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An Assessment of Wind Energy in Sanar Village in North of Iran Using Weibull Function

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Abstract : Sanar village in north of Iran is a remote region with difficult access to electricity, grid and water supply. Thus the aim of this research is to evaluate the potential of wind as a power source either for electricity generation or for water pumping. In this study the statistical analysis has been performed by Weibull distribution function. The results show that the Weibull distribution has fitted the wind data very well. Also it has been demonstrated that wind speed at 40 m height is ranged from 1.75 m/s in Dec to 3.28 m/s in Aug with average value of 2.69 m/s. In this research, different wind speed characteristics such as turbulence intensity, wind direction, monthly air temperature, humidity wind power density and other related parameters have been investigated. Finally it was concluded that the wind energy in the Sanar village may be explored by employing modern wind turbines that require very lower start-up speeds.

Keywords : wind energy, wind turbine, weibull, Sanar village, Iran
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