



BS7 to Unlock the Full Potential of Emissions Control Technologies

Dirk Bosteels • 16th Int. ECT Conference • 7-8 October 2025

AECC is now the Association for Emissions Control and Climate

Expanding the scope

Components and systems

Full and Associate member companies

- Air quality and **Climate** requirements
- Mobile and **Stationary** emissions sources
- Sustainable **components and systems**

- Catalysts
- Filters
- Adsorbers
- System integration
- Fuel cells
- Electrolysers

EMITEC
TECHNOLOGIES

JM Johnson
Matthey

NGK

umicore

Albonair

BASF
We create chemistry

GORE
Creative Technologies
Worldwide

EU Transparency Register #78711786419-61, consultative status with the UN Economic and Social Council (ECOSOC)

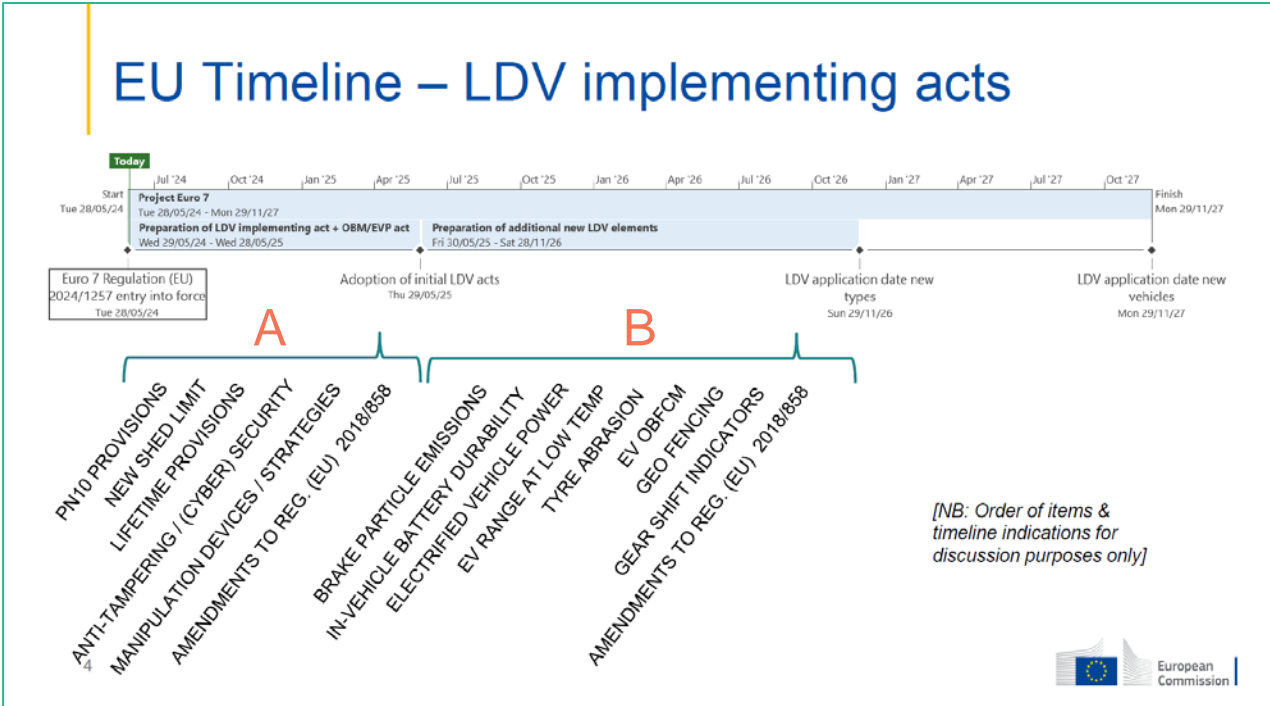
Overview of ongoing Euro 7 process

- Euro 7 regulation published in EU Official Journal on 8 May 2024
- Implementing legislation being developed by European Commission
 - Drafting by European Commission's DG GROW and DG JRC
 - Consulting stakeholders in Advisory Group on Vehicle Emissions Standards (AGVES) meetings

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035						
Light-duty	★ → +30 months → <table border="1" style="display: inline-table; margin-left: 20px;"> <tr> <td style="background-color: #4a7ebb; color: white;">New Types</td> <td style="background-color: #4a7ebb; color: white;">All Types</td> </tr> <tr> <td style="font-size: small;">(29 Nov 2026)</td> <td style="font-size: small;">(29 Nov 2027)</td> </tr> </table>												New Types	All Types	(29 Nov 2026)	(29 Nov 2027)		
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Heavy-duty	★ → +48 months → <table border="1" style="display: inline-table; margin-left: 20px;"> <tr> <td style="background-color: #4a7ebb; color: white;">New Types</td> <td style="background-color: #4a7ebb; color: white;">All Types</td> </tr> <tr> <td style="font-size: small;">(29 May 2028)</td> <td style="font-size: small;">(29 May 2029)</td> </tr> </table>												New Types	All Types	(29 May 2028)	(29 May 2029)		
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Euro 7 implementing legislation

