# *CERTIFICATE*

The project entitled:

***"SELECTING LOCATIONS FOR INSTALLING WIND TURBINES"***

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***ABSTRACT***

The large-scale use of [renewable energy](http://en.wikipedia.org/wiki/Renewable_energy) technologies would greatly mitigate or eliminate a wide range of environmental and human health impacts of energy use. Renewable energy technologies include biofuels, solar heating and cooling, hydroelectric power, solar power, and wind power. In this project, the wind power was studied on the base of wind power location. Two locations, Tobruk and Albayda were selected and their wind speed time series data were analyzed to study the best location for installing wind turbine generators.

The Weibull distribution is the standard function used by the wind energy community to study the wind power location by modeling the wind speed frequency distribution**.** The Weibull parameters namely, shape parameter (k) and scale parameters (c) were computed using the empirical method. This study indicates that a large magnitudes of winds at the hub height for power generation occurred during the first months of the year for the two sites, and the annual mean power density was 327.682W/m² in Tobruk, and 285.4917W/m² in Albayda, these locations if utilized, they will provide solution towards power shortage problem of Libya.

***الخلاصه***

ان الاستخدام الواسع النطاق لتكنولوجيات الطاقة المتجددة يخفف إلى حد كبير أو يقضي على مجموعة واسعة من الآثار الصحية البيئية والبشرية من استخدام الطاقة. وتشمل تكنولوجيات الطاقة المتجددة الوقود الحيوي، الطاقة الشمسية والتدفئة والتبريد، والطاقة الكهرومائية، والطاقة الشمسية، وطاقة الرياح. في هذا المشروع، درسنا طاقه الرياح بناءا على موقع قوة الرياح. وقد تم اختيار موقعين، طبرق والبيضاء وجرى تحليل بيانات سلسلة من سرعة الرياح التي سجلت يوميا على مدى سنه واحده لدراسة مدي أمكانية استغلال طاقة الرياح في هذين الموقعين.

توزيع وايبل هو وظيفة قياسية مستخدمة من قبل هيئة طاقة الرياح لدراسة موقع طاقة الرياح عبر الاقتداء بتوزيع تردد سرعة الرياح. حسبت معاملات وايبل، وهي معامل الشكل (k) ومعامل المقياس (c) باستخدام الطريقة التجريبية. هذه الدراسة تشير إلى أن مقادير كبيرة من الرياح في ذروة مركزا لتوليد الطاقة وقعت خلال الأشهر الأولى من السنة للموقعين، وكان متوسط ​​كثافة القدرة السنوية 327.682 وات لكل متر مربع في طبرق، و285.4917 وات لكل متر مربع في البيضاء، هذه المواقع إذا ما استغلت، فأنها سوف توفر حل مشكلة نقص الطاقة في ليبيا.