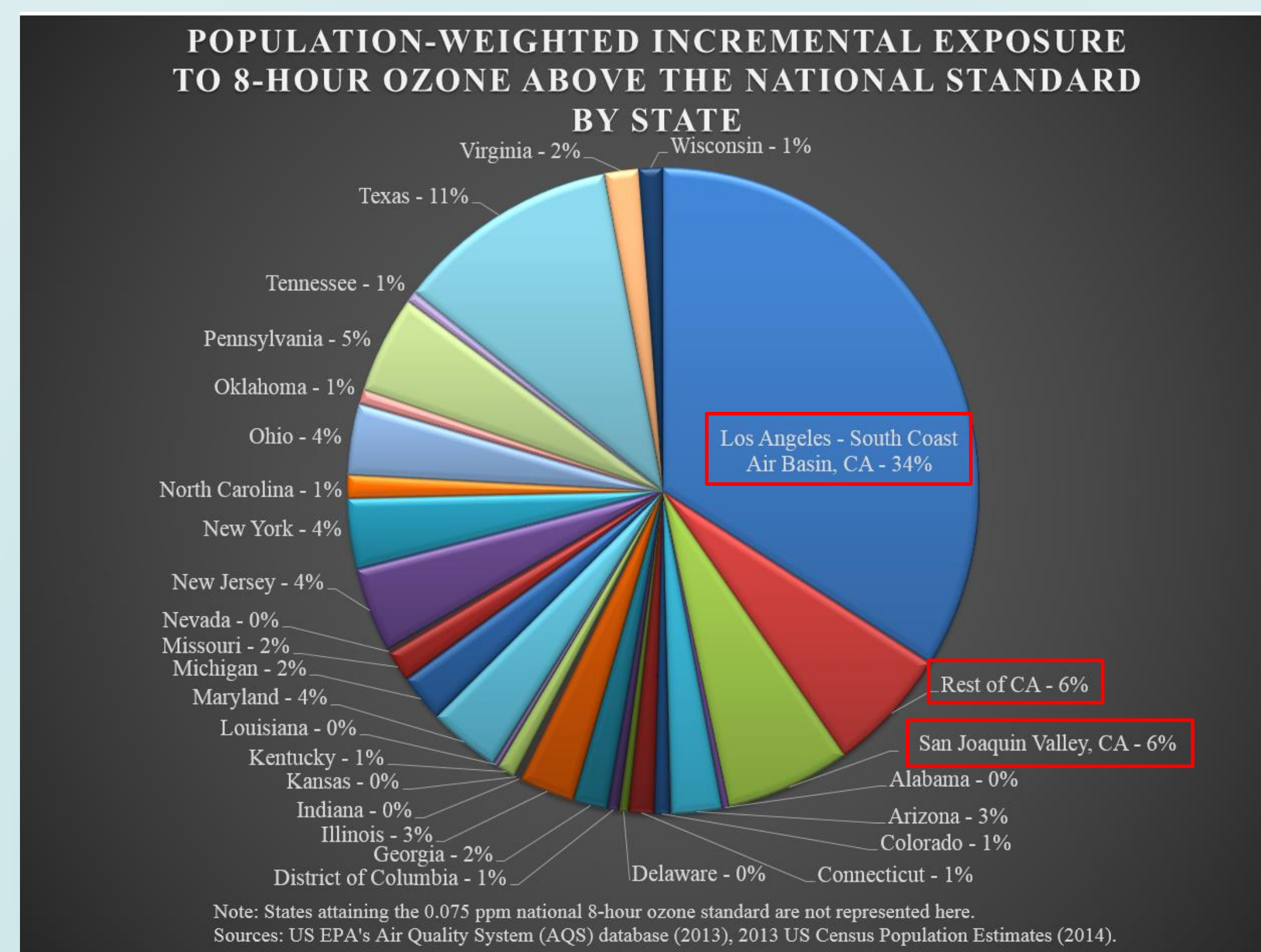


THE PURPOSE OF THIS STUDY IS TO ASSESS EMISSIONS REDUCTIONS WITH INCREASED ELECTRIFICATION OF PORT TRUCK OPERATIONS THROUGH THE IMPLEMENTATION OF POTENTIAL DRAYAGE POLICIES

