

ADVANCED CLEAN TRUCKS WORKSHOP: CREDIT POOLING CONCEPT

Perspectives of Section 177 States

November 28, 2023

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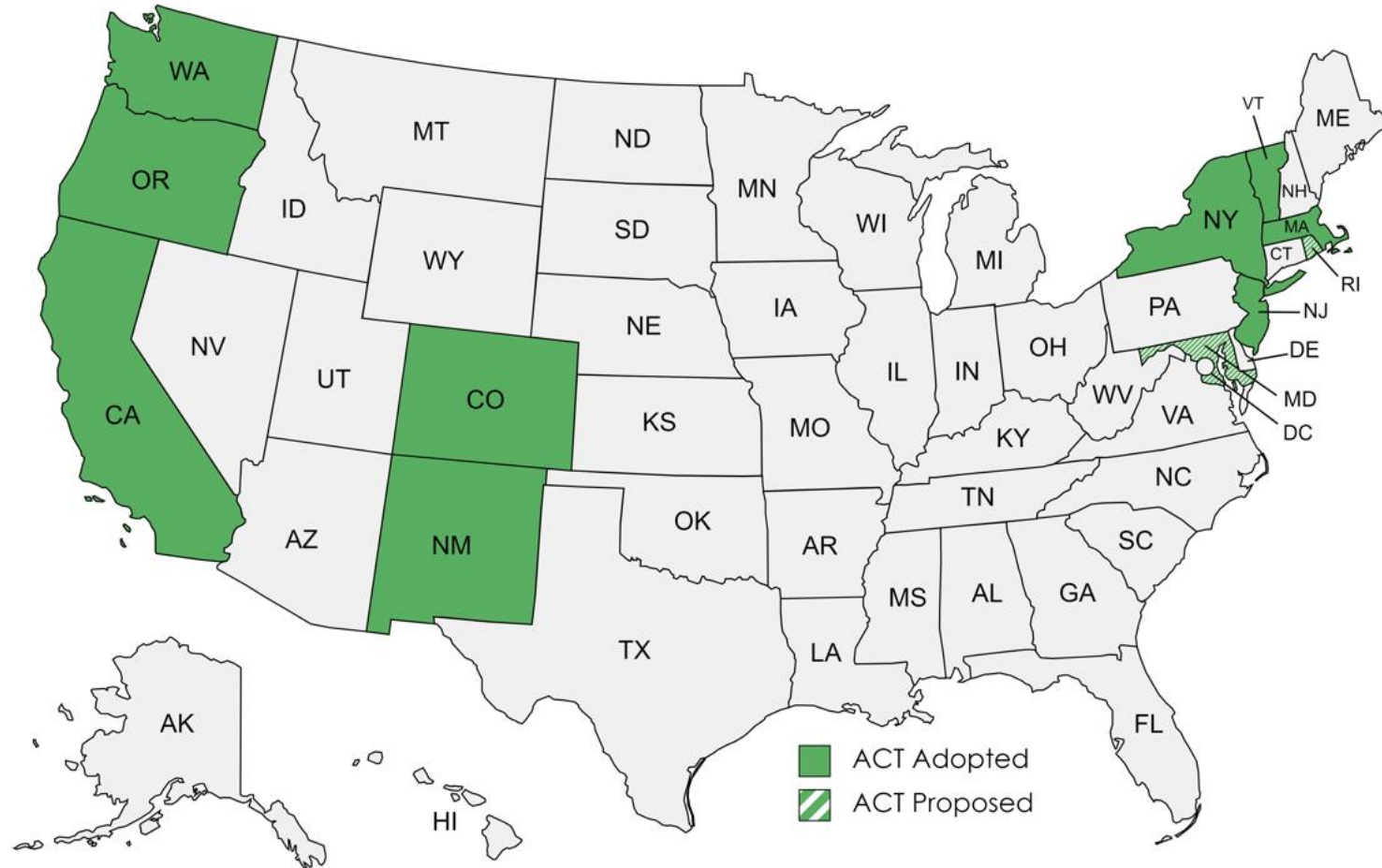
ACT Adoption in the U.S.

Implementation Model Year	States
2024	CA
2025	MA, NJ, NY, OR, WA
2026	VT
2027	CO, MD*, NM, RI*

* Proposed ACT

Collectively, these states represent 26.3% of total U.S. heavy-duty vehicle registrations.

