

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Modernizing Wholesale Electricity Market Design)

Docket No. AD21-10-000

Comments of the R Street Institute

I. Issue Summary

On April 21, 2022, the Federal Energy Regulatory Commission (Commission or FERC) issued an Order Directing Reports seeking information from the six jurisdictional Regional Transmission Organizations (RTOs) concerning existing and planned market reforms related to changing industry conditions.¹ The Order observed RTOs are facing new operational challenges from changes in the mix of generating resources and the nature of customer electric loads.² RTOs are responding to these challenges by seeking changes to energy and ancillary services (E&AS) markets and to operating practices to meet future system needs. The Commission's Order directed responses to several questions and invited RTO comments on the trends affecting their region as well as RTO plans to address these changes.

II. Statement of R Street's Position

a. Vision

¹ Federal Energy Regulatory Commission, *Order Directing Reports*, Docket No. AD21-10-000, April 21, 2022. <https://www.ferc.gov/media/ad21-10-000-0>.

² *Ibid.*

The R Street Institute (RSI) has long supported development of competitive markets in the electric power industry as the best way to better serve end-use customers.³ At the same time, RSI recognizes a role for government oversight. Elements of the electric power industry are susceptible to market failures. The industry has been regulated with a goal of mitigating market failures and securing better industry performance. However, regulatory processes are exposed to forces that may undermine consumer benefits, which is a kind of government failure. R Street advocates for policies that reflect the potential and the limits of both market and government institutions.

The success of RTO markets is founded on robust price formation processes.⁴ Efficient prices are necessary in the short run to ensure that operational incentives faced by system participants are aligned with system values. Such prices are needed in the long run to motivate efficient additions and retirement of resources on both the supply and demand side.

Concerns about effective price formation have grown as market fundamentals and the resource mix shift. Most RTOs report that they constantly monitor changing market conditions and have sought market-design reforms to improve price formation when necessary. The subject has also caught the eye of the Commission. In 2014, the Commission launched a price formation initiative involving several technical conferences and staff reports. This effort culminated in Commission Orders No. 825 (on settlement intervals and shortage pricing), 831 (on offer caps) and 844 (on uplift cost allocation), which were all issued in 2016.⁵

³ Devin Hartman, "Wholesale Electricity Markets in the Technological Age," *R Street Policy Study* No. 67, August 2016, p. 5. <http://www.rstreet.org/wp-content/uploads/2016/08/67.pdf>.

⁴ Devin Hartman, "Refreshing Price Formation Policy in Wholesale Electricity Markets," *R Street Policy Study* No. 106, August 2017, p. 5. <https://www.rstreet.org/wp-content/uploads/2017/08/106.pdf>.

⁵ Federal Energy Regulatory Commission, Order No. 825, "Settlement Intervals and Shortage Pricing in Markets Operated by Regional Transmission Organizations and Independent System Operators," June 16, 2016; Federal Energy Regulatory Commission, Order No. 831, "Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators," Nov. 17, 2016; Federal Energy Regulatory Commission, Order 844, "Uplift Cost Allocation and Transparency in Markets Operated by Regional Transmission Organizations and Independent System Operators," April 19, 2016.

As RTOs respond to a more rapidly changing environment it can be useful to revisit market design fundamentals and lessons learned from over two decades of experience developing RTOs. Market competition has emerged as a core component of the American economy because it provides members of society with desired economic freedom and often appears to be the most effective manner to promote economic growth. Markets are most effective when conditions support reasonable competitive behavior by buyers and sellers. Under some conditions, markets may stabilize at a less than fully competitive level of operation absent some sort of corrective action. Economists describe the conditions that impair competition as market failures. Types of market failure include externalities, public goods, asymmetric information and market power.

Technical characteristics of electric power production and consumption make electric power a demanding environment for the emergence of robust competition.

