

SPRING 2022
JOINT CREPC-WIRAB
MEETING SUMMARY

INTRODUCTION AND BACKGROUND

The Joint CREPC-WIRAB Meeting is the premier biannual gathering of state, provincial, and federal representatives, consumer advocates, and industry experts from the Western Electricity 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 not formal and is comprised of the public utility commissions, energy and facility siting agencies, and consumer advocates 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 regional advisory body created by 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., WECC) on matters pertaining to electric grid reliability in the Western Interconnection. WIRAB's membership is comprised of all states and provinces 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 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's Office of Electricity** (DOE-OE), 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 Spring 2022 Joint CREPC-WIRAB Meeting held May 2-4, 2022 in San Diego, California. The summary includes key takeaways from the various presentations and panel discussions, as well as links to all the meeting materials.

MONDAY MAY 2, 2022

WESTERN RESOURCE ADEQUACY PROGRAM

Sarah Edmonds, the President and CEO of The Western Power Pool (WPP), gave a presentation [[LINK](#)] on the first impressions of WPP's efforts to engage stakeholders and establish a Western Resource Adequacy Program (WRAP). WRAP seeks to ensure regional resource adequacy while maintaining

existing responsibilities for reliable operations. Ms. Edmonds discussed the project timelines including the potential for a fully functioning program by 2024 at the earliest.

NAMEPLATE, PERFECT, AND EFFECTIVE CAPACITY

Nick Schlag, Partner with Energy + Environmental Economics (E3), and Ryan Roy, Director of Technology, Modeling & Analytics for WPP, led a discussion on the various types of electric resource capacity concepts. Nameplate, perfect, and effective capacity are a cluster of capacity concepts that are crucial to understanding the changing resource adequacy paradigm in the West. These concepts are taking on increased importance in utility Integrated Resource Planning and enable capacity accounting and verification in the Western Resource Adequacy Program. Mr. Schlag's presentation [\[LINK\]](#) discussed the importance of, and challenges for, resource adequacy needs in the transition to a decarbonized grid. Mr. Schlag discussed the practical application of effective load carrying capability (ELCC) in resource adequacy, advocating that ELCC is agnostic to technology and provides a common currency for the issue. Mr. Roy's presentation [\[LINK\]](#) focused in more technical details on the Western Resource Adequacy Program (WRAP) discussed by Ms. Edmonds in the previous session. Mr. Roy discussed the key principles of the WRAP including, the regional reliability metric, a binding framework for entities to demonstrate secured capacity, and how these various elements come together to lower the overall needs of the region and drive savings for member entities and customers.

NATURAL GAS PIPELINE SYSTEMS AND GREEN HYDROGEN BLENDS

Hydrogen produced through clean pathways can potentially be injected into natural gas pipelines, and the resulting blends can be used to generate heat and electric power with lower emissions than using natural gas alone. Kellye Dundon, Environmental Policy & Programs Manager with NW Natural, presented on the Opportunities and Activities for Hydrogen [\[LINK\]](#). Ms. Dundon discussed the "rainbow of hydrogen", noting that the carbon intensity of a particular type of hydrogen is more important than its "color". NW Natural is exploring methanated green hydrogen which uses waste CO2 and helps to overcome the blending limit. Commissioner Mark Thompson, Oregon Public Utility Commission, continued the conversation on hydrogen blends [\[LINK\]](#), noting the potential of green hydrogen in decarbonization efforts while recognizing challenges within the regulatory landscape. Commissioner Thompson focused on actions state energy officials can take to engage in the conversation around hydrogen including Integrated Resource Planning and to consider regulatory tools such as tariffs and planning requirements.

