

Positions

The Draft Euro 7 / VII Regulation

For passenger cars and vans /
heavy-duty commercial vehicles and buses



Position

The Draft Euro 7 Regulation

For passenger cars and vans



Berlin, February 2023

Introduction

The European Commission finally published its long-awaited proposal for Euro 7/VII on 10 November 2022. The proposal contains new emission regulations for light and heavy-duty vehicles. For the first time it includes limits for brake dust, requirements for anti-tampering protection, for the durability of the traction battery and the introduction of on-board monitoring (OBM).

In principle the VDA welcomes the ongoing development of the European exhaust legislation. However, the current transformation to zero-emission powertrains must also be taken into consideration. We accordingly expect a proportionate and harmonized Euro 7 proposal.

This position paper covers the Euro 7 requirements for passenger cars and light commercial vehicles (vans).

General demands

We cannot see why, building on the already efficient Euro 6 exhaust legislation, the European Commission is focusing primarily on strict boundary conditions for testing and extreme driving situations that rarely occur in real life – which will not bring about a significant improvement in air quality. As a result, the present proposal is costly, not certain to be technologically feasible, and harbours risks relating to approval law.

We explicitly reject the argument put forward by Commissioner Breton that a correspondingly strict regulation would make Europe the technological leader. Industry in Europe needs harmonization and not Europe's isolation from other world markets – because without harmonization, development and production could relocate to other parts of the world, especially as the market for internal combustion engines is rapidly becoming less important in Europe.

We therefore call for the following (general aspects):

- Transparency of and a good balance between the costs and benefits of the Regulation, especially as the European Commission already has the end of the internal combustion engine in view;
- Emissions from exhaust and those from tyre wear and brake dust should be considered separately;
- Powertrain development and production should be secured in Europe by international harmonization of the legislation governing emissions, instead of Europe pursuing a separate path of excessive Euro 7 requirements;
- Clear restriction of the Commission's power to tighten up limit values and boundary conditions for testing (Article 15) without proper co-decision procedures involving the European Parliament and the Council on delegated and implementing acts.

Passenger cars and vans

Even though the new draft does not further reduce some nominal limit values for passenger cars, it will significantly tighten the legislation due to items such as the greatly expanded – and in some cases fully obsolete – boundary conditions for testing, and cannot realistically be implemented, particularly with regard to the planned timeframe. Vans will face more stringent limits, testing boundary conditions and measuring procedures, which represents much greater ambition compared with Euro 6. This will affect vehicles in the van category (N1, class III) in particular, which will now be subject to far stricter limits.

The development of Euro 7 therefore represents a major challenge that demands the design of new engines and exhaust aftertreatment systems. Between publication of this draft and the planned date of introduction in July 2025, there is only one year for development work before the start of type approval, to handle the wave of necessary type approvals for all vehicles within one or two years.

Finally, the current Euro 7 proposals do not provide for protection against misuse in testing. Tests could be designed for unrealistic worst-case conditions. This would make it impossible to comply with Euro 7, and at the very least it would be expensive and elaborate owing to non-representative use cases. The current draft regulation does not create legal security for vehicle type approvals.

Early on, the automotive industry had presented a proposal that represented a greater reduction in emission standard while maintaining a better cost-benefit-ratio and a more robust implementation schedule.

The industry has proposed significantly reduced emission limits, in particular for nitrogen oxides, while maintaining the established boundary conditions for testing. This would greatly decrease the emissions from vehicles in actual use, and would not affect the necessary legal security.

We propose the following points as a complete package:

- Ambitious and practicable exhaust emission limits based on the Euro 6 testing boundary conditions;
- A focus on representativeness and prevention of misuse (restriction of “any driving situation” and clear limits for third-party measurements);
- Final legislation at an early stage providing legal certainty, with sufficient lead time (3 years);
- Under these conditions: Introduction dates of July 2026 for new types and July 2027 for all types;
- Decoupling of the introduction dates for M1 and N1;
- Consideration of stricter durability requirements and development times for industrial availability of the additional exhaust systems required, including the on-board sensors and software.

