AEG Transportation Challenge

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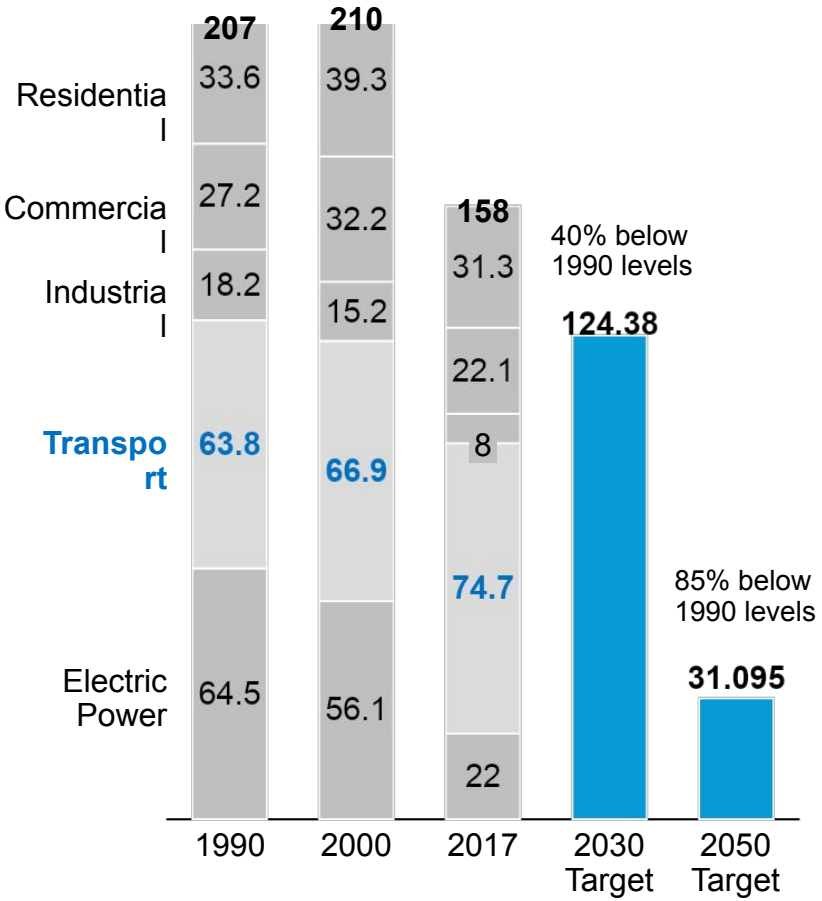
Introduction: Transportation electrification is a key component to meeting New York State (NYS) carbon reduction goals

NYS carbon goals [MMT of CO_2]



The transportation sector accounts for over 40% of all carbon emissions in NYS

Climate Leadership and Community Protection Act (CLCPA) (2019)

- 85% reduction in emissions by 2050
- Focus on equity and disadvantaged communities

Light Duty Zero Emissions Vehicle (ZEV) Memorandum of Understanding (MoU) (2013)

- 850k ZEV on NYS roads by 2025
- $700M in make-ready funding support

Medium, Heavy Duty (MDHD) ZEV MoU (2020)

- 30% of new MDHD are ZEV by 2030

Illustration of medium and heavy vehicles that potentially make up 90% of vehicle fleet in our service area

