

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

Modernizing Wholesale Electricity)	Docket No. AD21-10-000
Market Design)	
)	
)	

**COMMENTS OF THE
EDISON ELECTRIC INSTITUTE**

I. INTRODUCTION

The Edison Electric Institute (“EEI”) respectfully submits the following comments in response to the regional transmission organization and independent system operator (“RTO/ISO”) Reports¹ filed in the above-referenced docket on October 18, 2022. The RTO/ISO Reports were filed in response to the Federal Energy Regulatory Commission’s (“FERC’s” or “Commission’s”) Order Directing Reports.² The RTO/ISO Reports contain detailed information related to each RTO/ISO’s wholesale markets, including information on: (1) current system needs given changing resource mixes and load profiles; (2) how each expects its system needs to change over the next five years and over the next 10 years; (3) whether and how each plans to reform its energy and ancillary services markets to meet expected system needs over the next five years and over the next 10 years; and (4) information about any other reforms, including

¹ The RTO/ISO Reports consist of the following filings: Report of ISO New England Inc. in Response to Order Directing Reports, Docket No. AD21-10-000 (filed Oct. 18, 2022) (“ISO-NE” and “ISO-NE Report”); Report of PJM Interconnection, L.L.C. in Response to Order Directing Reports, Docket No. AD21-10-000 (filed Oct. 18, 2022) (“PJM” and “PJM Report”); Report of the California Independent System Operator Corporation, Docket No. AD21-10-000 (filed Oct. 18, 2022) (“CAISO” and “CAISO Report”); Response of New York Independent System Operator, Inc. to Order Directing Reports, Docket No. AD21-10-000 (filed Oct. 18, 2022) (“NYISO” and “NYISO Report”); Report on Modernizing Electricity Market Design of the Midcontinent Independent System Operator, Inc., Docket No. AD21-10-000 (filed Oct. 18, 2022) (“MISO” and “MISO Report”); Report of Southwest Power Pool, Inc. in Response to Order Directing Reports, Docket No. AD21-10-000 (filed Oct. 18, 2022) (“SPP” and “SPP Report”).

² *Modernizing Wholesale Electricity Market Design*, 179 FERC ¶ 61,029 (2022) (“Order Directing Reports”).

capacity market reforms and any other resource adequacy reforms that would help each meet changes in system needs. These topics necessarily cover broad areas such as resource adequacy, interregional planning, North American Electric Reliability Corporation (“NERC”) reliability standards, and distributed energy resources, among others. EEI previously submitted comments in this docket in response to a technical conference exploring the role of capacity market constructs in ISO-NE, NYISO, and PJM,³ and in response to a separate technical conference discussing the energy and ancillary services markets.⁴

EEI is the association that represents all investor-owned electric companies in the United States. Our members provide electricity for more than 235 million Americans and operate in all fifty states and the District of Columbia. As a whole, the electric power industry supports more than seven million jobs in communities across the United States. EEI’s member companies own and operate generation, transmission, and distribution facilities in regions in all areas of the country, both inside and outside of RTOs/ISOs. EEI members invest more than \$120 billion annually to make the energy grid smarter, cleaner, more dynamic, more flexible, and more secure; to diversify the nation’s energy mix; and to integrate new technologies that benefit both customers and the environment. EEI members are united in their commitment to get the energy they provide as clean as they can, as fast as they can, while keeping reliability and affordability front and center, as always, for the customers and communities they serve. Across the nation, EEI members are leading a clean energy transformation, making significant progress to reduce greenhouse gas emissions in our sector, while also creating good-paying jobs and an equitable

³ Comments of the Edison Electric Institute, Docket No. AD21-10-000 (filed April 26, 2021) (“EEI 2021 Post-Technical Conference Comments”).

⁴ Post-Technical Conference Comments of the Edison Electric Institute, Docket No. AD21-10-000 (filed Feb. 4, 2022) (“EEI 2022 Post-Technical Conference Comments”).

clean energy future. Accordingly, EEI members are directly affected by and can provide a broad-based perspective on the issues discussed in the RTO/ISO Reports.

