

FALL 2025  
JOINT CREPC-WIRAB  
MEETING SUMMARY

INTRODUCTION AND BACKGROUND

*The Joint CREPC-WIRAB Meeting is the premier biannual gathering of state, provincial, and federal representatives, and industry experts from across the Western Interconnection.*

*The **Committee on Regional Electric Power Cooperation (CREPC)** is a joint committee of the Western Interstate Energy Board (WIEB) and the Western Conference of Public Service Commissioners (WCPSC). Membership in CREPC is comprised of the public utility commissions and energy offices in the Western United States and Canadian Provinces. CREPC works to improve the efficiency of the western electric power system.*

*The **Western Interconnection Regional Advisory Body (WIRAB)** is a regional advisory body created by the Federal Energy Regulatory Commission (FERC) at the request of western governors. As such, WIRAB has the authority to advise FERC, the North American Electric Reliability Corporation (NERC), and the Western Regional Entity (i.e., then Western Electricity Coordinating Council (WECC) on matters pertaining to electric grid reliability in the Western Interconnection. WIRAB's membership is comprised of a representative of each state and province with load served in the Western Interconnection.*

*The **Western Interstate Energy Board (WIEB)** provides support to CREPC and WIRAB through financial and staffing agreements. To help facilitate discussion and improve common understanding between western state governor and provincial premier advisors, public utility commissioners, and energy office officials on electricity issues, WIEB has secured federal funding through a cooperative agreement with the **U.S. Department of Energy (DOE)**, as well as financial support from the **Western Conference of Public Service Commissioners (WCPSC)** to host policy advisors and regulatory officials at the biannual Joint CREPC-WIRAB Meetings.*

*The following is a summary of the Fall 2025 Joint CREPC-WIRAB Meeting held October 1-3, 2025, in Portland, OR. The summary includes key takeaways from the various presentations and panel discussions.*

WEDNESDAY, October 1, 2025

THE REALITIES OF RESOURCE ADEQUACY

Letha Tawney, Chair at the Oregon Public Utility Commission, moderated this panel on regional resource adequacy with Siva Gunda, Vice Chair of the California Energy Commission, Ray Johnson, Power Management Manager at Tacoma Power, Arne Olson, Senior Partner at Energy + Environmental Economics, and Rebecca Sexton, Chief Strategy Officer at Western Power Pool. Panelists discussed the

progress being made towards resource adequacy in the West and the challenges that remain with increasingly large load forecasts and delays in getting resources built on time.

Olson highlighted a recently published E3 study, “Resource Adequacy and Energy Transition in the Pacific Northwest,” which predicts a resource gap in the Northwest of up to 9 GW by 2030. While about 3 GW of resources are in development, most of the load events forecasted occur during low hydro years, creating the need for even more energy and capacity resources.

Vice-Chair Gunda underscored the work California has done over the past five years to bolster resource adequacy in the state, including authorizing the procurement of a collective 31 GW, with 5 GW of that being storage resources. Similarly, California is currently struggling to determine how much of the predicted load increase from data centers is real.

Sexton shared that 23 participants have been actively involved in the non-binding phase of the Western Resource Adequacy Program (WRAP), and that 11 participants are already onboard to begin the first binding season in Winter 2027-2028. Several non-binding participants may face challenges coming into compliance to join and may exit by the October 31, 2025, notice deadline for the first binding season. Several task forces have been formed to explore tariff changes that may make it easier for a wider group of entities to join future binding seasons.

Johnson highlighted the unprecedented challenges utilities are facing and suggested near-term solutions, including WRAP resource pooling, state emergency declarations to expedite new generation procurement, a separate rate class for data centers to shield residential customers, expanded demand-response and virtual power pool offerings, and temporary modifications to state clean energy requirements to allow limited natural gas use. He also cited mid-term solutions such as permitting reforms and transmission reconditioning and long-term solutions including continued west-wide transmission planning through WestTEC to help identify new transmission resources and adding small modular nuclear reactors to the resource portfolio.

