



## **DEPARTMENT OF ENERGY**

### **Federal Energy Regulatory Commission**

**[Docket No. AD25-7-000]**

#### **Meeting the Challenge of Resource Adequacy in Regional Transmission**

#### **Organization and Independent System Operator Regions; Third Supplemental**

#### **Notice of Commissioner-Led Technical Conference**

As announced in the February 20, 2025 Notice in this proceeding, the Federal Energy Regulatory Commission (Commission) will convene a Commissioner-led technical conference in the above-referenced proceeding. The two-day technical conference will take place from 9:00 a.m. to 4:00 p.m. Eastern Time on Wednesday, June 4, 2025, and 9:00 a.m. to 4:15 p.m. Eastern Time on Thursday, June 5, 2025, in the Kevin J. McIntyre Commission Meeting Room at the Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426.

The purpose of this technical conference is to discuss generic issues related to resource adequacy constructs, including the roles of capacity markets in the Regional Transmission Organization (RTO)/Independent System Operator (ISO) regions that utilize them and alternative constructs in RTO/ISO regions without capacity markets. The conference will start with a panel discussion on resource adequacy challenges across RTO/ISO regions, including regional differences. The remainder of the first day will include three panels specific to PJM Interconnection, L.L.C. (PJM) that will explore PJM's resource adequacy challenge, PJM states' perspectives, and additional perspectives on PJM's path forward. The second day will start with two panels specific to Midcontinent Independent System Operator, Inc. (MISO) that will explore MISO's

resource adequacy challenge and perspectives on MISO’s path forward. The remainder of the second day will include one panel to explore the resource adequacy challenge in ISO New England Inc. (ISO-NE) and New York Independent System Operator, Inc. (NYISO) and a final panel on the resource adequacy challenge in California Independent System Operator Corporation (CAISO) and Southwest Power Pool (SPP). The preliminary agenda for this conference is attached to this Supplemental Notice and provides more detail for each panel.

Commission staff will post pre-filed statements submitted by panelists on the FERC technical conference webpage prior to the conference and in eLibrary. With the exception of opening statements on Panel 1, which may be delivered orally, all other panels will proceed immediately to questions from the Chairman and Commissioners.

All interested persons are also invited to file pre-technical conference comments in eLibrary on the issues of the conference, including the questions listed in the attached agenda. Commenters need not answer all the questions but are encouraged to organize responses using the numbering and sequencing in the attached agenda.

The Commission does not intend to discuss at this technical conference any specific proceeding pending before the Commission, including proceedings that involve similar issues. These proceedings include, but are not limited to:

NRG Business Marketing LLC; NRG Power Marketing LLC	Docket Nos. ER23-2688, et al.; ER22-1539, et al.
Southwest Power Pool, Inc.	Docket Nos. ER24-1317-000 ER24-2953-000
H.A. Wagner LLC; Brandon Shores LLC	Docket Nos. ER24-1787, et al.; ER24-1790, et al.
PJM Interconnection, L.L.C.	Docket No. ER24-2045-000

California Independent System Operator Corp.	Docket Nos.	ER24-2671, et al.
Southwest Power Pool, Inc.	Docket No.	ER25-89-000
Midcontinent Independent System Operator, Inc.	Docket Nos.	ER25-507, et al.
Manitowoc Public Utilities	Docket No.	ER25-634-000
PJM Interconnection, L.L.C.	Docket Nos.	ER25-682, et al.
PJM Interconnection, L.L.C.	Docket Nos.	ER25-712, et al.
PJM Interconnection, L.L.C.	Docket Nos.	ER25-785, et al.
PJM Interconnection, L.L.C.	Docket Nos.	ER25-1128, et al.
PJM Interconnection, L.L.C.; Commonwealth of Pennsylvania v. PJM Interconnection, L.L.C.	Docket Nos.	ER25-1357, et al.; EL25-46, et al.
PJM Interconnection, L.L.C.	Docket No.	ER25-1525-000
PJM Interconnection, L.L.C.	Docket No.	ER25-1623-000
Midcontinent Independent System Operator, Inc.	Docket No.	ER25-1674-000
Midcontinent Independent System Operator, Inc.	Docket No.	ER25-1729-000
Midcontinent Independent System Operator, Inc.	Docket No.	ER25-1802-000
Midcontinent Independent System Operator, Inc.	Docket No.	ER25-1886-000
PJM Interconnection, L.L.C.	Docket No.	ER25-2002-000
Midcontinent Independent System Operator, Inc.	Docket No.	ER25-2050-000
New York Independent System Operator, Inc.	Docket No.	ER25-2245-000
Midcontinent Independent System Operator, Inc.	Docket No.	ER25-2247-000
Southwest Power Pool, Inc.	Docket No.	ER25-2296-000
Southwest Power Pool, Inc.	Docket No.	ER25-2297-000