ELECTRIC VEHICLE GROWTH -- IMPACTS ON ELECTRIC UTILITY DISTRIBUTION SYSTEMS

Electric Vehicle (EV) charging represents a rapidly growing load which presents unique challenges to grid planning. The Idaho National Laboratory (INL) has developed a modeling and simulation platform known as Caldera® to study the impacts of EV charging on various portions of the distribution network, the aggregate demands on generation, and the ability of novel control strategies to improve the integration of this load with the existing grid and future renewable generation. Timothy Pennington, Sr., Research Engineer in Vehicle Electrification at the Idaho National Laboratory, gave a stimulating presentation on

these questions [\[LINK\]](#). Mr. Pennington's discussion included various outcomes from the Caldera model, such as programmable charging with random start times to ensure a full charge by time of departure. By running various scenarios with this model, researchers are able to project impacts throughout the grid at the feeder level. Mr. Pennington also discussed the use of storage to smooth and reduces peaks caused by EV charging.

TUESDAY MAY 3, 2022

JOINT FEDERAL-STATE TASK FORCE ON ELECTRIC TRANSMISSION

The Federal Energy Regulatory Commission (FERC) and the National Association of Regulatory Utility Commissioners (NARUC) have formed a joint federal-state task force on electric transmission. Thad LeVar, Chair, Utah Public Service Commission, and Commissioner Cliff Rechtschaffen, California Public Utilities Commission discussed transmission-related issues and impacts in the West. Of particular note was a discussion on the FERC Notice of Proposed Rulemaking (NOPR). FERC had indicated an interest in state perspectives particularly given the diversity and unique challenges faced by the West. As such, there was interest in working together to submit joint comments from the Western States on elements of the NOPR on which the states could achieve consensus.

BARRIERS TO TRANSMISSION DEVELOPMENT IN THE WEST

In the first panel discussion of the day, moderator Debbie Lew, Associate Director at Energy Systems Integration Group, kicked off the panel with a presentation [\[LINK\]](#) discussing the role and costs of transmission in the transition to clean energy. Rob Gramlich, President of Grid Strategies, spoke about the benefits, barriers, and solutions of regional transmission [\[LINK\]](#). Mr. Gramlich noted the benefit of load and generation diversity in regional systems, providing examples from the Eastern Interconnect. He further discussed the need for new transmission between resource areas and load centers to decarbonize the energy sector further. Michelle Manary, Acting Deputy Assistant Secretary, Electric Delivery Division for the Grid Deployment Organization at the U.S. Department of Energy, gave a presentation on efforts at the federal level focused on the future of the grid [\[LINK\]](#). Ms. Manary reemphasized the importance of the transmission grid to meeting decarbonization goals. She also noted the importance of joint planning with the states for siting of new transmission. Ms. Manary also discussed a few specific efforts underway at the federal level including the Seem study by the National Renewable Energy Lab and the designation of Federal Transmission Corridors to streamline federal approvals.

TRANSMISSION PLANNING IN THE WEST

In the next session, panelists discussed proactive planning for new generation. Neil Millar, Vice President of Infrastructure and Operations Planning at California ISO (CAISO), gave a presentation [\[LINK\]](#) on Transmission Planning efforts at the CAISO. Over the past year, CAISO completed a 20-Year Transmission

Outlook report as well as their Annual Transmission Plan. The 20-Year outlook looks at both in-state and out-of-state needs, as well as diverse resources, including long-duration storage and off-shore wind. CAISO is also exploring and making other improvements to their processes, such as coordination with other western planning entities, to meet needs. Dave Angell, Vice President of Regional Transmission Planning at WPP, furthered the discussion with his presentation [\[LINK\]](#) focusing on planning timelines and horizons. Mr. Angell emphasized how certainty in the planning process decreases the further into the future we go, and discussed how the various planning processes (e.g., IRP, policy, regional efforts, and operations) are affected by changing variables over time. Keegan Moyer, Principal, Energy Strategies, discussed the complexities of transmission planning in the West [\[LINK\]](#). Mr. Moyer noted that while the West is particularly complicated given the various drivers, processes, and desired outcomes, there have been \$7 billion worth of new transmission projects recently approved throughout the West. He went on to offer solutions to overcome many of these challenges, including maximizing the use of the existing system and cost allocation frameworks to support next-generation transmission builds.

