APRIL 2023

NEWSLETTER

International Regulatory Developments

TABLE OF CONTENTS

EUROPE

Publication of Regulation on CO_2 Standards for New Cars and Vans

On 25 April 2023, Regulation 2023/851 amending Regulation 2019/631 was published in the Official Journal of the European Union. The relates to strengthening the CO_2 emission performance standards for new passenger cars and new light commercial vehicles in line with the Union's increased climate ambition (see AECC News of 6 April 2023).

The Regulation will enter into force on the twentieth day following its publication in the Official Journal.

It can be found at eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2023.110.01.0005.01.

Publication of Regulation on GHG Emission Reductions by Member States

On 26 April 2023, Regulation 2023/857 amending Regulation 2018/842 was published in the Official Journal of the European Union. The Regulation concerns binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement, and Regulation (EU) 2018/1999.

The Regulation will enter into force on the twentieth day following its publication in the Official Journal.

It is available to read at eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2023.111.01.0001.01.

European Parliament Adoption of Legislation in 'Fit for 55' Package

On 18 April 2023, the European Parliament approved the deals reached with EU countries in late 2022 on several key pieces of legislation that are part of the 'Fit for 55 in 2030 package'.

The reform of the Emissions Trading System (ETS) was adopted with 413 votes in favour to 167 against and 57 abstentions. It increases the ambition of the ETS, as greenhouse gas (GHG) emissions in the ETS sectors must be cut by 62% by 2030 compared to 2005-levels. It also phases out free allowances to companies from 2026 until 2034 and creates a separate new ETS II for fuel for road transport and buildings that will put a price on GHG emissions from these sectors in 2027 (or 2028 if energy prices are exceptionally high).

With 487 votes to 81 and 75 abstentions, the European Parliament adopted the rules for the new EU Carbon Border Adjustment Mechanism (CBAM), which aims to incentivise non-EU countries to increase their climate ambition and to ensure that EU and global climate efforts are not undermined by production being relocated from the EU to countries with less ambitious policies.

The deal with Member States to set up an EU Social Climate Fund (SCF) in 2026 to ensure that the climate transition will be fair and socially inclusive was adopted with 521 votes to 75 and 43 abstentions. Vulnerable households, micro-enterprises and transport users who are particularly affected by energy and transport poverty will benefit from this.

The texts now also have to be formally endorsed by Council. They will then be published in the EU Official Journal and enter into force 20 days later.

The Parliament's press release is available to read at europarl.europa.eu/news/en/press-room/20230414IPR80120/fit-for-55-parliament-adopts-key-laws-to-reach-2030-climate-target.

Council Adoption of 'Fit for 55' Legislation

On 25 April 2023, the European Council adopted five laws that will enable the EU to cut greenhouse gas emissions within the main sectors of the economy, while making sure that the most vulnerable citizens and micro-enterprises, as well as the sectors exposed to carbon leakage, are effectively supported in the climate transition. The laws are part of the 'Fit for 55' package.

The package of measures had been approved by the European Parliament on 18 April (see AECC News of 21 April 2023). The vote in the Council is the last step of the decision-making procedure.

The Council press release can be found at consilium.europa.eu/en/press-releases/2023/04/25/fit-for-55-council-adopts-legislation-delivering-on-2030-climate-targets/.

Commission Proposal to ENVI Committee on HDV CO_2 Standards

On 26 April 2023, the European Commission presented its proposal revising the CO_2 emission performance standards for new heavy-duty vehicles (HDV) to the ENVI Committee.

Ms Beatriz Yordi, Director for DG CLIMA on Carbon Markets and Clean Mobility (CLIMA.B) reminded the MEPs that HDVs were accounting for 20% of transport emissions and stressed the need to upgrade targets in the longer term. She mentioned that the measure proposes emission target reductions up to 2040 while extending the scope of the Regulation to include almost all HDVs with some minor exceptions. The proposal also includes new conditions for compliance and new definitions.

Rapporteur Yannick Jadot (Greens/EFA, FR) expressed his concerns about the signal that the proposal is giving for climate and the industry. The Rapporteur mentioned the debate within the Commission that led to a 90% reduction in 2040, which the MEP particularly criticised. According to the Rapporteur, the signal that the proposal is sending does not align with the EU's climate ambition and called for the

European Parliament to readjust Commission's proposal to be coherent. He also expressed concerns that 20% of vehicles would not be covered by the current proposal while he described the definition of zero-emission vehicles as dangerous in terms of emissions.

Shadow Rapporteur MEP Christel Schaldemose (S&D, DK) underlined the urgency to act fast but stressed that the Commission should have gone further than a 90% CO_2 reduction by 2040 in the proposal. Shadow Rapporteur Pascal Canfin (Renew, FR) supported the differentiation between vehicles in terms of pollution and supported the date proposed by the Commission. He mentioned that while a series of elements show little alternative technology for HDV, which would make the 100% target an issue, there could be some flexibility between 90% to 100%.

MEP Alexandr Vondra (ECR, CZ) expressed the ECR's concerns on the proposal and called for more rationality. The MEP described the targets as unrealistic technology-speaking, too costly as well as time-consuming.

MEP Peter Liese (EPP, DE) claimed that since the presentation of the proposal and the approval of the ETS, e-fuels might not be the most cost-efficient solution but could be relevant in emergency times.

