

# NEWSLETTER

International Regulatory Developments

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## AECC Press Release following Euro 7 Proposal Adoption

On 10 November 2022, AECC issued a press release welcoming the European Commission's Euro 7 emission standards proposal for cars, vans, lorries and buses.

AECC commented on the delays in the adoption process and urged the co-legislators to conclude negotiations swiftly.

The press release suggested that the Commission has taken a cautious approach with respect to possible innovation for light-duty vehicles, deviating from the outcome of the impact assessment.

The AECC press release can be found at [aecc.eu/wp-content/uploads/2022/11/221110-Press-Release-AECC-Euro-7-final.pdf](https://aecc.eu/wp-content/uploads/2022/11/221110-Press-Release-AECC-Euro-7-final.pdf).

## EUROPE

### Publication of Euro 7 Proposals

On 10 November 2022, the European Commission proposed new Euro 7 standards to reduce pollutant emissions from vehicles and improve air quality. This is intended to meet the European Green Deal's zero-pollution ambition, while keeping vehicles affordable for consumers and promoting Europe's competitiveness.

The Commission says that the new Euro 7 emission standards will ensure that cars, vans, lorries and buses are much cleaner, in real driving conditions that better reflect the situation in cities where air pollution problems are largest, and for a much longer period than under current rules. The proposal tackles emissions from tailpipes as well as from brakes and tyres. It will also contribute towards achieving the new stricter air quality standards proposed by the Commission on 26 October 2022.

The Commission states that the new rules bring emission limits for all motor vehicles, i.e., cars, vans, buses and lorries under a single set of rules, and are fuel- and technology-neutral, placing the same limits regardless of whether the vehicle uses petrol, diesel, electric drive-trains or alternative fuels.

For M1, N1 vehicles, the proposed limits and driving conditions are:

	M <sub>1</sub> , N <sub>1</sub> (/km)	N <sub>1</sub> PMR < 35 kW/t (/km)	M <sub>1</sub> , N <sub>1</sub> cold-start budget (/trip)	N <sub>1</sub> PMR < 35 kW/t cold-start budget (/trip)
NOx in mg	60	75	600	750
PM in mg	4.5		45	
PN in # (>10 nm)	6x10 <sup>11</sup>		6x10 <sup>12</sup>	
CO in mg	500	630	5000	6300
THC in mg	100	130	1000	1300
NMHC in mg	68	90	680	900
NH <sub>3</sub> in mg	20		200	

	Normal	Extended*
Ambient temperature	0 to 35 °C	-10 to 0 °C or 35 to 45 °C
Ambient altitude	0 to 700 m	700 to 1800 m
Max speed	<145 km/h	145 to 160 km/h
Towing or aerodynamic modifications	Not allowed	Allowed according to manufacturer specifications and up to the regulated speed
Auxiliaries	Possible as per normal use	-
Max. avg. wheel power during first 2 km after cold-start	<20% of max	>20% of max
Trip composition	Any	-
Min. mileage	10000 km	3000 to 10000 km

\* The same emission strategy shall be used when a vehicle is run outside those conditions, unless there is a technical reason approved by the type approval authority

For M2, M3, N2 and N3 vehicles the proposed limits and driving conditions are:

	Cold emissions (MAW100) (/kWh)	Hot emissions (MAW90) (/kWh)	Emissions budget for trips less than 3xWHTC (/kWh)
NOx (mg)	350	90	150
PM (mg)	12	8	10
PN (10 nm, #)	5x10 <sup>11</sup>	2x10 <sup>11</sup>	3x10 <sup>11</sup>
CO (mg)	3500	200	2700
NMOC (mg)	200	50	75
NH <sub>3</sub> (mg)	65	65	70
CH <sub>4</sub> (mg)	500	350	500
N <sub>2</sub> O (mg)	160	100	140
HCHO (mg)	30	30	

MAW: Moving Averaging Window, 90<sup>th</sup> or 100<sup>th</sup> percentile

	Normal	Extended
Ambient temperature	-7 to 35 °C	-10 to -7 °C or 35 to 45 °C
Ambient altitude	0 to 1600 m	1600 to 1800 m
Towing or aerodynamic modifications	Not allowed	Allowed according to manufacturer specifications and up to the regulated speed
Vehicle payload	>10%	<10%
Auxiliaries	Possible as per normal use	-
ICE loading at cold-start	Any	-
Trip composition	As per usual use	-
Min. mileage	5000 km (<16t) 10000 km (>16t)	3000 to 5000 km (<16t) 3000 to 10000 km (>16t)

\* The same emission strategy shall be used when a vehicle is run outside those conditions, unless there is a technical reason approved by the type approval authority

The Commission intends to better control emissions from all new vehicles by broadening the driving conditions covered by the on-road emissions tests, and by updating and tightening the limits for pollutant emissions.

As can be seen from the tables above, limits will be tightened for lorries and buses while the lowest existing limits for cars and vans will now apply regardless of the fuel used by the vehicle. The new rules also set emission limits for previously unregulated pollutants, such as nitrous oxide emissions from heavy-duty vehicles.

The Euro 7 standards rules will be the first worldwide emission standards to move beyond regulating exhaust pipe emissions and set additional limits for particulate emissions from brakes and rules on microplastic emissions from tyres. These rules will apply to all vehicles, including electric ones.

All vehicles will need to comply with the rules for a longer period than until now. Compliance for cars and vans will be checked until these vehicles reach 200 000 kilometres and 10 years of age. This doubles the durability requirements existing under Euro 6/VI rules (100 000 kilometres and 5 years of age). Similar increases will take place for buses and lorries.

The new rules will regulate the durability of batteries installed in cars and vans in order to increase consumer confidence in electric vehicles. This will also reduce the need for replacing batteries early in the life of a vehicle, thus reducing the need for new critical raw materials required to produce batteries.

The Commission also says that Euro 7 rules will ensure that vehicles are not tampered with and emissions can be controlled by the authorities in an easy way by using sensors inside the vehicle to measure emissions throughout the lifetime of a vehicle.

The Commission's proposal will now be submitted to the European Parliament and the Council in view of its adoption by the co-legislators.

The adopted act is open for feedback for a minimum period of eight weeks, until 30 January 2023. All feedback received will be summarised by the European Commission and presented to the European Parliament and Council with the aim of feeding into the legislative debate. AECC will contribute to the feedback based on analysis of the data of the AECC demonstrator vehicles.

The Euro 7 proposal can be downloaded from [ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_6495](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_6495).

Feedback can be provided at [ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12313-Euro-7-for-cars-vans-lorries-and-buses\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12313-Euro-7-for-cars-vans-lorries-and-buses_en).