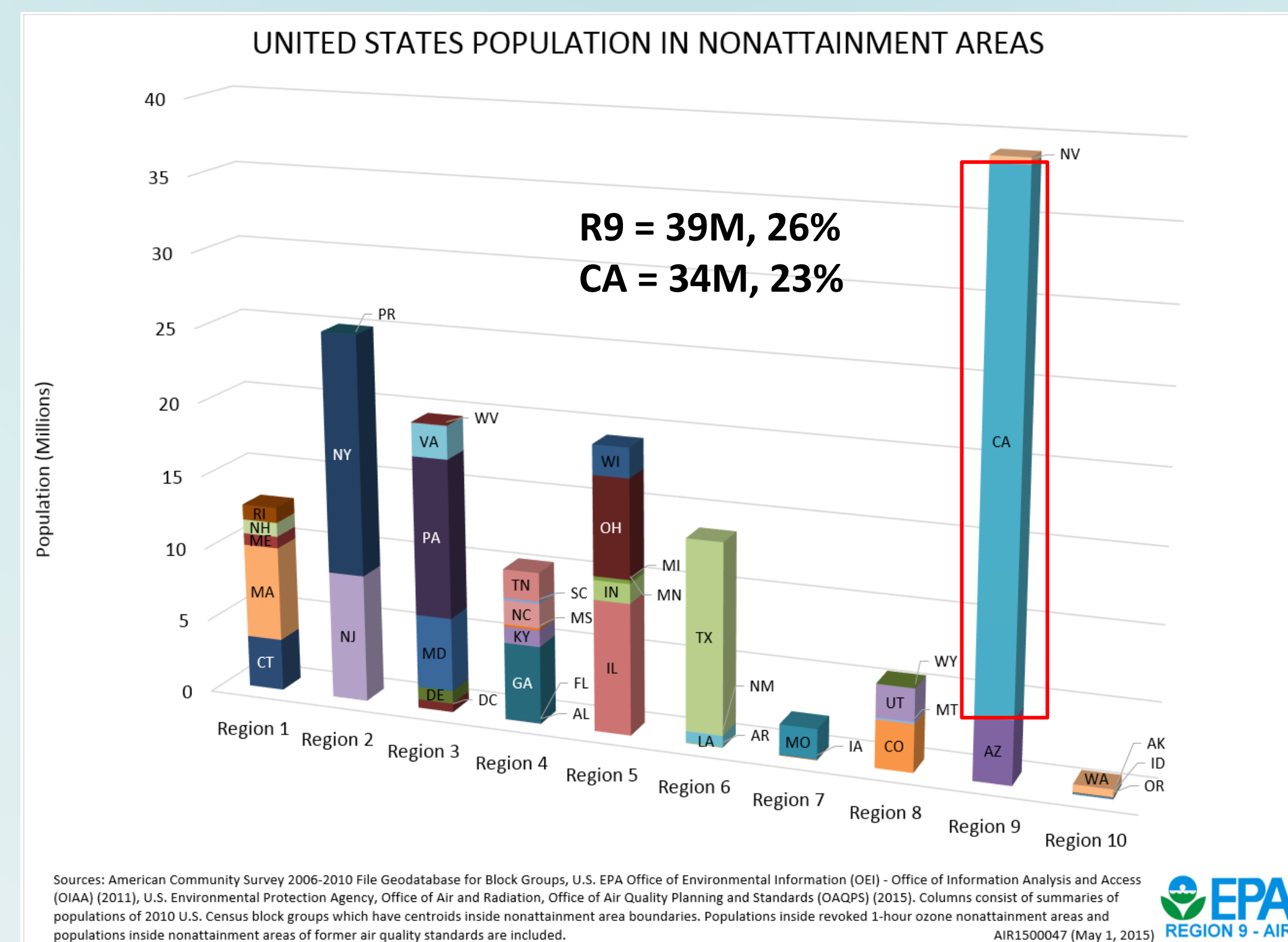
MOTIVATION

In the freight transportation system, ports are the epicenter of container and intermodal freight.