Midcontinent Independent System Operator, Inc.	Docket No. ER25-2298-000
Sierra Club, Natural Resources Defense Council, Inc., and Sustainable FERC Project v. Southwest Power Pool, Inc.	Docket No. EL24-96-000
Sierra Club, Natural Resources Defense Council, Public Citizen, Sustainable FERC Project, and Union of Concerned Scientists v. PJM Interconnection, L.L.C.	Docket No. EL24-148-000
Joint Consumer Advocates, Illinois Citizens Utility Board, Maryland Office of the People's Counsel, New Jersey Division of Rate Counsel, Office of the Ohio Consumers' Counsel, Office of the People's Counsel for the District of Columbia v. PJM Interconnection, L.L.C.	Docket No. EL25-18-000
Constellation Energy Generation, LLC v. PJM Interconnection, L.L.C.	Docket No. EL25-20-000
PJM Interconnection, L.L.C., Allegheny Electric Cooperative, Inc., American Transmission Systems, Incorporated, Atlantic City Electric Company, Baltimore Gas and Electric Company, Delmarva Power & Light Company, Duke Energy Ohio, Inc., Duke Energy Kentucky, Inc., East Kentucky Power Cooperative, Inc., Essential Power Rock Springs, LLC, Hudson Transmission Partners, LLC, Jersey Central Power & Light Company, Mid-Atlantic Interstate Transmission, LLC, Neptune Regional Transmission System, LLC, Old Dominion Electric Cooperative, PECO Energy Company, PPL Electric Utilities Corporation, Potomac Electric Power Company, Public Service Electric and Gas Company, Rockland Electric Company, Trans-Allegheny Interstate Line Company, Transource West Virginia, LLC, UGI Utilities, Inc., Monongahela Power Company, The Potomac Edison Company, Commonwealth Edison Company, Commonwealth Edison Company of Indiana, Inc., The Dayton Power and	Docket Nos. EL25-49, et al.

Light Company, AEP Appalachian Transmission Company, Inc., AEP Indiana Michigan Transmission Company, Inc., AEP Kentucky Transmission Company, Inc., AEP Ohio Transmission Company, Inc., AEP West Virginia Transmission Company, Inc. Appalachian Power Company, Indiana Michigan Power Company, Kentucky Power Company, Kingsport Power Company, Ohio Power Company, Wheeling Power Company, Duquesne Light Company, Virginia Electric and Power Company, Linden VFT, LLC, City of Cleveland, Department of Public Utilities, Division of Cleveland Public Power, City of Hamilton, OH, Southern Maryland Electric Cooperative, Inc., Ohio Valley Electric Corporation, AMP Transmission, LLC, Silver Run Electric, LLC, NextEra Energy Transmission MidAtlantic Indiana, Inc., Wabash Valley Power Association, Inc., Keystone Appalachian Transmission Company	
Joint Consumer Advocates v. PJM Interconnection, L.L.C.	Docket No. EL25-76-000
North American Electric Reliability Corporation	Docket No. RD25-7-000

The technical conference will be open to the public. Advance registration is not required, and there is no fee for attendance. Information will also be posted on the Calendar of Events on the Commission’s website, [www.ferc.gov](http://www.ferc.gov), prior to the event. To stay apprised of issuances in this docket, there is an “eSubscription” link on the Commission’s web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s).

The technical conference will be transcribed and webcast. Transcripts will be available for a fee from Ace Reporting (202-347-3700). A link to the webcast of this event will be available in the Commission Calendar of Events at [www.ferc.gov](http://www.ferc.gov). The

Commission provides technical support for the free webcasts. Please call 202-502-8680 or email [customer@ferc.gov](mailto:customer@ferc.gov) if you have any questions.

Commission technical conferences are accessible under section 508 of the Rehabilitation Act of 1973. For accessibility accommodations, please send an email to [accessibility@ferc.gov](mailto:accessibility@ferc.gov) or call toll free 1-866-208-3372 (voice) or 202-208-8659 (TTY) or send a fax to 202-208-2106 with the required accommodations.

For more information about this technical conference, please contact Tim Bialecki at [timothy.bialecki@ferc.gov](mailto:timothy.bialecki@ferc.gov) or 202-502-8403. For legal information, please contact Nathan Lobel at [nathan.lobel@ferc.gov](mailto:nathan.lobel@ferc.gov) or 202-502-8456. For logistics information, please contact the Office of Public Participation (OPP) at [OPP@ferc.gov](mailto:OPP@ferc.gov) or 202-502-6595.

Dated: June 2, 2025.

**Debbie-Anne A. Reese,**

*Secretary.*

**Meeting the Challenge of Resource Adequacy in Regional  
Transmission Organization and Independent System Operator  
Regions, Docket No. AD25-7-000**

**Agenda**

**Wednesday, June 4, 2025**

**9:00 am – 9:15 am: Welcome and Opening Remarks**

**9:15 am – 10:30 am: Panel 1: The Resource Adequacy Challenge in RTOs/ISOs**

This panel will include opening statements from RTO/ISO representatives and a North American Electric Reliability Corporation (NERC) representative. Panelists should focus on defining resource adequacy, identifying resource adequacy challenges across RTOs/ISOs, and identifying information that will inform and guide later discussions.