## Adoption of UN Regulation on Light-Duty Vehicle Emissions

On 10 November 2022, UN Regulation No 154 was published in the Official Journal of the European Union. The

Regulation's 02 series of amendments entered into force on 8 October 2022 and relates to uniform provisions concerning the approval of light duty passenger and commercial vehicles with regards to criteria emissions, emissions of carbon dioxide and fuel consumption and/or the measurement of electric energy consumption and electric range (WLTP) [2022/2124].

The intention of this Regulation is to establish uniform provisions concerning the approval of motor vehicles with regard to the emissions of light-duty vehicles based on the new World harmonized Light vehicle Test Procedure (WLTP) included in UN GTR No. 15 and the updated Evaporative Emissions test procedure (Type 4 test) which has been developed in UN GTR No. 19. It will enable Contracting Parties (CPs) to issue and accept approvals based on these new type approval tests.

The WLTP Type 1 test replaces both the current Type 1 test in UN Regulation No. 83 and UN Regulation No. 101, whilst the updated Evaporative Emissions test procedure (Type 4 test) replaces that currently in UN Regulation No 83.

In addition, this new Regulation includes an update to the Type 5 test for verifying the durability of pollution control devices and updated On-Board Diagnostic (OBD) requirements. These updates are in order to reflect the changes from the previous NEDC based Type 1 test to the new WLTP Type 1 test.

The 02 series of this Regulation covers two sets of requirements – termed Level 1A and Level 1B. Level 1A is based on a four phase test cycle (Low, Medium, High and Extra-High), whilst Level 1B is based on a three phase test cycle (Low, Medium and High), with different type 1 limits applying to these different levels. The majority of the regulatory text is applicable to both Level 1A and Level 1B. Where the requirements are specific to either Level 1A or Level 1B the relevant sections are labelled accordingly. This series of amendments covers regional requirements and does not require mutual recognition by other Contracting Parties.

The 03 series of this Regulation includes a harmonised procedure which contains the most stringent procedures/limits which shall be subject to full mutual recognition. A type-approval to the 03 series shall therefore be accepted by all CPs having adopted this Regulation.

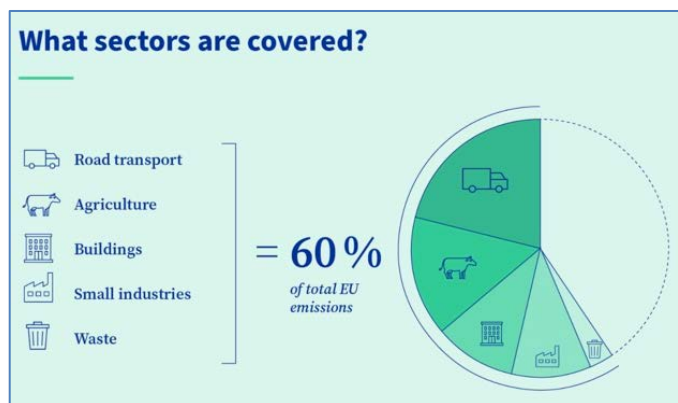
The full text of the Regulation can be found at [eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:42022X2124&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:42022X2124&from=EN).

## Agreement on Stricter Rules for Member States' Greenhouse Gas Emissions

On 8 November 2022, the European Council and the European Parliament reached a provisional political agreement on stronger emission reduction targets for Member States under the so-called effort sharing regulation.

Pending a formal adoption, the provisional deal endorses an EU-level greenhouse gas emission reduction target of 40% compared to 2005, for the sectors not covered by the EU Emissions Trading System (EU-ETS), namely road and domestic maritime transport, buildings, agriculture, waste and small industries. The agreement keeps the increased national targets assigned to each Member State as proposed by the Commission and adjusts the way member states can use existing flexibilities to meet their targets.

To take into account uncertainties related to unforeseen events having an impact on emissions, the Council and Parliament agreed on an update in 2025 of the linear emission trajectory set for each Member State, which could lead to annual emission allocations to be adjusted upwards or downwards for the period 2026 to 2030.

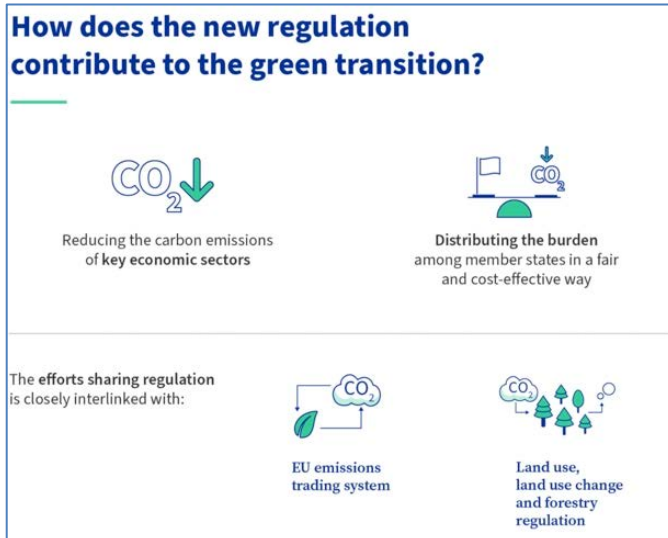


The provisional agreement allows Member States to 'bank and borrow' emission allocations. In respect of the year 2021, if their emissions were lower than their annual emission allocations, Member States can bank up to 75% of their annual emission allocation for that year to subsequent years until 2030. As regards the years 2022 to 2029, Member States will be able to bank up to 25% of their annual emission allocations up to that year and use them in subsequent years until 2030.



The provisional agreement also makes it possible to buy and sell emission allocations between Member States, up to 10% of their annual emissions allocations as regards the years 2021 to 2025, and 15% as regards the years 2026 to 2030.

The provisional agreement also maintains an ETS flexibility that allows nine Member States to use a limited amount of ETS allowances to offset emissions in the effort sharing sectors from 2021 to 2030.



Further details of the agreement can be found at [consilium.europa.eu/en/press-releases/2022/11/08/fit-for-55-eu-strengthens-emission-reduction-targets-for-member-states/](https://consilium.europa.eu/en/press-releases/2022/11/08/fit-for-55-eu-strengthens-emission-reduction-targets-for-member-states/).

