

NEWSLETTER

International Regulatory Developments

TABLE OF CONTENTS

EUROPE	2
Publication of Draft Agenda for Council Meetings	2
European Commission Proposal on End-of-Life Management of Cars.....	2
ENVI Committee Amendments to Euro 7 Regulation	2
IMCO Committee Vote on Euro 7 Draft Opinion.....	2
ITRE and TRAN Amendments on Euro 7 Draft Opinion	3
ENVI Committee Amendments to HDV CO ₂ Emission Standards Regulation	3
ITRE Committee Amendments to HDV CO ₂ Emission Standards Regulation	3
Council Adoption of Alternative Fuel Infrastructure Regulation.....	3
EP Vote on Alternative Fuels Infrastructure	4
EESC Opinion on Review of HDV CO ₂ Emission Standards	4
NORTH AMERICA	5
US Department of Transport Proposal for Updated Fuel Economy Standards	5
CARB Clean Truck Partnership with Truck and Engine Manufacturers	5
GENERAL	5
ICCT Estimate of Emission Control Costs to meet Euro 7 HDV Standards	5
ICCT Report on EU Truck CO ₂ Emissions	6
ICCT Policy Update on US Heavy-Duty Vehicle NO _x Standards	6
IEA Report on Critical Minerals	7
Emissions Analytics and VERT Letter on Pollutants from Tyre Emissions	7
RESEARCH SUMMARY	8
FORTHCOMING CONFERENCES	9

EUROPE

Publication of Draft Agenda for Council Meetings

On 30 June 2023, the Spanish Presidency of the European Council published a draft agenda for upcoming Council meetings in the 2nd half of 2023.

According to the draft agenda, the Spanish Presidency aims to reach a Council position on the Euro 7 vehicle emission standards at the Competitiveness Council on 25 September in Brussels. This would be the week after the Euro 7 vote in the Parliament's Environment (ENVI) Committee.

Regarding the heavy-duty vehicle CO₂ emission standards, Spain has scheduled time to adopt a General Approach in the Environment Council meeting in Luxembourg on 16 October. This would be in advance of the planned vote in the European Parliament's ENVI Committee.

The draft agenda for Council meetings can be found at data.consilium.europa.eu/doc/document/ST-11106-2023-INIT/en/pdf.

European Commission Proposal on End-of-Life Management of Cars

On 13 July 2023, the European Commission proposed measures to enhance the circularity of the automotive sector, covering the design, production and end-of-life treatment of vehicles. This initiative is expected to improve access to resources for the EU's economy, contribute to the EU's environmental and climate objectives, while reinforcing the single market and contributing to address the challenges associated with the ongoing transformation of the automotive industry.

The proposed regulation, replacing the current Directives on end-of-life vehicles and on reusability, recyclability and recoverability, is expected to have substantial environmental benefits, including an annual reduction of 12.3 million tons of CO₂ emissions by 2035, better valorisation of 5.4 million tons of materials, and increased recovery of critical raw materials. The implementation of the regulation will lead to long-term energy savings at the manufacturing stage, reduced dependency on imported raw materials, and the promotion of sustainable and circular business models.

The scope of these measures will be gradually expanded to include new categories such as motorcycles, lorries, and buses, ensuring a more comprehensive coverage.

The press release and further information are at ec.europa.eu/commission/presscorner/detail/en/ip_23_3819.

ENVI Committee Amendments to Euro 7 Regulation

On 13 July 2023, the Environment (ENVI) Committee of the European Parliament published amendments to the proposed Euro 7 regulation regarding type-approval of motor

vehicles and engines and of systems, components and separate technical units intended for such vehicles, with respect to their emissions and battery durability.

Regarding entry into force of the regulation for light-duty vehicles, amendments range from 21 months to 60 months after entry into force of all implementing or delegated acts, as opposed to 1 July 2025 as proposed by the Commission. For heavy-duty vehicles, the corresponding range is from 1 July 2025 to 60 months from entry into force. The EC proposal is 1 July 2027.

One of the amendments, from MEP Sylvia Limmer (ID, DE), calls for the complete rejection of the proposal.

MEP Bas Eickhout (Greens, NL) proposes that durability requirements are for the entire lifetime of vehicles rather than the 'average expected lifetime.' He also proposed deleting references to vehicles running exclusively on CO₂ neutral fuels, as well as stating that real driving emissions should include a vehicle's emissions 'under normal driving conditions and one or more extended conditions.'

On 18 July, the committee published further amendments.

With regard to emissions limits, amendments to light-duty NO_x limits range from the European Commission Impact Assessment (EC IA) high ambition option of 20 mg/km to the Euro 7 proposal for cars and up to a higher limit of 125 mg/km for vans. For heavy-duty, proposed NO_x limit amendments for the 100th percentile Moving Window range from 175 mg/kWh (EC IA high ambition) to the Euro 7 proposal. Or an alternative proposal with only averaging of emissions instead of the Moving Window methodology, with a limit of 375 mg/kWh.

