



Resource Adequacy, Decarbonization, and Reliability: Making It Happen in the West

A Northwestern Electricity Dialogue Webinar

Northwestern Pritzker School of Law

Tuesday, December 14, 2021

10:45 a.m. - 2:00 p.m. CST

9:45 a.m. - 1:00 p.m. MST

8:45 a.m. - 12:00 p.m. PST

Times listed below are PST

The Western Interconnection has evolved in recent years with its growing acceptance of new generation technologies, substantial focus on decarbonization, and rapidly growing interest in multistate markets. Yet, increasingly frequent natural challenges and the operating properties of intermittent resources have triggered reliability awareness and concern. What tools are available today and, in the future, to supply load that is projected to increase with electrification of the economy? How will regulators respond to these pressures? What information is required to support the transformation in the most efficient, cost-effective manner possible?

8:45 - 9:00

Welcome

Elizabeth Kronk Warner, Dean, S.J. Quinney College of Law,
University of Utah

Thad LeVar, Commission Chair, Utah Public Service Commission

9:00-9:30

Opening Keynote Addresses: *Where Do We Stand Today?*

Introduction: **Thad LeVar**, Commission Chair, Utah Public Service
Commission

Richard Glick, Chair, Federal Energy Regulatory Commission

9:30-10:45

Session One — Infrastructure Solutions?

Policy makers and utilities in the west are increasingly aligned on reliably decarbonizing the electricity sector. But change is never easy, especially in a time of projected load growth and economic uncertainty. What are the near-term tools and new technologies that could contribute to the reliable decarbonization of the electricity sector? Do these technologies support the need for highly flexible, quick ramping capability to support the intermittency of generation and demand? What are the challenges facing deployment of these technologies? How have weather driven events hastened consideration of new technologies? What are the policy implications of these technologies?

Moderator: Ann Rendahl, Commissioner, Washington Utilities and Transportation Commission

Maury Galbraith, Executive Director, Western Interstate Energy Board (WIEB)

Jeffery Preece, R&D Program Manager | Low-Carbon Resources | Energy & Technology, EPRI

Elizabeth Salerno, Lead, Transmission and Technology Initiatives, Federal Energy Regulatory Commission

10:45 – 12:00

Session Two — The Ball is in Your Court

The west is facing a long list of issues related to the transformation of the electricity sector: integrating new generation technologies, decarbonization and other policy goals, exploration of wholesale markets, drought and related water challenges, other weather-related events, periodic generation shortages, and reliability and resilience concerns. How can the west work cooperatively to address these challenges? Are some of these challenges more pressing than others? What are the impediments to success? What tools and knowledge do regulators need to address these daunting issues? Are they best addressed state by state or in a multistate or regional manner?

Moderator: Senator Chris Hansen, Colorado General Assembly

Susan Ackerman, Former Chair, Oregon Public Utility Commission

Tammy Cordova, Commissioner, Public Utilities Commission of Nevada

Thad LeVar, Commission Chair, Utah Public Service Commission

Kris Raper, Commissioner, Idaho Public Utilities Commission

12:00

Adjourn

Participants (as of December 13, 2021)

1. **Susan Ackerman**, Former Chair of the Oregon Public Utility Commission
2. **Tammy Cordova**, Commissioner, Public Utilities Commission of Nevada
3. **Maury Galbraith**, Executive Director, Western Interstate Energy Board (WIEB)
4. **Richard Glick**, Chairman, Federal Energy Regulatory Commission
5. **Chris Hansen**, Senator, Colorado General Assembly
6. **Elizabeth Kronk Warner**, Dean, S.J. Quinney College of Law, University of Utah
7. **Thad LeVar**, Commission Chair, Public Service Commission of Utah
8. **Jeffery Preece**, R&D Program Manager | Low-Carbon Resources | Energy & Technology, EPRI
9. **Kristine Raper**, Commissioner, Idaho Public Utilities Commission
10. **Ann Rendahl**, Commissioner, Washington Utilities and Transportation Commission
11. **Elizabeth Salerno**, Lead, Transmission and Technology Initiatives, Federal Energy Regulatory Commission