## Implementing Decision on Publication of HDV CO<sub>2</sub> Emissions by Manufacturer

On 29 November 2022, Commission Implementing Decision (EU) 2022/2336 was published in the Official Journal of the European Union. This relates to the publication of a list indicating certain CO<sub>2</sub> emissions values per manufacturer as well as average specific CO<sub>2</sub> emissions of all new heavy-duty vehicles registered in the Union pursuant to Regulation (EU) 2019/1242 of the European Parliament and of the Council for the reporting period of the year 2020.

This states that the average specific CO<sub>2</sub> emissions of a manufacturer should be determined on the basis of data reported by Member States and manufacturers pursuant to Regulation (EU) 2018/956 for vehicles of that manufacturer. It also says the zero- and low-emission factor for each manufacturer should be determined taking into account the zero- and low-emission heavy-duty vehicles, and that the CO<sub>2</sub> emission reduction trajectory and the emission credits per manufacturer should be determined on the basis of the number of new heavy-duty vehicles excluding vocational vehicles.

The average specific CO<sub>2</sub> emissions of all new heavy-duty vehicles registered in the Union should be based on those data reported for vehicles from all manufacturers.

The Implementing Decision can be read in full at [eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ).

## EEA Report on Air Quality in Europe

On 24 November 2022, the European environment Agency (EEA) published its report on 'Air Quality in Europe 2022'. This presents the status of air quality in Europe, assesses the impacts of air pollution on health and ecosystems, and identifies sources of emissions to air.

According to the EEA analysis, air pollution continues to pose significant risks to health in Europe, causing chronic illness and premature deaths. In 2020, 96% of the EU's urban population was exposed to concentrations of fine particulate matter (PM2.5) above the WHO guideline level of 5 micrograms per cubic metre ( $\mu\text{g}/\text{m}^3$ ) of air. Air pollution also harms biodiversity and damages agricultural crops and forests, causing major economic losses.

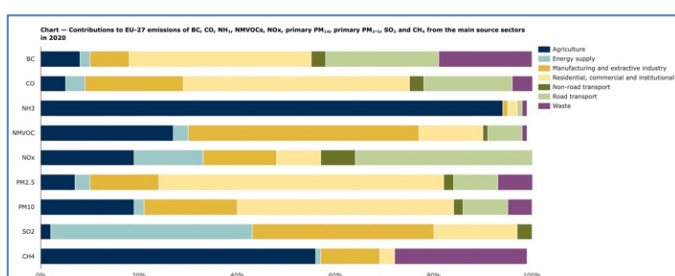
Poor air quality, especially in urban areas, continues to affect the health of European citizens. According to the EEA's latest estimates, at least 238 000 people died prematurely in the EU in 2020 due to exposure to PM2.5 pollution above the WHO guideline level of 5  $\mu\text{g}/\text{m}^3$ . Nitrogen dioxide pollution led to 49 000, and exposure to ozone to 24 000 early deaths in the EU.

As well as premature death, air pollution causes ill health and adds significant costs on the health care sector. For example, in 2019, exposure to PM2.5 led to 175 702 years lived with disability (YLDs) due to chronic obstructive pulmonary disease across 30 European countries.

From 2005 to 2020, the number of early deaths from exposure to PM2.5 fell by 45% in the EU. If this trend continues, the EU is expected to deliver on the zero-pollution action plan target of a 55% reduction in premature deaths by 2030.

The main source of particulate matter pollution in Europe is from fuel combustion in the residential, commercial and institutional sector, the EEA analysis shows. These emissions are mainly linked to burning solid fuels for the heating of buildings. In 2020, the sector was responsible for 44% of PM10 and 58% PM2.5 emissions. Other significant sources of these pollutants include industry, road transport, and agriculture.

In 2020, road transport was the principal source of nitrogen oxides, responsible for 37% of emissions. Emissions of nitrogen oxides fell by 48% between 2005 and 2020.



The report also looked at the policy background, noting that the European Green Deal aims to improve air quality and to align EU air quality standards more closely with the updated WHO air quality guidelines. The EU zero pollution action plan sets a vision for 2050 to reduce air, water and soil pollution to levels no longer considered harmful to health and natural ecosystems. In October 2022, the European Commission proposed a revision of the Ambient Air Quality Directive, which includes stricter thresholds for pollution, enhanced right to clean air – including potential provisions for citizens to claim compensation for health damage due to air pollution – strengthened rules for air quality monitoring, and better public information.

The EEA report can be downloaded from [eea.europa.eu/highlights/premature-deaths-due-to-air](https://eea.europa.eu/highlights/premature-deaths-due-to-air).

## Outcomes of COP27 Climate Change Conference

At the COP27 UN Climate Change Conference which ended on 20 November 2022 in Sharm el-Sheikh, Egypt, the European Commission said it showed 'ambition and flexibility to keep the goal of limiting global warming to 1.5 degrees within reach'. The Commission claimed a strong and united European effort helped secure a hard-fought deal to keep the targets of the Paris Agreement alive. The EU's bridge-building also helped to put in place balanced new funding arrangements, with an expanded donor base, to help vulnerable communities to face loss and damage caused by climate change.

On mitigation, Parties agreed that limiting global warming to 1.5C requires rapid, deep and sustained reductions in global greenhouse gas emissions, reducing them by 43% by 2030 relative to the 2019 level. They also recognised that this requires accelerated action in this critical decade and reiterated the call from the Glasgow Climate Pact for nationally determined contributions (NDCs) to be updated as necessary to align with the Paris Agreement temperature goal, by the end of 2023. They also affirmed that the Glasgow Climate Pact will guide a new Mitigation Work Programme to encourage Parties to align their targets and actions towards net zero.

On loss and damage, the Parties decided to establish new funding arrangements for assisting developing countries that are particularly vulnerable to the adverse effects of climate change. This includes a new fund with a focus on addressing loss and damage, to be established by a transitional committee which would also look into expanding sources of funding.

Commission Vice-President Mr Frans Timmermans said that in spite of the agreements that were achieved, this is "not enough of a step forward for people and planet. It does not bring enough added efforts from major emitters to increase and accelerate their emissions cuts. It does not bring a higher

degree of confidence that we will achieve the commitments made under the Paris Agreement and in Glasgow last year”.