**** Slide updated 11/28/23**



Reasons States Adopt the ACT Regulation

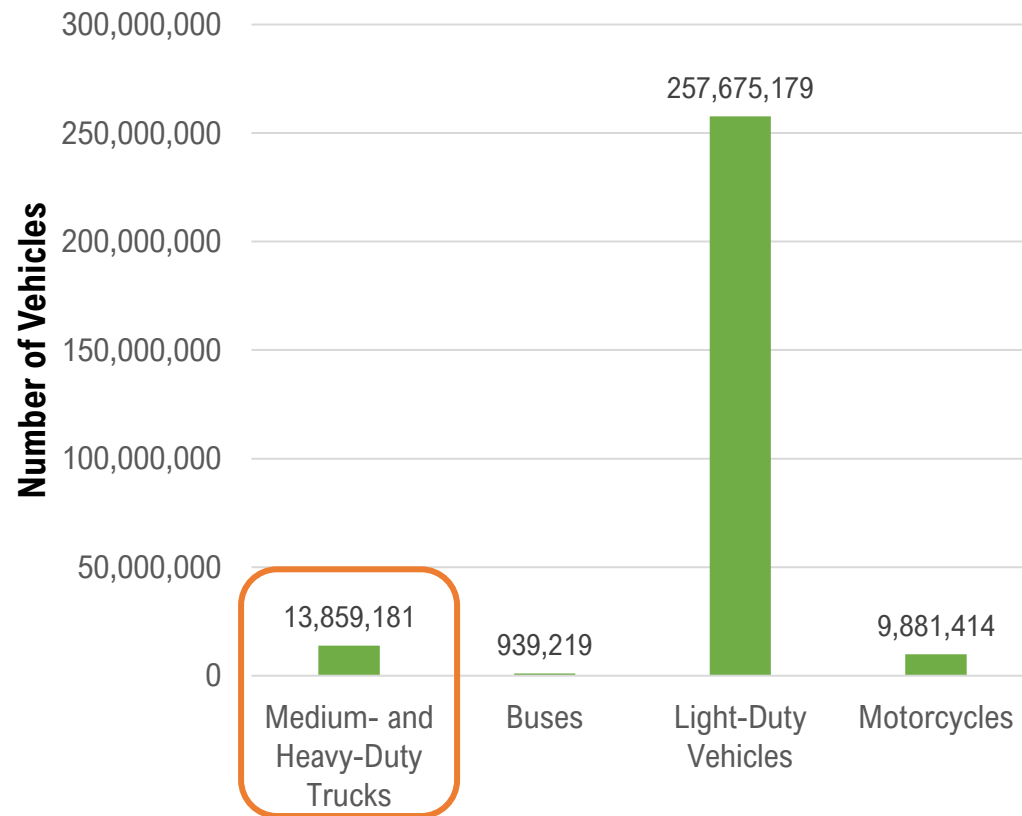
- **Improve air quality:** Major source of smog-forming pollutants, particulate matter, and air toxics that harm public health
- **Promote equity and justice:** Helps to address historical and current public health, economic, and social inequities
- **Mitigate climate change:** Transportation is the largest source of greenhouse gas (GHG) emissions in the U.S.
- **Provide regulatory certainty:** Sales requirements provide certainty needed to support effective planning and to spur public and private infrastructure investments
- **Generate economic growth:** Transitioning to ZEV attracts public and private investments and creates high-quality jobs
- **Enhance energy security and resilience:** Reduces reliance on foreign oil and insulates consumers from global market fluctuations



