



## Coordination and Optimization of Energy Management in Smart Grids

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Deadline for manuscript  
submissions:

**closed (20 December 2024)**

### Message from the Guest Editors

The large integration of variable distributed energy resources (DERs), such as photovoltaic panels, wind power, electric vehicles, and energy storage systems, etc., poses a formidable challenge to the power and energy system management. The variable and uncertain generation characteristics of DERs would make power system operation challenging to continuously balance generation and demand. An excess or scarcity of electricity in the production or consumption of energy can disrupt the system operation and cause serious difficulties to maintain voltage and frequency within prescribed limits. In extreme cases, it may result in power outages and the shutdown of the complete system. Energy management systems can efficiently increase the balance between supply and demand while reducing peak load during unscheduled periods. The use of energy management systems can effectively increase the balance between supply and demand. The energy management system can handle distributing or exchanging energy among the many energy resources available and economically supplying loads in a stable, safe, and effective manner under all power grid operating situations.





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## Message from the Editor-in-Chief

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