The European Commission press release is at [ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_7064](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7064) with Vice-President Timmermans’ closing speech at [ec.europa.eu/commission/presscorner/detail/en/speech\\_22\\_7042](https://ec.europa.eu/commission/presscorner/detail/en/speech_22_7042)

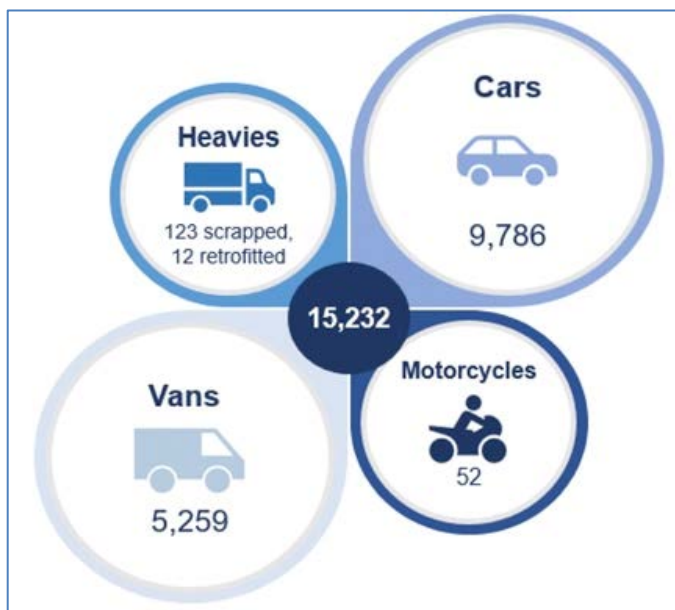
## London ULEZ Scrappage Schemes Evaluation Report

On 18 November 2022, the Mayor of London published an evaluation report on the London Ultra Low Emission Zone (ULEZ) scrappage schemes.

The report says that the scrappage schemes were successful in helping Londoners prepare for the expansion of the ULEZ. The £61 million provided by the Mayor supported many Londoners on lower incomes, disabled Londoners, small businesses and charities who would have found it more difficult to afford to adapt to the ULEZ, its expansion and the tightening of the Low Emission Zone (LEZ) standards.

As well as helping them avoid paying a ULEZ charge, the report found that many of those who used the scrappage schemes have reduced their vehicle ownership and changed their travel habits towards more sustainable modes of transport. A third of recipients did not purchase a replacement car or motorcycle, while net increases were seen in walking (22%), cycling (5%), bus use (16%), Underground travel (4%) and rail travel (1%).

The scrappage schemes removed 15 232 older and more polluting vehicles from London’s roads. The breakdown across vehicle types is shown below:



The report can be downloaded from [london.gov.uk/media-centre/mayors-schemes-successful-taking-polluting-cars-streets-and-reducing-toxic-emissions](https://london.gov.uk/media-centre/mayors-schemes-successful-taking-polluting-cars-streets-and-reducing-toxic-emissions).

## NORTH AMERICA

### California Scoping Plan for Achieving Carbon Neutrality

On 16 November 2022, the California Air Resources Board (CARB) published its 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan). This lays out a path to achieve targets for carbon neutrality and reduce anthropogenic greenhouse gas (GHG) emissions by 85% below 1990 levels no later than 2045, as directed by Assembly Bill 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Scoping Plan Update assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State’s long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

The document says that in 2019, the transportation sector accounted for approximately 50% of state-wide GHG emissions and thus was by far the single largest source of carbon pollution in the state. In addition, the sector accounted for over 80% of state-wide NOx emissions and 30% of fine particulate matter emissions, including toxic diesel particulate matter.

Communities adjacent to congested roadways, including ports and distribution centres, are exposed to the highest concentration of toxic pollutants from vehicles and equipment consuming fossil fuels, leading to a number of demonstrated health impacts such as respiratory illnesses, higher likelihood of cancer development, and premature death.

Strategies for achieving success include achieving 100% ZEV sales of light-duty vehicles by 2035 and medium- and heavy-duty vehicles by 2040. California will also prioritise e incentive funding for heavy-duty ZEV technology deployment in regions of the state with the highest concentrations of harmful criteria and toxic air contaminant emissions.

The document states that California must also ensure that an adequate supply of zero-carbon alternative fuel and distribution is available to power ICE vehicles. It goes on to say that the transition to complete ZEV technology will not happen overnight. Conventional ICE vehicles from legacy fleets will remain on the road for some time, even after all new vehicle sales have transitioned to ZEV technology. For

this reason, California wants to accelerate the reduction and replacement of fossil fuel production and consumption in California.

The Scoping Plan documents are available at [arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents](http://arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents).

## **CARB Investment in Transition to Zero-Emission Transport**

On 17 November 2022, the California Air Resources Board (CARB) announced a \$2.6 (€2.5) billion investment plan that ensures all Californians benefit from our state's transition to zero-emission transportation. Supported projects range from incentives for cleaner trucks and buses, and mobility options such as bike- and car-sharing, to consumer rebates for clean cars. This year's investment funding focuses largely on underserved communities, including low-income communities and those disproportionately burdened by environmental pollution, as well as small truck fleets.

Funded projects include \$2.2 (€2.11) billion for clean trucks and buses, and off-road equipment. This includes over \$2 (€1.92) billion for zero-emission trucks and buses and off-road equipment including school buses, transit buses, and drayage trucks, \$33 (€31.72) million for financing for small truck fleets transitioning to cleaner technologies, and \$135 (€129.75) million for demonstration and pilot projects, including commercial harbour craft.

The CARB announcement can be found at [content.govdelivery.com/accounts/CARB/bulletins/3385cc8](http://content.govdelivery.com/accounts/CARB/bulletins/3385cc8).

## **CARB Amendments to Off-Road Regulation**

On 17 November 2022, the California Air Resources Board (CARB) approved amendments to the In-Use Off-Road Diesel-Fuelled Fleets Regulation (Off-Road Regulation) aimed at further reducing emissions from the off-road sector.

The amendments will require fleets to phase-out use of the oldest and highest polluting off-road diesel vehicles in California; prohibit the addition of high-emitting vehicles to a fleet; and require the use of R99 or R100 renewable diesel in off-road diesel vehicles.

Off-road vehicles subject to the amendments are used in construction, mining, industrial operations, and other industries. The amendments phase-in starting in 2024 through the end of 2036 and include changes to enhance enforceability and encourage the adoption of zero-emission technologies.

The amendments are expected to yield \$5.7 (€5.48) billion in health benefits, prevent more than 570 air-quality related deaths and nearly 200 hospitalisations and emergency room visits from 2023 to 2038. The estimated cost of the program is \$1.9 (€1.83) billion.

The amendments will further reduce harmful air pollutants from over 150 000 in-use off-road diesel vehicles that operate in California. The off-road sector (excluding locomotives, aircraft, waterborne vessels, portable equipment and agriculture) comprises about 14% of the total state-wide emissions of nitrogen oxides (NOx). That constitutes the second largest mobile source of NOx in California, only exceeded by trucks on roads and highways.

