UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators	**)**	**Docket No. AD14-14-000**

COMMENTS OF THE ELECTRIC POWER SUPPLY ASSOCIATION ON REPORT OF THE MIDCONTINENT INDEPENDENT SYSTEM OPERATOR, INC.

The Electric Power Supply Association ("EPSA")[1] respectfully submits the following comments on the Midcontinent Independent System Operator ("MISO") report ("Report")[2] responding to the Federal Energy Regulatory Commission ("ERC" or "the Commission") Order Directing Reports[3] issued in the above-captioned proceeding on November 20, 2015 ("the Order") on five price formation reform issues: (1) pricing of fast-start resources, (2) commitments to manage multiple contingencies, (3) look-ahead modeling, (4) uplift allocation, and (5) transparency. Such reforms are critical to the ISO market, and therefore the Commission should direct improvements as discussed below

[1] EPSA is the leading national trade association representing competitive power suppliers, including generators and marketers. Competitive suppliers which collectively account for 40 percent of the installed generation capacity in the United States provide reliable and competitively priced electricity from environmentally responsible facilities. EPSA seeks to bring the benefits of competition to all power customers. The comments contained in this filing represent the position of EPSA as an organization, but not necessarily the views of any particular member with respect to any issue.

[2] *Midcontinent Independent System Operator, Inc. Report On Price Formation Issues,* Docket No. AD14-14-000 (filed March 4, 2016) ["MISO Report"].

[3] *Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators* 153 FERC ¶ 61,221 (2015) ["Order Directing Reports"].

on a clear timeline supported by a work plan to that such initiatives are approved within 2016 and can be implemented expeditiously.

In its Report, MISO identifies several technical considerations and specific policy choices that inform its approach to achieving proper price formation based on a set of Market Vision Guiding Principles that inform its roadmap for evaluating and developing market enhancements in cooperation with stakeholders.[4] EPSA appreciates that MISO has clearly laid out a concrete path for necessary enhancements that will support proper price formation in MISO's wholesale energy and ancillary services markets. EPSA urges the Commission to direct MISO to expediently implement its market reform efforts so that stakeholders can meaningfully ascertain if these efforts have indeed lessened market interventions and price distortion. Additionally, EPSA requests that FERC direct MISO to commit to specific deadlines (whether imposed by FERC or negotiated by MISO in its stakeholder process and then approved by FERC) that will guarantee rapid and timely improvement of certain technical practices, dispatch/pricing modeling enhancements, necessary software upgrades, and greater transparency in operator policies around multiple commitments and uplift causes, frequency, and allocation.

EPSA also suggests in comments below that FERC require certain practices and policies identified in MISO's Report be implemented across all ISOs and RTOs. Ensuring consistency across ISOs/RTO's price formation reforms is critical to ensure useful comparisons of each system operator's progress under a common baseline for

[4] *Id.*, at 2.

reforms and a common timeline for completion. This approach is particularly useful to ensure that price formation reforms stay on track across all markets, even if individual system operators assert that unique attributes of their market structure merit a delay in implementing certain critical reforms. Overall, the price formation reports indicate that there is a strong need to create and maintain nationwide accountability through the Commission's leadership of the often disparate price formation and market design enhancement activities taking place at different paces among the individual ISOs and RTOs.

Finally, EPSA notes that the ISO/RTO reports do not explicitly discuss the array of specific market design and pricing solutions needed to address price signal distortions, reduce uplift, and thereby temper concerns about uplift allocation and transparency around out-of-market operator actions. EPSA addresses these issues and the urgency and priority of broad price formation reforms in our separate EPSA Price Formation Proceeding Comments.[5] While the five issues discussed in these reports are pathways toward a price formation solution, improvements in any of these areas will not be effective in isolation of nationwide market design and pricing reforms. Therefore, the Commission must simultaneously address the marketplace fundamentals that inhibit proper price formation -- topics on which the Commission has already received extensive feedback from both EPSA and other stakeholders during its price formation workshops and in subsequent public comment periods. This includes the

[5] *Cf.*, Comments of the Electric Supply Association, *Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators*, Docket No. AD14-14-000 (Filed April 6, 2016)(extensively discussing the views of the Electric Supply Association on the urgent need for market design and pricing reforms across all ISOs/RTOs). ["EPSA Price Formation Proceeding Comments"].

pending proceeding in which the Commission proposes generic reform to the outdated and arbitrary energy offer cap;[6] EPSA comments in that proceeding reiterate that the generic offer cap of $1000/MWh must be eliminated or substantially revised across the ISOs/RTOs before winter 2016/17.[7]

EPSA respectfully requests that the Commission direct ISOs and RTOS to develop detailed work plans and clear timelines to address all price formation reforms discussed herein. The Commission should further ensure that these reform initiatives are expeditiously approved within 2016.