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## LEARNING FROM THE UNEXPECTED: TAKEAWAYS FROM THE IBERIAN OUTAGE

Lea Márquez Peterson, Commissioner at the Arizona Corporation Commission, moderated this session on the Iberian Outage with Debbie Lew, Executive Director of the Energy Systems Integration Group; Camilo Serna, Senior Vice President of Strategy and Engagement at the North American Electric Reliability Corporation; and Steven Johnson, Senior Director of Markets Administration at the Southwest Power Pool. Panelists discussed that while final results of the investigation into the cause of the Iberian outage are still pending, the data points to what potentially went wrong and suggests that the United States is already in a good position to avoid similar situations.

Lew discussed how wind and solar are not permitted provide voltage regulation in Spain, and that oscillations caused generators to trip offline, which in turn reduced the ability to regulate voltage. This sequence ultimately led to an over-voltage situation that caused outages in Spain and France. She noted that while Spain doesn’t allow renewables to control voltage, the U.S., through FERC Order 827, requires dynamic control within a specified range, and ERCOT goes even further by allowing full voltage control from renewable resources (allowing generators to ride through oscillations instead of tripping when limits are not yet reached).

Serna pointed out that all of the early recommendations in Spain are already in place in North America through NERC standards, alerts, and guidelines. These include voltage regulation standards, a requirement for all resources capable of voltage regulation to perform those controls, review of overvoltage settings, enhanced voltage control resources through things such as the use of batteries to provide voltage and frequency support, and standardized disturbance monitoring. He also pointed out that work still needs to be done on standards for large loads, to ensure that they don't trip off and have impact similar to inverter-based resources.

Johnson pointed out that we've seen some near misses in the western interconnection, but that IEEE standards allowed units to stay online and prevent frequency shedding. He acknowledged that while the West is currently in good shape, there is still a need to continuously look at best practices and develop accurate models to avoid future outages.

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## STATE OF PLAY: MARKET DEVELOPMENTS AND UPDATES

Gabriel Aguilera, Chair of the New Mexico Public Regulation Commission, moderated a panel with Tracey LeBeau, CEO of the Western Area Power Administration, Pam Sporborg, Director of Transmission and Markets at Portland General Electric, Kent Walter, Director of Western Market Affairs at Arizona Public Service, and Mike Wilding, Vice President of PacifiCorp, that discussed current developments in the West towards regional markets.

Wilding explained that PacifiCorp has been working on the CAISO Extended-Day-Ahead Market implementation for the past two years, including updates to its OATTS filed at FERC and the massive IT project needed to join a day-ahead market. He added that PacifiCorp is also currently working with the Southwest Power Pool's RTO expansion into the West, as the territory of entities joining that market touch on PacifiCorp's balancing authority, and with CAISO on solutions to congestion management allocations.

Walter described how APS evaluated different market options before deciding to join both WRAP and Markets+, and also emphasized the large IT lift involved with joining a market. APS has identified over 60 systems that will need changes and more than 600 staff who will be impacted. He noted that APS initially was unsure if Markets+ would reach critical mass, but said current commitments would create a market larger than ISO NE, NYISO, or CAISO, and that APS had concerns about the challenges with congestion management in CAISO.

Sporborg described the evolution of the Pathways Initiative from its beginnings in 2023 as a letter from several state regulators to its current phase of development, which has successfully seen through legislative change in California to allow the project to move forward with independent governance. With passage of the most recent legislation in California, the Pathways Regional Organization can unlock barriers that previously prevented CAISO from having a wider footprint and unlocks more evolutionary opportunity in the West.

Panelists discussed the benefits of the current Western Energy Imbalance Market footprint versus the footprints of EDAM and Markets+, with PacifiCorp noting that APS is currently its largest trading partner, and expects they will still have some trading despite the separate market. APS countered that while the Markets+ footprint is different, it provides a good complement to APS' resources.

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## ENABLING THE FLOW: TRANSMISSION EXPANSION MARCHES FORWARD

Moderated by Commissioner Tammy Cordova of Nevada Public Utilities Commission, with Sarah Edmonds, President and CEO of the Western Power Pool, Caitlin Liotiris, Principal at Energy Strategies, Keegan Moyer, Principal at Energy Strategies, and Bob Rowe, Trail Boss at the Western Transmission Consortium, this panel explored how various transmission efforts in the West can lead to action, with new transmission being built in an economical and efficient way.

