UNITED STATES OF AMERICA 105 FERC ¶ 61,140
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Pat Wood, III, Chairman;
William L. Massey, and Nora Mead Brownell.

California Independent System Operator Corporation	Docket Nos. ER02-1656-003 ER02-1656-004 ER02-1656-015 EL01-68-028

FURTHER ORDER ON THE CALIFORNIA COMPREHENSIVE MARKET REDESIGN PROPOSAL

(Issued October 28, 2003)

1. The California Independent System Operator (CAISO) has filed a conceptual proposal, rather than detailed and comprehensive tariff revisions, that sets forth proposed market design elements for inclusion in its Comprehensive Market Redesign Proposal 2002 (MD02). The CAISO has filed the conceptual proposal so that it can gain a clearer view from the Commission as to whether its proposed market design elements will be approved, prior to incurring significant costs and spending time developing the more detailed tariff language that will be required. The CAISO's filing represents significant progress and reflects a pragmatic approach to its market redesign effort. As a general matter, the Commission supports a phased-in design that is balanced. The design should provide for monitoring and mitigation where wholesale markets are not yet structurally competitive. The various elements of a regional market should work well together to produce an efficient, well-functioning wholesale market for the benefit of customers.

2. In this Order, we approve in principle many of the conceptual market design elements submitted by the CAISO; provide guidance and seek additional information and explanation for some elements; and establish a technical conference to address other issues raised by the filing. Our action in this regard should allow the CAISO to proceed with the development of requisite software and tariff modifications. This will facilitate the implementation of MD02 without further delays or the incurrence of unnecessary expenses that may otherwise have been incurred by the CAISO if development and implementation of the design had proceeded prior to obtaining Commission approval, and such approval had not ultimately been given. In addition, our actions today will establish

a framework for further development of the issues that were either less developed or raised concerns not fully resolved by this filing. As this order provides guidance only and the matters discussed are subject to further proceedings and orders, this order is advisory in nature and not subject to rehearing. However, parties may revisit these issues de novo after the CAISO files a comprehensive tariff.

3. In this order, the Commission:

- Accepts the CAISO's proposal to implement LMP and the Integrated Forward Market in redesigning its congestion management system.
- Accepts, subject to modification, the CAISO's Residual Unit Commitment (RUC) process.
- Accepts the CAISO's proposed bidding and scheduling concepts, subject to further review of actual tariff language.
- Directs the CAISO to complete and publish results of a study of the proposed CRR allocation process before the Commission can provide a definitive ruling, requires the CAISO to file detailed information on the proposed first year allocation when it files its proposed tariff instituting the CRR allocation method, and directs the CAISO to make an initial filing of this allocation information as soon as practicable but at least three months prior to its tariff filing.
- Directs the CAISO to conduct further analysis of its ETC proposal before the Commission can provide a definitive ruling.
- Directs the CAISO to submit a filing with the Commission outlining any necessary changes to its market redesign proposal resulting from a final rule in the California Public Utilities Commission (CPUC) Procurement Proceeding.[1]
- Revises the CAISO's proposed day-head/hour-ahead/real-time must-offer obligation to give generators the choice to fulfill the must-offer obligation either in the day-ahead market or real-time market.
- Sets the CAISO's proposed market power mitigation measures for Technical Conference to create a mitigation package that will be effective within the CAISO's market design.

4. Outline

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[1] Public Utilities Commission of the State of California, Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development, Docket # R. 01-10-024.

I. Background

5. The overhaul of California's electricity markets was initiated by the CAISO in December 2001, as a result of the Commission's January 7, 2000 and December 19, 2001 orders which required the CAISO to submit a plan for redesigning the CAISO congestion management system, and for creating and implementing a day-ahead energy market.[2] The objective of MD02 was to enhance the efficiency, effectiveness and reliability of the CAISO's markets

6. On May 1, 2002 the CAISO submitted its Comprehensive Market Design 2002 (MD02) to be implemented in three Phases: Phase 1, market power mitigation measures, real-time economic dispatch and the use of a single energy bid curve; Phase 2, an integrated forward market, including an energy market and procedures for procurement of ancillary services; and Phase 3, implementation of the full network model, redesigned firm transmission rights, and the integration of congestion management with energy and ancillary services markets.

7. In an order issued July 17, 2002,[3] the Commission approved certain elements proposed for implementation in Phase 1 and directed the CAISO to hold technical conferences to further develop the longer-term elements of MD02. Specifically, the Commission approved the continued use of a West-wide "must offer" provision,

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[2] California Independent System Operator Corp., 90 FERC ¶ 61,006 at 61,013-61,014 (2000); San Diego Gas & Electric Co. v. Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator and the California Power Exchange, et al., 97 FERC & 61,275 (2001).

[3] California Independent System Operator Corporation, 100 FERC ¶ 61,060 (2002) (July 17 Order).

implementation of automatic mitigation procedures, a safety net bid cap set at $250/MWh, a cap on decremental bids set at $-30/MWh, the use of a single energy bid curve, and real-time economic dispatch. The Commission also approved penalties on uninstructed deviation, subject to the condition that the CAISO implement software improvements which would allow more accurate representation of ramp rates at various operating points of a generating unit and would allow real-time communication of a generator's outages, derates, and operating problems.

8. On August 16, 2002, the CAISO filed a request for rehearing of certain aspects of the July 17 Order, including the Commission's decision authorizing the CAISO to implement real-time economic dispatch. In an order issued October 11, 2002,[4] the Commission granted the CAISO's request to delay the implementation of real-time economic dispatch until such time as the CAISO could also impose penalties for uninstructed deviation.

9. To reflect the staged implementation of the market design elements, the CAISO then divided Phase 1 of MD02 into two sub-Phases: Phase 1A, consisting of the market design elements of Phase 1 which had been approved by the Commission without conditions; and Phase 1B, real-time economic dispatch and penalties for uninstructed deviation.

10. On January 17, 2003,[5] in response to requests for rehearing, the Commission reversed its previous decision requiring bids from System Resources (imports) to be submitted at $0/MWh and to allow System Resources to submit bids greater than $0/MWh, but required that the prohibition on System Resources setting the market clearing price (MCP) be maintained.

11. On May 27, 2003, the CAISO sought approval from the Commission for expedited implementation of its tariff Amendment No. 52, which would eliminate the zero-bid requirement in order to ensure that it had sufficient energy resources available to meet peak demands in the Summer of 2003. Phase 1B, which was originally intended to be implemented prior to Summer 2003, was delayed until Fall 2003. In the June 24, 2003

[4] California Independent System Operator Corporation, 101 FERC ¶ 61,061 (2002) (October 11 Rehearing).

[5] California Independent System Operator Corporation, 102 FERC ¶ 61,050 (2003), (January 17 Order).

Order,[6] the Commission approved the expedited elimination of the zero-bid requirement for System Resources.

12. On July 8, 2003, the CAISO filed Amendment No. 54 to the CAISO Tariff. The CAISO sought approval for the implementation of the Phase 1B elements of the Real Time Imbalance Energy Market, including approval of Uninstructed Deviation Penalties (UDPs), Real Time Economic Dispatch (RTD), and inclusion of multiple ramp rates and other operational constraints into dispatch decisions. The implementation of the Phase 1B elements of the Real Time Imbalance Energy Market will complete the implementation of all the elements of Phase 1 of CAISO's MD02 that have been approved by the Commission.[7]

13. The instant filing represents the Revised MD02 proposal that builds on CAISO's previous proposal of May 2002. The CAISO indicates that its original proposal has evolved to reflect consideration of many of the recommendations that were developed through its stakeholder process by customers and market participants.

Summary of Filing

14. The CAISO's July 22, 2003, Revised MD02 Comprehensive Market Design is a conceptual proposal filed pursuant to section 205 of the Federal Power Act (FPA).[8] Specifically, it includes an Integrated Forward Market[9], with a financially binding day-ahead market that ensures feasible schedules based on an accurate model of all transmission constraints on the CAISO system (full network model). The CAISO proposes to co-optimize energy and ancillary services, and to determine prices using locational marginal pricing (LMP). Suppliers will settle at the nodal LMPs, while load will be settled at an aggregated price (the nodal prices will be aggregated and averaged, initially over the 3 existing IOU service territories). Load that can provide demand

[6] California Independent System Operator Corporation, 103 FERC ¶ 61,340 (2003) (June 24 Order).

[7] California Independent System Operator Corporation, 105 FERC ¶ 61,091 (2003).

[8] 16 U.S.C. § 824d (2000).

[9] The Integrated Forward Market as proposed contains a day-ahead and hour-ahead market, with a Residual Unit Commitment (RUC) procedure in both.

response will receive the nodal LMP through the CAISO. The proposal also includes a Residual Unit Commitment (RUC) process. It also replaces the existing "point to point" Firm Transmission Rights with "source to sink" Congestion Revenue Rights, and proposes to alleviate the problem of "phantom congestion" by modifying the way the CAISO reserves capacity for existing transmission contracts.

15. The CAISO also proposes a host of market power mitigation elements including the continuation of the current real-time must-offer obligation, the expansion of that obligation to the Integrated Forward Market (including the day-ahead and hour-ahead markets and the RUC process), the continuation of the current bid cap at $250/MWh, the continuation of the current Automatic Mitigation Procedures (System AMP), the continuation of RMR contracts, and the creation of a new mechanism to mitigate local market power.

16. The CAISO states that a resource adequacy requirement for load serving entities is being addressed in a proceeding before the CPUC,[10] and states that because the CPUC is not expected to issue a final procurement rule until late this year, it must wait until early in 2004 to undertake a review of the procurement rules and determine if any refinements to the MD02 proposal are necessary.

17. The CAISO has filed this conceptual proposal, rather than detailed and comprehensive tariff revisions, so that it can gain a clearer view from the Commission as to whether these market design elements will be approved. The CAISO states that once the Commission has indicated whether it is prepared to approve the design elements of MD02, it will then proceed to the next step of developing the detailed tariff provisions, and commissioning the development of the software required to implement the changes.

II. Notices and Interventions

18. Notice of the CAISO's filing in Docket Nos. ER02-1656-015 and EL01-68-028 was published in the Federal Register, 68 Fed. Reg. 46,177 (2003), with comments, protests, and interventions due on or before August 12, 2003. On August 7, 2003, the Commission extended the time to intervene and protest until August 27, 2003, as requested by the parties. The parties shown on the attachment to this order filed timely interventions, protests or comments. On September 17, 2003, the CAISO filed an Answer to Motions to Intervene, Motions to Reject, Comments, and Protests (CAISO

[10] Public Utilities Commission of the State of California, Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development, Docket # R. 01-10-024

answer). On September 26, 2003, the CERS filed Reply Comments out-of-time, and on October 6, 2003, the California SWP filed Supplemental Comments out-of-time.

III. Discussion

A. Procedural Matters

19. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2003), the timely, unopposed motions to intervene of the parties listed on the attachment to this order serve to make them parties to this proceeding. In addition, due to the early stage of the proceeding, their interest in the proceeding, and the lack of undue prejudice or delay, we accept the out-of-time comments filed. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure prohibits an answer to a protest unless otherwise ordered by the decisional authority. We find good cause to accept the CAISO's answer because it has provided information that has assisted us in our decision-making process.

B. Legal Issues Raised by Intervenors

(1) The Filing is Incomplete

20. Many intervenors[11] have raised concerns about incompleteness and lack of detail for some elements of the CAISO filing. They note that the filing does not comply with the requirements for section 205 rate filings under the Commissions Rules of Practice and Procedure,[12] including the requirement that tariff language be reflected in such filings. In addition, Dynegy/Williams, Redding and SMUD note that the CAISO Board has not yet formally approved the proposal as outlined in the instant filing.

21. The Commission recognizes that several aspects of the Revised MD02 proposal are not fully developed, e.g., finalizing the allocation process for CRRs, resolving outstanding issues regarding existing transmission contracts, the proposal to alleviate "phantom congestion." Other aspects appear to be an effort by the CAISO to produce feasible recommendations and to ascertain the level of support that might be available, both from the Commission and from market participants.

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[11] E.g., Reliant/Mirant, SWP, CPUC, Dynegy, SMUD, and CMUA.

[12] Rules of Practice and Procedure 18 C.F.R. § 35 (2003).

22. In this order, the Commission identifies those parts of the proposal which should be the subject of further consultation and development and directs the CAISO to provide information on the continuing progress towards resolving issues and more fully developing market design elements in the monthly status reports currently filed to update the Commission regarding the ongoing market redesign.[13] In addition, because the Commission is aware of the costs associated the development and implementation of the CAISO's proposed market reforms and because we believe that these costs should be transparent, we will direct the CAISO to file with the Commission a breakdown of the cost of its redesign, by market design element, to the extent possible (e.g., cost of software to implement RUC). We direct the CAISO to include this information as part of its monthly MD02 status reports to the Commission.

23. The purpose of this filing is to solicit the Commission's guidance so that the CAISO can either proceed as planned or modify its proposal as necessary. As such, considering this filing in its present state will benefit customers as our approval in principle of these design elements will provide further assurance to the CAISO that the general design is acceptable to the Commission.

24. Therefore, consistent with the nature of the filing, the Commission's approval of these design elements is in principle only. Our objective is to provide guidance to the CAISO on whether its concepts and design elements are acceptable so that the CAISO can move forward with its market redesign. In addition, the Commission is willing to revisit certain elements of the proposal once a resource adequacy program is complete. Our order will allow the CAISO to proceed with more detailed implementation of the Revised MD02, including the preparation of detailed tariff sheet amendments and the development of requisite software.

25. Although most protests and interventions respond to the CAISO filing with comments of a "descriptive" nature, the Commission notes the considerable efforts that were made by intervenors to respond to the CAISO proposal in detail. These comments, as with all of the interventions and protests received, have helped the Commission assess the CAISO proposal, and determine and feasibility of each component of the proposal. We expect that at such time as the CAISO files a detailed methodology implementing each of the elements of its Revised MD02 proposal, together with tariff language that supports each of the elements, any specific issues raised by intervenors at that time can then be specifically addressed.

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[13] See Order Clarifying the California Market Redesign Implementation Schedule, 101 FERC ¶ 61,266 at P 8-9 (2002).

(2) Governance Issues

26. Many intervenors have expressed concerns about the structure of the CAISO Board and the risk that parts of the MD02 design will be implemented in a manner that does not reflect true independence.[14] The Commission has previously ruled on this issue and the relevant Orders are the subject of pending proceedings before the D.C. Circuit Court of Appeals.[15]

(3) Lack of Customer and Other Market Participant Process

27. While the Commission is encouraged by the market design elements of this evolving MD02 proposal, we are concerned by the many comments from diverse interests[16] that suggest there has not been an adequate opportunity for market participants and customers to contribute to the development of the proposals under review. The CAISO has committed to consult with customers and market participants on many of the elements of the MD02 proposal and has demonstrated its efforts to ensure that customers and market participants have been kept informed of developments. Nevertheless, the considerable volume of comments from interested parties shows a significant interest in and support for the CAISO's efforts to further the development of MD02. There exists a wealth of industry experience, and in particular an invaluable knowledge of local issues and conditions, within the government bodies, municipal co-operatives and companies represented by the intervenors, and their input benefits the evolution of the CAISO market. Input from these market participants and customers can help shape the necessary market redesign revisions, build a sense of ownership in the process and its outcomes, and can assist in the proper transition and implementation of new market features.

28. The Commission emphasizes its preference that ISOs work with their customers and market participants, and that they allow an adequate opportunity for debate and airing of possible alternatives to proposals that may be under review. Processes required to develop detailed proposals should not be relied upon as justification for undue delays in

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[14] E.g., Southern Cities, NCPA concerns about the allocation of CRRs, and Reliant/Mirant concerns about the application of market power mitigation measures.

[15] See Mirant Delta, LLC and Mirant Potrero, LLC v. California Independent System Operator Corporation et al., 100 FERC ¶ 61,059, order on reh'g, 100 FERC ¶ 61,271 (2002), review pending California Independent System Operator Corporation et al. v. FERC, Case Nos. 02-1287, et al. (D.C. Cir. filed Sept. 12, 2002 and later).

[16] E.g., Competitive Suppliers, Dynegy/Williams, Modesto, SoCal Edison, Sempra, TANC, CMUA, SVP, PG&E and FPL/AWEA.

the implementation of the proposals. However, we believe it is important that major issues be fully aired through a consultation process. The Commission directs the CAISO to redouble its efforts to convene consultative processes with market participants to resolve the outstanding design issues identified in this filing.

C. CAISO Proposal to Operate an Integrated Forward Market

29. The CAISO currently operates a day-ahead scheduling process that does not require schedules to be feasible. The acceptance of infeasible schedules has led to a host of congestion management problems for the CAISO.[17]

30. Under the Revised MD02 proposal, the CAISO proposes to operate an integrated forward market[18] that will simultaneously optimize energy, congestion management, and ancillary services procurement using a security-constrained unit commitment process. This change will eliminate the distinction between intra-zonal and inter-zonal congestion,[19] eliminate the market separation rule[20] and the balanced schedule requirement,[21] and will produce feasible schedules day ahead.[22] The CAISO further

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[17] See California Independent System Operator Corporation, 103 FERC ¶ 61,265 at P 16-44 (2003).

[18] The CAISO's Integrated Forward Market will consist of the day-ahead market, the hour-ahead market, and the RUC process.

[19] The current congestion management system of the CAISO is based on a zonal model that differentiates between two kinds of congestion: inter-zonal and intra-zonal congestion. Inter-zonal congestion management refers to the management of congestion between zones. Under the current CAISO rules, forward inter-zonal schedules are limited to the available transmission capacity between each zone. Congestion is managed using adjustment bids to ration available transmission capacity. Intra-zonal congestion management refers to the management of congestion within a zone. Intra-zonal congestion, unlike inter-zonal congestion, is managed in real-time in the energy imbalance market for supplemental energy.

[20] Scheduling Coordinators are the only entities permitted to submit schedules of resources and load to the CAISO. Currently, the market separation rule restricts trades between Scheduling Coordinators.

[21] The balanced schedule requirement requires Scheduling Coordinators to submit schedules in which resources and load are balanced.

[22] The CAISO intends to continue the current deadline of 10:00 a.m. for closing

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proposes to implement a full network model, redesigned Firm Transmission Rights as Congestion Revenue Rights (CRRs) and LMP. The CAISO will use a detailed model of the CAISO grid to adjust market participants' preferred schedules to mitigate congestion, ensure local reliability and produce feasible forward schedules and congestion costs based on the differences between marginal energy prices at each node on the grid. With these changes, the CAISO will eliminate its existing zonal congestion management system.[23]

31. The CAISO states that its proposal is consistent with the least-cost security-constrained unit commitment and dispatch algorithms used in the NYISO.[24] As well, the CAISO states that the proposed day-ahead, hour-ahead, and real-time market rules are based in part upon the market designs currently in use in other RTOs and are consistent with the Commission's SMD NOPR and Commission's White Paper. [25]

32. The CAISO proposes to allocate transmission and generation capacity among competing uses through LMP. By using LMP, congestion on the transmission system will be managed through market mechanisms. LMP is the method that is currently used

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the day-ahead market to bid submissions, and to publish final schedules at approximately 1:00 p.m. The CAISO states it will close the hour-ahead market two hours prior to the beginning of the operating hour (referred to as T-120 minutes), publish the final hour-ahead schedules at T-90 minutes, and close the real time market at T-60 minutes. According to the CAISO, this will allow a 30 minute re-bid period between final hour-ahead schedules and the close of real-time bid submissions. The CAISO states it will also perform a real-time pre-dispatch at approximately T-45 minutes to enable the CAISO to give real-time dispatch instructions to supply resources that are needed for the coming operating hour, but cannot change operating levels in response to intra-hour dispatch instructions.

[23] Note that the CAISO proposal retains the zonal system for use in applying market power mitigation measures.

[24] New York Independent Transmission System Operator, Inc., 97 FERC ¶ 61,242 (2001); see also Midwest Independent Transmission System Operator, Inc., 102 FERC ¶ 61,196 (2003).

[25] Remedying Undue Discrimination Through Open Access Transmission Service and Standard Electricity Market Design, Notice of Proposed Rulemaking, FERC Stats. & Regs. ¶ 32,563; 100 FERC ¶ 61,138 (SMD NOPR) at P216-235; White Paper Wholesale Market Platform issued on April 28, 2003, (Commission's White Paper) at 9-10.

for managing congestion in the regional markets operated by PJM, the NYISO and ISO-NE.

33. According to the CAISO, the benefits of a locational marginal pricing and congestion management scheme are significant. LMP will more accurately price the true cost of using the grid and should result in a more efficient and effective dispatch. LMP replaces the CAISO's flawed congestion management system and eliminates the need for the CAISO to make out-of sequence adjustments for congestion. LMP prices are consistent with the system operator's actual dispatch of the least-cost units. In addition, LMP-based markets benefit from the efficient price signals that LMP provides to those considering long-run investments in new generation, promotes demand response, as well as transmission upgrades that help eliminate congestion.

34. The CAISO proposes to establish three mandatory default load aggregation zones for load scheduling, bidding and settlement purposes initially defined as the transmission service areas of SoCal Edison, PG&E and SDG&E. Most loads within the ISO control area will be settled at the level of the load aggregation zone in which they are located. Load aggregation will be mandatory so that loads will not have the option to "opt out" of the aggregation.[26] The CAISO states that this approach is consistent with the methodology used by PJM, the NYISO and ISO-NE which settle loads at a high level of aggregation.[27] Furthermore, they assert that the Commission's SMD White Paper supports the use of zonal or nodal prices for electricity buyers.

35. The CAISO proposes to settle with supply resources based on the applicable nodal price,[28] as determined by the Security Constrained Unit Commitment algorithm and the

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[26] The only exceptions to this aggregation scheme are: loads served under non-converted existing transmission contracts (ETCs) which will schedule and settle according to their specific ETC rights; demand reduction by participating loads (demand response) which will settle at the locational price; and entities that can operate as either loads or generators (e.g., cogeneration and pumped- storage hydro facilities will be treated as generators and will bid and settle at location prices).

[27] The CAISO states that for example, PJM settles loads at the Utility Distribution Company level. ISO-NE has eight zones and the load in each zone pays the zonal price which is the load-weighted average of the nodal prices in that zone. See, e.g., ISO New England, Inc., 91 FERC ¶ 62,069 at 62,069-71 (2000).

[28] The nodal pricing produced by the Integrated Forward Market will consist of three components: energy, congestion and transmission losses. For any given dispatch period, the energy component will be the same at all nodes in the system (i.e., the cost of

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proposed local market power mitigation measures discussed below.[29] The CAISO asserts that settling with supply resources on a nodal basis is a fundamental requirement of its congestion management reform because it is critical to eliminating inter-zonal and intra-zonal congestion. By settling supply resources at nodal prices, it is unnecessary to have distinct procedures or uplift charges for local re-dispatch.