II. COMMENTS

In the Order Directing Reports, the Commission rightfully recognized that the existing record in this proceeding does not support a one-size-fits-all solution for addressing changing system needs across the RTOs and ISOs.⁵ Instead, it is critical that RTOs and ISOs be allowed to identify issues and propose solutions to changing system needs through their stakeholder processes. It is especially important that the Commission allow the existing reform efforts described in the RTO/ISO Reports to play out. As the Commission recognized, these ongoing reforms are “designed to address specific system needs and market conditions in each RTO/ISO, and no single [energy and ancillary services] market reform that addresses all system needs and all market conditions has been identified.”⁶

In addition, as EEI has noted in prior filings in this docket, the Commission also should keep certain key principles in mind when determining whether there is a need to reform existing wholesale markets. Competitive wholesale energy markets should provide accurate price signals, in both the day-ahead and real-time markets, in order to promote efficient operation and resource adequacy.⁷ To help accomplish this goal, any new market services should be co-optimized to work with other RTO and ISO market services.⁸ Co-optimization also helps to

⁵ Order Directing Reports at P 7 (“At this time, we do not propose a generic solution to address changing system needs across the RTOs/ISOs because of the diversity of those needs and the lack of a compelling record to support any one-size-fits-all solution for meeting those needs.”).

⁶ Order Directing Reports at P 35.

⁷ See EEI 2021 Post-Technical Conference Comments at 3; EEI 2022 Post-Technical Conference Comments at 9-10.

⁸ As used herein, the term “co-optimization” refers to the simultaneous derivation of commitment and dispatch of energy and ancillary services that minimizes costs and meets reliability and operational constraints. The co-optimization of energy and ancillary services economically selects resources to deliver least cost and reliable energy to the market. See EEI 2022 Post-Technical Conference Comments at 8-10.

determine the economic trade-offs between the variety of services the resources can provide, and thus results in proper price formation to incent offering the services into the market. Lastly, while some level of volatility and uncertainty always will exist in markets, RTOs and ISOs should work to minimize out-of-market solutions and payments.⁹

A. Comments on responses to specific questions in the Order Directing Reports

In addition to the general comments above, EEI provides the following comments on responses provided in the RTO/ISO Reports to specific questions posed in the Order Directing Reports.

- a. **Question 9.2** - *What new products that value flexible attributes, if any, should be introduced in resource adequacy constructs, including capacity markets? Would such a change support adequate price signals for the investment and/or retention of resources with the capabilities needed to address emerging needs?*

The RTO/ISO Reports were right to highlight the importance of ensuring that flexible attributes are properly valued by markets. For example, the ISO-NE Report noted that “it is critical to ensure that capabilities relating to resource flexibility are remunerated appropriately, which is most accurately determined in the day-ahead and real-time markets.”¹⁰ Similarly, PJM noted that “further reforms to properly value flexibility in the operational timeframe is a necessary first step in ensuring that reserves are appropriately procured and priced in the operating timeframe.”¹¹

In order to address changing system needs, it is crucial that markets accurately value products with flexible attributes, including those that provide essential reliability services.

Generation resources that are available when dispatched and that are able to match load profiles

⁹ See EEI 2021 Post-Technical Conference Comments, at 3 (“The Commission should work to ensure that administrative interventions and uplift payments that reduce transparency are minimized.”); EEI 2022 Post-Technical Conference Comments, at 12.

¹⁰ ISO-NE Report at 81.

¹¹ PJM Report at 32.

are needed and are critical to the reliability and resiliency of the electric system.¹² Market rules should recognize the value of these attributes and ensure sufficient compensation for them. In addition to ensuring proper valuation for flexible attributes in the day-ahead and real-time markets, RTOs and ISOs should also consider longer-term ramp products for resources with these attributes.¹³ This will further bolster the reliability and resilience of the electric system and help RTOs and ISOs be better prepared for low probability, high risk events.

b. **Question 10.1** - *What reforms to reliability requirements, such as reforms to NERC standards, might be necessary?*

In response to this question, CAISO observed that generator interconnection models must be robust and accurate and that the Commission can facilitate this “by fostering industry dialog regarding the development and validation of non-proprietary models and, where appropriate, enhancing reliability standards and compliance, monitoring, and enforcement programs.”¹⁴ In order to effectively model inverter-based resource (“IBR”) performance, more work is needed to develop and validate non-proprietary models that enable more accurate performance modeling. Additionally, as CAISO suggested,¹⁵ the Commission should facilitate additional discussions with industry to determine if the NERC control performance Reliability Standards need to be modified or if other actions should be considered in light of the increasing number of renewable resources connecting to the grid.¹⁶

¹² See MISO Report at 11-12 (noting the need for resource availability during shifting times of need).

¹³ See EEI 2022 Post-Technical Conference Comments at 7-8 (noting the potential for longer-term ramp products to assist in addressing the uncertainty in net load).