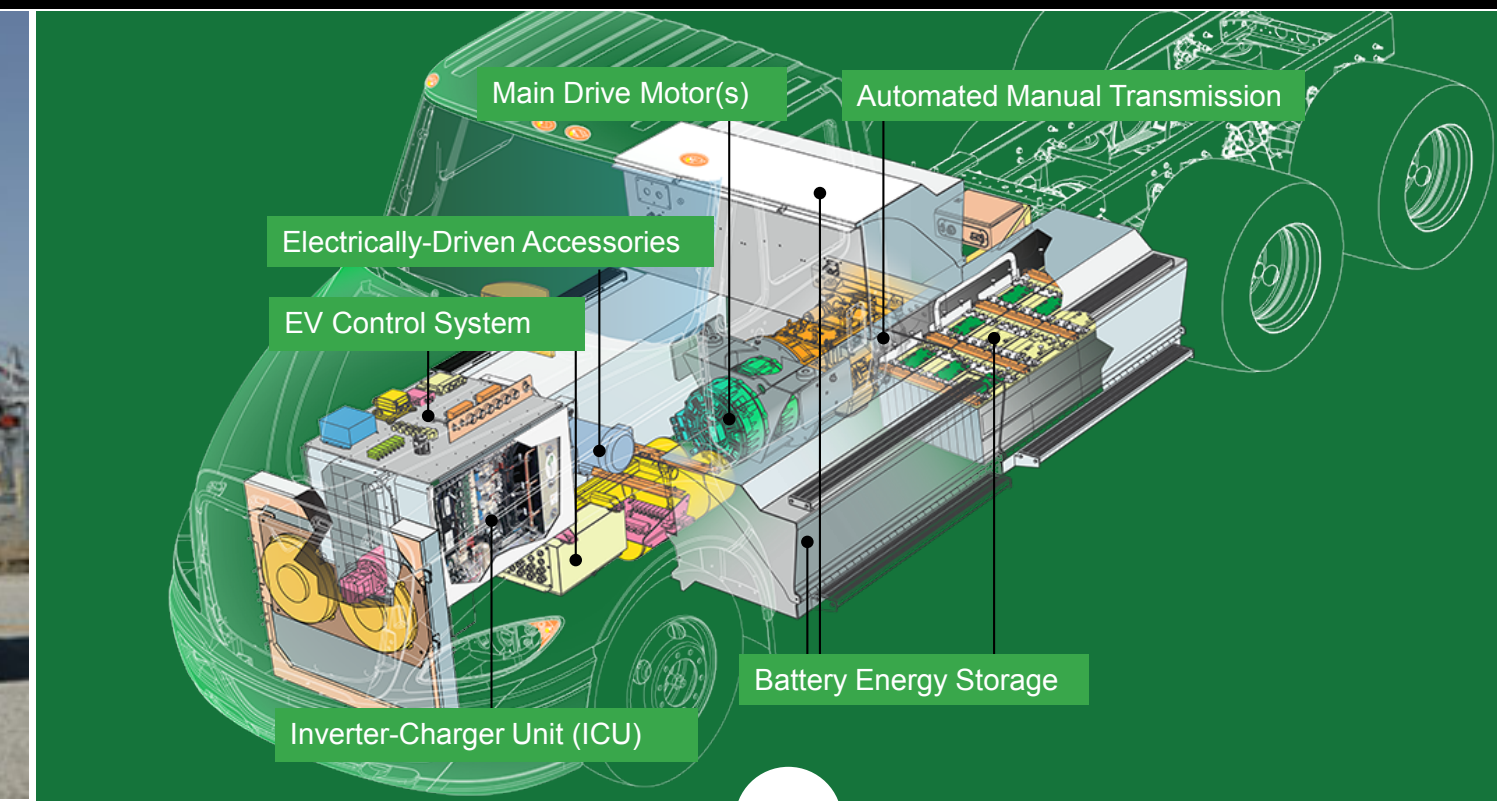
Approximately 60% of west coast freight tonnage or 7% of national tonnage goes through the Ports of Los Angeles and Long Beach.



California has identified the need to reduce the negative impacts of the freight activity, especially near ports, railroads, highways, and other large traffic generators.

