

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**Electricity Market Design and
Structure**

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Docket No. RM01-12-000

**Comments of the California Independent System Operator Corporation on
the Federal Energy Regulatory Commission's Working Paper on
Standardized Transmission Service and Wholesale Electric Market Design**

The California Independent System Operator Corporation ("ISO") appreciates the opportunity to provide comments on the Federal Energy Regulatory Commission's ("Commission") "Working Paper on Standardized Transmission Service and Wholesale Electric Market Design" ("Working Paper") issued on March 15, 2002 in the above-referenced docket. The ISO is committed to working with the Commission and other interested parties to develop a workable open access transmission tariff and standardized wholesale market design. Most importantly, the ISO supports the Commission's objective of developing and articulating to the industry the policy framework necessary to allow the Commission and all parties to develop the details of a standardized wholesale market design.

The ISO shares the goals enunciated by the Commission in the Working Paper. Specifically, the ISO supports the Commission's goals to provide more choices and improved services to all wholesale market participants; to reduce delivered wholesale electricity prices through lower transaction costs and wider trade opportunities; to improve reliability through better grid operations and expedited infrastructure improvements; and to increase certainty about market

rules and cost recovery for greater confidence to facilitate much-needed investments in the electric industry. The ISO also agrees that a key challenge faced by the Commission and all participants is that of balancing the need for standardization with the need to permit regional differences and market innovation. As the ISO has stated throughout this proceeding, the Commission should permit, to the maximum extent possible, necessary variations from its standard model; variations that reflect legitimate regional circumstances and a workable market design for the respective market participants.

In its comments below, the ISO comments on each of the specific issues discussed in the Working Paper. Wherever possible, the ISO comments use the same terminology as used in the Working Paper but the ISO notes that definitions are not standardized and parties may ascribe different meanings to the same term or word. The ISO urges the Commission to set forth clear definitions of concepts and terms commonly used in market design.

The Need For A Single Transmission Tariff

The Working Paper contemplates the development of a new form of transmission service; a service that would build upon the services provided under the Commission's *pro forma* Open Access Transmission Tariff ("OATT") and would ensure open and non-discriminatory access to the transmission system. As stated in the Working Paper (Working Paper at 2), the Commission is concerned that the existing OATT, operating in conjunction with established market rules, allows energy suppliers that also provide transmission service to favor their own generation and disadvantage other suppliers. The Commission

states that in areas of the country without centralized markets for energy and ancillary services, bilateral transactions are being curtailed under transmission loading relief (TLR) mechanisms that rely on non-price mechanisms (Working Paper at 2). The Commission states that in such cases, transmission is not being allocated to market participants that value the available transmission the most and that flawed market rules have resulted in the socialization of transmission congestion costs, thus obscuring price signals for new generation, demand response and new transmission.

ISO Response

First, the CA ISO supports the Commission's intention to create a new form of transmission service, a service that provides comparable service to all transmission users and ensures efficient use of the transmission system. As the Commission is aware, the ISO, since 1998, has provided a very flexible form of network service: a form of service consistent with the Network Access Service outlined in the Working Paper. Moreover, the ISO has offered tradable firm transmission rights ("FTRs") to complement that service. Thus, the ISO believes that it already provides a form of transmission service that ensures non-discriminatory service to all customers.

In addition, the ISO fully supports and endorses the guiding principles outlined by the Commission. As the Commission is aware, the ISO is in the midst of a market redesign effort ("Market Design 2002" or "MD02").¹ As outlined

¹ Documents related to the ISO's MD02 effort can be found at <http://www.caiso.com/docs/09003a6080/15/99/09003a6080159970.pdf>

in the ISO's draft MD02 proposal, the ISO has identified, in substance, similar principles to guide its own market design initiative. Specifically, the ISO's MD02 proposal identifies the following principles; principles that are guiding the ISO in shaping its final proposal:

- a) improve upon the ISO's performance of its core functions, particularly the provision of non-discriminatory transmission service and reliable operation of the grid;
- b) identify and address the root causes of problems; in particular, provide incentives and means for buyers to limit their exposure to volatile spot prices and for suppliers to fully offer all available capacity to the market;
- c) ensure that forward market price signals, incentives, and transmission allocation rules are consistent with and support real-time operating needs;
- d) design for flexibility and open architecture so the market design and the implementing systems are adaptable to changes, such as key Commission rulings expected over the coming year and the development of Regional Transmission Organizations ("RTOs") in the West;
- e) strive for simplicity and transparency, and make the ISO a more accommodating place for all participants to do business;
- f) provide adequate, timely, and transparent information, tools and incentives for market participants to self-manage their business activities and risks in the forward markets;
- g) accommodate the needs of diverse ISO participants, including municipal utilities and other governmental entities in the ISO Control Area that use the ISO Controlled Grid and ISO markets; and
- h) support the creation of a seamless western market by addressing seams issues.²

Once finalized, the ISO believes that its market design effort will be compatible with and support the ideals of the Commission's standard market design initiative.