I. Comments

EPSA appreciates the detailed report MISO provides regarding its current practices in the five areas of price formation topics raised in the Commission's Order Directing Reports. In our comments below, EPSA highlights several aspects of MISO's fast-start pricing mechanism and contingency pricing that should provide helpful comparisons for the Commission to ascertain where each ISO and RTO can make improvements to increase the ability of generation resources to accurately reflect their costs of providing energy in both day-ahead and real-time markets. In particular, MISO's Extended Locational Marginal Pricing mechanism represents a version of convex hull pricing, which is a fundamental price formation mechanism that the Commission should direct each ISO/RTO to evaluate for the dispatch of Fast Start

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6 *Offer Caps in Markets Operated by Regional Transmission Operators and Independent System Operators*, Notice of Proposed Rulemaking, Docket No. RM16-5-000 (January 21, 2016) ("NOPR"), 81 FR 5951, 154 FERC ¶ 61,038 (Feb 4, 2016).

7 EPSA Comments, Offer Caps in Markets Operated by RTOs and ISOs, Docket No. RM16-5 (Filed April 4, 2016)].

resources as it is a broad solution to increasing uplift payments and the dampening of signals in the Locational Marginal Prices ("LMPs"). Applications of convex hull pricing can be applied to allow the capture of otherwise uneconomic costs in one time period for distribution to LMPs when the capacity is used. It is no surprise that stakeholders have argued for other ISOs to consider ELMP.[8]

In the case of the MISO market in particular, an important adjunct effort is the ISO's development of reforms to its capacity product auction rules and retail market design that will have a meaningful impact on the progress that MISO envisions in improving energy market price formation. While the energy price formation improvements addressed herein are critical and should be undertaken in a specified timeline under the auspices of this proceeding, it will be important for the Commission and MISO stakeholders to also asses the progress of resource adequacy reform efforts as an indicator of whether the resultant MISO capacity and energy markets work together to ensure the long-term resource investments which are critical to reliability and liquidity.

A. Pricing of Fast-Start Resources

The Commission notes in its Order Directing Reports that fast-start resource pricing processes are highly technical given unique features of each marketplace which inform each market's reasons for choosing a particular design for each process. EPSA agrees that each regional operator must retain some discretion to tailor pricing models that inherently work for its individual system. However, there are several design

[8] Comments of the Electric Power Supply Association et al., *California Independent System Operator, Inc. Report On Price Formation Issues,* Docket No. AD14-14-000 (filed April 6, 2016) ["EPSA *et al.* Comments on CAISO Report"].

elements and pricing logic of MISO's Extended Locational Marginal Pricing ("ELMP") that make an effective baseline for broad reforms that can be widely implemented across all ISO/RTO pricing mechanisms for fast-start resources, as well as enhancements to scarcity pricing (though MISO's practical application of scarcity pricing requires improvements as well). Importantly, MISO must make significant improvements to its modeling of unit dispatch and pricing optimization so that offline fast-start resources only set LMPs when they are both available *and* economic.

First, EPSA notes that a fractional/partial commitment approach to relaxing economic minimum operating limits (EconMins) for fast-start resources, based on cost causation principles, is an appropriate baseline as used by MISO, CAISO, ISO-NE, and NYISO. EPSA agrees with the MISO Report that a default administrated EconMin for all resources, as is done in PJM, is not an adequate approach to accurately reflecting the actual costs of these resources in scarcity pricing models. Therefore in terms of theoretical design, the ELMP approach appropriately relies on a fractional commitment algorithm (the security constrained economic dispatch, or "SCED" algorithm) that dynamically determines EconMins based on market offers and system conditions for eligible (*i.e.*, available and economic) block-loaded fast-start resources.

Second, EPSA is concerned that even as the design theory of ELMP should support enhanced scarcity pricing, recent results of MISO's Phase I implementation show limited impact on reduction of uplift and also demonstrate that the ELMP algorithm is not correctly pricing scarcity in periods of real-time scarcity caused by shortages or transmission violations. More specifically, recent Phase I reports from MISO for ELMP state that the market is attempting to more accurately price shortage or transmission

violations when MISO has offline Fast-Start resources available. And yet, actual results show an approximate $15/MWh decline in prices during the relevant intervals. As MISO itself notes in this Phase I report, there is an outstanding need for MISO to "leverage 'offline fast start pricing' for more accurate shortage pricing." [9]

