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Sustainable Energy Concepts for Energy Transition

Guest Editor:

Prof. Dr. Stefan Krauter

Electrical Energy Technology—
Sustainable Energy Concepts
(EET-NEK), Paderborn University,
33095 Paderborn, Germany

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Message from the Guest Editor

To accomplish energy transition effectively, the necessary measures must go beyond the substitution of fossil generation units by renewable ones, due to their fundamentally different operation characteristics. Seasonal and daily energy consumption patterns do not presently correspond to the availability of fluctuating renewables such as wind and solar power.

We address this challenge in four ways: 1. Better predictability of the availability of wind and solar power to prepare load, storage, and back-up units. 2. Modification of wind and solar generation units to better adapt to consumption needs. 3. Adaptation of consumption to the availability of renewables statically (e.g. via adapted architecture) and dynamically (via controllable loads and demand side management). 4. Reduction of storage and back-up needs, by increasing the flexibility of the back-up and implementing adaptable, multi-stage storage.



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Prof. Dr. Enrico Sciubba

Department of Mechanical and Industrial Engineering, University Niccolò Cusano, 00166 Roma, Italy

Message from the Editor-in-Chief

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Energies Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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