When considering testing conditions, some MEPs propose that medium ambition conditions are used, while others want to keep Euro 6 RDE testing for ambient temperature and altitude. Heavy-duty proposals range from high ambition conditions to deleting the proposals and maintaining Euro VI testing.

The files containing amendments can be found at europarl.europa.eu/doceo/document/ENVI-AM-750172_EN.pdf, europarl.europa.eu/doceo/document/ENVI-AM-750173_EN.pdf, europarl.europa.eu/doceo/document/ENVI-AM-750236_EN.pdf, europarl.europa.eu/doceo/document/ENVI-AM-750174_EN.pdf and europarl.europa.eu/doceo/document/ENVI-AM-751613_EN.pdf.

IMCO Committee Vote on Euro 7 Draft Opinion

On 18 July 2023, the European Parliament's Committee on the Internal Market and Consumer Protection (IMCO) voted on its draft opinion on the Euro 7 proposal. Compromise amendments 1-8 were adopted, along with the overall report.

Included in the opinion are amendments to the time for Euro 7 implementation. The Rapporteur, MEP Antonius Manders (EPP, NL), proposes that new type-approvals should get a

lead time after adoption of all implementing and delegated legislation of 36 months for light-duty and 48 months for heavy-duty vehicles, with all new vehicles to be Euro 7 after 48 and 60 months respectively.

The IMCO draft opinion with amendments is at europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/IMCO/DV/2023/07-17/14-CAsEuro7_EN.pdf.

ITRE and TRAN Amendments on Euro 7 Draft Opinion

On 19 July 2023, the Industry (ITRE) and Transport (TRAN) committees of the European Parliament adopted their opinion reports on the European Commission's Euro 7 proposal.

ITRE's amendments relate, amongst other things, to the need for technology neutrality, with particular regard to the use of CO₂ neutral fuels. They also cover not testing under combined extended conditions. Proposed changes to the implementation of the Regulation state 36 months from the entry into force of all implementing or delegated acts for light-duty and 60 months for heavy-duty vehicles. Proposals for weaker emissions limits are also included.

The ITRE report can be found at europarl.europa.eu/doceo/document/ITRE-AD-742516_EN.pdf.

The TRAN amendments make similar proposals, including the timing of implementation, taking a technology neutral approach and having testing methods closer to Euro 6/VI standards.

The report from the TRAN Committee is at europarl.europa.eu/doceo/document/TRAN-AD-746906_EN.pdf.

ENVI Committee Amendments to HDV CO₂ Emission Standards Regulation

On 11 and 12 July 2023, the Environment (ENVI) Committee of the European Parliament published amendments to the proposed regulation strengthening the CO₂ emission performance standards for new heavy-duty vehicles (HDVs).

Amendments include proposals for the extensive use of carbon neutral fuels, as well as for all heavy-duty vehicles on the EU market as of 2040 to be fully zero-emissions. There are also calls for improved infrastructure and full life-cycle assessment of CO₂ emissions.

On 17 July 2023, the committee published amendments 509-594 to the draft report.

The amendments relate to annexes of the proposal, covering vehicles included, calculation of CO₂ emissions, reporting periods, and CO₂ reduction targets for vehicle sub-groups.

The ENVI Committee is provisionally scheduled to vote on its Report and the amendments tabled to it on the measure on 23 October 2023. The Report would be expected to be

debated and voted on in the plenary session to be held on 20-23 November.

The ENVI amendments are at europarl.europa.eu/doceo/document/ENVI-AM-751554_EN.pdf, europarl.europa.eu/doceo/document/ENVI-AM-749993_EN.pdf, europarl.europa.eu/doceo/document/ENVI-AM-751554_EN.pdf.

ITRE Committee Amendments to HDV CO₂ Emission Standards Regulation

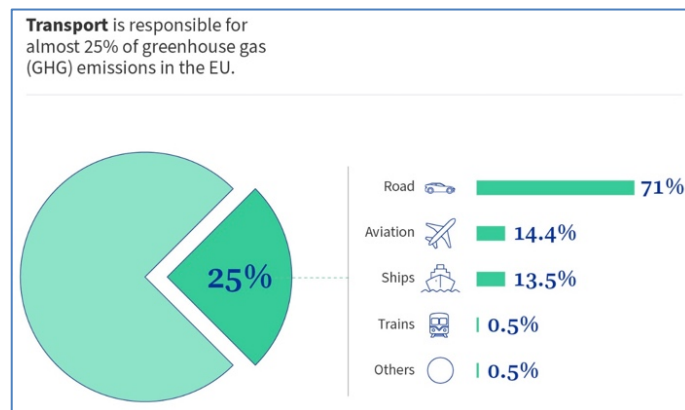
On 13 and 17 July 2023, the Committee on Industry, Research and Energy (ITRE) in the European Parliament published amendments to the proposed heavy-duty vehicle CO₂ emission standards regulation.

Amongst other amendments, there are proposals to change the 2040 CO₂ reduction targets from 90% to either 70, 80 or 100%. ITRE amendments 19-304 relate to the text of the Regulation, including proposals for CO₂ reduction targets, running on CO₂ neutral fuels and the need for recharging and refuelling infrastructure.