¹⁴ CAISO Report at 46-47.

¹⁵ CAISO Report at 47 (noting that “the Commission and NERC should consider facilitating additional discussions regarding the need to revisit control performance standards that apply to balancing authority functions”).

¹⁶ This discussion could be made part of the Commission proceeding proposing to direct NERC to develop reliability standards for inverter-based resources that cover data sharing, model validation, planning and operational studies, and performance requirements. *Reliability Standards to Address Inverter-Based Resources*, 181 FERC ¶ 61,125 (2022).

ISO-NE explained in its response that NERC’s Energy Reliability Assessment Task Force has proposed development of a standardized planning framework for fuel adequacy issues and stated that such standards “could be agreed upon across balancing areas, to ensure co-reliance on neighboring supply does not succumb to incorrect assumptions that lead to a shared energy adequacy shortcoming.”¹⁷ The Commission should note, however, that NERC has an active Reliability Standards project, P2022-03 (Energy Assurance with Constrained Resources), which will modify or create new NERC Reliability Standards for Operations Planning, Near-Term Transmission Planning, and Long-Term Transmission Planning to evaluate energy assurance, including analyzing the expected resource mix availability (flexibility) and the expected availability of fuel in these assessments. Those standards will be enforceable across all regions and responsible entities. The MISO Report also highlighted certain NERC proposals to improve responsible entity winterization and training within NERC Reliability Standards.¹⁸ The Commission should take these ongoing efforts into consideration when determining whether additional action is necessary at this time.

- c. **Question 10.2** - *What reforms to policies for coordinating operations with adjacent balancing authority areas in both RTO/ISO and non-RTO/ISO regions might be necessary?*

The RTO/ISO Reports rightfully noted the importance of improving coordination between balancing authorities as resource portfolios evolve and variable resources increase in number.¹⁹ The RTO/ISO Reports also described certain regional reform efforts that are already underway that are designed to enhance coordination between balancing authority areas.²⁰ The

¹⁷ ISO-NE Report at 82-83.

¹⁸ MISO Report at 41.

¹⁹ MISO Report at 31.

²⁰ ISO-NE Report at 83-84; CAISO Report at 47.

Commission should continue to allow these regional reform efforts to develop and play out, as noted above. The Commission can play a helpful role in these efforts by supporting “innovative approaches to wide area coordination of electric system operations”²¹ that may arise from these regional processes.

In response to this question, the PJM Report asked the Commission to “consider development of a robust standardized interregional transfer capability methodology that would inform future interregional transmission coordination.”²² The question of whether and, if so, how, the Commission should consider developing an interregional transfer capability methodology is significant and merits robust stakeholder discussion. The Commission already has opened a separate proceeding, “Establishing Interregional Transfer Capability Transmission Planning and Cost Allocation Requirements” in Docket No. AD23-3-000, in which this issue is being addressed. Most recently, Commission Staff lead a workshop on December 5 and 6, 2022, to discuss issues associated with interregional transfer capability, with a subsequent notice requesting comments in response to the workshop issued on December 23, 2022.²³ Therefore, the Commission’s proceeding in Docket No. AD23-3-000—not the present proceeding dedicated to market design—is the appropriate setting in which to discuss potential Commission action on interregional transfer capability.

²¹ CAISO Report at 48.

²² PJM Report at 34.

²³ Notice Inviting Post-Technical Conference Comments, Docket No. AD21-15-000 (filed Dec. 23, 2022).

- d. **Question 10.3** - *What actions should the Commission consider taking to encourage coordination between the electricity transmission and distribution system operators in order to address challenges arising from limited visibility into distribution-connected resources?*

As several of the RTOs/ISOs note,²⁴ coordination between electricity transmission operators and distribution system operators is important to ensuring reliability. This issue will likely grow in significance as more distributed energy resources come online and participate in wholesale markets as a result of the implementation of Order No. 2222.²⁵ To encourage coordination, CAISO asks the Commission to “facilitate dialogue” by “identifying practices and technologies to integrate distribution-connected resources into organized electricity markets... as well as information sharing practices and tools between distribution system operators and transmission operators to enhance load forecasting for planning and operational purposes.”²⁶ While the Commission can help to facilitate dialogue between electricity transmission operators and distribution system operators, it should be cognizant of the important role that electric distribution utilities play in maintaining reliability of the distribution system and that states play in regulating them.

