

CALL FOR PAPERS

IEEE Transactions on Sustainable Computing

Special Issue on Intersection of Computing and Communication Technologies with Energy Systems

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AIMS & TOPICS

Computing and communication technologies impact energy systems in two distinct ways. The exponential growth of these technologies has made them large energy consumers. Therefore, new architectures, technologies and systems are being developed and deployed to make computing and networked system more energy efficient. Additionally, these technologies will play a central role in the on-going transformation of our energy systems. They help measure, monitor and control energy resources, inform and shape human demand, and determine how utilities, generators, regulators, and consumers interact. Recently, there have been vibrant developments in the research community at the intersection of computing and communication technologies with energy systems. Diverse applications of computing and networked systems have made legacy systems more energy-efficient, as well as improved the design, analysis, and development of innovative new energy systems.

This special issue calls for novel ideas for shaping the future of this area. We seek high-quality papers at the intersection of computing and communication technologies with energy systems. We welcome submissions describing conceptual advances, as well as advances in system design, implementation and experimentation.

Relevant topics for this special issue include, but are not limited to the following:

- Monitoring and control of energy systems for smart grids, smart buildings, and smart cities
- Energy-efficient computing and communication, including in data centers
- Electric vehicles and energy-efficient transportation systems
- Control of distribution and transmission networks
- Microgrid and distributed generation management and control
- Distributed energy resources, including energy storage resources
- Privacy and security of smart grid infrastructure
- Demand-side management, including innovative pricing and incentive design
- Modeling and understanding the user behavior of energy systems enabled by computing and communication technologies
- Data analytics for the smart grid and energy-efficient systems
- Electricity market and electricity supply chain measurement, modeling, and analysis
- Applications of cyber-physical systems and industrial Internet-of-Things to smart energy systems

Selected papers with significant extensions from ACM e-Energy 2018, which will be held in Karlsruhe, Germany from the 12th to the 15th of June 2018 in conjunction with this call, will be invited to be fast-tracked to this special issue. However, other high-quality relevant submissions in this area are also welcome.

IMPORTANT DATES

Submission Due: Dec 15, 2018

First-round notification: Mar 15, 2019

Revised papers Due: Apr 30, 2019

Final notification: Jun 30, 2019

Publication: October-December 2019

SUBMISSION GUIDELINES

Authors are invited to submit their manuscripts electronically adhering to the IEEE Transactions on Sustainable Computing guidelines (<https://www.computer.org/web/tsusc/author>). Please submit your papers through the online system (<https://mc.manuscriptcentral.com/tsusc-cs>) and be sure to select the special issue on Intersection of Computing and Communication Technologies with Energy Systems. Manuscripts should not be published or currently submitted for publication elsewhere. Please submit only full papers intended for review, not abstracts, to the ScholarOne portal.