Policy Choice for Urban Low-carbon transportation in Beijing: Scenario Analysis Based on LEAP model

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Beijing is a fast developing megacity with serious traffic problems, such as high energy consumption, high CO_2 emission and traffic congestion. The coming 13th Five-Year Plan for Beijing economic and social development will focus on the low-carbon transportation policy to achieve the urban traffic sustainable development. In order to improve the feasibility of urban low-carbon transportation policies, this paper analyzes the future trends of CO_2 emissions from transportation of Beijing. Firstly, five policies scenarios are developed according to the coming Beijing 13th Five-Year Plan, including the "Business As Usual (BAU)", the "Public Transportation Priority(PTP)", the "New Energy Vehicle(NEV)", the "Active Transportation(AT)", the "Private Car Regulation(PCR)" and the "Hybrid Policy(HP)". Then the Long-range Energy Alternatives Planning System(LEAP model) framework is adopted to estimate CO_2 emission under given policies scenarios up to year 2020 and analyze the implications. The results demonstrate that the low-carbon transportation policies can reduce CO_2 emission effectively. Specifically, the "Hybrid Policy(HP)" has the best performance. In terms of single policy effect, the "Private Car Regulation(PCR)" comes first followed by the "Public Transportation Priority(PTP)".