

# Driving factors behind energy-related carbon emissions in the U.S. road transport sector: a decomposition analysis

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## Abstract

The U.S. is the world's second largest contributor to carbon emissions, with its road transport sector being one of the most significant emission sources. However, few studies have been conducted on factors influencing the emissions changes for the U.S. from the perspective of passenger and freight transport. This study aims to evaluate the carbon emissions from the U.S. road passenger and freight transport sectors, using a Logarithmic Mean Divisia Index approach. Emissions from 2008 to 2017 in the U.S. road transport sector are analysed and key findings include: 1) passenger transport contributes over 70% to total transport carbon emissions, with cars and light trucks contributing the highest share; 2) energy intensity and passenger transport intensity are critical for reducing emissions from road passenger transport, and transport structure change is causing shift of emissions between different passenger transport modes; and 3) the most effective strategies to reduce carbon emissions in the road freight transport sector are to improve energy intensity and reduce freight transport intensity. Several policy recommendations regarding reducing energy and transport intensity are proposed. The results and policy recommendations are expected to provide useful references for policy makers to form carbon emissions reduction strategies for the road transport sector.

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