- Electricity must be produced in the same moment it is consumed.
- The number of potential buyers and sellers is fixed in the short run by the network of physical infrastructure.
- Electricity production and consumption must remain in balance to allow efficient and reliable operation of the electric power system.
- Each party producing or consuming power within a networked power grid can affect the flow of power throughout the system. Transmission operators must monitor grid use and have tools to prevent power flows from inadvertently overwhelming grid components.
- Because of the interactive nature of power flows on the networked grid, reliability is in some respects a common pool resource shared by all users of the system.

These elements combine in ways that can challenge the emergence of effective competition. For example, even in regional markets with many buyers and sellers, network conditions can combine to give market participants transitory market power at their location.

Government may be well positioned to provide corrective action to mitigate the effects of market failure and help obtain reasonably competitive outcomes. In other cases, government may replace competition with alternative industry structures with beneficial results. However, government action is sometimes susceptible to failures, yielding industry outcomes that impede rather than aid overall wellbeing. Identification of a market failure is no guarantee that government intervention will bring improvement. For the wholesale electricity industry, the most efficient approach is for government to facilitate competition—rather than substitute for it—because power generation is unequivocally not a natural monopoly.

Some externalities are best addressed by appropriate market designs. For example, power flows on a networked grid all affect other power flows—creating externalities for other grid participants. Areas outside of RTOs often must set aside substantial transmission capability to account for potential loop flows, power flows on a company's transmission grid induced by transactions on interconnected systems. Such set asides increase transmission expense. A core advantage of RTO markets is in their integration of generator capability and consumer load with information on transmission capability. This integration not only ensures planned power flows are feasible given network capacity but also provides price signals to market participants that support reliable operations, offering higher prices where more generation (or lower consumption) would reduce grid congestion and lower prices where less

generation (or more consumption) would cut congestion.⁶ As a result, both transmission and generation resources are employed more efficiently.

Ultimately the purpose of the industry to help end-use customers create value using electric power. RTO markets facilitate wholesale trades between buyers and sellers of power upstream of end-use customers, rather than between producers and end-use customers directly. Upstream transactions can be vital in helping end-use customers manage price and other risks of power generation and distribution. Still, RTO markets are only worth the expense of their development and operations if they help customers get access to power on terms and conditions that are better than otherwise possible. Organized wholesale energy and ancillary service markets administered by RTOs have unquestionably produced benefits exceeding their costs, and their net benefits outlook continues to grow with the changing trajectory of the future resource mix.⁷

As a final preliminary matter, we note the Order presumes RTOs continue in their existing form. In July 2021, RSI joined a broad coalition of groups seeking a comprehensive, independent study of the electric power industry and its regulation to assure the industry is providing consumers with the most reliable and affordable power available.⁸ RSI agrees RTOs have been effective tools for promoting wholesale competition in the electric power industry, yielding cost savings and enhanced reliability, innovation and transparency. Yet the benefits of wholesale competition have not always been clear for retail consumers, sometimes because of unmitigated market power but more often because of faulty

⁶ See, e.g., “Response of the New York Independent System Operator, Inc. to Order Directing Reports,” Docket No. AD21- 10-000 at Attachment A (filed Oct. 18, 2022); Scott Harvey and William Hogan “Locational Marginal Pricing and Electricity Markets,” Oct. 17, 2022 (Harvey and Hogan Report). https://scholar.harvard.edu/files/whogan/files/locational_marginal_prices_and_electricity_markets_hogan_and_harvey_paper_101722.pdf.

⁷ Hartman. <https://www.rstreet.org/wp-content/uploads/2018/04/67-1.pdf>; Devin Hartman, “Western Grid Energy Markets,” EUCI, March 28, 2022. <https://www.rstreet.org/2022/03/28/western-grid-energy-markets>.

