

Special Issue

Energy Transition: Interaction of Gas/Hydrogen and Electricity Systems

Message from the Guest Editors

This Special Issue is dedicated to showcasing the latest advances in understanding, modeling, and optimizing the complex interplay between gas, hydrogen, and electricity systems during the energy transition. Topics of interest include, but are not limited to, the following:

- Coupling strategies for gas, hydrogen, and electricity systems;
- Hydrogen production technologies (electrolysis, pyrolysis, etc.) and their grid impacts;
- Cross-vector energy storage and sector integration methods;
- Modeling and simulation of integrated energy networks;
- Flexible operation, market mechanisms, and ancillary services involving gas, hydrogen, and electricity;
- Infrastructure planning, investment, and retrofitting for hybrid energy systems;
- Regulatory frameworks and policy challenges;
- Decentralized solutions and digitalization for multi-vector energy management;
- Scaling up hydrogen production and storage, testing and deploying large-scale electrolyzers, storage facilities, and hydrogen transportation networks;
- Real-world demonstration projects and case studies;
- Large-scale hydrogen production and storage and integration with gas/electricity systems pilot and demonstration plants.

Guest Editors

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About the Journal

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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