These results are a side effect of MISO's slow progress in implementing the ELMP design. Currently, offline fast-start generators are being counted as "marginal" resources (i.e. included towards the calculation of costs of the next MW to serve load) even when they would not be able to actually respond to an increase in demand. This has the effect of over-including resources available and economic in the starting process, and prevents some occurrences of real-time scarcity from being correctly priced. Rather than being a simple problem of "transitory price increases" in brief real-time shortage intervals (which MISO has noted may occur under the SCED algorithm),[10] the broader concern now given the results of ELMP Phase I is that offline resources have been inaccurately designated as being able to respond to a constraint: this results in lower real-time locational marginal prices in certain intervals where actual reserve shortages are masked on the system by over-reliance on such offline units. [11]

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[9] Market Subcommittee Presentation, Extended LMP Phase II, Market Roadmap ID: 18, at 6 (March 1, 2016), at https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/MSC/2016/20160301/20160301%20MSC%20Item%2004b%20MR018%20ELMP%20Phase%20II.pdf.

[10] *Initial Extended Locational Marginal Price Filing of the Midcontinent Indep. Sys. Op.*, Docket No. ER12-668-000, at 2-3 (filed Dec. 22, 2011).

[11] Note: The MISO Report discusses that MISO includes eligible offline fast-start resources in the ELMP software engine at intervals when the dispatch run encounters shortages or transmission violations, but it does not state that these resources are *only* included in resource pricing when they are available and economic to address shortages or transmission violations. This is a design flaw that should be rapidly addressed in ELMP implementation.

As the Commission is aware, MISO's Independent Market Monitor ("IMM") shares EPSA's concerns that offline fast-start resources are being used too aggressively in setting real-time prices in the ELMP model, with the effect of mispricing scarcity in certain real-time constraint intervals.[12] In its affidavit seeking withdrawal of MISO's initial administrative filing of ELMP tariff sheet revisions in 2014,[13] the IMM discussed that offline resources should only set prices when they are *both* feasible (available to produce energy) *and* economic for addressing a shortage. As FERC has noted, the IMM "found that both of these principles were violated during [MISO's] parallel operations period. [The IMM] identified a number of reasons why it believes that excessive quantities of offline resources are being used by ELMP to set prices. Specifically, the IMM observed that (1) the offline units setting prices are rarely started and account for only three percent of the energy dispatched by ELMP, suggesting that they are either infeasible or not economic; (2) over 85 percent of dispatched energy came from energy-limited pump storage units; (3) a large share of the energy made available to ELMP came from units having very small effects on the violated constraint; (4) a large share of the pump storage energy is made available due to PJM Interconnection, L.L.C.'s (PJM's) market-to-market transmission shortages; and (5) the system marginal price is substantially affected in intervals when units are dispatched due to a transmission shortage, but typically the energy required to resolve a single constraint violation would generally be much smaller and only affect prices in the local

[12] Order Conditionally Accepting Tariff Revisions, *Midcontinent Indep. Sys. Op.*, Inc., Docket 150 FERC ¶ 61,143 at P. 15 – 16 (Feb. 27, 2015).

[13] MISO ELMP Tariff Sheet Revisions, Initial Administrative Filing, Docket No. ER14-2566-000 (August 1, 2014).

area impacted by the constraint."[14] Although MISO and the IMM have since agreed to revise ELMP to ensure that offline resources are both economic and feasible to address a shortage when they are allowed to set prices, these changes have not yet been effectuated in practice.[15]

MISO recently detailed the process for implementation of ELMP Phase II at its March 1, 2016 Marks Subcommittee meeting. In this session, MISO staff further noted that Phase II is supported by the IMM and numerous stakeholders. MISO also noted only modest benefits were realized as a result of Phase I and stated that Phase II is intended to increase these benefits. MISO also stated that ELMP Phase II will apply only to fast start resources that are online and that these resources could set prices. However, MISO has been careful to stress that this is not their proposal at this point in time because the concept is still being discussed and evaluated internally. Based on their findings, MISO has targeted a Phase II implementation date sometime in 2017. MISO has committed to providing the results of their evaluation in August and software testing would start in Q1 2017.

EPSA is thus eager to see the swift implementation of Phase II, as Phase I has not provided significant, tangible results in reduction of uplift costs, nor does it include a diverse, broad pool of fast-start resources that should be able to affect LMP when available and economic. MISO acknowledges this result, noting in its Report that the

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[14] Order Conditionally Accepting Tariff Revisions, *Midcontinent Indep. Sys. Op.*, Inc., Docket 150 FERC ¶ 61,143 at P. 16 (Feb. 27, 2015), at http://www.ferc.gov/CalendarFiles/20150227152342-ER15-684-000.pdf.

[15] *See* Midcontinent Indep. Sys. Operator, Extended Locational Marginal Pricing, Docket Nos. ER15-684-000 and ER15-685-000.

