavior and then relieving this intra-zonal congestion by purchasing this energy back from CAISO at a very low decremental energy bids taken out of sequence in the real-time market. The local market power of these supplier's forces the ISO to accept of DEC bids significantly below both the real-time zonal price and reasonable estimates of decremental costs. The CAISO's local market power mitigation mechanism has proven inadequate in limiting the costs of this local market power problem.

Suppliers with long-term contracts have an additional incentive to engage in this behavior even if their DEC bids were set equal to their marginal cost. These suppliers have an incentive to cause and relieve intra-zonal congestion as long as their true marginal cost is below the price they are paid under the long-term contract, a highly likely circumstance for state contract providers. It is important to emphasize that suppliers with and without state contracts causing and then relieving intra-zonal congestion would not occur, if these suppliers did not make significant profits from engaging in this behavior. Consequently, any solution to excessive congestion in the Miguel-Imperial Valley Region must address the incentives to cause and relieve intra-zonal congestion caused by the process used to settle the state contracts and the CAISO's local market power mitigation mechanism. We now consider each of the CAISO proposals in more detail and point out why the success of each proposal requires solutions to the fundamental causes of this congestion

The New Zone Proposal

The usual way to deal with excessive intra-zonal congestion and uncompetitive decremental energy (DEC) bids would be to create a new zone. Such a concept works

best if the generation in the new zone could be represented as cleanly detached from its predecessor zone and connected by a simple, radial interface. In such a circumstance, the delivery of power to a zone that is congested 'out' (i.e., export constrained) would cause the price for power in the new zone to fall well below the price in the other regions of the 'old,' combined zone. Congestion costs would be priced explicitly by using adjustment bids to extract the willingness of market participants to utilize that interface. The lower value of power in the new zone would theoretically reduce the incentive of firms to schedule supply there (these firms could no longer earn the higher 'old' zonal price without paying congestion costs), and result in the elimination of the DEC game and a reduction in energy deliveries to that zone. This would in turn help to relieve the reliability problems of oversupply over a congested interface.

Two factors work to limit the benefits of a new zone under the current CAISO market rules. First, the new zone cannot be easily separated from the old zone or easily represented as connected through a simple, radial, interface. In order to make this new creation fit the radial zone paradigm of the present California market design, many details of the interaction of flows from several zones must be ignored in the day-ahead congestion management process. One consequence of this is that the aggregate day-ahead import capabilities of network appear to be reduced, in order to accommodate the potential impacts of simultaneous flows from several sources on the aggregate import capabilities of the region. The net result is that, with the new zone, the ISO can import less aggregate power day-ahead than it could without the zone.⁴

It is important to recognize that this apparent reduction in import capacity is entirely fictional. The creation of the new zone will do nothing to change the actual physical capability of the network. To the extent that the ISO must impose conservative limitations on the day-ahead congestion management process, it can make up for this by allowing additional imports in real-time. However, the fictional changes in import capacity can have important impacts on the economics of the power supply. One reason comes from the CAISO's recent experience with incremental power imports in real-time, which are high priced and limited in availability, because suppliers prefer day-ahead commitments of longer duration than a single hour. Another is that the ISO has had a consistent policy of seeking to minimize the use of the balancing market for actual energy transactions. These policies may conflict with and limit the ability of participants to take advantage of any 'additional' transmission capacity that is made available in the balancing market.

There are parallels between this circumstance and the problems the ISO has had with existing transmission contracts (ETCs) held by municipal utilities in California. The ISO is very concerned about the ability of ETC holders to reserve large amounts of transmission capacity, making it unavailable in the day-ahead congestion management process. Although capacity that is reserved but unused by ETC holders is made available in the real-time balancing market, the ISO has expressed serious concern that the 'last-minute' availability of the capacity makes it far less valuable for addressing both economic and reliability needs.

⁴ This outcome could also occur if the new zone was created in the context of a looped network model.

The second factor that limits the benefits of the new zone is the presence of extensive pre-existing long-term contracts that limit the incentives of producers to participate in the CAISO's congestion management process. Two sets of contracts play a role here, the 'seller's choice' supply contracts negotiated by the state of California and the regulatory 'must-take' arrangements for power from Arizona. Producers supplying power under these two types of contracts are competing to get their supply through the constrained interfaces in the southeast region of the ISO system.