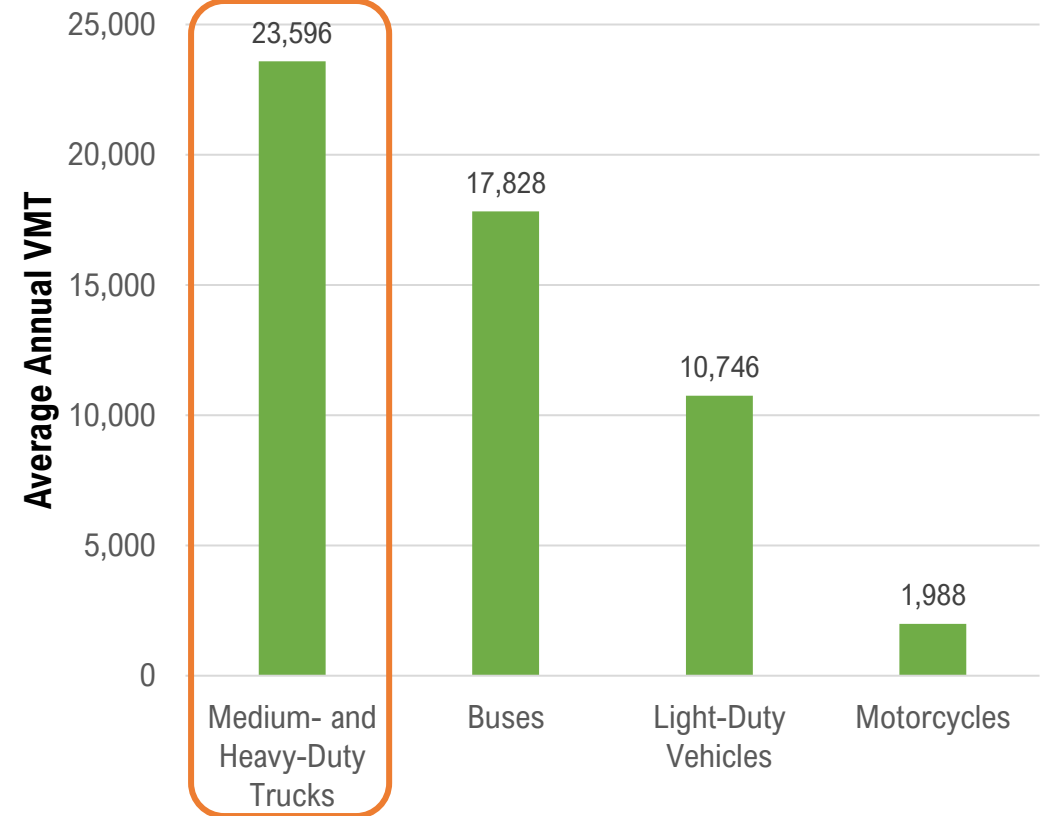
Volvo VNR ZEV Logistics Transport Truck

Oversized Impact of Medium- and Heavy-Duty Trucks

2021 U.S. On-Road Vehicle Registrations

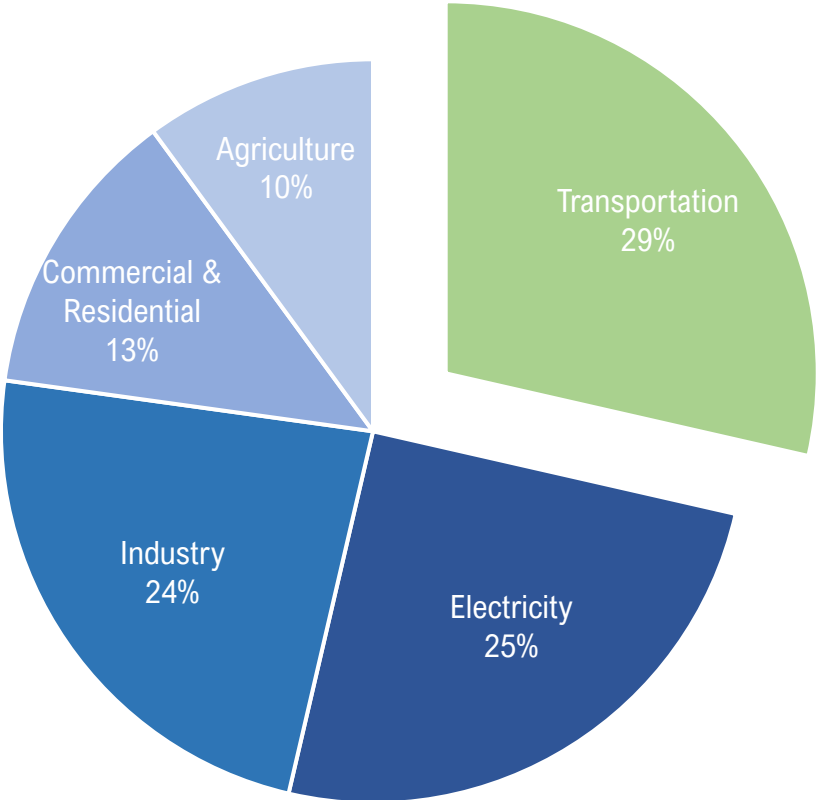


2021 U.S. On-Road Annual VMT by Vehicle Type

