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Challenges and opportunities facing by China's renewable energy development

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Since 2006, China's renewable energy has developed very quickly with average annual wind power and solar power increase rate by 50% and 90% respectively, which is much higher than the average level, 20%, and 49%, in the world (BP, 2017). China has become the largest wind power capacity and solar power capacity country in the world. However, on the other side, some obstacles still exist in the process of renewable energy development in China. First, large amount of wind power and solar power is curtailed in China. Second, the fiscal subsidy gap for renewable energy is huge. Third, a series of policies aimed to resolve the issues of wind power and solar power curtailment have not been implemented effectively. China's specific characteristics of resources, economics, and politics determine that resolving of the above problems is facing big challenges. In contrast, China's renewable energy is facing important opportunities for further development. Based on analyzing these challenges and opportunities, we put forward the key measures to resolve the obstacles of China's renewable energy development in the future. Firstly, we discuss how to motivate China Grid Corporation to dispatch more renewable energy by adjusting the regulation mechanism. China Grid Corporation plays a significant role in dispatching renewable energy, currently, China Grid Corporation pays more attention to profit instead of promoting renewable energy. Hence, how to motivate China Grid Corporation to dispatch more renewable energy by adjusting the regulation mechanism is important; second, we analyze how to promote renewable energy generation by optimal design of China's power market mechanism. Third, we illustrate how to formulate appropriate environmental regulation policies to promote the competitiveness of renewable energy by studying the various impacts of the carbon tax and Cap & Trade on renewable energy development. Fourth, we suggest electricity storage by batteries and also P2G should be motivated.

Biography

Xiaoli Zhao has completed his PhD from the Renmin University of China. She is the director of the Institute for Low Carbon Economy and Policy, China University of Petroleum-Beijing, Prof. She is the secretary general and executive member of The Branch of Energy & Resource Systems Engineering, Systems Engineering Society of China. She has published more than 80 papers in reputed journals and has undertaken four energy research projects awarded by China's National Natural Science Foundation as a project leader.

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