



**KEY FACTS FOR
COMMUNITY MEMBERS**

UNDERSTANDING THE

Heavy-Duty Omnibus Regulation

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Moving Forward
Network 

Understanding the Heavy-Duty Omnibus Regulation

The **Heavy-Duty Engine and Vehicle Omnibus Regulation (Heavy-Duty Omnibus or HDO)** attempts to curb health-harming pollution from heavy-duty trucks starting in model year 2024. This fact sheet introduces how the rule came to be, what activity it regulates, and the recently proposed changes to the regulation that may leave gaps in fully protecting EJ communities.



The Heavy-Duty Omnibus is a California-based regulation first adopted by the state in September 2021.¹ In August 2023, the California Air Resources Board—the entity responsible for drafting new truck rules for the state—proposed changes to the regulation to give more flexibility to truck manufacturers.²

As of October 2023, the state has not yet finalized the proposed standards.³

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.⁴ 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.⁵ 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.⁷

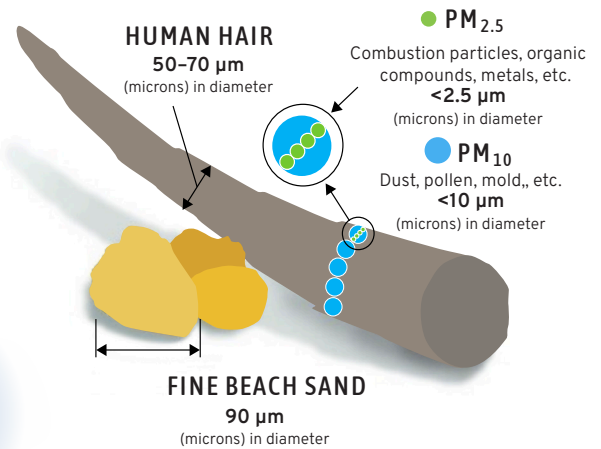
2

Low-income and overburdened communities are more likely to live in areas with higher levels of air pollution⁶ 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



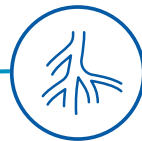
Lungs

- 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.⁸

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.⁹

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.¹²

HC

Hydrocarbons (HC) are another pollutant that, when mixed with NO_x, create ground-level ozone that can cause long-term lung damage.¹⁰

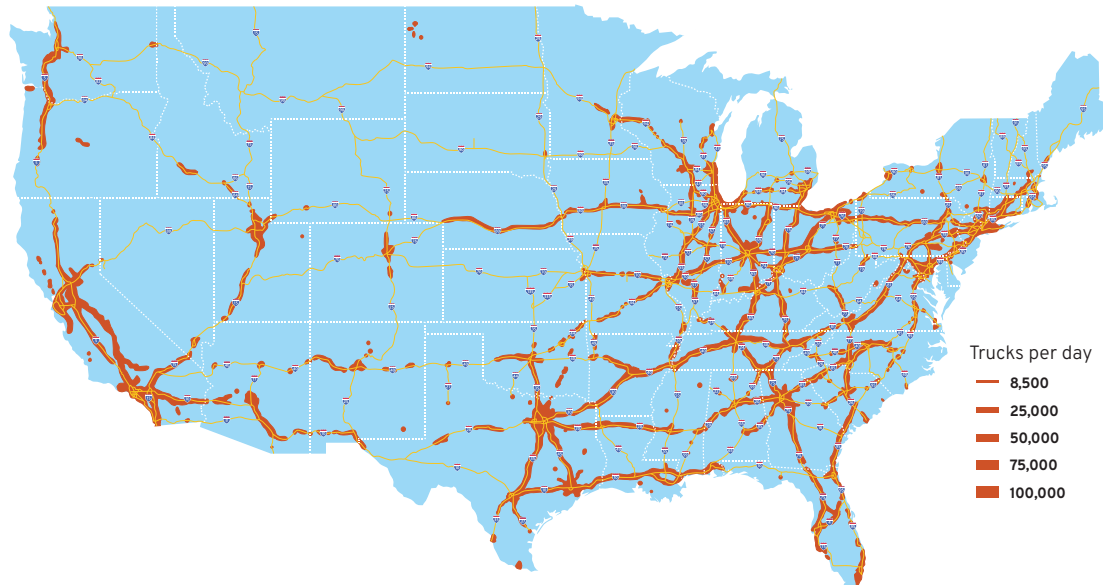
CO

Carbon monoxide (CO) can poison and kill humans when inhaled.¹¹

WHY DO WE NEED THE HEAVY-DUTY OMNIBUS REGULATION?

Medium and heavy-duty trucks are a major source of NOx and particulate matter emitted by the transportation sector: while only 10% of vehicles on the road are medium and heavy-duty vehicles, 45% of NOx and 56% of PM2.5 (the smallest, most hazardous type of particulate matter¹³) originate from these vehicles.¹⁴ These emissions worsen community air quality, contributing to increased rates of diseases like asthma and lung cancer within communities near major transportation routes.¹⁵

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.](#)"

Heavy-duty trucks are a major source of NOx and particulate matter emitted by the transportation sector.¹⁶ These emissions worsen community air quality, contributing to increased rates of diseases like asthma and lung cancer within communities near major transportation routes.¹⁷

Communities near ports, warehouses, and other major shipping facilities are particularly susceptible to the pollution emitted by heavy-duty trucks while idling or operating in start-and-stop traffic. This is because current emissions standards do not comprehensively regulate emissions during these driving conditions.¹⁸

Regulations that decrease the level of NOx and PM emissions over a wider range of truck operating conditions can help improve air quality, support community health, and lessen the speed of climate change. The Heavy-Duty Omnibus regulation is a California-based state action that aims to do so in a way that is stronger than current federal regulations recently passed in the Heavy-Duty Truck Rule. However, the full impact of the regulation depends on the result of upcoming modifications to the regulation.

