Special Issue

The Development and Modeling of Energy Storage Systems for Renewable-Based Electric Systems

Message from the Guest Editors

Environmental concerns are driving a huge change in the production and transmission of energy. A crucial aspect is represented by the transition from a centralized power production, mainly based on fossil fuels, to a decentralized one, consisting of renewable sources. As a matter of fact, renewables are considered as non-programmable power sources since they present a strong intermittent and fluctuating behavior that can lead to safety and reliability issues on the national power systems. To accelerate this transition and meet the user demands, non-programmable energy produced by renewables needs to be stored and used when necessary. Therefore, the development and modeling of new energy storage systems and the technological improvement of the existing ones could be a milestone for a massive penetration of renewables. Therefore, this Special Issue aims to disseminate the most recent advances related to the development, modeling, application, electrical architecture topologies, and control of all types of energy storage systems coupled with renewable-based electric systems.

Guest Editors

Dr. Dario Pelosi

Department of Engineering, University of Perugia, Via G. Duranti 93, 06125 Perugia, Italy

Dr. Linda Barelli

Department of Engineering, University of Perugia, Via Duranti 93, 06125 Perugia, Italy

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Energies
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
energies@mdpi.com

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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.

Editor-in-Chief

Prof. Dr. Enrico Sciubba
Department of Mechanical and Industrial Engineering, University Niccolò Cusano, 00166 Roma, Italy

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