Brake and tyre wear

The VDA supports the regulation of particle emissions from brake, tyre and road wear, as scientific investigation has shown that these emissions are greater than tailpipe emissions which have been markedly reduced in recent years.

It is not possible to implement limits on brake dust for all vehicles in July 2025, given that a suitable test procedure has yet to be fully developed at UN level, plus the necessary new brake technologies are not yet universally available, and the test bench capacities are limited both at manufacturers and at the technical testing centres.

At this time, it is not possible to make plans or assessments relating to tyre wear because some details are lacking and the boundary conditions are not known (limit values, testing methodology).

Two of the unresolved points here are the stability and representativeness of the method for measuring brake dust. For example, at present inter-laboratory comparisons headed by the European Commission (JRC) still exhibit large systematic variations of over 100 % and test results from individual components are not transferred to representative behaviour of whole vehicles. This applies in particular to vehicles that use electric recuperation.

The automotive industry is doing everything it can to promote the development and applicability of these new measuring procedures. However, the draft Regulation gives little or no consideration to objective and correct objections to improvement of the test regulations on the part of laboratory companies in view of the time pressure imposed by the European Commission. The values communicated by the CLOVE consortium as a basis for determining the limits were worked out using different testing cycles, under different conditions, and with testing technology that does not correspond to the current version of the proposal. We are therefore very concerned that the proposed limits and the measuring method still under development will be incompatible. We believe it is necessary to apply a correct scientific approach: first the measuring method should be finalized, then it should be evaluated, and only then should limit values be defined on this basis.

We therefore call for the following regarding brake and tyre emissions:

- No premature introduction of limit values, and instead:
 1. First of all, finalization of the method for measuring brake dust, and suitable evidence of the reproducibility and stability of the method;
 2. Transfer of the method used on the brake test bench to the whole vehicle, and consideration of realistic, vehicle-specific recuperation;
 3. The introduction of an approx. two-year period of monitoring brake and tyre emissions after finalization of the measuring method in order to determine the actual level of emissions from current vehicles and brake systems;
 4. The introduction of (gradually increasing) limit values only after completion and evaluation of the monitoring phase, taking account of the relevant lead times.
- The same applies to measuring tyre wear, for which not even a measuring procedure has been developed yet.