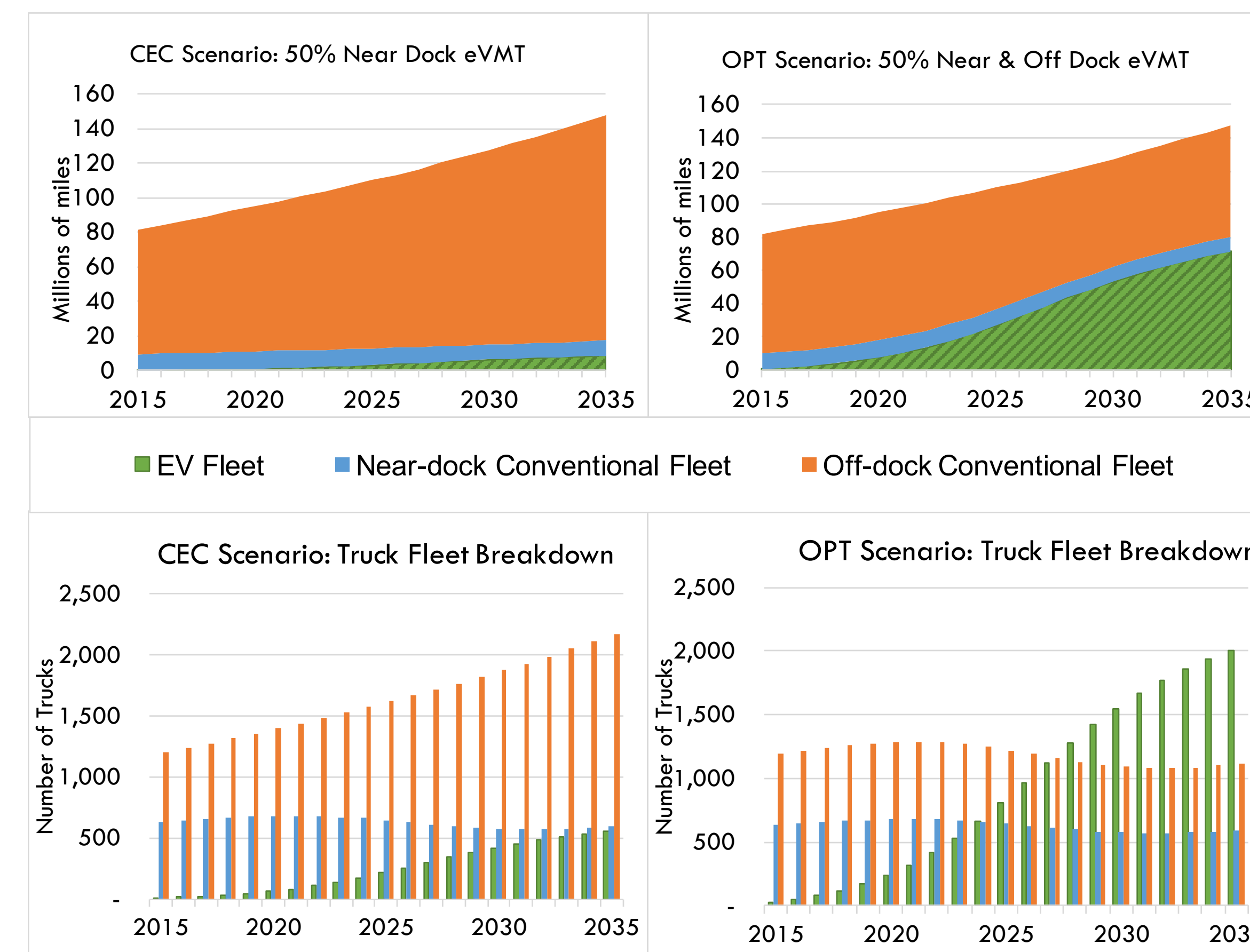