36. The CAISO further states that because the nodal prices produced by the Integrated Forward Market may exceed the $250/MWh Bid Cap,[30] the CAISO will initially cap the nodal prices used for settlement of aggregated loads at $250/MWh. If this results in a revenue shortfall in any settlement period (i.e., total payments exceed total receipts), the CAISO will recover the difference through an uplift charge. According to the application, the CAISO will publish the actual un-capped nodal prices because these prices reflect the most accurate information on the cost impacts of congestion on the grid and can be used for planning investment in transmission, demand response and the location of new generation.

37. The CAISO will incorporate the cost of losses into the LMPs produced by the day-ahead Integrated Forward Market optimization using marginal losses rather than average losses (i.e., scaled marginal losses).[31] In the Integrated Forward Market, the Scheduling Coordinator can estimate the amount of losses it will be responsible for and self-schedule additional supply to cover the estimated losses, using the payment for the excess supply to offset the cost of losses. The CAISO proposes to refund such over-collection using the

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energy to the system in the absence of congestion and losses). Therefore, the differences between nodal prices will represent the cost of congestion and transmission losses between the corresponding nodes.

[29] As discussed below, the CAISO seeks a new cost-capping mechanism or tighter Local AMP thresholds, and seeks to apply "System AMP" to the Integrated Forward Market, to imports, and as part of the RUC procedures.

[30] Because of potential redispatch costs to meet a reliability constraint, a nodal price could hypothetically exceed $250 even when all bids by suppliers are less than $250. For instance, an increase in demand at a node where there is congestion could require that one MW of less expensive generation be backed down and two MW of more expensive generation be dispatched to meet the increase in demand.

[31] The CAISO states that because it will use an AC power flow model, it will calculate losses using a marginal loss rate.

Congestion Revenue Rights (CRR) Balancing Account.[32] The CAISO states that pricing losses on a marginal basis is important in establishing nodal prices that accurately reflect the cost of supplying additional load at each node.

38. The CAISO proposes to procure a portion of its forecasted ancillary services requirement in the day-ahead market and give itself the option to procure the remainder in the hour-ahead market. The CAISO states this will minimize the risk of over-procuring ancillary services and will allow it to account for self-provision of ancillary services. In addition, the CAISO states that it may defer procurement if it anticipates the price will be lower in the hour-ahead market.

39. With respect to the day-ahead market, Constrained Output Generators will not set the Market Clearing Price under the Revised MD02 proposal.[33] When scheduling these resources in the forward market the CAISO may need to keep the schedule of a flexible generating resource below the level that it would otherwise have been scheduled in order to accommodate the inflexible output of such constrained-output resources. Therefore, the CAISO will not permit a Constrained Output Generator to set the price in the day-ahead market because the ISO would need to accept a schedule that is not feasible, knowing that such schedule would have to be adjusted in real-time.

40. In addition, under the Revised MD02 proposal, imports will be allowed to set marginal clearing prices. The CAISO proposes that imports be subject to Automatic Mitigation Procedures (AMP). In support of this proposal, the CAISO states (1) that inter-tie bids need to be eligible to set the clearing price in order for nodal pricing to function and to establish "true" prices at each node, and (2) that these bids are necessary to set the marginal clearing price to establish price differentials across the inter-ties during congested periods. However, the CAISO states that if imports are permitted to set

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[32] The CRR Balancing Account accumulates the excess revenues generated in hours when total net congestion charges exceed required net CRR payments and then distributes these revenues to keep CRR holders whole in hours when congestion charges are inadequate.

[33] Constrained-Output Generators are "block-loaded" or "inflexible" generating resources that must operate at discrete output levels or cannot easily change load levels. As a result, these units, when on-line, are typically restricted to generating at a specific operating point (usually their full capacity for their unit-specific minimum run time). In its Amendment No. 54, the CAISO proposed to allow Constrained Output Generators to set the real-time Market Clearing Price when all or a portion of their output is needed by the CAISO.

the marginal clearing price, AMP must apply to imports as part of local market power mitigation measures so suppliers cannot exert market power and set unreasonably high nodal prices.[34]

(1) Locational Marginal Pricing (LMP)

Comments

41. Numerous intervenors[35] assert that: (1) LMP has not been adequately justified; (2) it is premature to implement LMP; (3) the mitigation measures proposed to protect consumers from potentially high locational prices will undermine the benefits of LMP; (4) LMP is not sufficient to stimulate needed investment in transmission; (5) LMP does not resolve the problem of resource adequacy; or (6) LMP will produce unjust and unreasonable prices.

42. The CPUC supports the implementation of LMP, stating that it should contribute to more efficient outcomes that more realistically reflect the operating characteristics of the grid. Although the CPUC continues to have concerns regarding the implementation of LMP, it supports the elements of the ISO proposal to implement an LMP price cap[36] and to implement LMP settlements to load based on an aggregated LMP price. The CPUC states that an entity that owns a portfolio of generating units, both inside and outside load pockets, may have a strong incentive to under-offer its load pocket generation. According to the CPUC, this provides a very strong basis upon which to have a day-ahead must-offer requirement as a condition of LMP pricing.

43. CERS supports the CAISO's purchase of software to implement LMP and the publishing of LMP prices. However, CERS states that a zonal pricing mechanism for settlement purposes must be retained in the interim to allow for a transition that will

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[34] The CAISO asserts that if imports are allowed to set the clearing price but are not subject to AMP, internal generators would have a strong incentive to circumvent AMP mitigation by "megawatt laundering" some of their capacity to unmitigated parties to avoid AMP and set a high price through a submitted import bid to the benefit of their entire portfolio.

[35] Bay Municipals, CERS, Modesto, Metropolitan, Redding, SMUD, TANC and SVP.

[36] The CPUC supports a cap on the locational marginal prices at each node, in addition to the cap on suppliers' bids into the energy markets.

identify problems and develop solutions prior to implementation of LMP-based settlements. CERS contends that although LMP, in theory, may incent investment in transmission and generation, it is at best only one of many factors that will influence when and where new generation and/or transmission facilities are built.[37] CERS asserts that the CAISO's LMP proposal could result in an unintended transfer of wealth from ratepayers to generators without any assurance that those needed transmission improvements will be built.

44. SVP states that despite the extensive discussions that have already taken place on this issue, it is still not clear how nodal LMP is to be reconciled to the proposed load aggregation zones and trading hubs. It is unclear whether LMP is now to be on a zonal basis, or whether there will be different prices for nodes and hubs. SVP states also that it is unclear how the Integrated Forward Market "adjust[s] schedules at the nodal level for clearing the energy market and managing congestion and to determine nodal prices," and how the appropriate weights will be assigned to each aggregation.

CAISO Answer

45. The CAISO states that the implementation of LMP, as proposed under MD02, will address and fix problems with its original zonal congestion management approach. The CAISO states that these problems are becoming more acute with the addition of new generation facilities that serve California customers. The CAISO currently has no way to manage intra-zonal Congestion in the day-ahead and hour-ahead time frame, and this leads to excessive and unsustainable adverse impacts on real-time grid operations.

46. The CAISO further states that it is not proposing a new or experimental approach. LMP is a thoroughly tested and proven method for managing and pricing congestion in the forward scheduling process in a manner that is consistent with the physics of real-time electricity flows by virtue of employing a Full Network Model that accurately represents the transmission grid. The CAISO asserts that the best way to properly manage congestion is to employ a Full Network Model. Once this is recognized, then the decision to perform congestion management using bids submitted by Scheduling Coordinators leads to locational prices that reflect the economic value of supply and demand at each network node, i.e., LMP.

[37] CERS cites economic trends, environmental and safety considerations, land use restrictions, and local community opinion as more significant influences on when and where new transmission and generation is built. According to CERS, it is questionable that LMP alone will bring about new transmission investment.

Commission Response

47. We support the CAISO's move to LMP and the Integrated Forward Market in redesigning its congestion management system. We believe that the use of LMP will resolve perverse incentives in the current design and promote efficient short and long-run behavior.

48. By using the Full Network Model in conjunction with LMP, the CAISO will be able to use price bids to calculate the lowest cost way of meeting an increase in load at each location on the network, taking transmission limits into account. The use of the Full Network Model in conjunction with LMP in the CAISO's Integrated Forward Market will: (1) recognize all transmission bottlenecks so that schedules submitted in the day-ahead time frame are consistent with real-time system limits; (2) allocate the use of limited transmission facilities to energy buyers and sellers in a non-discriminatory and efficient manner; and (3) make the best use of transmission and generation resources to serve load and provide system reserves on a least cost basis.

49. The Commission agrees with the CAISO that managing congestion using LMP will be a vast improvement over the CAISO's current congestion management system and has the potential to reduce overall energy costs by correcting current market design flaws and inefficiencies, eliminating gaming opportunities and providing a means for spot energy trading by buyers and sellers on a day-ahead basis. LMP is supported by the Commission as a congestion management system because it makes transparent what the true marginal cost of congestion is to transmission customers. We don't disagree with CERS that LMP is only one factor that may influence investment. Because nodal prices will be published by the ISO, i.e., prices will be transparent, these price signals will, over time, provide a market signal that will serve to enable appropriate decisions concerning investment in new generation, transmission and demand response. Accordingly, we find the CAISO's adoption of LMP for managing congestion in its markets to be appropriate.

50. We find that the CAISO's proposal to adopt a congestion management system based on LMP will promote more efficient use of the transmission grid, promote the use of the lowest-cost generation, provide for transparent price signals, and enable the transmission grid operators to operate the grid more reliably. Therefore, we approve the CAISO's adoption of LMP for managing congestion in its markets.

(2) LMP Impact on Bilateral Contracts

51. One key issue that has been raised by the State is the impact of the MD02 market redesign on the scheduling of, and congestion costs related to, bilateral power contracts.

52. The California Department of Water Resources (CDWR) presently has

approximately 10,000 MW of capacity under contract, roughly half of which is referred to as "must-take" or "take-or-pay," while the other half is "dispatchable." The "must-take" contracts, representing arrangements with four suppliers, provide that the State must pay for predetermined quantities of energy which, under the contract, the supplier can deliver to its choice of a number of delivery points. One contract in particular provides for delivery at any point on the CAISO system at the seller's discretion, while the other three provide for delivery at any point within either SP15 or NP15 ("seller's choice" contracts).

Comments

53. Specifically, CERS has raised concerns that the implementation of an LMP-based market design will have an adverse impact on the long-term contracts entered into by the CDWR on behalf of retail consumers during the 2000-2001 electricity crisis. CERS is concerned that (1) LMP will result in increased congestion costs for the State contracts, and therefore increase costs to customers,[38] and that (2) those increased costs will disadvantage the long-term CDWR contracts by making them less economic. CERS is further concerned that the IOUs to whom the contracts have been allocated by the CPUC will not dispatch such energy contracts to serve retail load, but will instead sell the power in the market, which CERS asserts will defer CDWR's revenue recovery and result in higher rates in the future.

54. NCPA argues that if the Commission were to offer special treatment for the CDWR contracts, it would discriminate against others who signed similar long-term contracts. NCPA highlights the difference in the treatment the CAISO proposed for bilateral purchase contracts held by CERS, and the treatment proposed for ETCs held by municipal entities. The NCPA argues that the CAISO appears "willing to bend over backward" to avoid the congestion charge repercussions of LMP on the CERS long-term contracts. NCPA asserts that the Commission should closely examine any proposal to send certain state contracts to "the head of the CRR line," stating that it would be unfair and unduly discriminatory for the Commission to sanction special protection for the power purchase contracts of one market participant, but not others.

[38] Under the current zonal market design, congestion cost exposure under the contracts is limited because the congestion impact is largely intra-zonal and, as such, the congestion costs arise only as a result of real-time re-dispatch. Those costs are then borne by all loads within the respective zones.

CAISO Answer

55. The CAISO states that its Governing Board recognizes the legitimacy of this transitional issue, and has directed CAISO Management to continue to work with affected parties towards resolution of this issue prior to implementing LMP. The CAISO states that it sees two promising avenues for resolution of this issue. The first is the mechanism of Inter-Scheduling Coordinator (Inter-SC) trades (i.e., bilateral trades that occur outside of the CAISO's markets but which may be scheduled in the CAISO's markets to facilitate allocation of CAISO charges between the contracting parties without affecting the results of the day-ahead market in any way). The second is the use of CRRs to hedge congestion cost exposure.

56. The CAISO also proposes to hold a series of discussions with interested parties to discuss these outstanding issues. To date, the CAISO has held a series of meetings with CERS, the IOUs, the CPUC and the EOB regarding the impact of LMP on the long-term state contracts. The CAISO states that it intends to expand the discussion of this issue to other market participants. The CAISO also states its intent to issue a draft white paper regarding the impact on bilateral contracts of an LMP-based market. The draft white paper will focus on the potential financial impact of LMP on such contracts and the arrangements that may be necessary to hedge such contracts from increased forward market congestion costs.[39] The CAISO believes that such a paper will help market participants better understand and assess how bilateral schedules can be accommodated under LMP and how market participants may or should do business with each other outside of the CAISO's markets.

57. The CAISO states that upon issuance of the white paper, the CAISO will solicit comments and inform market participants as to the general substance of comments and concerns expressed. The CAISO will meet with constituency groups to address their questions and concerns and then bring the entire discussion back to the larger stakeholder forum to discuss how to move forward. The CAISO hopes that such a process can result in a resolution of key issues and facilitate a smoother transition to a LMP-based regime.

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[39] The CAISO cautions, however, that it is important to recognize that a change from zonal to nodal pricing increases forward market congestion costs in general (not just for bilateral contracts) because more (otherwise intra-zonal) transmission constraints are enforced. The CAISO also notes that while forward congestion costs will rise, real-time congestion management costs are expected to be substantially lower. Presently, these costs are borne by all Scheduling Coordinators rather than just those that cause the costs because of their infeasible forward market bilateral schedules.

Commission Response

58. While we are mindful of issues of the kind raised by CERS, we do not believe that rights and obligations under existing bilateral power contracts will be abrogated by the implementation of further design elements to the California electricity market. These existing bilateral power contracts should not be a reason to adopt a sub-optimal market design, or afford special treatment for any market participant that is a party to them. We note that CDWR entered into long-term contracts with both "seller's choice" and congestion-sensitive provisions.[40] CDWR knew such changes in market design were possible, perhaps even probable, and made arrangements to hedge against such market design changes, as evidenced by the inclusion of these congestion-sensitive clauses in

[40] In certain CDWR contracts, the contracting parties addressed how the contracts would be implemented in the event the current congestion management zones were changed, by including a congestion compensation clause. See, e.g., Master Power Purchase and Sale Agreement between Constellation Power Source, Inc, and CDWR, dated March 9, 2001, which states:

> In the event that the [CAISO] eliminates or materially modifies the characteristics of SP15 such that either CPS or CDWR is adversely affected thereby, CPS shall, upon such elimination or modification, deliver the Product to a delivery point reasonably determined by it to approximate the location and characteristics of SP15 on the date of the execution of this Confirmation Letter ("Modified Delivery Point"). If CPS reasonably determines that no Modified Delivery Point exists, the parties shall negotiate a mutually agreeable replacement delivery point ("Replacement Deliver Point") for such delivery. Once CPS or CDWR determines that SP15 will be modified or eliminated such that it will be adversely affected thereby, it will notify the other party as soon as practicable.

See also Master Power Purchase and Sale Agreement between CDWR and High Desert Power Project, LLC, dated March 9, 2001, which includes a similar congestion compensation clause:

> "HDPP shall, upon such elimination or modification reasonably determine an alternate method of assuring economic neutrality similar to that utilized in this Confirmation Letter. In the event HDPP is not able to readily identify such an alternative method, the Parties shall negotiate a mutually agreeable methodology which places them in the same economic position as currently provided in this Confirmation Letter."

some of its contracts. Such commercial arrangements (and their differing risk allocation and associated pricing) are not uncommon in power markets. The initiation of LMP in PJM and ISO-NE caused similar commercial issues between buyers and sellers of "seller's choice" contracts. In each case, the issues were addressed as commercial matters between the contract parties who had agreed to such contract terms. In PJM and ISO-NE, the focus of the Commission and the market participants was to establish a well-designed market for a long-term application, rather than create an exception within the market design in consideration of particular bilateral power agreements. We would therefore see no basis upon which to alter an efficient market design to address a perceived variation in the manner in which such contracts operate, such as the "seller's choice" issue.

59. We note the arguments of CERS that the CAISO proposal will have the effect of increasing costs to customers. Again, we do not believe that the implementation of the Revised MD02 will alter contractual rights. However, the Commission's approach has been to support the implementation of market reforms that incorporate mechanisms for appropriately protecting the financial positions of native load customers. CERS is free to raise its concerns on this issue in the future discussions on the CAISO's development of its CRR proposal, discussed below. At the same time, where existing contracts provide an opportunity for the parties to them to negotiate towards a mutually acceptable settlement of the manner in which future dealings between them will occur in light of changes in market design, we encourage such negotiations to proceed. This will allow those parties to work towards minimizing any effects they consider may arise from implementation of market developments of this kind.

60. We note that the CAISO states that it remains committed to work with interested parties in a combined effort to reach an effective solution for bilateral contracts. We direct the CAISO to proceed with drafting its white paper, soliciting and addressing comments, and proceeding with a stakeholder forum to address options for resolution.

(3) Load Aggregation

Comments

61. Some intervenors object to the CAISO's proposal to aggregate load on the basis of the service areas of the three IOUs. Morgan Stanley argues that the approach reverses the market efficiencies that will be gained through implementation of LMP and that the service areas of the three California IOUs are too large to serve as aggregation levels for purposes of settlement. Southern Cities and SMUD argue that the approach discriminates against LSEs located in low-price nodes by requiring them to subsidize LSEs located in high congestion areas. SMUD contends that LSEs should be given the option to "opt out" of load aggregation provisions. SVP argues that settling supply sources at nodal

prices and loads at aggregated prices will create a disconnect between the CAISO's revenues and its obligations. Bay Municipals and SVP also contend that ETC-served load should not be excluded from the load aggregation.

62. Southern Cities argue that the CAISO's proposal to cap the aggregated prices to loads at the $250/MWh cap and spread any revenue shortfalls as an "uplift" charge is unjust and unreasonable and inconsistent with LMP principles. The CPUC supports the proposal to limit nodal prices to $250/MWh, stating it will help to allay concerns regarding implementation of an LMP-based system in California. However, the CPUC adds that it expects the CAISO will implement a mechanism that limits nodal prices—not just bids, payments, or charges—to $250/MWh, and is therefore opposed to any uplift, stating that there should never be a revenue shortfall due to the proposed limitation on nodal prices.

63. Other intervenors support load aggregation. Bay Municipals assert that they strongly support mandatory load aggregations, with no opt-out provision, since this element is crucial to protect consumers from potentially high nodal prices in constrained areas of the transmission grid. Bay Municipals contend that the approach is consistent with the methodology employed by PJM, the NYISO, and ISO-NE, all of which settle loads at a high level of aggregation. PG&E asserts that the proposed aggregation will ensure that all customers within these zones are charged comparably.

CAISO Answer

64. The CAISO responds that the Eastern ISOs use utility service territories as load aggregation zones, and that the approach is supported by the Commission's White Paper. The CAISO argues that the use of smaller areas would defeat the purpose of load aggregation because the utilities would still be averaging prices over their entire service territories for retail rates, but non-utility customers would unfairly face the impacts in certain areas. The CAISO states that the structure in certain areas of the grid unduly limits access by customers in those areas to competitive supplies.

Commission Response

65. We believe that the CAISO's approach to aggregate prices for load over the three existing service territories provides a reasonable and simplified approach to introduce LMP pricing, while minimizing its impact on load. Furthermore, it is consistent with load aggregation proposals the Commission has approved in the northeastern ISO and

RTO markets and with the Commission's White Paper.[41] Accordingly, we find that CAISO's load aggregation is a reasonable approach to LMP implementation.

66. However, we will reject the $250/MWh cap on each nodal price for aggregation and the proposed uplift. It appears that the uplift payment required to pay for the load price cap of $250 will result in essentially the same total payment by load as simply paying the non-capped zonal LMP. The mechanism will, however, dampen demand response incentives since customers willing to reduce demand at a price that exceeds $250 will have little reason to do so. Since we are rejecting the proposed bid cap, there will be no uplift, and therefore concerns raised by the CPUC pertaining to any potential uplift charge are moot.

67. We find that the CAISO's responses satisfactorily alleviate the remaining concerns raised by intervenors.

(4) Demand Response

68. Under the Revised MD02 proposal, the CAISO will accommodate and facilitate demand response. Load that participates in the Participating Load Program may express, through its day-ahead energy bids, its willingness to reduce its energy use below its normal level if the energy price goes above a specified value, or to use additional energy if the price is low. The CAISO states that the day-ahead market creates a new opportunity for consumers to respond at a known price. In addition, load that responds to real-time dispatch instructions from the CAISO will be treated the same as generation and settled at the applicable nodal price.

Comments

69. Dynegy/Williams state that the Commission has recognized the importance of having market clearing prices in load pockets that reflect scarcity rents as a way to promote demand response, maintain availability of existing resources, and provide incentives for new supply resources.

[41] The Commission's White Paper states that "The RTO or ISO may use zonal or nodal prices for buyers. Under a zonal system, the prices paid by load would be aggregated for the zone (e.g., a utility service territory)." Appendix A at 10.

Commission Response

70. We believe that allowing electricity customers the opportunity to respond to market price signals can promote efficient long-run investment, help mitigate short-run market power by generators, reduces price spikes, reduce price volatility, and increase system reliability. We encourage the CAISO to continue its efforts in allowing wholesale energy customers who have the ability respond to prices to receive the economic benefits of doing so. Such efforts will help encourage future investment in economic demand response technologies.

(5) Marginal Losses

Comments

71. FPL/AWEA and Competitive Suppliers argue that the CAISO's methodology for calculating, collecting and disbursing the full marginal loss component in LMP is flawed and adds inappropriate cost to the CAISO energy markets. In addition, FPL/AWEA assert that the CAISO's methodology will over-recover physically-based transmission losses since marginal losses are typically "twice as much" as average losses.

72. The CPUC states it is unclear whether the CAISO's proposal to charge full marginal losses rather than scaled marginal losses is justified. Intervenors state that over-collection of revenues from losses that are credited to the CRR Balancing Account generally benefit LSEs first, and any remaining over-collection goes to Participating Transmission Owners to reduce their Transmission Access Charge.

73. SVP asserts that due to the physical differences in topography between the New York and California grids, the New York ISO model is not transferable to California. SVP asserts that distances between sources and sinks are greater in California and the mix of generation resources is different from the market in New York.

74. SVP alleges that the CAISO prefers a complicated LMP process over the simple process of allowing Scheduling Coordinators to self schedule for losses. SVP claims that under an LMP regime, it will be difficult for Scheduling Coordinators to accurately estimate the amount of losses for which they will be responsible. SVP contends that it is also unclear how losses will affect the MSS deviation band.

CAISO Answer

75. The CAISO responds that intervenors misunderstand the proposal when they argue that over-collection of loss revenues should be refunded "to the suppliers who overpaid these loss charges." CAISO acknowledges that although it is true today that the

methodology of Generation Meter Multipliers assesses loss charges to suppliers, under LMP, the cost of losses will be paid by loads. The CAISO states that when the Integrated Forward Market calculates the nodal prices, each nodal price will reflect the marginal cost of serving an additional MWh of load at that location, including the effects of congestion and losses to deliver the supply to the load. The CAISO further states that the cost of losses will be included in the settlement charges to load and therefore, it is appropriate to refund the over-collected revenue to loads, not to suppliers.