In the case of the seller's choice contracts, suppliers have flexibility to determine the location for delivery of the contracts and are paid the contract price as long as the energy is delivered according to the terms of the contract. With such contracts, sellers have an incentive to deliver power at the location where it will be the least cost for the seller to supply. Unfortunately for the buyers under these contracts, these locations are also usually the places where the power has the least value to the buyer. Such is the case for the deliveries at the power plants along the Mexican-California border that would comprise the proposed new MIV zone. Because sellers have already locked in a contract price for delivery, the fact that the new zone will likely have an extremely low (potentially even negative) spot price for power will have little impact on the quantity of power delivered there.⁵ Thus the normal market dynamic that allows for locational prices to eliminate the DEC game will largely be absent in the new zone. For this reason, we do not believe deliveries to this zone will be reduced in response to the resulting low prices in the zone.

The likely result will be an increase in the incentive for the Border generation units to deliver power under these contracts.⁶ But any resulting increase in deliveries from the Mexican units comes at the cost of a decrease in deliveries from generation provided under regulatory must-take agreements. This second set of contracted power is largely originated at the Palo Verde nuclear station in Arizona. Under terms negotiated at the time the California industry was restructured in the mid 1990's, utilities were allowed to recover their costs from certain generation investments at rates that were decoupled from market prices. Power from nuclear stations and from PURPA-era qualifying facilities (QFs) is scheduled into the California ISO under these terms.

Without a solution to the sellers' choice contracts problem, the new zone will allow California loads to take delivery of power supplied under one set of inflexible supply contract at the expense of taking less of power supplied under a different set of inflexible supply contracts. The trade-off is not entirely symmetric, however. Because of

⁵ Note that this impact is not uniform over time. Not all of the Border generation companies have seller's choice contracts that are in effect all of the time. Thus, some of the time the power from Border generation plants is marketed in short-term markets. The new zone would have a more positive impact on the incentive to schedule this non-contracted power supply.

⁶ An increase in "deliveries" to the new zone can happen because a unit owner supplying power from outside the new zone under a seller's choice contract would earn not only the contract price, but also an amount equal to the difference between the zonal price where the unit is located and the price in the new, low-priced zone. Then the buyer of the power would have to pay the contract price plus the virtual congestion charge associated with transferring the power from the new zone to the buyer's zone. Because the seller's delivery to the new zone would equal the buyer's purchase, this is a virtual transaction with no effect on congestion; rather, the effect is simply to transfer money from consumers to this unit owner.

the relative power transfer distribution factors (PTDFs) of Mexican and Palo Verde generation with respect to the Miguel bank, every additional 1 MW of Border generation that is scheduled day-ahead would have to be matched by a reduction of more than one MW of Palo Verde generation scheduled day-ahead, even though Palo Verde generation is likely to be less expensive.

There are both efficiency and equity impacts from such a change. The apparent displacement of low marginal-cost energy at Palo Verde, most likely produced from nuclear units, for less gas-fired Mexican energy with a higher marginal cost is clearly inefficient. In this sense, instead of making the congestion management process more efficient in the spirit of a LMP market, the new zone will actually make the process less efficient by utilizing more costly resources. Of course, the displaced nuclear plants will likely not sit idle as the result of the change. The output from these plants will probably be marketed on the Arizona side of the transmission constraint, but at substantially lower prices than those paid under the existing long-term contracts. Consequently, even if the efficiency impact is minimal, the new zone has the effect of excluding more power that has traditionally been imported through the Palo Verde interface and thereby devaluing that power by cutting it off from the California market.

The equity effects of this process are difficult to sort through, but are almost certainly substantial. Who 'owns' the must-take power, ratepayers or the utilities? Which types of contracts should have higher priority, must-take or sellers choice? What is the distribution of impacts among utility ratepayers? These issues have been explored to some extent but the full impacts have not been clearly established or agreed upon. For this reason we believe there is a significant upside cost risk associated with implementing a new zone without a solution to the state contracts problem and a more effective local market power mitigation mechanism.

Forward Market Solution within Existing Market Design

It will take time and a significant expenditure of money to establish a new congestion zone and, furthermore, this new zone will only be in place approximately one year, assuming the CAISO implements its new market design on schedule. These facts argue in favor of crafting a temporary solution within the context of the current three-zone market design. Although the CAISO management is willing to employ more manpower on the operations floor to manage this intra-zonal congestion before the real-time market, this solution does not address the perverse incentives for day-ahead scheduling created by the combination of the state contracts described above and the inadequate local market power mitigation mechanism available to the ISO operators. Consequently, without addressing these underlying causes, the CAISO management's willingness to employ more manpower to resolve this congestion earlier may address the reliability problems, but potentially at substantially increased costs to California consumers.