² Because of California's high level of dependence on imported energy to meet its needs, seams issues must be addressed in the ISO market design. These inter-control area coordination issues exist and must be resolved no matter how California's involvement in the evolution of RTOs in the western region unfolds.

The New Transmission Service

The Commission contemplates the development of a new form of network service (“Network Access Service”) available to all customers. The Commission states that Network Access Service would combine the flexibility and universal access of network integration transmission service and the reassignment rights of point-to-point service (Working Paper at 7). Under this service, customers would have access to all “sources” and “sinks” (defined as both individual nodes as well as aggregated points such as trading hubs), and would be able to obtain price certainty through access to tradable transmission property rights that would also offer a hedge against congestion costs. Under the Commission’s proposal, congestion charges would accrue to customers without transmission rights. However, the Commission stated that it intends to preserve the existing rights of current users of the system.

ISO Response

As the Commission is aware, the ISO has, over the past four years offered a form of transmission service that has provided open and non-discriminatory transmission service to all customers that seek access to the ISO Controlled Grid. The transmission service provided under the ISO Tariff is a form of network service, as defined under the Commission’s *pro forma* tariff, and is unique in a number of aspects. First, in contrast to the network service under the *pro forma* tariff, customers that take transmission service under the ISO Tariff need not formally designate network resources. Moreover, any customer, no matter how such customer is situated with respect to loads and resources, can obtain

transmission service under the ISO Tariff. The ISO believes that the form of transmission service provided under the ISO Tariff is certainly equal to, if not superior to, the transmission service provided under the *pro forma* tariff. In addition, as that service is described in the Working Paper, the ISO believes that the transmission service provided under the ISO Tariff is equal to the Network Access Service proposed in the Working Paper. Transmission service under the ISO Tariff is flexible and the ISO offers, through an auction, tradable transmission rights.

The ISO acknowledges the validity of the Commission's interest in honoring, to a reasonable degree, existing rights of current uses of the transmission system. On the other hand, as the Commission is aware, since inception the ISO has been forced to contend with inefficient use of the grid as a result of existing contracts. The inefficiencies arise from two factors: scheduling timelines and generator visibility. Specifically, a number of existing contracts have scheduling timelines that are different than the ISO timelines (*i.e.*, existing contracts provide the ability to schedule 20 minutes before the operating hour whereas the schedules for the ISO's Hour-Ahead market must be submitted 2 hours prior to the operating hour). This timeline discrepancy requires the ISO to assume that full contract rights will be used and so the ISO must reserve the full capacity in the Hour-Ahead market. Ultimately, not all existing contract rights are exercised and thus there is unused capacity on the grid. The second problem focuses on the lack of visibility of qualifying facilities and generators owned by governmental entities. Absent information about all resources using the

transmission system, the ISO is severely challenged to ensure reliability in the face of “bubbles” or pockets where resources use the grid but the ISO lacks information on the actual usage.

Energy Markets

The Working Paper states that one of the problems under the current OATT is that the current rules allow the control area operator and transmission provider to net out its imbalances over a larger load while charging other sellers and buyers penalties for imbalances and that the solution to this problem is the creation of a balancing market with imbalances charged the real-time price (Working Paper at 12). Moreover, the Working Paper states that while a day-ahead energy market is not strictly necessary for resolving imbalances, experience indicates that the combination of a day-ahead and real-time market enhances system reliability and efficiency, as compared to operating only a real-time market. *Id.*

The Day-ahead Energy Market

The Working Paper provides that the day-ahead and real-time markets be bid-based and security constrained (i.e., factor in or reflect recognized transmission system constraints). The Working Paper provides that the day-ahead market be voluntary but financially binding. The Working Paper states that the day-ahead energy market should provide for both supply and demand resource participation. In addition, the Working Paper states that the day-ahead market should be transparent, meaning that the rules should be clear and understandable and the software should produce predictable results. The

Commission states that such features are important if market participants are to trust market operations. The day-ahead market, since it is voluntary, should also accommodate bilateral transactions and self-schedules.