In recent years, resource retirements, load growth, and the changing resource mix have contributed to resource adequacy challenges across the nation, including in the RTO/ISO regions. According to NERC’s 2024 Long-Term Reliability Assessment, five of the six Commission jurisdictional RTO/ISO regions are at either high or elevated risk of experiencing electricity supply shortfalls.<sup>1</sup> High risk regions are expected to fall below

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<sup>1</sup> NERC, *2024 Long-Term Reliability Assessment 6* (Dec. 2024),

established resource adequacy criteria in the next five years, while elevated risk regions meet resource adequacy criteria but are likely to experience shortfalls in extreme weather conditions. Some trends that continue to challenge regions' abilities to achieve resource adequacy include: increasing amounts of large commercial and industrial loads (e.g. data centers); electrification of energy end uses in transportation and building heating/cooling; retirement of baseload generation resources; and slower than anticipated interconnection of new resources.<sup>2</sup> RTO/ISO representatives should discuss their current resource adequacy constructs, recent resource adequacy challenges and, most importantly, their plans and recommendations to address resource adequacy challenges within their RTOs/ISOs in the future as demand grows.

Questions that panelists could be asked:

1. What is the current state of resource adequacy across RTO/ISO regions? Is this static or variable? Are resource adequacy challenges more acute in RTO/ISO regions with capacity markets compared to those RTO/ISO regions with alternative resource adequacy constructs? Why or why not?
2. Given load growth and generation forecasts, what are your resource adequacy challenges going forward?

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[https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC\\_Long%20Term%20Reliability%20Assessment\\_2024.pdf](https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_Long%20Term%20Reliability%20Assessment_2024.pdf).

<sup>2</sup> See *id.* 8-9, 12, 16, 19.

3. How do you reconcile your RTO's/ISO's resource adequacy objectives with state public policy requirements, which may accelerate the retirement of certain resource types or limit the entry of other resource types? For example, in light of such state public policy requirements and particularly in multi-state RTOs/ISOs, how does your RTO/ISO ensure resource adequacy?
4. What are the key drivers that cause delays in the construction and interconnection of generators in your RTO/ISO? What can be done to accelerate the interconnection of generators to help meet the resource adequacy challenge? How have factors external to your RTO/ISO, such as supply chains and siting/permitting, impacted generator interconnection timelines? What is the composition of resources in the queue? Will accelerating queue processes help address the challenge of resource adequacy? How many resources (by number and aggregate nameplate capacity) have received approval for interconnection but have not been constructed? How, if at all, are the expected resource adequacy contributions of a resource in the interconnection queue considered during the interconnection process?
5. Are there additional concerns that may affect resource adequacy in the near term (e.g., over the next five years) and in the longer term (e.g., ten years and beyond)?
6. In NERC's view, what aspects of resource adequacy planning could be improved? For example, what type of reliability metric (or metrics) should be used in resource adequacy planning models? What elements of resource adequacy planning can be improved or could serve as best practices?

7. How does your RTO/ISO approach capacity accreditation? What are the benefits and drawbacks of harmonizing capacity accreditation methods across regions versus allowing for regional variation?
  - a. Given that many regions use the same probabilistic models for both evaluating resource adequacy and/or reserve margins and for Effective Load Carrying Capability (ELCC) accreditation, are there best practices in approaches that NERC is observing that could help align various regions across the country in using the best modeling methodologies or data sources, etc.?
  - b. What are the potential strengths, weaknesses, and implementation considerations of alternatives to ELCC when evaluating the contribution of various types of resources in meeting resource adequacy requirements?
8. How can the RTOs/ISOs ensure that their demand forecasts adequately take into account load growth from data centers and other large loads? How can the RTOs/ISOs ensure there is sufficient supply to meet these demands, and what will those sources of supply be?
9. How can demand flexibility and demand-side management solutions be utilized to address load growth and resource adequacy concerns?
10. How do you reflect transmission availability—both regional and interregional—in your resource adequacy planning and requirements? To what extent do your transmission planning processes capture the resource adequacy benefits of regional and interregional transmission?

## Panelists

- Manu Asthana, PJM, President and CEO
- Todd Ramey, MISO, Senior Vice President of Markets and Digital Strategy
- Gordon van Welie, ISO-NE, President and CEO
- Richard J. Dewey, NYISO, President and CEO
- Lanny Nickell, SPP, President and CEO
- Elliot Mainzer, CAISO, President and CEO
- Jim Robb, NERC, President and CEO

**10:30 am – 10:45 am: 15-minute Break**

**10:45 am – 12:00 pm: Panel 2: PJM’s Resource Adequacy Challenge**

This panel discussion among the Commission, PJM, and stakeholders will focus on resource adequacy challenges specific to PJM, including whether changes to the existing market construct are needed or potential alternatives to the existing mandatory capacity market construct should be considered.