ENVI Vice-Chair Bas Eickhout (Greens, NL) asked about the data provided in the impact assessment where it is clearly stated that the 100% target is a feasible one. The Vice-Chair also questioned the Commission on the issue of climate neutrality by 2050 which could be undermined by the 2040 target and mentioned intermediate targets stated by manufacturers that do not correspond with the Commission's ones.

Answering MEPs' questions, the Commission emphasised the long-term market signal that the proposal represents, in terms of savings and air quality. Director Ms Yordi stressed that the transition requires investment for manufacturers, which the Commission obtained, supported by infrastructure and innovation.

The ENVI Committee session can be replayed at europarl.europa.eu/en/webstreaming/committee-on-environment-public-health-and-food-safety_20230426-0915.

Timeline for ENVI Committee Amendments on Euro 7

On 19 April 2023, an updated timeline from the European Parliament's Environment (ENVI) Committee indicated that it is now provisionally expected to adopt its Report on the proposal on light- and heavy-duty vehicle emissions (Euro 7) on 20 September 2023.

The Committee is provisionally scheduled to exchange views on the forthcoming Rapporteur's draft Report on the proposal on 15 June 2023, while ENVI MEPs would have until 21 June to table amendments to expected draft Report on the measure.

The timeline is available at europarl.europa.eu/cmsdata/268016/envi-work-in-progress-17042023.pdf

Draft Opinion of EP Committees on Euro 7

The 3 Committees in the European Parliament that provide an opinion on the proposal for a regulation on 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 (Euro 7), TRAN, ITRE and IMCO, have published draft reports. The report of the leading Committee, ENVI, is expected in June.

Rapporteur for the opinion in TRAN is MEP Marian-Jean Marinescu (EPP, RO) and the draft opinion report was published on 27 April 2023. The opinion states that while the proposal will significantly contribute to the improvement of air quality and the environmental objectives of the Union, its implementation will also imply a wave of investments for all categories of vehicle manufacturers (LDV and HDV) as well as for the entire industry of components and separate technical units (tyres and breaks), which will be likely passed on to consumers.

It goes on to say that in its Impact assessment the European Commission estimates an increase in the price of a passenger car by a maximum of €150, while the automotive industry estimates a €2 000 price increase. The draft opinion also says there is a significant discrepancy between the estimations in the case of HDVs. Proposed amendments include longer lead times from entry into force of the Regulation (three years for cars and vans, five years for heavy-duty vehicles) and increased limits for heavy vans. Some other amendments relate to CO_2-neutral fuels.

The draft opinion and proposed amendments are at europarl.europa.eu/doceo/document/TRAN-PA-746906_EN.pdf.

The ITRE Rapporteur is MEP Massimiliano Salini (EPP, IT) and its draft opinion report was published on 28 April 2023. Amendments proposed in the draft opinion include extending the lead times for entry into force for both light- and heavy-duty vehicles, deleting the Euro 7+ option, increasing limits for heavy vans and increasing heavy-duty limits. Some other amendments relate to CO_2-neutral fuels.

The ITRE draft opinion can be found at europarl.europa.eu/doceo/document/ITRE-PA-742516_EN.pdf.

The IMCO Rapporteur is MEP Antonius Manders (EPP, NL) and its draft opinion report was published on 3 May 2023. The amendments call for full life cycle emissions of vehicles to be assessed as part of the non-exhaust emissions, and for "realistic and reasonable" emission targets to be set for 2035 onwards, by repealing Regulation (EU) 2023/851 regarding CO_2 emission performance standards for new passenger cars and new light commercial vehicles.

The document also contains amendments calling for a lead time of 36 months after entry into force for vans (N1), 60 months for trucks (N2 and N3), and 48 months for buses and coaches (M2 and M3).

The IMCO draft opinion is at europarl.europa.eu/doceo/document/IMCO-PA-746967_EN.pdf.

ENVI Draft Report on Ambient Air Quality Directive

On 11 April 2023, the EP's Environment Committee published draft reports containing amendments on the proposal for a Directive on Ambient Air Quality and Cleaner Air for Europe. This would amend Directives 2008/50/EC and 2004/107/EC (Ambient Air Quality Directives; AAQDs).

The proposed amendments included those for hastening the attainment of new limit values as well as for extending the time by which they should be achieved. Other amendments were specific to certain pollutants, while some referred to measurement, information and reporting.

The Committee will vote on the draft Report and any amendments tabled to it on 26 June 2023. The European Parliament will then vote on adopting its negotiating position during a plenary session provisionally scheduled on 10 July 2023.

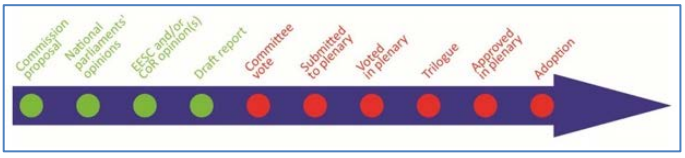
Once the Council and the European Parliament have finalised their respective internal positions on the proposal, informal negotiations (trilogues) are expected to begin with the aim of reaching an agreement. Any resulting compromise would need to be approved by the European Parliament and by the Council. If a successful compromise can be reached and is approved, the Directive would enter into force following its publication in the EU Official Journal.

The draft reports can be found at
europarl.europa.eu/doceo/document/ENVI-AM-745427_EN.pdf.
europarl.europa.eu/doceo/document/ENVI-AM-745423_EN.pdf.
europarl.europa.eu/doceo/document/ENVI-AM-745424_EN.pdf.

