

Estimation of Wind Characteristics and Energy Yield at Different Towns in Libya

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Abstract : A technical assessment has been made of electricity generation, considering wind turbines ranging between Vestas (V80-2.0 MW and V112-3.0 MW) and the air density is equal to 1.225 Kg/m³, at different towns in Libya. Wind speed might have been measured each 3 hours during 10 m stature at a time for 10 quite sometime between 2000 Furthermore 2009, these towns which are spotted on the bank from claiming Mediterranean ocean also how in the desert, which need aid Derna 1, Derna 2, Shahat, Benghazi, Ajdabya, Sirte, Misurata, Tripoli-Airport, Al-Zawya, Al-Kofra, Sabha, Nalut. The work presented long term "wind data analysis in terms of annual, seasonal, monthly and diurnal variations at these sites. Wind power density with different heights has been studied. Excel sheet program was used to calculate the values of wind power density and the values of wind speed frequency for the stations; their seasonally values have been estimated. Limit variable with rated wind pace to 10 different wind turbines need to be been estimated, which is used to focus those required yearly vitality yield of a wind vitality change framework (WECS), acknowledging wind turbines extending between 600 kW and 3000 kW).

Keywords : energy yield, wind turbines, wind speed, wind power density

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