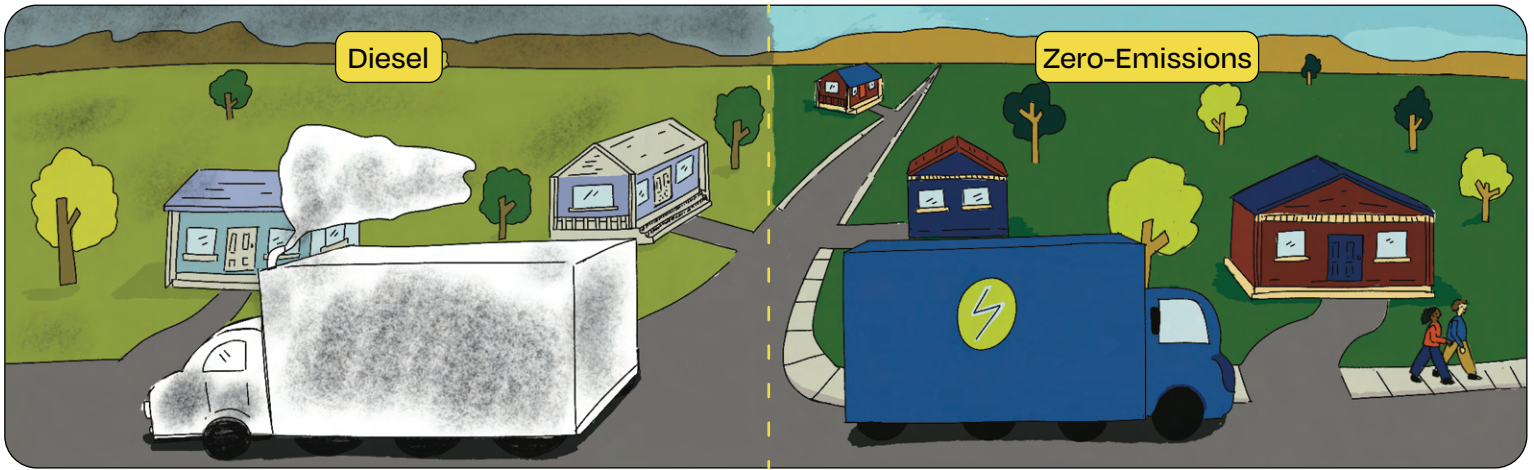
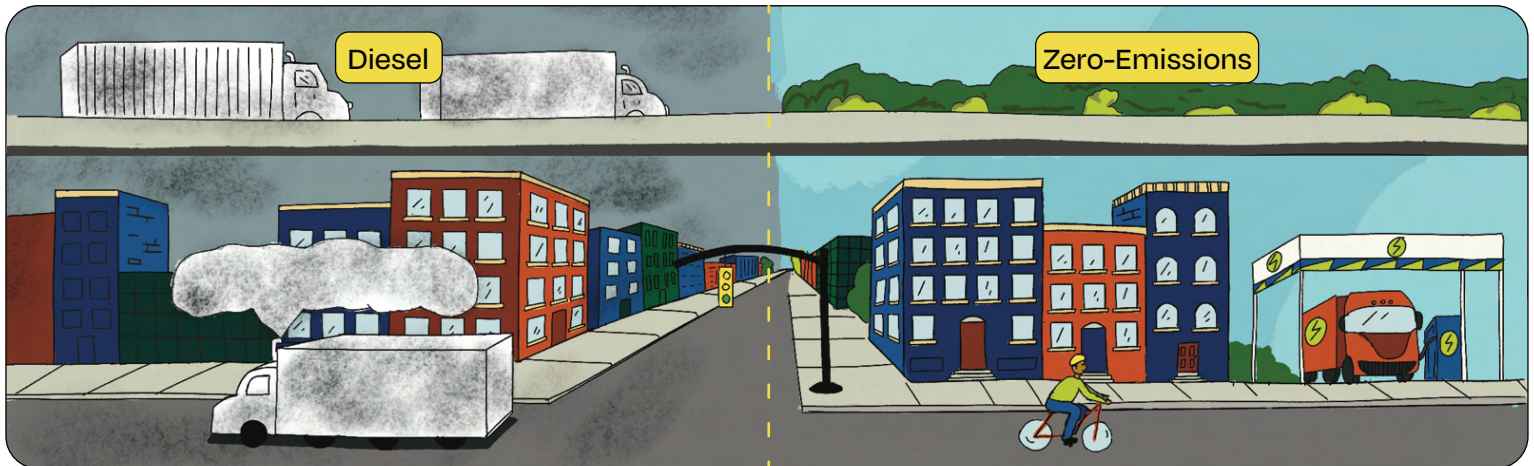


# ZERO-EMISSIONS FOR HEAVY-DUTY TRUCKS!



**Diesel exhaust** from heavy-duty trucks pollutes the air, threatening human health and the environment.

The people most affected live on the front lines and fence lines of major transportation routes where diesel trucks operate. Black, Indigenous, People of Color (BIPOC) and people with low income are more likely to live in these areas.