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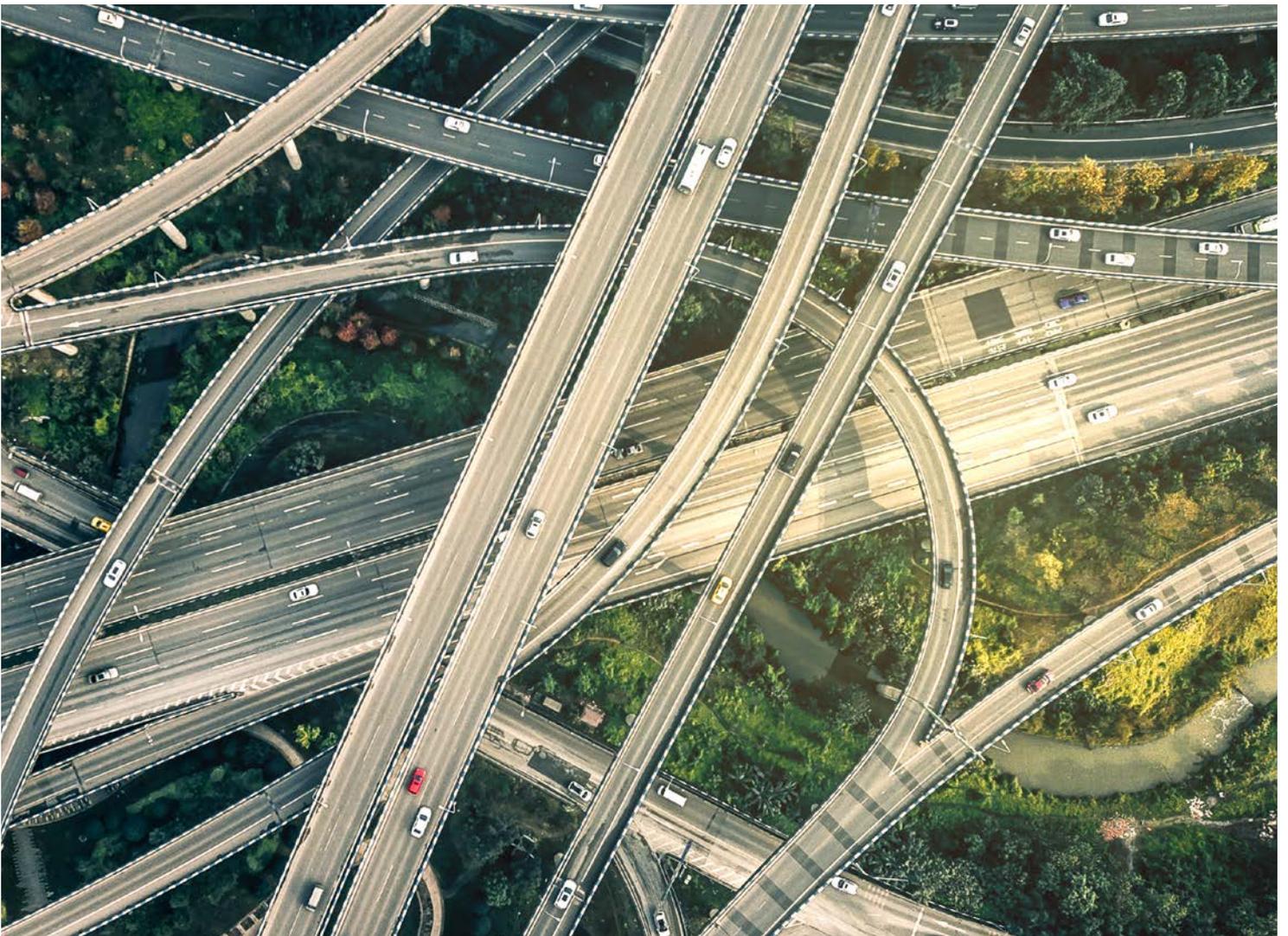
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Position

The Draft Euro VII Regulation

For heavy-duty commercial vehicles and buses



Berlin, February 2023

Introduction

The European Commission finally published its long-awaited proposal for Euro 7/VII on 10 November 2022. The proposal contains new emission regulations for light and heavy-duty vehicles. For the first time it includes limits for brake dust, requirements for anti-tampering protection, for the durability of the traction battery and the introduction of on-board monitoring (OBM).

In principle the VDA welcomes the ongoing development of the European exhaust legislation. However, the current transformation to zero-emission powertrains must also be taken into consideration. We accordingly expect a proportionate and harmonized Euro VII proposal.

This position paper covers the Euro VII requirements for heavy-duty commercial vehicles and buses.

General demands

We cannot see why, building on the already efficient Euro VI regulations, the European Commission is focusing primarily on extreme reductions to the limits accompanied by the strictest boundary conditions for testing, even though development is concentrated on battery-electric and hydrogen-powered, climate-neutral powertrains.

As the industry is focusing on decarbonization, we are very concerned that the draft Euro VII proposal for heavy-duty commercial vehicles might harbour the risk of greatly slowing down the transition to climate neutrality.

The draft Euro VII proposal completely ignores the rapid transition to emission-free vehicles, which on their own will bring about a considerable reduction in exhaust emissions from the heavy-duty commercial vehicle fleets.

We urgently need a targeted political approach that is tailored to the European commercial vehicle industry and which is effective and economical, while simultaneously taking account of the huge challenges inherent in transforming the European transport and logistics sector.

We explicitly reject the argument put forward by Commissioner Breton that a correspondingly strict regulation would make Europe the technological leader. The Industry in Europe needs harmonization and not Europe's isolation from other world markets – because without harmonization, development and production could relocate to other parts of the world, especially as the market for internal combustion engines is rapidly becoming less important in Europe.