⁸ “Re: Independent Study of the Cost of Electricity,” Electricity Consumers Resource Council et al., July 8, 2021. <https://elcon.org/wp-content/uploads/Coalition-Letter-Independent-Study-of-the-Cost-of-Electricity-July-2021.pdf>.

retail regulation.⁹ We again note the need for a comprehensive study of the electric power industry that pinpoints the retail impact of organized wholesale markets.

b. Recommendations

In lieu of itemized responses to specific Commission questions, RSI offers several overarching recommendations: consistent with answers the Commission's questions seek.

1. *Market design reform is not the way to "correct for" or distribute benefits from state subsidies.*

The AD21-10-000 docket began as an effort to clarify issues surrounding capacity market structure and direct state subsidies for specific generation projects. The inquiry broadened to encompass trends in generator resource mixes and demand-side variability, and the primary focus shifted to E&AS market designs. Capacity market and E&AS market design decisions are often siloed, which deters an integrated consideration of overlapping issues. More holistic examinations of these two categories of markets and interactions between them are necessary in those RTOs with formal capacity markets.

Regarding the initial scope of this docket, the rise of state subsidies creates a legitimate concern for those interested in the health of electricity competition. However, efforts to fix markets to counteract subsidies by another government body result in compounding deadweight loss in a marketplace. While RSI generally opposes distortive subsidies, the best way to think about the issue is captured in the words of consumers who pay for increased state subsidies via non-bypassable charges, "two wrongs do not make a right."¹⁰ Market design reforms are generally not the

⁹ Jennifer Chen and Devin Hartman, "Why wholesale market benefits are not always apparent in customer bills," R Street Institute, Nov. 10, 2021. <https://www.rstreet.org/2021/11/10/why-wholesale-market-benefits-are-not-always-apparent-in-customer-bills>.

¹⁰ Devin Hartman, "MOPR Madness: 2 wrongs don't make a right," *Utility Dive*, Sept. 13, 2019. <https://www.utilitydive.com/news/mopr-madness-2-wrongs-dont-make-a-right/562798>.

appropriate place to respond to potential distortions to the market coming from public policy choices.¹¹

2. *Market design reform should be focused on ensuring efficient price formation.*

This point is the more general version of the prior one. Efficient prices support grid reliability and help reduce the overall cost of serving end-use customers, given the broader policy environment. Efforts to pursue policies beyond efficient operation of the grid through market design tend to undermine grid reliability and efficiency.¹² This point is not only the product of theoretical study, but also the lesson hard won by the Commission and industry through experiments with alternative approaches to market design.¹³ Again, policy efforts directed at goals other than economic efficiency and grid reliability ought to be addressed in other forums. Three concrete possibilities within the context of increasing net load variability and the effort to better deploy flexible resources are: first, improve the depiction of the capabilities of physical resources relied upon by RTOs; second, include all active constraints in price formation; and third, improve “look ahead” capabilities in RTO commitment and dispatch processes.¹⁴

3. *Regulatory oversight of price formation practices may reasonably differ across RTOs.*

Challenges faced by regulators examining RTOs in regions dominated by merchant generation differ from those faced in RTOs that are dominated by traditionally regulated utilities. Merchant investment and operational behavior responds to real and expected net revenues in bilateral and

¹¹ “Comments of the R Street Institute on Modernizing Electricity Market Design before the Federal Energy Regulatory Commission,” Docket No. AD21-10-000, April 26, 2021. https://www.rstreet.org/wp-content/uploads/2021/04/Final_Modernizing-Elec-Mrkt-Design-Devin-Hartman.pdf.

¹² Devin Hartman, “Re: An Open Letter on FERC’s New Policy and Procedural Agenda,” R Street Institute, March 28, 2018. <https://www.rstreet.org/wp-content/uploads/2018/04/R-St-Open-Letter-to-FERC-final-1.pdf>.

¹³ Harvey and Hogan Report.

https://scholar.harvard.edu/files/whogan/files/locational_marginal_prices_and_electricity_markets_hogan_and_harvey_paper_101722.pdf.