WHO PASSES THE HEAVY-DUTY OMNIBUS REGULATION?

States are responsible for passing the Advanced Clean Fleets Rule.

However, the federal Clean Air Act limits states' ability to adopt their own truck standards. Instead, the Clean Air Act allows California to adopt emission standards that are stricter than federal emission standards because of its long history of regulating cars and trucks due to significant statewide air pollution issues. Once the US Environmental Protection Agency (EPA) approves those California standards, other states can choose whether to adopt the stronger California standards.

What is regulated by the Heavy-Duty Omnibus, and what may be changed by the proposed amendment?

Complimentary Rule to the CA Advanced Clean Truck Rule. While ACT seeks to put new electric trucks on the road, this rule seeks to clean up the remaining diesel trucks on the road.

- 1 Strengthens standards for NOx and PM.** The initial Omnibus regulation set stricter emissions standards for NOx and PM, including that NOx standards were 75 percent below previous requirements beginning in 2024 and 90 percent below previous requirements in 2027.¹⁹ Additionally, it set stricter PM 2.5 standards to help prevent trade-offs of emissions between NOx and PM. The allowable PM 2.5 emissions is cut by 50%.
- 2 Broader range of operating conditions in testing procedures.** New low-load cycle requirements change the testing of NOx and engine evaluation. These include measures for trucks in low speeds and high idling situations.
- 3 Extends useful life and manufacturer emission warranty.** Current federal law requires a certain length of time representing the lifetime of heavy-duty vehicles, which the standards have to be in effect. This rule extends the time periods, so the engine emission control lifetime is extended, meaning trucks must comply with emission standards for the duration of their now extended useful lifetime. The extended warranty makes the manufacturers guarantee emission control systems last longer.
- 4 Combination of different measures.** The rule includes the above-mentioned measures plus additional measures setting limits on compliance flexibility. There is less flexibility in meeting lower NOx, and PM standard with what is called a Family Emissions Limit (FEL) cap. The family emission standard serves as the emission standard for the engine family with respect to all required testing.²⁰

WHO PASSES THE HEAVY-DUTY OMNIBUS REGULATION?

What is regulated by the Heavy-Duty Omnibus, and what may be changed by the proposed amendment?

1 Continued uncertainty in truck testing updates. The initial Omnibus regulation introduced changes to how trucks are tested for emissions to include a broader range of operating conditions (a “3-bin moving average window” test). Eventually, these tests would include a broader range of engine temperatures as well (“cold-start” engine tests).²¹ These fundamental changes to truck testing remain in CARB’s new Omnibus proposal.

- ✓ While including a broader range of operating conditions and engine temperatures will be helpful in comprehensively regulating truck emissions, a loophole remains. Current testing procedures and the new 3-bin test both **allow emissions up to double the amount formally set by legal standards.**²²
- ✓ While the full impact of this manufacturer-friendly flexibility still needs to be studied and validated, allowances for manufacturers can often lead to less-than-promised emissions reductions.²³

2 Delayed Standards Proposed. Even in the initial Omnibus regulation, there was no guarantee that frontline and fenceline communities would experience real-world decreases in emissions that matched those on paper. This is due to gaps in how vehicles are tested for emissions levels (detailed in the next section).

- ✓ Now, CARB proposes to give truck manufacturers the option of delaying their compliance by a year. In the meantime, manufacturers will be able to sell more trucks with engines that do not meet the newest round of emissions standards (“legacy engines”).²⁴



How will the states ensure compliance?

In California, vehicle manufacturers will be fined for vehicles that 1) do not meet emissions standards set by the Heavy-Duty Omnibus and 2) are not recalled and repaired in order to meet emissions standards.²⁵



WHAT SHOULD EJ COMMUNITIES KEEP IN MIND?

While the Heavy-Duty Omnibus Regulation introduces helpful changes in emissions tests and significant on-paper reductions in emissions, the regulation leaves some leeway that may lead to benefits for manufacturers at the cost of EJ communities.

When will the trucks operated near EJ communities reduce their NOx and PM emissions?

- ✓ If adopted, the proposed amendment to the Heavy-Duty Omnibus would delay the enforcement of its stringent emissions standards by one year. Manufacturers could continue selling vehicles with legacy engines at the same rate between model years 2024 and 2026.²⁶
- ✓ CARB proposed this change despite the current availability of emissions-reduction technology. Rather, this change is meant to accommodate vehicle manufacturers' roll-out plans for heavy-duty vehicles.²⁷
- ✓ While CARB has proposed additional guidelines meant to offset additional increases in emissions from this delay, this is modeled on a system often criticized for enabling companies to buy the right to continue polluting nearby communities.²⁸

Will trucks operating near EJ communities face more effective emissions regulations?

- ✓ It is too soon to determine if the on-paper reductions in emissions will truly translate to real life. While emissions tests will now better represent the operating conditions typically experienced near ports and shipping hubs, manufacturers still have the flexibility to pollute above on-paper standards.

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://ww2.arb.ca.gov/our-work/programs/innovative-clean-transit/omnibus-regulation>
- 2 <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2023/hdomnibus2023/isor.pdf>
- 3 <https://ww2.arb.ca.gov/rulemaking/2023/hdomnibus2023>
- 4 <https://www.liebertpub.com/doi/10.1089/env.2021.0075>
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