In addition, the Commission states that the bidding parameters must allow buyers and sellers the opportunity to reflect, respectively, the value they place on purchasing energy and the cost and operational constraints of producing energy. Importantly, the Commission recognizes that additional scheduling options may be needed to address the special conditions facing energy-limited resources (e.g., hydroelectric power and environmentally constrained thermal power). Working Paper at 14.

The Real-time Energy Market

Similar to the day-ahead market, the Commission states that transmission providers must operate a bid-based, security constrained real-time energy market. The Commission states that all imbalances should be settled at the real-time price as established by the real-time energy market and that such markets should be transparent, the demand side must be able to participate, and limits may be necessary on bidding flexibility. Moreover, as with the day-ahead market, the Working Paper states that nodal pricing must be used for both buyers and sellers in the real-time market and that such prices be established through market clearing price auctions. Lastly, the Commission states that all deviations and imbalances from the day-ahead market will be settled at the real-time price and that real-time imbalances that threaten reliability may require special rules, including penalties.

ISO Response

The ISO supports the creation of bid-based security constrained energy markets. As noted throughout the ISO's draft market design proposal, a primary objective in the ISO's market redesign process is to support feasible transmission schedules, *i.e.*, schedules that reflect both operational limitations and actual supply and demand conditions, and that are consistent with and support reliable system operation. Moreover, the ISO believes that it is appropriate, at least in California, to establish a forward spot energy market – a market that would enable load-serving entities to shape their purchases to more precisely satisfy their load obligations. Finally, the ISO has consistently supported the creation of viable financial forward energy markets wherein both supply and demand resources can participate. Through the MD02 proposal, participating loads will be able to participate in the Day-Ahead and Real-Time markets for energy and ancillary services, in accordance with the Commission's standard market design.

The ISO is reducing its role in emergency demand response programs while expanding the flexibility for loads to participate in its market-based program, the Participating Load Program. Currently, loads can participate in the Non-Spin, Replacement Reserve, and Supplemental Energy markets. The ISO will extend load participation into the Residual Unit Commitment market during fall, 2002. Further, implementation of MD02 in 2003 will allow loads to compete in the Day-Ahead market for energy. Both of these additional markets, the RUC and Day-Ahead energy market, can provide to loads greater flexibility through earlier dispatch and hour-long or multi-hour commitments. However, even with

this added flexibility, the ISO notes that facilitation of true demand responsiveness could be frustrated by mitigated price levels.

The ISO is concerned that, at least in the near term, conditions in the California market may be such that high price mitigation levels may be inappropriate. Specifically, the ISO is concerned that since the supply-demand imbalance in the California market is likely to persist in the near term, it will be necessary for the ISO to develop and propose to the Commission more restrictive price mitigation measures (i.e., measures to mitigate economic withholding); measures commensurate with the level of competition in the market.³ Mitigated price levels, while needed in the near-term, may not provide incentive for new demand response because such prices may not compensate loads sufficiently for the cost of lost business, infrastructure and other associated costs.

The Working Paper contemplates the prospective integration of transmission service and the energy markets. Under this methodology, which is currently in use in areas of the country outside of California, the price of transmission would be based on the energy-price differential between any two points on the transmission system. As the Commission is aware, the ISO's MD02 draft proposal provides for the adoption of a locational marginal pricing with an integrated transmission and energy market.

³ The ISO provides further insight into the state of the California market in its "Third Annual Report of the California Independent System Operator Corporation" submitted March 26, 2002.

As detailed in the ISO's draft market design proposal, the ISO would use a day-ahead congestion management system that would employ a fully accurate model of the ISO Control Area for the purpose of adjusting generation and load (and import and export) schedules to mitigate transmission overloads and ensure local reliability. This methodology would result in an integrated transmission and energy market. Under an integrated energy and transmission market methodology, the ISO would be unable to preserve its current "Market Separation Rule," (i.e., not forcing trades between Scheduling Coordinators ("SCs")) and therefore some forward trading of energy among SCs will necessarily occur in the process of managing congestion. Moreover, the ISO proposes to eliminate the balanced schedule requirement. This methodology is in contrast to the current methodology that utilizes a simplified three-zone model of the transmission network and separately prices transmission and energy (i.e., does not integrate energy and transmission prices).

