

TESC2020 – Call For Participation

IEEE PES and the GridWise Architecture Council

Overview: Architecting a Resilient Transactive Grid

Digitization, decarbonization, and democratization are driving the most dramatic changes to the electricity grid since Tesla and Edison. State and local policy makers have pledged to meet their energy needs with 100% carbon neutral energy, including new efforts to electrify heating, transportation, and industrial sectors. With this transformation come new challenges and complexity in managing the grid that must be addressed concurrently. Transactive energy systems enable a participatory approach to help manage and mitigate the system impacts of these changes to the benefit of consumers, prosumers, and grid operators. Grid Architecture facilitates this transformation by providing tools to manage complexity, new structures for accommodating change, and techniques for comparing and evaluating proposed architectures.

The IEEE PES in partnership with the GridWise® Architecture Council (GWAC) will convene the IEEE PES International Transactive Energy Systems Conference and Workshop (#TESC2020) on December 9-10, 2020, in Portland, OR hosted by Portland General Electric at the Portland World Trade Center, with a tutorial December 8. The theme for this year's event is "Architecting a Resilient Transactive Grid."

Call for Participation

Abstracts for papers/presentations are being sought to address all aspects of transactive energy systems with a focus on the ongoing transformation to a participatory grid, including the following topical categories:

- **Drivers of Change** – Profound changes to our energy system are being driven by decarbonization, distributed systems, expansion of distributed energy resources, the advancement of related technologies, and now a global pandemic. What are primary drivers of change and where will they impact the future of an integrated grid at all scales? How big will the transformation be in the near and long term?
- **Business Models and Value Realization** – What does it take to create value for participants? How do different systems assign risk, cost and value to stakeholders? What do our transactive energy systems incentivize? Where should the focus be for the next transactive system implementations?
- **Visions for Participation** – A future grid will have many transactive systems and may include buildings, microgrids, campuses, smart cities and active residential participation. What models for participation will be possible and necessary?
- **Regulation and Policy** – How do legislation and regulation support or limit transactive energy implementations today? What's working well? 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?
- **System Design and Architecture** – What steps are needed to support the transition from a centralized to a decentralized grid based on highly coordinated self-optimization, featuring grid integration with water and gas through smart buildings and smart cities? How can Grid Architecture accelerate pragmatic action?



- **Resilience** – Some qualities of the power system by their nature improve the resilience of the system, and these qualities may be provided by transactive or non-transactive systems. What resilience benefits can a flexible and adaptive grid provide by incorporating transactive systems?

- **System Implementation Strategies and Examples** – In recent years a number of states, municipalities, utilities, NGO's and corporations have engaged in putting transactive energy theory into practice around the globe. This topic will revisit some of these implementations, the lessons learned, and 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.

Abstracts will be considered for panel sessions and a poster session. Authors must clearly identify if they intend their abstract submission for presentation at a panel or a poster session. Poster presentations require submission of a full paper upon acceptance of the abstract by the TESC2020 Technical Committee. Submitted full papers will be reviewed by the Technical Committee and the authors will be notified as to acceptance, rejection, or the need to revise the papers. A poster session will be held only if sufficient number of papers are submitted and accepted. The poster session will be in conjunction with the evening social event. If the number of accepted papers is less than half a dozen, there may be a paper session during the conference instead of the poster session. Panel and any paper session presentations must be accompanied by Power Point presentation using the IEEE PES template.

Submission Requirements:

The abstracts should clearly indicate for which of the seven categories listed above they are intended and be no longer than 500 words. Final papers will be limited to 5 pages in IEEE PES two column format. Abstracts and papers should be submitted to gridwiseac.coordinator@pnnl.gov according to the dates below.

Important Dates:

- Abstract submission deadline: Extended to July 1, 2020
- Notification of abstract acceptance: July 31, 2020
- Full paper submission: Sept. 14, 2020
- Notification of full paper acceptance: October 31, 2020
- Submission of Power Point presentations: November 2, 2020
- Pre-Conference Tutorial: December 7, 2020
- TESC 2020 Conference and Workshop: December 8-10, 2020

Why Attend TESC2020

- Exchange ideas with other key stakeholders about how to transform the electrical grid to achieve deep decarbonization through transactive energy, grid architecture, interoperability, building to grid interactions, and distributed energy resources.
- Join other thought leaders, those with both vision and rigor, to work through questions, motivate action, and align efforts to lead the industry through rapid change of the distributed modern grid.



- Understand how bold policy solutions can either create or avoid problems for electricity infrastructure.
- Learn from the states who have already adopted policy to decarbonize their economies in the next 30 years and from local governments implementing similar initiatives.
- Attend the global event where you will see the energy future most clearly and be equipped to lead your organization into that future.
- Discern which trends are driving change and value creation.
- Discuss investment strategies and plans with utilities, investors, researchers, regulators, NGOs, and policy makers.

The conference will have plenary sessions, two parallel panel sessions, and a single poster session. Each panel session will be followed by a corresponding workshop session with active participation by attendees.



Call for Participation TESC2020: 9-10 December 2020, Portland, OR

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Exchange ideas with other key stakeholders about how to transform the electrical grid to achieve deep decarbonization through transactive energy, grid architecture, interoperability, building to grid interactions, and distributed energy resources. This year's seven topics are: System Design and Architecture; Drivers of Change; Business Models and Value Realization; Visions for Participation; Regulation and Policy; Resilience; System Implementation Strategies and Examples.

Abstracts should be submitted to gridwiseac.coordinator@pnnl.gov no later than June 1, 2020.