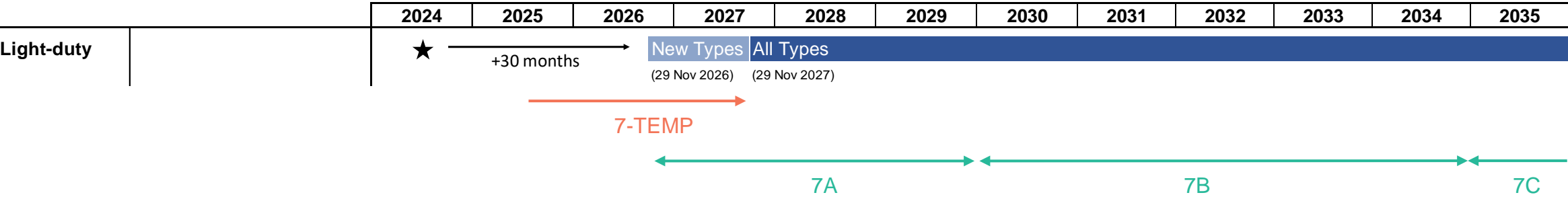
- Focus is first on light-duty vehicles
 - LDV implementing act and OBM/EVP act has been published on 5 September 2025 (A)
 - Adoption of additional LDV elements is targeted by 29 November 2026 (B)
 - Euro 7 transposition into UN Regulations in parallel



Different Euro 7 steps clarified in LDV package

- Type approval certification numbering according to Annex I Appendix 6 (below is M1 example)
 - **Euro 7-TEMP**: voluntary type approval for emissions (transition when only LDV package 1 is published)
 - **Euro 7A-B-C**: steps in requirements for brake emissions (Regulation 2024/1257, Annex I, tables 4-8)

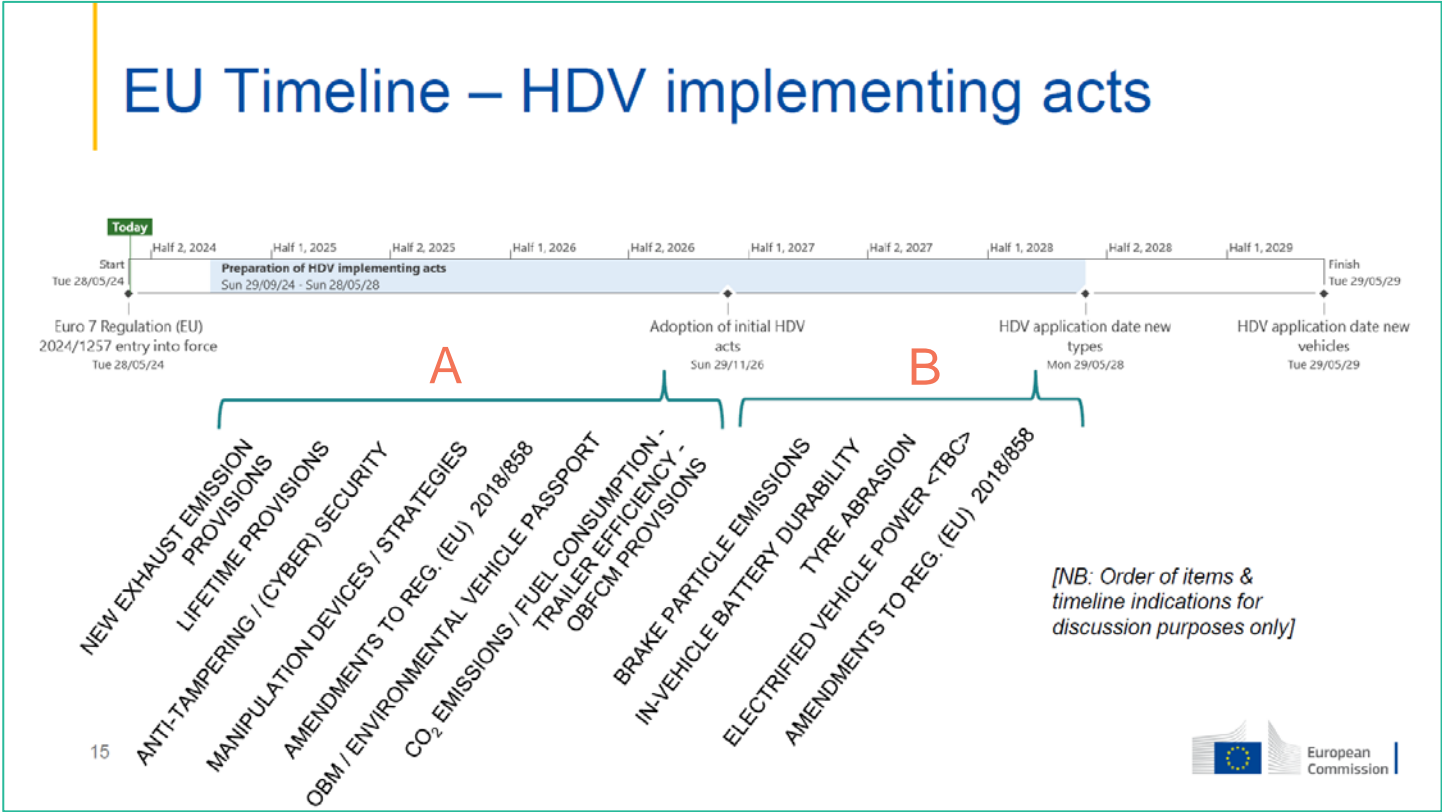
Emission Character ⁶	Emission standard	Sub-character for this regulation (see Table 2)	Sub-character for OBM and EVP (see Table 3)	Vehicle category or product type	In-vehicle battery durability ³	Brake emissions	EV system power ²	EV-range at low temp. ³	Last date of registration
TL ¹	Euro 7-TEMP	MT, MA, MC or ME	OA, OC or OE	M ₁ , N ₁	N/A	N/A	N/A	N/A	28.11.2027
FL	Euro 7A	MA, MC ⁴ or ME	OA, OC or OE	M ₁ , N ₁	UA or UB	RA or RB	SA	LA	31.12.2029 ⁵
GL	Euro 7B	MA or ME	OA, OC or OE	M ₁ , N ₁	UA or UB	RE	SA	LA	31.12.2034 ⁵
HL	Euro 7C	MA or ME	OA, OC or OE	M ₁ , N ₁	UA or UB	RH	SA	LA	