The demise of the California Power Exchange cost the California energy market the primary vehicle for day-ahead energy trades to shape supplies to meet the next-day's expected demand. Without the ISO creating an explicit new spot energy market, the draft MD02 proposal outlines a congestion management approach that would result in energy trades between participants. With forward congestion management and forward energy trading thus integrated, the ISO believes that a separate new market similar to the California Power Exchange is not required. However, the ISO recognizes and supports the development of

additional energy trading markets in California and believes its proposal is compatible with such markets.

Lastly, the ISO urges the Commission to remain flexible as to the pricing structure of the real-time market. Specifically, the ISO believes that, depending on the circumstances, it may be appropriate for an ISO or RTO to maintain a dead-band structure that penalizes participants who rely heavily on the real-time market. The ISO has proposed such a structure in its Amendment No. 42 to the ISO Tariff, in Docket No. ER02-922-000. The Commission rejected this aspect of the proposed Amendment No. 42 but directed that the ISO should include a proposal for treatment of uninstructed deviations in the ISO's comprehensive market redesign to be filed on May 1, 2002.

The ISO believes that such a real-time pricing approach is warranted for two reasons. First, and perhaps most importantly, it may be necessary in circumstances or markets where a supply-demand imbalance exists. In such circumstances, load-serving entities may inappropriately lean on the transmission provider to satisfy their residual demand – demand that could in fact be quite large and for which they should make every effort to forward procure and schedule. Moreover, in such circumstances, suppliers may wait to offer their supply until real time, knowing that the ISO or RTO will have to rely on their power at a high price. Such circumstances existed in California in 2000-2001 and still exist today. As noted in the ISO's March 26 Report on Conditions in the California Market, California remains capacity-short and the ISO believes that the exigent circumstances are not sufficient to support competitive market outcomes.

Second, as noted by the Commission, limitations on the real-time market may be appropriate when necessary to support reliable grid operations. As the ISO has noted repeatedly, large uninstructed deviations from forward-market schedules can seriously challenge a transmission operator's ability to maintain the system within established reliability criteria and may require the purchase of large quantities of regulating capacity in order to follow such large deviations. While such circumstances may be the result of the conditions (supply-demand imbalance) described above, mechanisms to ensure a small deviations market may nonetheless be warranted to generally support reliable system operations. Finally, the ISO believes that penalties for participants that fail to follow an operator's real-time dispatch instructions, especially under emergency conditions, are appropriate. The ISO had such penalties in place prior to the establishment of the Commission's West-wide price mitigation measures.⁴ Once these measures expire, the ISO believes that it is appropriate to reestablish the penalties previously in place. Such penalties appropriately support the Commission's goal to support reliable real-time operation of the transmission system.

Furthermore, the ISO is certain that the Commission did not intend that payments energy procured in the real-time markets would offer an unfettered opportunity for market participants to engage in arbitrage or financial hedging

⁴ Under Amendment No. 33 to the ISO Tariff, as approved by the Commission, the ISO established penalties for participants that failed to follow ISO dispatch instructions in a System Emergency. The Commission suspended such penalties when, in its view, it effectively supplanted such enforcement mechanisms with the existing "Must-Offer Obligation", as established under the Commission's West-wide price mitigation measures.

between the forward and real-time energy markets. To prevent such arbitrage, a forecasting bandwidth is appropriate to bound the amount of energy that can be procured in the real-time markets without incurring a penalty.

Ancillary Services

The Working Paper contemplates the development of bid-based day-ahead and real-time markets to satisfy a load serving entities operating reserve and regulation service requirements. The Commission states that load-serving entities have the responsibility to procure regulation and operating reserves or pay for these services, as they are procured by the transmission provider on its behalf. Working Paper at 18. The Working Paper also provides that regulation and operating reserve markets must allow sellers to submit availability bids in addition to energy bids. In addition, the Commission states that all market-clearing prices must recognize substitution possibilities among operating reserves and conduct a least-cost procurement of the products. Working Paper at 20.

