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Wind Energy in Sudan for Water Pumping in Rural Areas

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Abstract

Wind is a form of renewable energy, which is always in a non-steady state due to the wide temporal and spatial variations of wind velocity. A number of years worth of data concerning wind speed in Sudan have been compiled, evaluated and presented in this article. The need for the provision of new data stations in order to enable a complete and reliable assessment of the overall wind power potential of the country is identified and specific locations suggested. This paper presents the background and ideas of the development of the concept as well as the main results, and experience gained during ongoing project up to now. In Sudan, various designs of wind machines for water pumping have been developed and some designs are presently manufactured commercially. Results suggest that wind power would be more profitably used for local and small-scale applications especially for remote rural areas. It is concluded that Sudan is blessed with abundant wind energy.

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