PJM states that it is facing potential capacity shortfalls as soon as the 2026/2027 Delivery Year due to a combination of trends, including growing electricity demand, rapid retirement of thermal generators, and slow entry of replacement generation.<sup>3</sup> PJM’s

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<sup>3</sup> PJM Board of Directors, Letter to Stakeholders (Dec. 9, 2024), <https://www.pjm.com/-/media/DotCom/about-pjm/who-we-are/public-disclosures/2024/20241209-board-letter-outlining-action-on-capacity-market->

capacity auction for the 2025/2026 Delivery Year cleared at record high prices due to a variety of factors, including declines in supply, growing demand, a higher reserve requirement, and revised capacity market rules.<sup>4</sup> In response to recent challenges, PJM has revisited several of its capacity market's design elements, such as non-performance penalties, granular resource adequacy modeling, resource accreditation, and the role of reliability must-run resources in PJM's capacity market.<sup>5</sup>

Questions that panelists could be asked:

1. What is the state of resource adequacy in PJM in the near term (e.g., over the next five years) and over the longer term (e.g., ten years and beyond)?
2. Going forward, what steps will PJM need to take to ensure resource adequacy? Is PJM's resource adequacy construct adequate to determine resource adequacy needs given changing circumstances (e.g., unforeseen load growth, changes in state public policy requirements, faster-than-anticipated retirement of resources)?
3. How does PJM establish its load and resource forecasts?

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adjustments-rri-and-sis.pdf.

<sup>4</sup> PJM, *2025/2026 Base Residual Auction Results* (2024), <https://www.pjm.com/-/media/DotCom/committees-groups/committees/mrc/2024/20240821/20240821-item-08--2025-2026-base-residual-auction---presentation.pdf>.

<sup>5</sup> See *PJM Interconnection, L.L.C.*, 190 FERC ¶ 61,088 (2025); *PJM Interconnection, L.L.C.*, 190 FERC ¶ 61,117 (2025).

- a. Have the assumptions driving load and capacity resource forecasts changed over time? If so, how?
  - b. How do the forecast models weight different inputs? Are some assumptions more uncertain, important, or impactful than others?
  - c. How have the forecasts performed historically and are you considering any changes to forecasting models or processes? For example, are you considering requiring demonstration of commercial readiness from prospective new large load additions?
4. To what extent are barriers to entry (e.g., the interconnection queue backlog, supply chain limitations, siting and permitting delays, etc.) impeding the ability of the capacity market to achieve resource adequacy at just and reasonable rates?  
What opportunities are there to address these barriers to entry?
5. How does PJM consider electric-gas coordination issues in the context of resource adequacy planning and capacity resource accreditation?
  - a. To what extent do uncertainties pertaining to natural gas fuel supplies or infrastructure constraints affect resource adequacy planning in PJM? How can PJM better address those uncertainties?
  - b. Does PJM need additional natural gas pipeline infrastructure for the future or is existing infrastructure sufficient?
6. To what extent does the availability of regional and interregional transmission capability affect resource adequacy planning in PJM? How can PJM better address the effect of transmission capability on resource adequacy?

7. Is the PJM capacity market adequately designed to provide correct signals for needed capacity additions? Given the degree to which the capacity market rules have changed in recent years, is the PJM capacity market producing stable investment signals? How have these frequent rule changes affected market participants and consumers? How has PJM sought to maintain stable investment signals in the face of these changes?
8. Do you think PJM's capacity market is more effective at delivering resource adequacy than other RTOs/ISOs' approaches would be in PJM and, if so, why?
9. Are there alternatives to a mandatory capacity market construct that should be considered, such as a residual capacity market construct (e.g., MISO), enhanced use of self-supply mechanisms such as Fixed Resource Requirement (FRR), or other mechanisms, including allowing load-serving utilities to own generation, increased long-term contracting by load-serving utilities, or other alternatives? To what extent do the current PJM market rules allow for these alternatives?
10. Several states in PJM have public policy requirements that drive resource entry and exit decisions. How does PJM work with the states and the District of Columbia to identify and meet the region's resource adequacy needs at just and reasonable rates? Has PJM studied the effects of state public policy on either resource adequacy or capacity market outcomes? What are the effects of state policies on resource adequacy in PJM?

## Panelists

- Adam Keech, PJM, Vice President of Market Design and Economics
- Joe Bowring, Monitoring Analytics, President and Independent Market Monitor
- Wendy Stark, PPL Corporation, Executive Vice President of Utilities & Chief Legal Officer
- Brian Tierney, FirstEnergy, Chairman, President, and CEO
- Glen Thomas, PJM Power Providers Group, President
- Marji Philips, LS Power, Senior Vice President of Wholesale Market Policy
- Scott Hallam, Boardwalk Pipelines, President and CEO (on behalf of the Interstate Natural Gas Association of America (INGAA)).

**12:00 pm – 1:00 pm: Lunch Break**

**1:00 pm – 2:15 pm: Panel 3: PJM States' Perspectives**

This panel discussion between the Commission and state representatives will focus on the status of resource adequacy, and the role of states in achieving resource adequacy, in PJM.