ISO Response

Since 1998, the ISO has facilitated four distinct markets for Ancillary Services: Spinning Reserve, Non-Spinning Reserve, Replacement Reserve and Regulation (collectively, “Ancillary Services” or “AS”). To date, the ISO facilitated sequential (i.e., conducted after and separate from congestion management) Ancillary Service markets. Thus, the ISO supports the creation of, as it has today, bid-based markets for Ancillary Services while allowing for self-provision. Moreover, the ISO agrees with the Working Paper that such markets be

facilitated on a day-ahead and real-time basis⁵ and should accommodate self-provision.

As noted in the ISO's draft MD02 proposal, a major design question faced by the ISO is whether the ISO should maintain today's sequential AS markets or whether the ISO should integrate AS procurement into the day-ahead congestion management process, as proposed in the Working Paper. The ISO recognizes that the integrated approach is advantageous from the viewpoint of system efficiency, since, in theory, it optimally (*i.e.*, at least cost) allocates all available generating capacity to provide energy or unloaded reserve capacity. However, the sequential approach also offers some advantages, the principal benefits being a more meaningful allocation of transmission capacity. That is, an unresolved issue is whether AS should have a priority equal to that of energy when allocating available transmission capacity. If, in the long-term, it is decided that energy is more valuable than unloaded capacity, a sequential auction may be more appropriate. In addition, a simultaneous auction implicitly values AS at the opportunity cost of providing energy. However, in the future, there may be a higher correlation between AS and the cost of capacity as determined through

⁵ The ISO assumes that when the Commission refers to real-time AS markets that the Commission is referring to AS markets that are conducted on a particular operating day in order to support that day's operations. Thus, the ISO assumes that the hour-ahead AS markets that the ISO facilitates today would satisfy the Commission's requirement for "real-time" AS markets. To the extent that the Commission proposes something different, the ISO requests that the Commission clarify its intent. The ISO may have objections if the Commission's intent is for the ISO to facilitate AS markets closer to (*i.e.*, less than 120 minutes prior to the operating hour) or during the actual operating hour.

the proposed Available Capacity (“ACAP”) obligation. Thus, valuing AS based solely on the opportunity cost of providing energy may not be warranted.

At this time, the ISO’s MD02 proposal contemplates migrating to an integrated energy/transmission/ancillary services market. However, on a long-term basis, the ISO has not yet concluded whether the simultaneous or sequential approach is preferable or more appropriate for the ISO. Therefore, as these markets develop, the ISO urges that the Commission remain flexible on this issue.

Other Important Changes to the OATT

The Commission’s Working Paper also outlines what the Commission deems to be other necessary changes to its OATT. Specifically, the Working Paper states that should a transmission provider utilize Capacity Benefit Margin (“CBM”), the capacity set aside for CBM should not automatically receive a transmission rights allocation. In addition, the Working Paper provides that capacity set aside for CBM should be posted on the OASIS and specifically reserved and paid for by the entity requiring the service, whether for reliability or access to other resources. Working Paper at 20. The Working Paper also states that transmission capability calculations (and facility studies for transmission expansions) should be performed by an independent entity *Id.* Furthermore, the Commission states that such calculations should be performed on a regional basis (to incorporate regional trading patterns and power flows), as opposed to a utility-service-territory basis. The Commission concludes that all transmission providers not part of a Commission-approved RTO must contract with an

independent entity to perform transmission capability calculations and a common OASIS for the region is required. Working Paper at 21.

Additionally, the Working Paper calls for proactive regional long-term planning and expansion and, to minimize implementation costs, software should be modular to reduce reliance on single-source vendors and data format and transfer protocols should be standardized. *Id.*

ISO Response

As detailed in the ISO's June 1, 2001, RTO filing, the ISO already posts and calculates Available Transmission Capacity and Operating Transfer Capability. In addition, the ISO operates an OASIS that provides market and transmission system information regionally for the ISO Controlled Grid, including posting of CBMs. While the ISO believes that CBMs are a tested utility tool that should be used by ISOs to ensure the reliability of the control area, the ISO has not yet developed a proposal for cost allocation of CBMs. The ISO strongly supports the Commission's call for an active transmission planning process. As set forth in the ISO's comments on the Commission's October RTO Workshop, the ISO has extensive experience in transmission planning and in addressing certain of the issues raised in the Working Paper. For example, over two years ago the ISO examined the propriety of conducting a formal solicitation for "non-wires" alternatives to proposed transmission projects. Those discussions resulted with the filing of Amendment No. 24 to the ISO Tariff. While the ISO ultimately withdrew the filing due to strong opposition, in light of the evolved thinking and changed circumstances, the ISO urges the Commission to

