

Abstract

This article focuses on the modeling and simulation of the performance of a wind farm with the objective of defining an optimal maintenance. Considered as an alternative source of clean energy, it is still subject to hourly or seasonal variations in speed and wind direction. Therefore, turbines undergo random charge unlike most industrial machines operating under more or less static. The task of forecasting failures becomes complex due to the random load. The process of decision making regarding the choice of schedule and the type of maintenance applied, these in turn are challenges that must be overcome with adequate modeling of the wind turbines operation. The simulation in Matlab environment based on a deterministic optimization model will contribute to the definition of a maintenance strategy to even enable greater availability and therefore an increased power output