As noted above, the key to reducing the frequency and magnitude of intra-zonal congestion costs is eliminating the profitability to suppliers of causing and then relieving intra-zonal congestion. The current method the ISO uses to set DEC reference levels clearly provides suppliers with far too much discretion to exercise substantial amounts of

local market power in the intra-zonal congestion management process. This is evidenced by the fact that the DEC reference level for two of the Border generators are currently extremely different, despite the fact that these two generation units are both combined-cycle natural gas-fired facilities using almost identical technologies. Moreover, these two units are located very close to one another geographically. Therefore, it is difficult for us to understand why such large differences in DEC reference levels should be allowed to persist given that the primary goal of local market power mitigation is to approximate competitive bidding when insufficient competition exists. We would not expect that under competitive conditions two nearly identical generation units would be submitting DEC bids that are so different.

The ISO has also found that the DEC bids available in real-time at the Palo Verde intertie to manage intra-zonal congestion associated with the Miguel bank are often substantially below the real-time zonal price in SP15. This outcome is consistent with the logic that at this time horizon there may be insufficient competition for the provision of DEC bids, so that the few suppliers able to reduce the output from their units in real-time may be able to exercise local market power in DEC energy market at Palo Verde. This fact further underscores the need for the ISO to have a more effective local market power mitigation mechanism.

Further Recommendations

Regardless of the approach taken to dealing with the problem of congestion in the Miguel-Imperial Valley Region, we feel that the problems in this region highlight the need for two further changes that would help to reduce the costs of intra-zonal congestion in the future. The first involves modifying the CAISO's current local market power mitigation mechanism under the three-zone market design. The second clarifies what constitutes delivering energy under long-term contracts settled by the CAISO.

Modifying the Local Market Power Mitigation Mechanism

Particularly, because the Border generation issue involves only two suppliers of DEC bids, we see little reason to set a unit's DEC reference level based on accepted in-sequence DEC bids, as is the case for one supplier with a very low DEC reference level. The very low DEC bid from this supplier is in-sequence only a very small fraction of the hours of the year when the real-time demand for decremental energy in the SP15 congestion is so large that virtually all of the units in the congestion zone, including those owned by this supplier are called upon for decremental energy. During the vast majority of the hours, this unit's DEC bids are taken out-of-sequence at a price that is substantially below the zonal market-clearing price.

Returning to logic behind the design of an effective local market power mitigation mechanism, we believe it makes very little sense to assume that DEC bids accepted under extreme system conditions, when virtually all units in the SP15 congestion zone are decremented, are representative of competitive behavior under all other system conditions. For this reason, we instead favor an incremental cost-based method for setting the DEC reference levels for all of the Border generation units. This is the procedure now used for the Border generation units with a \$28/MWh reference level.

Even with a policy for setting the DEC reference levels for the Border generation units that is more representative of competitive market conditions, there two remaining problems. The first concerns the level of the DEC bids available at the Palo Verde intertie. The second concerns how to provide incentives for market participants to resolve known intra-zonal congestion before the real-time market to address the CAISO operators' reliability concerns.

To address the first problem we recommend that the ISO publish information on its web site on the hourly quantity-weighted average price of accepted decremental energy bids and the total amount of decremental energy bids accepted to resolve intra-zonal congestion at the Miguel bank during the previous day. Making this information available to market participants will hopefully stimulate competition to provide DEC bids at this intertie (to resolve intra-zonal congestion at the Miguel bank) that are closer to the real-time zonal price in SP15.

To address the second problem of providing incentives for suppliers to submit fully feasible schedules and therefore manage intra-zonal congestion in the forward market, the ISO operators should have the option to manage intra-zonal congestion using the DEC reference levels for the Border generation units and the DEC bids submitted to the real-time market by suppliers at the Palo Verde intertie immediately following the day-ahead or hour-ahead scheduling process. If Border generation owners know that the ISO operators have the option to reduce the day-ahead schedule from their units at a bid price equal to their cost-based reference level, these suppliers should have less of an incentive to submit day-ahead schedules that cause substantial amounts of intra-zonal congestion.

As we propose below, this market rule would mitigate some of the distorting effects of the pre-existing contracts. Another important benefit is likely to be a decrease in intra-zonal congestion management costs because accepted DEC bids will be at higher levels that are more representative of competitive conditions because they are required to be cost-based. It is important to emphasize that all of these solutions to deficiencies in the ISO's current local market power mitigation mechanism would only need to be in place until the transition is completed to the LMP market design with a comprehensive local market power mitigation mechanism designed for an LMP market, such as the one that exists in the PJM market.

