



Microgrids and Energy Storage for Emergency Grid Resilience Webinar Series

Session 3: Microgrids & Energy Storage Applications for Resilience & Energy Equity

Friday, November 19, 2021

10:00 AM to Noon (CT)

Presented by:

**U.S. DOE Office of Electricity Energy Storage Program,
Iowa State University Electric Power Research Center,
and Sandia National Laboratories**

As extreme weather events and other potential disruptions to the electric grid increase in frequency, the need for new technologies and approaches for providing resilience in the grid increase as well. This five-session series will explore technologies, policies, economics, applications, and case studies associated with microgrids and battery energy storage as options to help emergency management agencies provide greater electricity resilience across the states in FEMA Regions 5 (IL, IN, MI, MN, OH, WI) & 7 (IA, KS, MO, NE).

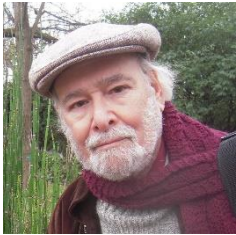
Agenda

Nov. 19, 2021 - Microgrids & Energy Storage Applications for Resilience & Energy Equity

10:00 - 10:20	Introductory Remarks Dr. Imre Gyuk, Director, DOE Office of Electricity Energy Storage (ES) Program
10:20 - 10:40	Energy Equity Dr. Bethel Tarekegne, Pacific Northwest National Laboratory
10:40 - 11:00	Modeling and Mapping Social Vulnerability Dr. Eric Tate, University of Iowa
11:00 - 11:10	Discussion/Q&A
11:10 - 11:30	Tribal Equity & Resilience Dr. Stan Atcitty, Sandia National Laboratories
11:30 - 11:50	Case Studies Daniel Wiggins Jr., Bad River Tribal Member and Mashkiiziibii (Bad River) Natural Resource Department's- Air Quality Technician (AQT)
11:50 - 12:00	Discussion/Q&A



Speaker Biographies



Dr. Imre Gyuk, Director, DOE Office of Electricity Energy Storage (ES) Program

After taking a B.S. from Fordham University, Dr. Imre Gyuk did graduate work at Brown University on Superconductivity. Having received a Ph.D. in Theoretical Particle Physics from Purdue University he became a Research Associate at Syracuse. As an Assistant Professor he taught Physics, Civil Engineering, and Environmental Architecture at the University of Wisconsin. Dr. Gyuk became an Associate Professor in the Department of Physics at Kuwait University where he became interested in issues of sustainability. Dr. Gyuk joined the Department of Energy to manage the Thermal and Physical Storage program. For the past two decades he has directed the Electrical Energy Storage research program in the Office of Electricity, developing a wide portfolio of storage technologies for a broad spectrum of applications. He supervised the \$185M ARRA stimulus funding for Grid Scale Energy Storage Demonstrations and is now partnering with the States on numerous storage projects for grid resilience. His work has led to 12 R&D 100 awards, two EPA Green Chemistry Challenge Awards, and Lifetime Achievement Awards from ESA and NAATBatt. He is internationally recognized as a leader in the energy storage field.



Dr. Bethel Tarekegne, Pacific Northwest National Laboratory

Dr. Bethel Tarekegne joined PNNL in 2021 and she is part of the Renewables team in the Distributed Systems group. Her work focuses on understanding the social equity implications of renewable energy technologies. She is currently exploring the equity/justice implications of energy storage for the DOE -OE's Energy Storage Program to imagine the ways energy storage can benefit people in underserved communities. Bethel's work in this space set the framework for applying energy justice principles to storage technologies. She is now investigating how storage can provide local non-energy benefits by developing fundamental data and metrics to measure these benefits. Bethel received her doctorate in Energy & Environmental Policy from Michigan

Technological University.



Dr. Eric Tate, University of Iowa

Eric Tate is an Associate Professor at the University of Iowa, in the Department of Geographical and Sustainability Sciences. Dr. Tate's research lies at the nexus of natural hazards and society, with particular focus on vulnerability indicators, flood loss estimation, and geospatial modeling. At Iowa, he teaches courses on water resources, natural hazards, environmental issues, and environmental justice. Dr. Tate earned a B.S. in Environmental Engineering from Rice

University, an M.S. in Water Resources Engineering from the University of Texas, and a PhD in Geography from the University of South Carolina.



Dr. Stan Atcitty, Sandia National Laboratories

Dr. Stan Atcitty received his BS and MS degree in electrical engineering from the New Mexico State University in 1993 and 1995, respectively. He received his PhD from Virginia Tech University in 2006. He is presently a Distinguished Member of Technical Staff at Sandia National Laboratories in the Energy Storage Technology & Systems department. He has worked at Sandia for over 25 years. His interest in research is power electronics necessary for integrating energy storage and distributed generation with the electric utility grid. He leads the power electronics subprogram as part of the DOE Office of Electricity Energy Storage Program.



Daniel Wiggins Jr., Bad River Tribal Member and Mashkiiziibii (Bad River) Natural Resource Department's- Air Quality Technician (AQT)

My name is Daniel Wiggins Jr, a Bad River Tribal Member and the Mashkiiziibii (Bad River) Natural Resource Department's- Air Quality Technician (AQT). I have worked for the Tribe for nearly 10 years as the AQT and have had oversight of the Tribe's Renewable Energy Activities since 2017. I was recently tasked as the Project Lead for the Ishkonige Nawadide Solar Microgrid Project, which installed over 500 kilowatts of solar and 1,000 kilowatt hours of batteries at three tribal facilities. The Tribe's energy projects are planned and executed on the Tribe's ability to exercise energy sovereignty, and eventually reach the Tribe's energy vision, "to empower and enable the community to move towards energy independence.