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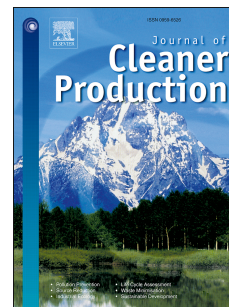
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**Coal-derived alternative fuels for vehicle use in China: a review**

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**Abstract:** The rapid growth of vehicle ownership in China has brought severe energy and environmental challenges. By referring to a wide range of existing studies and policy documents, this paper reviews the rationality, pathway choice, policy initiatives, barriers and opportunities of developing coal-derived alternative fuels in China, including methanol, Dimethyl Ether (DME) and Coal-to-Liquid (CTL). The review suggests that (a) the production of coal-derived alternative fuels faces the constraints of coal resource, water consumption and CO<sub>2</sub> emissions. China should develop coal-derived alternative fuels with full considerations of these constraints. (b) Coal can be utilized as vehicle fuel through multiple pathways, each pathway with significant trade-off among its energy, environmental and economical attributes. Some

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