¹⁴ Hartman, pp. 11-13. <https://www.rstreet.org/wp-content/uploads/2017/08/106.pdf>.

organized wholesale markets. Thus, incentive compatibility in market design is sufficient for the provision of essential reliability services. Existing market monitoring practices likewise sufficiently target the potential abuse of market power in such areas.

By contrast, monopoly utilities tend to pass wholesale revenues and generator costs to captive customers through automatic rate adjustments, often referred to as trackers.¹⁵ This incentive misalignment explains why the subject of uneconomic power plant operations and associated inaccurate RTO economic and physical supply offers are limited to traditionally regulated utilities and not a concern for merchants. Potomac Economics has noted this in stating that differences in merchant and integrated utilities “underscores the fact that regulatory incentives can weaken the natural discipline of the competitive markets.”¹⁶ This translates into the Commission’s price formation efforts needing to follow the economic textbook of incentive compatibility in merchant-heavy regions, whereas in traditionally regulated regions the Commission should engage state utility commissions about providing them with greater generator-specific information on un/economic wholesale operations so they can gauge the prudence of retail mechanisms like trackers and rate recovery generally.

4. *Market design reform should be proactive rather than reactive.*

Too often market design reforms are reactions to recent performance and can end up better fitting conditions of the past rather than the conditions in which the reforms will play out. Proposed reforms should be evaluated based on expected costs and benefits across reasonable scenarios of future market conditions. An explicit or implicit Commission policy that market design changes have

¹⁵ Travis Kavulla, “Reviewed Work: ‘The Billion-Dollar Coal Bailout Nobody is Talking About: Self-Committing in Power Markets,’” R Street Institute, June 12, 2019. <https://www.rstreet.org/2019/06/12/reviewed-work-the-billion-dollar-coal-bailout-nobody-is-talking-about-self-committing-in-power-markets>.

¹⁶ “A Review of the Commitment and Dispatch of Coal Generators in MISO,” Potomac Economics, September 2020, p. 1. https://cdn.misoenergy.org/Coal%20Dispatch%20Study_9-30-20479770.pdf.

a sufficient forward period for cost-benefit analysis may be fruitful. A 5-10 year minimum forward period is reasonable, especially considering that major changes often take multiple years to implement and often require fine-tuning adjustments thereafter. The instant proceeding can facilitate such proactive market design efforts by facilitating the exchange of information among stakeholders on current and planned market changes in response to changing industry conditions.

5. *RTO market designs need not be forced into harmonization, but harmonization can be valuable.*

Stakeholder processes are valuable mechanisms for identification, evaluation and development of new information, and for promoting and understanding the value of regional markets within the stakeholders' home organizations and the broader community. In addition, conditions vary in material ways across regions. When best practices are unknown, diversity in approaches to market design enable extremely useful trial and error learning processes that allow best practices to emerge and spread in an evolutionary manner. On the other hand, diversity also tends to make RTO processes less transparent, increasing costs for firms and regulators involved in multiple markets. Arcane RTO-specific policies can serve as a barrier to entry, which impedes competition and just and reasonable rates, and RTO stakeholder processes left to their own devices have a pattern of favoring incumbent supply interests rather than maximizing economic efficiency.¹⁷

Appropriate FERC policy is to balance the benefits of robust regional stakeholder processes against the benefits of greater consistency across markets. In addition, FERC must remain aware of the prospects that stakeholder processes may fail to produce policies consistent with FERC's mandate to ensure rates are just and reasonable and without discriminatory or preferential treatment. To address incumbency bias in RTO stakeholder-lead efforts, research shows FERC must

¹⁷ Mark James et al., "How the RTO Stakeholder Process Affects Market Efficiency," *R Street Policy Study* No. 112, October 2017. <https://www.rstreet.org/wp-content/uploads/2017/10/112.pdf>.

demonstrate increased vigilance.¹⁸ One policy option is for the Commission to clarify conditions that permit regional variance in market design, such as differences in generation mix, generator regulatory status, transmission topology and other unique regional drivers of system contingencies.

