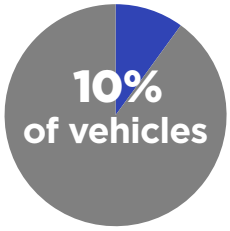
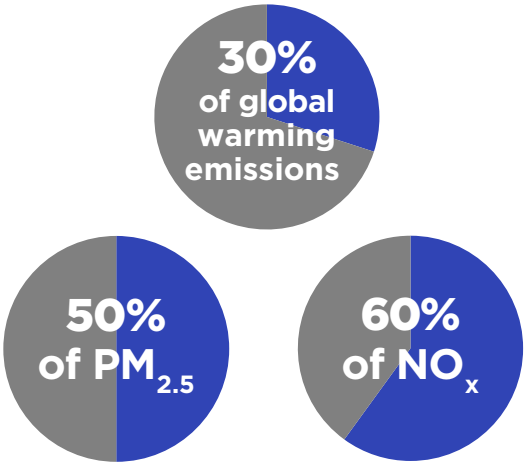
What the Advanced Clean Truck Rule Will Do for Washington

Big trucks and buses cause disproportionate harm.

On Washington's roads, big trucks and buses make up:



However, when it comes to the emissions released by all on-road vehicles in Washington, trucks and buses are responsible for:



NO_x and $PM_{2.5}$ are toxic air pollutants that aggravate respiratory symptoms and can have life-threatening consequences.

Deploying electric trucks will help Washington's economy . . .

- ✓ **$1.3 billion** in health-related savings
- ✓ **$2.4 billion** in annual net societal benefits
- ✓ **$24.9 billion** in net societal benefits cumulatively by 2050

. . . and improve Washington's environment and health.

- ✓ NO_x reduced by **47%**
- ✓ $PM_{2.5}$ reduced by **43%**

  Doubling *expected reductions of $PM_{2.5}$ by 2050*

- ✓ **97** avoided hospital visits
- ✓ **114** avoided premature deaths

Electric trucks and buses eliminate toxic tailpipe pollutants compared with their conventional counterparts—and also carbon emissions, if the electricity or hydrogen comes from renewable sources. Read on to learn about the public health, environmental, and economic costs and benefits of Washington adopting policies that bring more electric trucks and buses on the road.

Union of Concerned Scientists

How Clean Trucks Can Benefit Washington

Buses, delivery vehicles, tractor-trailer trucks, and other medium- and heavy-duty (M/HD) vehicles are an essential part of our economy. Though their operation facilitates commerce, trucks and buses are also a significant source of toxic air pollution and climate-changing carbon emissions. Conversely, electric trucks and buses powered by batteries or hydrogen fuel cells eliminate toxic tailpipe pollutants, and when powered by clean electricity or hydrogen, can operate with zero carbon emissions as well.

These vehicles are becoming increasingly available, and regulatory efforts such as California's Advanced Clean Trucks (ACT) rule can speed the transition to a future in which transportation poses less risk to public health and the climate. California adopted the ACT in 2020, requiring truck manufacturers to produce and sell an increasing percentage of zero-emissions M/HD vehicles. Under the Clean Air Act, California can set emissions standards such as the ACT that are stricter than federal standards, and other states may then adopt California's rules.

A recent study commissioned by the Union of Concerned Scientists and the Natural Resources Defense Council evaluated the public health, environmental, and economic costs and benefits of Washington adopting the ACT. This fact sheet highlights the key results.

Big Trucks, Even Bigger Impacts

The nearly 540,000 M/HD vehicles on Washington's roads significantly impact public health and the environment. Although they represent only about 1 in 10 of all vehicles on Washington roads and highways, these big trucks and buses are responsible for around 30 percent of the state's global warming pollution, approximately 60 percent of its NO_x, and just over 50 percent of its fine particulate matter ($PM_{2.5}$) from on-road vehicles. In terms of Washington's total annual global warming pollution, emissions from on-road diesel, largely from M/HD vehicles, were responsible for about 9 percent—more than that of all industrial, landfill, and wastewater emissions combined (Washington State Department of Ecology 2020).

Long term exposure of NO_x and $PM_{2.5}$ can have life-threatening consequences and damage ecosystems already threatened by climate change.