The CARB announcement is available to read at [arb.ca.gov/news/carb-approves-amendments-road-regulation-further-reduce-emissions](http://arb.ca.gov/news/carb-approves-amendments-road-regulation-further-reduce-emissions).

## **US Catalytic Converter Theft Network**

On 2 November 2022, the US Justice Department announced a nationwide, coordinated takedown of leaders and associates of a national network of thieves, dealers, and processors for their roles in conspiracies involving stolen catalytic converters sold to a metal refinery for tens of millions of dollars.

Arrests, searches, and seizures took place in California, Oklahoma, Wyoming, Minnesota, New Jersey, New York, Nevada, North Carolina, and Virginia. In total, 21 individuals in five states have been arrested and/or charged for their roles in the conspiracy.

Last year approximately 1600 catalytic converters were reportedly stolen in California each month, and California accounts for 37% of all catalytic converter theft claims nationwide.

Full details of the case are available to read at [justice.gov/opa/pr/justice-department-announces-takedown-nationwide-catalytic-converter-theft-ring](http://justice.gov/opa/pr/justice-department-announces-takedown-nationwide-catalytic-converter-theft-ring).

## **US EPA Response to Petitions on Locomotive Emissions**

On 9 November 2022, the US EPA announced it is responding to petitions from the California Air Resources Board, the San Joaquin Valley Air Pollution Control District, and the California Air Pollution Control Officers Association to address nitrogen oxide (NOx) and particulate matter (PM) emissions from locomotives. As part of EPA's response to these petitions, the Agency is taking immediate steps to develop options and recommendations to address pollution from new locomotives as well as those already operating in communities nationwide.

Additionally, EPA plans to propose revisions to existing locomotive pre-emption regulations to ensure they do not inappropriately limit California's and other states' authorities under the Clean Air Act to address their air quality issues. EPA has also formed a rail study team to evaluate how best to address air pollutant emissions from the locomotive sector.

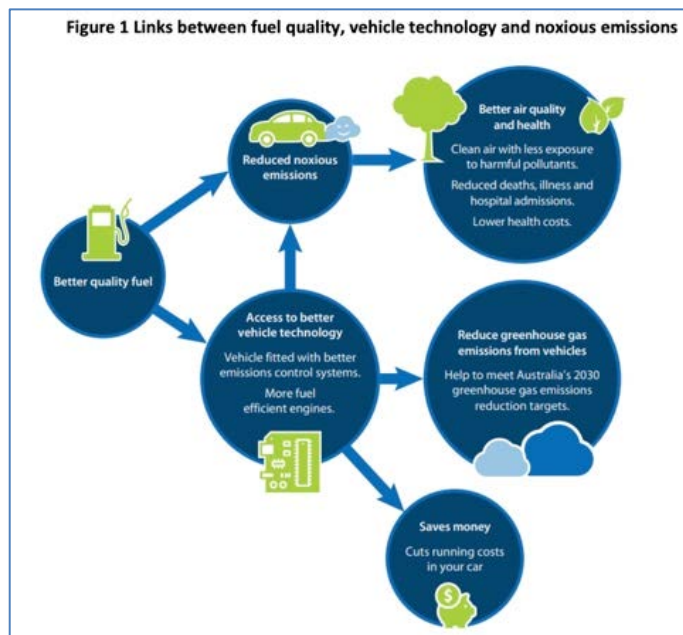
More information can be found at [epa.gov/newsreleases/epa-responds-petitions-address-harmful-emissions-locomotives](https://www.epa.gov/newsreleases/epa-responds-petitions-address-harmful-emissions-locomotives).

## ASIA-PACIFIC

### Consultation on Improvements to Australia’s Fuel Quality Standards

On 17 November 2022, the Australian government opened a consultation on improvements to Australia’s fuel quality standards. The Department of Climate Change, Energy, the Environment and Water says that improved fuel quality and Euro 6d noxious emissions standards could ensure better air quality, improved health outcomes, the latest and cleanest vehicle technology works as designed, and greater access to more efficient vehicles.

The draft Regulation Impact Statement (RIS) shows that the main concern is Australia’s petrol quality may not enable Euro 6d standards. Australia’s standards currently allow up to 150 parts per million sulfur in regular unleaded petrol, and 50 parts per million sulfur in premium unleaded petrol. The Government recently announced that from 15 December 2024, the sulfur limit in Australia’s petrol standard will reduce to 10 parts per million (ppm) across all grades. This will align sulfur in Australian petrol with international best practice.



Australia’s maximum limit of aromatic hydrocarbons (aromatics) in petrol is 45%, with a maximum pooled average content of 35%. 85% of the global light vehicle fleet is sold in countries that have a maximum petrol aromatics content of 35%. The reduction of aromatics is the main consideration of the draft RIS.

The Government carried out a cost benefit analysis (CBA) to identify the costs and benefits of lowering the aromatics limit

in petrol and changing the diesel specifications. The CBA includes a detailed analysis of the costs and benefits for individuals (including motorists), non-government organisations and businesses (including fuel suppliers).

Based on consideration of the policy assessment criteria and the results of the CBA, the Department’s preferred option for petrol is to introduce 35% aromatics limit for 95 RON. The Department is recommending no changes to the diesel fuel standard, as current diesel quality is not a barrier to the implementation of Euro 6d standards.

The consultation is open until 16 December and is at [consult.dcceew.gov.au/better-fuel-for-cleaner-vehicles](https://consult.dcceew.gov.au/better-fuel-for-cleaner-vehicles).

### Remote Sensing Study on Vehicle Emissions in Jakarta

On 21 November 2022, The Real Urban Emissions (TRUE) Initiative, in partnership with Bandung Institute of Technology (ITB), published information on a remote sensing testing study in the Greater Jakarta Region to provide up-to-date information on vehicle emissions. Analysis of the data collected is intended to provide evidence and support for future actions to address the impacts of motor vehicles on air quality and health.