Registrants (as of December 13, 2021)

1. **Ed Achaab**, Trans Asset Strategy, AEP
2. **Jeffrey Ackermann**, Senior Policy Advisor, Center for the New Energy Economy
3. **Mark Alder**, Regulatory Projects Manager, PacifiCorp
4. **Eric Anderson**, Commissioner, Idaho Public Utilities Commission
5. **Grant Anderson**, Regulatory Consultant, Idaho Power Company
6. **Pedram Arani**, Analyst, PG&E
7. **Alison Archer**, Regional Director, MISO
8. **Kenrick Au**, Accountant, ICC
9. **David Babin**, Student, Student at NU
10. **Vicki Baldwin**, Shareholder, Parsons Behle & Latimer
11. **Kim Ballard**, Senior Analyst, IURC
12. **Adam Benshoff**, Vice President, Regulatory Affairs, Edison Electric Institute
13. **Lewis Binswanger**, VP External Affairs, Southern Company Gas
14. **Scott Bolton**, SVP, Transmission Development, PacifiCorp

15. **Pamela Bonrud**, Director Gov & Reg Affairs, NorthWestern Energy
16. **Kate Bowman**, Renewable Energy Program Manager, Utah Clean Energy
17. **David Boyd**, Regulatory and Policy Strategist, AESL
18. **James Bransomb**, Senior Rate Engineer, Wyoming Public Service Commission
19. **Elizabeth Breretib**, Associate, Snell & Wilmer, LLP
20. **David Brown**, Engineer, NJBPU
21. **Rich Brunt**, Sr. Analyst, Indiana Utility Regulatory Commission
22. **Diane Burman**, Commissioner, New York Public Service Commission
23. **Kim Burton**, Chief of Staff and Legal Advisor to Chairman Silvey, Missouri PSC
24. **Tanya Capellan**, Director ORMD, Illinois Commerce Commission
25. **Michael Carrigan**, Commissioner, Illinois Commerce Commission
26. **Tina Chin**, Counsel, DPU
27. **Julie Clark**, Attorney, Clark Energy Law
28. **Daniel Conway**, Commissioner, PUCO
29. **Sarah Cronin**, Commissioner Assistant, ICC
30. **Stacey Crowley**, VP External Affairs, California ISO
31. **Soham Dalal**, Staff Electrical Engineer, Burns & McDonnell
32. **Jeff Danielson**, Central Region Director, American Clean Power
33. **Dave Danner**, Chair, Washington Utilities and Transportation Commission
34. **Chris Devon**, Director of Market Intelligence - West, Customized Energy Solutions
35. **Scott Drzycimski**, Director- Public Affairs, ITC Midwest
36. **Sarah Edmonds**, Director, Transmission Services, Portland General Electric
37. **Matt Ellis**, Regional Transmission Program Manager, Great River Energy
38. **Christine Ericson**, Attorney, Illinois Commerce Commission
39. **Julie Fedorchak**, Chair, North Dakota Public Service Commission
40. **John Feeley**, Staff Attorney ICC, Illinois Commerce Commission
41. **David Fein**, President, Fein Solutions, LLC
42. **Neal Fitch**, Sr. Director, Regulatory Affairs, NRG Energy, Inc.
43. **Kara Fornstrom**, Director, State Regulatory Policy, Southwest Power Pool
44. **Andrew French**, Commissioner, Kansas Corporation Commission
45. **Bob Funk**, ICC Solicitor General, Illinois Commerce Commission
46. **Jennifer Gardner**, Member, Western EIM Governing Body
47. **Edward Garvey**, Regulatory Strategist, AESL Consulting
48. **Larry Gasteiger**, Executive Director, WIRES
49. **Benjamin Gerber**, CEO, M-RETS
50. **Orijit Ghoshal**, Director, Regulatory Affairs, Invenergy
51. **Glenda Gibson**, Manager - Regulatory Compliance, NorthWestern Energy