Many people who live in these areas are advocates for Environmental Justice—that's why they're called Environmental Justice Communities. There will be **Environmental Justice (EJ)**...

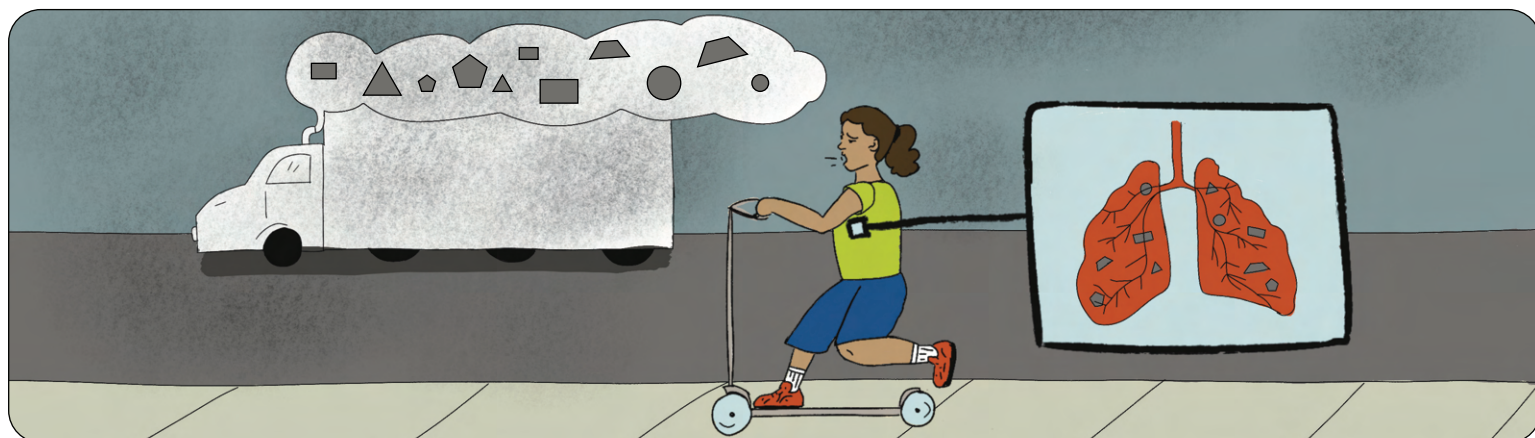
...when low-income and BIPOC in freight-line communities are equally protected from threats to their health and environment, and included in the decisions that affect their health and environment.



**Heavy-duty trucks that run on electricity and produce zero emissions already exist.** What's missing are rules and regulations that call for zero-emissions.

Read on to learn about the pollutants found in diesel exhaust, how they affect our health and environment, and four rules that aim to reduce emissions.

# WHAT YOU CAN'T SEE CAN HURT YOU



**Diesel exhaust is made up of many different kinds of harmful pollutants.** Pollutants can reach the deepest parts of our lungs and bloodstream and cause serious health problems.

Some pollutants are especially harmful to the environment. The pollutants most harmful to our health and environment are Particulate Matter (PM), Nitrogen Oxides (NOx), and Carbon Dioxide (CO<sub>2</sub>).

## NOx

**Nitrogen Oxides (NOx)** are made up of harmful gasses that can cause bronchitis, worsen asthma and heart disease, and lead to premature death.

## PM

**Particulate Matter (PM)** is made up of tiny solids and liquids that can irritate the eyes, nose, and throat, and lead to cancer, asthma, and heart disease.

## CO<sub>2</sub>

**Carbon Dioxide (CO<sub>2</sub>)** is a greenhouse gas that traps heat in the atmosphere, speeding up climate change.

## Four rules limit heavy duty truck pollution

Three of the rules limit how much PM, NOx, or CO<sub>2</sub> heavy-duty trucks can emit. The other rule calls for zero-emissions. Each U.S. state can choose to follow national rules (left) or stricter rules (right).

This rule limits CO<sub>2</sub>

**Phase 3 Greenhouse Gas Rule**

**Heavy-Duty Truck Rule**

This rule calls for zero-emissions

**Advanced Clean Truck Rule**

**Heavy-Duty Omnibus Rule**

These are national rules, enforced by the Environmental Protection Agency (EPA). All U.S. states have to follow these rules.

These rules were created in California, and are stricter than the national rules. If states want to follow rules that are better for human health and the environment, they can choose to follow these, in addition to the national rules.

These rules limit PM and NOx

Read on to learn more about each rule: what it regulates, how it's enforced, and where it falls short.



