Maryland
Department of
the Environment

Medium and Heavy Duty Trucks

An Emerging Area to Achieve Significant Emission Reductions

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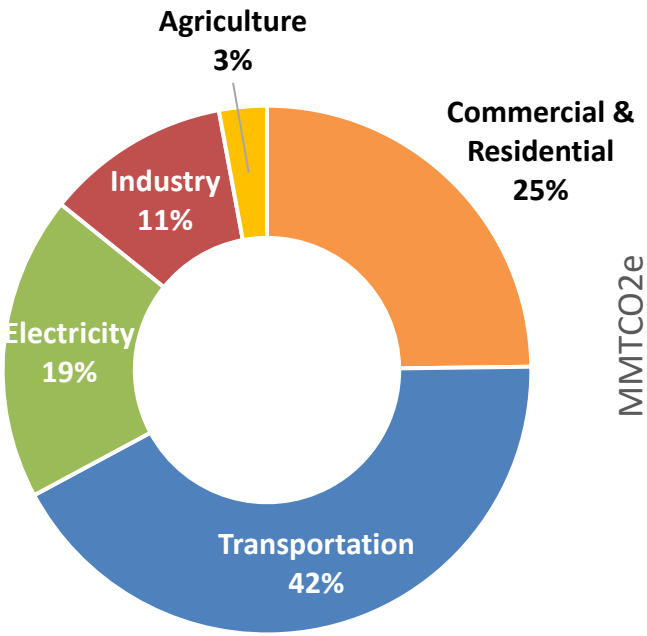
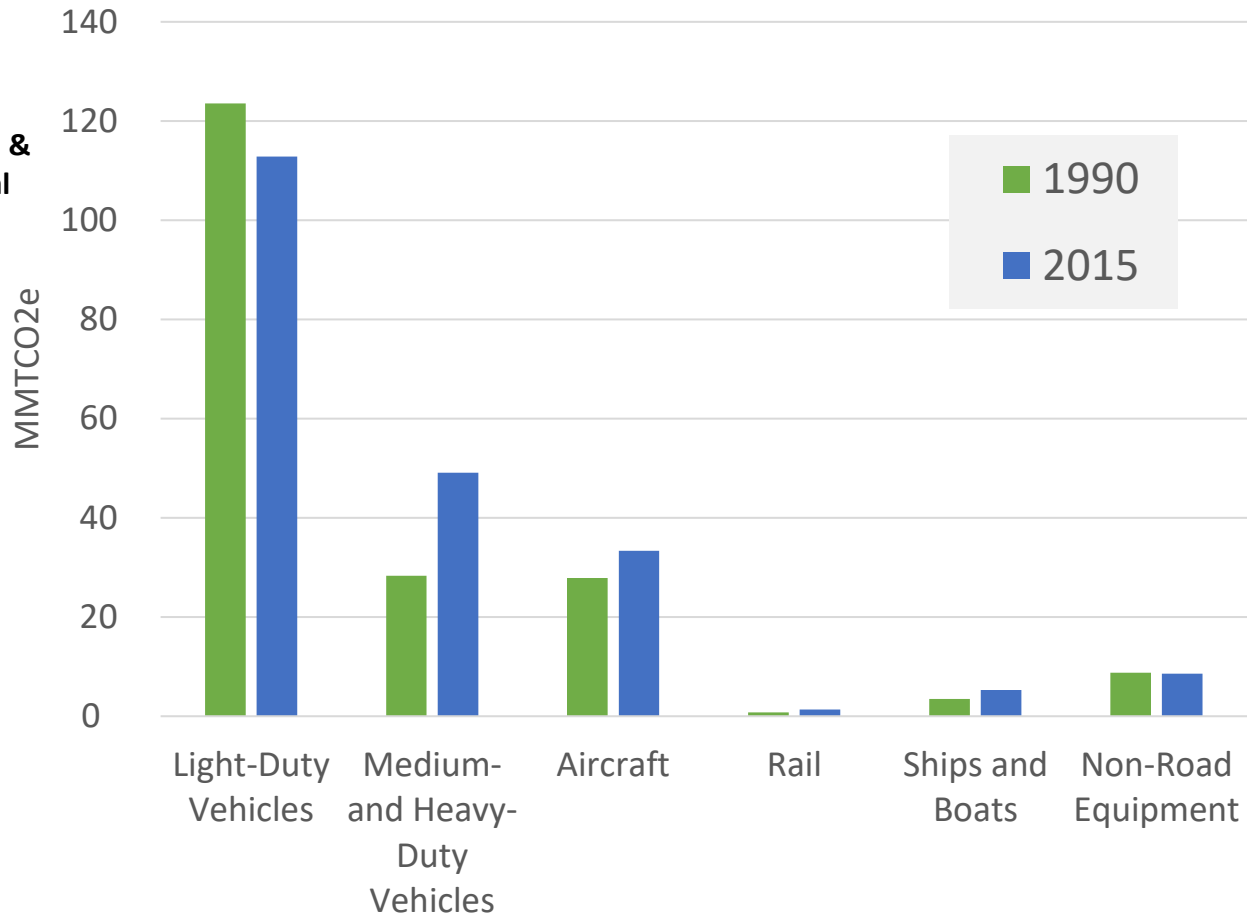
The Medium and Heavy Duty (MHD) Zero Emission Vehicle (ZEV) MOU

