Special Issue

Renewable and Sustainable Energy Integration in Power Systems

Message from the Guest Editor

In recent years, a radical change in the characteristics and operation of modern power systems has been witnessed, due to the increasing integration of renewable energy technologies. A large number of new small- and large-scale renewable energy installations have occurred worldwide. The majority of these technologies are nondispatchable, so energy storage usually has to also be incorporated into the grid, combined with advanced renewable energy forecasting methods. The complexity of modern power systems makes their optimal operation and control a very challenging task, driving to advanced solutions such as microgrids and smart grids.

In order to achieve a holistic approach in this context, a number of issues have to be taken into account, including power system reliability and resilience, evolution of electricity markets, demand-side management, and integration of electric vehicles. Moreover, the impact of renewable energy technologies and energy storage has to be assessed during their whole lifetime in the context of lifecycle analysis. This Special Issue aims to cover the area of renewable and sustainable energy integration in power systems.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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