

Abstract

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Control Strategy of a 6 MVA Series Connected Synchronous Generator for Wind Power

A new proposal for a wind power system utilizes a variable-speed generator, since it has a higher energy capturing and converting efficiency than a fixed-speed system. This paper describes a vector control strategy for a direct-driven Series Connected Synchronous Generator (SCSG), which is connected to the power network through a controlled three phase rectifier and a PWM inverter. The generator side converter is controlled to obtain maximum power from the incident wind and the grid-side inverter maintains a constant DC-link voltage. Simulated results are given to illustrate the performance of the system.