Although the Commission should not adopt a standard market design across regions, it can communicate consistent goals and objectives of market design across regions. For example, this could be accomplished in a Commission policy statement stating that an objective of E&AS market design is to drive net cost of new entry (CONE) toward zero in merchant-heavy markets, unleash price-responsive demand in all RTOs and co-optimize energy and ancillary service reforms consistent with a coherent vision alongside capacity market reforms. The most efficient and accurate price signals come from energy and ancillary service markets, where the reflection of actual conditions occur on a granular basis, unlike the more administrative constraints at broader estimation of transmission constraints in capacity markets. It is also easier to detect and mitigate market power in E&AS than capacity markets, since the former ties to verifiable short-term conditions and the latter is predicated on a multi-year outlook that requires more judgement. A Commission policy objective to upsize E&AS net revenues would minimize the missing money needed for capacity markets, which translates into superior combined market performance as well as the need for less capacity market designs. For example, E&AS markets that signal flexibility characteristics more effectively mitigates the need to explore multi-product capacity markets.

6. *RTO efforts to meet increasingly variable and uncertain net loads should be developed through market design reform and not by out-of-market operating practices.*

¹⁸ Ibid, p. 19. <https://www.rstreet.org/wp-content/uploads/2017/10/112.pdf>.

Among the key concerns noted in the Commission's Order Directing Reports was an increasing variability and uncertainty in the net loads that RTOs must meet reliably in real-time.¹⁹ The Order further noted a variety of proposed processes and products under consideration at one or more RTOs, including special rates for fast-ramping resource to requirements for faster response times to tools to identify and prepare for upcoming extreme ramp events. RSI's recommendation applies the messages of the prior points: sustainable approaches to managing net load variability will integrate system requirements into real time E&AS markets in a transparent, rule-based manner. As conditions vary across regions and no clear best practices have been identified, experimentation should be encouraged consistent with favorable 5-10 year forward cost-benefit tests.

FERC should routinize existing market design reviews and assess proposed reforms to ensure they do not erect unnecessary barriers to participation in wholesale markets. One option is to host periodic industry forums on the state of newly commercial technologies and prompt RTOs and independent market monitors to assess whether existing market designs create undue barriers to entry. At the same time, such a forum could examine whether market designs present barriers to exit as a consequence of their failure to productize reliability services fully. Such failures may lead to additional reliability must-run agreements (RMRs) and other out-of-market actions tending to undermine efficient price formation.²⁰

7. *Market design reforms should unleash demand-side opportunities.*

Demand-side participation is chronically underutilized, yet it holds large reliability, cost savings, market power and price spike mitigation potential.²¹ This problem is a direct reflection of regulatory

¹⁹ *Order Directing Reports*, p. 4. <https://www.ferc.gov/media/ad21-10-000-0>.

²⁰ See, e.g., Michael Giberson, "Integrating Reliability-Must-Run Practices into Wholesale Electricity Markets," *R Street Policy Study* No. 114, October 2017. <https://www.rstreet.org/wp-content/uploads/2018/04/114-1.pdf>.

²¹ Devin Hartman, "Pathways to Competition in Demand Response," *R Street Shorts* No. 30, July 2018, p. 2. <https://www.rstreet.org/wp-content/uploads/2018/04/RSTREETSHORT30-1.pdf>.

paradigms. Regulation of the electric power industry is generally conducted by the Commission and by state commissions on behalf of consumers and with a focus on companies with extensive generation, transmission or other assets at stake. Most RTOs continue to see their primary obligation as managing energy resources to meet consumer load reliably. Load, in many of the RTO filings, is presented as something to be forecasted and met by the system rather than as an expression of consumers' willingness to pay for electricity and a contributor to stakeholder processes and active participant in RTO markets. Effective market designs should "bring together a large enough proportion of potential buyers and sellers to produce satisfactory outcomes for both sides of a transaction," in the words of Nobel prize-winning economist Alvin Roth.²²

RTOs, especially those spanning restructured states, enabled price signals that encourage entrepreneurs to find innovative means to provider demand response.²³ Generally, RTOs in restructured states yield greater total levels of demand response and are the only institutional arrangement attracting significant economic demand response. RTOs consisting primarily of integrated utilities typically only result in limited levels of emergency demand response.

