

The Road Less Travelled: Euro 7/VII vehicle standards not going far enough

Eurelectric position paper

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:

- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

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Euro 7/VII Standards not going far enough

A Eurelectric position paper

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KEY MESSAGES

Stringent emission limits are pivotal to reducing air pollution, benefiting both the climate and public health

- The European Commission's proposal fails to do push forward the agenda as they settle for an alignment of the limits for diesel cars and vans with the petrol Euro 6 limits. Eurelectric urges the European Council and European Parliament to strengthen the standards for cars and vans and, further, include currently non-regulated exhaust emission because air pollution causes more than 300,000 premature deaths annually with road transport as a major contributor.
- Eurelectric supports the standards proposed for heavy-duty vehicles and sees it as an important step to keep up with technical development and as a necessary step to reduce air pollution and push the electrification of the transport sector.
- Eurelectric welcomes the harmonisation of the standards, ensuring a level playing field between technologies and fuels while reducing implementation costs.

Important steps taken to include non-exhaust emissions

- Eurelectric supports the European Commission's proposal to set limits and develop a methodology for tyre wear emissions and emphasises the importance of such a provision considering the increased payload of battery-electric vehicles.
- Eurelectric welcomes the suggested brake wear limit for PM₁₀ at 7 mg/km, and, further, the proposed consideration for regenerative braking in the test methodology, still to be determined. The limit to be set and methodology determining tyre wear emissions must equally consider the increased load of electric vehicles to not disadvantage them.

It is time to eliminate the discrepancy between real driving emissions and test procedures

- Eurelectric advocates to, as a minimum, further extend the main lifetime durability requirements for vehicles to meet additional lifetime limits proposed, hence removing the introduced additional lifetime to ensure full compliance over the actual service life.
- Scrap the durability multipliers. Applying weaker emission limits in the defined additional lifetime will exacerbate the unevenly distributed impacts of air pollution across the EU.

Zero-emission transport for the sake of public health and mitigating climate change

A revision of emission standards for vehicles is both timely and needed as a matter of course when raising the EU's climate ambitions. The objective of electrifying the transport sector by shifting to electric vehicles is not only to decarbonise transport and decrease dependence on imported fossil fuels but likewise a matter of reducing air and noise pollution, hence creating clean and liveable cities. More stringent emission limits will push the imminent electrification of the transport sector and strongly reduce noise and air pollution in cities, with the latter being the major cause of premature death, more than 300,000 Europeans each year, and the single largest environmental health risk in Europe¹.

The current limits set out by Euro 6 are dependent on fuel and vehicle size. They are set accordingly for cars and vans² fuelled by petrol and diesel:

Pollutant	Euro 6 - Petrol	Euro 6 - Diesel	<i>Euro 7 proposal</i>
CO [mg/km]	1,000	500	500
THC [mg/km]	100	-	100
NO _x [mg/km]	60	80	60
THC + NO _x [mg/km]	-	170	-
NMHC [mg/km]	68	-	68
PM [mg/km]	4.5	4.5	4.5
PN [# /km]	6x10 ¹¹	6x10 ¹¹	6x10 ¹¹
NH ₃ [mg/km]	-	-	20

It is genuinely worrying that the European Commission maintains the exhaust emission limits for cars and vans fuelled by petrol as imposed under Euro 6, limits, set a decade ago, to 60 mg/km for NO_x and 4.5 mg/km for PM. Thus, failing to enshrine a decade of technological development, nor requiring automakers to implement available measures and equipment to reduce pollution and uphold investor confidence on the path toward zero-emission vehicle fleets. Reducing emissions is in no opposition to reducing CO₂ emissions, as several available NO_x-reducing technologies do not increase CO₂ emissions, according to the ICCT³.

More stringent exhaust emissions limits can push forward electrification

The electricity sector supports more stringent limits for exhaust emissions from all vehicles no matter the size, engine, or technology employed, that is why Eurelectric supports the proposed harmonization between fuels and technologies securing a level playing field and the need for stringent limits for all exhaust emissions. This is a key tool to electrify the transport sector.

The revision of the Euro Standards is an opportunity to keep up with even more stringent global standards, as the Euro 6 and VI limits are in general more lenient than the standards set out in the U.S. and China⁴. Dragging our feet will also hurt European automaker's competitiveness, as China already plans to adopt NO_x limits for cars of 35 mg/km by 2023, 40% more stringent than the proposed Euro 7. Applying more stringent emission limits than the ones proposed will boost innovation and European automaker's competitiveness⁵, as ambitious limits will keep the EU at the forefront of technological development and global markets.

