

Call for Papers



TESC 2018

THE 5TH INTERNATIONAL TRANSACTIVE ENERGY SYSTEMS CONFERENCE AND WORKSHOPS

“EVOLVING APPROACHES FOR
IMPLEMENTING TRANSACTIVE ENERGY”

Massachusetts Institute of Technology
Cambridge, MA
June 12–14, 2018

Abstract Submission Deadline: April 30, 2018

The GridWise® Architecture Council (GWAC) in partnership with the Smart Electric Power Alliance (SEPA) will convene the Fifth International Conference and Workshop on Transactive Energy Systems in Cambridge, MA at the Massachusetts Institute of Technology (MIT), 12-14 June 2018. The theme for this year's conference will be "***Evolving approaches for implementing Transactive Energy.***"



View of the Boston Skyline from MIT

Submission Process

Abstracts for papers should be submitted to the following email address no later than April 30, 2018:
gridwiseac.coordinator@pnnl.gov

Submittals should clearly indicate the Transactive Energy category of the paper (see below), with which the submittal is aligned.

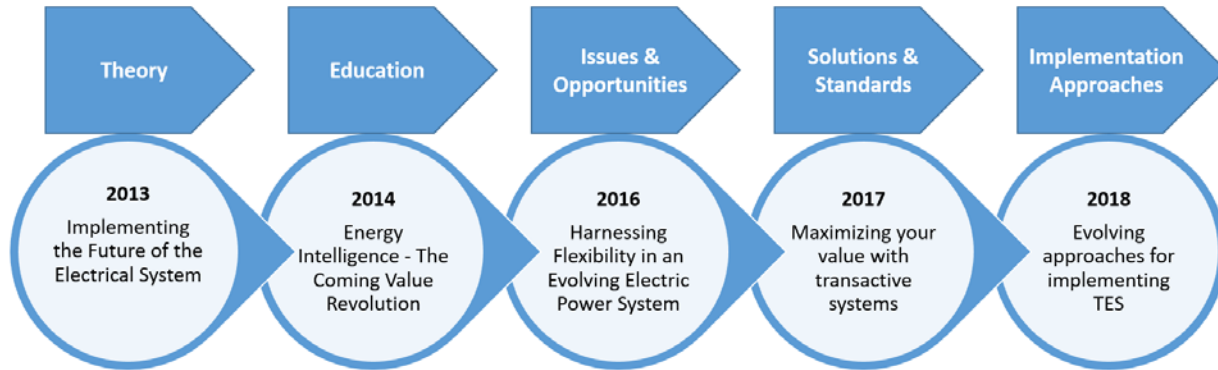
Abstracts should be no longer than 500 words.



View of MIT (foreground) and Boston (across the Charles River)

Call for Papers Subject Areas

Over the course of four prior Transactive Energy Systems Conferences and workshops the focus has gradually evolved. The 2018 Transactive Energy Conference and Workshops continues this evolution and invites submissions relating to implementation approaches. Many factors will influence the selection of implementation approaches including penetration level of Distributed Energy Resources (DER), jurisdictional rules and requirements, societal impacts and benefits, the population, size and location of participants, communications infrastructure, technology choices, and services that can be exchanged or sold. Hence the nature of submissions may cover topics from policy challenges to technology options and everything in between such as business models and system design.



Evolution of TESC Themes from 2013 to 2018

Abstracts for papers/presentations are being sought to address all aspects of implementation as mentioned above. The presentations will be organized into four categories that are aligned with the four main categories of the GWAC Transactive Energy Framework and the four tracks in the Transactive Energy Roadmap. These categories are:

- **The convergence of policy, technology, and society: a world where the customer is the ultimate regulator.**

This category will focus on the actions needed by legislative/regulatory bodies and utilities to enable Transactive Energy systems as DER proliferation increases. The objective of this category is to discuss how to establish a convergence of architectural changes and energy marketplace changes that align with policy and regulatory measures to guide the TE transition. Submissions are also invited to discuss how to achieve a consistency of approach across jurisdictions where possible to promote interoperability. For instance:

 - Is there more than one objective or problem being addressed and if so how are they related?
 - How do you protect customers without distributed energy resources such as renters and those with low income?
 - What energy products are people willing to transact?
 - How should investments to enable participation in transactive energy markets be evaluated?
- **Looking ahead: Generating revenue and value for platforms and participants.**

This category will focus on the various stakeholders, their roles in Transactive Energy and how their business models could evolve for them to provide and realize value over time as the industry changes. While the regulatory and policy category should discuss the actions policymakers need to take in order to establish a Transactive Energy environment, this category will focus on the actions to create, assess, and implement business models by various stakeholder categories. Among the stakeholders are prosumers, utilities, distribution grid operators, DER equipment suppliers, and consumer product companies. For instance:

 - How will the value associated with the objectives be quantified and monetized?