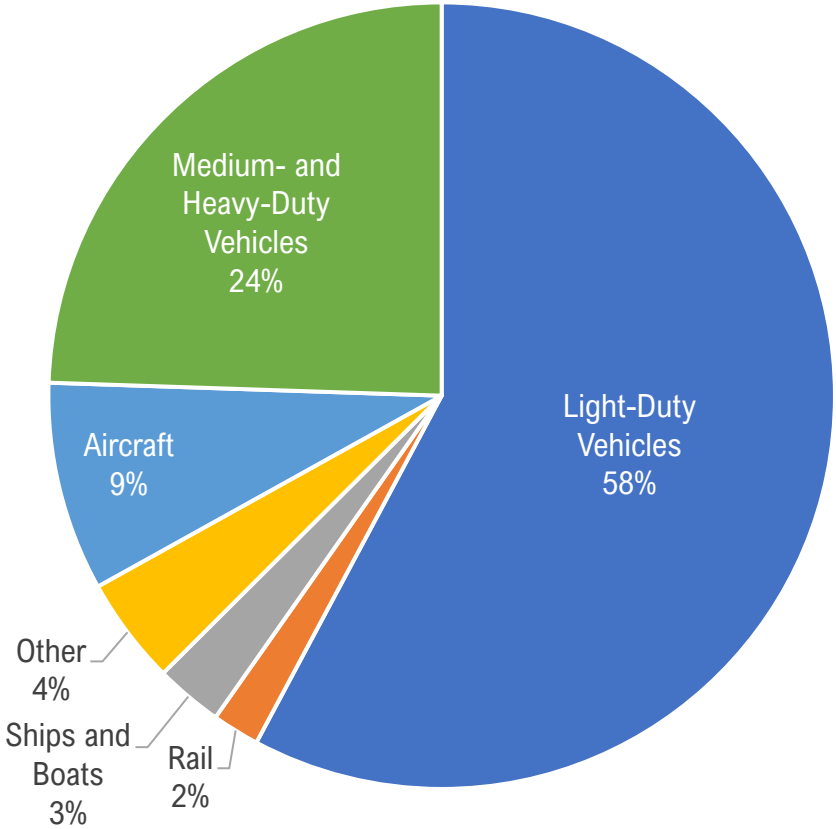


MHD Vehicles Are a Significant Source of Greenhouse Gas Emissions

2021 U.S. GHG Emissions by Sector

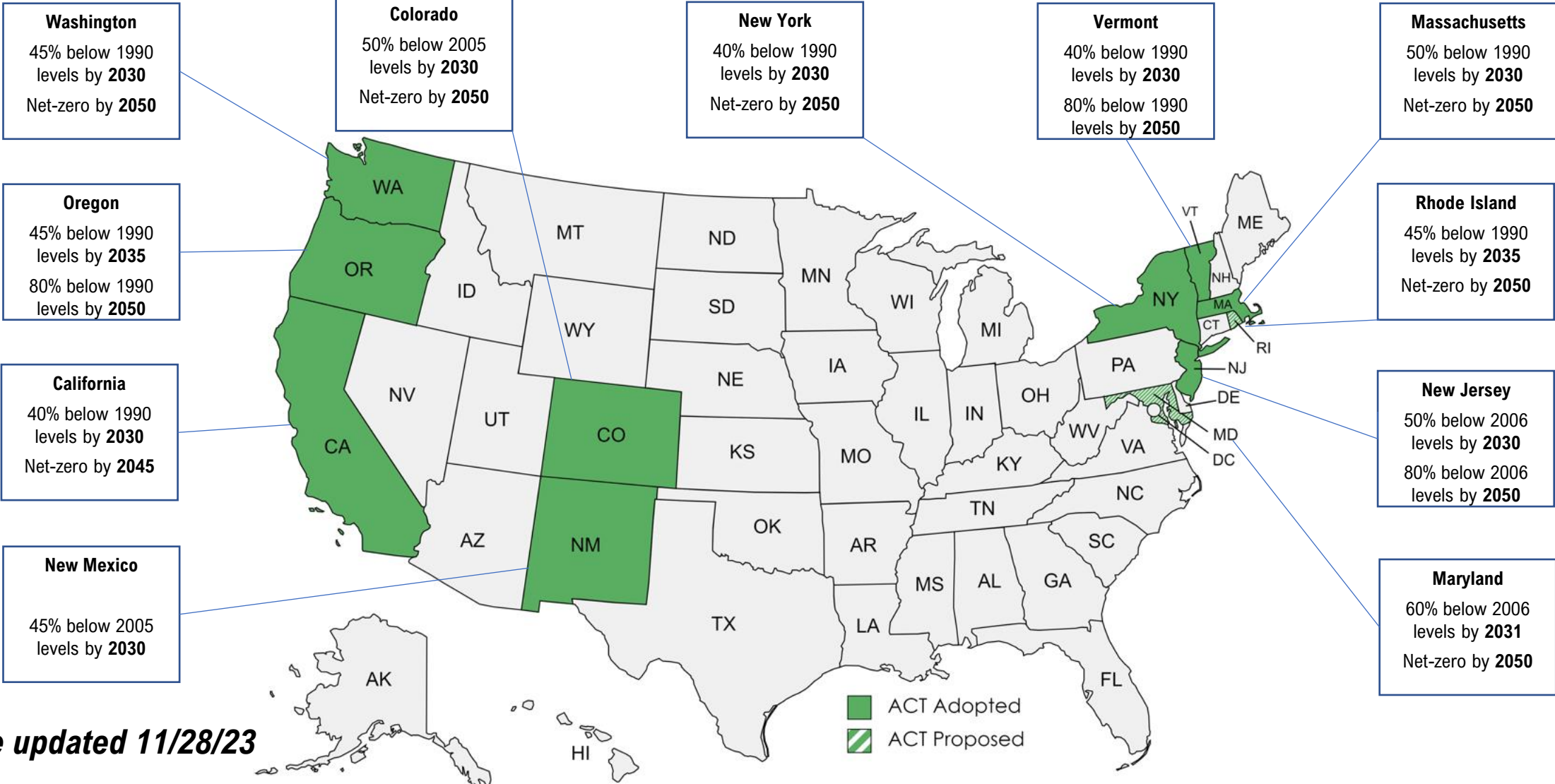


2021 U.S. Transportation GHGs by Source



Source: EPA (2023). