



**KEY FACTS FOR
COMMUNITY MEMBERS**

UNDERSTANDING THE

GHG Standards for Heavy-Duty Vehicles Phase 3 Rule

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Moving Forward
Network 

Understanding the Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles – Phase 3 Rule

The US Environmental Protection Agency's (EPA) proposed **Phase 3 Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles ("GHG Phase 3")** attempts to curb greenhouse gas emissions from new heavy-duty vehicles.



This fact sheet introduces how the rule came to be, what activity it regulates, and the gaps it leaves in fully protecting environmental justice (EJ) communities.

The proposed GHG Phase 3 Rule is part of the EPA's Clean Trucks Plan, which includes two other rules (the Heavy-Duty Truck Rule and the proposed Multi-Pollutant Emissions Standards for Light-Duty and Medium-Duty Vehicles) that attempt to regulate health-harming pollutants like NO_x and particulate matter from heavy-duty trucks, as well as multiple emission types from medium-duty trucks.

As of September 2023, the EPA is reviewing public comment and has yet to finalize the proposed GHG Phase 3 rule.¹

DIESEL AND PUBLIC HEALTH:

What harms environmental justice (EJ) communities?

Environmental justice examines the disproportionate impacts of climate change and governmental policy on the physical condition of marginalized neighborhoods.² Diesel engines are an environmental justice issue. They are a prominent source of some of the most common air pollutants in the United States, posing direct threats to human health and the environment.³ Those in EJ communities disproportionately bear these harms:

1

People who live near freight hubs or “diesel death zones”—including ports, highways, warehouses, and rail and intermodal yards—are disproportionately exposed to high concentrations of pollution from the combined activity of diesel-fueled heavy-duty trucks, equipment, rail, and vessels.⁵

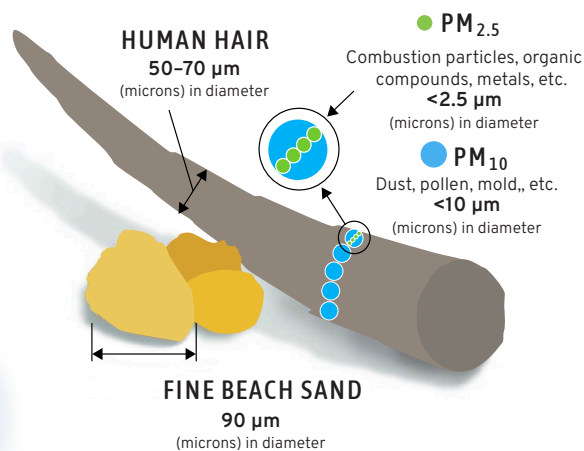
2

Low-income and overburdened communities are more likely to live in areas with higher levels of air pollution⁴ because of historical inequitable zoning practices

DIESEL AND PUBLIC HEALTH:

How Does Particulate Matter Affect Your Body?

COMPARISON OF HAIR, SAND AND PM_{2.5} & PM₁₀ PARTICLES



SOURCE: [A Critical Review on the Effect of Particulate Matter \(PM\) in Air on Public Health](#)

Brain

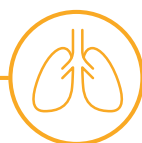


- Increased brain ischemia

Heart



- Altered cardiac autonomic function
- Oxidative stress
- Increased dysrhythmic susceptibility
- Altered cardiac repolarization



Lungs

- Inflammation
- Oxidative stress
- Accelerated progression and exacerbation of COPD
- Increased respiratory symptoms
- Effected pulmonary reflexes
- Reduced lung function

Blood



- Altered Rheology
- Increased coagulability
- Translocated particles
- Peripheral thrombosis
- Reduced oxygen saturation



Vasculature

- Atherosclerosis, accelerated progression and destabilization of plaques
- Endothelial dysfunction
- Vasoconstriction and hypertension

Source: "[Summary Report of the Aphekom Project 2008-2011.](#)"

DIESEL AND PUBLIC HEALTH:

Common Types of Pollutants

Some common pollutants in the United States include NO_x and particulate matter.

PM

Particulate matter (PM) is made of solids and liquids that are small enough to inhale. Once in your body, particulate matter can enter your lungs and bloodstream, causing health issues such as asthma, heart attacks, and even death for people with pre-existing heart and lung illnesses.⁶

NO_x

NO_x is the collective term for nitrogen monoxide and nitrogen dioxide. Long-term exposure to high levels of NO_x can lead to diseases like bronchitis, worsen the impact of heart disease, and contribute to premature deaths.⁷

GREENHOUSE GASES

Greenhouse gases, primarily CO₂, speed up the rate of climate change by trapping heat in the atmosphere. In the United States, the communities that are most vulnerable to heat-related health impacts are Black and Hispanic communities.¹⁰