52. **Gilbert Gil**, Economist, Federal Energy Regulatory Commission
53. **Michael Gilbertson**, Assoc Prof of Practice, Texas Tech University
54. **Katherine Goyette**, Counsel, MA DPU
55. **Jordan Graham**, Policy Advisor, Illinois Commerce Commission
56. **Ryan Granholm**, Staff Attorney, Illinois Commerce Commission
57. **Kevin Gunn**, Prinicpal, Paladin Energy Strategies
58. **Dianna Hain**, AM, ComEd
59. **Daniel Hall**, Central Region Director, American Clean Power Association
60. **James Harmening**, Cybersecurity and Risk Management Director, Illinois Commerce Commission
61. **Bryce Haugen**, Resource Planner, Otter Tail Power Company
62. **Marcus Hawkins**, Executive Director, OMS
63. **Christina Hayes**, VP, Fed Reg Affairs, BHE
64. **Pat Hayes**, Manager of Transmission Policy, LS Power
65. **Thomas Haymaker**, Manager, Energy Planning, Clark Public Utilities
66. **Shannon Heim**, Director, Regulatory Counsel, NorthWestern Energy
67. **Ann Hill**, Corporate Counsel, NorthWestern
68. **Hunter Holman**, Staff Attorney, Utah Clean Energy
69. **Mark Holman**, Managing Director, Powerex
70. **Callie Hood**, Program Assistant, Western Resource Advocates
71. **Libby Jacobs**, President, The Jacobs Group LLC
72. **Paris Jackson**, Procurement Manager, Target Corp
73. **Jared Jevons**, Litigation Counsel, Kansas Corporation Commission
74. **Brad Johnson**, Vice-Chair, Montana Public Service Commission
75. **David Johnston**, Chief Technical Advisor, Indiana Utility Regulatory Commission
76. **Arthur Justice**, VP Energy&Sustainability, Cinemark USA
77. **Ben Kaldunski**, Policy Analyst, PSCW
78. **Christopher Kennedy**, Partner, Whitt Sturtevant LLP
79. **Nancy Kelly**, Senior Policy Advisor, Western Resource Advocates
80. **Scott Kinney**, Director Energy Supply, Avista Corp
81. **Joshua Kmiec**, Director, ScottMadden, Inc.
82. **Ryan Kohler**, Director, Office of Regional Markets, Public Service Commission of Wisconsin
83. **Aly Koslow**, Director, Federal Regulatory, Arizona Public Service Company
84. **Glenn Krassen**, General Counsel, Northeast Ohio Public Energy Council
85. **Stefanie Krevda**, Commissioner, IURC
86. **Alex Kronauer**, Senior Manager, Energy Services, Walmart