- Signed on July 14, 2020.
- Fifteen states and the District signed on (California, Colorado, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Vermont, Washington, Vermont, and D.C.).
- Builds off success of 2013 governors MOU and subsequent Action Plans for light-duty vehicles.
- Commits signatories to work together to foster a self-sustaining market for zero emission medium and heavy-duty vehicles.
- Calls for 30% of new truck and bus sales to be zero emission by 2030 and 100% by 2050.
- Emphasizes need to accelerate deployment of zero emission trucks and buses in disadvantaged communities.
- Regional and state specific Action Plans being developed, both due to be completed by end of the year.

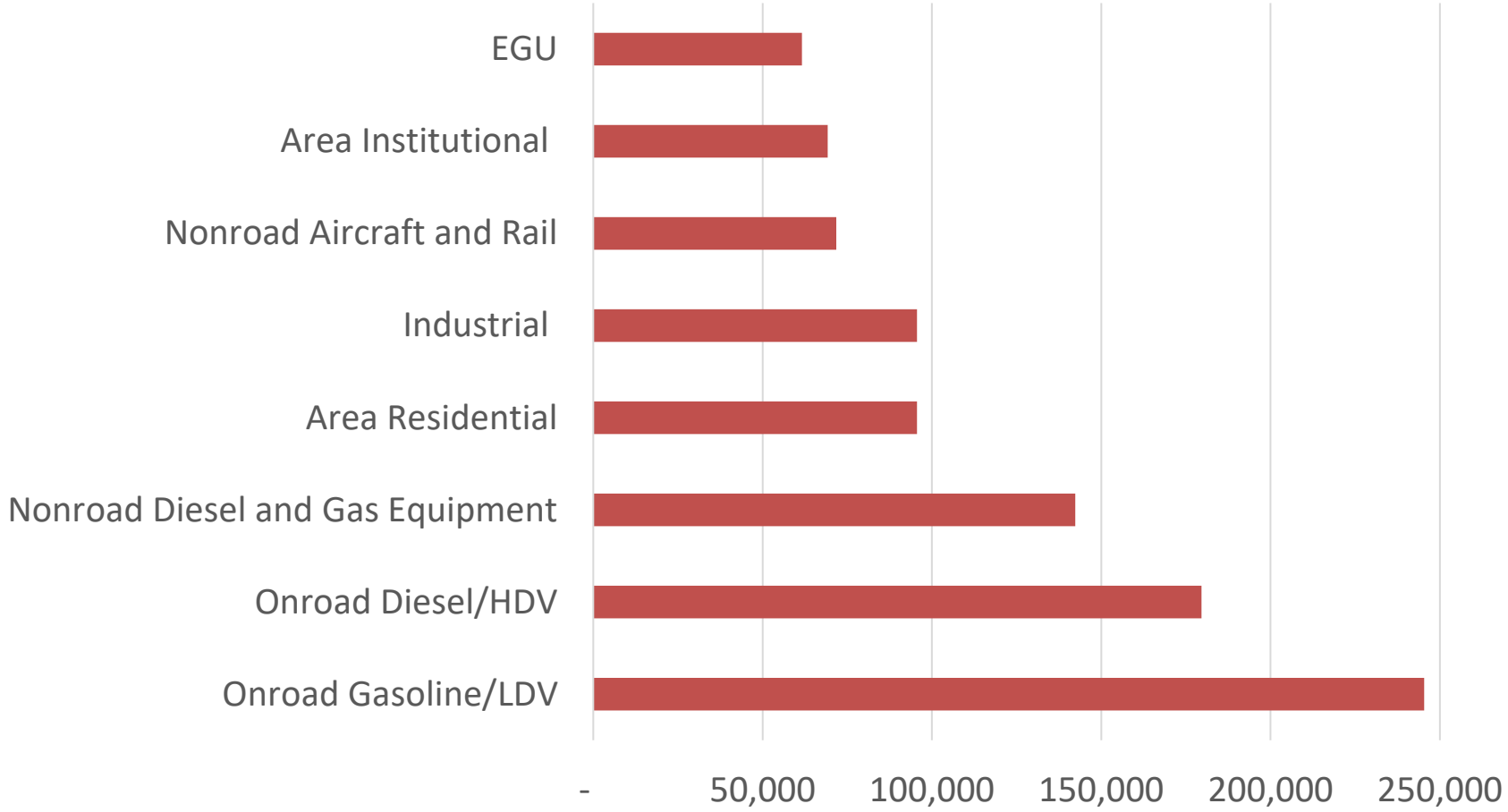
Greenhouse Gas Emission in the Northeast





