Call for Papers
IEEE TRANSACTIONS ON SUSTAINABLE ENERGY
Special Issue on Real-Time Applications of Intelligent Methods in Sustainable Power and Energy Systems

A sustainable power and energy system (SPES) is one of the main challenges in the present world. For sustainability, mainly renewables and smart electric vehicles (plug-in hybrid and fully electric) are added to traditional generations. Real-time (RT) applications are very important for dynamically changing power system monitoring, operation, management and control. In the real-time operations SPESs are very complex considering convergence, availability, uncertainty, scalability, robustness and so on. An RT process needs the optimization of the entire SPES to reduce losses and costs, and to increase profit and reliability. Traditional methods may not be sufficient for the real-time applications of the large scale SPESs in complex stochastic dynamic environment and thus intelligent methods come into the picture. Intelligent methods are evolving; however, presently few companies are using intelligent methods for their products in power industry and thus more efforts are needed for the deployment of intelligent methods in RT operations of SPESs. This special issue wants to act as a bridge between research and development groups for state-of-the-art real-time applications of intelligent methods in sustainable power and energy systems. Prospective authors from academia, industry and government are invited to submit their original and unpublished contributions to this special issue with emphasis on real-time applications that will increase sustainability of energy or will be affected by sustainable energy. The topics of interest include, but are not limited to:

- Dynamic wind energy applications using real-time data
- Dynamic solar energy applications using real-time data
- Real-time vehicle-to-grid, grid-to-vehicle, vehicle-to-home, etc. operations
- Micro-grid/ home-grid automation, operations and control in real-time for sustainable power and energy systems
- Real-time renewable energy management system
- Dynamic optimization with uncertainly in sustainable power and energy systems
- Real-time emissions and environmental impact analysis
- Real-time state and load estimations with/without renewables
- Real-time demand side management with smart controllable loads
- Distribution management system with renewable in real-time
- Real-time pricing of a sustainable power system with renewables
- Real-time monitoring and control using smart sensors
- Online fast source and load forecasting including renewable with uncertainty
- Online intelligent load shedding with/without renewables considering uncertainty
- Real-time economic and environment friendly dispatch with renewables
- Real-time dynamic unit commitment with wind, solar, electric vehicles, etc.
- Real-time dynamic system reconfiguration and switching optimization
- Online fault detection, isolation and load restoration
- Real-time cyber-physical-social energy systems
- Real-time communication in sustainable power and energy systems
- Online dynamic optimum power flow for distribution system
- Fast dynamic stochastic optimization for real-time power system optimization with renewables, electric vehicles, etc.
SUBMISSION GUIDELINES
This special issue solicits original work that must not be under consideration for publication in other venues. Two-page extended abstracts are solicited for the first round of reviews. Authors of selected abstracts will be invited to submit the full papers in the second round. Please submit your 2-page abstract that gives a summary of the proposed paper and discussions of conclusion by email to aysaber@ieee.org with the subject line “Special Issue on RTAIMSPES” before the deadline. After the first round of reviews, a selected number of authors will be invited to submit full papers for further consideration.

IMPORTANT DATES
Dec 31st, 2011: Deadline for extended abstract (2-page) submission
Feb 29th, 2012: Completion for abstract reviews and author notification
April 30th, 2012: Deadline for full paper submission
Aug 31st, 2012: Review decision notification (expected)

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