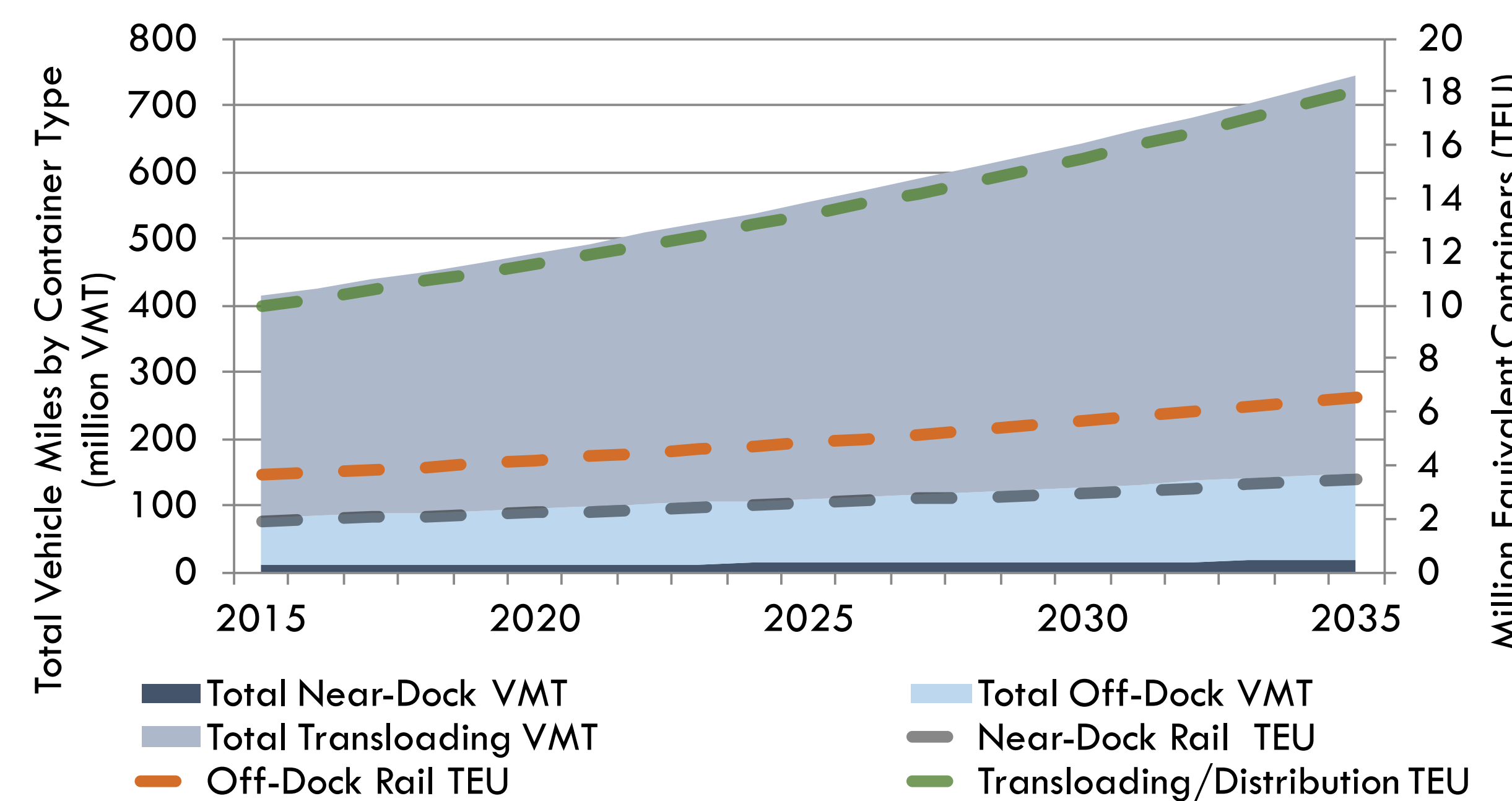