reexamine the specific approach proposed by the ISO and to address the issues raised in response to that filing. For example, prior to mandating a formal competitive solicitation for non-wires alternatives, the Commission should provide guidance on costs related to the selection of a non-wires alternative (e.g., since the non-wires project was selected to defer or displace a transmission project, should the costs of such project be recovered in transmission rates). In addition, the Commission should address market power issues with respect to reliance on a non-wires project for supporting the transmission system (i.e., does a non-wires project that must operate in a certain manner in order to support the transmission system have market power?). The ISO refers the Commission to the attachments included as part of its comments on the Commission's RTO Workshop for more detail on these and other issues. Finally, the ISO urges the Commission to further explore its requirement that public utility transmission providers to "put out for bid" the construction/implementation of a transmission project. The ISO is unsure, but believes it warrants further examination, as to whether such procurement or construction decisions need be or should be specified by the Commission.

The ISO supports a proactive role for RTOs/ISOs and other transmission providers in furthering transmission expansion in their regions under the paradigm of reliability through competitive markets. The ISO encourages the Commission to proactively define the criteria necessary to support "economic" expansion of the transmission system. The ISO believes that existing reliability criteria and standards are already sufficient to ensure that the transmission

system is expanded in a reliable manner and in a manner to support reliable delivery of energy to load. However, the ISO believes that further work is needed, and the Commission should support such efforts, to define the circumstances under which the transmission system should be expanded in order to support competitive market outcomes. The ISO has already done significant work in this area. As originally explained in its RTO Week Comments, the ISO has engaged a consultant to define and construct a methodology that could be applied by the ISO in its annual transmission planning process to determine when and whether economic expansion of the grid is warranted. That is, the ISO intends to use the methodology to determine when expansion of the transmission system is necessary to cost-effectively mitigate market power and to ensure access by consumers to additional power supplies. The ISO believes that such an approach is not only consistent with the proactive transmission planning role contemplated in the Commission's Working Paper, but is also entirely consistent with the transmission planning and expansion function defined by the Commission in Order No. 2000. As a necessary corollary, the ISO believes that an ISO or RTO should have the authority to require construction of new transmission facilities that are necessary to ensure reliability, including both system and local reliability threats rising from congestion.

Lastly, the ISO urges the Commission to further support efforts and mechanisms to ensure effective regional transmission planning and expansion. As the Commission is aware, a platform for effective regional transmission *expansion* is essential if the West is to develop a robust transmission network

capable of supporting an efficient and competitive regional energy market. Regional parties must work together to coordinate transmission *planning*. The ISO believes that the Commission must support efforts to develop truly regional transmission projects (e.g., Path 15 expansion in California). Thus, we believe that the Commission should further development of: 1) institutional mechanisms or venues to address transmission siting issues regarding regional transmission projects (i.e., siting for transmission projects located in one state that may benefit other states); and 2) ratemaking mechanisms that ensure that the customers that benefit from regional transmission projects pay for such projects (e.g., region-wide transmission rates). The ISO supports any effort to strengthen effective regional transmission planning and expansion and is committed to working with its regional partners to achieve that desired outcome.

Market Monitoring and Mitigation

The Working Paper provides certain policy guidance regarding the role and function of a market monitor and the nature of market power mitigation measures. In the Working Paper, the Commission has outlined certain general principles to guide the development of market power mitigation rules and a market monitoring plan. Working Paper at 22.

ISO Response

The ISO agrees with the Commission on the need for market rules that enhance competition. In addition, the ISO agrees that, along with the necessary infrastructure (including the development of price-responsive demand), good and workable market rules both are essential to a well-functioning market and reduce

the importance and need for restrictive market power mitigation measures. The ISO agrees that the primary emphasis of a market monitoring unit should be on evaluating the effectiveness of existing market rules and identifying needed changes to those market rules.

The ISO believes that appropriate preventative mitigation measures are a necessary part of market rules to prevent physical and economic withholding from the market and enhance market efficiency. As described in the ISO's draft MD02 proposal, both structural and market mechanisms need to be in place to prevent physical withholding. The ISO believes that it has accomplished the above-stated goals by: 1) mitigating physical withholding through a combination of an "Available Capacity" or "ACAP" obligation that would work with a proposed Residual Unit Commitment process and a form of a must-offer obligation to ensure that enough capacity is made available to the ISO in a day-ahead timeframe to satisfy ISO forecasted control area load; and 2) mitigating economic withholding through a combination of measures including a damage control cap, forward-market prospective bid mitigation and a competitive-market benchmark for triggering more extensive price mitigation. Thus, through a combination of well-designed market rules and selective mitigation measures, the ISO believes that its draft market design proposal is consistent with the market monitoring and mitigation approach outlined in the Working Paper.