ELMP "staged implementation strategy" has resulted in "price and uplift changes [that are] modest as expected from a conservative initial implementation where the fast-start pricing logic is only applied to a small pool of units that can respond to notifications within ten minutes."[16] Beyond the Report, MISO has noted to the Commission that several aspects of its market design will require reform to facilitate more accurate price formation during periods of scarcity. For example, MISO has explained that though it "understands the immediate need for the [generic] energy offer cap, MISO would prefer that these administrative caps be gradually relaxed to provide incentives for competitive offers and to support efficient market operations. Over time, MISO expects new technologies and demand response to allow more efficient pricing to manage scarcity situations."[17]

EPSA emphasizes MISO's discussions both in the instant proceeding and in Docket No. RM16-5-000 that timely and comprehensive implementation is needed as soon as possible to capture the broader price formation benefits that were envisioned under ELMP. We urge the Commission to require that MISO collapse its phased implementation approach to more comprehensively and expediently address the pricing of offline resources, expand ELMP pricing software to include more emergency demand response resources, and expand the definition of an online fast-start block loaded and non-block loaded capacity resource to include peaking resources, specifically fast-start capacity that can respond to notifications within 30 minutes, not just within 10 minutes.

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[16] MISO Report, at 6.

[17] Comments of the Midcontinent Indep. Sys. Op., Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators, Docket No. RM16-5-000 (filed April 4, 2016), at 2.

To the extent other ISOs/RTOs do not have a 30-minute reserve market, all markets should be required to develop such markets.

Third, EPSA reiterates that the Commission should require all ISOs/RTOs to incorporate into their fast-start resource pricing engines commitment variables that fully consider an offline fast-start resource's commitment costs – including start-up cost, no-load cost over the minimum run time specific by the resource's economic minimum offer, and the estimated out-of-merit costs of running the unit at its minimum output level for the remainder of its minimum run time. EPSA supports MISO's ELMP design principle which allows for the inclusion of such commitment-related costs towards setting prices under LMP when the fast-start resource is marginal (available *and* economic).[18] EPSA emphasizes that any system operator's dispatch of resources to meet market needs should result in prices that completely reflect the actual costs of this dispatch and appropriately signal the need for capital investment or deployment of the range of supply and demand-side resources that are available to the system operator.

Fourth, EPSA generally supports approaches to fast-start resource pricing that set prices separately in an ex-post pricing run that follows the dispatch run.[19] As described in MISO's Report, MISO executes its fast-start pricing logic and relaxes a generation resource's minimum operating limit only in the pricing run which follows the dispatch run, and applies the partial commitment factor to the resource during its entire commitment period. MISO also reports that the application of ex-post pricing logic does not change the dispatch instructions for the fast-start unit or other units already

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18 MISO Report, at 6.

19 *See also* EPSA Price Formation Proceeding Comments, at 14-15.

committed – and, along with several penalty charges and settlement rules in place to discourage generator deviation from dispatch instructions, its approach has resulted in robust dispatch operations. MISO thus concludes that its operations staff has not observed any significant over-generation resulting from its pricing logic. EPSA notes that MISO's approach appears to render favorable results as to ensuring that: (i) generators follow dispatch signals, (ii) the dispatch run fully acknowledges and respects the minimum operating limit offers submitted by block-loaded fast-start resources, (iii) that generators' minimum operating limits are satisfied in dispatch, and (iv) that the ELMP pricing algorithm does not affect MISO operations and its merit-order dispatch of resources because it only modifies the calculation of energy and ancillary service prices.

Finally, the Resource Offer information reported by MISO[20] clearly indicates that only a minimal number of the available fast-start capacity resources are actually eligible MWs that can currently participate in ELMP – MISO anticipates that with Phase II changes, block-loaded capacity will increase from 0.1 GW to 1.1 GW, and non-block-loaded capacity will increase from 1.5 GW to 3.5 GW. These are very substantial increases in the amount of capacity that can be deployed and reflected in scarcity prices moving forward. EPSA looks forward to swift implementation of Phase II and subsequent phases so that the theoretical model actually materializes real improvements in reduced uplift frequency, more accurate and transparent resource pricing, and increased certainty for eligible fast-start resources such that they have the opportunity to recover their costs as the marginal units dispatched to maintain system

[20] MISO Report, at 14.

reliability and satisfy energy demand in periods of shortages or transmission violations on MISO's system.