EPRS Briefing on Revision of Air Quality Legislation

On 5 April 2023, the European Parliamentary Research Service (EPRS) published a briefing on the revision of EU air quality legislation, in the context of the European Commission's zero pollution objective for air.

The briefing explains the current legal situation, outlining that the Ambient Air Quality Directives cover standards, monitoring and assessment, reporting and information and corrective action.



It then identifies the key aspects of the European Parliament's position, primarily that the Commission should align PM_{10}, $PM_{2.5}$, SO_2 and O_3 values with WHO guidelines, and benzene and benzo(a)pyrene values with WHO reference levels, through a revision of the two directives following a comprehensive impact assessment. It stressed the need to update EU air quality standards as soon as the new WHO guidelines are available, and to include an obligation for a periodic review of the standards based on the latest scientific and technical evidence. In this context, Parliament recommended considering covering pollutants not yet regulated by the EU that have proven negative health and environment impacts, such as ultrafine particles, black carbon, mercury and ammonia.

The Council on the other hand stressed the importance of striving to achieve the WHO air quality guideline levels in its starting position. It encouraged the Commission to complement the revision of the air quality standards, in particular limit values, which have proven effective, with further considerations on how an approach based on average exposure indicators could contribute to a reduction of overall exposure of the general population in all areas.

The briefing explains the changes the Commission's proposal would bring, before providing information on the opinions of advisory committees including the European Economic and Social Committee (EESC), which recommends fully aligning EU air quality standards with the updated WHO Air Quality Guidelines by 2030 at the latest.

The briefing highlights the views of some stakeholders. The deadline for stakeholders' feedback on the Commission proposal was 14 March 2023, by which date 60 contributions were received. Pushing for increased ambition, non-governmental organisations (NGOs) support full alignment of EU air quality standards with the WHO recommendations by 2030 at the latest.

Client Earth warns that rather than proposing fully aligned limit values, the proposal relies on average exposure reduction obligations, allowing air pollution hotspots to be ignored. Regarding air quality plans, it criticises the fact that the first 'delivery plans would only need to be in place four years after the entry into force of the recast (i.e., possibly late 2028 or 2029), making it impossible to deliver compliance in time. It also regrets the lack of sanctions for non-compliance with the limit values by 2030. Transport & Environment proposes that, if compliance is not achieved by 2030, penalties be issued to competent authorities, and a more ambitious remedial plan be adopted.

For Eurocities, attaining the proposed standards requires matching ambitions in source-specific regulation in the transport sector, notably the Euro 7 proposal. On the industry side, ACEA insists that assessing future air quality limits must be based on a full risk assessment and management process. In their view, the Euro 7 proposal for exhaust emission standards is not the key to achieving future air

quality standards, since zero emissions at the tailpipe are being delivered by the industry's transition to zero-emission new vehicles.

Finally, the briefing outlines the legislative process. The Parliament's Environment (ENVI) committee considered the rapporteur's draft report on 22 March 2023. The committee aims to adopt its legislative report before the end of June. In the Council, work is ongoing at working party level. The Swedish Presidency of the Council plans to hold a policy debate on the file at the Environment Council on 20 June 2023.

The briefing is available to read at europarl.europa.eu/RegData/etudes/BRIE/2023/747087/EPRS_BRI(2023)747087_EN.pdf.

Annual EU GHG Inventory 1990-2021 and Inventory Report 2023

On 15 April 2023, the European Environment Agency (EEA) published its annual European Union greenhouse gas inventory for 1990-2021 and inventory report for 2023. The report is the official inventory submission of the EU for 2023 under the United Nations Framework Convention on Climate Change (UNFCCC).

Total GHG emissions – including Land Use, Land Use Change and Forestry (LULUCF), indirect CO_2 emissions and international aviation – in the EU were 3 311 million tonnes CO_2 equivalent in 2021. All GHG emission totals provided in the report include indirect CO_2 emissions. The EU's national total emissions also include LULUCF and international aviation to be consistent with the scope of the EU's 2030 Nationally Determined Contribution (NDC).

In 2021, total GHG emissions were 30% (-1 401 million tonnes CO_2 equivalents) below 1990 levels. Emissions increased by 6.2% or 193 million tonnes CO_2 equivalent) between 2020 and 2021. Still, emissions in 2021 remained below the 2019 pre-COVID-19 pandemic level (3 477 million tonnes CO_2 equivalent) and confirm an overall downward trend.

The EEA says the trend in GHG emissions over the 31-year period was driven by a variety of factors, including the growing share in the use of renewables, the use of less carbon intensive fossil fuels and improvements in energy efficiency, as well as to structural changes in the economy, and more recently the economic recession from the COVID-19 pandemic in 2020 and the recovery of 2021.

GHG emissions decreased in the majority of sectors between 1990 and 2021, with the notable exception of transport, refrigeration and air conditioning, where emissions increased, and forest land, where net removals decreased.

At EU level, almost two thirds of the net increase in GHG emissions in 2021 took place in road transportation and public electricity and heat production. But almost all economic sectors saw significant emission increases in 2021, including manufacturing industries and construction, iron and steel, and international aviation, among others.

