

FACT SHEET

‘EURO’ POLLUTANT EMISSION STANDARDS

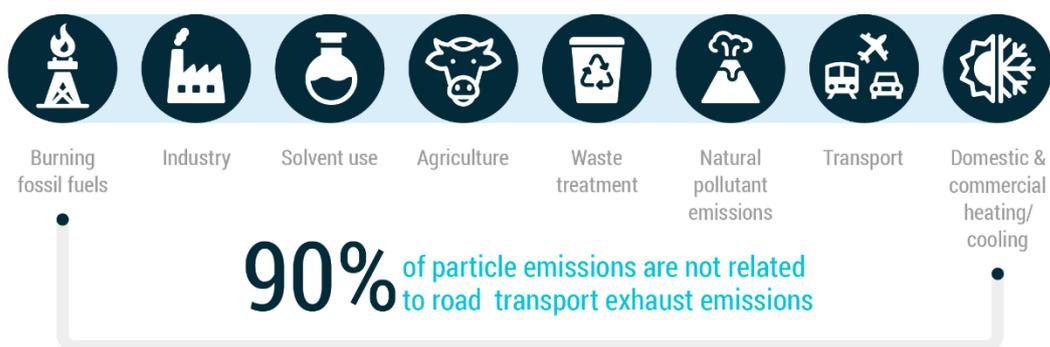
Although considerable advances in EU air quality have been made in recent years, pollutant emissions still impact the quality of the air we all breathe, especially in urban areas.

The EU automobile industry has invested heavily in complex exhaust control technology to deliver vehicles which go beyond the stringent emission standards that are in place today, and that have proven to deliver results when measured under real driving conditions.

What are pollutant emissions and what are their sources?

Many sources of pollution contribute to ambient air quality. Apart from road transport, other sources include the burning of fossil fuels, industrial processes and solvent use, agriculture, waste treatment, natural pollutant emissions, and domestic and commercial heating/cooling.

With respect to road transport, the key pollutants are oxides of nitrogen (NOx) and particles with two measurements: PM2.5 and PM10. According to the European Environment Agency (EEA), road transport is responsible for just 8% of PM2.5 and 9% of PM10, and for 37% of total NOx emissions¹. In other words, **over 90% of particle emissions are not related to road transport exhaust emissions.**



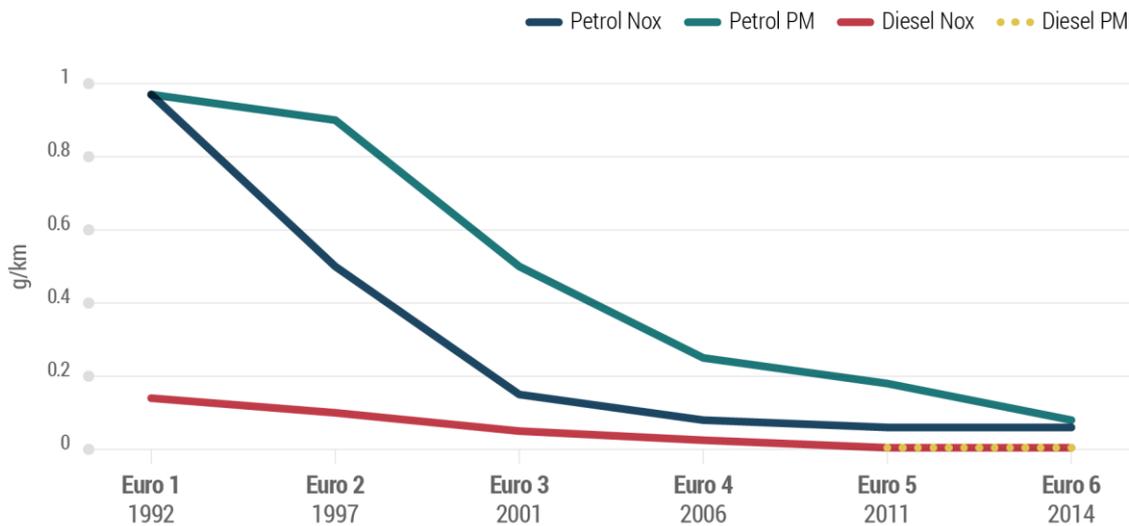
Pollutant emissions should not be confused with greenhouse gas emissions such as CO₂. With the Green Deal, the European Commission has made decarbonisation its top priority to help meet globally agreed climate goals.