# HEAVY DUTY TRUCK RULE

- This is a **NATIONAL** rule. All U.S. states have to follow it.
- It applies to **NEW** trucks, starting with trucks made in 2027.

PM

NOx

HC

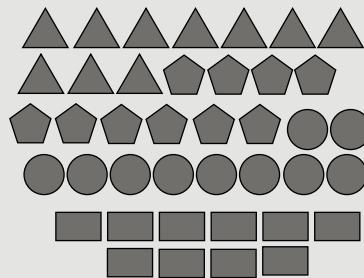
CO

## How it works

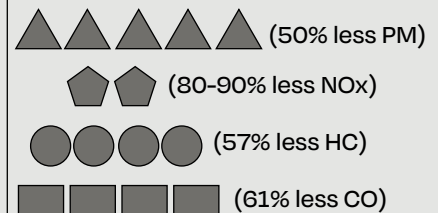
**This rule limits the amount of PM and NOx that can come out of heavy-duty trucks' tailpipes.** It also limits the amount of two other harmful pollutants: Hydrocarbons (HC) and Carbon Monoxide (CO).

**How it's enforced:** The rule explains how manufacturers should test and report to the EPA on how much pollution their trucks emit. The EPA can fine manufacturers for selling trucks that emit too much pollution.

Pollutants allowed for trucks manufactured before 2027



Pollutants allowed for new trucks manufactured in 2027 and after



## Where it falls short

**"Idle"** is when a truck is left running when stopped.

### It allows trucks to pollute more when it's cold outside and when they're idle.

There's a system of parts inside trucks' engines that limits tailpipe emissions. The system doesn't work as well at lower temperatures or when trucks are idle. Trucks will be allowed to pollute more at temperatures under 77°F, and to pollute freely at temperatures under 40°F. It also means trucks in stop-and-go traffic (more common in urban areas) will be allowed to pollute more than trucks in continuous movement.

### It only limits pollution from new trucks.

It doesn't limit pollution from trucks that are already on the road, which will continue polluting at their current rate for as long as they're profitable to drive.

### It doesn't call for zero-emissions.

Scaling down pollutants over time can make sense, but it needs to lead to zero emissions.

### It doesn't guarantee less pollution in EJ communities.

Limiting tailpipe emissions may lead to less pollution in EJ communities, but there are no systems in place to make sure EJ communities are actually experiencing less pollution.

# PHASE 3 GREENHOUSE GAS RULE

- This is a **NATIONAL** rule. All U.S. states have to follow it.
- It applies to **NEW** trucks, starting with trucks made in 2027.

The amount changes depending on **how much trucks weigh**. Heavier trucks are allowed to emit more CO<sub>2</sub> than lighter trucks.

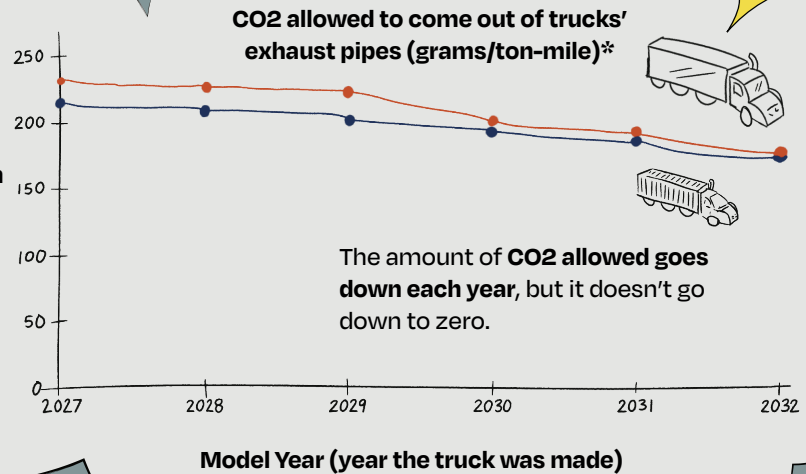
CO<sub>2</sub>

## How it works

This rule limits the amount of CO<sub>2</sub> that can come out of heavy-duty trucks' tailpipes.

**How it's enforced:** The rule explains how manufacturers should test and report to the EPA on how much CO<sub>2</sub> their trucks emit. The EPA can fine manufacturers for selling trucks that emit too much CO<sub>2</sub>.

Grams per-ton mile of CO<sub>2</sub>



\*One ton-mile is the equivalent of shipping one ton of product, one mile.

## Where it falls short

### It allows the heaviest trucks, which are the most commonly used, to pollute the most.

It should prioritize the heaviest and dirtiest trucks by requiring them reduce emissions the most, not the least.

### It only limits CO<sub>2</sub>, not other pollutants.

States that follow this rule will also follow the Heavy-Duty Truck Rule, which limits PM and NO<sub>x</sub>. But keeping the rules separate makes it easier for truck makers to keep using engines that produce more harmful pollutants than engines that produce zero emissions.