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021. U.S. Environmental Protection Agency, EPA 430-R-23-002. <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021>.

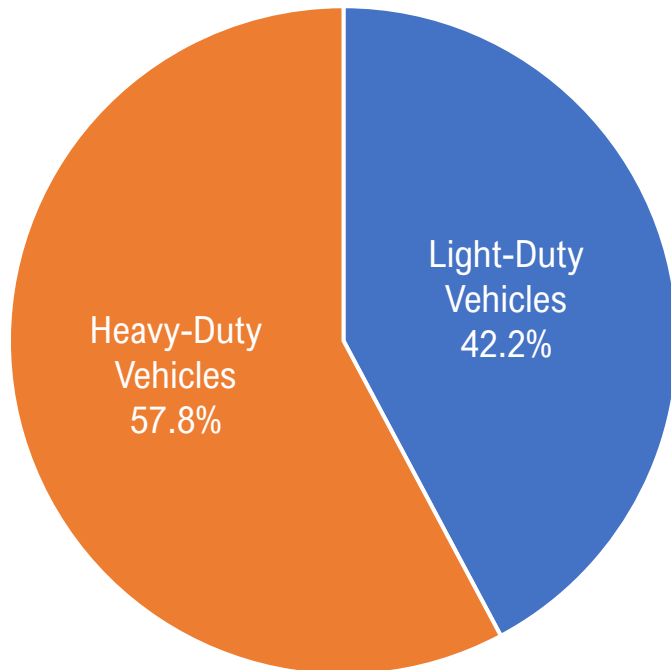
GHG Reduction Requirements and Targets in California and the Section 177 States