MAXIMIZING THE USE OF EXISTING RIGHTS-OF-WAY

The conversation on transmission continued with a discussion on how to maximize existing Right-of-Ways (ROWs). Morgan Putnam, Founder of NGI Consulting, gave an overview of the NextGen Highways [\[LINK\]](#) that emphasizes co-location of transmission, EV charging, and communication infrastructure. Mr. Putnam discussed how the High Voltage DC Macro Grid that has been modeled by NREL could capitalize on the existing federal interstate highway system. Mr. Putnam gave real world examples of existing projects where planning and coordination, especially that amongst utility commissions and transportation departments, was used to facilitate success. Nick Miller, President of HickoryLedge, went on to discuss the importance of high-power density within existing transmission ROWs. In his presentation [\[LINK\]](#), Mr. Miller challenged the historical assumptions that land is cheap and that towers and conductors are the primary expenses in building transmission. Mr. Miller discussed the various types of transmission towers and circuits, explaining how the various designs allow for an effective increase in the amount of electricity that can flow through a particular ROW. Doug Howe, Board Member of the New Mexico Renewable Energy Transmission Authority (RETA), then shared perspectives from RETA [\[LINK\]](#). RETA was established to “plan, finance, develop, and acquire high voltage transmission and storage projects” that would promote economic development in New Mexico. This independent, quasi-governmental organization includes a board of executive and legislatively appointed members and is not subject to the supervision or control of any other New Mexico state public body. Uniquely, RETA has the ability to invoke eminent domain. RETA has successfully completed multiple transmission projects enabling resource development in the state for out-of-state off-takers. While RETA is unique and has been successful, Mr. Howe noted that there are no easy fixes for siting new transmission and offered a handful of tips for success including local zoning laws and fostering long-standing partnerships with the state land office and neighboring state infrastructure authorities.

U.S. DOE FUNDING OPPORTUNITIES FOR TRANSMISSION AND DISTRIBUTION GRIDS

Michelle Manary, Acting Deputy Assistant Secretary, Electric Delivery Division for the Grid Deployment Organization at the U.S. Department of Energy (DOE), returned to give a presentation on the federal

initiative: Building a Better Grid [\[LINK\]](#). In support of the Biden Administration's commitment to modernize the nation's power grid and infrastructure, and deliver 100% clean energy to businesses and homeowners by 2035, the DOE has announced the availability of up to \$15.5 billion in grants or assistance for efforts to improve and expand the nation's transmission and distribution grid. The Building a Better Grid initiative includes early and meaningful collaboration with states, focusing on high-priority national transmission needs, over \$20 billion in federal funding for various initiatives, facilitated permitting, and research and development to continue to drive cost reductions in the deployment of efficient technologies. Ms. Manary noted that the Justice 40 Initiative will be incorporated into these efforts as well.

POTENTIAL ROLE FOR WECC IN TRANSMISSION PLANNING IN THE WEST

Melanie Frye, President and Chief Executive Officer, and Kris Raper, Vice President of External Affairs, for the Western Electricity Coordinating Council (WECC) discussed the organization and its role in transmission planning throughout the West. WECC's mission is to mitigate risks effectively and efficiently for the reliability and security of the Western Interconnection Bulk Power System. Ms. Raper and Ms. Frye discussed the needs and benefits of leveraging existing resources and engaging with stakeholders through the support of the Western Interstate Energy Board (WIEB). They also noted that state energy offices are required to support transmission and distribution planning through the Infrastructure Investment and Jobs Act (IIJA).

DAY-AHEAD MARKET DESIGN CHALLENGES

In the next session, Caitlin Liotiris, Principal at Energy Strategies, moderated a panel of utility representatives focusing on the various challenges to designing and implementing a day-ahead market in the West. Panelists included: Scott Kinney, Director Power Supply, Avista; Russ Mantifel, Transmission & Policy, Bonneville Power Administration; and, Kathy Anderson, Senior Manager, Real Time Operations and Markets, Idaho Power Company. While both the California ISO and the Southwest Power Pool are currently designing regional day-ahead electricity markets, neither of these offerings provide all the services of a full Regional Transmission Organization (RTO). The panelists noted that markets are about optimizing transmission resources, not just generation.

