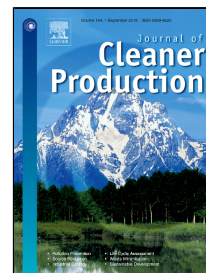


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## Regional energy efficiency evaluation in China: A super efficiency slack-based measure model with undesirable outputs

Ting Yang <sup>a,b</sup>, Wen Chen <sup>a,b</sup>, Kaile Zhou <sup>a,b,c\*</sup>, Minglun Ren <sup>a,b\*</sup>

a. School of Management, Hefei University of Technology, Hefei 230009, China

b. Key Laboratory of Process Optimization and Intelligent Decision-making, Ministry of Education, Hefei 230009, China

c. City University of Hong Kong, Kowloon, Hong Kong SAR, China

**Abstract:** With the rapid development of global economy, the demand for energy has increased significantly. Therefore, energy efficiency improvement is essential for global energy and economic transformation. In the Chinese context, study on the energy efficiency of various provinces can contribute to better understand China's energy utilization status and provide policy implications for improving China's energy utilization efficiency. In this study, based on the super efficiency slack-based measure model with undesirable outputs, the energy efficiency of China's 30 provinces in 2013 and 2014 was investigated. Then, the energy efficiency of the eastern, central and western China was compared and further discussed. Finally, according to the results, the relevant policy implications were put forward. The results showed that China's overall energy efficiency had decreased while taking the undesirable outputs into consideration. In addition, eastern China had the highest energy efficiency and the energy efficiency of western China was relatively low. The energy efficiency gap among China's provinces was still large. Therefore, it

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\* Corresponding authors.

*E-mail addresses:* zhoukaile@hfut.edu.cn (K. Zhou); renml@hfut.edu.cn (M. Ren)

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