Source: State Inventory Tool (2015 emissions)

2017 NOx Emissions (Tons) in Mid-Atlantic/Northeast



New Vehicle Emission Regulations

- All new vehicles (light, medium, and heavy-duty) have to meet emission certification standards set by either EPA or California Air Resources Board (CARB).
- California is the only state allowed to set their own new vehicle emission standards under the Clean Air Act (CAA).
- Section 177 of the CAA allows other states to adopt California's emission standards as long as they are identical.

Clean Car Program

- Applies to light-duty passenger cars and trucks.
- Requires that vehicles sold in Maryland be the cleanest allowed by law.
- Sets emission standards for criteria pollutants, GHG, and has a ZEV requirement as well.
- Using Section 177 of the CAA, Maryland adopted the Clean Car Program in 2007 through Incorporation by Reference, with enforcement beginning with the 2011 Model Year (MY).
- Regulations were updated in 2012 that reduced criteria pollutants, GHG, and increased ZEV requirements through the 2025MY.

California Medium/Heavy-Duty Regs

- CARB has more stringent emission regulations for MHD vehicles.
  - MDE did not adopt these regulations when adopting the light-duty regulations.
- CARB has recently developed regulations that seek to strengthen the emission requirements for MHD vehicles.
  - Vehicles with a GVWR over 8,500 lbs.
  - Class 2b – Class 8 vehicles.
- The Advanced Clean Truck Regulation requires a growing percentage of vehicles sold to be zero emission.
- The Heavy-Duty Omnibus Regulation reduces NOx emissions.

Medium/Heavy-Duty Trucks

TRUCK CLASSES

LIGHT DUTY

- Class 1: Truck GVWR from 0 to 6,000 pounds (0 to 2,722 kg).
- Class 2: Truck GVWR from 6,001 to 10,000 pounds (2,722 to 4,536 kg). Class 2 is subdivided into Class 2A and Class 2B, with Class 2A being 6,001 to 8,500 pounds (2,722 to 3,856 kg) pounds, and Class 2B being 8,501 to 10,000 pounds (3,856 to 4,536 kg) pounds
- Class 3: Truck GVWR from 10,001 to 14,000 pounds (4,536 to 6,350 kg)