76. The CAISO believes that once it is established that refunding the loss revenues to loads is appropriate, it follows logically that the CRR Balancing Account is the appropriate mechanism. The CAISO states that while it agrees that it may be more precise to create a separate balancing account for losses, to do so would be more complex and costly. The CAISO asserts that using the CRR account should achieve a similar result since any balancing account surplus paid to the Participating Transmission Owner becomes an offset to the transmission access charge which is paid by all load on a per-MWh basis.

Commission Response

77. We find that the CAISO's proposal to reflect marginal losses in its calculation of LMPs is appropriate because this is required to assure a least-cost dispatch. In a large geographic area, such as the CAISO's footprint, losses can be significant, and pricing them on a marginal basis is important to establishing nodal prices that accurately reflect the cost of supplying additional load at each node; these are the prices that are required to balance supply and demand at each location. An average loss mechanism results in prices that produce a higher cost dispatch, and adds to uplift charges. Although an average loss approach may be acceptable if losses are small, or as a transition mechanism, we agree with the CAISO that an approach that promotes greater efficiency, i.e., using marginal losses, is preferable. Therefore, we will approve the CAISO's proposal to use marginal losses.

78. We find the CAISO's proposal to add over-collection of losses to the CRR Balancing Account and its method of allocating the surplus revenues reasonable. However, while we find the CAISO's proposal to return the surplus revenues to load reasonable, it is unclear how the CAISO will compensate an entity that self provides for losses under the CRR Balancing Account. As a result, we will direct the CAISO to clarify how the allocation method would apply to self schedules.

(6) Ancillary Services

Comments

79. Reliant/Mirant assert that the CAISO has proposed in another proceeding not to allow suppliers to buy back ancillary services in the hour-ahead market while in this proceeding giving itself such flexibility. This, according to Reliant/Mirant gives the CAISO "monopsony power" to suppress prices in the hour-ahead market.[42] They contend that the Commission should require the CAISO to procure 90 percent of its ancillary services requirements in the day-ahead market, and argue that a residual market of 10 percent allows the CAISO to adjust for forecast error and self schedules by Scheduling Coordinators.

80. Reliant/Mirant further argue that the CAISO should: allow for the import and export of all ancillary services; clarify the role of opportunity cost pricing in the co-optimization of energy and ancillary services; and explain why it will exclude both capacity bids and a market-clearing price from the real time ancillary services market.

CAISO Answer

81. The CAISO states that it fully intends to satisfy the bulk of its ancillary services requirements in the day-ahead time frame, and its proposal to delay procurement of ancillary services until the hour-ahead market is consistent with the CAISO's existing practice and its Tariff.[43] The CAISO states that it optimally procures ancillary services to

[42] According to Reliant/Mirant, the CAISO proposes to deny sellers of ancillary services in the day-ahead market the opportunity to buy back their ancillary services in the hour-ahead market if prices were lower in that market. See CAISO Amendment No. 55, filed July 22, 2003, in Docket No. ER02-1102-000. See also Order Accepting and Suspending Tariff Amendment No. 55, 104 FERC ¶ 61,308 (2003), suspending the CAISO's proposal pending the result of the ongoing proceedings in Docket Nos. EL01-118-000 and EL01-118-001.

[43] The CAISO operating procedures states that the CAISO may defer satisfying all of its projected day-ahead ancillary services requirements until the hour-ahead if, among other reasons, the CAISO believes that its forecast is likely to change. In addition, the CAISO states that Section 2.5.3 of its Tariff currently affords its operators the discretion to modify the amount and location of procured ancillary services. The CAISO also notes that the quantity of ancillary services is set by the Western Electricity Coordinating Council.

satisfy its responsibilities and obligations as the provider of last resort using the only flexibility it has to minimize total costs, namely, the ability to defer a portion of its total ancillary services requirements to the hour-ahead market.

82. The CAISO states that its proposal allows for the import and export of ancillary services, subject to transmission congestion charges. Moreover, the CAISO believes that this feature of MD02 will facilitate a robust Western market, promote reciprocity and minimize seams issues. The CAISO states that its proposal to pay the unit's opportunity cost is designed to make the unit indifferent to being dispatched for energy or designated for ancillary services.

Commission Response

83. We suspect that part of the CAISO's intended purpose for the proposed flexibility to procure a portion of its ancillary services requirement in the hour-ahead market is price convergence between the two markets (day-ahead and hour-ahead). However, the Commission would be concerned if the CAISO's proposal were to result in price divergence between the two markets. This may occur since the CAISO would be the only purchaser of ancillary services in the hour-ahead market and thus could have the power to suppress prices. Accordingly, we will allow the CAISO the flexibility to procure a portion of its ancillary services requirement in the hour-ahead market, however, suppliers must be allowed the same flexibility to buy back ancillary services; i.e. for both fairness and market efficiency. In addition, we will direct the CAISO's Department of Market Analysis to monitor the convergence/divergence of such prices in the day-ahead and hour-ahead markets and to report independently to the Commission on a monthly basis following the implementation of a day-ahead market.

84. The Commission notes its concern that, by delaying ancillary services purchases in order to benefit from potential lower hour-ahead prices, the CAISO may appear to be speculating in the market. This reflects a potential inconsistency with regard to the CAISO's approach to reliability. The CAISO might procure RUC resources following the close of the day-ahead market, yet on occasion could simultaneously delay procurement of needed ancillary services until the hour-ahead, based on price expectations. Therefore, we will direct the CAISO's Department of Market Analysis to monitor this issue, along with the convergence/divergence of ancillary services prices in these markets discussed above, and report independently to the Commission on a monthly basis, upon implementation of a day-ahead market.

(7) Constrained-Output Generation

Comments

85. Dynegy/Williams and Reliant/Mirant argue that constrained-output generators should be permitted to set the energy price in the forward markets. Reliant/Mirant argue that permitting Constrained Output generators to set price in the forward market is consistent with Commission's treatment of the NYISO's "fixed block" generation.

86. Dynegy/Williams explain that constrained-output generators include peaking units which have short start-up times, but are not very efficient. These units are run time-constrained so that they are only permitted to operate for a given amount of hours per year. According to Dynegy/Williams, the CAISO has no reason to commit these units in the day-ahead time frame, especially since the CAISO also proposes to procure 95 percent of its energy needs in the day-ahead market. If the CAISO must commit these units in the day-ahead market, the units should be eligible to set the Market Clearing Price so that the market is able to see the value of these resources.

CAISO Answer

87. The CAISO states that it is not appropriate to let Constrained Output Generators set the price because (1) it would essentially involve acceptance of an infeasible schedule, with the knowledge that such a schedule would have to be adjusted in Real-Time; and (2) energy would be priced based on the Constrained Output Generator, the actual marginal price for determining congestion charges would be the price of the generator that was decreased to "make room" for the Constrained Output Generator.

88. The CAISO also notes that while the Commission did rule in favor of NYISO's proposal to allow Fixed-Block Generation to set the Market Clearing Price in the day-ahead market, there are significant differences in the market operations of the two ISO's which renders the comparison inappropriate. The CAISO argues that the NYISO runs a multi-pass Integrated Forward Market in which the outcome of its unit commitment (i.e., RUC) procedure -- specifically the minimum-load energy of RUC-committed units – is incorporated into the final day-ahead markets results by clearing the RUC minimum-load energy against load that has bid into the day-ahead market. Thus, this minimum-load energy is treated as flexible (and may be dispatched below the unit's minimum operating point). According to the CAISO, their proposal differs from the models in PJM, ISO-NE and NYISO. Those Eastern ISOs allow Constrained Output Generators to set forward prices by dispatching them in the forward markets at infeasible operating points (i.e., pretending they are flexible). These generators then become price-takers in real-time because they are forced to deviate from their forward dispatch points.

Commission Response

89. Each of the Eastern ISOs has developed mechanisms that allow non-dispatchable units to set the market clearing prices in the day-ahead market. This ability is absent in the current filing. The Commission is concerned that the present CAISO proposal to limit the ability of Constrained Output Generators to set the clearing price in the forward markets is not consistent with its approach to real-time pricing and may prevent the convergence of prices in these markets. We direct the CAISO to review its approach to setting prices in the forward market and develop a pricing mechanism for Constrained Output Generators that is consistent with its approach to real-time pricing (i.e., a constrained-output generator can set the market clearing price for those dispatch intervals in which any portion of its output is needed to serve real-time load) and promotes the convergence of prices in the forward and real-time markets.

(8) Permitting Imports to Set the Nodal Marginal Clearing Price

90. As noted earlier, the CAISO proposes to allow imports to set the nodal clearing price. We approve the CAISO's proposal to permit imports to set the nodal market clearing prices. Bids from resources inside and outside the CAISO-controlled grid should have equal opportunity to set the market clearing price and to receive the value of the products they supply. However, we will evaluate the appropriate application of mitigation to imports following the technical conference directed in this order, and the CAISO's subsequent filing.

(9) Seams Issues

91. The CAISO notes it is working toward the creation of seamless Western markets through its participation in the Seams Steering Group – Western Interconnection (SSG-WI), and is, therefore, sensitive to the flexibility necessary to allow for improved integration across the region. The CAISO, as part of the SSG-WI effort, is closely following the progress of other ISOs in developing solutions to inter-ISO/RTO integration issues. The CAISO further states that while this subject is vitally important for the long term, the implementation of the CAISO's redesign proposal need not wait for the other RTOs to finalize their market designs.

Comments

92. SMUD argues that the CAISO treatment of seams issues sharply contrasts with the position adopted by the Commission in its White Paper, in which the Commission states a necessary component of a congestion management system is that it "be compatible with congestion management systems used by other RTOs and ISOs in the electrical interconnection, to avoid creating barriers to trade among RTOs and ISOs." SMUD

believes that seams issues must be resolved cooperatively before the CAISO finalizes its market design, to avoid imposing costly market redesign changes on California consumers later.

93. The RTO West Filing Utilities request that the Commission affirm the need for the CAISO to incorporate programming and infrastructure flexibility into the Revised MD02 proposal in order to facilitate inter-seams cooperation and collaboration. The RTO West Filing Utilities urge the Commission to ensure inter-seam flexibility by incorporating into its order in this proceeding, the commitments that the CAISO has previously made to implement software and systems that are modular, open and flexible to accommodate resolution of seams issues.

94. The Regional Public Power Entities express concern that the CAISO has proceeded with design and implementation irrespective of the efforts of SSG-WI which has identified seams issues and a schedule for addressing those issues.

95. Redding asserts that MD02 fails to recognize the scheduling protocols throughout the remainder of the Western Electricity Coordinating Council. Redding argues that the inability to permit changes nearer to the operating hour arises from the complexity of the CAISO's market design.

CAISO Answer

96. The CAISO disagrees with intervenors who doubt that the proposal can go into effect without creating insurmountable seams issues in the West. The CAISO states it is proposing a "best practices"-based software design built upon a flexible and adaptable system design and architecture. The CAISO states its proposed approach largely conforms to the open architecture approach originally presented by the Commission in the SMD NOPR. The CAISO states that with respect to market and system designs that respectively are still under development or have not been formulated, to represent that the CAISO's proposed design will create insurmountable seams issues is an attempt to delay any reform of the market.

97. The CAISO states it does not object to RTO West's request that the Commission "require the CAISO to implement software and systems that are modular, open and flexible to accommodate resolution of seams issues." The CAISO states that it has already committed to do just as RTO West requests. The CAISO states it has been working with representatives of RTO West and West Connect filing utilities to coordinate and further develop a seamless Western market and it has been proactively engaged in the following SSG-WI-established working groups: (1) West-wide Market Monitoring; (2) Congestion Management Alignment; (3) Transmission Planning and Expansion; (4) Common Systems Interface Coordination; and (5) Price Reciprocity.

Commission Response

98. As we discussed above, we support the CAISO's move to LMP and will not slow the momentum created in proposing these much needed market reforms. We are confident that the CAISO's proposal will not create insurmountable seams issues in the West. We direct the CAISO to explore further development of a seamless Western market and encourage the participation and input of a Regional State Committee in this endeavor. Furthermore, we accept the CAISO's commitment to incorporate programming and infrastructure flexibility in using software and systems that are modular.

D. Residual Unit Commitment Process (RUC)

99. Currently, the CAISO relies on the existing must-offer obligation and the must-offer waiver process to commit resources when it believes that scheduled resources will not be adequate to meet forecasted demand. According to the CAISO, because the must-offer waiver process does not consider economics when deciding which units to commit, it has been difficult for the CAISO to make rational and efficient decisions about which units should be required to run at minimum load under the must-offer obligation when some, but not all, of the units seeking a waiver need to be committed to maintain grid reliability.[44] The CAISO thus proposes a RUC process to help it more appropriately commit units in order to meet its reliability requirements.

100. According to the proposal, the RUC process will operate after the CAISO has established a final day-ahead or hour-ahead schedule. According to the CAISO, this is appropriate because the outcome of the Integrated Forward Market is predicated on schedules and bids, which may not coincide with the CAISO's load forecast. In the event that these markets close below the CAISO's load forecast, the RUC process will commit additional resources to ensure that on-line capacity is available in real-time. The CAISO

[44] According to the CAISO, the current process of waiver denials suffers from the following drawbacks: (1) it does not necessarily produce the optimal or most efficient solution to waiver denial because it essentially implements a first-come, first-served policy in issuing waiver denials instead of a sound optimization algorithm such as the unit commitment algorithms used by the Eastern ISOs; (2) it does not optimally consider the physical constraints of resources such as ramping and minimum up and down times; (3) it does not fully consider network constraints; (4) waiver decisions are based only on the peak hour condition instead of considering conditions for an entire 24 hours; and (5) it does not provide a means for the CAISO to procure energy from intertie suppliers—energy that is vital to meet peak loads—in advance of the real-time market.

proposes to procure 100 percent of the capacity procurement target[45] and 95 percent of the energy procurement target.[46]

101. The RUC process will procure minimum-load energy and unloaded capacity from internal resources. It will also procure energy from import suppliers, if adequate transmission capacity is available over the inter-ties to accommodate the energy. The CAISO further states that any energy procured in the day-ahead RUC process will be submitted to the hour-ahead market as a price-taker (i.e., a self schedule) and, if cleared against load bids, will receive the appropriate locational market clearing price. The CAISO adds that in the event that the locational market clearing price does not cover a resource's bid price, such resources will receive additional payment through the RUC uplift charge.[47] Resources who do not participate in the day-ahead Integrated Forward Market will not be eligible to participate in the day-ahead RUC process.[48] However, they may still participate in the hour-ahead Integrated Forward Market and hour-ahead RUC process.

102. The CAISO states that resources committed under the RUC process will be fully compensated for the recovery of start-up costs and minimum-load costs through either a cost-based bid option[49] or market-based bid option.[50] However, the CAISO will not pay

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[45] The capacity procurement target for the day-ahead RUC will be the next day's hourly load forecast plus reserves minus: 1) the final day-ahead schedule of energy plus ancillary service capacity; 2) a forecast of expected incremental hour-ahead schedule changes; and 3) a forecast of additional supplemental energy bids expected on the operating day.

[46] The energy procurement target is based on the CAISO's next day's hourly demand forecast.

[47] The CAISO also explains that any energy not cleared in the hour-ahead market will be submitted to the real-time market as a price-taker with the same opportunity to earn market clearing prices, or an uplift charge to recover the bid price.

[48] The CAISO states that the exclusion is necessary to prevent units from being withheld in the day-ahead market in order to exclusively participate in the day-ahead RUC process.

[49] Under the cost-based bid option, start-up costs will be recovered based on the lower of: either a suppliers' bid or its cost-based start-up data plus a proxy price for natural gas and an electricity price index for start-up auxiliary energy consumption. Minimum load costs will be based on the lower of: either a suppliers' bid or its cost-

(continued…)

start-up and minimum load costs to resources that self schedule energy or self-provide ancillary service in the day-ahead Integrated Forward Market because they are "self committed."[51] The CAISO contends that the proposed market-based bid option will prevent resources from economically withholding start-up and minimum-load cost bids under certain system conditions. Moreover, the CAISO points out that the Commission's SMD NOPR recognized that several approaches can be used, including the PJM method of allowing units to change their start-up and minimum-load bids only once every six months.

103. Under the RUC process, the CAISO also proposes to provide resources with a capacity payment for each MWh of RUC capacity that is not awarded ancillary service or dispatched for energy in the hour-ahead or real-time markets. The RUC process will allow resources to bid for RUC availability as a component of their bids into the Integrated Forward Market, up to a cap of $100 per MWh. The CAISO states that the RUC capacity payment will be paid as-bid to the selected resources. The CAISO also proposes to net the RUC capacity payment against each MW of RUC capacity that is scheduled or dispatched for energy or ancillary service in a subsequent market. Similarly, the RUC capacity payment will be rescinded if the resource engages in uninstructed deviation or does not respond to the CAISO's dispatch instruction.

104. The CAISO states that the RUC process will allocate costs in accordance with cost causation principles. Specifically, RUC costs associated with the day-ahead or hour-ahead markets will be borne first by Scheduling Coordinators whose metered load exceeds the final day-ahead or hour-ahead schedules.[52] The CAISO states that these

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based data plus a payment of $6 per MWh of minimum load for presumed O&M costs and a proxy price for natural gas costs.

[50] Under the market based-bid option, a resource will submit market-based bids for start up and minimum-load costs that will remain fixed for a six-month period. The CAISO will use the start-up and minimum-load costs bid in all markets in which the resource participates during the designated six months.

[51] The CAISO explicitly states that resources in the day-ahead RUC process will lose all or part of its commitment period if it self schedules energy or ancillary services in the hour-ahead Integrated Forward Market or engages in uninstructed deviations in the real time market. In addition, a resource eligible for cost recovery in the hour-ahead RUC process will lose all or part of its commitment period if it engages in uninstructed deviations in the real-time market.

[52] This excludes a metered subsystem load that is covered by its own resources

(continued…)

charges will be in addition to the cost of energy to serve the load in the day-ahead, hour-ahead or real-time markets. In addition, the CAISO states that any excess RUC cost not recovered from under-scheduled load will be allocated to all metered demand plus exports.

(1) Start-up and Minimum Load Costs

Comments

105. Several intervenors raised concerns with regard to the CAISO's proposal to offer two options for recovery of start-up and minimum-load costs under the RUC process. Among the concerns raised are: that bid based start-up and minimum-load costs should include a bid cap; that the monthly average index to calculate the unit's natural gas costs is not cost-based; and that cost-based bidding rules do not include legitimate costs.

106. Reliant/Mirant contend that neither option proposed by the CAISO is acceptable. Reliant/Mirant allege that CAISO's proposal to use the monthly average index to calculate the unit's natural gas costs is not cost-based. They argue that the monthly average index ignores the fact that monthly average gas indices are not related to the purchase of gas for daily spot sales of electricity, as generators purchase daily spot gas to make daily spot sales of electricity. Reliant/Mirant contend that the CAISO's proposal should recognize this form of purchase. They further argue that the CAISO's proposal to fix market-based bids for six months is flawed. Reliant/Mirant suggest that any market-based option accepted by the Commission for the CAISO markets should allow daily start-up and minimum-load bids.

107. Dynegy/Williams support the flexibility to choose between a cost-based and market-based approach. However, Dynegy/Williams challenge the CAISO's cost-based formula because it fails to include the recovery of legitimate costs. Dynegy/Williams suggest that the Commission require the modification of this element to allow a resource to recover in-state transportation costs, opportunity costs from other markets, or daily fuel market price variations.

108. Although the CPUC raised concerns with certain RUC procedures, the CPUC has agreed to support the CAISO's proposed RUC with the understanding that the CAISO will commit to review the performance of RUC after implementation, to determine whether certain procedures are set properly or require modification.

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because the load does not cause RUC procurement.

CAISO Answer

109. In its answer, the CAISO states that the Commission has rejected the use of a daily gas index (rather than a monthly index) on several occasions and should again reject such arguments. Specifically, the CAISO asserts that the Commission found that use of a monthly gas price methodology "will not impede suppliers' recovery of operating costs." The CAISO also states that the Commission found the average pricing formula "represents a reasonable price for the marginal costs that generators will incur since they can pre-buy their gas requirement for the month at this price."[53]

Commission Response

110. We find that the CAISO's proposal to compensate generators for the recovery of start-up and minimum-load costs through either a cost-based or a market-based bid option to be reasonable. With regard to intervenors concerns that the cost-based bid option should recognize daily spot gas purchases, we will not rule on this issue at this time. As the Commission stated in its Policy Statement on Natural Gas and Electric Markets,[54] the Commission will require that any prospective use of any index in its jurisdictional tariffs meet the criteria set forth for price index developers and reflect adequate liquidity at the referenced location to be reliable. The CAISO, to date, has not demonstrated that the Gas Daily index meets the minimum standards present in the Policy Statement for energy price indices.

111. With regard to the market-based option we find that the CAISO's proposal is a reasonable mechanism that prevents resources from submitting excessive start-up and minimum-load bids when contingencies exist within its system. Therefore, in an effort to avoid gaming within the CAISO market, we will accept the market-based bid option to remain fixed for a six-month period once they are submitted. We also note that this is consistent with the Commission's order approving market-based rates for the PJM market where we found that the fixed six-month period effectively prevents any gaming behavior.[55] Accordingly, we accept the proposed market-based bid option with no further modification.

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[53] San Diego Gas & Electric Co., et al., 97 FERC ¶ 61,275 at 62,204 (2001).

[54] Price Discovery in Natural Gas and Electric Markets, 104 FERC ¶ 61,121 (Policy Statement) (2003).

[55] Atlantic City Elec. Co., 86 FERC ¶ 61,248 at 61,904 (1999).

112. With respect to Dynegy/Williams' argument that in-state transportation costs should be included as a component of the cost-based option for start-up and minimum-load cost recovery, we note that the Commission has previously found in-state transportation to be an ineligible component for cost recovery because gas transportation is a demand-related cost.[56] If generators are concerned with the cost-recovery mechanism, generators are free to choose the market-based option.

(2) Netting of Start-up and Minimum-Load Costs

Comments

113. Some intervenors[57] object to the CAISO's proposal to require that any start-up and minimum-load costs be netted against market profits during the unit's commitment period, including those from energy payments, ancillary service capacity payments and the RUC capacity payment. The CAISO states that the Commission must approve this net-of-market payment approach since it exists in other markets. Intervenors, on the other the hand, argue that those markets have resource adequacy requirements in which capacity and other fixed costs can be recovered. As a result, some intervenors suggest that the Commission reject the net-of-market approach and instead allow suppliers to be paid for the capacity they are providing until such time as a Commission-approved resource adequacy model can be put in place. Others assert that there is nothing in the current filing that gives the Commission reason to rethink its earlier position that minimum-load costs do not equate to capacity costs.[58]

CAISO Answer

114. The CAISO asserts that PJM, among others, "net" start-up and minimum-load costs. The CAISO also notes that no other supplier disputes the fact that the Eastern ISO's have such a start-up and minimum-load cost recovery mechanism. Therefore, the Commission must find it appropriate to provide the CAISO the same treatment as the Eastern ISOs. The CAISO believes the Commission's failure to require "netting" means that suppliers, having been guaranteed recovery of their start-up and minimum-load costs through the RUC process, can freely participate in bilateral agreements and CAISO

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[56] See San Diego Gas & Electric Co., et al., 99 FERC 61,159 at 61,642 (2002).