### Questions that panelists could be asked:

1. What should be the allocation of roles and responsibilities between PJM and the states to ensure resource adequacy in the PJM region? Please explain the role your state takes on with regard to the procurement of capacity to meet resource adequacy requirements, including with respect to bilateral contracting, self-supply, and/or purchases from the PJM capacity market. Do states in PJM have

appropriate opportunities to participate in PJM decisions regarding resource adequacy? Are there different, or greater, responsibilities that states should assume to ensure resource adequacy?

2. Is PJM's capacity market compatible with state public policy requirements? Why or why not?
3. Do you believe consumers are treated fairly in the PJM capacity market process? If so, why? If not, why not?
4. Are changes necessary to ensure that the PJM capacity market process delivers resource adequacy at just and reasonable rates?
5. What barriers, if any, are there to PJM states assuming more responsibility for resource adequacy via constructs like the Integrated Resource Planning (IRP) model, a hybrid between the capacity market and IRP model, or enhanced use of self-supply mechanisms such as FRR? Should alternatives to the mandatory capacity market construct be considered or does your state prefer retaining the existing construct?
6. Does your state currently have sufficient expertise on resource adequacy mechanisms and resource adequacy modeling to meet the challenge of resource adequacy without PJM's technical expertise, or does your state need additional resources? If your state would need additional resources, what types of resources would be required and what are the benefits and costs of developing that technical expertise compared with continuing to rely on PJM's expertise? Based on those costs and benefits, would your state prefer to continue to rely on PJM's technical

expertise?

7. What state mechanisms, such as long-term bilateral contracts, self-supply arrangements, or other approaches, exist to help ensure that rates for procuring resources will be just and reasonable? Will consumers have access to the information (transparency) to understand their share of the costs for procuring adequate resources?

### **Panelists**

- Chairman Emile C. Thompson, Public Service Commission of the District of Columbia, President of Organization of PJM States, Inc. (OPSI)
- Jacob Finkel, Office of the Governor of Pennsylvania, Deputy Secretary of Policy
- President Christine Guhl-Sadovy, New Jersey Board of Public Utilities
- Commissioner Kelsey Bagot, Virginia State Corporation Commission
- Commissioner Michael Richard, Maryland Public Service Commission
- Commissioner David Veleta, Indiana Utility Regulatory Commission
- Commissioner Dennis Deters, Public Utilities Commission of Ohio

**2:15 pm – 2:30 pm:            15-minute Break**

**2:30 pm – 3:45 pm:            Panel 4: Additional Perspectives on PJM’s Path Forward  
and the Future of Resource Adequacy in PJM**

Panelists will offer their varied perspectives on the topics discussed in the first two PJM-specific panels. Topics to be explored during this panel may include reforms to the current PJM capacity market design, potential alternatives to the existing mandatory

capacity market, the roles and interests of states and other entities (e.g., cooperative and municipal systems) in achieving resource adequacy, and how to ensure resource adequacy at reasonable costs for consumers.

### **Panelists**

- Brian O. Lipman, Consumer Advocates of the PJM States (CAPS), President
- Brian George, Google, US Energy Markets, Senior Lead
- Casey Roberts, Natural Resources Defense Council, Director of RTO Advocacy
- Michelle Bloodworth, America's Power, President and CEO
- Denise Foster Cronin, East Kentucky Power Cooperative, Vice President of Federal and RTO Regulatory Affairs
- Susan E. Bruce, Industrial Energy Consumers of America, PJM Industrial Customer Coalition, Coalition of MISO Transmission Customers, and American Forest & Paper Association, Counsel

**3:45 pm – 4:00 pm:            June 4 Closing Remarks**

## **Thursday, June 5, 2025**

**9:00 am – 9:15 am:            Welcome and Opening Remarks**

**9:15 am – 10:45 am:        Panel 5: MISO's Resource Adequacy Challenge**

This panel discussion among the Commission, MISO, and MISO stakeholders will

focus on resource adequacy challenges specific to MISO.

MISO faces the most immediate risk of falling below established resource adequacy criteria compared to all other regions assessed by NERC in its 2024 Long-Term Reliability Assessment.<sup>6</sup> According to MISO's 2024 Regional Resource Assessment (RRA), MISO may need to add 17 gigawatts of new capacity each year for the next 20 years—more than triple the recent average rate of 4.7 gigawatts per year—to reliably meet future demand and policy goals.<sup>7</sup> Although MISO's RRA expects thermal resources and battery storage to account for the bulk of the region's accredited capacity in the future, the capacity of variable energy resources is expected to grow and contribute to an increasing need for ramp capability.<sup>8</sup>

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<sup>6</sup> See NERC, *2024 Long-Term Reliability Assessment* (Dec. 2024), [https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC\\_Long%20Term%20Reliability%20Assessment\\_2024.pdf](https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_Long%20Term%20Reliability%20Assessment_2024.pdf).

<sup>7</sup> MISO, *2024 Regional Resource Assessment* (Jan. 2025), <https://wdeawebwebsite.blob.core.windows.net/usrfiles/documents/miso%202024%20regiona1%20resource%20assessment.pdf>.

