Special Issue

Innovations and Developments in Emerging Offshore Renewable Energy Technologies

Message from the Guest Editors

Offshore renewable energy technologies are emerging as vital enablers in the global transition toward sustainable and resilient energy systems. Among these, offshore wind and wave energy stand out for their capacity to deliver large-scale, low-carbon power generation. Their rapid development is supported by advances in engineering design, materials science, digitalization, and environmental management.

This Special Issue highlights innovations shaping the future of offshore renewables, with a primary focus on wind and wave energy, while also covering tidal energy, ocean thermal energy conversion (OTEC), and floating solar. The offshore wind sector has progressed through innovations in floating foundation systems and turbines. Wave energy technologies are gaining momentum through hybrid designs. Material innovation plays a key role in improving reliability and reducing costs, while the integration of digital technologies is transforming offshore system operations.

This Special Issue presents interdisciplinary research and case studies showcasing how offshore renewable energy technologies are addressing technical, economic, and environmental challenges.

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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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