[57] Dynegy/Williams, Competitive Suppliers, and Duke Energy.

[58] See, e.g., Dynegy/Williams citing San Diego Gas & Electric Co., et al., 99 FERC ¶ 61,159 at 61,641 (2002).

markets, retaining all of the profits by selling the energy derived from their capacity through their market-based rates.

Commission Response

115. We will reject the CAISO's proposal to net start-up and minimum-load costs against market profits following the unit commitment process. In an order issued May 15 2003, the Commission denied the CAISO's request that minimum-load costs should include a "net of market revenue" methodology, whereby the CAISO is required to reimburse the generator for minimum-load operating costs not recovered through other sales.[59] The Commission found that revenues received by generators for sales in the imbalance energy market are intended to compensate the generators for recovery of fixed costs. In the Eastern ISOs, the revenues from capacity markets provide balance to the "netting" of revenues following the unit commitment process. Thus, we will deny the CAISO's current proposal to net the recovery of start-up and minimum-load costs against market profits, without prejudice to resubmit upon implementation of a resource adequacy program.

(3) RUC Capacity Payment

Comments

116. Several intervenors[60] note that the CAISO provides no justification for the proposed $100/MWh RUC availability payment (capacity payment) bid cap, some arguing it is too high and others that it is too low. They also note that there is no resource adequacy requirement in the CAISO market, and assert that the RUC process should be conditioned on the outcome of the state proceeding establishing a resource adequacy requirement. Specifically, SoCal Edison states that no permanent availability or capacity payment should be included in the RUC process. Instead, SoCal Edison argues that the RUC capacity payment should be eliminated once a State resource adequacy requirement becomes operative.

117. SoCal Edison also suggests that the CAISO may need to monitor and/or reduce the $100/MWh price cap for the capacity payment once the RUC process is implemented. To the contrary, Dynegy/Williams argue that the capacity bid cap should be set at the same level as the bid cap for energy and ancillary services (i.e., $250/MWh). The CPUC contends that the $100/MWh may create the potential for market abuse.

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[59] San Diego Gas & Electric Co., et al., 99 FERC ¶ 61,159 (2002).

[60] E.g., Competitive Suppliers, Dynegy/Williams, and SoCal Edison.

118. Some intervenors object to the CAISO's proposal to rescind the RUC capacity payment for each MW of RUC capacity scheduled or dispatched for service. These intervenors argue that the rescinded capacity payment is unjust and unreasonable because the proposal provides a "free" call option to the CAISO and LSEs on capacity or energy associated with RUC capacity. They support an approach whereby the capacity payment is paid regardless of whether the power is taken. They believe this approach will, among other things, provide suppliers an opportunity to receive capacity payment similar to the Eastern markets, and also give LSEs an incentive to lock in long-term capacity contracts instead of relying on the volatile daily RUC market.

119. CERS argues that the RUC proposal does not address if and how it integrates with the State contracts. CERS contends that a supplier who has a State contract and has been subject to RUC should not receive a capacity payment. CERS argues that ratepayers should not have to compensate these suppliers twice.

CAISO Answer

120. In its answer, the CAISO agrees that the capacity payment under the RUC process should be reviewed once a resource adequacy program has been implemented, and may be eliminated provided the resource adequacy program is effective in ensuring that capacity procured by LSEs under their capacity obligations will be available to the CAISO for commitment in the RUC process and for dispatch in real time. With respect to the level of the cap on capacity payment bids, the CAISO states that its intent was to balance the competing interests of various market participants. The CAISO stresses that the RUC process is intended to be a reliability backstop mechanism that enables the CAISO to procure resources to meet forecast load that the forward markets do not provide. Given this purpose, the CAISO states that it is not appropriate or necessary to increase the bid cap to $250/MWh because the RUC process will begin to take on the appearance of a market and, therefore, potentially compete with the actual forward markets.

121. In addition, the CAISO states that no party offers a valid reason why the RUC capacity payment should not be rescinded. The CAISO states that the circumstances under which the RUC capacity payment will be rescinded are consistent with the treatment of the capacity payment under the CAISO's existing Replacement Reserve mechanism. The CAISO contends that similar treatment for the RUC capacity payment is necessary in order to remove the incentives for suppliers to attempt to bypass the day-ahead market in order to receive a guaranteed RUC capacity payment, even if their unit is not dispatched.

122. The CAISO agrees with CERS' contention that a resource recovering its fixed costs through a bilateral contract should not also recover those same fixed costs through

another market mechanism. Accordingly, the CAISO has proposed that the RUC capacity payment be terminated when a resource adequacy program is put in place. However, until a resource adequacy program is put in place, the CAISO states that it cannot simply conclude that just because a unit has a CERS contract it should not receive the RUC capacity payment.

Commission Response

123. We disagree with the CAISO's contention that it would be inappropriate to increase the capacity bid cap. While the RUC process is a unit commitment process necessary to procure energy in real-time, we find the proposal to compensate resources with a capacity payment under RUC is similar to the procurement of capacity in the ancillary services market. As a result, we conclude that the CAISO should be required to set the RUC capacity bid cap to the current $250/MWh bid cap to ensure comparable compensation for capacity. In addition, we will allow the capacity bids to set a market clearing price rather than be paid as bid. Accordingly, we direct the CAISO to replace the proposed $100/MWh bid cap to reflect $250/MWh and allow the bids to set a market clearing price. We note that, in its transmittal letter, the CAISO makes the statement that it "does not prohibit energy from capacity committed in the day-ahead RUC from being sold by the unit owner via any bilateral transaction in the hour-ahead market, including sales to other Control Areas." The Commission finds this statement to be contrary to the proposal as the CAISO has described it elsewhere in its filing.[61] This statement seems to indicate that units, once committed, are actually free to sell elsewhere, i.e., not committed. We request further clarification of this aspect of the CAISO's proposal.

124. With respect to the CAISO's proposal to rescind the RUC capacity payment when a unit is dispatched, we will reject the CAISO's proposal. We find the RUC capacity payment is a payment for the call option on any supplier's capacity and therefore, should be paid regardless of its dispatch. Suppliers cannot bid exclusively into the RUC process. Once a supplier bids into the day-ahead market they are automatically considered as part of the RUC process. If this capacity payment were rescinded, suppliers would be offering day-ahead and hour-ahead RUC capacity at no cost. In addition, we find that the CAISO has not adequately supported its contention to rescind the RUC capacity payment in order to remove the incentives for suppliers to attempt to bypass the day-ahead market

[61] In its filing the CAISO states that in the event that the day-ahead market closes significantly below the CAISO's load forecast and does not commit adequate resources to meet that forecast, the RUC process provides a reliability backstop for the CAISO to commit additional supply resources if needed to meet the system load forecast and reserve requirements.

to receive a guaranteed RUC capacity payment. Thus, we will direct the CAISO to modify its proposal to allow for the capacity payment regardless of whether the power is taken.

(4) RUC Procurement Targets for Capacity and Energy

Comments

125. Several intervenors raised concerns with regard to the CAISO's proposal to acquire, through the RUC process, 100 percent capacity and 95 percent energy to meet its forecasted load and reserve margin. Some intervenors suggest that the CAISO reduce the day-ahead RUC capacity commitment target from 100 percent to 95 percent of forecast load because, by incurring costs on behalf of the LSE in the RUC process, the CAISO will have reduced LSEs' incentive to manage their resources efficiently in the hour-ahead market.[62] Dynegy/Williams conversely suggest the procurement of 100 percent of energy needs in the day ahead or, at a minimum, that RUC resources selected in the day ahead should be eligible to set the day-ahead market-clearing price. Metropolitan recommends that the CAISO should be limited to only 95 percent of the capacity and no energy through the RUC process.

CAISO Answer

126. In its answer, the CAISO states that it does not believe that any additional flexibility is either appropriate or necessary. The CAISO states that the 100 percent capacity and 95 percent energy targets were intended to strike a balance between over-committing generating units and failing to procure sufficient generation resources in the forward markets. Furthermore, the five percent margin is intended to allow for load forecast error, to minimize the risk of over procurement and to avoid creating an incentive for load to under-schedule in the day-ahead market and rely on the RUC process. Moreover, the CAISO states that its capacity procurement target for the day-ahead RUC process will take into account a forecast of expected incremental hour-ahead schedule changes and a forecast of additional Supplemental Energy Bids expected on the operating day for the relevant operating hour. The CAISO states that these modifications were made in response to the desires of LSEs to have more flexibility.

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[62] E.g., SoCal Edison and PG&E.

Commission Response

127. We accept the CAISO's capacity procurement target as proposed. However we reject, without prejudice, its proposal to procure energy in the RUC Process. It is the Commission's understanding that the RUC process provides a reliability backstop for the CAISO to commit additional supply resources if needed to meet the system load forecast and reserve requirements. We believe the CAISO is capable of meeting its load forecast through the RUC process without the procurement of energy. The RUC process should be a method for obtaining adequate capacity, not energy, to meet the system load forecast because by purchasing the capacity the CAISO will have the energy associated with those capacity resources available to them in the subsequent market, at the prevailing market price, if needed to meet their load forecast. We note, however, that the CAISO raises a concern that a purchase of only capacity might not give sufficient incentive to imports to acquire the necessary transmission capacity across the ties. The CAISO may submit additional clarification on this point.

(5) General Comments on RUC

128. The CAISO also states in its answer that the RUC process is not a resource adequacy mechanism but rather a mechanism to enable the CAISO to maintain real-time reliability. The CAISO asserts that the Commission recognizes the unit commitment distinction in the SMD NOPR. It further contends that the Commission in no way states that unit commitment is conditioned upon having a resource adequacy program in place. In that regard, the CAISO contends that the extent of participation in the day-ahead market is determined by load (and presumably by load's forecast of its anticipated demand), not by the CAISO. However, there can be a difference between CAISO and LSE forecasts of load for the following day, and it is irrelevant whether or not there is a resource adequacy plan in place. The CAISO states that it needs the RUC process regardless of whether there is a resource adequacy program in place. Resource adequacy programs are intended to ensure that LSEs have sufficient capacity to serve their projected native load needs. The CAISO states that the RUC process is intended to serve the CAISO's forecasted needs.

129. SoCal Edison states that the must-offer obligation should be continued and extended only if the Commission approves the CAISO's proposed RUC process, arguing that the unlimited discretion that the CAISO has in the current must-offer waiver process and the CAISO's administering of that process has been troublesome. SoCal Edison contends that the goals of such a process require the rigor and transparency that the RUC process would introduce when it replaces the waiver process, if approved.

Commission Response

130. In this order we approve in principle the proposed RUC process, as modified above, and it is the Commission's expectation that the RUC procedure will replace the CAISO's current must-offer waiver process. We address the issue of resource adequacy below.

E. Bidding and Scheduling

(1) Bidding

131. The CAISO will operate the Integrated Forward Market using a Security-Constrained Unit Commitment algorithm[63] to run the integrated energy and congestion management markets, procure ancillary services and perform unit commitment based on multi-part supply bids.

132. Under the Revised MD02 proposal, Scheduling Coordinators will submit Preferred Schedules to the Integrated Forward Market that may consist of any of the following:[64]

- Supply bids – These bids are to supply energy or ancillary services capacity at no less than specified prices. Ancillary services capacity may be provided by qualified supply-side and demand-side resources.
- Demand bids – These bids are to purchase energy at no more than specified prices.
- Energy self schedules – These preferred quantities of energy supply or demand are submitted without associated energy bids. These self schedules may or may not be balanced.
- Ancillary Services – These nominations are supply-side or demand-side ancillary services capacity offered for self provision.

[63] This algorithm will minimize the cost of meeting scheduled demand and clearing demand bids subject to transmission and generator performance constraints.

[64] Under the proposal, bid prices that are accepted in one market time frame are essentially contractual commitments and cannot be altered in a subsequent market time frame. This would apply to final day-ahead or hour-ahead energy schedules, ancillary services capacity awards and the energy bids associated with that capacity. Energy or capacity that is offered in one market time frame but not accepted is no longer a binding commitment and may be offered in a subsequent market time frame at a higher price, or not offered at all in the CAISO's markets (subject to the must-offer obligation).

Comments

133. Reliant/Mirant allege that the CAISO's proposed bidding rules for sequential markets places a de facto price cap on the supplemental energy market. Reliant/Mirant assert that the Commission should reject the CAISO's bidding rules for sequential markets and permit sellers to submit bids for each succeeding market subject to the CAISO's current market power mitigation rules.

134. CERS points out that the CAISO states the energy bid curve will be composed of not more than 20 segments and the CAISO's Phase 1B filing limits the energy bid curve to 10 segments. CERS states that for this reason, it is unclear whether the CAISO intends to increase the maximum number of bid curve segments.

CAISO Answer

135. The CAISO disagrees that the proposed bidding rules place a de facto price cap on the supplemental energy market; rather, bids that are accepted are viewed to be contractual commitments that cannot be altered. The CAISO explains that this rule only impacts bids that are accepted, and adds that if energy or capacity is offered in one market but not accepted, it may be offered in a later market at a higher price.

136. The CAISO clarifies that the energy bid curve under LMP and the full network model will consist of, at most, ten segments, consistent with the Amendment No. 54, Phase 1B filing.

Commission Response

137. It is unclear as to why Reliant/Mirant believe that the CAISO's bidding rules, as proposed, will place a de facto bid cap on supplemental energy bids. The underlying principles of the CAISO's proposed bidding rules are: (1) bid prices that are accepted in one market time frame are contractual commitments that cannot be altered in a subsequent market time frame, however a supplier can lower its energy bid prices associated with awarded ancillary services and RUC capacity to increase the likelihood of real-time dispatch and (2) energy or capacity that is offered in one market time frame but not accepted by a buyer is no longer a binding commitment on the part of the seller and may be offered in a subsequent market time frame at a higher price. We believe that the rules promote efficient least-cost dispatch. Therefore, we will accept the CAISO's proposed bidding rules for sequential markets.

138. We find that the CAISO's answer has sufficiently clarified the issue raised by CERS.

(2) Self Scheduling

139. The Revised MD02 proposal allows Scheduling Coordinators who want to self schedule, to submit preferred quantities of supply or demand without associated bids. If congestion cannot be fully resolved, or supply and demand cannot be balanced using economic bids, self schedules may be reduced. All self schedules will be settled as price-takers whether or not they are adjusted in the Integrated Forward Market.

Comments

140. NCPA and TANC argue that the CAISO should continue to use a "contingency flag" to protect schedules and to allow market participants to make their own resource portfolios without being responsible to others. NCPA contends that CAISO should hold Metered Subsystems (MSS) operators[65] harmless from penalties incurred for operating outside of the deviation band when the CAISO adjusts MSS balanced schedules, and to explain how MSS requirements will be upheld in order to respect the resource adequacy contribution of the MSS.

141. Southern Cities state that the CAISO's proposal does not address whether there will be a nodal price for a node at which all resources are self scheduled or how such a nodal price would be determined.

142. SoCal Edison asserts that the CAISO should modify its proposal to reflect that: (1) self schedules are not price-takers; (2) self-scheduled generation is not an energy sale to the CAISO's market; and (3) self-scheduled load is not an energy purchase from the CAISO's market. SoCal Edison also asserts that the CAISO should clarify that balanced self schedules must receive scheduling priority over unbalanced self schedules. SoCal Edison further asserts that proceedings to develop data requirements for use-limited resources initiated for resource owners should be expanded to include all interested stakeholders, not just resource owners.

CAISO Answer

143. The CAISO agrees that the issues surrounding the implementation of MSS under the new market design need further development. The CAISO states that the use of a "flag" is unnecessary and would constitute retention of the market separation rule. The CAISO also notes that the majority of market participants rejected the use of such flags.

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[65] A MSS Operator is the entity that operates the Metered Subsystem.

144. The CAISO responds that the clarifications sought by SoCal Edison are not possible in an integrated congestion management and energy market. The CAISO contends that there is no way to self schedule (submit a preferred quantity without bids) and not be a price-taker. The CAISO states that it is willing to explore SoCal Edison's concerns regarding the distinction between unbalanced loads and supply resources that buy and sell energy in the CAISO's market versus balanced self schedules that only use the CAISO. The CAISO states that its proposal makes it clear that the priorities among supply resources are not a function of whether the submitted schedule is balanced or not; rather, they are a function of whether the supply resource is designated must-run or must-take. The CAISO contends that its self-scheduling proposal reflects a compromise solution which results in some inefficiencies, but accommodates the desires of some market participants to self schedule. With respect to proceedings to develop data requirements, the CAISO states that it will engage all interested parties in such proceedings.

Commission Response

145. We find that the CAISO has sufficiently addressed the concerns raised by the intervenors with respect to self-scheduling. The CAISO states that it will work with interested parties on issues such as the implementation of MSS under the new market design and concerns regarding the distinction between unbalanced loads and supply resources and balanced self schedules. The CAISO further states that it will include all interested parties in proceedings to develop data requirements. We agree that there is no way to self schedule and not be a price-taker. Any customer that has self-scheduled has explicitly not submitted a price at which it is willing to curtail load, generation or both and thus expressed its desire for service independent of price. We also agree that there is no need for a mechanism such as a "flag" to distinguish and protect self schedules. Accordingly, we accept the CAISO's proposed self-scheduling concepts, and note that final tariff language will be subject to further review and comments by intervenors.

(3) Virtual Bidding

146. Virtual Bidding involves the submission of bids to buy or sell energy in the forward market that will not ultimately be produced or consumed by the bidder in real-time. The CAISO states that virtual bidding should not be implemented until after sufficient experience is gained with the implementation of the Integrated Forward Market.

Comments

147. Some intervenors [66] generally support implementing virtual bidding procedures. In support, these intervenors state that virtual bidding will: create liquidity in the California markets; provide the market with the proper price signals; facilitate demand response by providing market price signals upon which to make rational economic decisions; promote convergence of day-ahead and real-time prices; and eliminate the incentive for load to underschedule in the day-ahead markets as a way to manipulate the market clearing price.

148. Dynegy/Williams assert that without virtual bidding, suppliers will be at a competitive disadvantage. Dynegy/Williams state that if the CAISO is concerned about potential "gaming," Dynegy/Williams recommend that the CAISO should propose reasonable position limits on virtual bids based upon objective measures (such as a participant's past performance in the market) and require these bids to be appropriately labeled rather than prohibit virtual bidding outright.

149. The CPUC opposes the introduction of virtual bidding at this time. The CPUC believes that consideration of the virtual bidding issue should be deferred until CAISO's new market design is fully implemented and CAISO's market shows stability over a significant period of time.

CAISO Answer

150. The CAISO acknowledges that there may be benefits to virtual bidding, but it does not believe that it would be prudent to implement virtual bidding at the outset of the new market design. The CAISO argues that no other independent system operator implemented virtual bidding at the outset of its markets and asserts that the CAISO should not be required to do so either.

Commission Response

151. We agree with intervenors regarding the benefits of virtual bidding, however, we also agree with the CAISO's arguments for delaying the implementation of virtual bidding. Therefore, we will not require the CAISO to implement virtual bidding at this time. We note that the CAISO states it will also continue assessing the merits of explicit virtual bidding and will explore when it may be appropriate to allow such bidding. Additionally we recommend that the CAISO, along with stakeholders and market

[66] E.g., Reliant/Mirant, Morgan Stanley, Dynegy/Williams, Competitive Suppliers.

participants, continue to address the issue of virtual bidding. We believe that this collaborative process would be informed by the NYISO process.[67]

(4) Billing & Settlement

152. According to the CAISO's Revised MD02 proposal, settlements will be in accordance with the MSSA and the CAISO Tariff. Generation will be settled at the applicable locational price and load not covered by an Existing Contract will be settled at the appropriate load aggregation price.[68] Load served under an Existing Contract will be settled at the applicable locational price. The applicability to MSS of any new charges and charge types developed will be addressed when they are defined.

Comments

153. Intervenors raise various concerns with respect to the CAISO's settlements system. The CPUC states that additional information is necessary to understand clearly all of the settlement charges that will affect load in the new model, including how the procurement of energy, ancillary services and the RUC process are settled. NCPA contends that the Commission should require the CAISO to provide examples of how its financial settlements system would apply to bilateral contracts, self-scheduled transactions and Scheduling Coordinator-to-Scheduling Coordinator trades, and how any shortfalls would be allocated to the market. NCPA also seeks a detailed description of how the credit policies and escrow requirements for each class of market participant will change from the current design. SoCal Edison requests that the CAISO clarify that revenue shortfalls resulting from Scheduling Coordinator defaults will be allocated among those participating in the CAISO's energy market and not to self schedules.

CAISO Answer

154. The CAISO responds that it has not proposed any changes to its current credit policies in its Revised MD02 proposal, and that the issues raised by NCPA and SoCal Edison with respect to creditworthiness are beyond the scope of this proceeding.

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[67] See NYISO, 96 FERC ¶ 61,059 (2001).

[68] Existing Contracts are defined in Appendix A to the CAISO Tariff as "contracts which grant transmission service rights in existence on the CAISO Operations Date (including any contracts entered into pursuant to such contracts) as may be amended in accordance with their terms or by agreement between the parties thereto from time to time."

Commission Response

155. In two recent orders, the Commission provided guidance regarding creditworthiness requirements in markets that are similar to those proposed by the CAISO here. As the CAISO works to revise its tariff, it should look to these orders for guidance from recent Commission action.[69] When actual tariff language is filed for review, parties will be afforded an opportunity to comment on both the credit policies and the billing and settlement provisions proposed.

(5) Metered Subsystems (MSS)

156. The CAISO states that its proposal provides maximum flexibility to integrate Metered Subsystems (MSS) into the MD02 structure. MSS operators have the option of being treated like any other Market Participant. The CAISO states that if a MSS Operator wants treatment that recognizes its unique features and functions, the CAISO proposes to accommodate MSS operators, accordingly. The CAISO states that a MSS Operator may elect to participate in some elements of the MD02 design and not others, where it is feasible to do so.

Comments

157. SVP expresses concerns that important MSS components and principles will be jeopardized by MD02. According to SVP, the CAISO does not say whether the MSS exemption from the must-offer obligation is true for MSS units with RMR contracts, and it is unclear whether market rules apply only to the portion of the MSS Scheduling Coordinator portfolio that is participating in the CAISO markets, or to the entire portfolio. SVP believes that market rules should apply only to the participating portion of the portfolio, and that settlements must remain consistent with the terms and principles of the MSS agreements.

CAISO Answer

158. The CAISO states that it is making special accommodations for MSS Operators under the new market design. The CAISO agrees that additional discussions with MSS Operators will be needed to integrate the MSS concepts into the new design. However, the CAISO intends to honor the MSS Agreements.