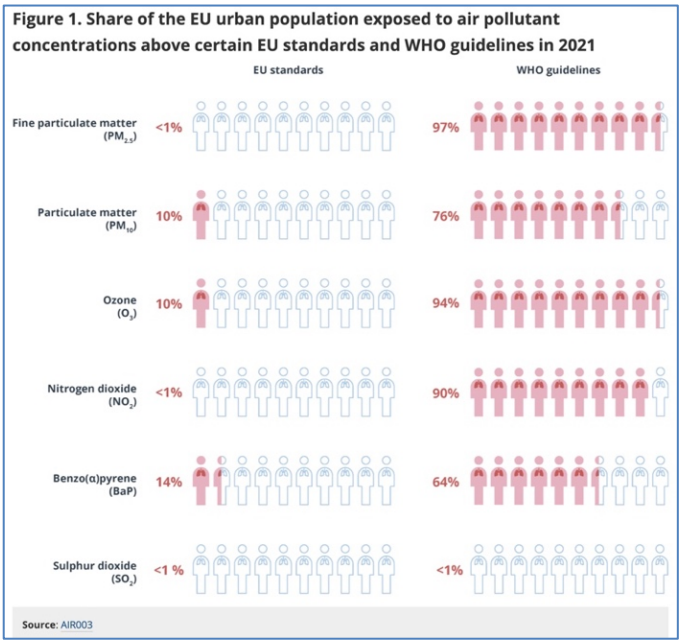
The largest increase in CO_2 emissions in 2021 came from electricity and heat production, with 64 Mt (or 10% increase compared to 2020). The second largest increase occurred in road transport, with CO_2 emissions increasing by 60 Mt (or 9%) in 2021, after a drastic reduction in transport activity in 2020 due to the lockdown measures during the COVID-19 pandemic. Passenger cars accounted for the largest share of the increase in road transport emissions, but emissions from light-duty and heavy-duty vehicles also increased significantly in 2021.

The full report can be found at eea.europa.eu/publications/annual-european-union-greenhouse-gas-2.

EEA Reports on Europe's Air Quality Status and Impact on Children's Health

On 24 April 2023, the European Environment Agency (EEA) published a briefing presenting the status of concentrations of pollutants in ambient air in 2021 and 2022 for regulated pollutants, in relation to both EU air quality standards and the 2021 World Health Organization (WHO) guideline levels. The assessment shows that, in spite of constant improvements, exceedances of air quality standards are common across the EU, with concentrations well above the latest WHO recommendations.

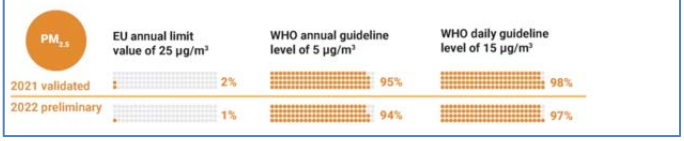
Figure 1. Share of the EU urban population exposed to air pollutant concentrations above certain EU standards and WHO guidelines in 2021



The briefing states that in 2021, 97% of the urban population was exposed to concentrations of fine particulate matter ($PM_{2.5}$) above the health-based guideline level set by the World Health Organization. Central-eastern Europe and Italy reported the highest concentrations of particulate matter,

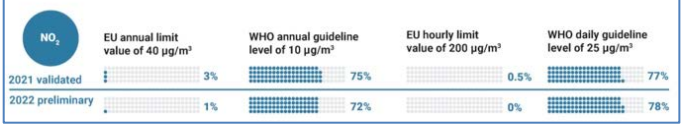
primarily due to the burning of solid fuels for domestic heating and their use in industry.

Figure 6: Percentage of reporting monitoring stations registering $PM_{2.5}$ concentrations above the EU annual limit value and the WHO guideline levels in 2021 and 2022



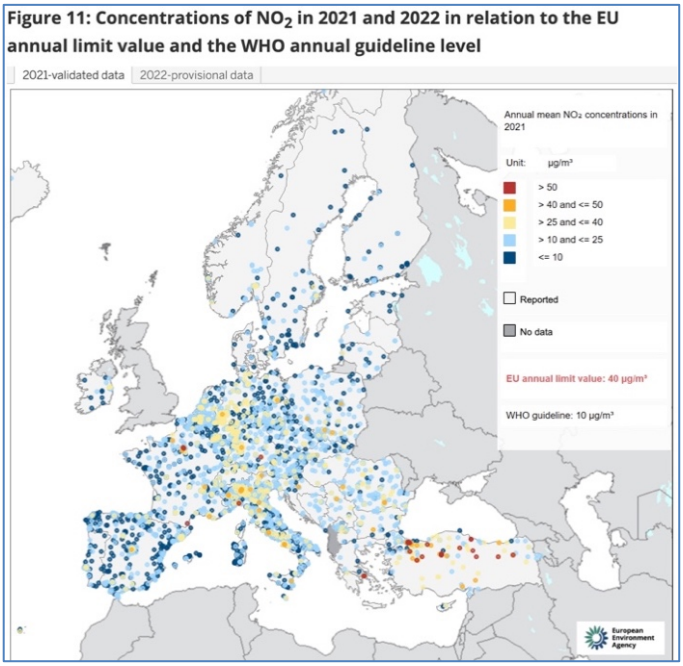
All countries reported levels of ozone and nitrogen dioxide above the health-based guideline levels set by the World Health Organization. The main source of nitrogen dioxide (NO_2) is road transport, which emits NO_2 close to the ground, mostly in densely populated areas, contributing to population exposure. The highest concentrations were found in some big cities with a high volume of traffic. In general, maximum annual concentrations of NO_2 continued to fall in 2021 and 2022. In areas where maximum values have increased, they have not reached the levels observed before COVID-19.

