

ACEA Proposal for Euro 7



1. TIMETABLE FOR EURO 7

ACEA is not against Euro 7 and, considering our views outlined in the accompanying note, we propose this integrated package for Euro 7 with an ambitious timeframe, ambitious criteria pollutant emission limits and fixed test procedures as the three cornerstones.

This proposal is presented as an integral package. One element of the proposal cannot be taken without the others.

It is politically attractive to consider if Euro 7 could apply in the year 2025. Considering the level of detail of the proposals for Euro 7 we have seen from the Commission's consultants (CLOVE), 2025 is much earlier than industry (and many other stakeholders) would consider feasible.

If we look to the severity of the proposals from CLOVE, it can be no surprise that in all stakeholder discussions, industry has consistently called for a minimum of four years lead-time from when the complete package is known (i.e. the political Act for decision of the co-legislators and subsequent technical regulations that the Commission may be mandated to deliver). Only from then would industry know the challenge for compliance, what it must plan to achieve and to decide on the feasibility and big engineering changes to future new vehicles that we foresee as a result of the proposals from CLOVE.

As outlined in the accompanying note, ACEA requests a balanced approach to Euro 7 that allows industry to focus on decarbonisation. In this respect, if we focus on the key issues, we believe it is possible to reduce the request for industry lead-time on condition the regulatory process is completed quickly. What we propose here will still require new development and the introduction of new hardware (for which ACEA would otherwise insist on a minimum of four years lead-time). For this integrated proposal we can accept three years lead-time.

Considering the key issues, we believe that a new Euro 7 regulation could apply as of the ambitious dates of:

- 1 September 2025 for new types, and
- 1 September 2026 for all new registrations,

These dates are proposed providing the following principles and conditions are respected:

1. The dates for N1 class II and class III light-commercial vehicles (vans) will apply one year later, retaining the same formulation of Euro 6.

2. Simple amendments to Euro 6 or a simple proposal for Euro 7, for the quick decision of the co-legislators.
3. For industry to be ready with Euro 7 by the proposed ambitious dates for Euro 7 mentioned above, we must call for agreement by the co-legislators no later than September 2022. Any delay must extend the proposed dates for Euro 7 accordingly. In other words, the dates for Euro 7 must be tied to a minimum of three years lead-time in respect to this proposal.
4. We believe there should be minimal need for additional amendments via supplemental delegated/implementing regulations. However, if any subsequent amendments would be required, they must be delivered by the European Commission (a) by the end of 2022, or (b) tied to an Article in the text agreed by the co-legislators that will set the dates for Euro 7 in accordance to how long the Commission takes to deliver supplemental delegated/implementing regulations plus three years lead-time.
5. Once the regulations forming Euro 7 are agreed there should be no further amendments for a period of five years from when Euro 7 becomes mandatory to give industry regulatory stability. However, amendments to Euro 7 in order to facilitate the type-approval of new powertrain systems and new technologies that will benefit the efforts of industry on decarbonisation are the exception and provided that any such amendments do not impact the on-going validity of already granted Euro 7 type-approvals and vehicle CoCs.
6. To help industry to recover from the current crisis and to prepare for what will come in revised CO₂ targets and this ambitious proposal for Euro 7, we call for no further amendments to Euro 6. Anything planned could be integrated into Euro 7.

2. EURO 6 FOR LIGHT-DUTY VEHICLES

For reference, Table 1 below shows the current Euro 6 emission limits:

Euro 6	CO (mg/km)		THC (mg/km)	NMHC (mg/km)	HC+NOx (mg/km)	NOx (mg/km)		PM (mg/km)	PN (#/km)
	PI	CI	PI	PI	CI	PI	CI	PI & CI	PI & CI
M & N1 class I	1000	500	100	68	170	60	80	4.5	6×10^{11}
N1 class II	1810	630	130	90	195	75	105	4.5	6×10^{11}
N1 class III	2270	740	160	108	215	82	125	4.5	6×10^{11}
PI = positive ignition engines, CI = compression ignition engines									

3. EURO 7 FOR LIGHT-DUTY VEHICLES

ACEA's proposal for technically neutral Euro 7 emission limits for cars and light commercial vehicles are as follows:

Table 2 – Type 1 test (WLTP dynamometer) emission limits:

Euro 7	CO (mg/km)	THC (mg/km)	NMHC (mg/km)	PM (mg/km)	NH₃ (mg/km)
M & N1 class I	500	90	68	3	40
N1 class II	630	117	90	3	53
N1 class III	740	144	108	3	61

Table 3 - Type 1A test (RDE NTE) emission limits (based on today's known PEMS):