**Table 1. Emission standards implementation in Indonesia**

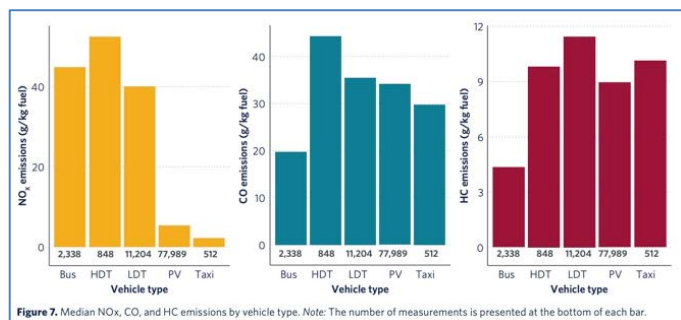
Emission standard	Adopted year	Vehicle category	Effective year for gasoline engine	Effective year for diesel engine
Euro 2/II	2003	Light-duty vehicles Heavy-duty vehicles	2007	2011
Euro 3	2013	Motorcycles	2015	
Euro 4/IV	2017	Light-duty vehicles Heavy-duty vehicles	2018	2022

The analysis found that vehicle types where diesel engines are more commonly used – buses, heavy-duty trucks, and light-duty trucks – had the highest median nitrogen oxides (NOx) emissions measured during the study. In addition, the results indicated that only a modest improvement in diesel truck emissions was achieved in the past decade. For diesel heavy- and light-duty trucks certified to Euro2/II standards, the median NOx emissions were 15% to 24% lower than those of pre-Euro 2/II vehicles. Although some improvement in median NOx emissions is observed with the introduction of Euro II standards, the emissions are well above the level that can be achieved with modern diesel exhaust aftertreatment systems.

The analysis also found that, for gasoline passenger vehicles, the implementation of Euro 2 emission standards in 2007 led to significant reductions in tailpipe emissions, including reductions in NOx emissions of 94% compared to pre-2007 model year vehicles. Relative to gasoline models, the implementation of Euro 2 standards for diesel passenger vehicles resulted in more modest emissions decreases, including a 45% reduction in NOx. However, the NOx emissions of Euro 2 diesel passenger vehicles are approximately seven times higher than those from gasoline models certified to Euro 2 standards.



TRUE recommends that Indonesia develops a plan and timeline for the implementation of Euro 6/VI emission standards. This step will ensure that best-available emissions control technologies, such as diesel particulate filters and selective catalytic reduction systems, are made available for new vehicles and engines. It adds that fuel quality standards will need to match this ambition.



The study says further development of Jakarta’s low emission zone policy would benefit from setting restrictions for those vehicle groups with the highest demonstrated real-world emissions, including pre-Euro 2 gasoline passenger vehicles and all diesel passenger vehicles. If future expansions of Jakarta low emission zones do not restrict goods movement vehicles, as is the case now, we recommend that only Euro 6/VI or zero-emission light- and heavy-duty trucks be allowed into these zones.

Recommended actions to support the improved emissions performance of buses operating in Jakarta include requiring fleet operators to purchase buses that meet Euro VI emissions standards, tightening inspection and maintenance requirements for these fleets, and accelerating the transition to zero-emission electric buses, especially for urban bus fleets.

To fully benefit from existing vehicle emission testing programmes, TRUE says Jakarta should implement provisions to encourage greater participation from private vehicle owners. Furthermore, existing thresholds for identifying high-emitting vehicles should be reviewed regularly. Future remote sensing programmes could be developed to supplement existing vehicle testing programmes in order to more efficiently identify high-emitting vehicles.

The TRUE study can be downloaded from [theicc.org/publication/true-jakarta-remote-sensing-nov22/](https://theicc.org/publication/true-jakarta-remote-sensing-nov22/).

## GENERAL

### Industry Response to Euro 7 Proposals

Following the European Commission’s Euro 7 proposal on 10 November, industry trade associations gave their views on the content.

The European Automobile Manufacturers’ Association (ACEA) says it has serious concerns about the Commission’s

proposal, stating that “exhaust emissions are already at a barely measurable level thanks to state-of-the art vehicle technology”.

It goes on to say that the environmental benefit of the proposal is very limited, whereas it heavily increases the cost of vehicles. According to ACEA, it focuses on extreme driving conditions that have hardly any real-life relevance. It says the proposal is particularly harsh for trucks and completely neglects the rapidly accelerating shift to zero-emission vehicles. As a result, it says truck makers will have to move substantial engineering and financial resources from battery and fuel-cell electric vehicles back to the internal combustion engine, with a severe impact on the transition to zero-emission vehicles.

ACEA adds that the proposed implementation dates – July 2025 for cars and vans and July 2027 for heavy-duty vehicles – are unrealistic, given the huge number of vehicle models and variants that need to be developed, engineered, tested and type approved before then.

The European Association of Automotive Suppliers (CLEPA) says the proposal makes a significant step towards higher ambition, although there are key elements of timing and both technical and economic feasibility that need to be addressed to ensure the new rules can be implemented and also apply to realistic driving situations.

CLEPA stresses the importance of the lead time needed by industry to develop and validate the new Euro 7 technologies, and also in consideration of the time required for the co-decision legislative process. It adds that the specific technical parameters for vehicle testing are key factors influencing the overall severity of the new regulation; these parameters are not yet known and will come via several implementing and delegated acts, which should be completed as soon as possible to enable a swift implementation of Euro 7. A lead-time of at least 24 months after the finalisation of the secondary legislation is necessary for light-duty vehicles. For heavy-duty vehicles, 36 months are needed.

The German Automobile Industry Association (VDA) states that the Commission’s proposal cannot be implemented by July 2025 for passenger cars and is technologically almost impossible to implement for heavy commercial vehicles by July 2027. It says the decision also sets unrealistic goals, especially for heavy commercial vehicles, by providing for a reduction in the limit values by a factor of more than 10 in some cases while at the same time significantly expanding the test conditions, durability and the introduction of new limits for nitrous oxide, ammonia and brake dust. In doing so, the Commission goes well beyond comparable international emissions legislation.

VDA goes on to say the resolution does not contain any differentiation between abusive or deliberately constructed test drives. For these test drives, vehicle emissions are measured in extremely unrealistic scenarios, according to

VDA. Without a differentiation from artificially provoked "worst-case drives" (biased driving), it says it is not possible to approve Euro 7 for light vehicles without legal risks.

It adds that light commercial vehicles are doubly affected by the tightening of legislation. The proposed N2O limit value poses a particular challenge for vans with a total weight of more than 3.5 tonnes, as the target limits are on the edge of what is technologically feasible.

VDA says the development of Euro 7 would also be very expensive, resulting in customers facing significant price increases.

ACEA's press release is at [acea.auto/press-release/new-euro-pollutant-emission-proposal-risks-slowing-down-transition-to-zero-emission-transport/](https://acea.auto/press-release/new-euro-pollutant-emission-proposal-risks-slowing-down-transition-to-zero-emission-transport/) with CLEPA's at [clepa.eu/mediaroom/euro-7-proposal-a-significant-step-towards/](https://clepa.eu/mediaroom/euro-7-proposal-a-significant-step-towards/) and the VDA response at [vda.de/en/press/press-releases/2022/221110\\_PM\\_Euro-7\\_emissions\\_standard\\_Commission-s-proposal](https://vda.de/en/press/press-releases/2022/221110_PM_Euro-7_emissions_standard_Commission-s-proposal).