The Commission recently issued an order directing NERC to review registration of unregistered IBRs that may in aggregate have a material impact on the reliable operation of the Bulk-Power System.²⁷ In conjunction, the Commission issued a notice of proposed rulemaking directing NERC to develop new or modified Reliability Standards for IBRs and IBRs connected to the distribution system that in aggregate have an impact on the reliable operation of the Bulk-

²⁴ See MISO Report at 31-32; PJM Report at 34-35; CAISO Report at 48-49; ISO-NE Report at 84.

²⁵ *Participation of Distributed Energy Resource Aggregations in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 2222, 85 FR 67094, 172 FERC ¶ 61,247 (2020).

²⁶ CAISO Report at 48-49.

²⁷ See *Registration of Inverter-based Resources*, 181 FERC ¶ 61,124 (2022).

Power System.²⁸ These proceedings are the optimal forums for stakeholders to discuss issues associated with IBRs and the reliability of the distribution system.

- e. **Question 10.4** - *What reforms to other services within the Commission's jurisdiction, such as natural gas transportation services, should the Commission consider in order to improve operational flexibility in the fuel supply?*

As the SPP Report noted, one potential area in which the Commission could consider additional reforms is in enabling and encouraging natural gas companies to provide utilities with more and better information regarding fuel risk.²⁹ Information regarding fuel risk will help utilities better plan their systems and prepare for emergencies. Pursuant to Section 284.12(b)(4) of the Commission's regulations, pipelines are "*authorized to share non-public, operational information with a public utility... for the purpose of promoting reliable service or operational planning.*"³⁰ However, to the extent that utilities feel that such information is not as easily accessible as it should be, the Commission should consider enhancements to better enable such communication. One option would be for the Commission to convene a technical conference to discuss this particular issue, along with other potential reforms to improve coordination between the natural gas and electric sectors.

- f. **Question 12** - *If RTO/ISO market design changes beyond the RTO/ISO's planned E&AS market reforms discussed in answering questions 4-7 are necessary to manage expected changes in system needs, how can the Commission best assist RTOs/ISOs and their stakeholders in reforming their markets in the future?*

Several of the RTOs/ISOs responded to this question by asking the Commission to continue to allow them to pursue regional market reform efforts through their respective

²⁸ See *Reliability Standards to Address Inverter-Based Resources*, 181 FERC ¶ 61,125 (2022).

²⁹ See SPP Report at 41 ("Any information that could help RTOs/ISOs model and quantify fuel assurance risks could help with risk assessment and mitigation.").

³⁰ 18 CFR § 284.12(b)(4) (emphasis added).

stakeholder processes.³¹ As discussed above, the Commission should support regional efforts to improve wholesale markets. Instead of imposing a single, one-size-fits-all approach to market reforms, the Commission should allow and encourage the RTOs/ISOs to develop their own market enhancements that reflect regional characteristics and concerns. To the extent the Commission wishes to indicate policy preferences with regard to market reforms, it should do so in a manner that is non-binding and suitably broad to accommodate regional variations.

III. CONCLUSION

EEI appreciates the opportunity to submit comments in response to the RTO/ISO Reports and looks forward to continuing to work with the Commission on these important issues.

Respectfully Submitted,

/s/Christopher M. Randall

Christopher M. Randall
Director, Federal Regulatory Affairs
Edison Electric Institute
701 Pennsylvania Ave., N.W.
Washington, D.C. 20004
crandall@eei.org

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³¹ See CAISO Report at 50-51 (stating that “the Commission can best assist RTOs/ISO by allowing those processes to occur and, where applicable, help to identify common issues emerging in one market that may also emerge in others... The Commission should allow the CAISO and other RTOs/ISOs to pursue the market enhancements they are designing with stakeholders to meet their specific operating conditions. A single approach to address operational flexibility needs makes no sense given the different operational challenges facing each RTO/ISO and the existing differences in overall market designs”); ISO-NE Report at 87-88 (“The ISO appreciates the Commission’s willingness to recognize that the unique resource mix, load profile, and existing market structures present in each ISO/RTO region militate against a one-size fits all approach to future potential energy and ancillary service market reforms.”); NYISO Report at 45-46 (“The NYISO encourages the Commission to allow each ISO/RTO, and the NYISO specifically, to work within its respective stakeholder processes to develop the improvements needed to continue running efficient wholesale electricity markets and to maintain electric system reliability as we transition to the grid of the future. The Commission should not impose a uniform approach on all ISOs/RTOs. Each ISO/RTO relies on a different mix of generation resources and must consider vastly different public policies from the state or states within its region.”).