With respect to the relationship between the market monitoring unit and RTO management, the ISO believes that a market monitoring unit can effectively operate while reporting to RTO management. Since 1998, the ISO's Department

of Market Analysis (“DMA”) has reported directly to ISO management. In that capacity, the DMA has never been constrained by management in pursuing matters of concern. In fact, DMA has, and continues to, aggressively pursue needed rule changes and market power mitigation and enforcement actions. Moreover, the ISO believes that the desire for independence must be balanced with the need for access to not only information, but on-site operating personnel. The ISO’s DMA has benefited greatly from the ability to talk directly and easily with operations staff. Thus, the ISO does not believe that the Commission should mandate that a market monitoring unit should be separate from RTO staff and management. On the other hand, the ISO is willing to identify and consider necessary clarifications to DMA’s reporting relationship with ISO management so as to ensure, to the extent deemed necessary by the Commission, that DMA has unfettered access to the ISO Governing Board, the Commission, and other appropriate regulatory or enforcement agencies. Finally, as the Commission is aware, the ISO has been engaged in discussions with other regional entities regarding the creation of a west-wide market monitoring unit. As currently discussed, such a monitoring unit would potentially be completely separate (i.e., independent) of the proposed RTOs in the West.

Long-Term Generation Adequacy

A fundamental premise of the Working Paper is that, on a long-term basis, in order for the system to be reliable and the markets to function efficiently, there must be adequate generation and transmission resources. Working Paper at 24. Therefore, the Commission states that there may be a need to include specific

measures to ensure that load serving entities maintain a reasonable supply reserve margin. The Commission recognizes that this issue is contentious, but sets forth certain basic principles that should be followed. *Id.*

ISO Response

The ISO agrees that mechanisms need to be in place to ensure adequate reserve margins. As evidenced by the experience of the California electricity crisis, the ISO believes that the Commission, along with the relevant state jurisdictions, must ensure that there is clear responsibility for securing adequate supplies to satisfy expected load. Absent a clear, enforceable requirement on load-serving entities to procure sufficient supply including reserves, entities like the ISO will be faced with finding power at the last minute in order to serve load. Therefore, at as a necessary minimum, the ISO believes it is appropriate to set a requirement tied to the daily minimum operating requirements (reserves) of the transmission provider, such that the load-serving entities must procure supplies equal to or greater than the sum of their forecasted load and their reserve requirement. Such a daily requirement can then be translated into a longer (*e.g.*, monthly, seasonally, annually) requirement that reflects the relevant reliability authority's standard for reliability.

The ISO also agrees that load-serving entities that fail to secure the necessary resources should be held accountable, whether through the imposition of charges/penalties for failure to procure sufficient power or load curtailment. The ISO agrees that such obligations and measures need to be developed in

tandem with state commissions, who have a predominant role in the oversight of investor-owned utilities that are load-serving entities. .

State Participation in RTO Activities

The Working Paper provides that state commissions have an important role in the process of creating an efficient competitive wholesale market for electricity. *Id.*

ISO Response

As the ISO stated in its comments on the recent Commission Operational Audit of the ISO, the ISO believes that a high level of coordination between federal and state policymakers is critical if electric competition is to succeed. More importantly, if California is to be successful in arresting the continued impact of the 2000-2001 electricity crisis, all parties must work together to develop the institutional, structural and market mechanisms necessary to produce a stable and reasonably priced electric market.

Whether this happens through some form of advisory committee or other mechanism, the ISO agrees with the Commission that states have a legitimate interest in RTO operation, especially because RTO markets and functions affect retail customers in a state.