RTO markets generally outperform non-RTO areas but do not yet unleash the full economic potential of demand response as a supply resource or, perhaps more promising, integrate actual customer preferences as part of the demand curve. While the Commission has not neglected demand-side participation in markets—attention to the demand side extends at least as far back as the year 2000—it is instructive that one theme remains relatively constant over this history: FERC urging RTOs to better encourage an active demand side of the market. It remains a constant theme

²² Alvin E Roth, "The Art of Designing Markets," *Harvard Business Review*, October 2007. <https://hbr.org/2007/10/the-art-of-designing-markets>.

²³ Dan York and Martin Kushler, "Exploring the Relationship Between Demand Response and Energy Efficiency: A Review of Experience and Discussion of Key Issues," American Council for an Energy Efficient-Economy, Report Number U052, March 1, 2005. <https://www.aceee.org/research-report/u052>.

because progress to date has been inadequate.²⁴ A fundamental reconsideration of what is needed for an active demand side of the market should be undertaken.

The Commission could consider various policy goals and objectives that advance demand-side participation in markets. For example, a goal should be to unleash price-responsive demand (PRD) such that demand curves more accurately reflect true consumer value of lost load (VOLL) preferences, rather than an artificially inelastic demand curve that is vertical in practice. Aside from large consumers, whose transactions costs are low enough to explore scheduling their consumption directly in dispatch and commitment processes, the majority of consumption is economic as PRD on an automated and aggregated basis to limit transactions costs.²⁵ Studies of the distribution—not merely the average level—of VOLL reveal enormous economic potential of enabling PRD and the notion of “differentiated reliability” generally.²⁶

This must work in tandem with a rethink of reliability policy, which relies on engineering metrics instead of economic social welfare, and thus inaccurately implies that all firm load is of equal value when VOLL actually varies by orders of magnitude between customers.²⁷ This thinking reinforces inflexible demand when instead industry stakeholders should be emphasizing ideas like privatizing resource adequacy since new technologies enable resource adequacy to no longer warrant treatment as a common good.²⁸ An appropriate policy objective the Commission should consider is increasing the volume and likelihood of voluntary demand curtailments and decreasing

²⁴ See the discussion in Federal Energy Regulatory Commission, Wholesale Competition in Regions with Organized Electric Markets, Advance Notice of Proposed Rulemaking, Docket Nos. RM07-19-000 and AD07-7-000, June 22, 2007. https://www.ferc.gov/sites/default/files/2020-04/E-3_29.pdf.

²⁵ Devin Hartman, “Differentiated Reliability,” Future Power Markets Forum, July 22, 2021. <https://www.rstreet.org/wp-content/uploads/2021/07/Hartman-FPMF-Differentiated-Reliability.pdf>.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Devin Hartman, “Enhancing Market Signals for Electric Resource Adequacy,” *R Street Policy Study* No. 123, December 2017, p. 2. <https://www.rstreet.org/wp-content/uploads/2017/12/Final-123.pdf>.

that of involuntary curtailments. Experiences with recent rotating and sustained outages resulting from firm demand exceeding supply suggest enormous social welfare gains potential, including lives saved, by allocating supply scarcity based on customer-class or customer-specific VOLL.²⁹ Enabling robust, voluntary demand-side participation is imperative.