REGIONAL TRANSMISSION ORGANIZATION DESIGN CHALLENGES

Many energy advocates and policymakers view an RTO as the ultimate end or objective of wholesale electricity market expansion. Caitlin Liotiris, Principal at Energy Strategies, again moderated a panel to discuss new laws requiring electric utilities join a full RTO and the challenges and considerations that that path entails. Carrie Simpson, Director of Western Markets for the Public Service Company of Colorado, discussed the new law in Colorado that requires electric utilities to join a full RTO by 2030. Scott Bolton, Senior Vice President of Transmission Development at PacifiCorp, and David Rubin, Federal Energy Policy Director, NV Energy discussed how utilities are analyzing the benefits and challenges of joining an RTO, particularly operational control.

CHANGING THE RTO/ISO DEBATE IN THE WEST

Building on the dialogue of the first two days, day three began with a discussion on how to shift the conversation around the drive towards markets in the West. While many states and stakeholders agree on the move towards decarbonization, doing so at the cost of reliability is unsustainable. Raymond Gifford, Managing Partner at Wilkinson Barker Knauer LLP and Matthew Larson, Partner at Wilkinson Barker Knauer LLP, lead a lively presentation [\[LINK\]](#) that focused on the “for the West, by the West” approach to market design for the Western Interconnection. They noted that collective action problems, such as decarbonization, are challenging to address, but not impossible. Mr. Gifford discussed the Western Resource Adequacy Program (WRAP) as a foundation for an RTO to build on. With references to classic hip-hop artists, Mr. Larson broke down the challenges facing the West as it seeks to address the objective of reliable decarbonization. They also discussed a new white paper by their firm titled “Rethinking and Restyling an Old Idea” [\[LINK\]](#), which explores how RTOs are expected to adapt to the transformation of the transmission system.

STATE GOVERNANCE PRINCIPLES

The following panel brought together utility Commissioner John Chatburn from the Idaho Public Utilities Commission and Chairman Eric Blank from the Colorado Utilities Commission, moderated by Commissioner Letha Tawney from the Oregon Public Utility Commission, to discuss wholesale electric organizations and state governance principles. To address this transition, state representatives have developed a set of principles [\[LINK\]](#) to promote inclusiveness in governance, fairness in balancing diverse interests, representation of minority interests, and ongoing responsiveness of any regional market to all stakeholders, including states and the policies their legislatures have mandated. Commissioner Chatburn discussed the importance of Board independence and transparency to ensure trust amongst the states. Commissioner Blank noted that stakeholder engagement is critical to the legitimacy of an organization or concept. He went on to discuss how priorities may shift during the development and implementation of a wholesale electric organization or structure, and the importance of reviewing and updating principles to meet current and future needs.

BOARD INDEPENDENCE AND REGIONAL STATES COMMITTEES

The meeting concluded with a discussion on the governing boards of multistate wholesale electricity markets. Commissioner Letha Tawney from the Oregon Public Utility Commission returned to moderate a discussion between the various entities developing markets in the West. Stacey Crowley, Vice President of External Affairs at the California ISO, expressed a desire to bring in diverse stakeholders to develop the Extended Day Ahead Market (EDAM). While Ms. Crowley discussed efforts made to elevate non-California voices through the Western EIM, she noted that governance does have limitations as the Board is appointed by the Governor of California. Kara Fornstrom, Director of State Regulatory Policy for the Southwest Power Pool (SPP), shared her perspectives on SPP’s board, which is approved by FERC, and the collaboration SPP hopes to have in its market design. She discussed pathways for non-market

participants to become members for a fee and that, based on feedback received by SPP, working groups will have non-market participants. Rebecca Sexton, Director of Reliability Programs for the Western Power Pool (WPP), described the WPP board as semi-independent with broad stakeholder involvement. Despite different approaches and journeys to market implementation, there was broad agreement that resource adequacy was the foundational element necessary for a successful market or RTO and that the success of future markets in the West hinges on independence and good governance.