EPSA encourages the Commission to develop a uniform directive to all ISOs/RTOs that requires each to confirm, update, or create design elements within their fast-start resource pricing engines that will incorporate the above-discussed principles and logic to adequately compensate resources, accurately reflect these resources in LMPs, and run efficient and orderly dispatch that respects economic minimum operating levels in light of generator start-up/shut-down costs and other commitment constraints. EPSA also requests that the Commission require MISO to formally commit to its current timelines proposing to implement ELMP Phase II by 2017 and rapidly address concerns that offline resources are being included in the ELMP software engine in circumstances when they are not in fact marginal. Additionally, MISO should be required to demonstrate that its implementation of Phase II reduces the overall level of Revenue Sufficiency Guarantee (RSG) payments made under ELMP pricing and demonstrate significant benefits from Phase II implementation. MISO should also be required to demonstrate by 2017, tangible improvements both as to real-time RSG and day-ahead RSG payments for both price-sensitive demand and virtual demand.

B. Commitments to Manage Multiple Contingencies

MISO's proposal to develop a local 30-minute reserve product is an important step needed to help price and procure reserves through MISO's markets rather than through out-of-market commitments that result in uplift, specifically RSG costs.[21] EPSA

[21] MISO Report, at 25-26.

supports MISO's conclusion that new build, especially in contingency areas where fast-start resources are not currently available to start within 30 minutes to restore reserves lost during a contingency, can better satisfy reserve needs at much lower costs because they can satisfy the reserve requirements while offline.

It is important for the Commission to ensure that mechanisms for managing multiple contingencies across all ISOs/RTOs take into account that, in lieu of administratively committing online resources to hold reserves, it is more economically efficient and beneficial both to reliability and proper price formation for the operator to take steps that provide market signals that will incent new build of fast-start units that can meet reserve requirements at lower costs. Taking these steps to incorporate multiple contingency constraints is uniformly helpful to proper price formation.

EPSA also notes that aside from the Market Roadmap projects identified for long-term handling of multiple contingencies, the near-term development of additional short-term capacity reserve requirements will be influenced by operational and planning issues MISO stakeholders have recently identified in the context of seams discussions occurring in stakeholder processes. The MISO Report discusses that developing additional short-term capacity reserve requirements is an imminent challenge because gas-fired units have become more economical than coal-fired generation for serving load during normal operating conditions, exacerbating these units' unavailability for short-term, contingency needs. It is imperative that MISO develop and take steps to fill these gaps in real-time and preserve reliability at lowest cost. Current stakeholder discussions on both seams issues (price divergence at the seams and seams pricing/operational transparency) and changes to the capacity product and auction

system address important concrete, pending concerns in MISO.[22] These challenges to MISO's long-term resource adequacy[23] have a meaningful impact on the region's ability to incentivize investments in the reserves and new build necessary to support liquid and robust energy markets. EPSA thus cautions that even as MISO is moving in a favorable direction on improving locational energy pricing through changes such as ELMP Phase II implementation, the Commission should ensure that changes to MISO's resource adequacy construct support and complement the ISO's critical ongoing price formation efforts in energy and reserve markets.

Finally, EPSA appreciates MISO's projected roadmap for new projects that will improve pricing for voltage and local reliability ("VLR") commitment, and that MISO has developed concrete plans to develop additional short-term capacity reserve requirements. EPSA looks forward to understanding the scope and efficacy of the VLR commitment project, which would incorporate these commitments into MISO's pricing

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[22] MISO Draft, Resource Adequacy: Seasonal Conceptual Design and Business Rules, Nov. 20, 2015, at pp. 3, at https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/LOLEWG/20151202/20151202%20LOLEWG-SAWG%20Joint%20Meeting%20Item%2011%20Seasonal%20Detailed%20Design%20Document.pdf.

[23] *See, e.g.*, *IPP Hot Topic Paper, Seams, Comments to the Advisory Committee*, March 23, 2016 (stating that ""MISO will need to work closely with PJM and SPP to refine the Market-to-Market Protocols to effectively price locational energy, particularly for resources committed elsewhere. Between MISO's rich topography for wind resources and its uncompetitive resource adequacy construct, a lot of generation internal to the MISO footprint has already begun exporting their capacity to other neighboring balancing areas. The IPP sector expects that both the number of capacity suppliers within MISO and their volume of exports will continue to increase, with many of those choosing to electronically remove themselves from MISO for a variety of reasons. Accordingly, **getting locational energy pricing and capacity price formation correct for those assets and settling the Market-to-Market process effectively will increase in importance, perhaps exponentially**.")(emphasis added), at https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/AC/2016/20160323/20160323%20AC%20Item%2002%20IPP%20Hot%20Topic%20Comments.pdf.

process and could reduce after-the-fact payments made to generators when their actual costs exceed market prices.