The ITRE amendments can be found at europarl.europa.eu/doceo/document/ITRE-AM-751615_EN.pdf, europarl.europa.eu/doceo/document/ITRE-AM-751614_EN.pdf.

Council Adoption of Alternative Fuel Infrastructure Regulation

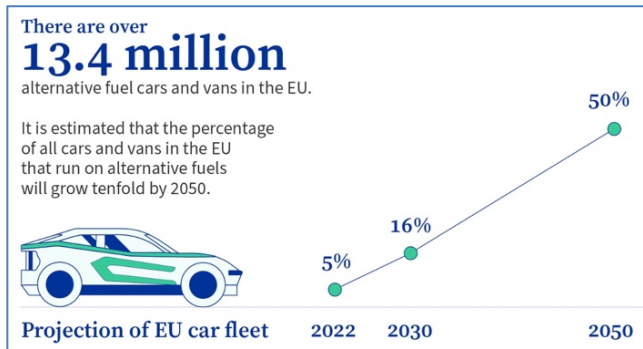
On 25 July 2023, the European Council adopted the Alternative Fuel Infrastructure Regulation (AFIR).



The text of the regulation provides for specific deployment targets that will have to be met in 2025 or 2030. These include a requirement that from 2025 onwards, fast recharging stations of at least 150kW for cars and vans need to be installed every 60 km along the EU's main transport corridors, the so-called 'trans-European transport (TEN-T) network'.

Recharging stations for heavy-duty vehicles with a minimum output of 350kW need to be deployed every 60 km along the TEN-T core network, and every 100 km on the larger TEN-T comprehensive network from 2025 onwards, with complete network coverage by 2030.

Hydrogen refuelling stations serving both cars and lorries must be deployed from 2030 onwards in all urban nodes and every 200 km along the TEN-T core network.



Users of electric or hydrogen-fuelled vehicles must be able to pay easily at recharging or refuelling points with payment cards or contactless devices and without a need for a subscription and in full price transparency. Operators of recharging or refuelling points must provide consumers full information through electronic means on the availability, waiting time or price at different stations.

The new regulation will be published in the EU's official journal after the summer and will enter into force the twentieth day after this publication. The new rules will apply from six months after the date of entry into force of the regulation.

The European Council press release is at consilium.europa.eu/en/infographics/fit-for-55-afir-alternative-fuels-infrastructure-regulation.

EP Vote on Alternative Fuels Infrastructure

On 11 July 2023, the European Parliament adopted new rules providing more alternative fuel stations for cars and trucks, with simple and easy recharging.

MEPs negotiated that electric charging pools for cars with a minimum 400 kW output will have to be deployed at least every 60 km along core TEN-T network routes by 2026, with the network's power output increasing to 600 kW by 2028. For trucks and buses, charging stations have to be provided every 120 km. These stations should be installed on half of main EU roads by 2028 and with a 1400kW to 2800 kW power output depending on the road. EU countries have to ensure that hydrogen refuelling stations along core TEN-T network will be deployed at least every 200 km by 2031.

MEPs also adopted new rules on cleaner maritime fuels. During the negotiations with Council, they ensured that ships will have to gradually reduce greenhouse gas (GHG) emissions by cutting the amount of GHG in the energy they use (below 2020 level) by 2% as of 2025 to 80% as of 2050. This would apply to ships above a gross tonnage of 5000, which are in principle responsible for 90% of CO2 emissions, and to all energy used on board in or between EU ports, as well as to 50% of energy used on voyages where the

departure or arrival port is outside of the EU or in EU outermost regions.

In order to significantly reduce air pollution in ports, containerships and passenger ships will be obliged to use on-shore power supply for all electricity needs while moored at the quayside in major EU ports as of 2030. Thanks to MEPs, the new rules also set a 2% renewable fuels usage target as of 2034 if the Commission reports that in 2031 renewable fuels of non-biological origin (RFNBO) amount to less than 1% of fuel mix.

The new rules on alternative fuels infrastructure were adopted by 514 votes in favour, 52 votes against and 74 abstentions, while the new rules on sustainable maritime fuels were backed by 555 votes to 48 and 25 abstentions. Once Council has approved both laws, the alternative fuels infrastructure rules will apply from six months after their entry into force, and the sustainable maritime fuels rules will apply as of 1 January 2025.

The Parliament press release is at europarl.europa.eu/news/en/press-room/meps-adopt-new-rules-for-more-charging-stations-and-greener-maritime-fuels.

EESC Opinion on Review of HDV CO₂ Emission Standards

On 12 July 2023, the European Economic and Social Committee (EESC) adopted its opinion on the review of CO₂ emission standards for heavy-duty vehicles (HDVs).