87. **Jonghwan Kwon**, Energy Systems Engineer, Argonne National Laboratory
88. **Clay Layson**, Assistant Attorney General, Attorney General of Arkansas
89. **Matt Lecar**, Principal, PG&E
90. **Kristin Lewis**, Policy Analyst, Wilkinson Barker Knauer LLP
91. **Wei Chen Lin**, Policy Advisor - Cybersecurity & Risk Management, Illinois Commerce Commission
92. **Carl Linvill**, Principal, Regulatory Assistance Project
93. **Ryan Long**, VP & Deputy General Counsel, Xcel Energy
94. **Robin Lunt**, Chief Strategy Officer, Guzman Energy
95. **Ivy Lyn**, Director, State Regulatory Affairs, EEI
96. **Glen Lyons**, Regulatory and Policy Advisor, Exxon Mobil Corporation
97. **Partha Malvadkar**, Principal, RA, Infrastructure, and Grid Enhancements., California ISO
98. **Robert Marischen**, Senior Advisor Regulation, Shell T&S
99. **Doug Marker**, Intergovernmental Affairs, Bonneville Power Administration
100. **Sophia Markowska**, Market Associate, Illinois Commerce Commission
101. **Chris Martel**, Regulatory Consultant, SWEPCO
102. **Rodney Massman**, Asst Gen Counsel, MOPSC
103. **Daryl Maxwell**, Dept Manager - Tx Services and Compliance, MB Hydro
104. **Jeff McClanahan**, Director - Utilities Division, Kansas Corporation Commission
105. **Emily McKay**, Law Student, S.J. Quinney College of Law, University of Utah
106. **Andrew McLain**, Director, Transmission Strategy and FERC Compliance Officer, NorthWestern Energy
107. **Cristina McQuiston**, VP Corporate Responsibility, OGE Energy
108. **Joanne Mello**, Vice President, Corporate Sustainability, Southern Company Gas
109. **Ryan Millard**, Grid & Market Ops Policy Analyst, Portland General Electric Company
110. **Scott Miller**, Executive Director, Western Power Trading Forum
111. **John Miller**, Special Assistant to Chairman Richard Glick, Federal Energy Regulatory Commission
112. **David Moeller**, Senior Attorney & Director of Regulatory Compliance, ALLETE
113. **Philip Moeller**, EVP, EEI
114. **Brian Mojica**, Senior Manager – Energy, Target
115. **Jane Montgomery**, Partner, Schiff Hardin LLP
116. **Sonia Morgan**, Rate Manager, AEP - SWEPCO
117. **Meagan Morley**, Staff Attorney, Office of General Counsel, Illinois Commerce Commission
118. **Tony Mugera**, Economist, Illinois Commerce Commission

119. **Stephanie Mullin**, Executive Director, Public Utilities Commission of Nevada
120. **Jennifer Murphy**, Director of Energy Policy and Senior Counsel, NARUC
121. **Neeharika Naik-Dhungel**, Program Manager, U.S. EPA
122. **Chris Nelson**, Commissioner, SD PUC
123. **Aaron Nelson**, Sr. Project Specialist, WEC Energy Group
124. **Liam Noailles**, Manager, Federal Regulatory Affairs, Xcel Energy Inc.
125. **Sarah Norcott**, Corporate Counsel, NorthWestern Energy
126. **Stacy Nowak**, Utility Analyst, Indiana Utility Regulatory Commission
127. **Erin M O'Connell-Diaz**, President, FutureFWD, Inc.
128. **Christopher Oprysk**, environmental engineer, NJ BPU
129. **Katie Otterbeck**, Associate, Wilkinson Barker Knauer
130. **Uma Outka**, Professor of Law/Assoc. Dean for Faculty, Univ. of Kansas School of Law
131. **Alexander Ovodenko**, Energy Industry Analyst, Federal Energy Regulatory Commission
132. **Katie Papadimitriu**, Deputy ED-Policy, ICC
133. **Morgan Pauley**, Chief Technical Advisor, Indiana Utility Regulatory Commission
134. **Matt Pawlowski**, Exec Director, NextEra Energy Resources (Juno Beach, FL)
135. **Julie Peacock**, Bonneville Power Administration
136. **Terri Pemberton**, Chief Litigation Counsel, Kansas Corporation Commission
137. **Audrey Penner**, Market access, Manitoba Hydro
138. **Lisa Perry**, Senior Manager, Energy, Walmart Inc.
139. **Matthew Prorok**, Sr Policy Manager, Great Plains Institute
140. **Tetyana Rabczak**, Chairman Advisor, ICC
141. **William Rader**, Rates Analyst - Regulatory Administration, Otter Tail Power Company
142. **Jay Rasmussen**, Wholesale Markets and Transmission Policy Senior Manager, Duke Energy
143. **John Ratnaswamy**, Member, The Law Office of John Ratnaswamy, LLC
144. **Ashley Renkor**, Commissioner's Assistant, Illinois Commerce Commission
145. **Lynn Retz**, Executive Director, Kansas Corporation Commission
146. **Preston Riewer** Senior Resource Planner, Otter Tail Power
147. **Pamela Ritger**, Milwaukee Program Director & Staff Attorney, Clean Wisconsin
148. **Jack Roback**, Student, Northwestern
149. **Jana Saba**, Regulatory Manager, PacifiCorp
150. **Stephen Sands**, Director - Energy Strategy, Rio Tinto Kennecott
151. **Kalia Savage**, Transmission Services Analyst, Portland General Electric