C. Look-Ahead Modeling

As noted in the Report, the next steps for improvement in look-ahead modeling will require additional time for MISO and stakeholders to address and implement. MISO has identified that Look-Ahead Commitment Phase II and Look-Ahead Dispatch are currently longer-term initiatives due to uncertainty around costs and development of future inputs into the software design for these forecasting tools. EPSA notes that the substantial costs of these next steps, as well as the need for additional enhancements to current ELMP implementation, may necessitate that MISO focus on smaller resource commitments that more quickly and definitively address price formation reforms. Key among those reform initiatives will be the timely and comprehensive implementation of ELMP Phase II, no later than 2017.

As to MISO's introduction of a Ramp Capability product, stakeholders cannot meaningfully comment on the benefits or outcomes at this time as it has just been implemented (May 1, 2016). The Commission should require MISO to provide by a date certain a comprehensive status update on both the Ramp Capability Product and the progress of its look-ahead commitment phase II and dispatch design initiatives. Aside from these issues, EPSA believes that MISO's forecasting tools do not pose a major concern for price formation improvements.

D. Uplift Allocation

Uplift allocation concerns are the byproduct of excess uplift, which is itself a symptom of the broader and more urgent market design and pricing problems FERC is addressing across energy and ancillary markets in this proceeding. In MISO, uplift allocation has been appropriately implemented based on cost causation principle, and EPSA is appreciative of this informed approach. FERC should direct all system operators to look at uplift impacts and take actions that can reduce uplift by addressing its underlying causes. EPSA also concurs with the observations made in MISO's Report that system operators should continue its efforts to make more connections between uplift costs and its various causes. As noted by MISO, this will facilitate more transparency around uplift cost allocation and ensure that allocation is fundamentally based on cost causation principles.[24]

Regarding allocation of uplift charges to virtual trades, EPSA observes that the Report does not provide a specific response to the question posed by the Commission as to whether these allocations impede the desirable convergence of day-ahead and real-time energy prices. The Report only explains that MISO currently nets virtual transactions for a market participant, and then applies uplift allocations on a net volume basis in both day-ahead and real-time markets. EPSA members have noted, however that as a general matter, virtual trading has beneficial impacts both as to facilitating price convergence and reducing out-of-market RSG cost allocations.

[24] MISO Report, at 55.

Specifically, at recent meetings of MISO's Markets Committee of the Board of Directors in November and December 2015, a key topic of discussion has been that virtual trading positively responds to the divergence between schedules in the day-ahead and real-time markets. These discussions were led by the MISO Independent Market Monitor, Potomac Economics ("MISO IMM"), and several scenarios were documented regarding virtual trading's unique and demonstrated benefits for facilitating price convergence among MISO's day-ahead and real-time markets.

One scenario offered by the MISO IMM at these meetings related to wind generation output fluctuation in MISO North. Dr. David Patton explained that on several days in November 2015 when day-ahead Minnesota Hub prices were much higher than real-time prices due to high levels of real-time wind generation, virtual supply responded to this divergence and offset more than half of the under-scheduled wind.[25] Dr. Patton stated that this virtual trading was in fact the *only real response* to address price convergence issues resulting from the 11% difference between the day-ahead scheduled wind and the real-time wind output generated. Dr. Patton also pointed to the fact that virtual trades are an important backstop in this particular case as certain wind generation contracts were only tied to real-time prices, had no incentive to schedule day-ahead, and that those resources could have been assessed RSG costs if they had over-scheduled. In light of these benefits, Dr. Patton explained that the MISO IMM is preparing an analysis to explain the value of virtual trading, and expressed concern that

[25] MISO Minutes of the Markets Committee of the Board of Directors, Midcontinent Independent System Operator (December 9, 2015) at https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/BOD/Markets%20Committee/2016/20160126/20160126%20Markets%20Committee%20of%20the%20BOD%20Item%2001%20Minutes%2020151209.pdf.

certain FERC staff, some academic commentators, and the PJM Market Monitor have raised concerns regarding virtual trading.[26]