Other Issues

Among the other issues raised in the Working Paper is that the current OATT will be revised to enunciate more explicitly the obligation of transmission providers to comply with all appropriate standards for ensuring system security

and reliability. Working Paper at 25. In addition, the Commission states that it expects all transmission providers, market participants and generators to comply with the recommendations offered by the President's Critical Infrastructure Protection Board and all best-practice recommendations from the electric reliability authority. The Commission also states that all public utilities will be expected to meet basic standards for system infrastructure and operational security, including physical, operational, and cyber-security practices. *Id.* The Working Paper also set out a phased implementation of the new transmission tariff and the standard market design. In its conclusion, the Working Paper notes that many issues remain unresolved, including the transition of existing contracts to the new service, allocation of transmission rights, the development of an implementation schedule, and issues regarding the role of state commissions and many of these issues may best be decided on a regional basis. Working Paper at 26-27. Lastly, the Commission states that RTOs will have a significant role under the standard market design and that the Commission will continue to use the two-track approach to resolve RTO issues, wherein issues of scope and governance will be addressed in individual RTO cases and not through its rulemaking process. Working Paper at 27.

ISO Response

The ISO supports the Commission's intention to require compliance with all system security and reliability standards. In the end, regardless of the functioning of the market, system reliability should be maintained. The ISO also supports the Commission's intention to support compliance with the President's

Critical Infrastructure Protection Board. The ISO is very active on the North American Electric Reliability Council's Critical Infrastructure Protection Working Group, where the ISO participates in creating national security strategies for the electric industry. In addition, the ISO is a member of the Electric Power Research Institute's Enterprise Infrastructure Security group.

Finally, the ISO supports the Commission's decision to phase-in implementation of the new transmission tariff and the standard market design. The ISO appreciates that the Commission recognizes that software design and development is a complex and time-intensive effort and that the new standard market design software should be modular and as flexible as possible to accommodate new or changed design features, as well as reduce reliance on particular vendors.

Over the last two years the ISO has employed an "application framework" to guide the architecture and design of its major new systems. This framework has allowed the ISO to utilize and integrate components and systems from numerous sources and vendors. This includes the economic dispatch and AMP software currently in use by the New York ISO. The framework has been used for internally developed systems (such as ADS, which provides automated dispatching of ancillary services) and to integrate the ISO's new Energy Management System with existing market and scheduling systems. It has provided a mechanism for exchanging data, defining standard formats and addressing software "seams" issues. The key characteristics of this framework are: 1) It is an open architecture, based on industry and public domain standards

where possible and all custom interfaces and reference implementations are provided publicly; and 2) It is flexible, wherein the interfaces (or “seams”) and data exchange formats are designed to be extended with minimal impact to existing implementations. The ISO plans to rely on this framework, and therefore, modular software, for future major developments as well, including the rewritten software that will be necessitated by adoption of the Standard Market Design.

The ISO endorses a requirement that software produce transparent and predictable results because such results are a requirement for all open standards. The software industry has recognized this requirement for standards and thus it is becoming common practice to provide reference implementations of standards. This practice in turn has facilitated wide-spread adoption of standards and provided mechanisms for ensuring interoperability of different implementations of a standard. It also allows implementations to be “certified” to be in compliance with a standard. Based on the success of this strategy the ISO recommends that a reference implementation of the standard market rules be produced. In addition, the ISO also recommends a certification or compliance program for other implementations. This reference implementation would facilitate definition and adoption of open standards as well as providing a mechanism for simulating and validating the current and future market rules. The ISO cautions, based on its experience, that costs will continue to be higher for the entities that comply with the Commission’s understandable but ambitious implementation timeline.

Conclusion

As detailed above, the ISO strongly supports the majority of specific elements set forth in the Working Paper, and in many cases has already incorporated such design elements in the ISO's draft market design documents. The ISO urges the Commission to give consideration to the several specific comments set forth above in finalizing the Standard Market Design.

Respectfully submitted,

Charles F. Robinson
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(916) 608-7147

Dated: April 10, 2002



April 10, 2002

The Honorable Magalie Roman Salas
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

**Re: Electricity Market Design and Structure
Docket No. RM01-12-000**

Dear Secretary Salas:

Enclosed for electronic filing please find the Comments of the California Independent System Operator Corporation on the Federal Energy Regulatory Commission's Working Paper on Standardized Transmission Service and Wholesale Electric Market Design.

Thank you for your assistance in this matter.

Respectfully submitted,

Margaret A. Rostker
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System Operator Corporation
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(916) 608-7147

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the Comments of the California Independent System Operator Corporation on the Federal Energy Regulatory Commission's Working Paper on Standardized Transmission Service and Wholesale Electric Market Design.

Dated at Folsom, California, on this 10th day of April, 2002.

Margaret A. Rostker
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