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[69] See New York Independent System Operator, Inc., 104 FERC ¶ 61,311 (2003); PJM Interconnection, L.L.C., 104 FERC ¶ 61,509 (2003).

Commission Response

159. Because the CAISO has stated its intentions of fully honoring the MSS Agreements and working jointly on incorporating the MSS concepts into the new market design, the Commission will approve the CAISO's MSS proposal provided that additional discussions do, indeed, take place in order to fully vet all issues that market participants may yet have.

F. Congestion Revenue Rights (CRRs)

Current Tariff Provisions for Implementing Firm Transmission Rights

160. The CAISO's current congestion management system uses Firm Transmission Rights (FTRs).[70] Each FTR is defined by a transmission path from a designated originating zone to a designated receiving zone. In addition, the FTR path is for only one direction.[71]

161. Any entity (with the exception of the CAISO) is eligible to acquire FTRs by participating in either the ISO's auction of FTRs, or by purchasing FTRs in the secondary market.[72] The FTRs are available on an annual basis through an FTR auction that commences approximately two months before the actual term of the FTR. Auction revenues received by the CAISO for FTRs are allocated and paid to Participating Transmission Owners that are entitled to receive the congestion revenues associated with inter-zonal interfaces. The CAISO tariff also states that a FTR holder is entitled to receive a portion of the total congestion revenues related to inter-zonal congestion in both the day-ahead and hour-ahead markets.

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[70] An FTR is a contractual right that entitles the FTR holder the right to receive a share of any net congestion revenues received by the CAISO for the use of a specific congested inter-zonal interface during a given hour.

[71] An FTR holder is entitled to share net congestion charges attributable to inter-zonal congestion for transfers on that path from the designated originating zone to the designated receiving zone. It is not entitled to the charge if the inter-zonal congestion is the opposite direction.

[72] Section 9.2.6 of the CAISO Tariff notes that in order to participate in the ISO's auction of FTRs, an entity must either be a certified Scheduling Coordinator or have met financial requirements equivalent to the financial certification criteria of all Scheduling Coordinators.

Congestion Revenue Rights Proposal

162. Under the Revised MD02 proposal, the CAISO proposes to replace the existing path-specific FTR model with a new Congestion Revenue Rights (CRR) model that adopts a redesigned "source-to-sink" congestion-hedging instrument.[73] Specifically, the CAISO proposes to redesign the current path-specific model with a design that recognizes a single or set of network nodes in which power is injected and withdrawn from the transmission grid.[74] It also states that, in conjunction with the source-to-sink model, the CAISO will perform a Simultaneous Feasibility Test to determine the quantities of CRRs available for allocation and auction. In addition, the CAISO proposes to offer on-peak and off-peak CRRs.

163. The CAISO proposes to allocate CRR obligations[75] to all loads within the CAISO control area, potentially including those loads served under ETCs.[76] ETC rights holders that convert their rights will be offered a choice of CRR options[77] or CRR obligations. The capacity associated with any CRR options issued to ETCs will be modeled in a way that sets aside this capacity in the network in order to determine the amount of CRR obligations that may be released.

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[73] The CAISO notes that the CRRs will serve as a hedge only against congestion, but not losses.

[74] In its application, the CAISO states that if there is a need for path specific or flowgate rights, the CAISO would explore the possibilities in conjunction with the implementation of source-to-sink CRRs.

[75] The CAISO states that with CRR Obligations, a CRR holder is liable for congestion charges when congestion is in the opposite direction of its CRRs. The CAISO notes that as long as the CRR holder schedules in accordance with its CRRs, the payment for counter-flow scheduling will offset the liability of the CRR holder's obligation.

[76] Loads such as those of the State Water Project that are not formally served as retail customers by a LSE will also receive CRRs.

[77] The CAISO states that CRR options do not impose a cost when congestion is in the opposite direction of the CRR. The CAISO states that CRR Options can only be released up to the level of grid transfer capability because, absent the liability for congestion charges associated with Obligations, releasing CRR Options based on the netting effects of counter flows will result in a systematic congestion revenue shortfall.

164. In general, CRRs will be allocated to LSEs on behalf of the loads they serve, but the CRRs will "follow the load" if the customer switches to a different LSE. The CAISO proposes to release CRRs on a two-year rolling annual basis and on a short-term monthly basis. The CAISO propose to release 75 percent of the transmission network capacity for annual CRRs.[78] The remaining network capacity would be available for monthly CRRs.

165. Following the allocation process, the CAISO will conduct an auction to allocate any remaining transmission capacity in the market. The CAISO proposes to allow CRR holders to participate in the auction as buyers or sellers. The revenues received from the sale of these allocated CRRs will be paid to the selling entities. The CAISO also proposes measures to allocate the CRRs created by the development of new transmission lines and upgrades to an existing transmission line.

166. The CAISO states that the CRR design will operate as an "obligation" instrument rather than an "options" instrument currently implemented under FTRs. The CAISO contends that the obligations instrument should be the primary form of CRR because this method provides a more efficient and extensive allocation of rights than is possible with CRR options, while still enforcing simultaneous feasibility.[79] The CAISO will create a single balancing account for CRR revenue surpluses and deficits. Funds in the balancing account will be disbursed to CRR holders at the end of each month.

167. The proposal attaches a physical CRR scheduling priority in the day-ahead Integrated Forward Market. The CRR scheduling priority applies to the demand side of CRR schedules. Scheduling Coordinators who want to utilize a CRR scheduling priority must submit preferred schedules that are initially balanced. In addition, the CRR protected schedules must specify the same source and sink as the CRR being utilized and must not have any decremental energy bids on the demand side of the schedule. The CAISO believes that a demand side scheduling priority will meet LSEs' needs by ensuring that their load is scheduled in the day-ahead market and served at least cost,

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[78] According to the CAISO, 75 percent of the available capacity will be released in the first operating year. Thereafter, the rights will be split into 37.5 percent for the immediate next year, and 37.5 percent for the second year out. As a result, entities can obtain rights covering a two-year period.

[79] The CAISO states that it is willing to offer CRR Options in conjunction with CRR Obligations to the entire market in the future if the CAISO determines that it is technically feasible to do so on a large scale, and the benefits outweigh the additional costs and complexity.

without the risk that their load may be curtailed while their own resources are scheduled to serve load of other LSEs.

168. The CAISO also proposes that CRRs may be used in conjunction with ancillary service schedules because ancillary services capacity and energy will compete to reserve transmission across control area inter-ties. The CAISO states that if there is congestion on an inter-tie in which ancillary services are being imported, the supplier will be assessed the congestion usage charge. Therefore, the CAISO has proposed to allow market participants who want to import ancillary services into the CAISO market to purchase CRRs through the auction process or secondary market.

(1) Allocation Mechanism for CRRs

Comments

169. Many intervenors[80] raise concerns about the lack of detail in the proposed CRR allocation mechanism and note that the CRR study proposed by the CAISO has not yet been completed. Intervenors contend that although the CAISO's conceptual description appears workable, the lack of detail makes it impossible to determine whether the proposal is appropriate in all the circumstances of the modified California electricity market. Reliant/Mirant contend that the proposed allocation methodology is unduly discriminatory because it proposes to allocate CRRs to LSEs and certain other groups without identifying those other groups, and relegates many new customers to the secondary market, placing them at a competitive disadvantage. Metropolitan, SVP, CPUC and CMUA identify problems that would arise if CRRs are to be allocated for arbitrarily assigned fixed terms without regard to the unique characteristics of the entities to which they will be allocated, such as their load profiles and differing business cycles. The CPUC suggests that the maximum term of any CRR be limited to six months, due to the uncertainty surrounding the CRR mechanism generally and to limit exposure to risk of entities whose portfolio profile is inadequate due to a lack of information.

CAISO Answer

170. The CAISO states that it seeks guidance from the Commission in this filing on several factors and that issues of allocation cannot be answered until the Commission rules on the CAISO's proposal on: (1) obligations and (2) treatment of ETCs. The CAISO states that resolution of details raised by intervenors is not necessary prior to the

[80] PG&E, Dynegy/Williams, Duke Energy, San Francisco, SMUD, Redding, SVP, Reliant/Mirant, CPUC, NCPA and CMUA.

development of the relevant software, and that there remains sufficient time to complete the CRR study and determine the details of the allocation mechanism. The CAISO believes that until there has been an opportunity to observe how LMP behaves in the context of the newly designed market in California, it will not be possible to determine with certainty the extent to which CRRs can be allocated. For these reasons, the CAISO prefers to retain a degree of flexibility in its proposal, opting for the determination and settlement of many details until a later date. Further, the CAISO commits to work with market participants and the State of California to develop the details of the CRR allocation process.

Commission Response

171. The adoption of CRRs as a risk management tool for participants in the newly modified California electricity market is a concept that is supported by the Commission. We believe that the allocation of rights has several important objectives including providing an allocation that is simultaneously feasible in a security-constrained power flow and providing an allocation that is fair and consistent with how the underlying costs of the system are recovered. As a general matter the CAISO's proposal to allocate CRR obligations to all loads not covered by ETC rights within the CAISO control area seems reasonable. We approve of the CAISO's proposal to offer to the holders of ETCs either obligations or options, as an incentive to convert.

172. We are sympathetic to the concerns of intervenors that the proposal lacks adequate information and detail about the CRR process generally, and in particular the method by which CRRs will be allocated. However, we note that the CAISO's filing is conceptual, and by its nature lacks details that one would expect to find in a more detailed tariff filing under section 205. As noted above, the CAISO seeks guidance from the Commission on obligations and ETCs so that it can move forward to the allocation phase. We address these later in this order. Because we find that a model of the system is paramount to accurate allocation of existing rights, we will require that the CAISO file detailed information on the proposed first year allocation when it files its proposed tariff instituting the CRR allocation method. The filing should include, at a minimum, each participant's expected allocation of FTRs based on the proposed tariff allocation method and CRRs. We also direct the CAISO to make an initial filing of this allocation information as soon as practicable but at least three months prior to its tariff filing. Finally, because we have questions about the CAISO's conceptual proposal, we will use the November 6th White Paper Technical Conference as a forum to learn more about the CAISO's proposal, including the role of a Regional State Committee (RSC), the method by which new users would obtain CRRs after the initial allocation of CRRs is complete, the rules applicable to users leaving the system, and the manner in which the auction process will match "spare" CRRs with prospective new users having different load

profiles, geographic locations and resource profiles to those whose "relinquished" CRRs are being auctioned.

173. We also direct that the CAISO convene a consultative forum, as soon as practicable, in which all interested parties may participate, to explain and discuss the details of the CRR proposal and the results of the study, to further develop the methodology and process by which CRRs will be allocated, and to determine an appropriate process by which potential disputes relating to the allocation process will be resolved.

174. The Commission reiterates its general support for the CRR proposal as a means of allowing participants to hedge against potential transmission congestion. However, we will be in a position to provide a further ruling on the proposal when additional details of the CRR proposal have been settled and submitted for our consideration.

(2) CRR Obligations vs. Options

Comments

175. Intervenors raised numerous concerns with regard to the CAISO's proposed allocation of CRRs as "Obligations" rather than "Options." Some intervenors argue that Obligations will not fully hedge their congestion costs. For example, SoCal Edison asserts that in order for LSEs to fully hedge servicing their loads and not take the additional risk presented by Obligations CRRs, the CAISO should offer Option CRRs to all LSEs, absent a showing by the CAISO that they are technically infeasible. California SWP argues that CRRs will not reliably protect loads from congestion charges in the same manners as firm transmission services, but rather would expose users to congestion charges for failing to provide counter-flows. Therefore, Option CRRs should be provided. Redding, CMUA and San Francisco complain that the Obligations model ignores seasonal flows and places customers at significant financial risk. They also argue that the Obligations model will not allow for time-related variations in the level of CRRs needed, such as with energy-limited resources. FPL/AWEA argues that sponsors of transmission upgrades should receive CRR Options, not CRR Obligations.

CAISO Answer

176. In its answer, the CAISO states that obligations make a more efficient use of the transmission system than options, and will more easily provide sufficient CRRs for LSEs to fully hedge their congestion costs. Moreover, the CAISO has sought throughout the MD02 process to rely, as much as possible, on design elements that have been proven in other ISO markets. Therefore, the CAISO is hesitant to commit to a combined options and obligations CRR model until such a model has been well tested and proven in

practice. The CAISO also expresses a willingness to provide options CRRs in the future, consistent with Commission guidance in the SMD NOPR when it determines that such instruments are feasible, and when the benefits of doing so are demonstrably greater than the costs. The CAISO submits that it is appropriate to provide obligations first, however, in order to ensure greater coverage.

Commission Response

177. We accept the CAISO's proposal to initially allocate CRRs in the form of CRR obligations. We note that although the CAISO has indicated reservations with regard to providing both CRR obligations and options at this time, we encourage the CAISO to continue the development of other types of Congestion Revenue Rights that may be valued in the CAISO market. It is the Commission's belief that offering several different types of Congestion Revenue Rights would make the system more flexible and better able to adapt to the needs of specific customers. Accordingly, we accept the CAISO's proposal to offer CRR Obligations to its market participants, and to offer options or obligations to ETC holders who elect to convert their contracts.

(3) Physical Scheduling Priority for CRR Holders

Comments

178. Several intervenors argue that the CAISO's physical scheduling priority is discriminatory.[81] In particular, they oppose the CAISO's request to implement a CRR scheduling priority to the demand side of CRR schedules. Some intervenors argue that there is no rationale for the CAISO to give higher scheduling priority to market participants that provide self-schedules that exactly match CRRs over market participants who are hedged by a portfolio of CRRs but do not submit self-schedules that exactly correspond with the CRRs. They further state that neither PJM nor NYISO gives CRRs any physical scheduling priority. Other intervenors argue that the CRR rights should only be financial instruments.

179. Duke Energy asserts that the remixing of physical and financial rights is contrary to the fundamental premise underlying the Commission's Standard Market Design, i.e., scarce transmission capacity is assigned to those who value it the most.[82] Duke Energy

[81] Duke, Competitive Suppliers, Morgan Stanley, Dynegy and Sempra.

[82] Reliant/Mirant contend that the CAISO should auction all CRRs and assign revenues based on existing contract rights.

claims that if the Commission were to assign a physical transmission right to CRRs, it is likely to discourage those who are awarded CRRs from releasing them into the market.

180. Sempra and Morgan Stanley contend that the CAISO should manage congestion similar to markets in PJM, ISO-NE and the NYISO. They suggest that the CAISO manage congestion through redispatch of loads and/or resources on the basis of participants' bids and offers. They further argue that allowing the CAISO to intermingle CRRs to rights for scheduling or dispatch priority will impede the CAISO's ability to devote the grid to its highest valued use as this use changes over time, and may frustrate the CAISO's efforts to manage congestion on the system.

181. The CPUC and SoCal Edison[83] support the CAISO's scheduling priority proposal for self-scheduled demand in the day-ahead market. The CPUC states that the CAISO's proposal appears to allow for economic dispatch and system optimization while minimizing risk for load to a reasonable extent. However, CPUC staff states that it is still working to understand the implications and risks of the fact that under the revised proposal, there will be neither scheduling priority nor CRR protection after the close of the day-ahead market.

CAISO Answer

182. In its answer, the CAISO states that most of the arguments against the CAISO's scheduling priority proposal ignore the fact that the priority would apply only to the demand side of an initially balanced schedule. As described in the proposal, the CAISO determined that providing a physical scheduling priority only on the demand side of CRR schedules would not constrain the CAISO's ability to perform congestion management by redispatch of supply resources, while accommodating market participants' desires to use their own resources to serve their loads. In particular, the CAISO acknowledged the concern that absent the proposed demand-side priority, a Scheduling Coordinator that is "short" on generation to serve its load could come into the CAISO's day-ahead market and effectively "buy" the supply resources that were brought to the market by a Scheduling Coordinator that is fully resourced. The CAISO contends that the demand-side-only priority effectively prevents this.

183. It further notes that applying the same priority to the supply side of a CRR schedule could create substantial risk of having severe shortages of bids for performing

[83] SoCal Edison notes that in the event the CAISO's proposal is not accepted in its entirety, SoCal Edison supports a CRR scheduling priority for both generation and demand components of a balanced self schedule.

congestion management, thereby forcing the CAISO to resort to non-economic adjustments with high regularity. In addition, the CAISO states that the SMD NOPR contemplates that there would be physical priority for CRRs. Therefore, the CAISO believes that the proposal is consistent with the Commission's position regarding CRRs.

Commission Response

184. Contrary to the claims of the CAISO, the physical scheduling priority that it proposes is different from that proposed in the Commission's SMD NOPR.[84] The CAISO's proposal would provide a priority to receive energy, while the SMD NOPR contemplates a priority to receive transmission service. Under the SMD NOPR, if transmission capacity existed to allow some (but not all) transmission service to be provided along a transmission path, priority to that service would be provided to those holding CRRs along that path. However, if transmission capacity became insufficient to provide transmission service to all customers holding CRRs along that path, requested transmission service to some CRR holders would not be provided. Under the SMD NOPR, CRR holders who were denied transmission service in these circumstances would not receive priority in receiving energy, unlike under the CAISO's proposal. The CAISO has not justified providing an energy scheduling priority to the holder of a transmission right. Under the CAISO's proposal, the load of an LSE without CRRs that owns local generation could be curtailed, and the local generation could be used to serve the load of another LSE that has CRRs. A LSE without CRRS would have a lower scheduling priority even if it has sufficient or excess generation resources located near its load and does not need transmission service over a constrained transmission path to receive energy from these resources. Thus, an LSE with CRRs could effectively "lean" on generation from an LSE without CRRs. In addition, LSEs may have an incentive to "game" CRR priority by buying counter-flow CRRs out of load pockets and creating additional CRRs into the load pocket that could be used to increase curtailment priority. We therefore reject the CAISO's proposal to provide a demand-side physical scheduling priority for CRR holders.

185. In addition, we are not persuaded by the CAISO's argument that the proposed CRR physical scheduling priority would allow the CAISO to redispatch self generation more efficiently during periods of transmission constraints. In order for a CRR holder to take advantage of the scheduling priority under the CAISO's proposal, generation resources would be prohibited from submitting decremental bids, and this prohibition

[84] Remedying Undue Discrimination Through Open Access Transmission Service and Standard Electricity Market Design, Notice of Proposed Rulemaking, FERC Stats. & Regs. ¶ 32,563; 100 FERC ¶ 61,138 (2002).

could prevent the CAISO from efficiently redispatching the system using the least cost resources. For these reasons, we will deny the CAISO's proposal to provide demand-side physical scheduling priority for CRR holders.

(4) CRR use for Ancillary Services

Comments

186. TANC argues that the CAISO's CRR designation and allocation process is unclear with respect to the opportunity for receipt of CRRs for supply of ancillary services. TANC states that LSEs should be entitled to sufficient CRRs to cover their ancillary services requirements, if needed, as well as their full load obligation.

CAISO Answer

187. In its answer, the CAISO states that ancillary services schedules that utilize the inter-ties will have a priority equal to energy schedules in terms of securing transmission capacity on the inter-ties and, when there is congestion on the inter-ties, such ancillary services schedules will pay congestion costs. These costs should be taken into account by an external ancillary services provider which bids into the CAISO ancillary services markets, and by a Scheduling Coordinator who is deciding whether to self-provide from an external resource or purchase ancillary services through the CAISO's markets. Other than the ancillary services provided over the inter-ties, there will be no exposure to ancillary services to congestion charges. Ancillary services procured or self-provided from internal resources will not be subject to congestion costs because internal ancillary services resources are not procured or priced on a nodal basis or scheduled on a source-to-sink basis as energy is. Thus, the CAISO states that congestion costs associated with ancillary services are limited in applicability and are not consistent with the design of CRRs. As a result, the CAISO contends that it is not appropriate to allocate CRRs to LSEs to cover their ancillary services obligations. The CAISO notes that parties that wish to utilize CRRs for this purpose will have the opportunity to secure CRRs in the auction process or the secondary market.

Commission Response

188. We reject TANC's suggestion to allocate CRRs on the basis of LSE schedules of ancillary services over inter-ties. We find the CAISO's proposal to allocate CRRS to all LSEs on the basis of their loads, on a nondiscriminatory basis, is acceptable. The CAISO adequately explains that congestion costs associated with ancillary services are limited in applicability and apply only to ancillary services that require scheduling over an inter-tie. We find that the CAISO sufficiently provides LSEs an opportunity to hedge their exposure to congestion charges associated with ancillary services. If an LSE chooses to

supply ancillary services from a resource that requires scheduling over an inter-tie, it may secure CRRs through the CAISO's auction process or the secondary market.[85]

(5) CRRs for Third Party Transmission Expansions

Comments

189. SoCal Edison comments that, in order to prevent double payments, the CAISO should clarify that entities which pay for transmission upgrades and receive transmission credits (Project Sponsors) are ineligible to receive CRRs for that portion of their upgrade for which they receive transmission credits.

190. FPL/AWEA assert that the CAISO proposes to reduce the amount of compensation for third-party transmission expansions from the standard recently set in the Amendment No. 48 proceeding.[86] Specifically, FPL/AWEA assert that there will be, by design, hours within the time period when more capacity will be available on the system than the CRRs represent. Because Project Sponsors contributed proportionally to the hourly capacity rating, they should receive a right of first refusal to a proportional share of congestion revenues that may accrue above the CRR capacity that is awarded or auctioned in the market. Likewise, if the capacity addition results in the ability to export incremental amounts of energy, Project Sponsors should receive a proportional share of any wheeling revenues. FPL/AWEA also note that there is the potential for CRRs associated with capacity that is created by a Project Sponsor to flow through to the CAISO's proposed residual auction. If this is the case, FPL/AWEA believe that the entity that funded the upgrade should have the opportunity to claim auction revenues.

191. FPL/AWEA also express the view that Project Sponsors should be allowed to identify their CRR elections at the earliest possible opportunity during each allocation (annual or monthly), and that other Market Participants should not be able to elect CRRs that were created by Project Sponsor investments. Lastly, they believe that CRRs should be determined, if not allocated, in advance of operation.

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[85] This is based on the fact that ancillary services requirements are defined and met on an internal basis, not a nodal basis.

[86] California Independent System Operator Corporation, 102 FERC ¶ 61,278 at P 21 (2003).

CAISO Answer

192. In its answer, the CAISO confirms that owners or sponsors of transmission upgrades will receive CRRs only if they do not recover the cost of the upgrade through a regulated cost recovery mechanism such as the CAISO's Transmission Access Charge or a transmission credit from an existing Participating Transmission Owner. Consistent with Amendment No. 48, the Project Sponsor will receive CRRs commensurate with the full amount of physical capacity added to the system. The CAISO contends that it is not deviating from the standards approved by the Commission in its Order on Amendment No. 48. The CAISO also notes that it is sympathetic to the desires of investors to obtain CRRs in advance of the facility actually going into operation. However, this would be ill-advised because if the facilities did not come on-line as scheduled, too many CRRs would be released.

Commission Response

193. In response to SoCal Edison, as noted above, the CAISO clarifies that entities that pay for transmission upgrades and receive transmission credits are ineligible to receive CRRs for that portion of their upgrade for which they receive transmission credits. We find the CAISO's clarification adequately responds to this concern.