Euro 7 implementing legislation

- Heavy-duty Vehicles

- Adoption of initial HDV implementing act is targeted by 29 November 2026 (A)
- Adoption of additional HDV elements is targeted the latest by 29 May 2028 (B)



Euro 7 for heavy-duty vehicles

- Significant reduction of limit values from Euro VI
 - PN10 measurement procedure instead of PN23
 - New limits introduced for NH₃ and N₂O
 - 1.3-1.5x lower limit for WHTC/WHSC test
 - 100th percentile and budget limit from proposal deleted
- Test procedures nearly kept from Euro VI-E
 - Low power threshold is reduced from 10% to 6%
- Durability is extended
 - Main lifetime up to 300 000 km or 8 years (Cat. 1), 700 000 km or 12 years (Cat. 2)
 - Additional lifetime up to 375 000 km or 10 years (Cat. 1), 875 000 km or 15 years (Cat. 2)
 - Durability multiplier for gaseous pollutant emissions tbc by 31 December 2025

Cat. 1: N2, N3<16t, M3 <7.5t

Cat. 2: N3>16t and M3>7.5t

RDE limits (90 th percentile)	<u>Euro 7 proposal</u> (10 Nov 2022)	<u>Final Euro 7</u> (8 May 2024)
NOx (mg/kWh)	90	260
PM (mg/kWh)	8	8
PN10 (#/kWh)	2x10 ¹¹	9x10 ¹¹
CO (mg/kWh)	200	1950
NMOG (mg/kWh)	50	105
NH ₃ (mg/kWh)	65	85
CH ₄ (mg/kWh)	350	650
N ₂ O (mg/kWh)	100	260
HCHO (mg/kWh)	30	-

Euro 7 for light-duty vehicles

- Limit values kept from Euro 6e, except PN
 - Still gap between CI and PI limits
 - PN10 procedure instead of PN23
 - PN10 limits apply to all vehicles (footnote for DI only deleted)
- Test procedures kept from Euro 6e
 - Includes PEMS error margin for PN (0.34) and NOx (0.1)
- Durability is extended
 - Main lifetime up to 160 000 km or 8 years
 - Additional lifetime up to 200 000 km or 10 years
 - With 1.2 durability multiplier for gaseous pollutant emissions

