Special Issue

Grid Stability Assessment under High Renewable Penetration and Virtual Inertia Control Topologies

Message from the Guest Editor

The increasing integration of inverter/converter interfaced power sources has posed new challenges to power systems. The reduction of system inertia is the significant ability to maintain power system stability and resiliency. Power system operation, stability, and resiliency will be critically affected, causing frequency/voltage oscillations, instability, and cascading failures. One of the solutions toward stabilizing such power systems with massive renewable energy sources (RESs) and distributed generators (DGs) penetration is by synthesizing additional inertia and damping properties virtually. This new concept—virtual inertia control, has opened up new possibilities to monitor and control such a challenge. Control techniques provide a key for maintaining a high share of RESs/DGs in future power systems without compromising system stability and resiliency. This Special Issue deals with the design, operation, and control of interfaced systems between RESs/DGs and power grids to guarantee the secure stability of systems. This issue will be served to stimulate further research and to offer practical solutions to real-world power system stability and control problems.

Guest Editor

Dr. Kerdphol Thongchart

Faculty of Engineering, Department of Electrical Engineering and Electronics, Kyushu Institute of Technology, Kitakyushu, Fukuoka, 804-8550, Japan.

Deadline for manuscript submissions

closed (31 July 2022)

Sustainability

an Open Access Journal by MDPI

Impact Factor 3.3
CiteScore 7.7

mdpi.com/si/61492

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

mdpi.com/journal/sustainability

Sustainability

an Open Access Journal by MDPI

Impact Factor 3.3
CiteScore 7.7

mdpi.com/journal/sustainability

MDPI

About the Journal

Message from the Editor-in-Chief

I encourage you to contribute a research or comprehensive review article for consideration for publication in *Sustainability*, an international Open Access journal which provides an advanced forum for research findings in areas related to sustainability and sustainable development. *Sustainability* publishes original research articles, review articles and communications. I am confident you will find the journal contributes to enhancing understanding of sustainability and fostering initiatives and applications of sustainability-based measures and activities.

Editor-in-Chief

Prof. Dr. Marc A. Rosen
Faculty of Engineering and Applied Science, University of Ontario Institute of Technology, Oshawa, ON L1G 0C5, Canada

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE and SSCI (Web of Science), GEOBASE, GeoRef, Inspec, RePEc, CAPlus / SciFinder, and other databases.

Journal Rank:

JCR - Q2 (Environmental Studies) / CiteScore - Q1 (Geography, Planning and Development)