

Energy system dynamic frequency support by DFIG-based wind generator.

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The article considers the possibility of maintaining the frequency in the power system in the event of an emergency power shortage by controlling the active power of wind farms of the third type with a double-feed induction generator (DFIG) and inverter equipment. Suggested the method of supplying additional energy stored in the rotating masses of wind turbines to the network by shifting the operating point of wind turbines from the tracking curve for the maximum power output to the virtual inertia control curve. Power system model with a WPP of the 3rd type, built in the Matlab Simulink software package, is used to test the proposed strategy for controlling inverter equipment. The simulation results show that wind farms with the proposed control strategy can provide power output at frequency deviations and thus improve the dynamic frequency response of a network with a high wind farms penetration.

Key words: renewable energy sources, wind generator, maximum power point tracking, virtual inertia control.