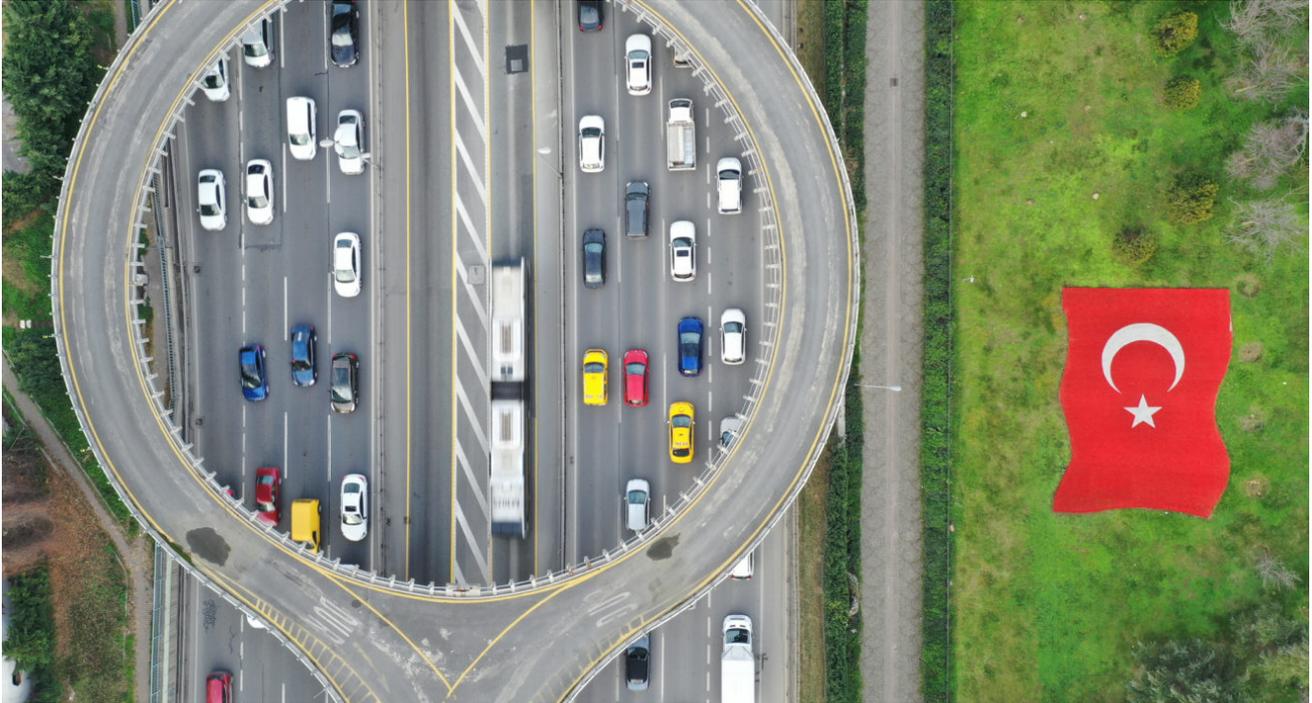


Brussels checks the brakes when it comes to slashing car emissions

Brussels plans to target dust pollution from brakes as part of new vehicle emission standards.



Traffic congestion in Topkapi, Istanbul | Yunus Emre Gunaydin/Anadolu Agency via Getty Images

by [Joshua Posaner](#), [Louise Guillot](#)

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It turns out slamming the brakes can be deadly.

That's because car exhaust isn't the only source of toxic emissions on the road: When a driver hits the brakes, tiny particulate matter is released from the pads, contributing to pollution and posing a danger to public health, according to researchers.

This brake dust represents almost [a third](#) of all polluting fine particulate matter emitted by passenger cars, according to a 2020 study by the OECD. That's prompting scientists — and legislators — to take a closer look.

EU lawmakers are set to include pollution from brakes and tires in legislation covering the next level of vehicle emissions standards — the so-called [Euro 7 reforms](#), set to land in November — alongside conventional tailpipe fumes.

Early work on the legislation has already begun, with the Commission convening experts on Tuesday to discuss the plans. There's "untapped potential" in non-exhaust pollutants such as dust from brake wear and tear when it comes to slashing emissions, said a European Commission official working on the upcoming legislation.

That's true for both standard cars and electric vehicles, whose brakes also cause pollution — though to a lesser degree — dashing hopes that getting more EVs on the road would help solve Europe's pollution problem once and for all.

“We want the strictest regulation possible at the EU level for all vehicles, combustion engines and electric cars,” said Matteo Barisione, policy officer at the European Public Health Alliance.

Tiny matter, big problems

The brake pads used in cars and trucks — along with those on trains and subway cars — produce particles that can be as small as a few nanometers, roughly the size of a virus, said Christophe Rocca-Serra, the boss of Tallano, a French start-up that is developing technology to Hoover up dust emissions before they escape the brakes.

“It goes very deep within the body and causes many different problems,” he said of the particles. “We are talking about cardiovascular disease, we are talking about links with Alzheimer's and Parkinson's disease and different cancers.”

Brake dust pollution is an especially “big problem” in congested areas and cities, said Liza Selley, air quality toxicologist at the University of Cambridge. The health risks are acute because cars stop at crosswalks or areas where people are walking, meaning pollution is being produced where people are likely to inhale it, she said.

Research is “really in its infancy”, she said noted. But a [paper](#) Selley co-authored last year found that brake dust caused similar inflammation of white blood cells in lungs — responsible for fighting bacteria — as diesel exhaust pollution.

Cars may spew more brake dust pollution than they do particulate matter from exhaust, according to Rocca-Serra. In an experiment on the streets of Paris, Tallano found that a Renault Zoe expels 11 milligrams of particulate matter pollutants per kilometer from its brakes. By comparison, an average internal combustion engine vehicle on average gives off some 4.5 milligrams of exhaust dust.

The problem also exists with electric vehicles. Although conventional brake mechanisms are largely replaced by regenerative systems that channel energy back to the battery — reducing a driver's need to hit the brakes — the added weight of the car's battery means wear and tear still remains a not-negligible source of pollution.

The car industry is open to new rules on brake dust as part of the upcoming Euro 7 reforms, as long as pollution-slashing standards don't reduce brake performance, according to Eric-Mark Huitema, the director general of auto industry lobby group ACEA.

But environmental groups are pushing for the EU to take action sooner. The new legislation “will come in late since we’re talking about an entry into force in 2025 or later,” said Barisione of the European Public Health Alliance, adding that the EU should already allocate more research funding to the issue.