

In this paper, a simple control strategy for an optimal extraction of output power from grid connected variable speed wind energy conversion system (WECS) is presented. The system consists of a variable speed wind turbine coupled to a permanent magnet synchronous generator (PMSG) through a gear box, a diode bridge rectifier, a dc-to-dc boost converter and a current controlled voltage source inverter. The maximum power point tracker (MPPT) extracts maximum power from the wind turbine from cut-in to rated wind velocity by sensing only dc link power. The MPPT step and search algorithm in addition to the DCeDC and DCeAC converters PWM controllers are simulated using MATLAB-SIMULINK software. The obtained simulation results show that the objectives of extracting maximum power from the wind and delivering it correctly to the grid are reached