Figure 12. Percentage of reporting monitoring stations registering NO_2 concentrations above the EU limit values and the WHO guideline levels in 2021 and 2022



Concentrations of NO_2 above the EU annual limit value were registered at 3% of all monitoring stations, 75% of which were traffic stations.

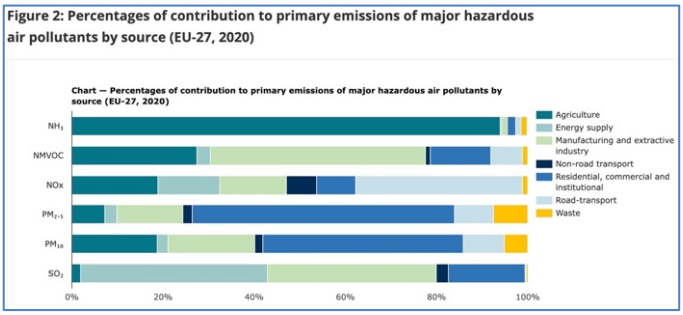
Figure 11: Concentrations of NO_2 in 2021 and 2022 in relation to the EU annual limit value and the WHO annual guideline level



The EEA briefing is at eea.europa.eu/publications/europes-air-quality-status-2023?utm_source=EEASubscriptions.

On the same date, the EEA published a report on air pollution and children's health. This explains that children of all ages are particularly vulnerable to air pollution, with over 1 200 deaths in people under 18 years of age estimated to be caused by air pollution every year in EEA member and collaborating countries. Air pollution also causes low birth weight, asthma, reduced lung function, respiratory infections and allergies in children and adolescents, as well as increased risks of adult chronic diseases.

Figure 2: Percentages of contribution to primary emissions of major hazardous air pollutants by source (EU-27, 2020)



The EEA says that traffic, heating, and industry are the main sources of air pollution in Europe, and that while emissions have declined, air pollution levels are still not safe. It goes on to say that air quality policies should protect the health of children and adolescents by explicitly taking into account differences in their biology and exposure pathways. Improving air quality in around schools and kindergartens, in other child-centric settings, and during activities like school commutes and sports, can help reduce exposure.

The report is available to read at eea.europa.eu/publications/air-pollution-and-childrens-health?utm_source=EEASubscriptions&utm_medium=RSS.

NORTH AMERICA

US EPA Proposals for Light- and Heavy-Duty Vehicle GHG Emission Standards

On 12 April 2023, the US Environmental Protection Agency (EPA) announced new proposed federal vehicle emissions standards that are intended to accelerate the ongoing transition to a clean vehicles future and tackle the climate crisis.

The "Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium Duty Vehicles," builds on EPA's existing emissions standards for passenger cars and light trucks for model years (Mys) 2023 to 2026. The proposal states that it retains the proven regulatory design of previous EPA standards for light-duty vehicles but leverages advances in clean car technology to further reduce both climate pollution and smog- and soot-forming emissions.

The proposal is expected to avoid 7.3 billion tons of CO_2 emissions through 2055, equivalent to eliminating all greenhouse gas emissions from the entire current US transportation sector for four years and would also deliver significant health benefits by reducing fine particulate matter.

EPA's proposal considers a broad suite of available emission control technologies, and the standards are designed to allow manufacturers to meet the performance-based standards however works best for their vehicle fleets. EPA projects that for the industry as a whole, the standards are expected to drive widespread use of filters to reduce gasoline particulate matter emissions and spur greater deployment of CO_2-reducing technologies for gasoline-powered vehicles.

The proposed standards are also projected to accelerate the transition to electric vehicles. Depending on the compliance pathways manufacturers select to meet the standards, EPA projects that EVs could account for 67% of new light-duty vehicle sales and 46% of new medium-duty vehicle sales in MY 2032. The proposed MY 2032 light-duty standards are projected to result in a 56% reduction in projected fleet average greenhouse gas emissions target levels compared to the existing MY 2026 standards. The proposed MY 2032 medium-duty vehicle standards would result in a 44% reduction compared to MY 2026 standards.

The "Greenhouse Gas Standards for Heavy-Duty Vehicles - Phase 3," would apply to heavy-duty vocational vehicles (such as delivery trucks, refuse haulers or dump trucks, public utility trucks, transit, shuttle, school buses) and trucks typically used to haul freight. These standards would complement the criteria pollutant standards for MY 2027 and beyond heavy-duty vehicles that EPA finalised in December 2022 and represent the third phase of EPA's Clean Trucks Plan.

These "Phase 3" greenhouse gas standards maintain the flexible structure that EPA previously designed through a robust stakeholder engagement process to reflect the diverse nature of the heavy-duty industry. Like the light- and medium-duty proposal, the heavy-duty proposal uses performance-based standards that enable manufacturers to achieve compliance efficiently based on the composition of their fleets.

The proposal is projected to avoid 1.8 billion tons of CO_2 through 2055, equivalent to eliminating all greenhouse gas emissions from the entire current U.S. transportation sector for an entire year and deliver additional health benefits by reducing other pollutants from these vehicles.

EPA says the proposed standards align with commitments made by automakers and US states as they plan to accelerate clean vehicle technologies in the light- and medium-duty fleets in the next 10 to 15 years.

The proposed light-duty rule is at epa.gov/regulations-emissions-vehicles-and-engines/proposed-rule-multi-pollutant-emissions-standards-model.

with the heavy-duty rule at epa.gov/regulations-emissions-vehicles-and-engines/proposed-rule-greenhouse-gas-emissions-standards-heavy.