¹ <https://www.eea.europa.eu/publications/european-union-emissions-inventory-report>

What are the Euro standards?

Since 1992, the EU has introduced increasingly stricter exhaust pollutant emission limits for each new vehicle sold in the EU ('Euro' standards). These standards are symbolised with Arabic numerals for **passenger cars (Euro 1-6)** and Roman numerals for **trucks (Euro I-VI)**.

Standardised laboratory tests measure pollutant emissions and ensure that a vehicle does not emit any more pollutants than allowed by these standards, which are established through European Union Regulations. Since 2017, real driving emissions (RDE) tests complement the lab tests, confirming that cars deliver low emissions over on-road conditions.



What is the latest Euro standard?

Today, the EU has the most comprehensive and stringent pollutant emission standards in the world.

The latest standard – Euro 6 – was introduced in 2014. Since then, **extra steps have been taken within Euro 6 for cars and vans to further reduce NOx and particle pollutant emissions under real driving conditions.** Euro 6d, in force since 2017, had a major update in 2020. A further update – Euro 6e – will apply in 2022.

Between 2014 and 2020, Euro 6/VI standards delivered a 25% cut in total NOx emissions from the EU car and van fleet, and a 36% cut from the heavy-duty vehicle fleet. In the same timeframe, total emissions of particles were cut by 28% from the car and van fleet, and by 14% from the EU heavy-duty vehicle fleet.

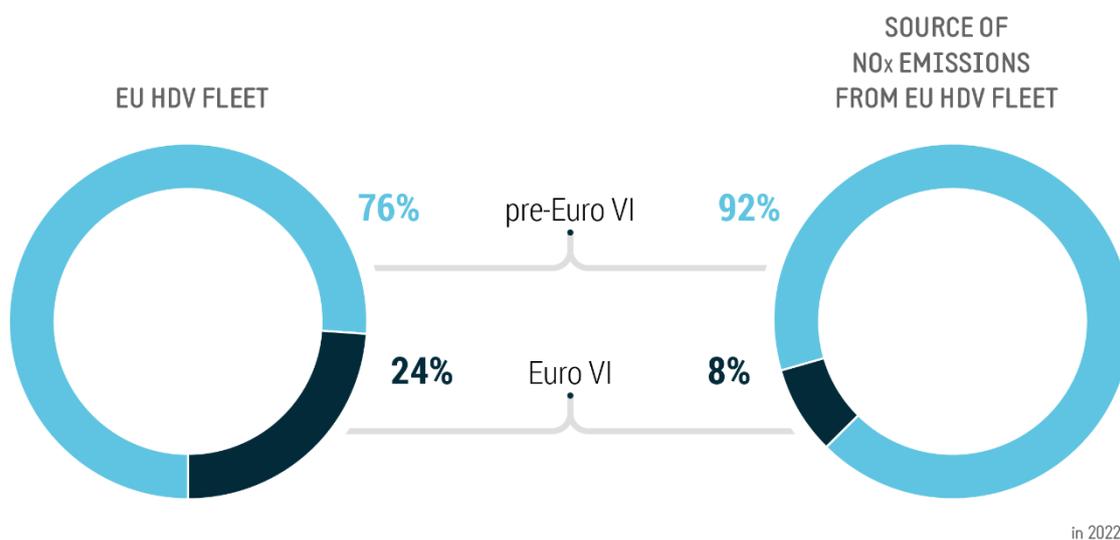
Emissions measured on the road using portable emission measuring systems (PEMS) are now at a barely measurable level.

What about CO2?

CO2 emissions are dealt with under separate regulations that set fleet average CO2 reduction targets. The recently-agreed CO2 regulation stipulates that by 2035 all new cars and vans sold in the EU will have to be zero-emissions. The European Commission will also soon bring forward proposals to revise the CO2 standards for heavy-duty vehicles which will likely entail an accelerated shift to zero-emission vehicles. The future direction of the auto industry is therefore steered by decarbonisation/the transition to zero-emissions.

