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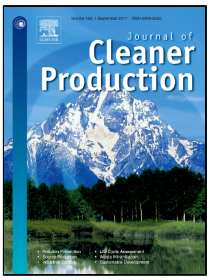

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Assessment and regulation of urban crude oil supply security: A network perspective

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ABSTRACT

A stable energy supply is essential to support urban socioeconomic activities and to ensure urban sustainable development. A quantitative systematic method is necessary to evaluate and improve the security level or urban energy supply. Ecological network analysis (ENA) is thus applied as a useful general analysis tool to systematically simulate, evaluate, and compare energy supply security in different cities. Based on the established ENA model, we evaluated and compared the crude oil supply security for Beijing, Shanghai, and Tianjin from 1997–2012, via sustainability, stability, and structure analyses. The results indicate that the overall levels of crude oil supply security for the three cities showed similar features and increase trends during the study period, whereas

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