Whilst welcoming the objective of this regulation to accelerate the pace of decarbonisation in the sector and to boost its structural transformation, EESC notes that despite all the benefits of electric and hydrogen powertrains, the proposed regulation based on the tailpipe approach needs to be complemented by other policy instruments to incentivise the use of renewable, non-fossil fuels for the part of the fleet running on internal combustion engine (ICE). It says the 'Fit for 55' package must ensure a life-cycle approach and avoid road transport decarbonisation leading to a shift of emissions upstream in the value chain.

The EESC calls for a CO₂ emission reduction trajectory, in line with the industrial sector's capacity to transform and compatible with transport operators in terms of costs and operational efficiency. The proposed targets must be compatible with the time needed to convert existing production facilities and build new ones, to roll out charging infrastructure, to secure supply of key components and raw materials, to create lead markets and to train the workforce.

The EESC adds that sustainable, non-fossil fuels can play a role complementary to electrification and hydrogen for decarbonising transport, even though lower efficiency and costs (which are currently high) are limiting that role. While they are recognised in regulations for aviation and maritime transport, EESC points out that they are not mentioned in road decarbonisation regulations. However, a methodology

distinguishing between linear CO₂ emissions (from fossil fuels) and circular or net-zero emissions (from e-fuels and sustainable biofuels), in a life-cycle context, shows that efficient ICE and hybrid vehicles, fuelled by sustainable biofuels and e-fuels, have a carbon footprint comparable to that of BEVs using fossil-based electricity. According to the EESC, this makes it even more important to replace fossil fuels in the existing fleet, as well as in those new HDVs that will continue to use ICE powertrains.

The EESC goes on to claim that the technology-neutral option presents numerous advantages. It would notably mitigate the risks both in technology development and in security of supply. The resilience of the EU economy would benefit from a diversified technology strategy, with sustainable fuels complementing BEV and hydrogen vehicles, while these two technologies develop and widen their domestic EU basis.

The EESC opinion also says that the 'Fit for 55' package must ensure a life-cycle approach and avoid road transport decarbonisation leading to a shift of emissions upstream in the value chain. The EU Emissions Trading System revision, as well as the Renewable Energy Directive, must ensure that the decarbonisation of road transport and of energy production happen at a compatible pace.

The EESC opinion can be downloaded from eesc.europa.eu/en/our-work/opinions-information-reports/opinions/review-co2-emission-standards-hdvs.

NORTH AMERICA

US Department of Transport Proposal for Updated Fuel Economy Standards

On 28 July 2023, the US Department of Transportation's National Highway Traffic Safety Administration (NHTSA) today issued a proposal to update fuel economy standards for passenger cars and light trucks. A 60-day public comment period will begin after the proposal is published in the Federal Register.

The standards for passenger cars and light trucks and fuel efficiency standards for model years (MYs) 2027-31 increase at a rate of 2% per year for passenger cars and 4% per year for light trucks, and new fuel efficiency standards for heavy-duty pickup trucks and vans (HDPUVs) for MYs 2030-2035 increase at a rate of 10% per year. NHTSA is also setting forth proposed augural standards for MY 2032 passenger cars and light trucks, that would increase at 2% and 4% year over year, respectively, as compared to the prior year's standards. NHTSA currently projects that the proposed standards would require an industry fleet-wide average for passenger cars and light trucks of roughly 58 miles per gallon (mpg) in MY 2032 and an industry fleet-wide average for HDPUVs of roughly 2.6 gallons per 100 miles in MY 2038.

The press release can be found at nhtsa.gov/press-releases/usdot-proposal-updated-cafe-hdpuv-standards.

CARB Clean Truck Partnership with Truck and Engine Manufacturers

On 6 July 2023, the California Air Resources Board announced a Clean Truck Partnership with the US's leading truck manufacturers and the Truck and Engine Manufacturers Association that advances the development of zero-emission vehicles (ZEVs) for the commercial trucking industry, which includes flexibility for manufacturers to meet emissions requirements while still reaching the state's climate and emission reduction goals.

The Clean Truck Partnership says that this marks a commitment from the companies to meet California's vehicle standards that will require the sale and adoption of zero-emissions technology in the state, regardless of whether any other entity challenges California's authority to set more stringent emissions standards under the federal Clean Air Act. In turn, CARB has agreed to work collaboratively with manufacturers to provide reasonable lead time to meet CARB's requirements and before imposing new regulations and to support the development of necessary ZEV infrastructure.

Under the agreement, CARB will align with EPA's 2027 regulations for nitrogen oxide emissions. CARB also will modify elements of the 2024 NO_x emission regulations for which manufacturers will provide offsets as necessary to maintain California's emission targets. In addition, CARB commits to providing no less than four years lead time and at least three years of regulatory stability before imposing new requirements. Truck manufacturers commit to meeting CARB's zero-emission and criteria pollutant regulations in the state regardless of any attempts by other entities to challenge California's authority.

The CARB press release is at arb.ca.gov/news/carb-and-truck-and-engine-manufacturers-announce-unprecedented-partnership-meet-clean-air.

GENERAL

ICCT Estimate of Emission Control Costs to meet Euro 7 HDV Standards

On 12 July 2023, the International Council on Clean Transportation (ICCT) published a report with the estimated cost of diesel emission control technology to meet Euro 7 standards for heavy-duty vehicles.