<sup>8</sup> *Id.* at 6-9. The RRA is one of several periodic studies MISO conducts to forecast how the mix of electricity-generating resources in the MISO region could evolve going forward. In other studies, MISO has modeled potential future scenarios where thermal resources have a decreased role in providing accredited capacity. See, e.g., MISO, *Futures Report Series 1A 75, 92* (Nov. 2023), [Series1A\\_Futures\\_Report630735.pdf](#).

Questions that panelists could be asked:

1. What is the state of resource adequacy in MISO in the near term (e.g., over the next five years) and over the longer term (e.g., ten years and beyond)?
  - a. Is MISO's resource adequacy construct delivering resource adequacy in MISO?
  - b. What are the benefits and drawbacks to MISO's resource adequacy construct and residual capacity auction?
2. How have the recent outcomes of MISO's capacity auctions affected market participants and consumers in MISO? Do states and stakeholders have confidence that the MISO capacity market will be effective to achieve resource adequacy at just and reasonable rates?
3. How have the seasonal resource adequacy requirements and revised capacity accreditation methods worked in MISO to date? Have they helped MISO more accurately determine its resource adequacy needs? What issues or challenges has MISO experienced in implementing a seasonal construct and revising capacity accreditation, and how does MISO plan to address those issues or challenges?
4. How does MISO establish its load and resource forecasts?
  - a. How does MISO integrate the load forecasts provided by load-serving entities and electric distribution companies into their planning reserve margin requirements? Does MISO verify the forecast methodologies and accuracy of forecasts?

- b. Have the assumptions driving load and resource forecasts changed over time? If so, how?
  - c. How do the forecast models weight different inputs? Are some assumptions more uncertain, important, or impactful than others?
  - d. How have the forecasts performed historically and are parties considering any changes to forecasting models or processes? For example, are you considering requiring demonstration of commercial readiness from prospective new large load additions?
5. To what extent are barriers to entry (e.g., the interconnection queue backlog, supply chain limitations, siting and permitting delays, etc.) affecting resource adequacy in the MISO footprint?
6. To what extent does the availability of regional and interregional transmission capability affect resource adequacy planning in MISO? How can MISO better address the effect of transmission capability on resource adequacy?
7. Would an alternative resource adequacy construct used by another RTO/ISO be more effective at delivering resource adequacy in MISO? If so, why? Are there alternatives to the current residual market construct that should be considered?
8. What should be the allocation of roles and responsibilities between MISO and the states to ensure resource adequacy in the MISO region? How does MISO work with the states to identify and meet the region's resource adequacy needs at just and reasonable rates? Has MISO studied the effects of state public policy on

either resource adequacy or capacity market outcomes?

## **Panelists**

- Todd Ramey, MISO, Senior Vice President of Markets and Digital Strategy
- David Patton, Potomac Economics, President and MISO Independent Market Monitor
- Laura Beauchamp, Entergy Louisiana, LLC, Vice President of Business Operations and Strategy
- Andrew Meyer, Ameren Missouri, Sr. Director of Energy Management & Trading
- Steven Lieberman, American Municipal Power Inc., Vice President of Transmission & Regulatory Affairs
- Todd Snitchler, Electric Power Supply Association, President and CEO
- Kelli Joseph, World Resources Institute, Senior Fellow

**10:45 am – 11:00 am: 15-minute Break**

**11:00 am – 12:15 pm: Panel 6: MISO’s Path Forward and The Future of Resource Adequacy in MISO**

This panel discussion among the Commission, state representatives, and others will focus on the state of resource adequacy, and the role of states in achieving resource adequacy, in MISO. The Commission will explore approaches to address MISO’s resource adequacy challenges, and the benefits of and improvements to its resource adequacy construct, to ensure MISO and states achieve resource adequacy.

Questions that panelists could be asked:

1. How do MISO and state resource adequacy processes interact? Do states in MISO have appropriate opportunities to participate in decisions regarding resource adequacy? Are there different or greater responsibilities that states should assume to ensure resource adequacy?
2. Do you believe consumers are treated fairly in the MISO capacity market process? If so, why? If not, why not?
3. Are changes necessary to ensure that the MISO capacity market process delivers resource adequacy at just and reasonable rates?
4. Are there aspects of MISO's resource adequacy construct that may result in inefficient price signals or create unnecessary resource adequacy risks?
5. Could MISO ensure resource adequacy at a lower cost to consumers through modifications to its existing resource adequacy construct? If so, what are the modifications and what are the challenges or downsides to implementing them?
6. Should MISO's capacity market model be replaced?
  - a. If MISO's capacity market model should be replaced, what should replace it? Could an alternative resource adequacy program, like in SPP and CAISO, or a more expansive capacity market construct, like in PJM, NYISO, and ISO-NE, achieve resource adequacy at a lower cost than MISO's resource adequacy construct? Would these alternative approaches provide load-serving entities, states, and consumer advocates with the necessary information to monitor their costs for capacity?