## NGO Evaluations of Euro 7 Proposal

On 23 November 2022, the International Council on Clean Transportation (ICCT) and Transport & Environment (T&E) published their respective evaluations of the European Commission's Euro 7 proposal.

ICCT says that while public health advocates call the proposal a disappointing step towards protecting the health of Europeans, industry representatives label it unrealistic and extreme. The blog goes on to discuss the strong and weak elements of the Commission's proposal.

ICCT highlights what it sees as three strengths of the proposal. It says Euro 7 would drop most of the restrictive requirements of real-driving emissions (RDE) testing, simplifying the testing and enhancing its real-world representativeness. It adds that limits for vapour emissions of petrol that occur during refuelling, as well as limits for particle emissions from brake, would drive new emission control systems in areas neglected under previous regulations. ICCT also welcomes the durability requirements for electric vehicle (EV) batteries, saying the provisions are essential for increasing trust in the second-hand market for EVs.

Regarding the weaknesses of the Euro 7 proposal, ICCT states that pollutant emission standards, such as Euro 7, have two essential functions: forcing the adoption of emission control technologies for which there is no market incentive, and ensuring these technologies are functioning correctly over the vehicle's lifetime. It argues that Euro 7 has shortcomings in this area.

The NGO says that in the case of cars and vans, the Euro 7 emission limits are not much different from those of the Euro 6 regulation. For NOx emissions in particular – the "most

important" air pollutant – the Euro 7 limits are a harmonisation with the limits set for petrol vehicles under Euro 6. And, despite the proposal of a voluntary certification level, the optional limits are 20% lower than what is mandated by Euro 7. ICCT's research shows that the emissions performance of current Euro 6 cars is already better than that.

The blog comments that Euro 7 emission limits apply up to 200 000 km or 10 years rather than the whole vehicle's lifetime. It goes on to say that more than half the cars in Warsaw, according to ICCT's own measurements, would be outside the Euro 7 requirements as they are older than 10 years or have accumulated mileage of more than 200 000 km. The situation is similar for trucks and buses, with the proposed durability requirement of 875 000 km being less than the current average lifetime of around 1.2 million km.

ICCT concludes by questioning why the current proposal was made when the scenario with higher ambition "is found to be the most effective to improve control of real-world emissions for all vehicles, even in view of the end-date of 2035 for combustion-engine cars/vans".

T&E says the proposal fails to deliver the ambition needed to tackle air pollution caused by road transport and meet newly revised EU Air Quality limits.

It comments that 'weak pollution limits' for cars set 15 years ago remain largely unchanged, despite leaps in technological progress. The NGO views this as particularly problematic for nitrogen oxides (NOx) and particles which cause the majority of air pollution deaths. It claims truck particle limits were also weakened at the last minute 'in direct contradiction with expert recommendations'.

T&E acknowledges that the proposal does increase the number of harmful pollutants regulated, the range of driving conditions and time for which limits have to be met, introduces particle pollution limits for brakes, and continuous monitoring of pollution through high-tech sensors.

The paper goes on to propose improvements, particularly in the areas of tailpipe and brake pollution limits and the durability requirements. T&E says the NOx limit should be reduced from that set for petrol cars over a decade ago (60 mg/km) to 30 mg/km. The particle number limit should be reduced to  $1 \times 10^{11}/\text{km}$  from  $6 \times 10^{11}/\text{km}$  and the particle mass limit should be reduced from 4.5 mg/km to 2 mg/km.

For trucks, T&E proposes the 'hot' particle number limit ( $2 \times 10^{11}/\text{km}$ ) should be reverted back to  $1 \times 10^{11}/\text{km}$ , with the so-called short trip 'budget' particle limit ( $3 \times 10^{11}/\text{km}$ ) reverted back to  $2 \times 10^{11}/\text{km}$ . Additionally, T&E says the 'cold' NOx limit should be halved from 350 mg/kWh to 175 mg/kWh.

With regards to durability, the NGO proposes that for cars, durability should increase to 240 000 km and 15 years (from 200 000 km and 10 years), for trucks smaller than 16 tonnes to 700 000 km and 15 years (from 375 000 km and 8 years),

and for trucks larger than 16 tonnes to 1.2 million km (from 875 000 km).

The ICCT blog is available to read at [theicct.org/euro-7-proposal-good-or-bad-nov22](https://theicct.org/euro-7-proposal-good-or-bad-nov22).

The T&E paper can be found at [transportenvironment.org/wp-content/uploads/2022/11/TE-Euro-7-reaction-paper-.pdf](https://transportenvironment.org/wp-content/uploads/2022/11/TE-Euro-7-reaction-paper-.pdf).

## Study on Implications of EU Policies for Affordability of Future Car Use

On 17 November 2022, the FIA European Bureau published a study by Transport & Mobility Leuven on the implications of EU policies for the affordability of car use in the future.

The study investigates the future affordability of car ownership and use in Europe in the context of the proposed EU policies and the current energy crisis. It compares the main determinants of the Total Cost of Ownership (TCO) of fossil fuel cars (ICEVs) compared to electric passenger cars (EVs) and identifies the driving factors behind affordability and equity.

In the TCO analysis, the study found that in the base case, EVs are more affordable than comparable ICEVs for first owners in the three countries. The TCO gap between EVs and ICEVs is largest in Germany, that offers generous financial incentives for electric vehicles. The cost gap is the smallest in Italy, where small EVs are nearly at par with small ICEVs. The cost advantage of EVs over ICEVs is much smaller for second owners. This is because most financial incentives are limited in time or only applicable to first time registrations. In Italy, second owners of EVs face higher costs than used ICEV owners in each scenario. In Denmark, used EVs are cheaper than used ICEVs in each scenario. For first owners, the TCO vary significantly depending on the scenario. In the Low EV cost scenario, electric cars are relatively cheap with TCO that can drop to 70% below those of a comparable ICEV. In the High EV cost-scenario, the opposite occurs and EVs may become up to 79% more expensive than ICEVs in the base case. The impact of the Low and High EV cost-scenarios is less extreme for second owners. This is because in the Low EV cost-scenario, EVs have a low depreciation rate, which benefits the first owner but increases the purchase cost for the second owner. Vice versa, in the High EV cost-scenario, first owners face a high depreciation rate, while second owners can benefit from a lower purchase price.

