

TESC19 – Call for Participation

IEEE PES and the GridWise Architecture Council

Overview

The century-old paradigm of large-scale generation and one-way distribution is being disrupted as dispersed renewable and other distributed resources are making an increasing impact. The electric industry is on the threshold of transitioning from a “load following” paradigm, where central generation adjusts to varying demand, to a “supply following” paradigm, where responsive demand and storage absorb more local, variable generation such as solar and wind. The effort to advance the technological and policy changes needed to enable and accelerate this paradigm shift is well underway, particularly as relates to laying the groundwork for transactive energy systems.

Now in its 6th year, this conference, the 2019 IEEE PES Transactive Energy Systems Conference, hosted by IEEE PES and GWAC, will help further develop the transactive energy model and examine the policy and technology changes necessary to implement and enable the advancement of transactive energy systems.

Transactive energy systems can create the capabilities for customers and utilities to buy and sell energy and services between each other based on economic and other perceived benefits (such as societal and environmental). But, if we expect most customers to invest a lot of time and conscious effort into participating in transactive energy systems, we have very little chance for success. Accordingly, consumer-facing components of transitive energy systems will, at least initially, have to be plug-and-play, and be highly automated.

Customer ease-of-use will be especially important since the residential customer class represents the most untapped potential for growing demand response and expanding the utilization and effectiveness of transactive energy systems. Based on the experience of telecommunications providers, the vast majority of customers will adopt valuable interactive capabilities within five years of availability. Accordingly, a primary focus now and for the foreseeable future involves creating easily accessible customer services and options, resolving market access issues and creating successful customer value propositions. A customer should be able to participate by responding to operational and market signals in an automated fashion without having to understand the theory and details of the underlying transactive energy system and policy needs to support these systems. Increased electric system flexibility will be paramount both to enable and manage such increased customer participation and responsiveness. The transactive energy model provides that needed flexibility.

Call for Participation

The IEEE PES in partnership with the GridWise® Architecture Council (GWAC) will convene the IEEE PES Transactive Energy Systems Conference in Minneapolis, MN at the University of Minnesota on, July 8-10, 2019. The theme for this year’s Conference is “A Framework for the Future.”

Abstracts for panel discussions and/or papers should be submitted to the following email address no later than March 1, 2019: gridwiseac.coordinator@pnnl.gov

Submittals should clearly indicate the Transactive Energy category (see below) with which the submittal is aligned. **Abstracts should be no longer than 500 words.** Papers will be considered for panel sessions, and the poster session. Abstracts without papers will be considered for panel sessions only. Unlike previous TESC events, there will be a poster session in conjunction with the evening social event and there **may** also be two paper sessions during the conference (dependent on number and quality of papers received). IEEE PES and GWAC highly encourage paper submissions instead of abstracts only.

Abstracts for papers/presentations are being sought to address all aspects of transactive energy systems with a focus on how to create a framework for a future participatory grid. **The abstracts should clearly indicate for which panel they are intended.** Accepted abstracts may be moved to a different panel where they are a good fit. The categories are:

- **Regulatory and Policy**
This panel will address the state of legislation and regulation currently existing to support transactive energy and limitations to transactive implementations today. What changes are needed and what should the industry do to encourage alignment of policy and regulatory measures to create a more flexible and interactive grid?
- **Business Models and Value Realization**
This panel will discuss where early transactive pilots have been implemented and their drivers. What does it take to create value for participants and where should the focus be for the next transactive implementations?
- **System Design and Architecture**
This panel will discuss the steps needed to support the transition from a centralized to a decentralized grid based on highly coordinated self-optimization and which features integration with water and gas through smart buildings and smart cities.
- **Physical & Cyber Technologies and Infrastructure**
This panel will discuss the interdependence of the electric grid and the communication networks that are necessary to monitor and coordinate actions on the grid and how to build explicit, well-defined, trust models that define identity, authentication, service-level agreements, and privacy into TE systems.
- **Resilience**
There are qualities of the power system that by their nature improve the resilience of the system and these qualities may be provided by transactive or non-transactive systems. This panel will focus on the resilience benefits that a flexible and adaptive grid can provide by incorporating transactive systems.
- **Visions for Participation**
This panel will discuss visions for a future-state grid with many transactive systems that include buildings, microgrids, campuses, smart cities and active residential participation.

In addition to the panel sessions, there will also be two workshops focused on **Visions for Participation** and **Multi-Use Applications** to foster in-depth discussions of these topics as well as four tutorials on transactive energy related topics.