- Does the regulatory environment support the proposed system?
- How should distributed energy and unbundled services be valued and priced?
- **Life cycle of value: lessons learned and next generation approaches.**

This category will focus on system design and architecture decisions that have been used for early Transactive Energy systems. Topics include possible approaches to support information interoperability, valuation of services and platforms, and valuation of transactive control. The objective is to understand the positive and negative impacts on the electric grid. For instance:

 - Are the alternatives to current plans well understood?
 - What are the rules governing transactions as well as the mechanism(s) for reaching agreement?
 - How will the wholesale/retail interface be managed?
- **Collaborative Autonomy: coordinating between physical and computational elements.**

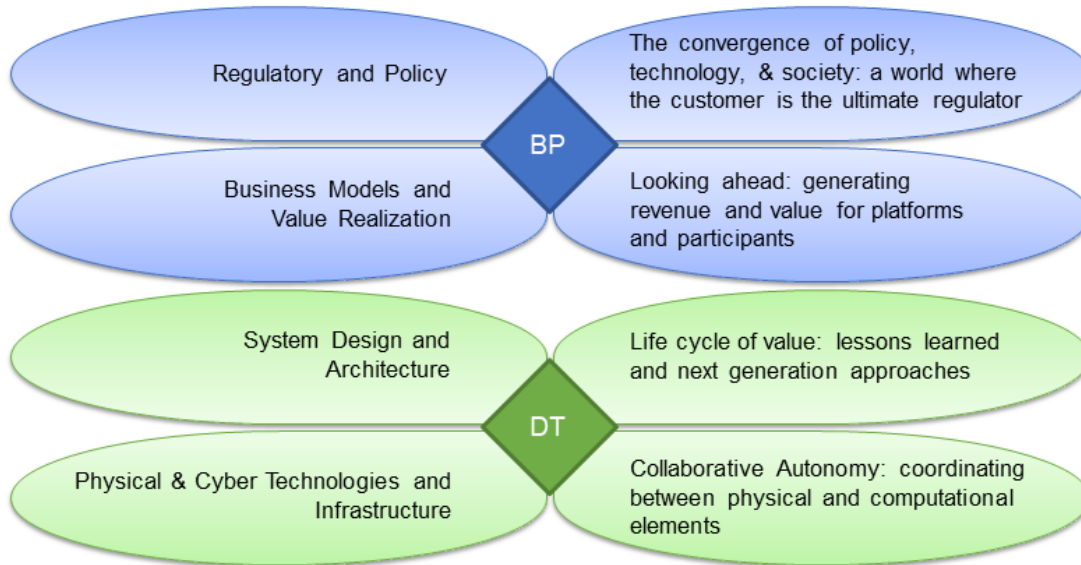
This category will focus on the changing cyber-physical needs of both the grid and Transactive Energy systems, and evolving requirements as the grid becomes smarter on both sides of the meter. This category addresses the technical layers of the GWAC Stack and the physical layers of the Control Abstraction Stack. It also addresses the functions of both the electric grid and the communication networks that are necessary to monitor and coordinate actions on the grid. For instance:

 - What automation is required/available to support participants?
 - Is the energy required for blockchains a potential unintended consequence of large scale adoption of transactive energy systems?
 - How do you build explicit, well-defined, trust models that define identity, authentication, service-level agreements, and privacy into TE systems?

Accepted submissions in the regulatory and policy category and the business models category will be combined into panels and workshops that address Business and Policy (BP) topics. Accepted submissions in the systems design and architecture category and the physical and cyber category will be combined into panels and workshops that address Design and Technology (DT) topics.

The panel sessions will be followed by facilitated workshop sessions fostering in-depth discussions of the panel topics and presentations.

Some abstracts may be selected for plenary panels. GWAC focuses on interoperability, transactive energy and the resilience of electric grids. Therefore, authors should, if possible, include discussions in their submissions of requirements for interoperability and resilience as they relate to Transactive Energy Systems.



Interoperability categories (left) and conference categories (right) will be combined into two tracks

Additional Information

We expect conference attendees to include regulators, policy makers, utility managers, system implementers, researchers, and academics. We are encouraging a broad interchange of ideas to facilitate the further development of Transactive Energy methods and systems within the electric power, energy management, consumer product, and related communities. The perspective for discussion is described in various GWAC publications including the *Interoperability Context-setting Framework*, the *Transactive Energy Framework*, the *GridWise Transactive Energy Decision Maker's Checklist*, the *Transactive Energy Info-graphic*, and the *Transactive Energy Roadmap*. All these GWAC publications are available at:

www.gridwiseac.org/about/publications.aspx

