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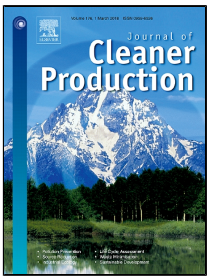

Is it more effective to bring time-of-use pricing into increasing block tariffs? Evidence from evaluation of residential electricity price policy in Anhui province

Lanlan Li, Yue Yao, Ranran Yang, Kaile Zhou

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Is it more effective to bring time-of-use pricing into increasing block tariffs? Evidence from evaluation of residential electricity price policy in Anhui province

Lanlan Li*, Yue Yao, RanranYang*, Kaile Zhou

(School of Management, Hefei University of Technology, Hefei 230009, China)

Abstract: Reform of energy prices in China has stepped into a crucial stage. It has become a controversial issue after the reform of increasing block tariffs (IBTs) for household electricity, followed by a time-of-use (TOU) pricing policy. Using ELES model, this paper estimates the price elasticity of residential electricity demand; based on perceived price and price elasticity, a power structure model demand response for nonlinear electricity price is proposed; taking Anhui province as a case, this paper analyzes the attainment situation of such policy objectives as electricity saving, consumer welfare, equity improvement and peak shaving, with the introduction of TOU pricing into IBTs for household electricity. The results show that IBTs helps reduce electricity consumption by 0.74%~0.93%, with minor energy effect; IBTs may lead to a maximum 1.57CNY increase of electricity expense per household per month, which is acceptable for residents. It also may reduce cross-subsidy to some extent. After introducing TOU pricing, the efficiency of peak shaving is only 2.25%~2.78%, and the load decrement at peak periods is far lower than the increase at valley periods; while the effect of electricity conservation and cross-subsidy reduction have been alleviated. In other words, peak-valley price is not only difficult to achieve its own objective effectively, but also prohibits the effect of IBTs. Based on the above conclusions, some policy recommendations are provided to improve the price