ICCT says industry experts estimate that complying with the proposed Euro 7 limits would require four aftertreatment technology upgrades, in addition to a typical Euro VI emission control system. These are additional close-coupled catalyst and urea injection, the use of vanadium-based catalysts, electric catalyst heating and the use of ultra-high filtration diesel particulate filters.

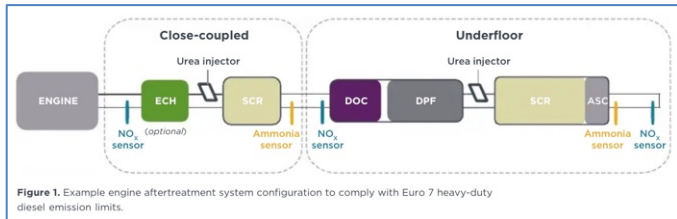


Figure 1. Example engine aftertreatment system configuration to comply with Euro 7 heavy-duty diesel emission limits.

The ICCT cost estimates include direct manufacturing costs (DMCs) and indirect costs that cover investments in research and development and the calibration and validation efforts required for new technology. Indirect cost multipliers that ICCT says are representative of the automotive industry were obtained from the United States Environmental Protection Agency and applied to DMCs. Assuming implementation of the Euro 7 regulation in 2027 and using ICCT’s Roadmap model, they project 3 million Euro 7 HDVs will be sold in Europe by 2050, which is in the same order of magnitude as the 4.1million Euro VI vehicles expected to be sold between 2015 and 2050. They therefore carry over the same indirect cost multipliers as in previous studies.

ICCT says it did not attempt to model the impacts of supply chain shortages, inflation, and geopolitical instability on the costs of emission control systems.

Based on these assumptions, ICCT finds that the level of stringency proposed by the European Commission for the Euro 7 regulation would result in incremental costs for emission control systems between €1 300 and €2 400 in 2027 compared to a typical Euro VI system. The Commission’s impact assessment study supporting the regulatory proposal estimated incremental costs of €2 800.

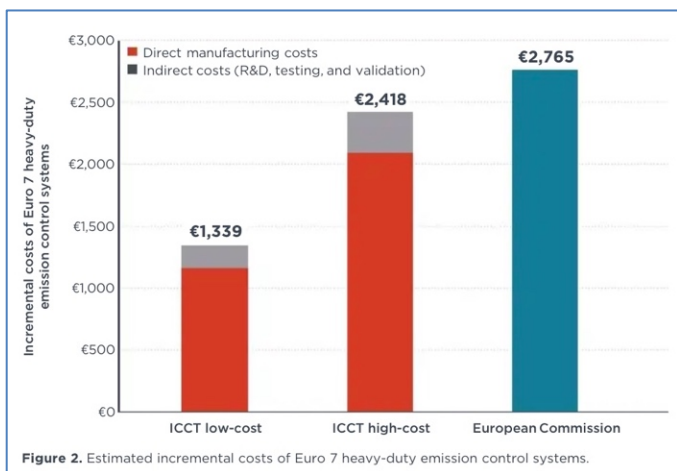


Figure 2. Estimated incremental costs of Euro 7 heavy-duty emission control systems.

The ICCT report can be found at theicct.org/publication/euro7-hdv-costs-jul23/.

ICCT Report on EU Truck CO₂ Emissions

On 11 July 2023, the International Council on Clean Transportation (ICCT) published an analysis of CO₂ emissions from trucks in the European Union in the 2020 reporting period.

The analysis finds that average fleet specific emissions of trucks covered by the CO₂ standards decreased from 52.5 gCO₂/tkm to 52.0 gCO₂/tkm between 2019 and 2020. To comply with the CO₂ targets set for 2025, an average annual reduction of 2.5% is required. As such, ICCT says most manufacturers are currently not on track to achieve the target.

Improvements were observed in engine efficiency, aerodynamics, and tyre operability between 2019 and 2020, but substantial variability around vehicle CO₂ emission values persists.

The sale of zero-emission trucks remains low. In 2020, Europe’s seven major truck manufacturers, who are responsible for 99% of the EU’s truck sales, reported 116 zero-emission trucks. An additional 1 200 were reported by other manufacturers, the majority of which were medium-duty trucks.

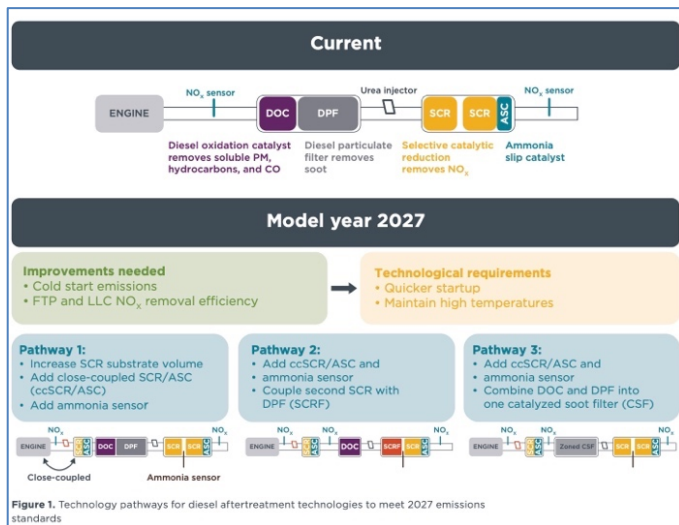
The ICCT report is at theicct.org/wp-content/uploads/2023/07/hdv-co2-emissions-eu-2020-reporting-jul23.pdf.