194. With regard to FPL/AWEA's argument that the CAISO's proposal will reduce the compensation for third party expansion, we find this speculative. In the Commission's March 12 Order, we found that a Project Sponsor should receive FTRs associated with the full amount of capacity added to the system. We note that the Revised MD02 proposal does not alter the fact that Project Sponsors will continue to receive their full capacity amount. As a result, we find the proposal to afford CRRs to third party expansion projects is reasonable. We also agree with the CAISO that it would be inappropriate to provide CRR rights to expansion projects prior to operation.

G. Existing Transmission Contracts (ETCs)

195. The CAISO states in its filing that the proposal for dealing with ETCs differs markedly from the proposal outlined in its May 1 filing. The CAISO states that it now appreciates that there are significant problems associated with the reservation of capacity for use by the holders of ETCs, as this practice causes so-called "phantom congestion."[87]

[87] Phantom congestion arises when capacity is reserved for potential ETC use, but the ETC holder does not ultimately use that capacity and, because of the later scheduling times permitted under the ETCs, alternative use cannot occur.

The central objective of CAISO's proposal for dealing with ETCs is the reduction of this "phantom congestion" and the avoidance or reduction of costs and inefficiencies associated with the CAISO's administration of ETCs. Under the proposal, the CAISO will no longer reserve transmission capacity for ETCs beyond the capacity used by their day-ahead schedules. In the hour-ahead market, ETC schedule changes will continue to have priority over all other schedule changes made in the hour-ahead market, and will be accepted as fully as possible without modifying the final day-ahead schedules. Any portion of the hour-ahead ETC schedule changes that cannot be accepted in the hour-ahead market will be accepted as real-time schedule changes. In addition, ETC rights holders will be able to submit, and the CAISO will accept, further schedule changes after the hour-ahead market closes in accordance with the ETC rights. In real-time the CAISO will re-dispatch non-ETC resources relative to their final hour-ahead schedules as needed to accommodate valid real-time ETC schedule changes.

196. Under the proposal, the CAISO also intends for Participating Transmission Owners to be responsible for verifying that ETC holders are scheduling according to the terms of their ETC contracts – the CAISO contends that this will help to reduce the effort and costs associated with the CAISO's present role in managing ETC scheduling. Furthermore, CAISO proposes that the California Oregon Transmission Project will not be subject to the modified bidding rules as it is not within the CAISO-controlled grid.

Comments

197. CMUA, LADWP, MWD and Modesto expressed skepticism about whether "phantom congestion" is a problem at all, or of the magnitude suggested by the CAISO, and whether it warrants the kinds of measures outlined in the CAISO proposal for overcoming this perceived problem. Intervenors[88] contend that the CAISO's ETC proposal will undermine the rights of ETC holders to be scheduled according to their contracts and may remove the flexibility that they feel they have now to schedule last-minute deviations to bids in unforeseen circumstances. LADWP, San Francisco, SMUD, SVP and CMUA believe that they will be forced to pay congestion or uplift charges as a consequence of the proposal, despite the fact that the ETC contracts to which they are parties were entered with the objective of keeping them financially whole. In addition, SWP and SoCal Edison express concerns about the proposal to shift responsibility for verification of ETC Schedules onto Participating Transmission Owners, and dispute that costs will thereby be diminished. NCPA expresses concern about the CAISO proposal to make an exception to the general rule that all ETCs will be treated in the same way.

[88] LADWP, SWP, Modesto, SoCal Edison, Metropolitan, TANC, Regional Public Power Entities, San Francisco, SMUD, SVP and CMUA.

198. LADWP, SWP, Dynegy/Williams, Morgan Stanley, Metropolitan, SMUD and CMUA are concerned that the proposal is not adequately detailed or developed. A number of alternative proposals were discussed by intervenors, with many expressing the view that no opportunity for consideration or debate has been allowed by the CAISO in relation to any feasible alternative approaches.

CAISO Answer

199. The CAISO responds to the concern that ETC holders' rights will be undermined by emphasizing that it will "fully honor ETC rights of access to the CAISO Controlled Grid, but without today's day-ahead reservations of unscheduled transmission, which is the cause of 'phantom congestion.'" The CAISO "strongly disputes the assertion that its proposal will abrogate the rights of parties to existing contracts,"[89] and contends that parties to ETCs will continue to receive the transmission service for which they contracted. According to the CAISO, nothing in the Revised MD02 proposal would prevent an entity from trading contractual transmission rights. The CAISO also disagrees with any suggestion that the ETC proposal discriminates against municipal entities that hold ETCs, as it contends that ETC schedules will have priority over non-ETC schedules against curtailment in all the CAISO markets.

200. The CAISO admits that the proposal is underdeveloped and that it intends to undertake "collaborative work" to finalize the details, such as cost allocation issues and the allocation of some responsibilities to other entities, such as Participating Transmission Operators.

Commission Response

201. The Commission has previously expressed its view about the issue of "phantom congestion."[90] Our preference is that "phantom congestion" should be overcome to the extent possible in a way that is consistent with contractual rights. If the CAISO is able to demonstrate that its proposal will continue to allow it to redispatch resources, and to accommodate valid real-time ETC schedule changes, without interfering with existing contractual rights, then its proposal may be workable and acceptable. The CAISO states that it plans to undertake a collaborative effort to further its proposal. We believe this is a

[89] CAISO Answer at 154.

[90] California System Operator Corporation, 91 FERC ¶ 61,205 at 61,727 (2000), where the Commission stated that "'phantom congestion' is a market inefficiency that must be addressed and rectified as quickly as possible."

positive step since many aspects of the problem have not been fully analyzed and developed. It appears that the proposal may alter the rights of ETC holders if deviations to schedules submitted by ETC holders cannot be accommodated. This contrasts with the present process, which provides these holders more assurance that such deviations are likely to be accepted. However, the extent to which it is possible that scheduling changes submitted by ETC holders cannot be accommodated is not presently known. Market participants, customers and the Commission are therefore relying on a description of how the proposal will work in theory, without the benefit of more detailed evidence of the magnitude of the problem sought to be addressed, and the likely consequences of implementation of the proposal, including any potential variations in costs.

202. The Commission is encouraged by the CAISO's efforts to find a workable solution to the problem of "phantom congestion" and its proposal to engage in a further consultation process. As an initial step, however, the Commission requires that the CAISO conduct further analysis of the proposal that will demonstrate the likelihood of ETC holders experiencing a diminution of contractual rights if the revised scheduling process is adopted. We believe that it would be appropriate for the results of this analysis to then be presented to stakeholders and interested parties for further consideration and discussion. We will be in a position to provide a definitive ruling on the ETC proposal only when further details have been settled and submitted for our consideration.

203. In response to Modesto's concerns that the proposal should not be considered while there are concurrent, related matters pending,[91] the Commission notes that as the ETC proposal is an integral part of the Revised MD02 filing, it is appropriate to consider it as part of the suite of proposals before us comprising the Revised MD02 filing. It is the Commission's view that by considering the CAISO's conceptual filing as a complete package at this time, notwithstanding that parts of it are not yet fully developed, or that there may be related matters presently under consideration before the Commission, the public will benefit by having further direction and guidance for the ongoing development of the California electricity market.

204. The Commission is reluctant to allow an exception to the general rule regarding the treatment of the California Oregon Transmission Project. On its face, the exception proposed by the CAISO for the California Oregon Transmission Project may be regarded as discriminatory.[92] The Commission requires that, as part of the further development

[91] Docket Nos. ER00-2019, et al.

[92] Previous attempts to differentiate in the treatment of such ETCs have been challenged. See Morgan Stanley Capital Group, Inc. v. California Independent System Operator Corporation, 96 FERC ¶ 61,354 (2001).

and consultation, the CAISO undertake a further analysis of this part of the proposal, and demonstrate that the variation in treatment of certain ETCs, as proposed, is not unduly discriminatory.

H. Lack of a Resource Adequacy Proposal

205. The CAISO's proposal lacks a resource adequacy element, a critical element to any market design. The CAISO states that the State of California has initiated, through the CPUC Procurement proceeding,[93] development of a resource adequacy framework for California. The CPUC's procurement proceeding will establish the rules and requirements for forward procurement of supply for the investor-owned utilities it regulates. According to the CAISO, parties to the proceeding have filed testimony and the CPUC anticipates issuing a final order on the procurement proceeding in December 2003.

206. The CAISO states that it is actively engaged in the procurement proceeding and has advocated that the CPUC adopt formal planning reserve requirements for the investor owned utilities and a formal process that would provide for regular (monthly and annual) validation of compliance with the procurement and reserve requirements. The CAISO has also recommended that the CPUC specifically assess and establish requirements for the deliverability of capacity resources procured by the utilities. Absent this requirement, the CAISO states that resources procured by the utilities may fulfill their obligations under the CPUC rules, but not be available for the CAISO for commitment and use. In addition, the CAISO has recommended that the CPUC ensure that resources procured by the utilities be offered to the CAISO in the forward market for possible commitment by the CAISO to serve forecasted load.

207. The CAISO specifically supports a resource adequacy requirement in the CPUC proceeding which would include: "(1) a well defined requirement that utilities procure in the forward markets sufficient resources to meet their projected peak load plus adequate planning reserves, with reasonable limitations on reliance on short-term and spot market purchases for capacity needs; (2) consistent definitions and counting conventions; (3) a process to review utility procurement plans, and an annual process to update them and ensure they are on track; (4) an explicit obligation to procure at least one month ahead of time adequate capacity to meet 100% of the projected peak load plus the planning reserve level; (5) a process to make the resources procured by the utilities known and available to

[93] Public Utilities Commission of the State of California, Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development, Docket # R. 01-10-024.

the CAISO for commitment and use, if needed, in the day-ahead, hour-ahead and real time markets; and (6) well defined consequences for a failure by the utilities to meet their resource adequacy obligations."[94]

208. A "Joint Recommendation" was filed by the three investor-owned utilities and the California Energy Commission, the Office of Ratepayer Advocates, and the Utility Reform Network, proposing to defer until 2004 the 17 percent planning reserve margin set by the California Consumer Power and Conservation Financing Authority. The parties proposed instead to meet operating reserve requirements equal to the minimum operating reserve requirement of the Western Electricity Coordinating Council (which averages 7 percent). The IOUs also proposed to purchase capacity in the spot market.[95]

209. The CAISO states that once the final resource adequacy related rules are established by the State, the CAISO will evaluate the need for the CAISO to make conforming changes to its market design. Because the CPUC is not expected to issue a final procurement rule until late 2003, the CAISO states it must wait until early in 2004 to undertake a review of the procurement rules for any necessary changes. The CAISO states that it will inform the Commission about developments in the State's resource adequacy activities in its monthly MD02 status reports.

Comments

210. Many intervenors have expressed concerns regarding the lack of a resource adequacy provision in the CAISO's proposal. Dynegy/Williams argue that the Commission's July 17 Order states, "without balanced market rules, sufficient infrastructure, and effective market oversight and market power mitigation, a competitive market cannot be created or sustained over the long run."[96] Dynegy/Williams assert that resource adequacy is a critical balancing element which is missing from the Revised MD02 proposal and that there has been little progress toward developing a workable resource adequacy requirement in the state.[97]

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[94] Opening Brief of the CAISO, September 15, 2003, Docket No. R.01-10-024.

[95] "Joint Recommendation," July 23, 2003, Docket No. R.01-10-024.

[96] July 17 Order at 61,239-40. The Commission included among these: a revised congestion management methodology, elimination of the balanced schedule requirement, the potential for demand-side participation in CAISO markets and a resource adequacy proposal.

[97] Intervenors also argue that the Commission should deny the CAISO's proposal to extend the must-offer obligation into the forward market without a corresponding obligation on LSEs to procure adequate resources to meet their load.

211. Reliant/Mirant state that the current MD02 proposal will replicate the flawed market design that laid the groundwork for the California electricity crisis. They state that the Commission has emphasized that an efficient, competitive energy market requires a robust resource adequacy requirement under which LSEs procure adequate capacity through forward markets and reduce reliance on volatile spot markets.

212. EPSA states that a resource adequacy provision must be a central feature in any market that includes mitigation measures as extensive as those in California. EPSA also notes that markets that utilize mitigation measures often suppress competitive market price signals needed to incent and direct new infrastructure investment. Properly structured resource adequacy programs are essential to balance the needs of both the short and long term markets by promoting the development of infrastructure needed for adequate generation capacity and reliable transmission system operation. EPSA further states that a resource adequacy program is an integral and necessary component of any market power mitigation strategy. For the MD02 market design to be successful the interplay between mitigation and resource adequacy must be recognized and a resource adequacy provision must be established as part of the Revised MD02 proposal.

CAISO Answer

213. In its answer, the CAISO contends that intervenors' arguments regarding resource adequacy are without merit. The CAISO states that the Commission, in its White Paper, placed the responsibility for resource adequacy squarely with the states. The CAISO states that it has not proposed a resource adequacy plan or a capacity market in its Revised MD02 proposal. It further argues that since the Commission has deferred the resource adequacy issue to the states and while the CPUC is actively engaged in the development of a formal resource adequacy plan, the Commission cannot use the CAISO's lack of a capacity market or other type of resource adequacy plan as a basis for eliminating the existing must-offer obligation or rejecting the CAISO's RUC proposal.

Commission Response

214. A requirement to assure adequate long-term resources is currently needed because spot market prices do not consistently signal the need for new infrastructure in the electric power industry. Most customers are unable to respond to real-time prices because of insufficient price information, inflexible rate design, and metering limitations. Most resources take years to develop and spot market prices alone may not signal the need to begin development of new resources in time to avert a shortage.[98] Spot market

[98] Further, rushing to relieve inadequate regional supplies and reduce high regional spot prices may bias construction choices toward supply resources that can be constructed

(continued…)

prices that are subject to overly strict mitigation may not produce an adequate level of infrastructure investment even after a shortage occurs. Further, if during a shortage regional resources are made available to all, load-serving entities and their customers have the incentive to depend on the resource development investments of others, a strategy that leads to systematic underinvestment in infrastructure. A provision for resource adequacy helps customers by assuring adequate supplies, helps generation developers by creating a demand for resources in advance of electricity prices doing so alone, and protects customers from high spot market prices. Those customers who are resource adequate are generally immune from scarcity-related high prices caused by demand from customers who did not procure adequate resources. Only those customers that are not resource adequate will be subject to prices in the spot market.
The approach to resource adequacy must be designed to work together with other elements of the regional market design: market power mitigation measures, demand response programs and any scarcity pricing measures. Those designing elements of a regional market must assess how the various regional choices work together. This is because the Commission is responsible for just and reasonable wholesale prices and wholesale market prices depend on having enough resources available for the market to function effectively. Investment in new generation and other infrastructure is needed to keep supply and growing demand in balance. To invest in such infrastructure, investors must find that the combination of mitigation measures, resource adequacy provisions and scarcity pricing provisions taken together provide a reasonable opportunity to recover the costs of their investments. For example, a region with little mitigation or mitigation that permits prices to rise quite high to reflect scarcity may not need to have a strong administrative approach to resource adequacy. But a region with a low safety net bid cap and no scarcity pricing to hold demand in check is unlikely to have a market with prices that attract new supply, unless such a region also has an additional approach to resource adequacy that provides additional assurance of capital cost recovery for new investment in the region.

215. We are encouraged that the State has undertaken a procurement proceeding, and that the CAISO supports an obligation on load-serving entities. However, the lack of a resource adequacy proposal in the CAISO's proposed comprehensive market design leaves a critical balancing element of the market subject to the outcome of the CPUC proceeding. We believe that issues such as resource adequacy and mitigation should not be dealt with in isolation. Without the benefit of a complete market redesign proposal, the Commission cannot make informed decisions on all aspects of this proposal -- decisions that impact the ability and incentive to forward contract, the reliable operation

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quickly, perhaps sacrificing long-term cost minimization, environmental concerns and fuel diversity goals.

of the grid, and the ability to attract and retain investment. In considering the proposal, we need to ensure that the CAISO has the appropriate tools at its disposal to address resource adequacy and protect against the exercise of market power.

216. We are encouraged to see that the CAISO has been proactively seeking resolution to this highly contested issue and we are confident that a mutually amicable solution between parties to the proceeding can be reached. The Commission is supportive of the position the CAISO has taken in the CPUC Procurement Proceeding and is awaiting its resolution so that this vital piece of the market can begin to take shape. We further accept the CAISO's commitment to inform the Commission about developments in the State's resource adequacy activities in its monthly MD02 status reports and direct the CAISO to submit a further filing outlining any necessary changes to their market design in response to the final rule issued by the CPUC within 60 days of the issuance of the final rule.

I. Must-Offer Obligation

217. The CAISO has proposed that the real-time must-offer obligation[99] be retained as a permanent feature of the CAISO market. According to the CAISO, the real-time must-offer obligation should be a permanent and fundamental condition for market-based rate authority. The CAISO supports this assertion by stating that if a resource owner has available capacity and can offer that capacity based on an energy and/or ancillary services bid price of its choosing, there is no legitimate reason why such capacity should not be offered in the CAISO's real-time market. In addition, the CAISO proposes to extend the must-offer obligation for uncommitted capacity to the day-ahead and hour-ahead markets, and the RUC process (forward markets must-offer obligation).[100]

218. The CAISO further states that extending the must-offer obligation to the day-ahead and hour-ahead energy markets is necessary to support its market design

[99] The CAISO represents that the existing real-time must-offer obligation implies an obligation for long start-time units to be available for day-ahead commitment.

[100] The must-offer obligation requires generators not otherwise under contract to offer the CAISO all of their capacity in real time during all hours if it is available and not already scheduled to run through bilateral agreements. This applies to generators located in California, including non-public utility sellers. However, hydroelectric power is exempt from the must-offer obligation. See San Diego Gas & Electric Company, 95 FERC ¶ 61,115 at 61,355-57 (2001).

proposal.[101] The proposed extension of the must-offer obligation would require resources to make capacity available in the forward markets. According to the CAISO, this will maximize the number of resources available in the forward markets and further the CAISO's objective of consistency between the day-ahead and real-time markets. Absent a requirement of full participation in the forward markets, suppliers may have the incentive to hold out until the real-time market in anticipation of higher prices. The CAISO states that, at a minimum, extension of the must-offer obligation to the forward markets should be maintained until such time as a fully-effective resource adequacy program has been implemented.

219. The CAISO argues that the lack of an existing formal resource adequacy program should not preclude approval of the proposed day-ahead must-offer obligation.[102] While a formal resource adequacy requirement may provide capacity or availability payments to certain resources, the CAISO contends that suppliers are already receiving capacity payments, not only through long and short term contracts with the State of California, but also through other mechanisms.[103] The CAISO states that because the Commission has deferred resource adequacy to the states, the Commission cannot use the CAISO's lack of a formal resource adequacy plan as a basis for rejecting the proposed day-ahead must-offer obligation, especially given the fact that the State is currently in the process of developing a formal resource adequacy plan.

Comments

220. Many intervenors argue that the Commission initially instituted the real-time must-offer obligation as a temporary measure in April 2001 to respond directly to the market anomalies that occurred in California during 2000 and 2001, and extended the obligation in July 2002 only because there were not yet sufficient changes in the market to support lifting the obligation. Intervenors contend that the real-time must-offer obligation was never intended to become a permanent market feature of the CAISO

[101] The CAISO also states that the must-offer obligation is a reasonable condition of granting generators market-based rate authority.

[102] In a few instances in its filing, the CAISO adds the word "interim" to its description of its proposed must-offer obligation in the forward markets. In those instances, the CAISO states that it would offer a generic waiver of the day-ahead must offer obligation upon implementation of a resource adequacy requirement.

[103] The CAISO states that suppliers also receive capacity payments through RMR units and ancillary services, and notes that the instant filing includes a capacity payment as part of the proposed RUC process.

market design; rather, it was intended to help stabilize a volatile marketplace until long-term market-based solutions could be implemented.[104] For this reason, intervenors believe that continuation of the current real-time must-offer obligation is unnecessary and should therefore, be rejected.[105]

221. In addition, Dynegy/Williams argue that (1) the CAISO's request to extend the must-offer obligation to the day-ahead market, hour-ahead market and RUC process should be rejected given California's lack of a mechanism to enforce resource adequacy; (2) the must-offer obligation should not be extended into the day-ahead market; and (3) the day-ahead market should be a voluntary market where a supplier can elect to commit resources. However, Dynegy/Williams assert that requiring generators within the CAISO to bid all of their unscheduled capacity to the CAISO in the day-ahead market unfairly precludes them from making capacity sales to non-CAISO entities in the rest of the Western Electricity Coordinating Council. Competitive Suppliers argue that rather than expanding the must-offer requirement, the CAISO should impose some form of resource adequacy requirement to create incentives for net purchasers to secure capacity well in advance of real time.

222. Some intervenors argue that the must-offer requirement and unit commitment process require generators to continue providing free capacity to the CAISO.[106] Reliant/Mirant argue that the proposal to obligate resources to schedule day-ahead and hour-ahead should include a corresponding financial obligation for the CAISO. Sempra argues that the CAISO should be required to pay for the "call" option. Reliant/Mirant suggests that the current must-offer requirement has undermined incentives for forward contracting and has allowed the CAISO to obtain free reserves.

223. The CPUC and SoCal Edison[107] support the CAISO's proposal to maintain the real-time must-offer obligation as a permanent element of its market design. The CPUC

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[104] Many intervenors highlight that the CAISO markets have been stable for some time. Reliant/Mirant points to the arguments being made by the IOUs and State agencies in the ongoing CPUC procurement proceeding that California is currently experiencing a "capacity glut." Based on that information, Reliant/Mirant contend that the conditions required for eliminating the real-time must-offer obligation have been met.

[105] EPSA, Competitive Suppliers, Dynegy/Williams and Reliant/Mirant.

[106] E.g., Reliant/Mirant.

[107] SoCal Edison conditionally supports continuation of the must-offer obligation so long as the Commission: approves the RUC process as proposed, the Commission

(continued…)

states that a must-offer requirement is a fundamental condition for a workably competitive market and must not be conditioned upon any sort of resource adequacy requirement or capacity market. In addition, the CPUC agrees with the CAISO's position that opportunities exist outside the energy market for generators to recover their costs.

CAISO Answer

224. The CAISO argues that the fact that market conditions have improved does not negate the need for the must-offer obligation, contending that system conditions can change rapidly in ways that create opportunities for the exercise of market power, and that rules to mitigate against physical withholding should be a permanent feature of the market, not a feature that comes and goes with changing market conditions. Again, the CAISO asserts that there is no valid reason for suppliers not to submit energy bids in real time if they have available energy and are fairly compensated because there is no other market in which they can sell the energy. The CAISO states that the must-offer obligation will be imposed in a manner consistent with generating units' limitations, subject to reporting requirements to ensure there is no physical withholding under the pretext of a use limitation.