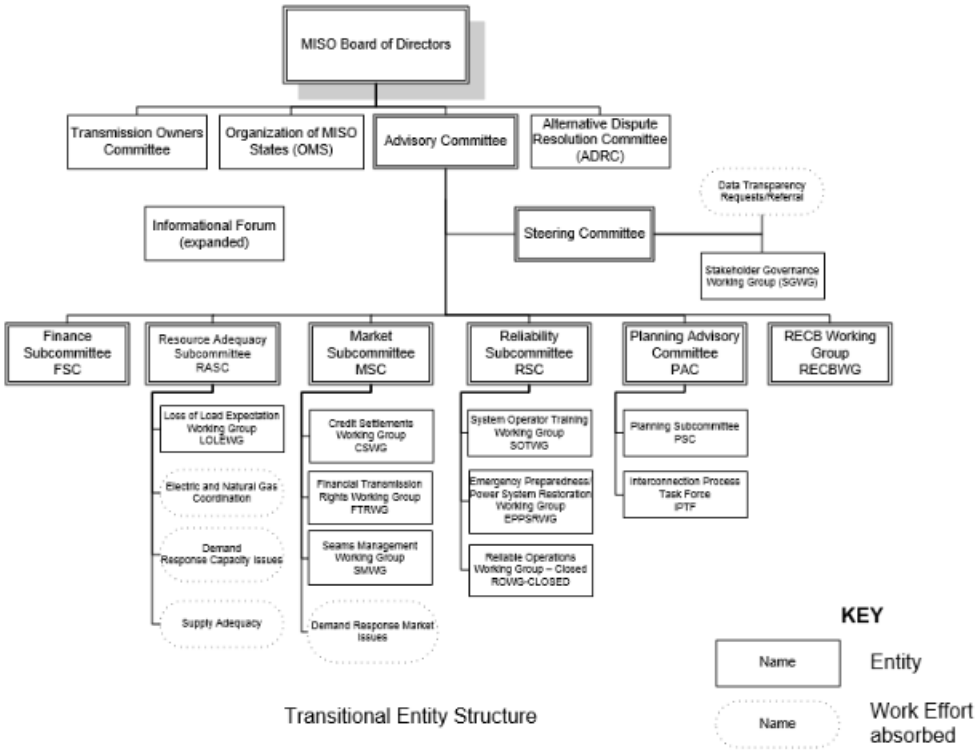
In light of these developments, EPSA notes that a virtual trading report, including a discussion of incentives provided to virtual traders in comparison with traditional incumbent utilities, and an analysis of whether virtual trading results in wealth transfer from ratepayers to virtual traders, will be forthcoming at a targeted date of June 2016. Until that report is issued, EPSA urges the Commission to refrain from taking action in this area that may dampen or impede incentives for virtual traders to participate in MISO's day-ahead and real-time markets.

E. Transparency

EPSA appreciates that MISO has demonstrated a continued commitment to addressing the sources and causes of uplift. However, stakeholders in the MISO process have often noted that because individual initiatives in various areas of market design reforms are siloed efforts, there is not necessarily uniform transparency around the complete scope, timeline, and commitments that MISO has made at any given moment of time to providing more transparency around both uplift issues and the causes and frequency of out-of-market operator actions. This is a primary concern for MISO stakeholders at this time because the Data Transparency Working Group that is cited in MISO's Report is no longer an active group. The working group's last meeting

[26] *Minutes of the Markets Committee Meeting*, MISO Board of Directors Meeting (Dec. 9, 2015) at: https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/BOD/Markets%20Committee/2016/20160126/20160126%20Markets%20Committee%20of%20the%20BOD%20Item%2001%20Minutes%2020151209.pdf.

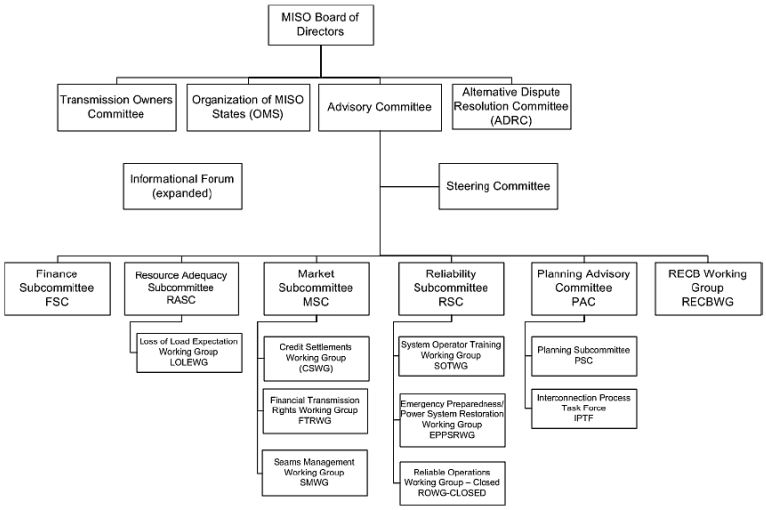
occurred on March 7, 2016.[27] EPSA members that have been a part of the Advisory Committee proceedings on this matter have noted that Q1 of 2016, through March 7, was specifically intended to be a transition period for implementation of the new organizational chart, and that there is no substitute for the now-eliminated Data Transparency Working Group. Rather, as denoted in the transitional organization chart and final chart below, the work of the transparency group has been "absorbed" into a larger committee chain:



Source: *Stakeholder Process Redesign Update*, AC Item 06, MISO Advisory Committee Materials, New Orleans (March 23, 2016) at pp. 6-7 (available via www.misoenergy.org).