We therefore call for the following (general aspects):

- Transparency of and a good balance between the costs and benefits of the Regulation, especially as the European Commission already has the end of the internal combustion engine in view;
- Emissions from exhaust, tyre wear and brake dust should be considered separately;
- Powertrain development and production should be secured in Europe by international harmonization of emission legislation, instead of Europe pursuing a separate path with excessive Euro VII requirements;
- Clear restriction of the Commission's power to tighten up limit values and boundary conditions for testing (Article 15) without proper co-decision procedures involving the European Parliament and the Council on delegated and implementing acts.

Heavy-duty commercial vehicles and buses

The draft Euro VII Regulation almost appears to be technologically impossible to implement in the case of heavy-duty vehicles (heavy commercial vehicles and large buses). This applies especially to the PN limit in combination with the extremely low limits for NO_x and N₂O. The provisions of the draft go much further than the legislation in other countries (US, China). The engine type approval commonly used around the world will now be replaced in Europe by vehicle type approval. The upshot will be that vehicles – and special vehicles and multi-stage vehicles in particular – can no longer use homologated powertrains.

A feasibility assessment is practically impossible without the implementing acts that still have to be drawn up. In addition, the on-board emission monitoring requirements that are indicated seem almost impossible to fulfil. It appears barely possible to achieve the individual limit values under the greatly extended boundary conditions for testing.

The measurement tolerance of the roadside measuring devices will no longer be taken into account in Euro VII and is already subsumed in the limit values. According to CLOVE, the consortium of emissions experts brought in by the Commission, the target measurement tolerance of the future PEMS devices is 89 mg NO_x/kWh. The proposed NO_x limit value of 90 mg/kWh therefore means de facto zero emissions if the measuring technology is not sufficiently advanced by 2027.

Considering this maximum requirement, 2027 as the desired introduction date is too early and too ambitious.

We therefore call for the following:

- Easing of the limit value, setting it at an expedient and technologically practicable level in line with comparable international standards. Simple comparison of the nominal limits with the legislation in other countries is misleading;
- Realistic scheduling and sufficient lead time for developing the new powertrains, taking account of the industrial availability of the necessary exhaust technologies (including the required on-board-sensors);
- Synchronization of the Euro VII Regulation especially with view to the introduction date, but also to the consequences of the CO₂ fleet regulation in 2030, in order to ensure the transformation to emission-free transport and mobility;
- Consideration of a feasible requirement for measuring devices and the boundary conditions for testing as part of the whole-vehicle assessment.

Brake and tyre wear

The VDA supports the regulation of particle emissions due to brake, tyre and road wear, as scientific investigation has shown that these emissions are greater than tailpipe emissions which have been markedly reduced in recent years.

The introduction of brake dust limits is not feasible, in particular due to the ongoing development of a suitable test procedure at UN level. Above all, however, the measurement method has so far been developed exclusively for passenger cars, for heavy vehicles there is still no measurement method. This applies in particular to vehicles that can decelerate pneumatically or electrically. Planning and evaluation with regard to tyre wear are currently not possible for any vehicle category due to a lack of details and unknown boundary conditions (limit values, test methodology), a reference to the Euro VII schedule cannot be established.

The automotive industry is doing everything it can to promote the development and applicability of these new measuring procedures. However, we are very concerned that the still unfinished measurement method is incompatible with the braking behaviour of heavy commercial vehicles and buses. We believe it is necessary to apply a correct scientific approach: first the measuring method should be finalized, then it should be evaluated, and only then should limit values be defined on this basis.

We therefore call for the following regarding brake and tyre emissions:

- No premature introduction of limit values, and instead:
 1. First of all, finalization of the method for measuring brake dust, and suitable evidence of the reproducibility and stability of the method without systematic influences;
 2. Transfer of the method used on the brake test bench to the whole vehicle, and vehicle-specific consideration of friction-free braking systems (engine brakes, retarders, recuperation systems, ...) and trailer brakes
 3. The introduction of an approx. two-year period of monitoring brake and tyre emissions after finalization of the measuring method in order to determine the actual level of emissions from current vehicles and brake systems;
 4. The introduction of (gradually increasing) limit values only after completion and evaluation of the monitoring phase, taking account of the relevant lead times.
- The same applies to measuring tyre wear, for which not even a measuring procedure has been developed yet.

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