225. The CAISO believes the real-time must-offer obligation is a market power mitigation tool necessary to deter physical withholding, and should be continued even after a resource adequacy obligation is imposed on LSEs. The CAISO disagrees that the must-offer obligation provides the CAISO with a free call option on capacity, arguing that an "option" contemplates that one party will make a payment to another party to hold something in reserve for such party, i.e., the second party cannot sell the "reserved" product to someone else. The CAISO states that is not how the must-offer obligation works. The CAISO also contends that resources subject to the must-offer obligation have no opportunity costs because, absent the CAISO's committing the unit, the unit would not be running and earning revenues through other sales. Moreover, the CAISO argues that once waiver of the must-offer obligation is granted, the unit owner can market the energy throughout the Western Electricity Coordinating Council because there is no obligation to serve only California load.

226. Moreover, the CAISO contends that the must-offer obligation guarantees compensation for all operating costs (start-up, minimum load and energy), and because the resource receives the market clearing price, rather than the as-bid price, there are ample opportunities for suppliers to recover fixed cost through the market. Further, the

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ensures continued treatment of energy-limited resources, and the must-offer obligation applies only to physical units and not contracts.

CAISO states that the must-offer obligation does not prevent resources from receiving more than their variable operating costs. Lastly, the CAISO notes that the Commission has found the must-offer pricing to be just and reasonable.

Commission Response

227. The CAISO proposes to retain the real-time must-offer obligation as a permanent feature of its Revised MD02 market design and to extend a must-offer obligation to the forward markets in order to maximize the number of resources available in the forward market. The CAISO market rules prohibit physical and economic withholding from energy markets,[108] and although a real-time must-offer obligation is one mechanism to address this problem, the CAISO's proposal to extend the must-offer obligation to the forward markets, coupled with its broad mitigation proposal and lack of a corresponding obligation on LSEs to acquire, in advance, adequate resources to serve their needs, does not strike an appropriate balance between obligations of suppliers and obligations of LSEs. Moreover, the Commission recently held in Midwest ISO that, absent a resource adequacy requirement, generators should not be required to bid into a day-ahead market. The Commission further found that "the imposition of economic withholding mitigation and penalties for physical withholding constitutes a must-offer obligation without a corresponding payment for capacity resources."[109] For these reasons, we reject the CAISO's proposal to extend the must-offer obligation into the forward markets. As an alternative, in an effort to balance those issues raised by intervenors and achieve the CAISO's goal to maximize the number of resources available to the CAISO in the forward market, we offer a blending of the real-time must-offer obligation with the proposed day-ahead must-offer obligation.

228. In this regard, the CAISO would modify its must-offer obligation proposal to give generators the choice to fulfill the must-offer obligation either in the day-ahead or real-time market (flexible-offer obligation). Allowing generators to choose the market in which to offer their capacity (i.e., in the day-ahead or real-time market) may provide an incentive for generators to participate in the day-ahead market.

229. A day-ahead must-offer obligation is similar to a call option on capacity, and the capacity payment functions as the premium payment for that call option.[110] Given the

[108] CAISO Tariff, Market Monitoring and Information Protocol. Section 2.1.1.

[109] See Midwest System Operator, Inc., 102 FERC ¶ 61,280, at P 96.

[110] In a recent decision, the Commission found that the MISO could not impose a day-ahead must-offer obligation without a corresponding capacity payment. Midwest

(continued…)

Commission-approved principle that generators are required to offer uncommitted capacity (i.e., generators are barred from physical withholding), the flexible-offer obligation we describe here provides generators a choice of when they prefer to meet that requirement. We believe this flexible-offer obligation removes the call option, thereby alleviating the need for a premium payment.

230. Generators who bid into the day-ahead market and the RUC, but whose bids are not accepted by the CAISO, will not be required to start up for the next day's real-time market. This obligation changes, however, if a generator elects to start up because it has, for example, another buyer for a portion of its capacity. If the generator is running and has uncommitted capacity available, the generator is then obligated to offer the uncommitted capacity it has not sold into other markets, into the CAISO's real-time market.[111]

231. Generators also have the option not to bid into the day-ahead market and RUC process. A generator may pursue opportunities through bilateral contracts or offer to sell into other markets. If the generator sells all of its output as a bilateral trade or in another market, then there is no further obligation on the part of the generator. However, if the generator chooses not to bid into the day-ahead market, the generator is subject to the must-offer obligation in real-time for any uncommitted capacity and energy. The Commission believes that, at this point, the generator should be indifferent to receiving marginal cost for uncommitted capacity in the real-time spot market.

232. We believe that the flexible-offer obligation: (1) ensures that a generator offers supplies into a market but provides greater flexibility for generators to offer supplies outside the CAISO's organized markets; (2) encourages (but does not require) generators to bid into the day-ahead market, thereby enabling the CAISO to select from the greatest number of resources to determine the least-cost dispatch; (3) effectively substitutes for the current real-time must-offer obligation process; and (4) effectively removes the call option associated with the extension of the must-offer obligation into the day-ahead must-offer obligation, thereby eliminating the need for a capacity payment. We recognize that the introduction of this flexible-offer obligation proposal will elicit response from the CAISO, market participants and customers, and we encourage further discussion among these groups of the benefits of this proposal.

Independent System Operator, 102 FERC ¶ 61,280 at P 96 (2003).

[111] This assumes that the generator has made the economic decision to run and therefore, its start-up and minimum-run cost are covered.

J. Market Power Mitigation

Background of Current Market Power Mitigation Elements

233. The CAISO's current market power mitigation elements were approved by the Commission on July 17, 2002, and implemented as "Phase 1A" on October 31, 2002.[112] Elements of the proposal included: (1) a must-offer obligation that required generators (located in California, including non-public utility sellers) to offer the CAISO all of their capacity in real time during all hours if it is available and not already scheduled to run through bilateral agreements;[113] (2) a bid cap of $250/MWh on energy and ancillary services[114] (3) automatic mitigation procedures that apply a price screen, a conduct test and a market impact test to each bid (System AMP);[115] (4) use of RMR contracts;[116] and (5) Local AMP which applies a market impact test to out-of-merit order bids.[117]

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[112] California Independent System Operator, 100 FERC ¶ 61,060 (2002); Order Granting in Part the Request for Extension of Time of the Sunset Date of the Existing California Energy Market Design, 100 FERC ¶ 61,351 (2002).

[113] Hydroelectric power is exempt from the must offer obligation. See 95 FERC ¶ 61,115 at 61,355-57 (2001).

[114] The $250/MWh bid cap was supported by the Market Surveillance Committee and was adopted by the Commission, despite the absence of a long-term adequacy requirement. July 17 Order at P 46.

[115] System AMP applies: (1) a price screen, where the price must exceed $91.87 before zonal mitigation occurs; (2) a conduct test, which examines whether the bid increases the zonal price by the lesser of 200 percent or $100, and (3) an impact test, which tests to examine if the bid increases the zonal price by the lesser of 200 percent or $50. Under System AMP, if a resource fails the conduct and impact tests, its bid is replaced with its reference price, typically the rolling average of accepted bids over the past 90 days. July 17 Order at P 67.

[116] Id. at P 89.

[117] If the bid is $50/MWh greater than the market clearing price or over 200 percent greater than the market clearing price, the bid is mitigated and the generator is paid the higher of the reference price or the market clearing price. July 17 Order at P 93, October 11 Rehearing at P 41 (2001).

Proposed Mitigation under Revised MD02 Proposal

234. In the Revised MD02 proposal, the CAISO proposes to retain the mitigation elements listed as 1-4 above, to expand the real-time must-offer obligation into the forward markets, and to replace the Local AMP with new local market power mitigation measures. The CAISO proposal therefore includes:

- Retention of the $250/MWh bid cap;
- Retention of the System AMP;
- Retention of the real-time must-offer obligation;
- Explanation of the expanded must-offer obligation to the forward markets (day-ahead, hour-ahead and RUC process);
- Replacement of the current local mitigation with a "PJM-style" cost capping measure, which mitigates to the incremental cost of the unit plus 10 percent; and
- Application of System AMP to imports.

235. The CAISO states that it will retain the $250/MWh bid cap "initially." It states it will apply the System AMP in the first run of its Integrated Forward Market software, and use the second software run to determine which units will be subject to its proposed new local market power mitigation.

236. The CAISO states that if it implements LMP, it is imperative that it have effective local market power mitigation measures in place. The CAISO argues that without effective local market power mitigation, suppliers located in transmission-constrained areas will be in a position to exercise locational market power and inflate nodal prices due to the lack of competitive alternatives. The CAISO states that its current protections against locational market power are wholly inadequate, inconsistent with protections approved by the Commission for other markets, and could result in unjust and unreasonable rates in a nodal market. For this reason, the CAISO seeks to replace the current local market power mitigation measures and explains the mechanics of its new local market power mitigation proposal as follows.

237. In order to determine RMR pre-dispatch levels and identify the units subject to local market power mitigation, the CAISO's proposed integrated forward market will perform two runs of the optimization software, which will be compared to determine when to mitigate for local market power, and will determine which resources will be subject to local market power mitigation. The first run will be based on the former zonal

model, which will take into account constraints between existing zones on the system.[118] The CAISO states that System AMP will be performed in the first optimization run. The second run will consider all network constraints in the full network model.[119] Local market power mitigation would apply to those resources which show an incremental dispatch level change from the first and second runs.

238. The CAISO proposes to apply what it calls a "PJM-style" cost-capping approach for mitigation of local market power. Under this cost-capping approach, if the CAISO must dispatch a generating unit as a direct result of congestion in the forward or real-time markets, as described above, the CAISO will dispatch the resource and determine locational marginal prices based on the resource's Default Energy Bid.[120] Under the proposed cost-capping mechanism, the incremental dispatch level would be automatically mitigated to the suppliers' Default Energy Bid.

239. In the event that the Commission does not approve its cost-capping mechanism, the CAISO proposes an alternative approach which would modify the CAISO's existing Local AMP by tightening the conduct threshold[121] and replacing the market-based reference price with the cost-based, Default Energy Bid. Using this alternative approach, the CAISO would examine whether any of the submitted bids violated a conduct threshold, and if so, the CAISO will apply a market impact test to determine whether the bids have a material impact on locational prices.[122] For the conduct test, the CAISO proposes that Local AMP bid reference levels be based on each unit's Default Energy Bids (i.e., cost-based bids) rather than the average of accepted bids which is currently

[118] The first run will consider only "competitive network constraints" (initially defined by the CAISO as Path 15, Path 26, and the inter-ties, plus local constraints out of local generation pockets).

[119] The CAISO will consider all transmission paths, other than those defined as "competitive" above, as non-competitive, but will periodically evaluate those paths based on a forward-looking assessment.

[120] Default Energy Bids for most thermal units will be cost-based bids equal to the incremental cost of the unit plus a ten percent adder.

[121] The CAISO proposes to tighten the Local AMP conduct threshold from the lower of 200 percent or $100/MWh above the unit's reference level, to the lower of 20 percent or $10/MWh.

[122] The applications of these tests are detailed in Attachment A to the Revised MD02 Proposal at Section 2.7 at P 137-138.

applied in System AMP. For the market impact test, if a mitigated run with all transmission constraints enforced would reduce nodal prices by more than the lower of $10/MWh or 20 percent, then the mitigated run would stand.[123]

240. The CAISO states that the substantially lower bid conduct and market impact thresholds for the alternative proposal are necessary because local market power can be exercised much more frequently than system-wide market power. According to the CAISO, these thresholds may be modified over time as the CAISO gains experience under LMP and may eventually transition to levels that are customized for particular aggregations of nodes (i.e., pre-defined load pockets) based on the frequency of congestion. The local market power mitigation procedures would apply to the day-ahead, hour-ahead and real-time (pre-dispatch) markets to reflect changes in system conditions.

241. The CAISO states that it will continue to enter into annual RMR contracts for units that are critical for reliability. According to the CAISO, the RMR contracts will work together with the local market power mitigation provisions. However, the CAISO states that there are units which are capable of exercising local market power under particular situations which are not designated as RMR units.[124]

242. As for ensuring that generators have the opportunity to recover adequate revenues to cover their fixed costs, the CAISO states that it recognizes that "revenue adequacy" concerns have been raised regarding their existing market and the proposed market re-design. The CAISO states that it agrees that in any market, there must be sufficient opportunities for suppliers to recover their costs, both fixed and variable. The CAISO asserts that its proposal will provide sufficient revenue opportunities to support fixed cost recovery, and asserts that:

- Spot market pricing mechanism will be more than sufficient to cover any resource's incremental costs;
- Resources will receive nodal market-clearing prices and are eligible to be compensated for their start-up, minimum-load and emissions costs;
- Suppliers participating in the ancillary services markets may submit market-based capacity bids and receive capacity payments;

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[123] Attachment A to the Revised MD02 Proposal at Section 2.7 at P 138.

[124] According to the CAISO, with the implementation of LMP it will be necessary to change the way RMR dispatches are scheduled and bid into the market. See Attachment A to the Revised MD02 Proposal at Section 2.2.6 P 143-146.

- Suppliers designated as RMR units are compensated under contracts which provide a portion of fixed costs; and
- Suppliers with long term power contracts with the State of California receive adequate capacity payments.

243. The CAISO points out that the majority of load in California is covered by long-term contracts that provide adequate capacity payments to suppliers. Moreover, the level of activity in the CAISO spot markets in 2002 has been one to three percent of the IOU's net short position. Therefore, the CAISO asserts that suppliers should not rely on a small CAISO spot market to recover large portions of their fixed costs. The CAISO states that the Revised MD02 proposal is designed explicitly to support this objective.

244. In addition, the CAISO asserts that its mitigation measures reasonably balance the need for effective mitigation of local market power with the cost-recovery concerns of those resources most likely to be mitigated under the proposal. The CAISO asserts that (1) the proposal allows mitigated resources to collect the market clearing price at their location, rather than being limited to collecting their mitigated bid price, and (2) the local market power mitigation proposal limits the circumstances under which such bids will be mitigated and the extent of such mitigation. Specifically, the CAISO's proposed local market power mitigation will mitigate only that portion of the bid curve dispatched to resolve congestion that cannot be resolved after the first pre-processing run. In addition, the CAISO asserts that its proposal provides additional provisions to ensure that mitigated resources are compensated fairly. For example, under the proposal, those resources that are frequently mitigated by the local market power mitigation mechanism may (1) request to be designated as a RMR generator (if qualified), or (2) file with the Commission for cost-based rates to ensure full recovery of costs.[125]

Comments on CAISO Selection of Various Mitigation Measures

245. Intervenors[126] state that the CAISO has "cherry-picked" mitigation measures from several approved forms of mitigation in the Eastern markets and intensified them for inclusion within its Revised MD02 proposal. Intervenors state that the Commission should reject the proposal and replace it with a new approach modeled after the ISO-NE mechanism based on a CT-proxy.

[125] The CAISO may consider, if the PJM cost-capping mechanism is approved, requests by generators for partial fixed cost recovery as a separate annual capacity uplift from the CAISO if the generators are frequently mitigated. Transmittal Letter at p 23, footnote 23..

[126] E.g., Dynegy/Williams.

246. Dynegy/Williams state that although the CAISO compares its proposals to the designs implemented by Eastern ISOs, these comparisons are incomplete and the CAISO has not adopted features that provide for robust competition, attract new investment and ensure reliability. For example, Dynegy/Williams state that although the CAISO will point to market mitigation measures in place in PJM or NYISO, neither of these has a must-offer requirement like that currently in place in California. Furthermore, the CAISO can propose a reliability commitment run in the day-ahead market but the CAISO does not offer to pay anything for available capacity as is the case in New York, PJM or New England. Dynegy/Williams state further that the CAISO has failed to show why suppliers on its grid should be subjected to the highest degree of mitigation imposed on any market in North America. Dynegy/Williams claim that the CAISO is cherry-picking when it requests "PJM style" mitigation: PJM has a capacity market, a $1,000/MWh bid cap and financial CRRs without priority, but it has no must-offer requirement. According to Dynegy/Williams, the PJM market, overall, has market features that provide a very different, more balanced risk-reward profile to its suppliers.

Comments on Retention of the $250 Bid Cap

247. The CPUC supports the proposal to limit nodal prices to $250/MWh because it will help to allay concerns regarding implementation of an LMP-based system in California. However, the CPUC notes that the CAISO continues to refer to the potential for an uplift charge in the event that setting an LMP price to $250 results in a revenue shortfall. The CPUC requests clarification that the CAISO has proposed, and FERC will accept, a mechanism which limits nodal prices—not just bids, payments, or charges—to $250/MWh.

248. Sempra states that the CAISO proposes to retain its current system-wide $250/MWh bid cap that was instituted during the California crisis and argues that the cap will prevent the owners of energy-limited resources, like hydro, from bidding their opportunity costs. In addition, Sempra contends the current cap is unnecessary because LSEs now have authority to manage the risk of volatile spot prices by compiling a portfolio of long and intermediate term contracts like their Eastern counterparts. Sempra believes the CAISO should function under a $1000/MWh damage control cap, similar to the Eastern ISOs.

249. SoCal Edison asserts that while it supports the continuation of a "soft" Damage Control Bid Cap of $250/MWh for energy with a lower limit of $-30/MWh, it opposes the proposed ancillary services capacity cap of $250/MWh as insufficient, since it would allow sellers to bid $250/MWh continuously regardless of the underlying economics of the unit. SoCal Edison alleges that ancillary services bids in the past were excessive under similar caps, and as such are not currently being investigated in the refund proceeding before the Commission.

Comments on Retention of System AMP

250. Sempra argues in favor of standardizing the CAISO's System AMP proposal to follow the NYISO threshold and conduct screens, or vice versa. Sempra states that the Commission must make reasoned decisions in balancing the need for accurate prices that support efficient electricity markets and preventing suppliers from exercising market power that could inflate prices beyond the statutory just and reasonable zone. Sempra believes that the NYISO AMP better balances the tension between accurate pricing and mitigation of market power and therefore, urges the Commission to conform the CAISO AMP proposal to the NYISO standard once the MD02 tariff becomes effective.

251. SVP states that System AMP, in combination with LMP, may cause energy providers to raise their bids to drive up LMPs and offset the effects of mitigation. SVP is also concerned that the CAISO has not indicated how it will estimate the cost of generating units that will form the mitigated bids. It provides no assurance that the generating unit owner will be able to recover its costs if they are higher than the CAISO's estimate. The CAISO's approach to mitigating prices, with its dependence on unverified and hypothetical fuel prices, is certain to ensure that full costs will not be recovered by some generators, even adding on the 10 percent premium. The CAISO must be required to adhere to standard principles of cost measurement if generators are to be assured of recovering their costs.

252. SVP further notes that the CAISO's statements are not only an admission, but a rather precise description of the mechanics, of how the System AMP and similar mitigation processes induce suppliers to adopt bidding strategies that raise their reference points with respect to pricing. The CAISO then dismisses their concerns, even though it provides no assurance that the so-called "conduct test" will actually detect or deter this behavior. SVP fears that other entities might resort to this bid-raising behavior as their response to the uncertainties and risks introduced through a mitigated LMP pricing regime.

Comments on Local Market Power Mitigation

253. Sempra argues that the Commission should reject the CAISO's local market power mitigation proposal and adopt what the Commission believes to be the "best practices" solution. Sempra states that the CAISO should be directed to file a new local market power mitigation proposal, to become effective concurrently with the new MD02 market design. The proposal should explicitly evaluate the reasons and benefits that have prompted PJM and ISO-NE to propose measures designed to avoid suppressing scarcity effects out of load-pocket prices.

254. Reliant/Mirant contend that the CAISO's proposed methodology to screen for local market power is not only unnecessarily complicated, but it is also unjust and unreasonable. Reliant/Mirant state that the Commission has previously determined that the CAISO's inter-zonal and intra-zonal congestion management scheme is fundamentally flawed.[127] Yet, the CAISO's local market power mitigation proposal relies on the concept of competitive constraints and non-competitive constraints based on the old, flawed congestion model. They further state the CAISO identifies the competitive network constraints as today's inter-zonal transmission constraints, in addition to pre-designated competitive constraints in local transmission pockets. But it is clear that competitive and non-competitive constraints merely perpetuate the inter-zonal and intra-zonal transmission dichotomy that the Commission has found to be fundamentally flawed.

255. Dynegy/Williams also strongly protest the CAISO's proposed definition of "non-competitive" paths to be used in the CAISO's pre-processing runs to determine which resources are subject to local market power mitigation. They assert that the CAISO proposes to deem all paths within the existing zones to be non-competitive, except for ill-defined "local transmission constraints in predesignated local generation pockets." Dynegy/Williams submit that the Commission has been careful not to define such constrained areas broadly.[128] At a minimum, the Commission must reject as incomplete the CAISO's definition of "non-competitive paths" and require the CAISO to file a straightforward methodology for determining which areas on the grid should be subject to local market power mitigation.

256. Duke Energy states that the CAISO has failed to demonstrate any changed circumstances that warrant reconsideration of the Commission's decision in the July 17, 2002 Order that a local market power mitigation scheme based on PJM is not just and

[127] California Independent System Operator Corporation 90 FERC ¶ 61,006 at 61,013-14 (2000).

[128] The Commission previously concluded that the proposal set forth by the MISO contained an overly broad definition of narrowly constrained area (NCAs) which could inappropriately designate some areas as NCAs. Therefore, the Commission directed the MISO to modify its definition. See Midwest Independent System Operator, 102 FERC ¶ 61,280 at 61,887 (2003).

reasonable. Furthermore, PJM is reconsidering the use of this approach because, in part, it does not allow scarcity to be reflected in spot prices.[129]

257. CERS states that while improved local market power mitigation measures are needed, the cost of any inefficiencies or uplifts occurring because of the weaknesses of the current measure to mitigate exercise of locational market power need to be weighed against the impacts due to the incompatibility of LMP with existing bilateral contracts. Premature implementation of LMP may result in greater harm than that caused by the existing inadequate local market power mitigation measures.

258. San Francisco supports the CAISO's statements that it is imperative for effective local market power mitigation to be in place when LMP is implemented. San Francisco also generally agrees that when mitigation is enforced a generator with market power should earn revenues for its dispatch on a resource-specific cost-of-service basis—that is, based upon a marginal cost proxy for a true competitive bid. San Francisco argues that since local market power mitigation is triggered when market conditions do not provide a competitive solution to price setting, cost-based revenue recovery becomes the appropriate compensation level to generators. San Francisco further states that if a generator is mitigated frequently and thereby faces the threat of uneconomic operation, and such a generator is needed to support reliability of the grid, then the CAISO should appropriately identify such unit as a RMR unit.

259. San Francisco urges the Commission to impose a requirement that any adopted local market power mitigation mechanism mitigate pivotal generators to their unit specific cost-based proxy bid and limit their recovery to exactly that amount. San Francisco argues that despite stating a preference for "separate fixed cost uplifts on a case-by-case basis instead of allowing mitigated bids to include generic bid adders for fixed cost recovery," the CAISO proposes that the default bid imposed as a proxy include a 10 percent adder. San Francisco states that the CAISO fails to justify the 10 percent adder, and asserts that the 10 percent cannot be justified as recovery of a generator's fixed costs, because the CAISO has clearly stated that such a recovery is not justifiable. San Francisco states that, as with all administratively set cost of service ratemaking, a mitigated bid should be set at the level of expected bidding if competitive conditions existed, in other words, through marginal cost pricing.