152. **Nick Schou**, Gov Affairs, Western Resource Advocates
153. **Jeremy Schwartz**, Lead Pricing Analyst, Oklahoma Gas & Electric Company
154. **Doug Scott**, Vice President, Great Plains Institute
155. **Kevin Siebert**, Accountant, Illinois Commerce Commission
156. **Jay Skabo**, VP Elec Supply, MDU
157. **Rick Starkweather**, Partner, ScottMadden, Inc.
158. **Mary Stephenson**, Principal, Stephenson Schroeder Ltd
159. **Kelsie Strobel**, Government Affairs Analyst, Invenergy LLC
160. **Scott Struck**, Director, Integrated Distribution Planning, Illinois Commerce Commission
161. **Dylan Stupca**, Supervisor T&D Studies, Otter Tail Power Company
162. **Christopher Sturgill**, Director, ScottMadden, Inc.
163. **Dan Stusek**, Communications/Lawyer, Montana Public Service Commission
164. **Alexis Sulentic**, Manager, Edison Electric Institute
165. **Patrick Sullivan**, Project Specialist, WEC Energy Group
166. **Heather Svenson**, RTO Strategy Manager, PSEG
167. **Simon Tanapat-Andre**, Engineer, Manitoba Hydro
168. **Justin Tate**, Commissioner, Arkansas Public Service Commission
169. **Fernando Thiers**, Mr, Kellogg
170. **Glen Thomas**, President, GT Power Group
171. **Ted Thomas**, Chairman, Arkansas Public Service Commission
172. **Mark Thompson**, Commissioner, Oregon Public Utility Commission
173. **Rob Threlkeld**, Global Manager - Energy Strategy, General Motors
174. **Brian Tulloh**, Executive Director, External Affairs North Region, MISO
175. **Usha-Maria Turner**, Director, Energy Policy, OGE Energy
176. **David Veleta**, Senior ALJ, IURC
177. **Julie Voeck**, Senior Director, Legislative and Regulatory Affairs, NextEra Energy Resources
178. **John Wachtler**, Energy Program Director, Minnesota Department of Commerce
179. **Ben Walker**, Director, Hospital Energy
180. **Michael Watkins**, Strategic Advisor, Seattle City Light
181. **Quentin Watkins**, Manager, ScottMadden, Inc.
182. **Sophia Wennstedt**, CEO, blip energy
183. **Carolyn Wetterlin**, Senior Manager, RTO Policy, Xcel Energy (Northern States Power Company)
184. **Rachelle Whitacre**, Director, Regulatory Affairs, Southern Company Gas
185. **Jordan White**, Executive Director, Development, GridLiance

186. **Dan Williams**, Director - MarketIQ West, Customized Energy Solutions
187. **Karen Willms**, Renewable Energy Lead, The Manitoba Hydro Electric Board
188. **Jeremi Wofford**, Sr. RTO Policy Specialist, Ameren
189. **Jeffrey Wolf**, Legal Affairs Advisor, City of Seattle, City Light Department
190. **Leet Wood**, Sr. Research Analyst, Edison Electric Institute
191. **Michelle Zaccagnino**, Sr. Manager, State Regulatory Policy, Edison Electric Institute
192. **Carrie Zalewski**, Chair, Illinois Commerce Commission
193. **Andy Zellers**, President, Influent Energy