**** Slide updated 11/28/23**

MHD Vehicles Are a Significant Source of Criteria Pollutant Emissions

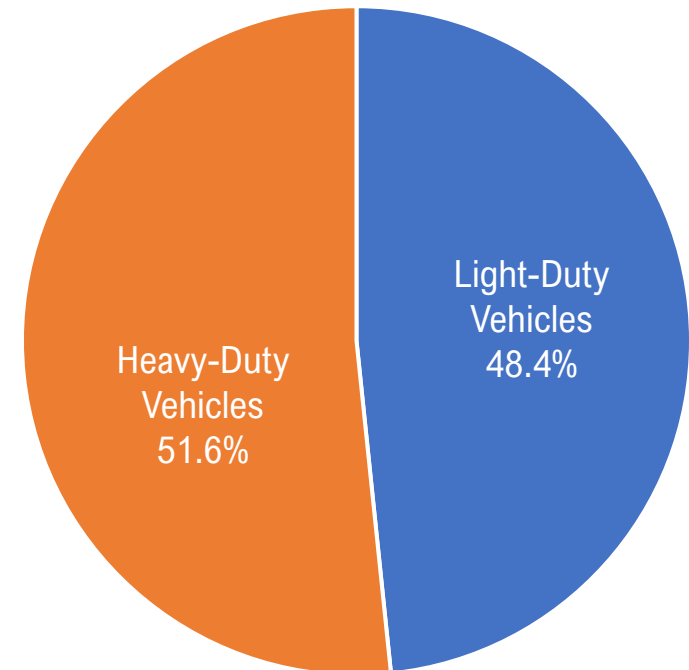
2020 U.S. On-Road NO_x Emissions



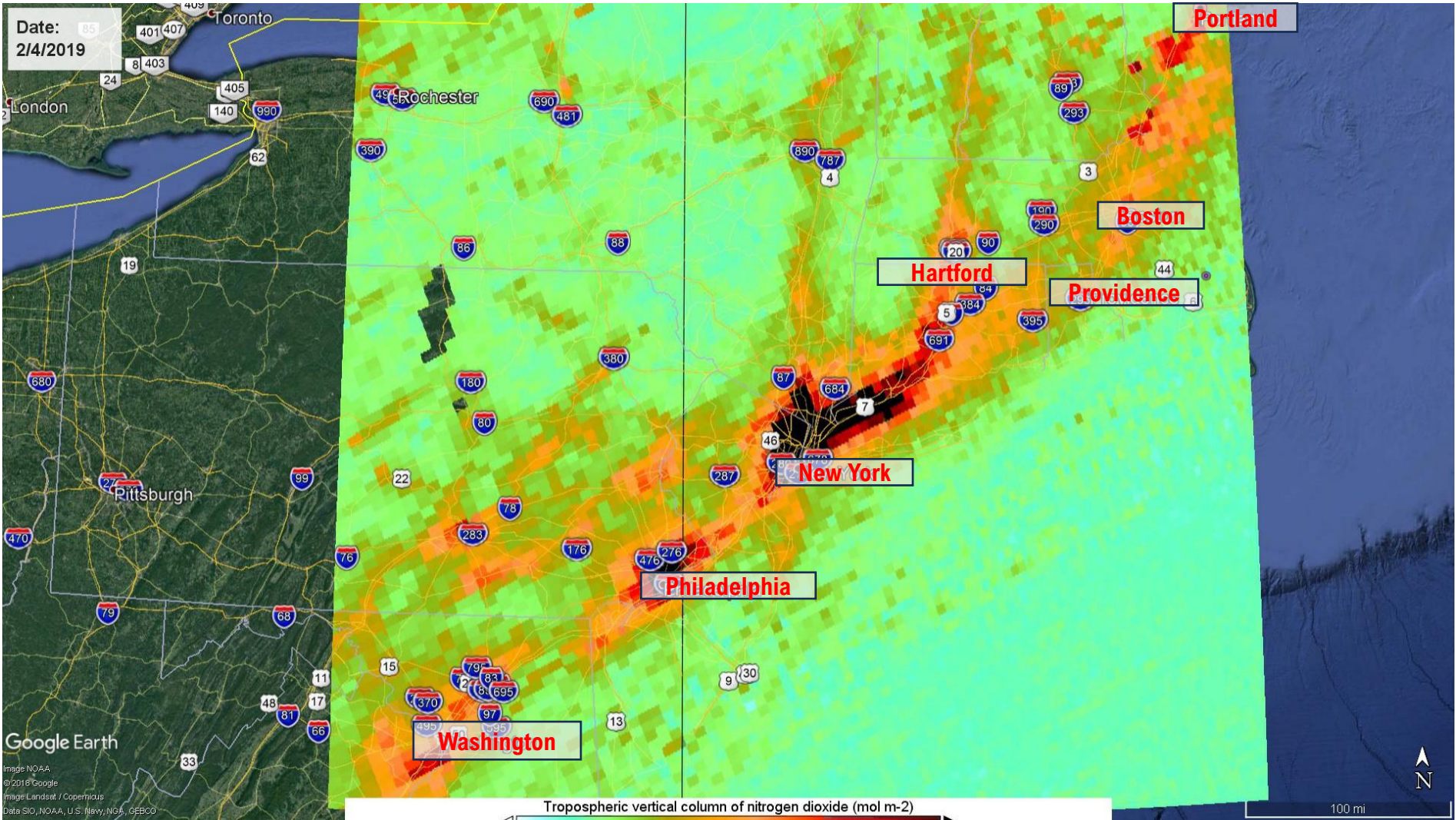
NO_x – smog-forming oxides of nitrogen emissions are a precursor to ground-level ozone