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[129] See Reliant Energy Mid-Atlantic Power Holdings, L.L.C. v. PJM Interconnection, L.L.C., 104 FERC ¶61,040 (2003) where the Commission directed PJM to reexamine its local market power mitigation approach.

260. The CPUC and San Francisco support the implementation of a local market power mitigation mechanism based on the model granted to PJM. PJM has a market power mitigation mechanism that allows it to effectively mitigate the market power of a unit that is needed for reliability but is not in the merit order. According to the CPUC, the PJM mechanism appears to be an effective and simple method for mitigating local market power. The CAISO states that suppliers in the CAISO markets will have ample opportunities to recover their annual revenue requirements and should not look to the spot market for recovery of fixed costs. The CPUC agrees stating that the spot market is a balancing market to reliability operate the electric system and to reflect spot prices in a transparent manner.

261. The CEOB states that approval of local market power mitigation provisions equivalent to or more rigorous than the CAISO's preferred "PJM-style" approach are necessary.

262. While the CPUC supports the CAISO's local market power mitigation proposal, it notes that it varies in certain respects from the adopted PJM local market power mitigation mechanism in ways that bear monitoring, including that it may be more generous to suppliers, more complex to use, and susceptible to gaming. The CPUC states that should these variations prove problematic, both the CAISO and the Commission should consider conforming the CAISO approach to that approved for PJM. The CPUC suggests that rather than using the submitted demand and supply schedules to determine if a unit is out of merit order; it should use the CAISO's load forecast. The use of a potentially higher forecast could result in higher bid units being in merit order and not identified as having local market power. By using submitted load and bid schedules, the local market power mitigation mechanism would cast a broader net, and better assure comprehensive mitigation of units with local market power.

263. The CPUC states that under the proposed method, the CAISO will perform the pre-processing run to identify units with local market power by using a Full Network Model assuming certain transmission paths are competitive. However, although the modeled paths are competitive based on a longer-term (e.g. annual) forecast of supply and demand, these conditions may change enough to enable exercise of market power. Using the simpler PJM method of performing this run at the zonal level could avoid this problem.[130] If some units are not in merit order in the zonal run but are needed for reliability, they should be flagged as having local market power and, like PJM, their entire bid curve should be mitigated.

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[130] The CPUC states that because the CAISO will initially deem inter-zonal paths to be competitive, the initial run will be made on a zonal basis.

264. Dynegy/Williams and Reliant/Mirant argue that the Commission should reject the CAISO's alternative local market power mitigation proposal to tighten the current Local AMP thresholds. Reliant/Mirant argue that (1) the CAISO has failed to demonstrate that the existing mitigation measures are inadequate, and (2) this level of mitigation will ensure that the fixed costs of generators cannot be recovered, eliminate existing generators from the market, and discourage new generators from entering the market. According to Dynegy/Williams, many of the CAISO's arguments for changing thresholds emphasize the need for tighter thresholds in an LMP environment, yet the CAISO's LMP study is not complete and implementation is years away. Thus, there is no reason to grant increased mitigation authority at this time.

265. San Francisco states that it might support the alternate proposal if it were more clearly described and supported with examples demonstrating the results of each AMP mechanism considered.

266. Reliant/Mirant state that the CAISO's assessment of revenue adequacy under the proposed MD02 market design is misleading. The CAISO's claim regarding the recovery of incremental costs in no way supports its basic contention regarding revenue adequacy. Reliant/Mirant contend that while the CAISO is correct in its contention that ancillary services markets provide an opportunity for recovery of fixed costs, the magnitude of the opportunity is relatively small. Further, the CAISO is correct in stating that RMR contracts are a potential source of fixed cost recovery, however, it fails to acknowledge that it has significantly reduced the number of units under RMR contracts. Reliant/Mirant also state that the existence of the CDWR contracts in no way supports the CAISO's claim regarding revenue adequacy because a substantial portion of the peak load and reserve requirements continue to be met through uncommitted generation that is made available to the CAISO through the must offer waiver process. Reliant/Mirant state that the CAISO's RUC process provides the CAISO with a daily call option on reserve capacity. The CAISO has no requirement to compensate the generator for making itself available; and therefore no ability for revenue adequacy exists.

267. Reliant/Mirant add that the local market power mitigation measure is problematic because the CAISO will not permit any opportunity for recovery of fixed costs. The Commission should reject the CAISO's argument that a generator does not need an opportunity to recover fixed costs from spot energy markets, which is based solely on present circumstances such as contracts entered into by the state and the load serving entities' pursuit of additional contracts. Reliant/Mirant state that the CAISO points to long-term contracts to support its argument, but ignores the fact that an additional 8,000 to 14,000 MW of uncommitted generation must recover fixed costs pursuant to some form of resources adequacy program or potentially shut down. If the local market power mitigation measure is implemented, purchasers will have no incentive to enter into long-

term contracts. Instead load serving entities will choose to purchase in the spot market at mitigated prices, which will not send the correct signal to new generation.

CAISO Answer

268. In its answer, the CAISO contends that its local market power mitigation measures are reasonable. The CAISO argues that Duke Energy's allegation that the CAISO has failed to demonstrate changed circumstances that warrant reconsideration of a previously rejected local market power mitigation measure is unjustified.[131] The CAISO contends that Duke Energy is seeking to apply an inappropriate legal standard. In its answer, the CAISO asserts that under Section 205 of the Federal Power Act, the CAISO is only required to demonstrate that its proposed local market power mitigation measures are just and reasonable. Notwithstanding, the CAISO states that there are changed circumstances since the July 17 Order that support Commission approval of the CAISO's local market power mitigation proposal.

269. With regard to Dynegy/Williams' argument that PJM-style local market power mitigation measures are inappropriate in California because the CAISO does not have a capacity market and has a lower bid cap than PJM, the CAISO contends that their arguments are without merit. In its answer, the CAISO asserts that the Commission did not base its approval of PJM's local market power mitigation measures on the fact that PJM had a $1,000/MWh bid cap and a capacity market.[132] As a result, the CAISO states that the Commission cannot now base its approval or disapproval of the CAISO's proposed local market power mitigation measures on the level of the CAISO's bid cap or whether the CAISO has a capacity market. These factors are unrelated to a determination of whether the CAISO's proposed local market power mitigation measures are just and reasonable. The CAISO believes that decision should be based on whether the proposed measures will effectively protect consumers against the exercise of local market power, while providing generators with adequate revenues for the particular service they are providing.

270. With respect to intervenors' allegations that cost-based proxy pricing is inappropriate, the CAISO disagrees. In its answer, the CAISO contends that its proposed

[131] Duke claims the Commission rejected the CAISO's proposed local market power mitigation measures that are similar to the local market power mitigation measures that the CAISO has proposed in its July 22 Filing. See July 17 Order at 61,247.

[132] See PJM Interconnection, LLC, 96 FERC ¶ 61,233 (2001); Atlantic City Electric Company, 86 FERC ¶ 61,233 (1999).

local market power mitigation measures will provide adequate revenues to suppliers under circumstances where prices must be mitigated in order to protect against the exercise of local market power. In that regard, both the "primary" and "alternative" local market power mitigation measures provide an adder to ensure the bid mitigation adequately covers a supplier's marginal operating costs. Moreover, the CAISO states that it is important to note that units will be mitigated only for the positive incremental dispatch associated with relieving congestion on the non-competitive constraint, and only to the extent that their incremental bids exceed the highest bid dispatched in the prior integrated forward market run in which only competitive constraints are enforced.[133] It further states in its answer that, to the extent there is insufficient supply to serve load in a constrained area, the pricing rules under MD02 will set the market clearing price equal to the bid cap. Thus, the Revised MD02 proposal does provide for pricing that will reflect true scarcity conditions.

271. In response to intervenors' suggestions that the Commission should approve a CT proxy approach similar to ISO-NE for purposes of mitigation of local market power, the CAISO argues that the Commission should not approve this approach for the following reasons. First, the CAISO notes that the Commission has eliminated the CT Proxy mechanism that it initially approved for ISO-NE.[134] According to the CAISO, the Commission found that such a mechanism was inappropriate because it permitted other generators (i.e., non-peaking units) to bid up to the CT proxy level.[135] For the same reasons, the Commission should not adopt a CT Proxy mechanism in California. Second, the CAISO asserts that intervenors fail to note that the Commission has approved two tiers of local market power mitigation for ISO-NE.[136] Third, the Market Surveillance

[133] In addition, the CAISO specifies that mitigated units are not precluded from earning the locational marginal price. Thus, to the extent units are infra-marginal, there will be opportunities for additional fixed cost recovery, even during mitigated periods. Moreover, resources will be able to earn revenues in excess of variable costs when prices are set by non-mitigated bids during unconstrained periods.

[134] See Devon Power, L.L.C., 103 FERC ¶ 61,082 (2003), order on reh'g, 104 FERC ¶ 61,123 (2003).

[135] In addition, the Commission found that this was unnecessary and could allow generators to exercise market power.

[136] See New England Power Pool, 100 FERC ¶ 61,287, at 62,265 (2002).

Committee strongly opposes implementation of any CT proxy mechanism.[137] In its answer, the CAISO states that the Market Surveillance Committee believes no CT proxy bid would be equal to what the unit owner would receive in a competitive market. Therefore, allowing such a regulated bid to set the price can result in distorted price signals at the unit's location.[138]

272. In its answer, the CAISO contends that Dynegy/Williams provided no support to suggest that the paths in the list of "non-competitive paths" are not load pockets to which local market power mitigation should apply. The CAISO believes the list of "non-competitive paths" is just and reasonable. The CAISO argues that until LMP is implemented and a historical record is built on the prices and degree of competition across congestion paths, a prudent approach is to assume initially that competitive paths are only those paths for which the ISO has experience to demonstrate they are workably competitive. The CAISO believes that intervenors misunderstand the CAISO's proposal.

273. The CAISO is not proposing to mitigate every bid on every path that the CAISO has initially deemed to be "non-competitive." The CAISO states that the first step for determining which resources might potentially be subject to local market power mitigation is to identify transmission paths where congestion typically can be resolved competitively. The CAISO will not seek to apply local market power mitigation on these paths. The CAISO will only seek to apply local market power mitigation on paths that are deemed to be "non-competitive." Thus, the "competitive" versus "non-competitive path" designation is intended solely as a "screen" to specify the paths on which bids might be subject to local market power mitigation. Similarly, the CAISO will only seek to apply local market power mitigation on "non-competitive" paths.

Commission Response

274. The Commission believes that the various elements of a regional market should work well together to produce an efficient, well-functioning wholesale market for the benefit of customers over the long term. There are important inter-relationships among such wholesale market elements as the energy market design, the system for congestion

[137] CAISO July 22 filing at Attachment D, "Market Surveillance Committee Opinion on Local Market Power Mitigation."

[138] In its filing, the CAISO notes that it is willing to consider the possibility of offering annual capacity contracts to any non-RMR unit that is frequently mitigated under the local market power mitigation provisions subject to an assessment of the unit's revenue sources and subject to coordination with the state resource adequacy plan.

management, resource adequacy provisions, and means for mitigating market power. Achieving an appropriate balance among these factors is critical to a well-functioning wholesale market. As part of this balance, market power mitigation should address market power concerns without undermining incentives for new entry and long-term resource adequacy.[139] And, as we have previously observed, the "resource adequacy measures adopted by the region must work together with the region's market power mitigation measures to ensure that there are appropriate incentives to invest in sufficient infrastructure to maintain reliable and reasonably priced service to customers in the region."[140]

275. In light of the substantial concerns raised by the commenters, we are not certain that the CAISO's mitigation proposal will achieve an appropriate balance with other market design elements. We believe that the best course of action is to provide a forum for further discussion of these inter-related market elements. The Commission will set these issues for discussion in a Staff-led technical conference to build upon discussions at the Commission's White Paper technical conference scheduled for November 6, 2003 in San Francisco. The goal of the technical conference will be to determine a set of market power mitigation measures that fit together with the other aspects of the CAISO market design. In addition to mitigation proposals by both the CAISO and others, the conference will also take into consideration the State of California's resource adequacy framework as contained in the CPUC's forthcoming final order.[141] The date for the conference will be determined in a future Commission notice. The Commission reassures parties of its commitment to development of appropriate market power mitigation measures that will prevent the exercise of market power as the market design goes forward.

K. Other Issues

(1) Disposition of Tariff Sheets

276. The CAISO's original MD02 filing of May 2002 included a conceptual description of Phases 2 and 3. The related tariff sheets were filed by the CAISO on

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[139] See California Independent System Operator, 100 FERC ¶ 61,060 at P 44.

[140] See Appendix A to the Commission's White Paper at 18.

[141] Public Utilities Commission of the State of California, Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development, Docket # R. 01-10-024.

June 17 and 28, 2002. Because this Revised MD02 proposal presents an evolution of the original proposal, the CAISO requests permission to withdraw the previously filed tariff sheets. The Commission will grant CAISO's request, and hereby officially closes the related sub-dockets, ER02-1656-003 and ER02-1656-004.

(2) Mirant Temporary Restraining Order

277. On September 12, 2003, the Bankruptcy Court for the Northern District of Texas issued a "Temporary Restraining Order Against the Federal Energy Regulatory Commission" ("TRO") in In re Mirant Corp. (Mirant Corp. v. FERC), Adversary Proceeding No. 03-4355, which enjoins the Commission "from taking any action, directly or indirectly, to require or coerce the [Mirant] Debtors to abide by the terms of any Wholesale Contract [to which a Mirant Debtor is a party] which Debtors are substantially performing or which Debtors are not performing pursuant to an order of the Court unless FERC shall have provided the Debtors with ten (10) days' written notice setting forth in detail the action which FERC seeks to take with respect to any Wholesale Contract which is the subject of this paragraph."

278. Should the TRO be converted into a preliminary injunction, an action that the Commission opposes, the Commission will appeal that order. Despite the Commission's disagreement with the validity of the TRO and its expectation that the TRO (or a preliminary injunction) will be vacated on appeal, the Commission must comply with it until vacated. The TRO requires ten days' written notice before the Commission takes a proscribed action with respect to a covered Mirant Wholesale Contract. Accordingly, to the extent that this Order requires Mirant to act in a manner proscribed by the TRO, the Order will provide written notice to Mirant of the action that FERC will take with respect to a covered Mirant Wholesale Contract, which action will not become effective until ten (10) days after issuance of this Order. In all other respects, this Order is effective immediately.

The Commission orders:

(A) Approval in principle is hereby granted for certain elements of the CAISO's Revised Comprehensive Market Design proposal; modification of certain elements of the proposal are directed, guidance is provided and clarification is sought on other elements; and certain elements of the proposal are set for a Staff-led technical conference, as discussed in the body of this order.

(B) The CAISO is directed to file information updates, as discussed in the body of this order.

(C) This order is advisory in nature and, since it provides guidance only, is not subject to rehearing, as discussed in the body of this order.

By the Commission. Chairman Wood concurring with a separate statement attached.

(S E A L)

Magalie R. Salas,
Secretary.

ATTACHMENT

Motions to Intervene

Automated Power Exchange (APX)

Motions to Intervene with Protests, and/or Comments

Bay Area Municipal Transmission Group (Bay Municipals)
Bonneville Power Administration, Avista Corporation, Idaho Power Corporation, Nevada Power Company, Northwestern Energy, Pacificorp, Portland General Electric Company, Puget Sound Energy, Inc., and Sierra Pacific Company (RTO West Filing Utilities)
California Department of Water Resources
California Electricity Oversight Board (CEOB)
California Energy Resources Scheduling Division of the California Department of Water Resources (CERS)
California Municipal Utilities Association (CMUA)
California Public Utilities Commission (CPUC)
Californians for Renewable Energy (CARE)
Cities of Anaheim, Azusa, Banning, Colton and Riverside (Southern Cities)
City and County of San Francisco (San Francisco)
City of Redding, California (Redding)
City of Roseville (Roseville)
City of Santa Clara, California and Silicon Valley Power (SVP)
Duke Energy North America, LLC and Duke Energy Trading and Marketing, LLC. (Duke Energy)
Dynegy Power Marketing, Inc., El Segundo Power LLC, Long Beach Generation LLC, Cabrillo Power I LLC, Cabrillo Power II LLC and Williams Energy Marketing & Trading Company (Dynegy/Williams)
Electric Power Supply Association (EPSA)
Energia Axteca X, S de R.L. de C.V., Energia de Baja California, S. de R.L. de C.V., and Wildflower Energy, LP (Intergen Projects)
FPL Energy, LLC and American Wind Energy Association (FPL/AWEA)
Independent Energy Producers Association and Western Power Trading Forum (Competitive Suppliers)
Los Angeles Department of Water and Power (LADWP)
Metropolitan Water District of Southern California (Metropolitan)
Morgan Stanley Capital Group Inc. (Morgan Stanley)

Modesto Irrigation District (Modesto)
Northern California Power Agency (NCPA)
Pacific Gas & Electric Company (PG&E)
Regional Public Power Entities (Regional Public Power Entities)
Reliant Energy Services, Inc., and Reliant Energy Power Generation, Inc., Mirant Americas Energy Marketing, LP, Mirant California, LLC, Mirant Delta, LLC, and Mirant Potrero, LLC (Reliant/Mirant)
Sacramento Municipal Utility District (SMUD)
Sempra Energy (Sempra)
Southern California Edison Company (SoCal Edison)
State Water Project of the California Department of Water Resources (California SWP)
Strategic Energy LLC (Strategic)
Transmission Agency of Northern California (TANC)

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation Docket Nos. ER02-1656-003
ER02-1656-004
ER02-1656-015
EL01-68-028

(Issued October 28, 2003)

WOOD, Chairman, concurring:

I would like to add some thoughts on local market power mitigation. Local market power mitigation was one of the key issues on which the California ISO requested approval in this order and I would like to address that issue with some more specificity.

One improvement in our agency's operations since 2001 is much closer coordination between FERC and the California ISO market monitor. We have regularly-scheduled conference calls, we have staff permanently located at the ISO in Folsom, and we have periodic reports from the monitor at Commission Open Meetings.[142] Through these interactions, I have come to appreciate the need for better local market power mitigation in California's market.

This order articulates FERC's responsibility to review the package of market design elements to ensure that they lead to prices that attract and retain needed investment, but are not excessive. Resource adequacy and market power mitigation mechanisms in particular must fit together to this end. In Eastern markets, the must-offer obligation is viewed as a contractual obligation on those suppliers who have sold capacity into the installed capacity market. Thus, must-offer obligations and resource adequacy mechanisms are tied together. In the Midwest, the RTO proposed a $5000/MWh bid cap, higher than the $1000/MWh caps in the Northeast, because of a lack of a resource adequacy mechanism. There are economic studies indicating the level of energy bid caps that would be required to replicate the same level of cost recovery and same net bill to customers as a market with capacity obligations and $1000/MWh caps. Thus, the resource adequacy mechanism and the safety net cap are also directly linked. To ensure that such linked elements fit together thoughtfully, I support the technical conference proposed in this order.

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[142] See http://www.ferc.gov/EventCalendar/Files/20030814145342-043003.pdf http://www.ferc.gov/EventCalendar/Files/20030814145210-A-3_anjali_sheffrin.pdf (Sheffrin presentation).

At the same time, I think we should endeavor to resolve as many issues as possible to quickly solve problems still plaguing the California market. The California ISO State of the Market report identified a handful of issues that require attention. One problem, the potential loss of imports due to the rule requiring $0/MWh bids, was discussed at the April 30, 2003 Commission meeting with the market monitor and resolved shortly thereafter. Other issues, such as the inefficient unit commitment process through must-offer waivers, will be addressed by MD02 as soon as it can be implemented. Another outstanding issue is intra-zonal congestion, which is raising costs to customers and is projected to increase significantly as new generation comes on line. There is a lack of a forward market mechanism to address congestion outside of real time. The MD02 proposal, by not accepting infeasible schedules and more efficiently and reliably managing congestion through real-time and day-ahead markets with locational marginal prices, will improve this problem considerably. However, part of the problem is inadequate local market power mitigation.

Local market power in California is currently addressed through RMR contracts and by allowing incremental bids to have a $50/MWh maximum allowed deviation from the default level, and decremental bids to have a $30/MWh threshold. Local market power can be recurring and predictable by the supplier. When these suppliers are pivotal, the markets are not sufficiently structurally competitive to discipline such bids, and excessive bidding flexibility can lead to inflated costs that add up over time and are socialized and paid by all customers.

One solution proposed by the California ISO to improve local market power mitigation is to narrow these "guard rails," or bid thresholds. That would be consistent with the New York ISO market, where the highly constrained and concentrated New York City area is addressed quite satisfactorily through narrow bidding thresholds. I would be comfortable accepting this option for California. When we encouraged California to use "AMP," or the conduct and impact method for local market power mitigation, we intended it to use narrow guard rails for persistent congested areas.

The California ISO's preferred option is "PJM-style" local market power mitigation. Under this approach, the ISO would "cost-cap" units that are dispatched out-of-merit-order due to congestion within one of the zones (e.g. NP-15). My understanding is that this procedure would be well-defined operationally such that there would be limited discretion on the part of the ISO. I would be comfortable accepting this approach as well. Cost-capping in PJM has not provided an incentive for entry, however, in load pockets. Thus, there must be some other mechanism to address long term solutions. I do not necessarily see a need for *both* the New York ISO-style and PJM-style procedures. I would encourage participants in the technical conference to choose which model is most appropriate.

Generally I believe power markets only require market power mitigation where

there are well-defined structural flaws significantly limiting competition. For example, when there is no congestion and hundreds of suppliers are competing across multiple states, it is difficult to imagine prices being raised above competitive levels by any one supplier for any significant period of time. I also believe that markets will become structurally more competitive over time, allowing for the reduction of market power mitigation tools such as those discussed here.

Sufficient infrastructure can have a significant impact on structural competitiveness. The California ISO State of the Market report noted that there were pivotal suppliers (a company whose supply must be taken by the market and which is, therefore, able to affect prices) in 30 percent of the hours during the 2000-2001 energy crisis. But after the entry of over 5,000 MW of new generation and more supply available from outside the state, there were pivotal suppliers in less than one percent of the hours in 2002. [143] Structural competitiveness is also increasing in the New England market, where market concentration has dropped significantly due to new entry and diverse ownership. The need for mitigation there has dropped accordingly. Thus, I believe tailoring market power mitigation directly to well-defined structural characteristics of the market will protect customers in the transition and avoid the many unintended investment consequences of overly aggressive intervention.

In the case of local market power, there are well-defined structural characteristics requiring market power mitigation. Suppliers in load pockets can be pivotal often and in a predictable fashion. Quite often, an individual unit must be run and would be paid whatever it is allowed to bid. In many other cases, a number of units in an electrically isolated area owned by one or two pivotal suppliers are protected from sufficient competitive discipline. I believe local market power mitigation clearly qualifies as a structural infirmity requiring intervention. Therefore I do not see any problem accepting a local market power mitigation component of the MD02 market re-design. I look forward to the development of appropriate measures to address local market power mitigation through the technical conference.

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Pat Wood, III
Chairman

[143] Id. Sheffrin Presentation.