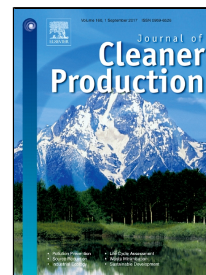


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Energy demand and greenhouse gas emissions of urban passenger transport in the Internet era: A case study of Beijing

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Abstract: The transport sector accounts for a large proportion of energy demand and environmental emissions and is growing rapidly. The city is the hub of modern human life and the urban transport sector is developing fast. Specifically, in the Internet era, the development of public transport has brought new challenges and opportunities to urban passenger transport. Thus, research on the energy demand and environmental emissions of the urban transport sector is significant and timely. This paper takes Beijing's public transport as an example and applies the Long-range Energy Alternatives Planning (LEAP) model to analyze the energy demand and the main greenhouse gas (GHG) emissions under different scenarios during the period 2016-2030. The results show that: 1) if the government fails to guide the development of passenger transport appropriately, its energy demand and GHG emissions will rise rapidly and under the baseline scenario, the energy demand and emissions in 2030 are about 1.8 times those of 2015; 2) the scenarios of developing public transport and transport sharing have a significant effect of energy saving and emission reduction and in 2030 the energy demand and GHG emissions falls by 25%-30% compared with that of the baseline scenario, so the combination of public transport and transport sharing is a wise choice for the low carbon development of the passenger transport sector in Beijing; 3) scenarios of easing road congestion and new-energy and clean-energy vehicle development have huge potential for energy saving and emission reduction, particularly the internal adjustment of the energy structure in the scenario of developing new-energy and clean-energy vehicles, which can greatly reduce the demand for traditional energy sources and reduce GHG emissions. This paper illustrates the development trends of energy demand and GHG emissions in Beijing's passenger transport sector under the scenarios of

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