- b. What are the potential tradeoffs and challenges of switching to a different resource adequacy construct? What timeline would be needed to determine or vet a replacement and implement it?

### **Panelists**

- Commissioner Marcus Hawkins, Wisconsin Public Service Commission, Chair of the Organization of MISO States (OMS) Resource Adequacy Committee
- Chairman Doug Scott, Illinois Commerce Commission
- Chairman James Huston, Indiana Utility Regulatory Commission
- Commissioner Eric Skrmetta, Louisiana Public Service Commission
- Carrie Zalewski, American Clean Power Association, Vice President of Transmission and Electricity Markets
- Jennifer C. Easler, Iowa Department of Justice Office of Consumer Advocate, Attorney

**12:15 pm – 1:15 pm: Lunch Break**

**1:15 pm – 2:30 pm: Panel 7: The Resource Adequacy Challenge in the Northeast RTOs/ISOs**

This panel discussion between the Commission, NYISO, ISO-NE, and relevant stakeholders will focus on resource adequacy challenges specific to NYISO and ISO-NE.

NYISO projects declining statewide resource margins and for the system to

approach a loss of load expectation of 1 day in 10 years by 2034.<sup>9</sup> NYISO's resource adequacy forecast is heavily affected by the assumption that approximately 6,400 MW of non-firm, gas-only generation will not be available to serve loads during winter peak demand periods.<sup>10</sup> NYISO explains that decreasing, and even negative, statewide system margins are a leading indicator of the system's inability to reliably serve demand under normal operations while fully maintaining operating reserves.<sup>11</sup> NYISO also notes that the development and commercialization of dispatchable emission-free resources capable of providing sustained on-demand power and system stability will be essential to achieving policy objectives while maintaining a reliable electric grid.<sup>12</sup>

ISO-NE, in comparison, states that it has procured or will procure the requisite resources needed to adequately meet resource adequacy for each year of the 2024-2028

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<sup>9</sup> NYISO, *2024 Reliability Needs Assessment 9* (Nov. 19, 2024), [nyiso.com/documents/20142/2248793/2024-RNA-Report.pdf/](https://www.nyiso.com/documents/20142/2248793/2024-RNA-Report.pdf/).

<sup>10</sup> *Id.*

<sup>11</sup> *Id.* at 10.

<sup>12</sup> NYISO, *NYISO's 2024 Comprehensive Area Review of Resource Adequacy 37-38* (Dec. 3, 2024), [https://cdn.prod.website-files.com/67229043316834b1a60feba3/678584c131bec5c726bae51b\\_2024%20New%20York%20Comprehensive%20Area%20Review%20of%20Resource%20Adequacy%20PV.pdf](https://cdn.prod.website-files.com/67229043316834b1a60feba3/678584c131bec5c726bae51b_2024%20New%20York%20Comprehensive%20Area%20Review%20of%20Resource%20Adequacy%20PV.pdf).

study horizon.<sup>13</sup> ISO-NE predicts growing peak load through 2032 and identifies potential risks to bulk power system reliability, but expects bulk power system reliability and economic performance to improve over the next decade because of planned transmission upgrades, an improved interconnection process, development of renewable resources with energy storage, imports from neighboring regions, fast-start and flexible ramping resources, and energy efficiency/conservation measures.<sup>14</sup>

Questions that panelists could be asked:

1. What is the state of resource adequacy in NYISO and ISO-NE in the near term (e.g., over the next five years) and over the longer term (e.g., ten years and beyond)?
  - a. What factors present the greatest uncertainty when projecting future resource adequacy challenges?
  - b. Are the capacity market constructs delivering resource adequacy in these RTOs/ISOs? Why or why not?
2. To what extent do uncertainties external to NYISO and ISO-NE—such as natural

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<sup>13</sup> ISO-NE, *2023 New England Comprehensive Area Review of Resource Adequacy* 8-10 (Dec. 5, 2023), [https://cdn.prod.website-files.com/67229043316834b1a60feba3/67229043316834b1a61003df\\_2023-new-england-comprehensive-review-of-resource-adequacy.pdf](https://cdn.prod.website-files.com/67229043316834b1a60feba3/67229043316834b1a61003df_2023-new-england-comprehensive-review-of-resource-adequacy.pdf).

<sup>14</sup> *Id.* at 10.

gas supplies or infrastructure constraints, supply chain limitations, and siting and permitting delays—affect resource adequacy planning in the Northeast? How can NYISO and ISO-NE better address those uncertainties?

3. How do NYISO and ISO-NE consider electric-gas coordination issues in the context of resource adequacy planning and capacity resource accreditation?
4. How will state public policy requirements change the resource mix and expected seasonal or hourly demand patterns? Do state public policy requirements create challenges for your regions in achieving resource adequacy at just and reasonable rates?
5. How might your capacity markets be improved to meet the challenge of resource adequacy?
6. Would an alternative resource adequacy construct used by another RTO/ISO be more effective at delivering resource adequacy in your regions? If so, why?
7. How do NYISO and ISO-NE work with their states to identify and meet the region's resource adequacy needs and to ensure adequate resources are procured at just and reasonable rates? How do NYISO and ISO-NE work with their states when pursuing capacity market reforms to meet the resource adequacy challenge at the lowest possible cost to consumers? What distinct challenges must be overcome in a multi-state RTO/ISO (ISO-NE) region relative to a single state ISO region (NYISO)?