As part of a comprehensive approach, the State has initiated demonstration projects to improve short-haul trucking at maritime ports, and evaluating alternative fuels for drayage trucks. Drayage trucks are essential for the functioning of ports as they facilitate the majority of distribution and intermodal goods transfers.



APPROACH

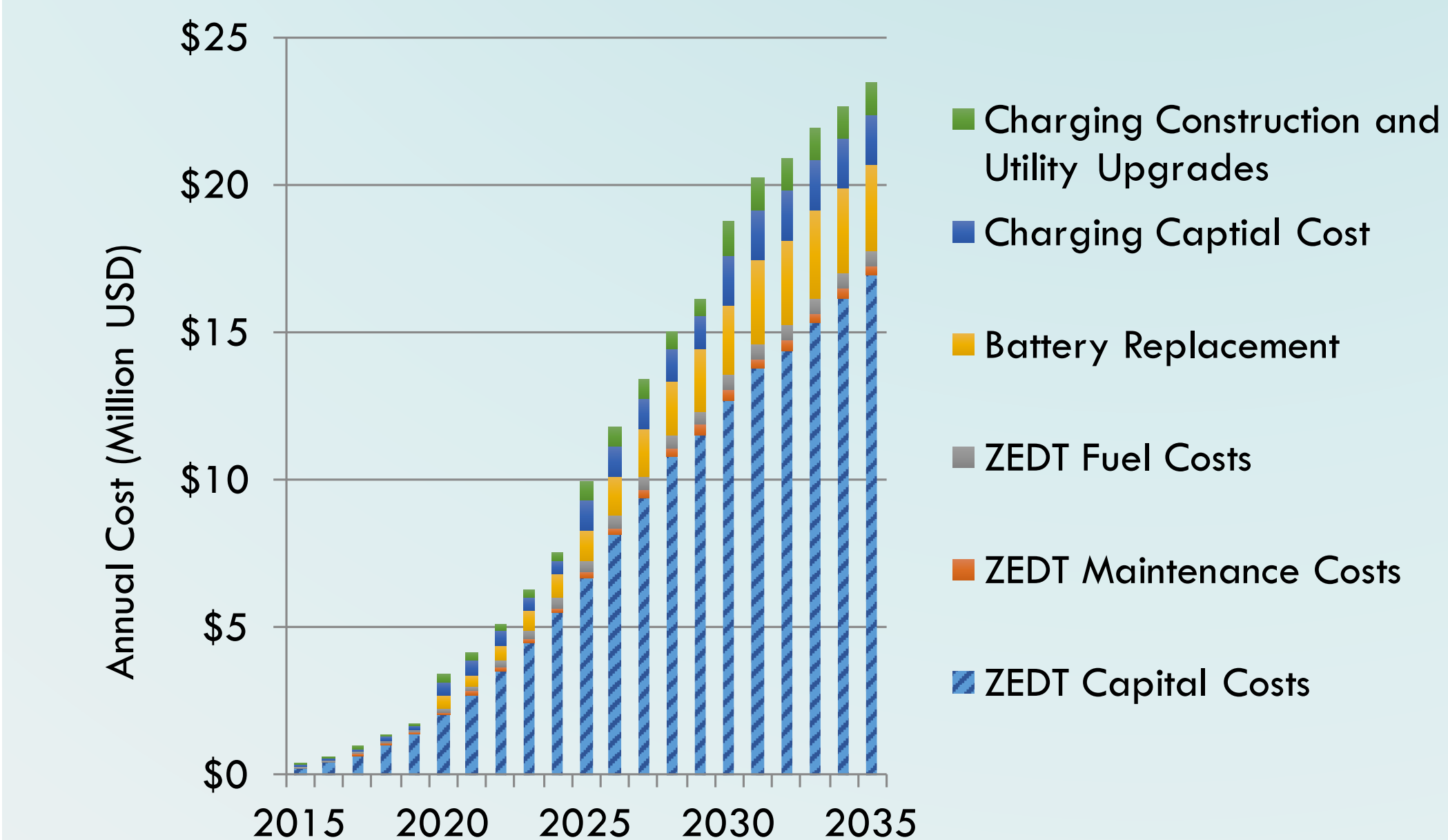
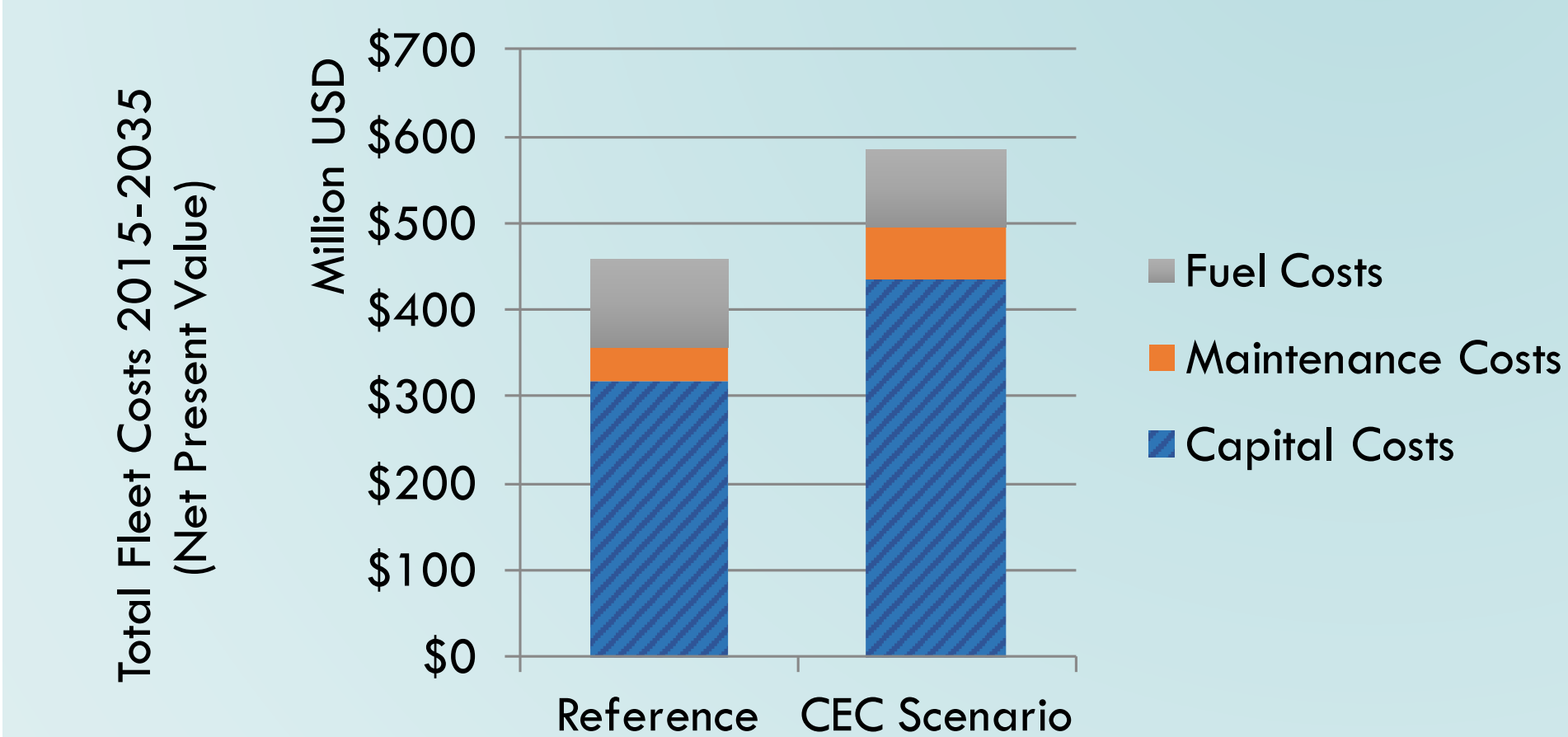
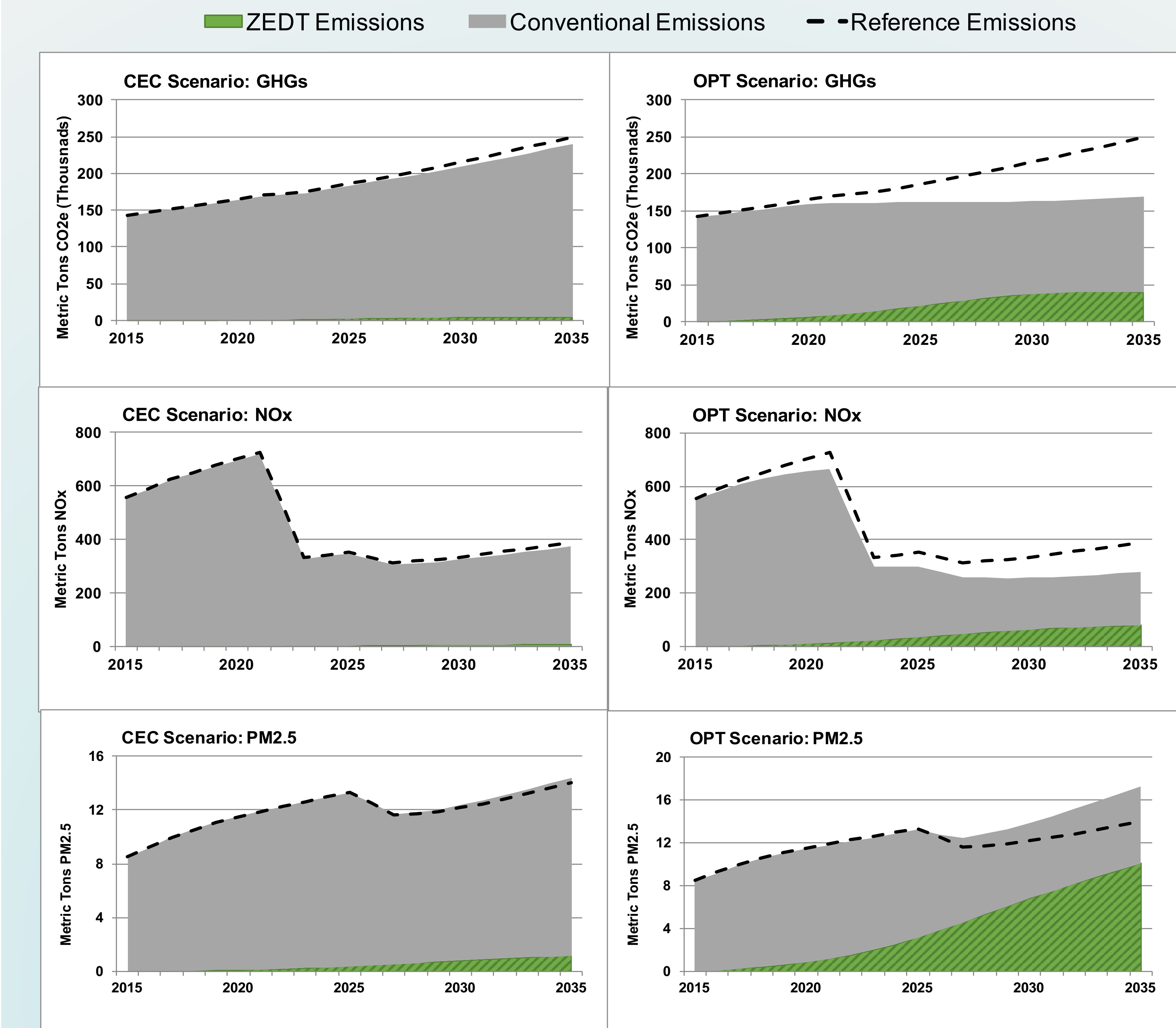
- Model drayage truck VMT as a function of TEU volume (Twenty Foot Equivalent Container Unit)
- Construct a reference case projection for VMT and emissions from conventional diesel trucks considering current regulation
- Model two (e)VMT based targets for electrification of drayage trucks
- Consider potential emissions impacts and cost implications



CEC = Conservative
OPT = Optimistic

RESULTS

Comparing emissions from drayage trucks through 2035 with different levels of electrification



Implementation Costs

Costs for the ZEDT deployment under the conservative scenario increases total fleet costs over the study period by 27%, or \$124 million dollars. Increased capital costs for ZEDT trucks were the primary driver of the overall cost increase. In addition to higher costs, conservative electrification had little impacts on emissions of GHGs or local contaminants.

Ambrose, H. & Jaller, M. Electrification of drayage trucks: on track for a sustainable freight path (Accepted for Presentation and publication) *Transportation Research Board (TRB) 95th Annual Meeting, Washington, D.C. January 2016*

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