Energy Needs of Heavy-Duty Zero-Emission Vehicles

Background

The number of zero-emission vehicles (ZEVs), including electric vehicles, has increased in California over recent years. As a result, there's a need to determine the impact of heavy-duty truck routing activity, energy use, and charging infrastructure on air quality co-benefits, pollution burden, and other factors related to ZEV adoption.

Main Question

What are the driving activities, energy needs, air quality co-benefits, and pollution-burden disparities associated with ZEV adoption?

Key Research Plans

Researchers will collect and analyze data on the driving activity, energy consumption, and charging patterns of ZEV trucks and off-road equipment. The analysis will characterize air quality co-benefits and pollution burden for California communities due to reduced emissions associated with ZEV use. The research team will then model ZEV energy use to simulate energy and charging requirements from emerging technology and fill knowledge gaps for ZEV energy use.

Expected Impacts

The results of this project are anticipated to inform several on-road and off-road ZEV programs. The data will be incorporated into emission inventories and establish a baseline for the performance of heavy-duty ZEVs during operations.

More Information

This project is led by Kanok Boriboonsomsin from the University of California, Riverside. Contract 24RD008. Please visit our website or contact us by e-mail.

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