Special Issue

Integration of Hydrogen Technologies in Renewable-Energy-Based Microgrids

Message from the Guest Editors

Microgrids are increasingly popular for applications such as electrification of remote areas, renewable energy penetration and energy supply resilience. When equipped with energy storage, they can accommodate large amounts of renewable energy. However, while battery storage is widely used, it is not suitable for storing large amounts of energy over long periods, sometimes spanning entire seasons. Green hydrogen is a solution to this challenge, and can also provide a variety of services while also enabling interactions with other infrastructure (e.g., transportation, natural gas) and forms of energy (e.g., heat, biomass). Multiple challenges should be addressed when considering the integration of hydrogen energy in microgrids.

Topics of interest for this Special Issue include the following:

- Sizing and energy management for both electric and thermal energy
- Uncertainty and risk quantification
- Interdependent multi-energy systems
- Ancillary services and power quality
- Reliability, diagnostics, and prognostics
- Modeling and simulation
- Interactions with transportation
- Economics, sustainability, and life cycle analysis

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Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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