Under the ACT, nearly 60 percent of medium- and heavy-duty vehicle sales will be zero-emissions trucks by 2035, eliminating almost 47 million metric tons of carbon dioxide.

Short-term exposure to toxic air pollutants such as NO_x and $PM_{2.5}$ aggravates respiratory symptoms, especially in vulnerable populations, and long-term exposure at even moderate concentrations can have life-threatening consequences. These health impacts significantly reduce Washington's economic productivity, and the state's environment suffers too: NO_x and $PM_{2.5}$ damage sensitive ecosystems and acidify rain, streams, rivers, and lakes. Climate change will intensify these effects.

Clean Trucks for Washington

In November 2021, the Washington State Department of Ecology adopted California's ACT rule, which will require a growing percentage of the new trucks and buses being sold to be zero emissions beginning in 2024. Adopting the ACT will put Washington well on the path to a cleaner and more efficient transportation future: by 2030, nearly 30 percent of M/HD vehicle sales in Washington will be zero-emissions trucks, where less than 1 percent are today. That share of annual sales is estimated to rise to nearly 60 percent by 2035, eliminating almost 47 million metric tons of carbon dioxide cumulative through 2050. This shift to cleaner trucks will bring significant health, economic, and environmental benefits to Washingtonians.

Cleaner Trucks, Clear Health Benefits

With the ACT regulation in place, Washington will see a nearly 47 percent reduction in NO_x emissions from M/HD vehicles by 2050 and a 43 percent reduction in $PM_{2.5}$ emissions, resulting in approximately 114 fewer premature deaths, 97 fewer hospital visits, and nearly 70,000 avoided minor sicknesses. This amounts to more than $1.3 billion in savings from avoided health care costs.

Clean Trucks Mean Business

Washington's economy will also benefit from the savings that zero-emissions M/HD vehicles will bring to truck operators and

businesses—more than $2.4 billion annually—along with increased electric utility revenue and air quality and climate benefits. While the sticker price of electric trucks may be higher than comparable diesel trucks today, continuing reductions in battery costs and vastly reduced fuel and maintenance expenses will save electric truck operators an estimated $54,000 in net lifetime savings per vehicle by 2040.

Washington Can Still Aim Higher

Washington's transition to cleaner, more efficient trucks and buses under the ACT would be good for the state's environment, economy, and human health—but the rule would still leave some benefits on the table. If Washington adopts additional policies to require significant NO_x emissions reductions from internal combustion engines and ensure that all new M/HD vehicles sold by 2040 produce zero emissions, the state would see approximately twice the reduction in global warming pollution by 2050 (83 percent lower than the baseline) and more than twice the cumulative health-related savings, totaling nearly $3.4 billion by 2050.

The content of this fact sheet is distilled from the Washington Clean Trucks Program report conducted by ***M.J. Bradley for the Union of Concerned Scientists and Natural Resources Defense Council****. Read the report online at www.ucsusa.org/resources/truck-pollution-united-states. For more information, contact Sam Wilson, senior vehicles analyst in the UCS Clean Transportation Program, at swilson@ucsusa.org.*

Reference

Washington State Department of Ecology. 2020. Washington State Greenhouse Gas Emissions Inventory: 1990-2018. Publication 20-02-020. Olympia, WA. https://apps.ecology.wa.gov/publications/documents/2002020.pdf

[Adopting California's Advanced Clean Trucks rule in Washington will benefit the state's public health, environment, and economy.]

Union of Concerned Scientists

www.ucsusa.org/resources/truck-pollution-united-states

The Union of Concerned Scientists puts rigorous, independent science to work to solve our planet's most pressing problems. Joining with people across the country, we combine technical analysis and effective advocacy to create innovative, practical solutions for a healthy, safe, and sustainable future.

HEADQUARTERS
Two Brattle Square
Cambridge, MA 02138
617-547-5552

MIDWEST
One N. LaSalle St., Suite 1904
Chicago, IL 60602
312-578-1750

WEST COAST
500 12th St., Suite 340
Oakland, CA 94607
510-843-1872

WASHINGTON, DC
1825 K St. NW, Suite 800
Washington, DC 20006
202-223-6133

ONLINE
@ucsusa
@unionofconcernedscientists
@unionofconcernedscientists

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