ICCT Policy Update on US Heavy-Duty Vehicle NO_x Standards

On 21 July 2023, the International Council on Clean Transportation published a policy update on the US EPA’s final rule, “Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards” (see AECC News of 13 January 2023). The rule updates testing procedures, compliance mechanisms, and emission limits for nitrogen oxides (NO_x) and other pollutants from engines used in on-road medium- and heavy-duty vehicles (MHDVs) for model year (MY) 2027 and beyond. The new standards will reduce allowable per-engine heavy-duty NO_x emissions by up to 82.5% starting in 2027 compared to the current 2010 standards.

ICCT’s policy update explains the updated emission limits, updates to off-cycle testing, useful life and warranty and on-board diagnostics, as well as updates to averaging, banking and trading of NO_x credits.

ICCT says the new regulation does not prescribe any specific engine or aftertreatment technologies to manufacturers. For diesel vehicles, most NO_x curtailment will come from upgrades in the aftertreatment process. The NGO says aftertreatment technologies will likely require substantial updates to meet the MY 2027 LLC and FTP NO_x limits and to comply with cold start testing.



The document shows three technology pathways that can meet these stricter standards. All three configurations employ a close-coupled SCR (ccSCR), which uses engine heat to reach higher temperatures more quickly. The first design splits SCR volume in two and places one before the first diesel oxidation catalyst. The first SCR would then also use a heated urea inlet. The second configuration is more compact by combining the second SCR with the DPF. The final pathway combines the diesel oxidation catalyst (DOC) and DPF into a catalyzed soot filter. ICCT states that all three pathways have been demonstrated to reduce NO_x emissions to the levels required in the MY 2027 standards.

The policy update is available to download from theicct.org/publication/us-nox-standards-update-jul23.

IEA Report on Critical Minerals

On 11 July 2023, the International Energy Agency (IEA) published its first annual market review of critical minerals.

The report shows that record deployment of clean energy technologies is propelling demand for minerals such as lithium, cobalt, nickel and copper. From 2017 to 2022, the energy sector was the main factor behind a tripling in overall demand for lithium, a 70% jump in demand for cobalt, and a 40% rise in demand for nickel.

IEA says it is encouraged by the rapid growth in the market for critical minerals, which are crucial for the world to achieve its energy and climate goals. It adds that much more needs to be done to ensure supply chains for critical minerals are secure and sustainable.

Accompanying the Critical Minerals Market Review 2023 is the new IEA Critical Minerals Data Explorer, an interactive online tool that allows users to easily access and navigate the IEA's data and projections for critical minerals. In its initial version, the tool provides users with access to the IEA's demand projections under various scenarios and technology trends. Supply-side information will be added in future updates.

The IEA press release can be found at [iea.org/news/critical-minerals-market-sees-growth-as-clean-energy-demand-drives-strong-increase-in-investment](https://www.iea.org/news/critical-minerals-market-sees-growth-as-clean-energy-demand-drives-strong-increase-in-investment).

Emissions Analytics and VERT Letter on Pollutants from Tyre Emissions

On 27 June 2023, Emissions Analytics (EA) and the VERT Association published an open letter regarding pollutants from tyre emissions.

The letter says the current Euro 7 proposal covers only the total mass of emissions and, therefore, ignores both ultrafine nanoparticles and chemicals released from the tyres. Without changes, they claim it is likely that tyres will be re-engineered to deliver lower emissions of larger particles but potentially at the cost of the release of more invisible nanoparticles and potentially toxic chemicals.

The signatories therefore call on the European regulators to initiate work as soon as possible on a second phase to Euro 7 tyre emissions that would expand the coverage to both nanoparticles and chemical release in real-world conditions.

EA and VERT conclude by calling on European regulators to apply the same approach they have applied to the tailpipe to the growing issue of tyre emissions.

The open letter is available to read at emissionsanalytics.com/news/Open%20letter:%20Regulating%20pollutants%20from%20tyre%20emissions.

RESEARCH SUMMARY

Effects of Emissions and Pollution

Prenatal exposure to ambient air pollutants and congenital heart defects: An umbrella review, Sophie Michel, et al.; *Environment International* (August 2023), Vol. 178, 108076, [doi: 10.1016/j.envint.2023.108076](https://doi.org/10.1016/j.envint.2023.108076).

