

Special Issue

Novel Energy Management Approaches in Microgrid Systems

Message from the Guest Editors

Due to large amounts of distributed generation (DG) connected lately to the low-voltage (LV) and medium-voltage (MV) networks, many important issues have risen: (a) some parameters of the grid cannot be measured accurately, (b) more renewable energy units are difficult to connect to the grid, (c) regular maintenance activities are now difficult or even prohibited due to the thermal capability or to voltage values, and (d) electricity grid protection has become more complicated now. Therefore, reliable, cost-effective communication and control schemes are needed in order to ensure the stable operation of the grid and keep the power quality indices inside their limits. These energy management schemes should ensure: (a) reliable measurement, (b) interoperability of different communication protocols, (c) new control schemes and techniques of distributed generation with low cost intervention and legal compatibility, and (d) that the new devices on the grid must be taken into account, such as energy storage, electric vehicles and their charging systems.

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Deadline for manuscript submissions

20 March 2025



Energies

an Open Access Journal
by MDPI

Impact Factor 3.0
CiteScore 6.2



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