

Next Generation Power System Test Cases

Dr. Bri-Mathius Hodge
National Renewable Energy Laboratory

Wednesday, April 19th

4:00 pm

Hill Hall 202

Abstract: Novel algorithms have the potential to transform electricity systems planning and operations with the introduction of new measurement and sensing devices such as phasor measurement units and residential smart meters. However, the design, development, and validation of next generation algorithms is hindered by the lack of robust datasets that provide sufficient detail to mimic real systems and sufficient data to truly validate and compare algorithms. ARPA-e has recognized this need for high quality archived datasets and funded the GRID DATA program. The Smart-DS project under this program is designing the next generation of distribution system test cases that can be used for algorithm development, validation, and comparisons. In addition, NREL has recently released a modified 118-bus transmission system model with additional wind and solar power generators, and a full year of time series data to help bridge the gap in the transmission space. The development of these two datasets will be examined and a study using the NREL 118-bus system to examine the relative value of renewable energy forecasting improvements and electric energy storage will be presented.

Biography. Bri-Mathias Hodge, Ph.D. - Dr. Hodge is the Group Manager for Power System Design & Studies at the National Renewable Energy Laboratory. His expertise is in the area of grid planning and operations with high levels of renewable energy. Dr. Hodge is a work package leader for Advanced Usage of Probabilistic Forecasts in the International Energy Agency Task 36 on Forecasting for Wind Energy. He received his Ph.D. from Purdue University, M.Sc. from Åbo Akademi and B.Sc. from Carnegie Mellon University.