Delivery truck

Walk-in van

Utility truck

City bus

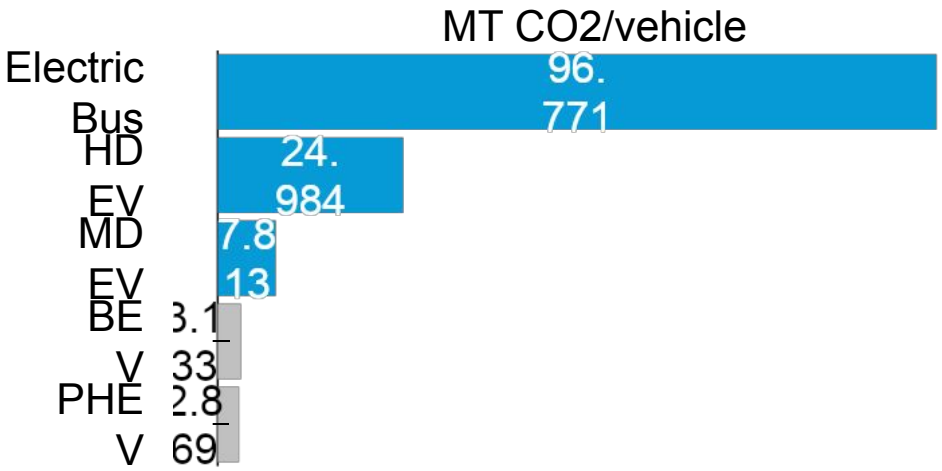
Refuse truck

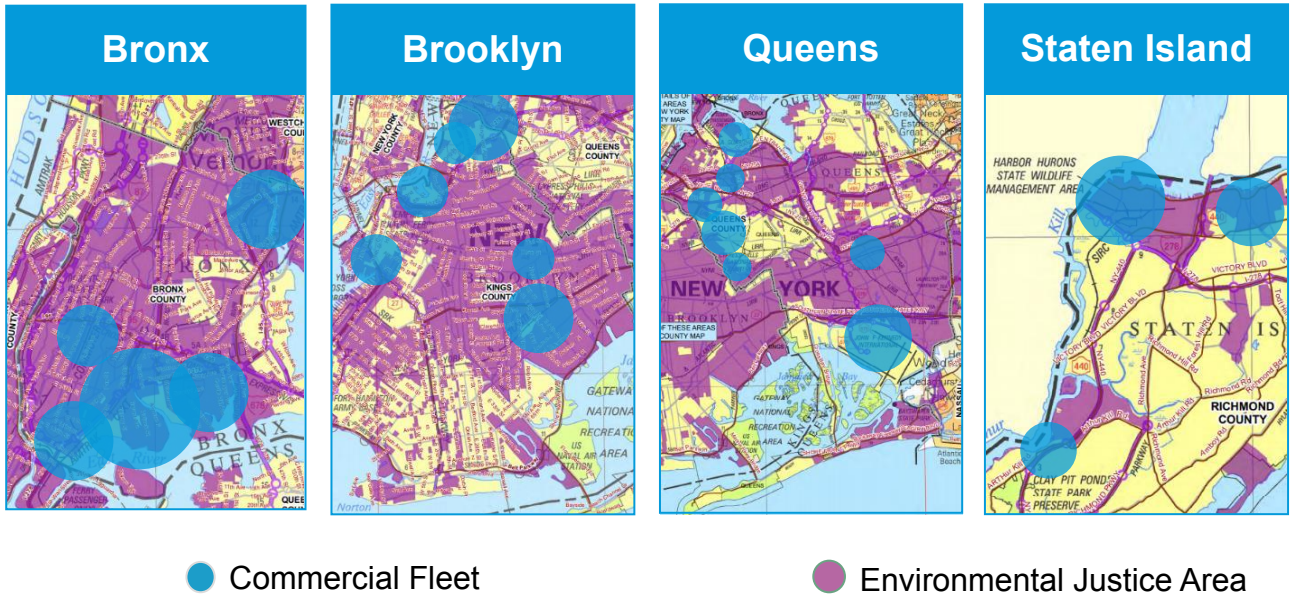
School bus

Drayage

General Problem: Meaningful electrification of MDHD will be necessary to meet policy goals and reduce localized pollution

Emissions by vehicle classification





Despite their relatively lesser usage – estimated at 4% of 21.7 billion vehicle miles traveled - MDHD vehicles contribute 15% of transportation-related GHG emissions

MDHD vehicles are concentrated in industrial areas that are coincident with higher levels of localized pollution, lower levels of health outcomes and higher levels of disadvantaged community populations

Key Obstacle: Smaller regional and local fleets face unique financial and non-financial barriers

	Geographic Scale	Fleet Age and Ownership	Operating Margins	Price Sensitivity	Fleet Logistical Sophistication	Corporate Goals
Tier 1	National	Generally newer and owned or self-managed	Medium to High	Large scale, balance sheets provide price leverage but also able to pay higher price	Highly sophisticated and generally operate integrated supply chain	Generally public stated with identified goals and funding
Tier 2	Regional or Local	Generally older and leased	Low	Highly price-sensitive with minimal leverage and limited ability to pay premium	Minimal sophistication and reactive and subject to business cycle vagaries	Generally undeveloped

Example Tier 1 Organizations

FedEx, amazon, pepsi, verizon, J.B. HUNT, XPOLogistics, Coca-Cola, Walmart

Example Tier 2 Organizations

BEST MOVERS NY, Z-A PRODUCE, anthony FLOWERS, MANHATTAN WHOLESALE NEW YORK est. 1985, MANHATTAN BEER DISTRIBUTORS, Gristedes, GREENCITY MOVERS

Benefits/Consequences: Failing to address Tier 2 electrification barriers will leave this important segment behind and impact GHG reduction goals

Economic Barriers

- Relationship between the fleet owner, operator, business(es) served can be complex
- Tier 2 fleets and the businesses they serve may lack incentives to electrify, such as corporate sustainability goals
- These smaller fleets may have less access to financing

Logistical and Operational Barriers

- Many Tier 2 fleets may not park at the businesses they serve
- Many Tier 2 fleets operate on the margin, including extending vehicle lifetime as long as possible, slowing vehicle turnover
- Without education and awareness, fleets lack an understanding of how to transition to electric

Goal: Develop a knowledge base to inform the development of policies and programs that will support and drive electrification of the Tier 2 segment

Challenge: Characterize NYC metro Tier 2 MDHD market and identify barriers, to aid in solution development

Regarding Mobility & Transportation, to achieve New York's Carbon & Equity goals, the most critical obstacle to overcome is **the lack of a knowledge base to inform the development of policies and programs that will support and drive electrification of the Tier 2 segment for medium- and heavy-duty vehicles.**

	Considerations	Challenge Questions
Equipment and locational barriers	Vehicles and geographies	• How do we consider fleet size and distribution, where they park and the businesses they serve that inform their operation needs?
Operational barriers	Routes and operating profile	• How do we draw some broad information about operations such as routes and miles traveled and how their operations vary, such as seasonally?
Economic and non-economic barriers	Ownership models and incentives	• How does the ownership model impact their ability and interest in electrification and their need for incentives to mitigate hard costs and soft barriers?