

Dynamic Energy Storage Generator





Overview

What is virtual synchronous generator (VSG)?

The virtual synchronous generator (VSG) can simulate synchronous machine's operation mechanism in the control link of an energy storage converter, so that an electrochemical energy storage power station has the ability to actively support the power grid, from passive regulation to active support.

Can energy storage systems control grid-connected inverters?

Energy storage systems can establish a dynamic link between the frequency variations and energy of the power generation system (Li and Yuan, 2021), simulating the rotational characteristics of synchronous generators to control grid-connected inverters.

What is a photovoltaic energy storage combined power generation system?

The photovoltaic energy storage combined power generation system is primarily composed of a photovoltaic array, an energy storage system, a bidirectional DC/DC converter for controlling energy conversion, and a photovoltaic grid-connected inverter.

How does a synchronous generator control system work?

This control strategy mimics the inertial behavior of conventional synchronous generators, dynamically modulating power output in response to system frequency and voltage deviations. For the modeling, simulation, and analysis of this dynamic system, MATLAB/Simulink was selected as the platform.



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