MEDIUM DUTY

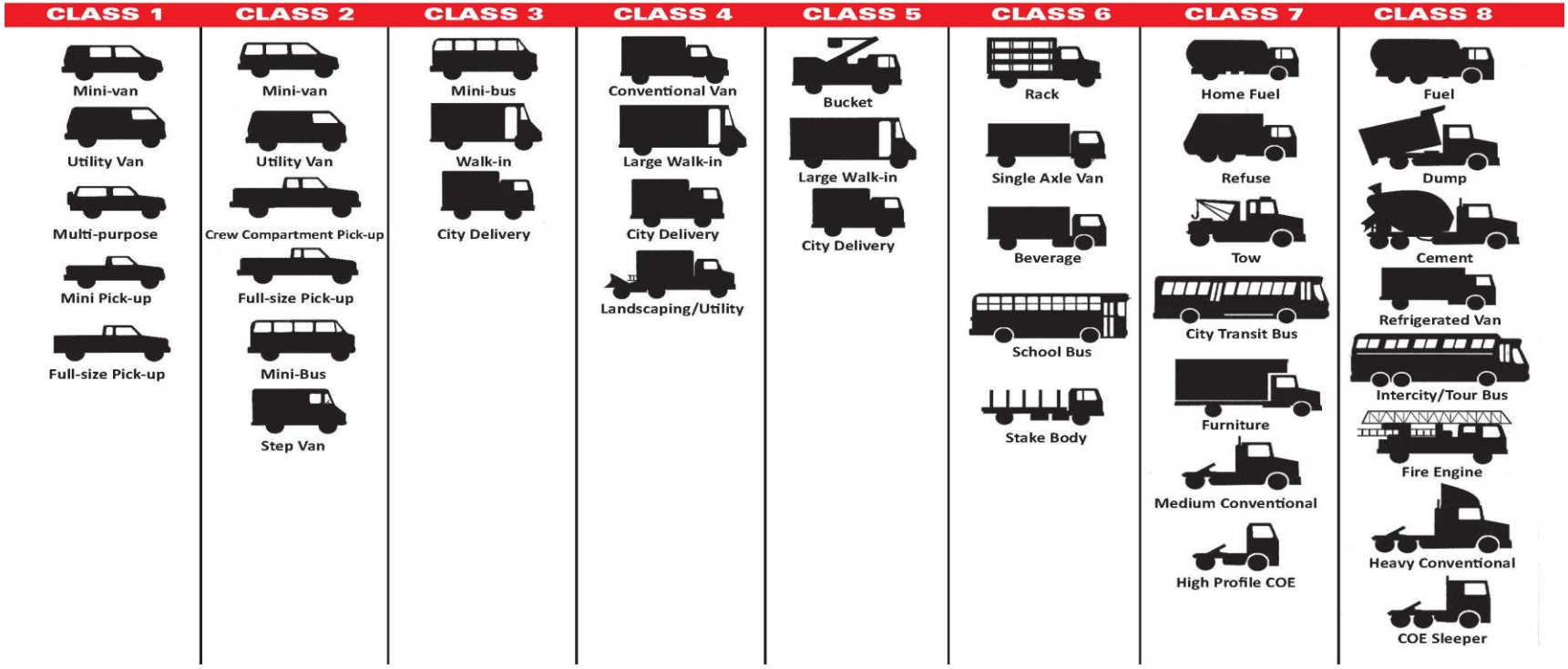
- Class 4: Truck GVWR from 14,001 to 16,000 pounds (6,351 to 7,257 kg).
- Class 5: Truck GVWR from 16,001 to 19,500 pounds (7,258 to 8,845 kg).
- Class 6: Truck GVWR from 19,501 to 26,000 pounds (8,846 to 11,793 kg).

HEAVY DUTY

- Class 7: Truck GVWR ranges from 26,001 to 33,000 pounds (11,794 to 14,969 kg).
- Class 8: Truck GVWR includes anything above 33,000 pounds (14,969 kg). These include all tractor trailer trucks.

Vehicles in Class 7 and above require a Class B CDL (Commercial Drivers License) to operate in the United States.