¹ EEA (2021). [Status of Air Quality in Europe 2021](#).

² Cars and Vans: M1, N1

³ ICCT (2019). Future Heavy-Duty Emission Standards – An Opportunity for International Harmonization.

⁴ ICCT (2019). *Recommendations for post-Euro 6 Standards for Light-Duty Vehicles in the European Union*.

⁵ Ntziachristos, L. et al., (2022). *Euro 7 Impact Assessment*. European Commission.

Eurelectric urges the European Council and European Parliament to strengthen the standards:

- As a minimum, go with the initially preferred option by the European Commission, option 3a, as this option is viable for society leading to major health and environmental benefits; expected to reach €190 billion altogether, far exceeding the regulatory costs of €53 billion⁶.
- To be more precise, option 3a would tighten the limits for already regulated pollutants for cars and vans to:

Pollutant	Eurelectric proposal
CO [mg/km]	400
NMOG [mg/km]	45
NO _x [mg/km]	30
PM [mg/km]	2
PN ₁₀ [# /km]	1x10 ¹¹

- Additionally, the scope of the regulation needs to be further expanded to include more air pollutants. Eurelectric welcomes lowering the size threshold to 10 nm for PN and the inclusion of ammonia, however, the suggested limit is inadequate. Furthermore, methane and nitrogen oxide must likewise be regulated directly. Eurelectric suggests the following limits for currently non-regulated pollutants:

HCHO [mg/km]	5
NH ₃ [mg/km]	10
CH ₄ [mg/km]	20
N ₂ O [mg/km]	20

The European Commission weakened the proposal at the last minute in consideration of the energy crisis and continuing inflation. Holding back on ambitions for the sake of consumer affordability is a false consideration for consumers, the Impact Assessment shows option 3a would only add ~300€ to the price of a car corresponding to a 0.8-2.2% price increase, which must be considered a limited impact, the exact wording used by the European Commission themselves. The Impact Assessment spells out the fact that European citizens would greatly benefit from more stringent emission limits in the form of improved air quality and health, while the automakers are the only ones benefiting from inaction.

Regarding heavy-duty vehicles, Eurelectric supports the European Commission's proposal as it adequately addresses pollutants and enshrines technological development. It is important not to water down standards, as the expected health and environmental benefits largely originate from introducing more stringent limits for heavy-duty vehicles. As an additional measure, Eurelectric proposes to tighten the limit for the allowed particle number limit to 1x10¹¹ from 2x10¹¹ per kWh. Leaks show that the limit was adjusted at the last minute by the European Commission since it appears the initial proposal was 1x10¹¹ per kWh.

Road traffic is still a major source of air pollution in cities and cause of premature deaths. Despite some improvements in recent years thanks to more stringent EU regulations, the situation remains serious. Setting lenient Euro 7 rules will mean that cities will need to take further action to fight air pollution to keep in line with the European targets proposed in the Air Quality Directive. Passing on the responsibility to local authorities to meet the air quality targets is both risky and disavows responsibility.

⁶ Ntziachristos, L. et al., (2022). *Euro 7 Impact Assessment*. European Commission.

Non-exhaust emissions will need a greater focus in the future

The former Euro Standards had a strict focus on exhaust emissions, but increased knowledge and monitoring have put focus on the role of non-exhaust emissions stemming from i.e., tyres and brakes as a significant source of air pollution. Tyres and brakes are significant sources of both PM_{2.5} and PM₁₀; especially in urban areas, and numerous studies report that non-exhaust emissions sources and exhaust emissions contribute almost equally to all traffic-related PM₁₀ emissions⁷.

The relative contribution of non-exhaust emissions to PM mass has steadily increased and will continue to do so as the vehicle fleet is increasingly electrified. However, no coherent methodology for measuring and testing non-exhaust emissions is in place or ready to be implemented, therefore, it is important to develop one. Eurelectric welcomes the proposed brake wear emission limit for PM₁₀ on 7 mg/km and the explicit consideration for regenerative braking to be accounted for in the methodology referring to UN standards. Additionally, it is key to consider the higher payload of electric vehicles in the methodology and future tyre wear limits to avoid disadvantaging electric vehicles.