### It only limits pollution from new trucks.

It doesn't limit pollution from trucks that are already on the road, which will continue polluting at their current rate for as long as they're profitable to drive.

### It doesn't call for zero-emissions.

Scaling down pollutants over time can make sense, but it needs to lead to zero emissions.

### It doesn't guarantee less pollution in EJ communities.

Limiting tailpipe emissions may lead to less pollution in EJ communities, but there are no systems in place to make sure EJ communities are actually experiencing less pollution.

# HEAVY DUTY OMNIBUS RULE

- This is a **STATE** rule that was created in California.
- States can choose to follow this rule in addition to the national rules.
- It applies to **ALL TRUCKS** (including new trucks and trucks already on the road) starting in 2024.

PM

NOx

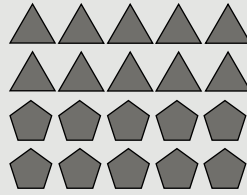
## How it works

**This rule limits the amount of PM and NOx that can come out of heavy-duty trucks' tailpipes.**

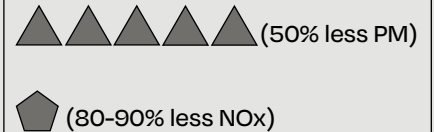
Because of the way Hydrocarbons (HC) and Carbon Monoxide (CO) are created, limiting PM and NOx will also lead to less HC and CO.

**How it's enforced:** States can fine manufacturers for trucks that are not recalled and repaired to meet emissions standards.

Pollutants allowed for all trucks, **starting in 2024**



Pollutants allowed for all trucks, **starting in 2027**



Between 2024-2027, pollutants are incrementally scaled down.

## Where it falls short

### It doesn't call for zero-emissions.

Scaling down pollutants over time can make sense, but it needs to lead to zero-emissions.

### It doesn't require updated trucks to be driven through EJ communities.

Trucks from other states that don't follow this rule and haven't been updated can still drive through EJ communities. There are no systems in place to make sure EJ communities are actually experiencing less pollution.

# ADVANCED CLEAN TRUCK RULE

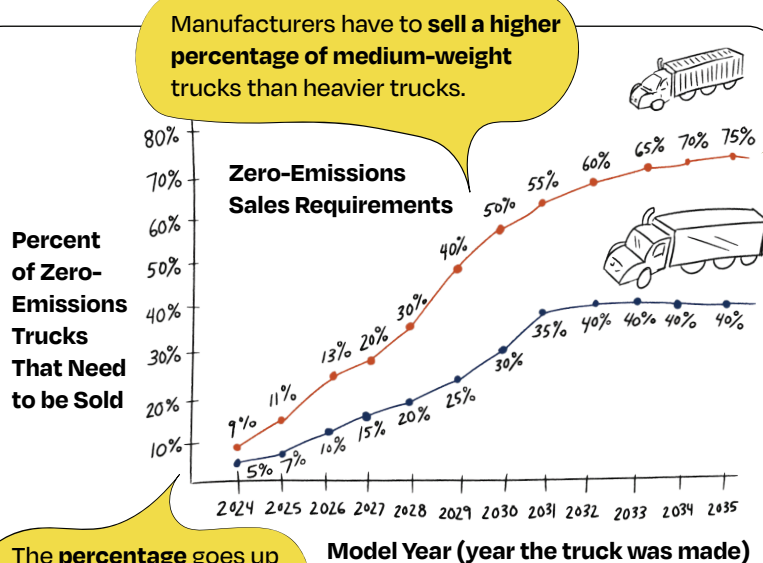
- This is a **STATE** rule that was created in California.
- States can choose to follow this rule in addition to the national rules.
- It applies to **NEW** trucks, starting with trucks made in 2024.



## How it works

This rule requires manufacturers to sell a certain percentage of trucks that run on electricity and produce zero-emissions.

**How it's enforced:** The state can request to view manufacturers' records at any time, and can fine them if they didn't sell as many zero-emissions trucks as they were supposed to in a given year.



The **percentage** goes up every year from 2024 to 2035 (for the most part).

This rule includes a yearly **Reporting Requirement**. Owners of large fleets must report information about the use of their trucks, like the weight, fuel type, age, and miles traveled of each vehicle, and more. The data helps states and advocates know how the transition to zero-emissions trucks is going, so they can make adjustments accordingly.

## Where it falls short

**It has the lowest sales requirements for the heaviest trucks.**

These pollute the most and are the most commonly used.

**It doesn't require zero-emission trucks to be driven in EJ communities.**

Selling more zero-emissions trucks may lead to less pollution in EJ communities, but there are no systems in place to make sure EJ communities are actually experiencing less pollution.