US EPA Report on Climate Change and Children's Health and Well-Being

On 25 April 2023, the US Environmental Protection Agency (US EPA) published a report showing the impacts of climate change on children in the United States.

The report investigates five climate-related environmental hazards associated with children's health and well-being in the contiguous United States: extreme heat, poor air quality, changes in seasonality, flooding, and different types of infectious diseases. With regard to air quality, the analysis considers how a warming climate will change childhood exposures to particulate matter ($PM_{2.5}$) and ozone (O_3), and then quantifies the related effects on respiratory diseases and related outcomes.

New diagnoses of asthma associated with $PM_{2.5}$ and O_3 exposure are estimated to increase by 34 500 per year at 2°C of global warming up to 89 600 at 4°C. On average, this represents a 4% and 11% increase relative to baseline incidence. Emergency department visits and hospital admissions due to general respiratory conditions are projected to increase, as are school days lost because of these effects. The analysis further projects additional premature deaths among newborns. Most impacts stem from climate-induced changes in weather conditions that worsen concentrations of $PM_{2.5}$ and O_3, although wildfires and ground-level dust in the arid Southwest also play a role. BIPOC children are more likely to experience new asthma diagnoses associated with $PM_{2.5}$ exposure, specifically.

The report can be downloaded from epa.gov/cira/climate-change-and-childrens-health-and-well-being-united-states-report.

US Senate Vote Against EPA 2027 Heavy-Duty Emission Standards

On 26 April 2023, the US Senate voted to overturn the EPA emission standards for heavy-duty vehicles that Republicans said were too aggressive. The decision, in a 50-49 vote, rescinds rules, adopted last December, that set new emission limits for NOx and other pollutants starting in model year 2027.

Further information can be found at congress.gov/bill/118th-congress/senate-joint-resolution/11.

CARB Approval of Advanced Clean Fleets Regulation

On 28 April 2023, the California Air Resources Board (CARB) approved the Advanced Clean Fleets (ACF) rule, which requires a phased-in transition toward zero-emission medium-and-heavy duty vehicles.

Under the new rule, fleet owners operating vehicles for private services such as last-mile delivery and federal fleets such as the Postal Service, along with state and local government fleets, will begin their transition toward zero-emission vehicles starting in 2024. Drayage trucks will need to be zero-emissions by 2035. All other fleet owners will have the option to transition a percentage of their vehicles to meet expected zero-emission milestones, which gives owners the flexibility to continue operating combustion-powered vehicles as needed during the move toward cleaner technology. The flexibility is intended to take into consideration the available technology and the need to target the highest-polluting vehicles. For example, last mile delivery and yard trucks must transition by 2035, work trucks and day cab tractors must be zero-emission by 2039, and sleeper cab tractors and specialty vehicles must be zero-emission by 2042.

The CARB press release is available at content.govdelivery.com/accounts/CARB/bulletins/3579202.

ASIA-PACIFIC

G7 Ministers' Meeting on Climate, Energy and Environment

On 15 and 16 April 2023, the G7 Ministers' Meeting on Climate, Energy and Environment took place in Sapporo, Japan.

Ministers discussed the global promotion of Green Transformation (GX), and transformation of the entire economic, social and industrial structure to be driven by clean energy to pursue net zero, circular and nature positive economies in an integrated manner.

The communiqué issued at the end of the meeting included a commitment to the goal of achieving net-zero emissions in the road sector by 2050, underlining that a transition over the coming decade to infrastructure and a vehicle fleet that supports zero emissions transport (e.g., zero emission vehicles (ZEV) and associated infrastructure, and sustainable carbon-neutral fuels) is critical.

The statement says that each of the signatories is committed to pursuing policies and investments to ensure that their efforts to decarbonise their vehicle fleets are in line with trajectories required for keeping a limit of 1.5°C temperature rise within reach and are consistent with environmental and climate integrity. In this context, they highlight the various actions that each is taking to decarbonise their vehicle fleets, including such domestic policies that are designed to achieve 100% or the overwhelming penetration of sales of light duty vehicles (LDVs) as ZEV by 2035 and beyond; to achieve 100% electrified vehicles in new passenger car sales by 2035; to promote associated infrastructure and sustainable carbon-neutral fuels including sustainable bio- and synthetic fuels. The G7 members note the opportunities that these policies offer to contribute to a highly decarbonised road sector, including progressing towards a share of over 50% of zero emission LDVs sold globally by 2030.

The full G7 communiqué can be read at env.go.jp/content/000127828.pdf.

GENERAL

TRUE Analysis of Real-World Vehicle Emissions in Scottish Cities

On 20 April 2023, The Real Urban Emissions Initiative (TRUA) published a policy assessment using real-world emissions data from vehicles in Scottish cities.

Emissions testing of the Scottish fleet was conducted in November–October 2021, led by Transport Scotland in conjunction with Hager Environmental & Atmospheric Technologies (HEAT), International Council on Clean Transportation (ICCT), and Element Energy. Over a month-long trial, over 225 000 real-world emissions measurements were collected using the EDAR commercial remote sensing instruments in the streets of Edinburgh and Glasgow. This technical note presents the assessment of real-world nitrogen oxides (NOx) emissions from passenger car vehicles, including taxis and private hires, in Edinburgh and Glasgow in 2021 and estimates the potential impacts of emissions-based policies planned to be put in place to address air quality.

