

Accepted Manuscript

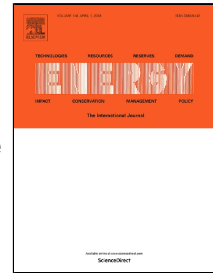
Assessment of onshore wind energy potential under different geographical climate conditions in China

L.I. Yi, W.U. Xiao-Peng, L.I. Qiu-Sheng, T.E.E. Kong Fah

PII: S0360-5442(18)30581-4
DOI: 10.1016/j.energy.2018.03.172
Reference: EGY 12630
To appear in: *Energy*
Received Date: 20 October 2017
Revised Date: 26 March 2018
Accepted Date: 30 March 2018

Please cite this article as: L.I. Yi, W.U. Xiao-Peng, L.I. Qiu-Sheng, T.E.E. Kong Fah, Assessment of onshore wind energy potential under different geographical climate conditions in China, *Energy* (2018), doi: 10.1016/j.energy.2018.03.172

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



**Assessment of onshore wind energy potential under different
geographical climate conditions in China**

Yi LI^{1,2}, Xiao-Peng WU³, Qiu-Sheng LI^{4,*}, Kong Fah TEE²

¹Hunan Provincial Key Laboratory of Structures for Wind Resistance and Vibration
Control & School of Civil Engineering, Hunan University of Science and
Technology, Xiangtan, 411201, Hunan, China

²Department of Engineering Science, University of Greenwich, UK

³Xiangtan Electric Manufacturing Group, Xiangtan, 411102, Hunan, China

⁴Department of Architecture and Civil Engineering, City University of Hong Kong,
Kowloon, Hong Kong

*Corresponding author, E-mail: bcqqli@cityu.edu.hk

Abstract: Wind resource in China is abundant due to its vast land mass and long coastline. Based on wind speed and direction records from wind measurement towers at six onshore sites with different geographical climate conditions in China, statistical assessment of wind characteristics and wind energy potential at height of 70 m corresponding to the hub heights of multi-megawatt wind turbines is presented and discussed in this paper. First of all, the Weibull distribution function is verified to be a reliable model for wind speed prediction and the moment method is proved to be an accurate approach for estimation of the Weibull parameters at all the sites. Moreover, the variations of mean wind speed, the Weibull parameters and wind power density at the six sites are investigated in terms of seasonal, monthly and diurnal time scales. Finally, annual energy outputs at the six sites are determined by

Download English Version:

<https://daneshyari.com/en/article/8071679>

Download Persian Version:

<https://daneshyari.com/article/8071679>

[Daneshyari.com](https://daneshyari.com)