HC

Hydrocarbons (HC) are another pollutant that, when mixed with NO_x, create ground-level ozone that can cause long-term lung damage.⁸

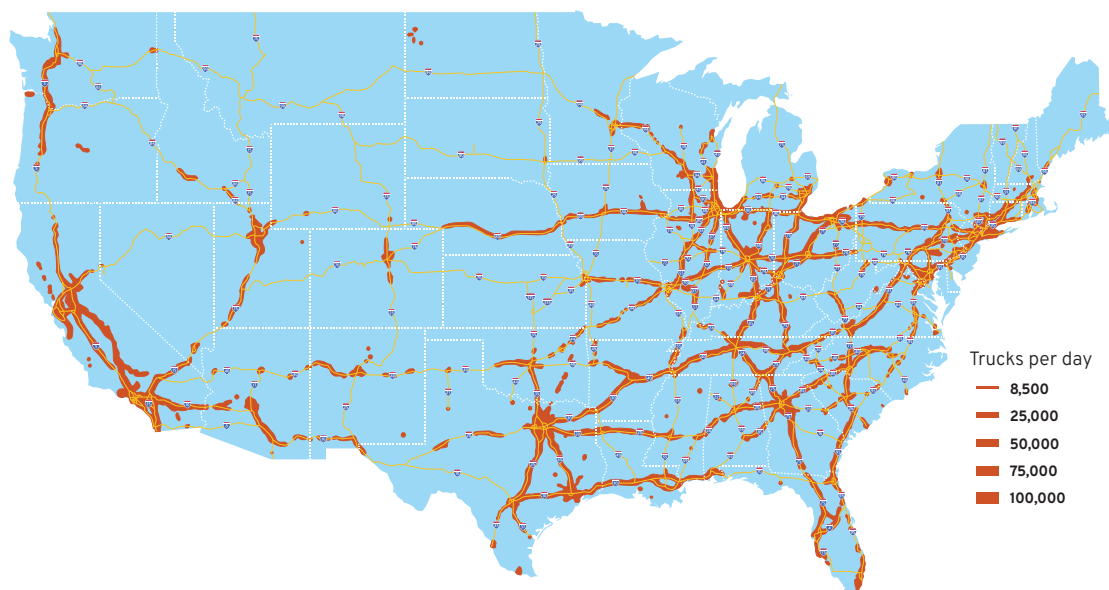
CO

Carbon monoxide (CO) can poison and kill humans when inhaled.⁹

WHY DO WE NEED THE GHG PHASE 3 RULE?

Medium and heavy-duty trucks are a major source of NO_x and particulate matter emitted by the transportation sector: while only 10% of vehicles on the road are medium and heavy-duty vehicles, 45% of NO_x and 56% of PM_{2.5} (the smallest, most hazardous type of particulate matter¹¹) originate from these vehicles.¹² These emissions worsen community air quality, contributing to increased rates of diseases like asthma and lung cancer within communities near major transportation routes.¹³

Trucking Routes Across the US Carrying 8,500 or More Trucks per Day



Source: American Lung Association. "[Delivering Clean Air: Health Benefits of Zero-Emission Trucks.](#)"

The transportation sector is the largest contributor to man-made greenhouse gas emissions in America.¹⁴ Medium and heavy-duty trucks produce a disproportionate share of this pollution: they make up 10% of on-road vehicles but produce 28% of greenhouse gases emitted from among on-road vehicles.¹⁵

Decreasing the level of pollution allowed by new medium- and heavy-duty trucks on the road can help improve air quality, support community health, and lessen the speed of climate change.

WHO HAS DECISION-MAKING POWER OVER THE GHG PHASE 3 RULE?



The EPA sets nationwide standards to protect and improve air quality, as directed by the Clean Air Act. One way that the EPA does this is through setting emissions standards for vehicles.¹⁶



The President often sets the agenda and direction for the EPA by issuing Executive Orders, as President Biden did with the Justice40 Initiative.

Who Decides?

While regulations on air quality are often drafted and implemented by the US Environmental Protection Agency (EPA), multiple elected officials and governmental bodies hold decision-making power and influence over the final version of the EPA's regulations.



Congress has the power to overturn EPA rules that have recently been finalized.¹⁷ For Congress to officially block new rules, the President must approve the Congressional block.¹⁸



The Office of Management and Budget (OMB) establishes how government agencies, including the EPA, should draft and implement "significant" regulations.¹⁹



WHAT ACTIVITY IS REGULATED BY THE GHG PHASE 3 RULE?

















The GHG Phase 3 rule revises and establishes the amount of CO₂ emissions permitted by heavy-duty vehicles manufactured in model year 2027 and later. These standards differ by **vehicle type** and increase over time. While these standards are more stringent than current EPA regulations, they still fall short of guaranteeing the full protection of EJ communities.