Pre-RDE Euro 6 vehicles show real-world NOx emissions two to four times the average emissions from vehicles certified to subsequent, post-RDE standards. Remote sensing data also highlighted the importance of emissions from taxis and private hire vehicles. For example, in Glasgow, 38% of passenger cars measured, which represents vehicle activity, were taxis or private hires. Almost 90% of all taxis and private hires measured were diesel-powered and showed significantly high real-world NOx emissions. Although their average age was about a year younger than that of other private passenger cars, NOx emissions from diesel Euro 4 to Euro 6 taxis and private hires, which made up some of the highest shares in the taxi and private hire measurements, were 42%–68% higher than private passenger car counterparts. The assessment says this may be attributable to higher annual mileage, since aftertreatment systems' performance is more strongly linked to total miles driven rather than simply age in years.

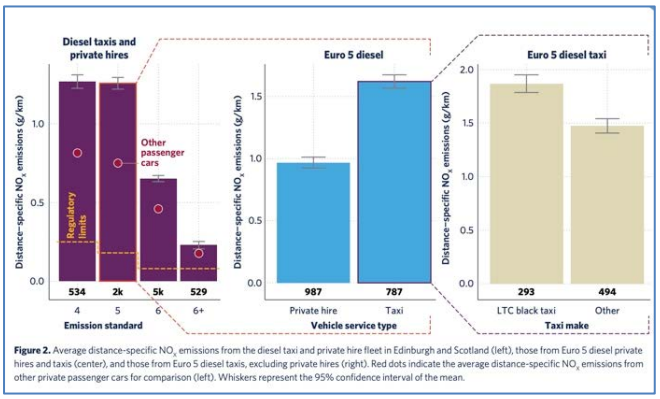


Figure 2. Average distance-specific NO_x emissions from the diesel taxi and private hire fleet in Edinburgh and Scotland (left), those from Euro 5 diesel private hires and taxis (center), and those from Euro 5 diesel taxis, excluding private hires (right). Red dots indicate the average distance-specific NO_x emissions from other private passenger cars for comparison (left). Whiskers represent the 95% confidence interval of the mean.

In reviewing implemented policies, the study says that Scottish cities have implemented policies addressing emissions from taxis and private hires but decided against removing some of the highest-emitting groups from the fleet. In 2021, the minimum standard for taxis and private hires in Edinburgh was Euro 5, determined at the annual test with some exemptions, and Glasgow put a 7-year age limit on only private hires. This policy setup does not restrict the use of one of the highest-emitting taxis and private hires, namely the diesel Euro 5 group that emits NOx emissions two to five times those from diesel vehicles certified to subsequent standards. Diesel Euro 5 was, however, the second most common emissions standard from the taxi and private hire fleet and was responsible for over 35% of the total NOx emissions from taxis and private hires in both cities. In Glasgow, the exception of taxis from the age limit allowed a greater proportion of older diesel taxis, resulting in the taxi fleet showing 38% higher average NOX emissions than the private hire fleet.

TRUE analysis shows that if a seven-year age limit, which currently applies to only private hires in Glasgow, is placed on both taxis and private hires, it could bring about greater emissions benefits than the impact the low-emission zone would have on taxis and private hires in 2024 in Edinburgh and in 2023 in Glasgow. Such a policy would additionally impact taxis and private hires responsible for 9% and 29% of the fleet's 2021 NOX emissions in Glasgow in 2023 and in Edinburgh in 2024, respectively, which would otherwise be on the streets despite the LEZ implementation. Additional advantages of an age limit include a gradual phase-out of the oldest vehicles in the fleet which tend to show the highest real world emissions.

The TRUE report is at theicct.org/wp-content/uploads/2023/04/true-scotland-tech-note-apr23.pdf.

T&E Position Paper on Ambient Air Quality Directive

On 14 April 2023, Transport & Environment (T&E) published a position paper setting out its views on EU clean air laws.

T&E says that air pollution remains the biggest environmental threat to human health and transport is a "major culprit", with specific action needed to tackle a sector which accounts for almost half of all emissions of nitrogen oxides (NOx) in Europe.

The position paper states that aligning the EU's standards more closely with the recommendations of the WHO is a step forward towards cleaner air in cities, but there is still much room for improvement. The NGO believes however that the proposal is a missed opportunity to incentivise tried and tested policies such as low-emission zones and ultimately drive the uptake of zero-emission zones by 2030.

T&E calls on policymakers to align the new Directive with the most recent WHO air quality guidelines. It claims failure to align with the WHO is estimated to amount to 114 000 additional premature deaths a year in European cities.

It goes on to say that the Commission's proposal would mainly benefit the last generation of diesel vehicles (Euro 6d), as compliance with the Commission's proposed new limit values for NO_2 would be possible by 2030 under a baseline scenario – i.e., without having to introduce more ambitious changes than the ones currently planned and with the expected uptake of new diesel and petrol cars into the fleet.

T&E wants Air Quality Plans (AQPs) – a key pillar of the AAQD – to be strengthened. It adds that timelines for preparing them should be brought forward and financial penalties put in place to ensure authorities who fail to comply with the limit values are incentivised to act and put in place tried and tested effective measures. To ensure effective measures are included in AQPs, T&E says the list of recommended pollution reduction measures should be expanded and competent authorities should be required to assess the potential impact of all relevant policies and justify decisions not to implement policies, such as zero-emission zones, that it says would achieve greater impact.