Euro 7	CO (mg/km)	NOx (mg/km)	PN (#/km) ⁽¹⁾
M & N1 class I	500	35	6×10^{11}
N1 class II	630	46	6×10^{11}
N1 class III	740	55	6×10^{11}
⁽¹⁾ SPN ₁₀ procedure from PMP in UNECE			

Pollutant	Test	Comment
THC	Dyno	Road transport THC emissions are not an air quality issue. PEMS measurement is feasible but the procedure remains impractical and complicated to address many HC-species. Hence, THC remains a limit measured on the dyno using WLTP. This aligns with the views of CLOVE.
NMHC	Dyno	Same rationale as THC.
PM	Dyno	PM is not an issue with the employed particle emission reduction technology but a lower limit is acceptable (also a PM limit should be retained for the basis of OBD demonstration).
NH ₃	Dyno	On the basis of today's known PEMS, NH ₃ is not feasible but we include this as a new limit. A new measurement procedure is

		needed for measurement in mg/km values and such a procedure in a Type 1 test must address the strict need for pre-conditioning to avoid latent NH ₃ spikes.
CO	Dyno & PEMS	CO is not an air quality issue but a single limit for petrol and diesel can be agreed. CO is measured and recorded using PEMS in Euro 6 and can be measured against an emission limit in Euro 7 (can also be subject to dyno measurement using WLTP).
NOx	PEMS	This proposal amounts to more than 50% reduction in the key pollutant, NOx, for diesel engines and more than 40% reduction for petrol engines
PN	PEMS	The limit for PN is maintained but the more challenging SPN ₁₀ test procedure developed by PMP in UNECE is introduced. The change to the new UNECE SPN ₁₀ procedure is already equivalent to an increase in stringency for PN control of 30-40% (source: GreenNCAP). The Commission should introduce reference to this new PMP test procedure directly in the Euro 7 proposal to the co-legislators

In view of ACEA's position paper after the last AGVES meeting we also propose the following for a Euro 7 proposal:

Issue	Proposal
RDE test Conformity Factors and PEMS measurement uncertainty	CO, NOx, SPN ₁₀ Conformity Factor (CF) = 1. PEMS measurement uncertainty derived from independent tests using CEN EN 17507. For a particular PEMS device, the measurement uncertainty values derived from testing according to EN 17507 shall be applied in the RDE results analysis and described in the appropriate Appendix of Annex IIIA (same method the Commission has included for the UNECE RDE Regulation).
Minimum trip distance	The emission limits proposed above in Table 2 are based on a minimum 16 km urban trip distance. Accordingly, the "budget concept" is not needed, meaning a less complex Euro 7 proposal.
All other aspects of RDE	The legislation describing RDE testing is complex and we agree there is scope for improvement but the options and interconnections make it impossible to summarise in a brief proposal. ACEA is

