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Energy Storage and Electric Power Systems: Theory, Methods, and Applications

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Message from the Guest Editors

The fast growth of renewables brings new design and operational challenges to the energy transition working towards a 100% renewable energy goal, and Europe has an ambitious target to decarbonize. Therefore, the role of electricity storage systems in the rapid rise of renewable energy resources and the steady fall of fossil fuels in power systems with large-scale wind and PV integration is investigated in this Special Issue.

Different energy storage technologies such as compressed air energy storage, hydro-pumped storage, sodium-sulfur batteries, electrical cars or ships, hydrogen, fuel cells, and desalination are some of the storage cases that could be included in this Special Issue. This Special Issue focuses on the theory, methods, and applications of storage systems combined with renewable energy sources. Integration and economic issues could be also addressed. Specific case studies, best practices, technical solutions and technoeconomic assessments could be analyzed or presented.

Keywords:

- electrical storage
- large scale wind and PV integration
- hydrogen
- electrical cars
- fuel cells
- hydro pumped storage
- integration issues



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Message from the Editor-in-Chief

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