The discrepancy between testing and real driving emissions must be removed

Sufficient and coherent testing procedures are essential to ensure the effectiveness of the regulation. The gap between real driving emissions and test procedures needs to be closed, as the current test procedures have significant loopholes and exemptions weakening the effect of the regulation. This concerns the Euro 6/VI exemption of diesel cars and NO_x emissions from the low-temperature test despite the clear link between low ambient temperature and higher emissions⁸. Therefore, it is much appreciated that the European Commission address this link in the proposed test conditions for heavy-duty vehicles, however, this should also be the case for cars and vans. Thus, the ambient temperature under which limits apply for cars and vans must be lowered, as the proposed test for normal driving conditions only requires cars and vans to comply under an ambient temperature level of 0 degrees Celsius and above.

On-board emissions monitoring and on-board diagnostic system are essential to compliance, as this can support the accuracy of the test procedures and identify defective components. Eurelectric considers on-board emissions monitoring and on-board diagnostic systems instrumental in the revised regulation, as monitoring is the only way to assess the effectiveness of the standards and to address emissions tampering. Introducing on-board emissions monitoring and on-board diagnostic system for malfunctioning devices are also assessed as effective in the Impact Assessment as the effects of such systems are similar to introducing more stringent limits.

High durability requirements are critical for successful regulation

The durability requirements must equally be extended to reflect the actual service life of light- and heavy-duty vehicles. The durability requirements of emissions control systems are set to guarantee the emissions performances of a vehicle over its service life. However, the Euro 6/VI demonstration programmes fall short, due to the discrepancy between the vehicle's defined and actual service life. The current in-service conformity tests are currently limited to 5 years/160,000 km for light-duty/commercial vehicles and 7 years/700,000 km for heavy-duty vehicles, whichever comes first. This is significantly underestimating the actual service life, as the average age of an EU passenger car and truck were 11.8 and 14.1 years in 2020⁹, respectively.

⁷ Grigoratos, T. & Martini, G. (2015). *Brake wear particle emissions: A Review*. European Commission, Joint Research Centre, Sustainable Transport.

⁸ ICCT (2019). Recommendations for post-Euro 6 Standards for Light-Duty Vehicles in the European Union.

⁹ ACEA (2022). [Average age of the EU vehicle fleet, by country](#)

The Euro 7/VII proposal extends the defined lifetime of vehicles for cars and vans to 8 years/160,000 km, medium-duty trucks 8 years/300,000 km., and for heavy-duty trucks 15 years/700,000, which is positive and timely. On top of this, the European Commission proposal introduces a so-called 'additional lifetime' extending the durability provisions. The additional lifetime is defined for cars and vans after the main lifetime and up to 10 years/200,000 km, up to 8 years/300,000 km for medium-duty vehicles, and up to 15 years/700,000 km for heavy-duty trucks. Nonetheless, the proposal fails to increase the durability lifetime, since long-haul trucks exceed the mileage threshold way before the 15-year threshold.

Weaker limits will apply in the additional lifetime due to the introduction of a durability multiplier for cars and vans of 1.2 for gaseous pollutant emissions, meaning that the limits under which vehicles shall comply will be multiplied by 1.2 for cars and vans. For example, cars and vans with mileages below 160,000 km can in year 5, 6, and 7 emit 72 mg NO_x per km, instead of 60 mg/km as in the first 5 years of their service life. The European Commission will introduce a delegated act for setting similar durability multipliers for medium-duty and heavy-duty vehicles providing no certainty for the stringency of the emission limits during the additional lifetime of vehicles.

Eurelectric recommends policymakers to:

- The main lifetime durability requirements for vehicles should be extended and as a minimum to cover the proposed additional lifetime threshold, hence removing the additional lifetime to ensure full compliance over the actual service life of vehicles.
- Scrap the durability multipliers, so, vehicles must comply with the emission standards for their entire defined lifetime. Applying weaker emission limits in the defined additional lifetime will further contribute to the unevenly distributed impacts of air pollution within the EU, as data shows; vehicles are, on average, older in eastern European countries¹⁰. Inadequate definitions and weakened durability requirements for older vehicles will only conduce to this.

Eurelectric welcomes the proposed battery durability requirements aligning with the UN's Global Technical Regulation to increase consumer confidence. It is important that the minimum performance requirements must not result in a change of battery technologies, hence the proposed requirements should be maintained.

¹⁰ ACEA (2022). [Average age of the EU vehicle fleet, by country](#)

Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability



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