



## **Priorities for Euro 7 / VII proposal**

*Non-paper by The Netherlands, as input for EC's proposal for Euro 7 / VII emission standards, expected in April 2022.*

Date: 21 December 2021

### **Introduction**

Air pollution is one of the biggest environmental threats to human health, alongside climate change. As road transport is one of the main sources of air pollution<sup>1</sup>, reducing vehicle emissions is critical in improving air quality.

The Netherlands has high ambitions as a front-runner in sustainable and clean mobility. We are internationally promoting the acceleration of uptake of zero emission vehicles<sup>2</sup> to enable carbon neutral transport at the latest in 2050. We also emphasize the need for cleaner air for the health of our citizens.

Where the latest Euro 6 / VI standards have shown to effectively decrease the emissions of vehicles, they have proven to be insufficient to sustain this decrease in a number of common driving situations<sup>3</sup>. As a result, cars emit too high emissions, unnecessarily affecting air quality especially in urban areas.

Euro 7 / VII vehicle emission standards should correspond to our needs to tackle air quality challenges and support the transition to zero emission vehicles. This means that at least, enforcement requirements for these standards should ensure lifetime compliance in all driving conditions. These standards should also account for pollutants that are not yet regulated in Euro 6, such as ammonia.

This document highlights four aspects that should at least be addressed in the Euro 7 / VII proposal. The Netherlands will determine its formal position regarding Euro 7 / VII when the proposal is published.

### **1. Importance of introducing a Euro 7 / VII standard to ensure clean fossil fuelled vehicles**

*The Netherlands requests the introduction of a Euro 7 / VII standard as soon as possible, but no later than 2025, to complement the CO<sub>2</sub>-standards.*

The recent EC proposal on CO<sub>2</sub>-standards for cars and vans proposes 100% zero emission vehicle sales in 2035. For heavy duty vehicles this will likely be even later<sup>4</sup>. This means that newly sold vehicles until then will remain part of the vehicle fleet until 2050. Therefore, it is important that until then, newly sold vehicles with an internal combustion engine, are as clean as (technically) possible.

Ambitions for exhaust emission reduction and air quality improvements should go beyond complying with minimum (average) standards of air quality and just eliminating air pollution hotspots. There is no safe minimum level for air pollution below which there is no impact on human health. Focus should therefore be on reducing exhaust emissions as much as reasonably possible, as to minimize overall health risks, in line with WHO guidelines.

To this end, the Netherlands requests that the emission limit values for all pollutants for all vehicles be set at the technically lowest possible level, regardless of the specific fuel or technology<sup>5</sup>.

<sup>1</sup> According to the European Environment Agency's 2020 report on air quality in Europe, in 2018 road transport was the sector with the highest NO<sub>x</sub> emissions (39%).

<sup>2</sup> As chair of the Transport Decarbonization Alliance and participant in iZEVA and EVI.

<sup>3</sup> More precisely: especially under real driving condition because of the introduction of the Real Driving Emissions (RDE)-test procedure for passenger cars and vans. However, the In Service Conformity (ISC) test procedure for trucks and the RDE-test procedure for passenger cars and vans have proven that the latest Euro 6 / VI standards are insufficient to sustain the emission decrease in a number of common driving situations.

<sup>4</sup> It means euro 7 / VII vehicles will be part of the vehicle stock until 2050.

<sup>5</sup> Conform Dutch Parliament request ref. '21 501-08 Milieuraad Nr. 724'.



## **2. Euro 7 / VII should include all driving conditions**

*The Netherlands wishes to extend the test conditions covered by Euro 7 / VII by including all driving conditions<sup>6</sup>.*

So far, the focus has been to comply with the limits for a selected range of conditions under which exhaust gas treatment systems work properly. Recent TNO studies show that it is hardly possible to drive an In Service Conformity (ISC) test with an unloaded truck because the required engine load conditions cannot be achieved (see appendix). High emissions occur in specific circumstances that are not covered by the ISC and Real Driving Emission (RDE) test, such as city driving, especially in the case of unloaded trucks, high altitudes, idle functioning, driving with caravans, short trips and fast acceleration. By extending the test conditions to include the full coverage of reasonably encountered on-road driving conditions, the harmful emissions can be drastically reduced.