Edmonds and Moyer gave the latest update on WestTEC, a voluntary west-wide transmission planning effort that started as a concept paper in 2023. WestTEC is currently finishing its 10-year transmission plan and is working on modeling for the 20-year transmission plan. Liotiris provided a summary and update on the completion of the cost allocation study work that Energy Strategies undertook with the guidance of the CREPC Transmission Collaborative. Rowe gave an update on the progress being made by The Western Transmission Consortium, which has been doing some planning work in parallel with WestTEC and has identified more than 2,000 miles of transmission in the Southwest so far, which will have specific development companies set up to pursue funding of those lines.

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## FERC COMMISSIONER CHANG

Vice Chair Nick Myers of the Arizona Corporation Commission moderated a discussion with Commissioner Judy Chang of the Federal Energy Regulatory Commission. Commissioner Chang discussed how markets in the Eastern U.S. are constantly adjusting and refining their designs to address issues as they arise, such as shortage pricing to ensure market signals bring in appropriate resources, and emphasized that it's important for EDAM and Markets+ to coordinate and work together to prepare for any unintended consequences. She also emphasized the need for states to have a voice in governance structures as they're being formed and to have a formal role in decision making, as well as the need for states to have more resources to dedicate to regional issues.

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## FROM PLANNING TO PRACTICE: CROSS-JURISDICTIONAL CASE STUDIES IN LARGE LOAD INTEGRATION

Janine Benner, Director of the Oregon Department of Energy, moderated a panel with Marie-France Samaroden, Vice President of Grid Reliability operations at the Alberta Electric System Operator, Niel Millar, Vice President of Transmission Planning & Infrastructure Development at the California Independent System Operator, and Natasha Henderson, Senior Director of Grid Asset Utilization at the Southwest Power Pool, on case studies from the West on how different jurisdictions are dealing with large load growth.

Samaroden outlined how data center applications in the AESO grew from 200 MW at the start of 2024 to more than 20 GW today, and noted that under the AESO design, energy cannot be planned to serve load. Rather, the market must respond to demand. Alberta's short-term solution is to set a reliability-based cumulative limit for large loads at 1.2 GW and to assign the limit to large loads based on readiness, system impact, and commitment. AESO is currently working on longer-term solutions as it develops a sustainable framework and redesigns its tariff to look at cost causation, including data centers in long-term transmission planning, and prioritizing a "bring your own generation" focus with offsite load partnerships.

Henderson stated that the region is at a crossroads: either building resources in advance so large loads can come online or not building and not allowing large loads on the system. She described efforts that SPP is currently undertaking around ride-through requirements for large loads to avoid a situation where there's too much generation and not enough load, as well as efforts to more efficiently integrate large loads that bring their own generation or have flexibility to be curtailed during tight supply hours.

Millar pointed out that CAISO is facing similar challenges with 13.5 GW in the interconnection queue, and is looking at ways to streamline the interconnection process for co-located loads and generation. He also explained that in California, it's not just large data centers driving load growth, but also transportation and building electrification and fuel switching, which has led to CAISO approving \$22 billion in the past four years for transmission investments.

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#### FERC COMMISSIONER SEE

Chairman Brian Rybarik of the Washington Utilities and Transportation Commission moderated a virtual discussion with FERC Commissioner Lindsay See. As this was Commissioner See's first time addressing the group, she spent some time reviewing her background and what experiences have been helpful in her current role at FERC. Commissioner See discussed the role the federal government can play in working with states on large load issues, including collaborating on information sharing to reduce the risks of over or under-building and streamlining certain projects to avoid unnecessary delays while still thoroughly reviewing it.