[27] This fact has not been mentioned in the Report, even as the MISO Organizational Chart Redesign Process that resulted in the working group's elimination was a proceeding that took place in 2015, concluding with the approval of a new organizational chart at a MISO Advisory Committee meeting on December 9, 2015.

Stakeholder Entity Structure: Post Transition (Final)



Final Entity Structure (Post-Transition)

Source: *Stakeholder Process Redesign Update*, AC Item 06, MISO Advisory Committee Materials, New Orleans (March 23, 2016) at pp. 6-7 (available via www.misoenergy.org).

MISO's report also describes that while it does provide daily summary reporting of the dollar amounts involved in day-ahead and real-time commitments, as well as in price volatility make-whole payments, its monthly market reporting charts merely summarize these values and discuss general trends without providing specific information on the reasons or uplift or operator actions. MISO also reported that at this time, it has not identified any potential refinements or further potential breakdowns to its reported uplift categories that could provide more transparency to uplift and out-of-market operator actions.

MISO's reporting of real-time commitments should be supplemented by monthly reporting (or such reporting as may be more frequently required) of actual settled uplift dollar impacts that are sufficiently aggregated to protect confidential information. While MISO states in its report that individual uplift or operator action information cannot be feasibly made available very close to real-time, or at a granular zonal level on a near

real-time basis, these limitations do not rule out the possibility of reporting actual settled uplift dollar impacts, on a megawatt (MW) basis, as well as the reasons why the MWs were committed out-of-market, on a monthly basis. This additional information gathering should be feasible for MISO, given that it would be comparable to the NYISO's currently in-effect monthly reporting practices,[28] without compromising granular zonal or asset-specific information. MISO itself submits accurate uplift costs can be made available after completion of the market settlement process seven days after a given operating day, and that disclosures closer to real-time could be achieved with certain changes in processing and technology.[29]

EPSA cautions that in light of differing ISO/RTO current approaches to reporting the causes, duration, and amount of uplift and out-of-market actions, FERC should take leadership over this critical transparency issue and prepare universally applicable guiding principles that each ISO/RTO must adopt toward regular reporting disclosures on a MW basis. EPSA believes that the Commission should direct transparency reporting reforms that provide a uniform, consistent, and comparable level of information about uplift and out-of-market actions from each ISO/RTO under common benchmarks, metrics, protocols, and reporting timelines. EPSA emphasizes that whatever the scope of the required transparency reporting, the format and parameters of each ISO/RTO report must be similar and comparable among reports -- this is a critical factor that will ensure that ISOs/RTOs have accountability benchmarks to measure their performance against one another, and so that the Commission and

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[28] *See, e.g.* New York Independent System Operator, Monthly Reports, available via www.nyiso.com.

[29] *See* MISO Report, at 62.

market participants can use comparable data sets to meaningfully glean where improvements have been made across ISOs/RTOs and where further reforms are necessary.

III. Conclusion

Wherefore, EPSA respectfully requests that FERC direct MISO to timely complete Phase II of its ELMP implementation and address recent Phase I results by rapid design changes that ensure only available and economic offline resources are included in the pricing logic. The Commission should likewise require that all other ISOs/RTOs implement convex hull pricing that is predicated on design principles which enable fast-start resources to set prices more frequently and reflect the full costs of these deployments through transparent market price signals. EPSA also requests that FERC take a leadership role in ensuring that MISO firmly commits to its implementation timelines both for its ELMP initiative and as to the several initiatives that have been planned with regard to facilitating reserve procurement and pricing through market-based mechanisms. Finally, EPSA urges the Commission to take leadership over MISO's development of revised transparency reporting practices, and also ensure that these practices are comparable to those of other ISOs/RTOs so that they are an effective tool to hold system operators accountable for their uplift and operator actions.

EPSA also urges that the Commission rapidly finalize its proposal to reform the default $1000/MWh offer cap in Docket No. RM16-5 and take additional steps to address market design and pricing concerns that are fundamental changes which must complement ISOs' and RTOs' individual efforts to improve fast-start resource pricing

and dispatch policies, multiple commitment contingency management, look-ahead modeling, uplift allocation, and uplift reporting.

Finally, EPSA respectfully requests that the Commission direct all ISOs and RTOS to develop detailed work plans and clear timelines to address all price formation reforms discussed herein. The Commission should ensure that these reform initiatives are expeditiously approved within 2016.

Respectfully Submitted,

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Filed: April 6, 2016

CERTIFICATE OF SERVICE

I hereby certify that I have this day served, via electronic transmission foregoing upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. this 6th day of April, 2016.

_____/s/_____

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