

# Interconnection of Inverter-Based Resources in Weak Grids

Dr. Debra Lew, ESIG  
SPP/ESIG Workshop  
May 24, 2021

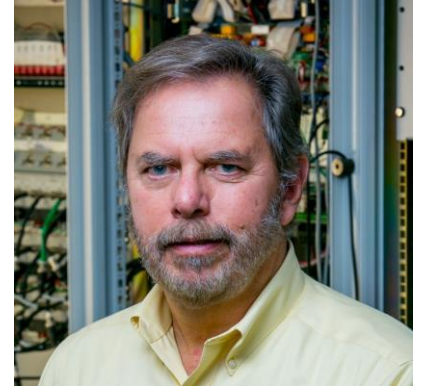
# What is ESIG?

- ESIG addresses the technical challenges for transforming energy systems through collaboration, education and knowledge sharing. Workshops, webinars, reports available freely at [www.esig.energy](http://www.esig.energy)
- 175 members worldwide broadly focused on decarbonization and integration of energy systems
- ESIG is part of the [Global Power System Transformation Consortium](#) and leads their System Operator Research and Peer Learning pillar.



# Nick Miller, HickoryLedge

Nick Miller recently retired from GE after 3/8 century of experience and research on bulk power systems. He has lectured on Wind and Solar Power integration to governments and institutions in more than three dozen countries. He currently provides consulting expertise to a variety of private and public institutions on topics of grid integration of renewable resources. He holds twenty US patents for wind, solar, and grid technologies, is a Fellow of IEEE, a NY PE, active in CIGRE and IEC, has authored over 150 technical papers and articles, and is the recipient of several power industry awards.



# Jason MacDowell, GE

Jason MacDowell is Senior Director of Technology, Strategy & Policy at GE Energy Consulting in Schenectady, NY. He has 20 years of energy industry experience on power system planning, operation and engineering analysis, grid integration of multiple technologies, grid stability and economic modeling as well as development of regulatory policy, grid codes and technical standards.



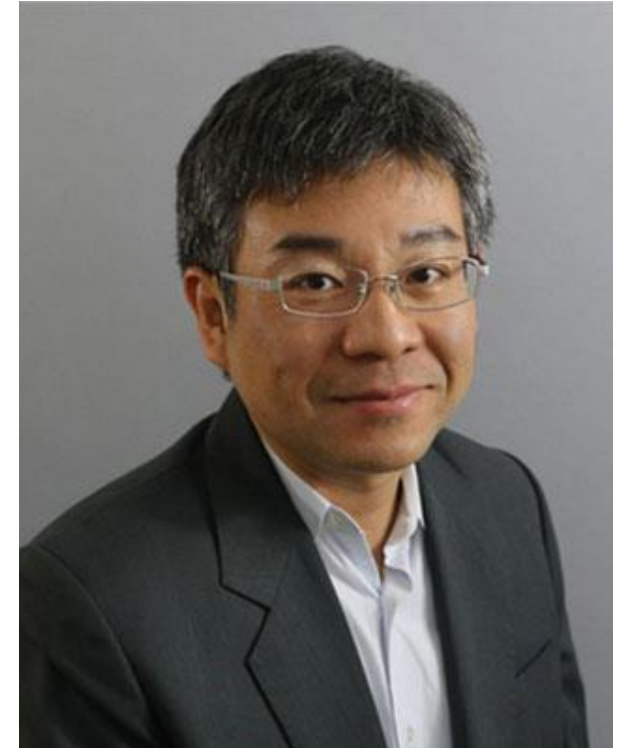
# Sebastian Achilles, GE



Sebastian Achilles is the Manager of a group of power system experts at GE Energy Consulting. His responsibilities include integration and interconnection of onshore wind, offshore wind, PV solar, battery and FACTS technologies globally. His team provides support to product design related to grid behavior of these IBRs. His team also provides consulting support to developers and transmission entities related to same area of expertise

# Shun Hsien (Fred) Huang, ERCOT

Shun Hsien (Fred) Huang has been working with ERCOT since 2006. Currently he is a manager in the System Planning department, responsible for the ERCOT regional planning, dynamic studies and ad-hoc studies.



# Agenda

- 1 pm CT Introduction – Casey Cathey, SPP, and Debra Lew, ESIG
- 1:05 pm Export Stability in Weak Grids – Nick Miller, HickoryLedge LLC
- 1:30 pm Overview of interconnection of IBRs into weak grids – Jason MacDowell, GE
- 1:45 pm IBRs in Weak Grids: Considerations and Mitigations – Sebastian Achilles, GE
- 2:25 pm ERCOT Practices and Experience – Fred Huang, ERCOT
- 2:55 pm Discussion
- 3:30 pm Adjourn



Debbie Lew  
[Debbie@esig.energy](mailto:Debbie@esig.energy)  
(303) 819-3470

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