PM_{2.5} – particulate matter < 2.5 micrometers in diameter

2020 U.S. On-Road PM_{2.5} Emissions



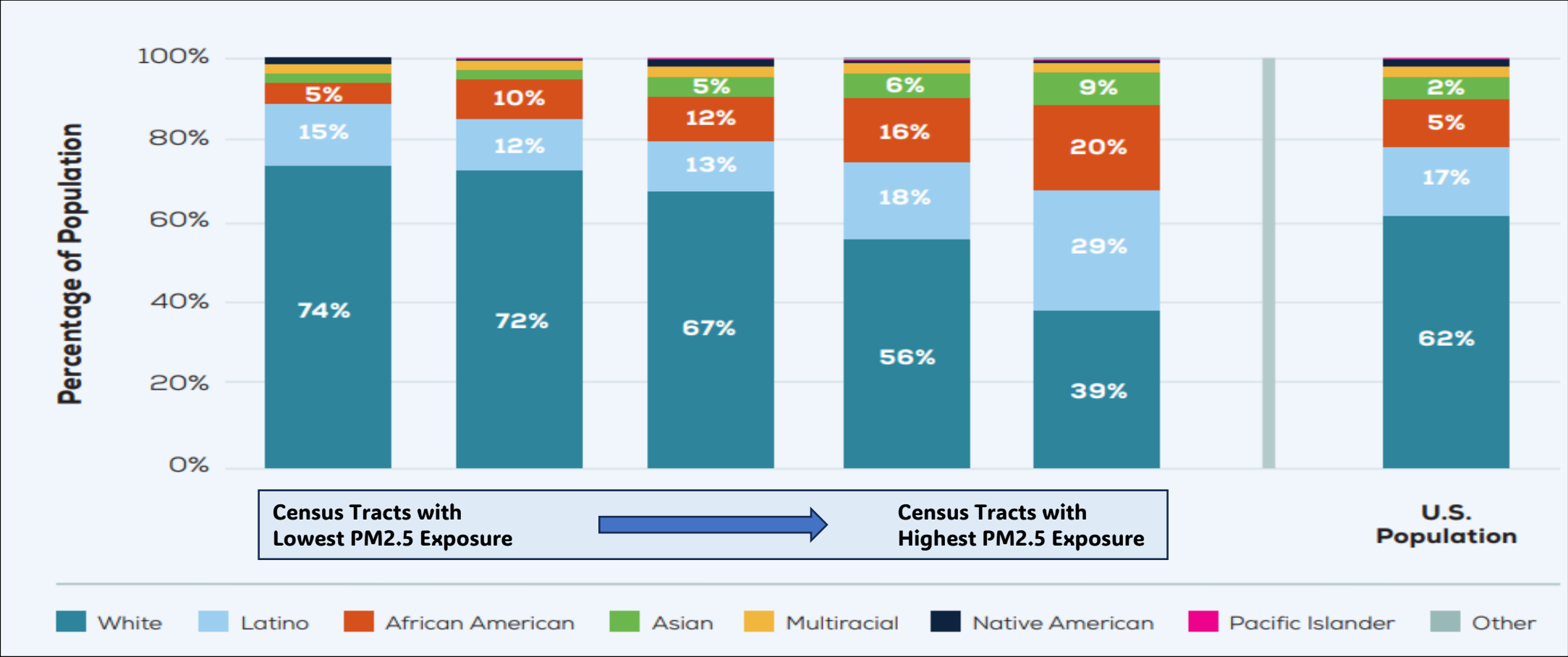
NO₂ in Winter – Transportation Dominates



Source: February 4, 2019, TropOMI NO₂ image.

