

Special Issue on
Optimization for Electric Power System Resilience

CALL FOR PAPERS

One of the ultimate goals of electric power systems is to “*Keep the Light On*”; however, ensuring an uninterrupted electricity supply is challenging for such a complex engineering network exposed to various threats. While for decades electric power systems have been designed to possess high levels of reliability to withstand typical threats, that is, N-1 security criterion, recent catastrophic power outages caused by extreme events have highlighted the importance and urgency of enhancing resilience of power system infrastructure. These extreme events consist of natural disasters (e.g., Hurricane Sandy of 2012), man-made errors (e.g., Northeast blackout of 2003), and even ever-growing cyber incidents (e.g., Ukraine power grid cyberattack of 2015). To achieve a resilient electric power system, various technical challenges need to be addressed spanning from planning to operation, and involving investment, preparation, prevention, response, mitigation, and recovery. Innovative optimization models and methods, which involve multidisciplinary fields (e.g., power engineering, operation research, data analytics, transportation, telecommunication), play an essential role to facilitate this target.

This special issue aims to publish original research papers and visionary review articles that focus on utilizing optimization techniques to enable a more resilient electric power system from various perspectives.

Potential topics include but are not limited to the following:

- ▶ Renewable energy, energy storage, and demand response integration for resilience enhancement
- ▶ Microgrid and networked microgrids management optimization for resilience improvement
- ▶ Long-term infrastructure hardening planning and/or short-term preventive and corrective control strategies to achieve resiliency
- ▶ Postevent service restoration and infrastructure recovery
- ▶ Resilience-oriented energy management and load scheduling optimization
- ▶ Resilience-oriented interdependent energy infrastructure optimization
- ▶ Cyber-physical system resilience optimization for electric power grids
- ▶ Identification and prevention of cascading failures
- ▶ Optimization of prevention, response, and mitigation strategies for cyber-attacks
- ▶ Optimization techniques related to game theoretic, big data, and machine learning for grid resilience

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jopti/oeps/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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