Can traffic-related air pollution trigger myocardial infarction within a few hours of exposure? Identifying hourly hazard periods, Jenni Shearston, et al.; *Environment International* (August 2023), Vol. 178, 108086, [doi: 10.1016/j.envint.2023.108086](https://doi.org/10.1016/j.envint.2023.108086).

Prenatal and childhood exposure to ambient air pollution and cognitive function in school-age children: Examining sensitive windows and sex-specific associations, Ariane Guilbert, et al.; *Environmental Research* (in press), [doi: 10.1016/j.envres.2023.116557](https://doi.org/10.1016/j.envres.2023.116557).

Diesel exhaust particles exposure induces liver dysfunction: exploring predictive potential of human circulating microRNAs signature relevant to liver injury risk, Lin Xu, et al.; *Journal of Hazardous Materials* (in press), [doi: 10.1016/j.jhazmat.2023.132060](https://doi.org/10.1016/j.jhazmat.2023.132060).

Spatial and sector-specific contributions of emissions to ambient air pollution and mortality in European cities: a health impact assessment, Sasha Khomenko, et al.; *The Lancet Public Health* (July 2023), Vol. 8, Issue 7, pp. e546-e558, [doi: 10.1016/S2468-2667\(23\)00106-8](https://doi.org/10.1016/S2468-2667(23)00106-8).

Health effects of low emission and congestion charging zones: a systematic review, Rosemary Chamberlain, et al.; *The Lancet Public Health* (July 2023), Vol. 8, Issue 7, pp. e559-e574, [doi: 10.1016/S2468-2667\(23\)00120-2](https://doi.org/10.1016/S2468-2667(23)00120-2).

Diesel Exhaust Particle (DEP)-induced glucose intolerance is driven by an intestinal innate immune response and NLRP3 activation in mice, Angela Bosch, et al.; *Particle and Fibre Toxicology* (2023), Vol. 20, Article 25, [doi: 10.1186/s12989-023-00536-8](https://doi.org/10.1186/s12989-023-00536-8).

Associations of particulate matter, gaseous pollutants, and road traffic noise with the prevalence of asthma in children, Chih-I Cho, et al.; *Chemosphere* (October 2023), Vol. 338, 139523, [doi: 10.1016/j.chemosphere.2023.139523](https://doi.org/10.1016/j.chemosphere.2023.139523).

Air Quality, Sources and Exposure

Review on main sources and impacts of urban ultrafine particles: Traffic emissions, nucleation, and climate modulation, Qin-Qin Li, et al.; *Atmospheric Environment: X* (August 2023), Vol. 19, 100221, [doi: 10.1016/j.aeaoa.2023.100221](https://doi.org/10.1016/j.aeaoa.2023.100221).

Air quality low-cost sensors and monitoring stations NO₂ raw dataset in Rouen (France), Emma Thulliez, et al.; *Data in Brief*, 109398, [doi: 10.1016/j.dib.2023.109398](https://doi.org/10.1016/j.dib.2023.109398).

Differences in public's perception of air quality and acceptability of a clean air zone: A mixed-methods cross sectional study, T.F. Mebrahtu, et al.; *Journal of Transport & Health* (July 2023), Vol. 31, 101654, [doi: 10.1016/j.jth.2023.101654](https://doi.org/10.1016/j.jth.2023.101654).

Impacts of net zero policies on air quality in a metropolitan area of the United Kingdom: Towards world health organization air quality guidelines, Jian Zhong, et al.; *Environmental Research* (in press), [doi: 10.1016/j.envres.2023.116704](https://doi.org/10.1016/j.envres.2023.116704).

Emissions Measurements and Modelling

Characterizing emission factors and oxidative potential of motorcycle emissions in a real-world tunnel environment, Yu-Chieh Ting, et al.;

Environmental Research (October 2023), Vol. 234, 116601, [doi: 10.1016/j.envres.2023.116601](https://doi.org/10.1016/j.envres.2023.116601).

Particulate emissions from gasoline vehicles using three different fuel injection technologies, Zongyan Lv, et al.; *Journal of Cleaner Production* (in press), [doi: 10.1016/j.jclepro.2023.138123](https://doi.org/10.1016/j.jclepro.2023.138123).

Emissions Control, Catalysis, Filtration

Investigation of the deactivation of a washcoated monolith using a spatially resolved technique, Yuhan Wang, et al.; *Catalysis Science & Technology* (2023), Vol. 13, Issue 10, pp. 1802-1817, [doi: 10.1039/d2cy01961b](https://doi.org/10.1039/d2cy01961b).

Oxygen storage modeling of a three-way catalyst based on a NARX network, Zhuoxiao Yao, et al.; *Catalysis Science & Technology* (2023), Vol. 13, Issue 10, pp. 3125-3138, [doi: 10.1039/d2cy01133f](https://doi.org/10.1039/d2cy01133f).

Performance analysis of diesel particulate filter thermoelectric conversion mobile energy storage system under engine conditions of low-speed and light-load, Xiaohuan Zhao, et al.; *Energy* (in press), [doi: 10.1016/j.energy.2023.128411](https://doi.org/10.1016/j.energy.2023.128411).