	<u>Euro 7 proposal</u> (10 Nov 2022)	<u>Final Euro 7</u> (8 May 2024)
NOx (mg/km)	60	60 (PI) – 80 (CI)
PM (mg/km)	4.5	4.5
PN10 (#/km)	6x10 ¹¹	6x10 ¹¹
CO (mg/km)	500	500 (CI) - 1000 (PI)
THC (mg/km)	100	100 (PI only)
THC+NOx (mg/km)	-	170 (CI only)
NMHC (mg/km)	68	68 (PI only)
NH ₃ (mg/km)	20	-
Minimum trip	2 km with cold-start budget for first 10 km	16 km

PI: Positive Ignition
CI: Compression Ignition

Reflection on Euro 7 for BS7 discussion

- Political outcome influenced by CO₂ emissions standards
 - Setting -100% (LDV) or -90% (HDV) tailpipe targets
 - These targets are under review 2025-2027, and ICE/HEV anyway on the road until 2050
 - All powertrains to fulfill future air quality requirements and contribute to transport decarbonisation
- Proposal had too much focus on worst case conditions
 - Due to wording 'any' for trip composition in Euro 7 proposal
 - Emission reduction opportunities missed under normal conditions
- AECC-IPA published fact sheet on myths and truths
<https://www.aecc.eu/wp-content/uploads/2023/09/2023-08-31-AECC-Factsheet.pdf>

IPA: International Platinum Group Metals Association



Myths and truths about Euro 7 pollutants limits for new vehicles in the EU

Every new vehicle sold in the next decades should play its part in reducing air pollution. The robust Euro 7 rules proposed by the European Commission put EU citizens' health first and will keep the automotive sector competitive globally.

<h3>Euro 7 is unnecessary</h3> <p>All EU citizens will benefit: an upgrade to Euro 7 reduces health risks caused by vehicle traffic. Each € invested in Euro 7 results in a reduction of 5€ on healthcare and environment costs.</p> <p>Keeping Euro 6/VI is not sufficient. 20% of distance driven in Europe is outside current test boundaries. Wider Euro 7 test methods will better capture emissions resulting from driving in different conditions.</p>	<h3>Euro 7 limits are not feasible</h3> <p>The necessary emission control technology is already available and has been tested successfully with vehicles on the road.</p> <p>Fitting the latest emission control technology can reduce truck NOx emissions by 75-96% compared to Euro VI-C and NOx from a gasoline car by 40-64% from Euro 6d. Vehicle manufacturers are already developing new vehicles with more stringent limits than Euro 6/VI in mind.</p>
<h3>Euro 7 will not make Europe competitive</h3> <p>China and the United States are moving ahead with more stringent standards than Euro 6/VI. Europe cannot stay behind if it wants to remain competitive.</p> <p>Investing in Euro 7 comes at incremental cost of 0.6-5.7 billion euro compared to the 59 billion euro each manufacturer is expected to invest in electrification, connectivity and automation by 2050.</p>	<h3>Euro 7 is not affordable</h3> <p>Cars and trucks will remain affordable as equipping them with new emission control technologies comes at a very small proportion of the cost of a new vehicle.</p> <p>Studies on the impact of Euro 7 estimate the additional cost of new cars to be between 104-251€ compared to Euro 6d. Contrary to some claims, Euro 7 vehicles will not need to comply with all possible driving situations, hence automatic gearboxes and hybridisation technologies should not be counted among the cost to adapt to the new standards.</p>

www.aecc.eu www.ipa-news.com 

Discover the full Euro 7 fact list and what technology can deliver.

AECC-IPA demonstrator vehicles

- Emission control technologies perform **beyond Euro 7 ambition**
 - Active thermal management
 - Combination of close-coupled and underfloor components
 - Catalysed filters
 - Clean-up catalysts
- **Zero-impact** gaseous and particulate emissions are **technically feasible** under real-world driving conditions
 - Significant reduction of initial cold-start peak
 - Near-zero emissions after initial cold-start peak, also at low-load
- Results confirmed on drop-in **CO₂-neutral fuels** with substantial reduction in WtW and LCA CO₂ emissions



J. Demuyne, et al.; *"Integrated Diesel System Achieving Ultra-Low Urban and Motorway NOx Emissions on the Road"*, Vienna, 2019

J. Demuyne, et al.; *"Zero-Impact Emissions from a Gasoline Car with Advanced Emission Controls and E-Fuels"*, Vienna, 2022

D. Bosteels, et al.; *"Combination of advanced emission control technologies and sustainable renewable fuels on a long-haul demonstrator truck"*, SIA 2022

THANK YOU!

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