Vehicle Type

The GHG Phase 3 rule regulates heavy-duty vehicles by creating vehicle sub-categories determined by weight and use. For the most part, vehicles in higher weight classes produce more emissions of NO_x, particulate matter, and greenhouse gases per mile than vehicles in lower weight classes.²⁰



TYPES OF VEHICLES REGULATED BY THE GHG PHASE 3 RULE

	Vocational	Tractor Truck
LHD Light heavy-duty	 WALK-IN  BOX TRUCK  CITY DELIVERY  HEAVY DUTY PICKUP	N/A
MHD Medium heavy-duty	 BEVERAGE TRUCK  SINGLE-AXLE  SCHOOL BUS  RACK TRUCK  REFUSE  FURNITURE  CITY TRANSIT BUS	 TRUCK TRACTOR
HHD Heavy heavy-duty	 CEMENT TRUCK  DUMP TRUCK	 SLEEPER  TRUCK TRACTOR

Source: [How Much Does a Semi Truck Weigh? A Comprehensive Overview](#)

WHAT ACTIVITY IS REGULATED BY THE GHG PHASE 3 RULE?

Establishing Emissions Levels and Timeframe

The GHG Phase 3 rule regulates the emissions from engines, not the technology used in engines. However, the EPA used estimates on how many truck owners will buy zero-emissions vehicles over time (“ZEV adoption rate”) to inform their proposed standards on CO₂ emissions.²¹

The EPA notes that their estimates for ZEV adoption are conservative because they could not account for the full impact of the Inflation Reduction Act on the use of ZEVs.²² This means that **their CO₂ emissions guidelines are likely lower than the actual reduction in emissions that the US can achieve.**

PROJECTED ZEV ADOPTION RATES FOR MY 2027–2032 TECHNOLOGY PACKAGES

Regulatory Subcategory	MY 2027 (%)	MY 2028 (%)	MY 2029 (%)	MY 2030 (%)	MY 2031 (%)	MY 2032 (%)
LHD Vocational	22	28	34	39	45	57
MHD Vocational	19	21	24	27	30	35
HHD Vocational	16	18	19	30	33	40
MHD All Cab and HHD Day Cab Tractors	10	12	15	20	30	34
Sleeper Cab Tractors	0	0	0	10	20	25
Heavy Haul Tractors	0	0	0	11	12	15

Source: Federal Register/Vol. 88, No. 81/Thursday, April 27, 2023/Proposed Rules, p. 25992

How will the EPA ensure compliance?

The rule specifies how manufacturers should test and report the performance of their stock to the EPA. The EPA can fine manufacturers for selling trucks that do not meet the emissions requirements stated in the rule.²³



WHAT SHOULD EJ COMMUNITIES KEEP IN MIND?

How are the dirtiest vehicles regulated?

- ✓ The GHG Phase 3 rule does not mandate the sale or use of zero-emission trucks, leaving it **weaker than standards already approved by 11 states** through the Advanced Clean Truck rule. In these states, 40% of new tractor trucks sold will be zero-emissions trucks as early as 2032. Meanwhile, the EPA's standards are based on estimates of only 15%-34% take-up in 2032.
- ✓ The rule does not target drayage trucks—the oldest, dirtiest heavy-duty trucks that service ports or railyards. Roughly 5% of trucks active in the United States in 2021—which translates to hundreds of thousands of vehicles—were 18 years old or older.²⁴ By not addressing pollution from trucks already on the road, **the rule leaves EJ communities vulnerable to existing pollution from heavy-duty trucks.**

How did the EPA calculate the new emissions standards?

- ✓ Due to the conservative and round-about processes used to calculate ZEV adoption rates, the rule does not reflect the full level of CO2 reductions that the United States can achieve through heavy-duty trucks.
- ✓ Because the regulation is technology-neutral, EPA's CO2 standards will not guarantee the sales of zero-emission trucks.
- ✓ While President Biden and the EPA acknowledge the negative health impacts of multiple emissions types in overburdened communities, the EPA did not consider how its proposed rules would address the disproportionate impact of truck emissions on EJ communities.²⁵

How can we ensure that EJ communities benefit from truck regulations?

- ✓ The Moving Forward Network demands zero emissions throughout the freight transportation system. The coalition mobilizes grassroots efforts to advocate for policies that require all new trucks are zero emission by 2035 and retire all diesel trucks before 2045.

ENDNOTES

- 1 <https://www.epa.gov/regulations-emissions-vehicles-and-engines/proposed-rule-greenhouse-gas-emissions-standards-heavy>
- 2 <https://www.liebertpub.com/doi/10.1089/env.2021.0075>
- 3 <https://www.ucsusa.org/resources/diesel-engines-public-health>
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- 19 <https://www.federalregister.gov/documents/2007/01/25/E7-1066/final-bulletin-for-agency-good-guidance-practices>
- 20 US EPA, "Average In-Use Emissions from Heavy-Duty Trucks"
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