Spearheading Electrification of Medium- and Heavy-Duty Vehicles: A Data-Driven Planning Platform Integrating Power and Transportation Sectors

Key Members

- AmpTrans Inc: Dr. Zuzhao Ye
- University of California, Riverside (UCR): Prof. Nanpeng Yu
- Southern California Edison (SCE): Mark Esguerra and Dana Cabbell
- California Energy Commission (CEC): Dr. Quentin Gee

Project Summary

Utility Partner's Problem: Proactive planning of the power delivery and charging infrastructure to meet the regulation goals of zero-emission medium- and heavy-duty (MDHD) vehicles.

Project Objective: Develop a data-driven planning platform that integrates power and transportation sectors, guiding the utility for proactive planning for MDHD electric vehicles.

Solution Proposed: Data-Driven Spatio-Temporal Optimization Model that identifies the optimal upgrade plan for the utilities by leveraging large-scale data and captures the interactions between different stakeholders in the ecosystem of electric mobility, including:

- Electric utilities
- Charging station developers
- MDHD fleet owners

Expected Benefits to Utilities: 1) Effectively manage the increased demands from electric MDHD vehicles. 2) Meet regulatory goals related to electrification and sustainability. 3) Minimize the need for rate increases while maintaining service quality and reliability.