

Availability of wind energy resource potential for power generation at Jos, Nigeria

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Abstract

The objective of this study was to assess the potential viability of the wind resource potential in Jos, Plateau state, Nigeria for power generation. The monthly mean wind speeds that span from 1987 to 2007 were employed to statistically analyze the monthly, annual and seasonal potentials of the wind energy resources at the site. Besides, the results were employed together with two models of wind energy conversion system to simulate the likely average output power. The outcome showed that Jos was suitable as a site for wind farm projects of varying sizes and that MW·h to GW·h of electricity is likely to be produced per period of months, seasons and years. The average wind speed range at the site was also estimated to be between 6.7 and 11.8 m/s across the months, years and seasons.

Keywords

green electricityrenewable resourcesWeibull statisticsJosNigeria
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