Scheduling of Seller's Choice Contracts

As we have already discussed, a significant amount of the generation located in the new zone is already providing power under seller's choice contracts, so the new zone does not substantially impact the economic cost of those contracts. It may however impact the distribution of those costs as the purchasers under the contract would be responsible for any additional congestion charges between the new zone and SP15, where the power will be consumed. Additional economic costs could be created however, if the new zone attracts other seller's choice contracts that are currently being delivered elsewhere in the ISO system. Recall that the current method for settling the sellers' choice contracts gives a producer the incentive to schedule "delivery" at the lowest priced

location. A new zone with a very low day-ahead price⁷ may therefore provide more revenue to sellers than the current delivery points used by some of these contracts.

Therefore, we recommend that the CAISO adopt the following physical feasibility rule for deeming forward contracts delivered through its markets. Deliveries scheduled under forward contracts settled by the CAISO must be specified as linked to specific generation units and limited to the energy scheduled from these units. Such requirements are commonplace for most power schedules, but deliveries under these contracts have taken the form of ‘inter-scheduling coordinator’ (inter-SC) trades and have to date been exempted from a physical feasibility requirement. We see no reason for this exemption and note that such an exemption is in contradiction to the ISO’s other FERC-approved policies restricting non-physical or “virtual” trades. Regardless of whether the ISO decides to create a new zone, we strongly recommend that these exemptions be ended and that a physical feasibility standard be applied to all schedules⁸.

The equity impacts of changes in the CAISO market rules on sellers’ choice contracts is a concern that is not limited to the creation of a new zone. In a sense, the issues arising from the creation of a new zone are a microcosm of the issues created by the transition to LMP. Just as sellers may choose to change deliveries under seller’s choice contracts from their current locations to a newly created low-price zone, they may also, under LMP, switch their current delivery locations to newly created low-price nodes. The potential scope of this problem is much larger as the number of potential low-price delivery locations could multiply under LMP. While we do not at this time have adequate information to estimate the full impacts of such a conversion, we do believe that, at a minimum, a physical feasibility rule will be necessary to help limit the potential adverse impacts of the transition to LMP on the costs of the sellers’ choice contracts. This physical feasibility requirement on delivery would provide strong incentives for suppliers with forward contracts to schedule this power from units that are physically able to operate in real-time time.

There is an additional important reason to require the physical feasibility of forward contract deliveries. The CAISO’s congestion management process and resulting congestion charges can be used to hedge the congestion charges associated with loads taking delivery at physically feasible delivery points. If suppliers are free to deliver virtual quantities of energy at any location they choose without regard to physical feasibility, the congestion revenues the CAISO’s receives will be grossly insufficient to hedge the congestion charges load-serving entities must pay for the virtual transfer of the energy from the “delivery” location to their load centers. In addition, without such a physical feasibility rule, the potential cost transfers implied by a new zone are significantly increased, because as noted above this the new zone is likely to have very low prices and therefore be a very attractive place for suppliers to “deliver” virtual power to load-serving entities under seller’s choice contracts.

⁷ In the absence of a day-ahead energy market, and in the presence of market separation, the “day-ahead congestion price” means the effective price resulting from adjustment of SC schedules using INC and DEC adjustment bids.

⁸ The problem exists even with the existing three zones for some seller’s choice contracts where the seller can designate any of the existing zones as a handoff point.

Concluding Comments

If our recommendations for the terms of deliverability of long-term contracts settled in the CAISO's markets and for revisions its local market power mitigation protocols are adopted, we believe a solution within the context of the current ISO market design should address the CAISO's operator's concerns with the potential least harm to California consumers. Although the creation of the new zone goes farther in creating a congestion management process that is true to the vision of a LMP market, it is important to note that this solution falls short of LMP in several crucial aspects. Creating a new zone in a fictional day-ahead a radial structure in a network that is actually meshed causes problems because simultaneous feasibility of flows would require very conservative day-ahead transmission capacity limits. This would restrict imports day-ahead and increase wholesale energy costs to California consumers. Ultimately, the creation of a new zone appears to be an extremely costly way to address the CAISO's reliability concerns, given the short period of time it will be in place before implementation of the new CAISO market design. We would be even more strongly opposed to the creation of a new zone if our recommended modifications of the ISO market rules were not implemented.

Although we have many reservations about the economic impacts of a new zone, if the ISO operators believe a new zone is essential to address its reliability concerns, we defer to their expertise in that area. However, we fully support and encourage efforts to reach a negotiated settlement that would satisfy the reliability concerns of the ISO without the creation of a new zone.