Intra-catalyst CH₄ oxidation pathways on a Pd/Al₂O₃/CeZrOx-based commercial catalyst and implications on NO_x conversion profiles for a natural gas vehicle exhaust under lambda modulation, Dhruva Deka, et al.; *Chemical Engineering Journal* (September 2023), Vol. 472, 144803, [doi: 10.1016/j.cej.2023.144803](https://doi.org/10.1016/j.cej.2023.144803).

Design and analysis of 3-way catalytic converter using CFD, Gill Kumar, et al.; *Materials Today* (in press), [doi: 10.1016/j.matpr.2023.07.215](https://doi.org/10.1016/j.matpr.2023.07.215).

Construct CeO₂-ZrO₂-Al₂O₃ support with relative CeO₂-ZrO₂-rich surface by peptization method to tame the thermal stability of Pd species in three-way catalysts, Wei Wang, et al.; *Molecular Catalysis* (August 2023), Vol. 547, 113371, [doi: 10.1016/j.mcat.2023.113371](https://doi.org/10.1016/j.mcat.2023.113371).

The formation mechanism of N₂O and NH₃ on PtRh three-way catalyst of natural gas vehicles, Yaliu Zhang, et al.; *Molecular Catalysis* (August 2023), Vol. 547, 113392, [doi: 10.1016/j.mcat.2023.113392](https://doi.org/10.1016/j.mcat.2023.113392).

Dynamic and reversible transformations of subnanometre-sized palladium on ceria for efficient methane removal, Dong Jiang, et al.; *Nat Catal* (2023), [doi: 10.1038/s41929-023-00983-8](https://doi.org/10.1038/s41929-023-00983-8).

Multi-objective optimization of performance characteristic of diesel particulate filter for a diesel engine by RSM-MOPSO during soot loading, Zhiqing Zhang, et al.; *Process Safety and Environmental Protection* (September 2023), Vol. 177, pp. 530-545, [doi: 10.1016/j.psep.2023.07.024](https://doi.org/10.1016/j.psep.2023.07.024).

Transport, Climate Change & Emissions

Hydrogen and ammonia as a primary fuel – A critical review of production technologies, diesel engine applications, and challenges, S. Manigandan, et al.; *Fuel* (November 2023), Vol. 352, 129100, [doi: 10.1016/j.fuel.2023.129100](https://doi.org/10.1016/j.fuel.2023.129100).

Present and future emission characteristics of air pollutants and CO₂ from the Beijing transport sector and their synergistic emission reduction benefits, Xuefang Wu, et al.; *Atmospheric Pollution Research* (in press), [doi: 10.1016/j.apr.2023.101844](https://doi.org/10.1016/j.apr.2023.101844).

Are green cars an optimal and efficient choice for motorists? Evidence from Italy, Massimiliano Agovino, et al.; *Transport Policy* (September 2023), Vol. 141, pp. 140-151, [doi: 10.1016/j.tranpol.2023.07.015](https://doi.org/10.1016/j.tranpol.2023.07.015).

FORTHCOMING CONFERENCES

Cenex-LCV

6-7 September 2023, Millbrook, United Kingdom

cenex-lcv.co.uk

International Conference on Engines and Vehicles for Sustainable Transport

10-14 September 2023, Capri, Italy

ice2023.info

FISITA World Congress 2023

12-15 September 2023, Barcelona, Spain

fisita.com/diary/fisita-world-congress-2023

International Transport and Air Pollution Conference

25-26 September 2023, Gothenburg, Sweden

ivl.se/tapase

Aachen Colloquium Sustainable Mobility

9-11 October 2023, Aachen, Germany

aachener-kolloquium.de/en/attend/speaker/call-for-papers.html

FEV Zero CO₂ Mobility Conference

7-8 November 2023, Berlin, Germany

fev-live.com/zero-co2-mobility

Heavy-Duty, On- and Off-Highway Engines

7-8 November 2023, Nuremberg, Germany

atzlive.de/en/events/heavy-duty-on-and-off-highway-engines

European E-fuels Conference

8-9 November 2023, Dusseldorf, Germany

wplgroup.com/aci/efue4-mkt-agenda

POLIS Annual Conference

29-30 November 2023, Leuven, Belgium

polisnetwork.eu/2023-annual-polis-conference

IMEchE Powertrain Systems for a Sustainable Future conference 2023

29-30 November 2023, London, United Kingdom

events.imeche.org/ViewEvent?code=CON7568#msdyntrid=P31DYp9_uO9BcgMpB1eDYE_yyLahi1N1sHvWz0Zd1JU

International Engine Congress

27-28 February 2024, Baden-Baden, Germany

atzlive.de/en/events/international-engine-congress/information/information-for-speakers/call-for-papers/

45th International Vienna Motor Symposium

24-26 April 2024, Vienna, Austria

wiener-motorensymposium.at/en/

Deadline for abstracts 30 September 2023

New Materials for future Mobility (NeMMo)

3-4 July 2024, Nantes, France

sia.fr/evenements/?year=2024

Deadline for abstracts 2 November 2023