	<p>therefore ready to discuss in more detail all elements of RDE where we believe performance improvements can be achieved in the proposed timeframe for this Euro 7 proposal.</p> <p>Additionally, we are ready to discuss measures for improving RDE test validity and take steps to improve the efficiency of RDE testing for all stakeholders.</p> <p>However, in the scope of this integrated package, we cannot accept that RDE would become “anything goes”. As addressed in the explanatory note, the investment and effort to go in that direction as the pace of electrification increases becomes less relevant.</p>																				
RDE test fuels	<p>The test fuels for measurement under RDE would be market fuels but the introduction of low carbon renewable fuels to help reduce overall fleet CO₂ could help deliver lower NOx values.</p> <p>Any change to the Fuel Quality Directive shall not negatively impact Euro 7 and shall not result in any need for any re-approval (in a short space of time).</p>																				
Regulation scope	<p>For now, the scope of Euro 7 shall remain as it is in Euro 6.</p>																				
N ₂ O and CH ₄ as GHG	<p>N₂O and CH₄ are greenhouse gases that have no place in regulations dealing with criteria emissions. N₂O and CH₄ can be addressed in terms of CO₂eq so they must be looked at in the context of the existing CO₂ targets and the current regulatory review.</p>																				
OBD	<p>OBD demonstration shall stay the same as Euro 6d. There can be no changes for Euro 7 in the proposed short timeframe.</p> <p>In respect of technology neutral pollutant emission limits, it proposed to also adjust the OBD thresholds to a technically neutral set of values, as follows:</p> <table><tr><td></td><td>CO (mg/km)</td><td>NMHC (mg/km)</td><td>NOx (mg/km)</td><td>PM (mg/km)</td></tr><tr><td>M1 and N1 class I</td><td>1750</td><td>170</td><td>90</td><td>12</td></tr><tr><td>N1 class II</td><td>2200</td><td>225</td><td>110</td><td>12</td></tr><tr><td>N1 class III</td><td>2500</td><td>270</td><td>120</td><td>12</td></tr></table> <p>ACEA is ready to discuss principles for strict enforcement to ensure</p>		CO (mg/km)	NMHC (mg/km)	NOx (mg/km)	PM (mg/km)	M1 and N1 class I	1750	170	90	12	N1 class II	2200	225	110	12	N1 class III	2500	270	120	12
	CO (mg/km)	NMHC (mg/km)	NOx (mg/km)	PM (mg/km)																	
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	that drivers of vehicles with malfunctioning emission control (i.e. MIL on) are encouraged to seek repair within a maximum of [1500 km].
Evaporative emissions	The test conditions for evaporative emissions shall stay the same as Euro 6d (i.e. SHED). There can be no changes for Euro 7 in the proposed short timeframe.
Durability & ISC	In Euro 7, the distance/vehicle age requirements for making fleet surveillance tests using RDE should be increased from 100,000 km / 5 years to 160,000 km / 8 years (to also align with battery durability).
Battery durability	<p>Evaluation of battery durability up to 160,000 km / 8 years can be part of Euro 7 in order to align with manufacturer's CO2 roadmap-driven vehicle electrification strategies.</p> <p>The coming UN GTR on in-vehicle Battery Durability for Electrified vehicles - global regulation that could be fulfilled on with the proposed Euro 7 timing.</p> <p>Justification:</p> <ul style="list-style-type: none"> • International harmonization. • New battery technologies cannot achieve significantly higher values than 8 years without degrading performance (service schedule replacement is not viable). <p>However, this is strictly on the basis that the UNECE GTR is completed swiftly and industry has sufficient lead-time, as explained in section 1.</p>
SVM, special purpose vehicles, vehicles with multiple stages of build/approval	<p>Small volume manufacturers are important economic actors within the EU with particular constraints. They shall be included in Euro 7 but with appropriate provisions that are proportional to the marginal impact they have on overall emissions from on-road vehicles. In this respect ACEA proposes a delay in the applicability of Euro 7 of five years for new types for small volume manufacturers having a worldwide annual production below 50,000 vehicles.</p> <p>In addition, special vehicles / conversions are a small but important sector that must have sensible provisions in accordance with the multitude of use-cases for such vehicles. ACEA has detailed proposals and is prepared to discuss these provisions.</p>

4. BRAKE WEAR PARTICLE EMISSIONS

There is still work to do to collect brake wear performance data to establish a reasonable proposal for brake wear limit(s), at least for cars and vans.

Setting future brake particle wear limits needs to consider all fleet segments that would be covered as well as aspects of brake safety and the influence of other technologies such as regenerative braking systems. Once the test procedures developed in UNECE have been proven to be representative of entire brake system particle wear emissions and to be robust enough including the contribution of regenerative braking, brake wear emission requirements can be established in a separate UNECE Regulation XXX.

However, the timetable for those activities seems to preclude making a robust proposal this year for brake wear particle emission limit(s) to be part of Euro 7. A framework that includes 'brake family concepts' and a 'new type/ all type definition for brake systems' needs to be discussed. Furthermore, activities and discussions have to be started concerning the definition of a traceable calibration standard for the testing procedures and equipment.

Since the introduction of new hybrid powertrain will influence future brake designs, it is recommended that any limits and new tests for brake wear particle emissions would apply after a Euro 7 step for exhaust emissions.

If brake wear particle emissions would eventually be part of a Euro 7 regulation, any future amendments to introduce such requirements shall not impact the validity of already granted Euro 7 type-approvals and vehicle CoCs – this suggests a stand-alone regulation would be the best way forward.



ABOUT THE EU AUTOMOBILE INDUSTRY

- 14.6 million Europeans work in the auto industry (directly and indirectly), accounting for 6.7% of all EU jobs
- 11.5% of EU manufacturing jobs – some 3.7 million – are in the automotive sector
- Motor vehicles are responsible for €398.4 billion of tax revenue for governments across key European markets
- The automobile industry generates a trade surplus of €74 billion for the European Union
- The turnover generated by the auto industry represents more than 8% of the EU's GDP
- Investing €62 billion in R&D per year, automotive is Europe's largest private contributor to innovation, accounting for 33% of the EU total

REPRESENTING EUROPE'S 15 MAJOR CAR, VAN, TRUCK AND BUS MANUFACTURERS

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