TRANSACTIVE SYSTEMS FOR THE SHARED ENERGY ECONOMY
~ by ~
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Tuesday, April 6 • 11:00 AM – Noon (PT) • TEAMS ONLY

[Link to TEAMS meeting]

OVERVIEW

The Washington Clean Energy Fund has funded this project that will advance and demonstrate the ability of batteries, photovoltaics and responsive loads to provide grid services, energy efficiency and resilience. The Avista distribution feeder models are now stored in CIM standard database and the feeder supplying the academic campus buildings have been enhanced with the installed photovoltaics and battery storage models. Academic campus building models have been developed from standard energy audit information, enhanced with machine learning methods applied to 3-second Avista metering data. These building models are linked to the distribution feeder model. This model is solved on the PNNL HELICS platform and in the PNNL Transactive Energy Simulation Platform for time-series simulation and evaluation of different use cases. A new multi-battery controller agent has been developed to optimize fleet operation in different grid conditions. All software and models will be open-source, which facilitates use by other researchers and adoption by industry.

BIOS

Dr. Thomas McDermott is in the Distributed Systems Group and the Solar Sub-sector Lead at PNNL, with over 35 years of experience in consulting, software development, teaching and research. Technical interests: simulation, transactive energy, and distribution system analysis. He is an IEEE Fellow, cited for contributions to modeling and analysis of electric power distribution systems and lightning protection. Tom has a PE license in Pennsylvania, a BS and ME in Electric Power from Rensselaer Polytechnic Institute, and a Ph.D. in Electrical Engineering from Virginia Tech.

Mike Diedesch received his B.S. in Electrical Engineering from WSU in 2008 and is a registered Professional Engineer in Washington. Since joining Avista Utilities in Spokane, WA, he has worked in various engineering roles including Generation Controls, SCADA, System Protection, Metering, and Smart Cities Lead. He is currently the Avista Grid Innovation Lab Manager.

Dr. Anjan Bose is a Regents Professor and Distinguished Professor of Power Engineering at WSU. He has 40+ years of experience in the power industry and academe. His pioneering work in developing and implementing real time analysis software for power grid control centers was cited in his election to Fellow of the Institute of Electrical & Electronics Engineers (IEEE). His work in the development of real time simulators—used around the world for training grid operators—was cited in his election to the National Academy of Engineering. He was also recognized by the IEEE with their Outstanding Power Engineering Educator Award, the Third Millenium Medal and the Herman Halperin Electric Transmission & Distribution Award. He has consulted on power system operation for numerous companies and governments all over the world.