What is the potential of fleet renewal with the latest vehicles?

The impact of new emission standards in helping reduce ambient pollution take several years to be felt, as the latest vehicles gradually come into the EU fleet. For example, in 2022, eight years after Euro VI started, pre-Euro VI heavy-duty vehicles (HDVs) still account for three-quarters of the total EU HDV fleet, and 92% of NOx from this fleet². In other words, the impact of Euro 6/VI is still being tempered by the high proportion of pre-Euro 6/VI vehicles in the fleet.



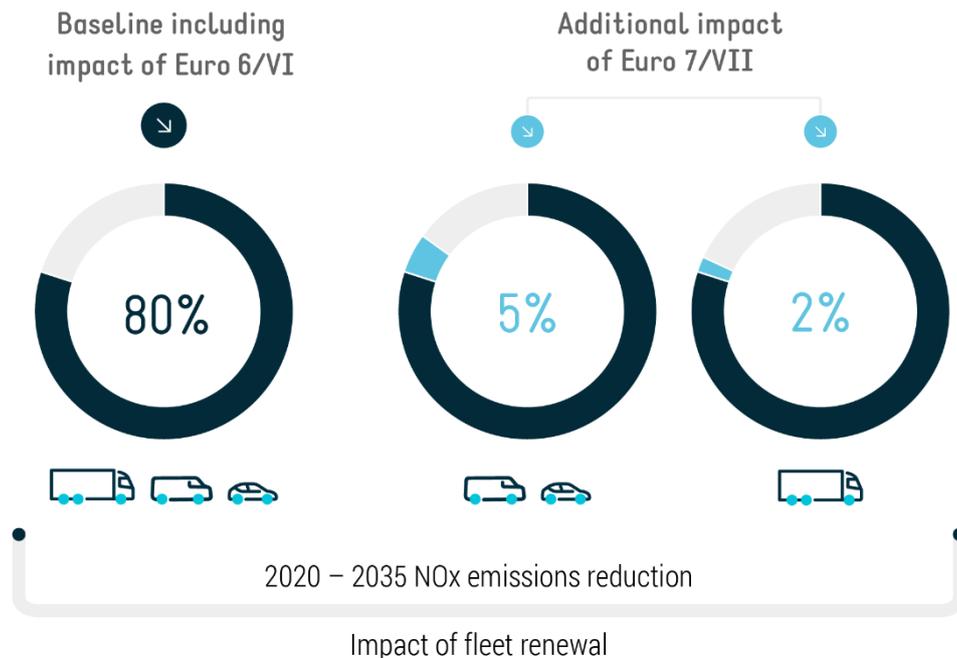
Recent studies have shown that **the renewal of the older fleet with the latest Euro 6/VI vehicles – alongside the electrification of new vehicles – would deliver a huge 80% reduction in road transport NOx emissions by 2035 (compared to 2020)³.**

² Sibyl fleet and emissions model, 2020

³ <https://aeriseurope.com/papers-and-articles/euro-7-impact-assessment-the-outlook-for-air-quality-compliance-in-the-eu-and-the-role-of-the-road-transport-sector/>

What is potential of Euro 7/VII?

Exhaust emissions



Studies³ show that **the most stringent Euro 7/VII scenarios (ie limits for NOx and particles set at zero) would reduce road transport NOx emissions by less than a further 5% for cars and vans compared to Euro 6d levels, and by about 2% for trucks (by 2035 compared to 2020).** If Euro 7/VII was less stringent than zero emissions, the benefits would obviously be even less.

As is the case for the current Euro 6/VI vehicles, any impact of Euro 7/VII will also take several years to realise. It will therefore start being felt only during the time that increasing numbers of zero-emission vehicles will be coming to market due to the CO2 regulations.

This means that, without tackling the older fleet, **Euro 7/VII will have a marginal impact on road transport NOx emissions.**

Non-exhaust emissions

In the future, it is expected that non-exhaust emissions, such as particles from brake wear and tyre abrasion, will overtake exhaust particle emissions from the latest vehicles.

Such emissions (from all vehicles, including electric), could be the focus of Euro 7/VII (in the case of brake wear) and the tyre type-approval regulation, when robust new test procedures are ready.