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#### ACCURACY IN ASSESSING LIABILITIES: MODELING WILDFIRE RISK

Commissioner Ann Rendhal moderated a panel with Bill Hillman, President & Executive Officer at AEGIS Insurance Services, Michael Wara, Senior Research Scholar at Stanford University, and Garrett Brandford, Principal & GIS Consultant at Milliman on ways utilities and insurance companies are assessing wildfire risks.

Hillman described how wildfire liabilities have drastically increased in the past several years, noting that, for 20 years prior to 2007, most policy limits only went to \$50 million, with a few offering options up to \$1 billion, and all of the utility claims stayed within those limits. He explained that California wildfires in 2007 were the first time a utility exceeded its wildfire policy limit, and that within the past 8 years there have been several multi-mega fires that exceeded limits, resulting in insurance companies starting to withdraw from the market, as was seen after the Maui fires in 2023.

Wara explained that utility wildfire models only look at ignition sources and ways to prevent ignition, however, unlike the insurance industry, they do not map the consequences of wildfire spread once ignition occurs. He pointed out that utility models are still derived from wildland forest spread, which is good for modeling the impact on timber, but not for structure loss or spread into suburban residential areas.

Brandford highlighted the challenges the insurance industry faces with mitigating wildfire risks when they don't own any of the infrastructure, including challenges if one property does fuel mitigation but its neighbor doesn't. He stated there's a need for access to more granular geospatial data for pricing

wildfire risk to an entire community, and that the insurance industry needs to start sharing data and working with others.

FRIDAY, OCTOBER 3, 2025

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## BALANCING PRIORITIES AND THE GRID: NEW DISPATCHABLE TECHNOLOGIES

Commissioner Andrew McAllister, California Energy Commission, moderated a panel with Michael Purdie, Vice President of Regulatory Affairs at National Hydropower Association and Mark Thompson, Senior Director of State Affairs at Form Energy, about how various forms of storage can act as dispatchable resources.

Purdie highlighted that, while only  $\frac{1}{4}$  of the total hydro in the U.S. is pumped storage, the technology can help with voltage support and black starts, and there is significant potential for more pumped storage to be developed.

Thompson highlighted the benefits of Form Energy's 100-hour duration batteries, which use iron and air—commonly found materials that do not present the same thermal runaway risk as lithium ion batteries. Thompson explained that Form developed a 100 hour battery to fill a need identified in utility studies, and that 100-hour storage provides reliability similar to natural gas.

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## CONGESTION REVENUE RIGHTS: PROTECTING INVESTMENTS PAST AND FUTURE

Commissioner Pat O'Connell of the New Mexico Public Regulation Commission moderated a panel with Anna McKenna, Vice President of Market Design and Analysis at the California Independent System Operator, Nita Zimmerman, Vice President of Bulk Marketing at Bonneville Power Association, and Cameron Yourkowski, Director of Regulatory and Market Affairs at Pattern Energy, on the importance and complexities of transmission congestion revenue rights.

Zimmerman explained how congestion shows up and is hedged against in bilateral markets. She described how entities procure physical transmission rights, and sell those rights based on feasibility and a determination of available transfer capacity to hedge against congestion in real time.

McKenna summarized congestion in markets, and explained how SCED is used to determine the costs of serving load in any location, and will instantaneously search for and price the next MW needed to serve load when there are outages and capacity cannot serve the full amount of load. She described congestion as the difference in price paid between generation and load on the system, with congestion revenue being the excess revenue collected on the system because load pays the same price for generation across the system and is greater than what is paid for transmission on the system. She stated that market operators developed financial rights to determine who gets the excess revenues, and are largely similar in how they honor those financial rights. Day-ahead markets have the challenge of working with entities who have been doing business in the bilateral market and have not yet shifted to financial rights for transmission.

Yourkowski described the issue of transmission congestion from the perspective of a transmission customer, including the transition from purchasing long-term firm Point-to-Point transmission rights to the day-ahead market settlements, and how changing settlement prices from point of delivery to point of

generation can leave a big gap and that congestion revenues need to be allocated back to customers. He emphasized that getting the congestion revenue allocation correct is important to continue to send appropriate signals to developers to continue to build new lines, and that the next step needs to be a full RTO instead of stopping at the day-ahead market.