GVWR = gross vehicle weight rating



California Advanced Clean Truck Regulation (ACT)

- CARB has finalized regulations requiring a percentage of Medium and Heavy-Duty Trucks sold in California to be Zero Emission Vehicles (ZEV).
- ZEV sales are phased in beginning with the 2024MY and increase through 2035.
- Different Truck Classes have different ZEV sales percentage requirements.
  - Class 2b-3, begin at 5% and increase to 55% by 2035MY
  - Class 4-8, begin at 9% and increase to 75% by 2035MY
  - Class 7-8 tractors, begin at 5% and increase to 40% by 2032MY

ACT Regulation

- Similar credit banking system that light-duty manufacturers use to meet compliance.
- Regulations can be adopted through Incorporation by Reference, the same way light-duty regulations were adopted.

California Heavy-Duty Omnibus Regulation

- Heavy-Duty Omnibus Regulation focuses on NOx reductions.
  - Not yet finalized by CARB.
- Calls for a 90% reduction in tailpipe NOx reductions.
  - From 0.20 gNOx/bhp-hr to 0.02 gNOx/bhp-hr.
- CARB updating testing requirements to ensure real-world emissions better meet regulatory standards.
- Regulation will lengthen existing emission warranty periods to better reflect longevity and usage of modern trucks.
- Proposing a 75% reduction (to 0.05 gNOx/bhp-hr) for 2024-2026 with full reduction starting in 2027.

Advanced Clean Cars II

- Light-Duty vehicle regulations still early in the development by CARB.
- CARB is basing the regulations on California's E.O. from September 2020 requiring 100% light-duty ZEVs by 2035.
- CARB anticipates proposing rule late 2021.
- CARB Hearing in June 2022 with regulation starting for 2027MY.

Where is the Trucking Industry and other Private Sector Stakeholders on this Issue

- Trucking Industry is involved but cautious.
  - Increase vehicle costs
  - Infrastructure
  - Vehicle availability
- In November, MMTA sent a letter to Governor Hogan expressing concerns about the MHD ZEV MOU and TCI.
- Other industries are supportive but have similar concerns as trucking industry.
- Transitioning to a zero emission trucking fleet would require incentives much like light-duty vehicles receive, and investment in infrastructure.
  - Infrastructure costs for medium and heavy-duty vehicles will be greater than for light-duty ZEVs.

Private Sector Initiatives to support ZEVs

- Medium-Duty ZEVs being deployed by delivery companies:
  - Amazon plans to have 10,000 electric delivery vans from Rivian on the road by 2022, and 100,000 by 2030.
  - FedEx has announced that 50% of global vehicle purchases will be electric by 2025.
    - Aiming to transition to full Zero-Emission Vehicles by 2040.
  - UPS has ordered 10,000 electric delivery vans from EV maker Arrival to be deployed between 2022 and 2024, with an option for 10,000 more.
- Heavy-Duty trucks being developed by Tesla, Cummins, Volvo, etc.

Where Is EPA on this Issue?

- EPA is currently developing regulations to reduce NOx emissions from MHD trucks.
- EPA has been working with CARB on these regulations and will likely model their regulations after CARB's.
- Adopting California's emission standards will provide NOx benefits earlier than relying on EPA, and provides a backstop against future efforts by EPA to rollback emission standards.
- Environmental groups have been supportive of CARB and EPA's efforts on MHD vehicles and have urged states to support stronger emission standards.

Next Steps

- MHD ZEV MOU
  - Conduct webinars with stakeholders in Maryland
  - Participate in regional webinars
  - Work with NESCAUM, other states and stakeholders to develop Regional Action Plan
  - Work with Maryland stakeholders to develop Maryland Action Plan

- ACT and Omnibus
  - Continue to work with other states to monitor these programs
  - Continue outreach to stakeholders
  - Work with EPA on future federal regulations

- Clean Car
  - Continue to work with California and other states in the development of these regulations
  - Attend bi-weekly meetings with the 177 States
  - Continue outreach with OEMs (monthly meetings)
  - Continue talks with EPA

QUESTIONS?