

# Storage Forum

## Energy Markets for the Future

October 28, 2021

# AGENDA & BIOS

## AGENDA

12:00 p.m.	<b>Welcome and opening remarks</b> Elliot Mainzer, President and CEO, California ISO
12:15 p.m.	<b>Overview of storage participation in organized markets today</b> Gabe Murtaugh, California ISO, Storage Sector Manager, Market and Infrastructure Policy
12:30 p.m.	<b>Panel Discussion and Q&amp;A</b> <ul style="list-style-type: none"><li>• ISO/RTO market design and interaction with storage</li><li>• Modeling considerations for storage</li><li>• Model interaction with different storage technology types</li></ul> <p>Panelists: Dr. Ross Baldick, Professor Emeritus, University of Texas, Austin Dr. Luke Lavin, Researcher III, National Renewable Energy Laboratory Nikita G. Singhal, Technical Leader, Electric Power Research Institute, Inc. Dr. Ramteen Sioshansi, Professor and associate fellow, Ohio State University</p> <p>Moderator: Dr. Benjamin F. Hobbs, Theodore M. and Kay W. Schad Chair of Environmental Management, Johns Hopkins University</p>
2:50 p.m.	<b>Closing remarks</b>



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## **Ross Baldick**

Dr. Baldick is Professor Emeritus in the Department of Electrical and Computer Engineering at The University of Texas at Austin. He has undergraduate degrees from the University of Sydney, Australia, and graduate degrees from the University of California, Berkeley. His current research involves optimization, economic theory, and statistical analysis applied to electric power systems, particularly in the context of increased renewables and transmission. Dr. Baldick is a Fellow of the IEEE and the recipient of the 2015 IEEE PES Outstanding Power Engineering Educator Award



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## **Elliot Mainzer**

Mr. Mainzer is the President and Chief Executive Officer of the California Independent System Operator (ISO). He started in his new role at the ISO on September 30, 2020 following a successful 18-year career at the Bonneville Power Administration (BPA) where he was at the forefront of transformational changes in the western electricity market.

Mr. Mainzer is committed to using leading-edge policies and new technologies to accelerate California's drive towards the reliable decarbonization of its electric power grid. While serving as BPA's administrator and CEO from 2013-2020, Mr. Mainzer effectively navigated the agency through a period of tremendous industry change and economic headwinds by improving the agency's long-term cost competitiveness and financial resiliency, modernizing assets and system operations, and positioning BPA as a more responsive and agile business partner.

A native of San Francisco, Mr. Mainzer has an undergraduate degree in geography from U.C. Berkeley, and master's degrees in Business Administration and Environmental Studies from Yale University.



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## **Gabe Murtaugh**

Mr. Murtaugh has 10 years of electricity industry experience, and is currently the storage sector manager at the California Independent System Operator. Mr. Murtaugh oversees storage related policy, including policy related to developing and improving the storage model and policy related to hybrid and co-located resources. He also serves as a liaison for storage-related issues for parties outside of the ISO. Mr. Murtaugh has experience developing policy related to resource adequacy and backstop procurement for the ISO. Previously, Mr. Murtaugh held a role in the market monitoring group at the California ISO and was a market monitor for the Midcontinent ISO. Mr. Murtaugh holds a master's degree in economics and an undergraduate degree in computer science and engineering.

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## **Benjamin F. Hobbs**

Dr. Hobbs is the Theodore M. and Kay W. Schad Chair of Environmental Management at the Johns Hopkins University, and has been a member of the faculty of the JHU Whiting School of Engineering since 1995. His PhD is in Environmental Systems Engineering from Cornell University, and his research addresses systems and economic analyses of electric power and environmental systems. Previously, he was at Brookhaven and Oak Ridge National Laboratories, on the faculty of Case Western Reserve University, and an Overseas Fellow at Churchill College, Cambridge University. From 2010 to 2018, he was Director of the JHU Environment, Energy, Sustainability & Health Institute. He presently co-directs the USEPA YaleJHU SEARCH (Solutions for Energy, Air, Climate, and Health) Center, and is a member of the leadership team of the JHU Robert O'Connor Sustainable Energy Institute. He was named a Presidential Young Investigator Award by President Reagan in 1986. Dr. Hobbs was appointed to the Market Surveillance Committee of the California Independent System Operator in 2001, and now serves as its Chair. He is a Fellow of IEEE and INFORMS.



## **Luke Lavin**

Dr. Lavin is a Researcher III in the Grid Systems Group at the National Renewable Energy Laboratory. His primary research interests are the application of computational models, optimization, and economics to electricity markets and resource adequacy. He previously worked in the Electricity Markets and Policy Group at Lawrence Berkeley National Laboratory and Energy + Environmental Economics (E3). He holds a PhD in Engineering and Public Policy from Carnegie Mellon University and a BA, summa cum laude, from Amherst College in Physics and Anthropology.



## **Nikita G. Singhal**

Ms. Singhal is a technical leader in the Grid Operations and Planning group at the Electric Power Research Institute, focusing on emerging technology integration into operations and wholesale electricity market design and operations. At EPRI, Nikita leads an ISO/RTO Energy Storage Market Modeling Technical Working Group, and provides technical support for bulk power system operation and planning simulation, including production cost modeling, dynamic operating reserve determination, storage and hybrid resource integration, and advanced software tool development for the power system industry. She received the B.E. degree in electrical and electronics engineering from the People's Education Society Institute of Technology (PESIT) in India, and the M.S. and Ph.D. degrees in electrical engineering from Arizona State University (ASU). Her research interests include power system economics and operations research applied to power systems.



## **Ramteen Sioshansi**

Dr. Sioshansi is a professor in the Department of Integrated Systems Engineering and Department of Electrical and Computer Engineering and an associate fellow in Center for Automotive Research at The Ohio State University. His research focuses on the integration of advanced energy technologies, including renewables, energy storage, and electric transportation, into energy systems. He also works in energy policy and electricity market design, especially as they pertain to advanced energy technologies. He is an IEEE Fellow and served three two-year terms on Electricity Advisory Committee, a federal advisory committee to U.S. Secretary of Energy, and chaired its Energy Storage (Technologies) Subcommittee.