T&E concludes that EU clean air laws have been the main driver for reductions in urban air pollution but cities now need up-to-date and science-based targets from the EU to be able to further implement tried and tested policies to deliver cleaner air.

The position paper can be found at transportenvironment.org/discover/revision-of-the-ambient-air-quality-directive/.

T&E Position Paper on Euro 7

On 3 May 2023, Transport & Environment (T&E) published a position paper on Euro 7. The document starts by pointing out what T&E sees as failures of the European Commission's proposal, and then makes recommendations for light- and heavy-duty.

For cars, T&E says the proposal fails to reduce pollution limits beyond those set for petrol cars 15 years ago and fails to ensure limits are met throughout the lifetime of the vehicle.

According to T&E, it also does not reduce brake particles to low levels, nor does it set a timeline for the introduction of a particle limit for tyres.

The NGO says the proposal for trucks is more ambitious but nevertheless fails to reduce pollution from when the engine is first started (cold start) in line with standards in other key automotive markets and also fails to ensure that limits are met throughout the lifetime of the vehicle. T&E also sees as a failure the lack of limits for PN, methane and nitrous oxide emissions.

When considering what the Commission should include in the proposal for cars, T&E says that pollution limits should be reduced in line with findings of the Commission's Impact Assessment, setting limits of 30 mg/km for NOx and 1x10 ^{11}/km for particles. It should also increase the requirement to comply with limits to 240 000 km/15 years to cover the entire lifetime of cars on EU roads. Other suggested measures include removing additional Euro 7 categories such as geo-fencing and Euro 7+, setting brake particle limits at 3mg/km from the first implementation of Euro 7, and committing the Commission to proposing a new regulation for tyre particle pollution, including the testing methodology and limits by not later than the end of 2024.

For trucks, T&E proposes reducing the NOx limit for when the engine is first started from 350 mg/kWh to 175mg/kWh, increasing the requirement to comply with limits to 700 000 km and 15 years for small trucks and 1.2 million km for large trucks, and reducing the particle number and greenhouse gas emission limits to align with the findings of the Impact Assessment.

The T&E position paper is at transportenvironment.org/wp-content/uploads/2023/05/2023_04_TE_Euro7_position_paper.

Report on Public Funding for Powerfuels Projects

On 24 April 2023, the Global Alliance Powerfuels (GAP) launched a report on the topic of 'Public Funding for Powerfuels Projects'.

The report analyses the geographical and technological scope of funding programmes, and differentiates between funding structures, categorising programmes into stand-alone (independent) and overarching programmes with sub-programmes. Based on the results of a best-in-class assessment, the report also provides an in-depth look at five selected support measures from different world regions and their priorities.

Despite an increase in funding in the US, Europe still leads in terms of absolute funding volume, while Germany is ahead in terms of the number of funding programmes for which powerfuels are eligible. South America and Africa stand out as regions with a number of newly established funding programmes.

The report adds that further public and private investments into powerfuels are needed for a path that is consistent with achieving net-zero emissions by 2050 globally. In addition, 90% of announced projects currently still lack a final investment decision. GAP says this shows that more public funding is still needed, as well as greater activation of private capital.

The report can be downloaded from powerfuels.org/news/publikationsdetailansicht/pub/report-public-funding-for-powerfuels-projects-vol-ii/.

RESEARCH SUMMARY

Effects of Emissions and Pollution

Long-Term Exposure to Traffic-Related Air Pollution and Non-Accidental Mortality: A Systematic Review and Meta-Analysis, H. Boogaard, et al.; *Environment International* (in press), doi: 10.1016/j.envint.2023.107916.

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Emissions Control, Catalysis, Filtration

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Insight into the better performance of Co than Pt on Ce-Sn catalyst for soot oxidation, Meng Wang, et al.; *Fuel* (August 2023), Vol. 346, 128379, doi: 10.1016/j.fuel.2023.128379.

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Highly effective recovery of palladium from a spent catalyst by an acid- and oxidation-resistant electrospun fibers as a sorbent, Nianshou Cheng, et al.; *Chemical Engineering Journal* (June 2023), Vol. 466, 143171, doi: 10.1016/j.cej.2023.143171.

FORTHCOMING CONFERENCES

Fuel Science – From Production to Propulsion
23-25 May 2023, Aachen, Germany
fuelcenter.rwth-aachen.de/cms/Fuelcenter/Austausch/~smxp/Int-Konferenz

AVL Vehicle & Environment Conference
25-26 May 2023, Graz, Austria
avl.com/-/vehicle-environment?j=3464186&sfmc_sub

SIA Powertrain 2023
14-15 June 2023, Paris, France
sia.fr/evenements/302-sia-powertrain-2023

ETH Conference on Combustion-Generated Nanoparticles
20-22 June 2023, Zurich, Switzerland
nanoparticles.ch/

Stuttgart International Symposium
4-5 July 2023, Stuttgart, Germany
fkfs-veranstaltungen.de/en/events/stuttgart-symposium

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 CO_2 Mobility Conference
7-8 November 2023, Belin, Germany
fev-live.com/zero-co2-mobility
Deadline for abstracts 16 June 2023

Heavy-Duty, On- and Off-Highway Engines
7-8 November 2023, Nuremberg, Germany
atzlive.de/en/events/heavy-duty-on-and-off-highway-engines/

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#msdynttrid=P31DYp9_uO9BcgMpB1eDYE_yyLahi1N1sHvWz0Zd1JU