WALMER ENERGY

E Wind power generation control system

Overview

What is next-generation wind turbine control?

With turbines growing taller, blades extending longer, and installations expanding into offshore areas, supporting control systems must evolve to meet the complex demands of future power grids. This evolution calls for next-generation wind turbine control systems—a fusion of intelligent automation, digitalization, and adaptive control technologies.

What is the future of wind turbine control?

The future of wind turbine control will go beyond speed and power to deliver intelligence and resilience. These systems will learn from operational data, adapt to environmental and grid changes, and contribute to a more flexible, sustainable energy landscape.

What are the key enablers of wind turbine control?

Key enablers include: Cybersecurity has become a core design priority, essential as turbines become part of critical national infrastructure. The future of wind turbine control will go beyond speed and power to deliver intelligence and resilience.

Can we integrate energy storage systems into wind energy conversion systems?

For stand-alone wind systems, it is essential to ensure continuity of energy supply, particularly in remote areas where the energy infrastructure is minimal. To meet these challenges, the integration of energy storage systems into wind energy conversion systems (WECS) has been proposed as a solution.

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Guest Editor Department of Electrical Engineering, Shanghai Jiao Tong University, Shanghai 200240, China Interests: wind power; photovoltaic generation and control technology; ...

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