In particular, heavy duty vehicles cause far too high emissions in urban areas, as currently for trucks, unlike for buses, no emission limits apply for these driving conditions. According to the Netherlands, the current work-based-windows method is insufficient, and operations with low engine load and short distance urban operation should be included in the test procedure. Further information on a possible solution is presented in the appendix.

## **3. Need for lifetime compliance**

*The Netherlands sees an urgent need to include lifetime compliance in the Euro 7 / VII proposal. The Netherlands therefore requests to extend the current durability limits to be coherent with the increasing average lifetime of vehicles in the European market AND to introduce emission requirements for vehicles of an age beyond the extended durability period.*

With every new Euro-stage vehicle emission performance has become progressively dependent on the correct functioning of the emission reduction technology. As such modern vehicles become increasingly vulnerable to aging and tampering. However, current Euro-standards insufficiently secure the emission performance of older vehicles. Conformity to emission limits is only required for the first 100,000 km of use, while vehicles with a high mileage emit on average substantial more NO<sub>x</sub> than new vehicles<sup>7</sup>.

In addition to extending the test conditions to include all driving conditions, measures should be taken to control lifetime emissions for at least 2 reasons:

- Aging of after treatment technology is known to cause a significant increase in emissions. Vehicles with a high mileage emit on average substantial more NO<sub>x</sub> than new vehicles<sup>8</sup>. For a substantial number of older petrol vehicles, this is due to a defective three-way catalyst, causing a tenfold increase in NO<sub>x</sub> emissions.
- Furthermore, intentional misuse (tampering) of after treatment technology by vehicle owners is increasing. Requirements for lifetime emissions are urgently required to ensure continued correct functioning of after treatment technology, also in the later stages of a vehicles' life. Removing a diesel particulate filter (DPF), that typically operates at efficiencies of above 99%, will result in a hundred-fold increase of emissions of ultrafine particles. Although it might occur in only a small number of vehicles, the total impact still significantly contributes to the total amount of vehicle emissions.

These two phenomena result in extremely high additional emissions and significantly increase the health risk and air quality, further exacerbated by the ever-increasing lifetime of modern vehicles.

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<sup>6</sup> All driving conditions refers to the full coverage of reasonably encountered on-road driving conditions including among others cold starting, idling, high acceleration. So *beyond* average conditions.

<sup>7</sup> TNO (2020) On road emissions of 38 petrol vehicles with high mileages.

<sup>8</sup> TNO (2019) Emission compliance over the lifespan of a vehicle.



Lifetime compliance is required to prevent this. We welcome the proposal from the Commission to extend the current durability limits to be coherent with the increasing average lifetime of vehicles in the European market, this should include the introduction of emission requirements for vehicles that are beyond the extended durability period.

To ensure low emissions over the lifetime of the vehicle, a system of effective road testing is required with a clear and unambiguous assignment of responsibilities (between car manufacturers and car owners). Apart from in service conformity tests and market surveillance programmes, the Euro 7 / VII norms should be effectively enforced through periodic technical inspections over the full vehicle lifetime. Through improved on-board systems both manufacturers and vehicle owners can be made aware of any deficits and can be ensured that the necessary service or repairs are done. Furthermore, diesel cars should be equipped with a provision for online NO<sub>x</sub> monitoring that allows the NO<sub>x</sub> emissions to be checked remotely.

#### **4. Inclusion of currently non-regulated emissions**

The Netherlands strongly advocates the inclusion of currently non-regulated emissions as part of Euro 7 / VII, i.e. PN<sub>10</sub>, NH<sub>3</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HCHO. These emissions affect health and air quality, and their relative share in the total emissions is increasing. The preferred option for greenhouse gasses N<sub>2</sub>O and CH<sub>4</sub> is to establish emission values only under Euro 7 / VII and make it possible to include the emissions in the CO<sub>2</sub> regulations, to ensure coherence with the approach for CO<sub>2</sub>.

Finally, the Netherlands requests that the emission limit values for all pollutants for all vehicles be set at the technically lowest possible level, regardless of the specific fuel or technology<sup>9</sup>.

#### **Appendices**

- Discussion paper "Urgent need to include 'lifetime compliance' in Euro 7 / VII proposal", presented at the AGVES informal working group meeting of 27 October 2020;
- Discussion paper "High NO<sub>x</sub> emissions of heavy duty vehicles driving in urban areas and directions for a real driving emissions test".

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<sup>9</sup> Conform Dutch Parliament request ref. '21 501-08 Milieuraad Nr. 724'.