Disproportionate Impacts on Frontline and Overburdened Communities

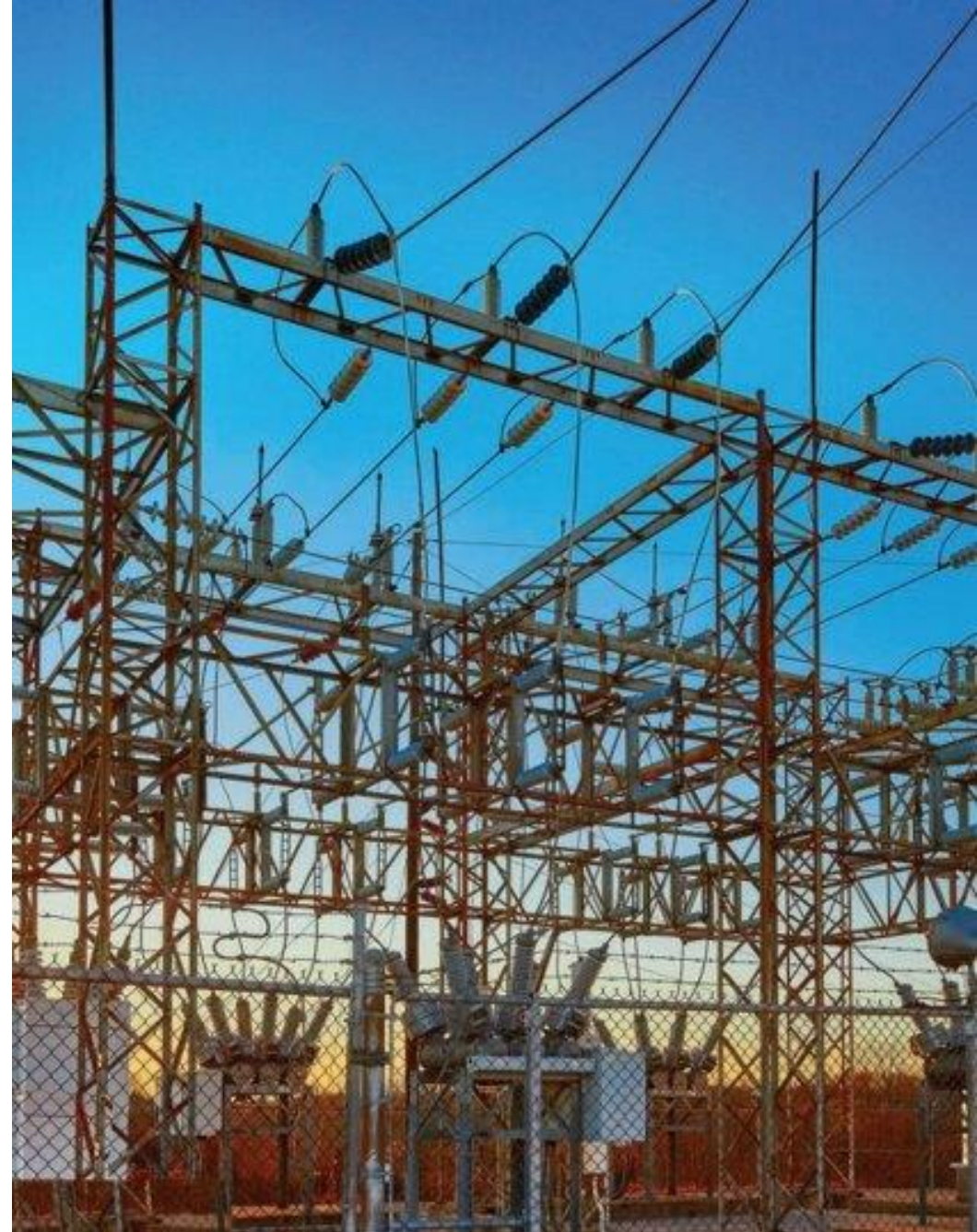
On-Road PM_{2.5} Pollution Exposure by Racial Demographic



Source: D. Reichmuth, Air Pollution from Cars, Trucks and Buses in the US: Everyone is Exposed, But the Burdens are not Equally Shared, Union of Concerned Scientists (Oct. 16, 2019), <https://blog.ucsusa.org/dave-reichmuth/air-pollution-from-cars-trucks-and-buses-in-the-u-s-everyone-is-exposed-but-the-burdens-are-not-equally-shared/>.

ZEV Sales Requirements Provide Regulatory Certainty

- Set a regulatory floor that ensures an increasing future supply of vehicles
- Create market certainty that is critical for industry, fleets, utilities, and state and local governments to effectively plan and manage the transition to MHD ZEVs
- Drive investments in zero-emission technologies and support the deployment of charging and fueling infrastructure



Concerns About Potential ACT Pooling

- Arresting/decelerating market development in the Section 177 states
- Slows needed reductions of criteria pollutants (e.g., NO_x and PM_{2.5})
 - Makes it more difficult to meet NAAQS and address localized impacts
 - Results in loss of public health benefits, especially in overburdened communities
 - Impedes state efforts to promote equity and justice
- Diminishes urgent need and state commitments and statutory requirements to reduce in-state GHG emissions
- Creates regulatory uncertainty
- Unclear how pooling would benefit the Section 177 states

Existing ACT Flexibilities

- Early action credits may be earned before regulation goes into effect (timing varies by state)
- Credits may be banked for future use
- Credits may be traded/sold between manufacturers
- NZEV credits may fulfill up to 50% of deficits
- Credits may be used interchangeably to meet non-tractor deficits
- Low tractor volume flexibility (≤ 25 tractor deficits) may use non-tractor credits to meet tractor deficits
- Deficits may be carried forward for one year (note: this is being changed to three years)
- Low volume exemption for manufacturers with < 500 average annual on-road vehicle sales

Thank you!