## **Panelists**

- Emilie Nelson, NYISO, Executive Vice President and Chief Operating Officer
- Stephen George, ISO-NE, Vice President of System Operations and Market Administration
- Adam Evans, New York State Department of Public Service, Chief of Wholesale and Clean Energy Markets
- Chairman Philip L. Bartlett II, Maine Public Utilities Commission
- Commissioner Katie S. Dykes, Connecticut Department of Energy and Environmental Protection
- Michelle Gardner, NextEra Energy Resources, Executive Director Northeast Region
- Sarah Bresolin Silver, New England Power Pool, Chair
- Pallas LeeVanSchaick, Potomac Economics, Vice President; ISO-NE External Market Monitor; NYISO Market Monitoring Unit

**2:30 pm – 2:45 pm:            15-minute Break**

**2:45 pm – 4:00 pm:            Panel 8: RTOs/ISOs without Capacity Markets**

This panel discussion between the Commission, SPP, CAISO, and relevant stakeholders will focus on resource adequacy programs in SPP and CAISO and how they compare to capacity markets in the other RTOs/ISOs.

In SPP, where each Load Responsible Entity must maintain adequate capacity to meet its Resource Adequacy Requirement, SPP expects no excess capacity to be available in summer 2027, and the planned reserve margin to decline from 20% in

summer 2024 to just 5% in summer 2029—a 5,950 MW deficiency.<sup>15</sup> Over that period, SPP projects resource retirements to outstrip new resource additions by a rate of roughly two-to-one while net peak demand grows by roughly 2% annually.<sup>16</sup> Most projected retirements are coal and natural gas resources.<sup>17</sup>

In California, the Public Utilities Commission (CPUC) oversees a resource adequacy construct to ensure jurisdictional load-serving entities meet those requirements. The CPUC sets system-wide resource adequacy requirements while CAISO sets local and flexible resource adequacy requirements. In recent years, CAISO and the CPUC have implemented regulatory and CAISO market changes to ensure that external capacity resources procured to meet resource adequacy requirements are delivered during peak net load hours.<sup>18</sup>

Questions that panelists could be asked:

1. What is the state of resource adequacy in SPP and CAISO in the near term (e.g.,

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<sup>15</sup> SPP, *2024 SPP Resource Adequacy Report* 4-5 (June 14, 2024), 2024 spp june resource adequacy report.pdf.

<sup>16</sup> *Id.* at 6 & Table 1.

<sup>17</sup> *Id.*

<sup>18</sup> CAISO Department of Market Monitoring, *2023 Annual Report on Market Issues & Performance* 31-32 (July 29, 2024), 2023-annual-report-on-market-issues-and-performance.pdf.

over the next five years) and over the longer term (e.g., ten years and beyond)?

What factors present the greatest uncertainty when projecting future resource adequacy challenges?

2. Given load growth and generation entry and retirement forecasts, what resource adequacy challenges does SPP's resource adequacy construct face going forward? How does SPP's resource adequacy construct perform compared to RTO/ISO-administered capacity markets?
3. Given load growth and generation entry and retirement forecasts, what resource adequacy challenges does the CPUC's Resource Adequacy program face going forward? How does California's Resource Adequacy program perform compared to RTO/ISO-administered capacity markets?
4. How do the resource adequacy constructs employed by your RTO/ISO ensure the availability of resources for resource adequacy, and can they adapt to increased load growth? How does this compare to attempting to meet these challenges through operation of an RTO/ISO-administered capacity market?
5. How do SPP and CAISO work with states to identify and meet the region's resource adequacy needs and to ensure adequate resources are procured at just and reasonable rates? How do SPP and CAISO work with their states when pursuing resource adequacy reforms to meet the resource adequacy challenge at the lowest possible cost to consumers? What distinct challenges must be overcome in a multi-state RTO/ISO (SPP) region relative to a single state ISO region (CAISO)?

## **Panelists**

- Casey Cathey, SPP, Vice President of Engineering
- Neil Millar, CAISO, Vice President of Transmission Planning and Infrastructure Development
- Chair Patrick O’Connell, New Mexico Public Regulation Commission
- Molly Sterkel, California Public Utilities Commission, Director of Electric Supply, Planning and Costs in the Energy Division
- Stacey Burbure, American Electric Power, Senior Vice President of Transmission Business Development and Joint Ventures
- Gillian Clegg, Pacific Gas and Electric Company, Vice President of Energy Policy and Procurement
- Travis Kavulla, NRG, Vice President of Regulatory Affairs

**4:00 pm – 4:15 pm:           Closing Remarks**

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