Energy and Power Management System for Renewable Energy Nanogrid

TECHNOLOGY #P18007

Categories

Electronic Devices and System, Energy and Environment

Solution

This particular technology offers an optimized control system for the novel and diversified topology consisting of different energy sources such as solar Photovoltaics and wind as well as storage systems like batteries and graphene ultracapacitor. In addition, the optimized performance of the nanogrid will reduce the amount of time to achieve its return of investment.

Technology & Applications

The present invention describes an energy management system for managing the charge and discharge states of the supercapacitor and battery present in a nanogrid.

A nanogrid may comprise of renewable generation sources such as solar Photovoltaics (PV), wind and fuel cells and multiple energy storage devices such as ultracapacitor and batteries to supply various AC and DC loads. A typical install capacity of a nanogrid is less than 50 kW and can be found in residential and small commercial units.

Advantages

This technology offers a number of advantages:

- Energy management system for renewable energy sources
- Balance of load supply using energy storage for nighttime and from PV during daytime
- Integration of graphene ultracapacitor for quick response of load demand
- Integration of idle time feature

Intellectual Properties

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