III. Response to Questions Raised by Commissioner Christie

Most RTOs responded to questions put forward by Commissioner Mark Christie in his concurrence to the Order Directing Reports. We have addressed the topic of the commissioner's fifth question, concerning implementation of Order No. 2222, in comments filed in response to that proceeding.³⁰ The commissioner's third question, on Locational Marginal Pricing (LMP), generated the most attention. The commissioner asked:

Is it appropriate to continue to use LMP in energy and capacity markets? Does the continued use of LMP threaten reliability as the generation mix changes? Does the use of LMP ensure that consumers get the benefit of low clearing prices? Is there a better pricing model than LMP in RTO/ISO markets to achieve reliability and fairness to consumers?

Responses were unanimous in supporting continued use of LMP in RTO market designs. PJM stated, "Independent analysis has repeatedly proven that Locational Marginal Pricing (LMP) is the best method for pricing the energy markets."³¹ The "SPP believes that LMP is appropriate for use in energy markets."³² "The CAISO believes it is appropriate to continue using locational marginal pricing in its

²⁹ Hartman. <https://www.rstreet.org/wp-content/uploads/2021/07/Hartman-FPMF-Differentiated-Reliability.pdf>.

³⁰ For e.g., see "Reply Comments to FERC regarding MISO Order 2222 Compliance filing," Docket No. ER22-1640-000, Aug. 1, 2022. <https://www.rstreet.org/2022/08/01/reply-comments-to-ferc-regarding-miso-order-2222-compliance-filing>.

³¹ "PJM Report," PJM, Oct. 18, 2022, p. 39. <https://www.pjm.com/-/media/documents/ferc/filings/2022/20221018-ad21-10-000.ashx>.

³² "Report of Southwest Power Pool, Inc," Southwest Power Pool, Oct. 18, 2022, p. 43. https://www.spp.org/documents/68091/20221018_spp%20report%20in%20response%20to%20order%20directing%20reports_ad21-10-000.pdf.

energy markets.”³³ ISO-NE said, “Locational marginal pricing has been a cornerstone of wholesale electricity markets in New England since the Commission’s acceptance of the Standard Market Design proposal nearly two decades ago.”³⁴

The NYISO response was, as they put it, “an emphatic ‘yes’.”³⁵ NYISO continued:

It is appropriate for ISOs and RTOs to continue to use LMP in energy markets, and to co-optimize the scheduling of related ancillary services products, including regulation service and operating reserves. The NYISO is not aware of any other pricing model that would be equal to or superior to the LMP market methodologies employed in ISO/RTO markets to maintain reliability while producing fair wholesale electric market prices for consumers.³⁶

In addition, NYISO commissioned the Harvey and Hogan report: “Locational Marginal Pricing and Electricity Markets,” and submitted the report as Attachment A to the NYISO Report.³⁷

The Harvey and Hogan report provides clear depictions of difficulties with early non-LMP market designs employed by RTOs and explain how LMP helped to address those difficulties. The report is highly recommended for the many persons in industry and regulatory communities today who did not live through those early experiences. The Harvey and Hogan review provides deep insight into the reasons that fundamental principles must be considered in any sustainable effort to modernize wholesale electricity market design.

³³ “Report of the California Independent System Operator Corporation,” CAISO, Oct. 18, 2022, p. 53. <http://www.caiso.com/Documents/Oct18-2022-Report-ModernizingElecMkts-AD21-10.pdf>.

³⁴ “Report of ISO New England Inc.,” ISO, Oct. 18, 2022, p. 91. https://www.iso-ne.com/static-assets/documents/2022/10/ad21-10_response_to_order_directing_reports.pdf.

³⁵ “Response of the New York Independent System Operator, Inc. to Order Directing Reports,” NYISO, Oct. 18, 2022, p. 47. https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20221018-5105&optimized=false.

³⁶ Ibid.

³⁷ Harvey and Hogan.

https://scholar.harvard.edu/files/whogan/files/locational_marginal_prices_and_electricity_markets_hogan_and_harvey_paper_101722.pdf.

IV. Conclusion

RSI respectfully requests the Commission consider the comments contained herein.

Respectfully submitted,

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