

GRIDED

The Center for Grid Engineering Education

Integrated Energy Regulation and Sustainability

Course Description

This course is one in a series of several courses developed and offered through GridEd to enhance workforce readiness through training and education of personnel with needed skill sets at the intersection of power systems and power electronics.

All the science in the world won't enable anything without regulations – be that infrastructure, investments or markets that for electrical energy – must align economic and technological need in kind with societally equitable solutions, customer outreach and state energy/utility programs. All of these can fall out of step with one another if the interactions, considerations, and policies are designed or have the unintended effect of displacing existent utility business structures, planning and operational frameworks. This tension can result in mild irritation within a local system or system-wide disruption as extreme events cause permutations to fluctuate based on approaches that can vary by location, utility type and jurisdiction.

This course integrates business neutral, regulation agnostic and technically integrated knowledge in three domains for common understanding by the non-lawyer, non-regulator, non-vendor, non-engineer, non-businessperson to gain full appreciation of diversities and synergies overlapping our shared electric energy enterprise:

- (1) energy regulation and sustainability,
- (2) grid-resilient technology inclusive of physical and digital coupled with services, and
- (3) traditional and reformed business structures.

Learning Objectives

Attendees will learn how to map tri-lateral domains along with the basic dynamics relevant to markets, grid operations, and business planning in a shared regulatory environment. The resultant benefits are fluency in the overall system interconnecting with stakeholder engagement encompassing regulators, utilities, customers, policies and programs where:

- implementers of FERC Order 2222 would gain an appreciation for state-based requirements like non-emissions, non-generation, jobs, equity and economic development at the retail rate level along;
- federal system's pre-emption over bulk rates involving 'sale for resale' of energy carries accompanying requirements for 'just and reasonable' rates together with reliability and competition that is regionally coordinated and organized;
- 3-dimensional understanding of Federal Energy Regulatory Commission's and Public Utility Commission or public power administrative proceedings is needed to create a regulatory process with potential for market transformation connecting T&D assets, non-wires alternatives, and system owners, operators, and aggregators where the system is fundamentally the same; and
- allowances for flexibility will persist due to bespoke statewide priorities and unique utility-franchise practices are unavoidable due to locationally diverse geography and other factors that can impact and affect larger independent system/regional transmission systems, grid planning and operations, and vice-versa.

Who Should Attend?

The course is intended for anyone wanting to gain hands on experience operating a smart inverter and/or required to test or field commission inverters. This course is also ideal for utilities and other stakeholders who are planning to develop a testing lab or would like detailed insight into how smart inverter tests are performed.

Registration Information Dates and Times: TBD

Course Length: This course is in development and is expected to be 6-8 hours.

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Meet the Professor



Justin R. Martin
Technical Executive
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Justin R. Martin is a Technical Executive at the Electric Power Research Institute (EPRI) for Distributed Energy Resources and Energy Storage (DER) in the Institute's Integrated Grid and Energy Services Sector. His work helps organizations manage risk where technology and business intersect with regulatory, economic and regulatory affairs.

Currently, as an adjunct law professor at the University of Tennessee, he teaches Energy, Regulation and Sustainability. His volunteer leadership includes serving as a Director of the Association of Corporate Counsel's 45,000-member organization and the Charitable Foundation of the Energy Bar Association.

He is a frequent speaker on legal and technical issues, leading presentations on Constructing Grid Resilient DERs at SAME's 2022 Joint Engineering Conference, Energy, Mapping and Lawyering at AUVSI 2022, InterDrone 2020, Ethics for the American Public Power Association's 2020 Law Conference and the Energy Bar Association's 2018 Annual Meeting on Transportation Electrification. Current projects include risk mitigation frameworks for integration of DER, grid flexibility, resilience, and cybersecurity under NIST SP 800-171.

In 2019, Martin established a cooperative research and development agreement with the U.S. Air Force Academy. His work in civil aviation includes representing fixed base operators. He has been published in peer reviewed journals concerning maritime law under the Jones Act and the Carriage of Goods by Sea Act (COGSA).

In private practice, Justin was a law firm partner in the Knoxville Metropolitan Area, leading transactional and finance deals for as approved counsel for banks, public companies and private equity, including federal contractors, power companies and municipalities. Justin received his J.D. and a College Scholars B.A. from the University of Tennessee.

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EPRI

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