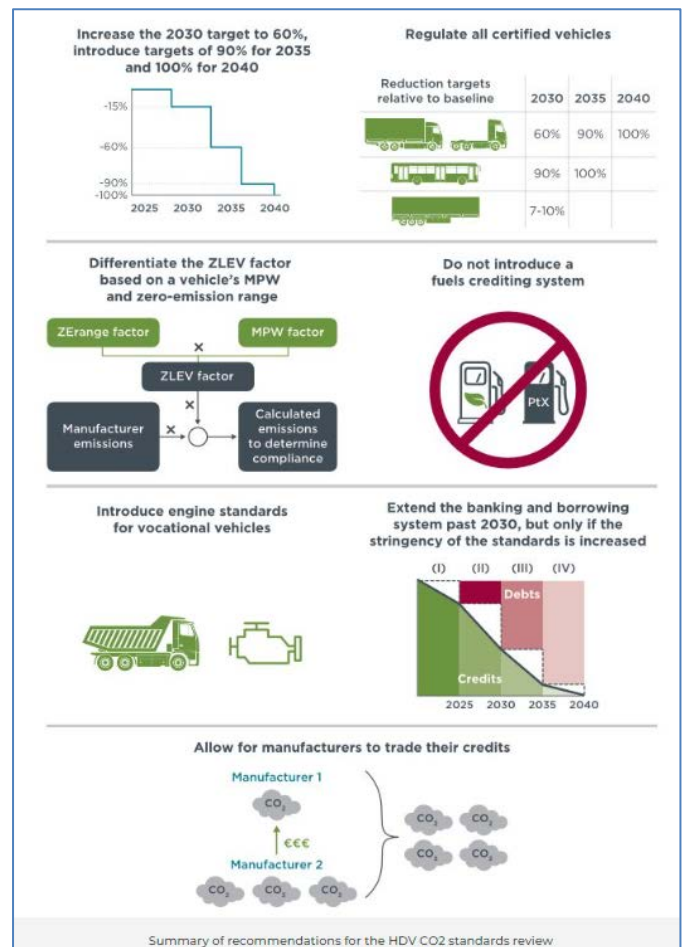
With respect to non-financial measures, the study finds that the development of a dense, accessible, and high-quality charging network is the main determinant of electric vehicle uptake. Another non-financial measure that has the potential to further support the uptake of and affordability of EVs, is the development of car sharing services. By avoiding the high upfront costs, electric car sharing services may attract people who are interested in electric cars but cannot afford to buy one.

The study is available to read at [fiaregion1.com/wp-content/uploads/2022/11/FIA\\_Study\\_CostofOwnership.pdf](https://fiaregion1.com/wp-content/uploads/2022/11/FIA_Study_CostofOwnership.pdf).

## ICCT Recommendations for Revision of Europe's HDV CO<sub>2</sub> Standards

On 29 November 2022, the International Council on Clean Transportation (ICCT) published a position brief on the European Commission's revision of heavy-duty vehicle (HDV) CO<sub>2</sub> standards. This specifically considers a number of points (otherwise known as modalities), within the current standards. These include giving consideration to increasing the stringency of the 2030 targets, introducing targets for 2035 and 2040, extending the standards to unregulated vehicles, adjusting incentives for zero- and low-emission vehicles, considering whether to account for synthetic and advanced renewable fuels, introducing engine-based standards, and assessing the emissions credit and debit system. The brief provides recommendations for the amendment of these modalities which would align the HDV sector with the European Climate Law.

ICCT's first recommendation is to increase the 2030 CO<sub>2</sub> target to 60% reduction, then introduce targets of 90% for 2035 and 100% for 2040.



ICCT also wants to see all certified vehicles regulated, whereas currently only 63% are covered by the standards. ICCT says separate CO<sub>2</sub> standards should be created for trailers, as well as for buses and coaches.

Regarding vocational vehicles, ICCT calls for the scope of the CO<sub>2</sub> standards to be extended through the implementation of engine standards requiring an emissions reduction through engine specific technologies.

ICCT also proposes that the zero- and low-emission vehicle (ZLEV) factor currently applied should be phased out after 2030. In the meantime, it says the mechanism can be improved by weighting incentives based on a vehicle's zero-emission range and mileage and payload weighting factor.

The NGO does not want to see a fuels crediting system introduced but does want the banking and borrowing system extended past 2030 if the stringency of the standards is increased. Manufacturers should also be allowed to trade their credits if the targets are increased.

The position brief can be downloaded from [theicct.org/publication/recs-eu-hdv-co2-standards](https://theicct.org/publication/recs-eu-hdv-co2-standards).

## Launch of Accelerating to Zero Coalition

On 17 November 2022, the Accelerating to Zero (A2Z) Coalition, a partnership of the UK Government's COP26 Presidency, The Climate Change High-Level Champions, the International Council on Clean Transportation, Climate Group, and the Drive Electric Campaign, was launched. This is seen as the next step in securing more ambitious commitments to a zero-emission vehicles transition aligned with the Paris Agreement. Announced on Solutions Day at COP27, more than 200 stakeholders are signalling their commitment to a rapid transition to zero-emission transportation.

The A2Z Coalition is working towards all sales of new cars and vans being zero emission no later than 2035 in leading markets and 2040 globally. A2Z Coalition's partners also work on the acceleration of zero-emission medium- and heavy-duty vehicles.

According to the coalition's press release, national ZEV targets and internal combustion engine (ICE) phase-out targets now cover nearly 41% of the global passenger vehicle market by 2035, similar to a year ago. Automakers with 2035 ICE phase-out targets account for 23% of the market, up slightly from 19% a year ago.

More information on the coalition can be found at [acceleratingtozero.org/accelerating-to-zero-a2z-coalition-launches-at-cop27-to-drive-global-transition-to-zev](https://acceleratingtozero.org/accelerating-to-zero-a2z-coalition-launches-at-cop27-to-drive-global-transition-to-zev).

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## FORTHCOMING CONFERENCES

### E-Fuel World Summit

6-7 December 2022, Brussels, Belgium

[e-fuelworldsummit.com](http://e-fuelworldsummit.com)

### SAE On-Board Diagnostics Symposium

14-16 March 2023, Prague, Czech Republic

[sae.org/attend/obd-europe](http://sae.org/attend/obd-europe)

### 13<sup>th</sup> VERT Forum

21 March 2023, Switzerland

[vert-dpf.eu/j3/index.php?view=article&id=66:vert-r-13th-vert-forum-march-21th-2022-conference&catid=8](http://vert-dpf.eu/j3/index.php?view=article&id=66:vert-r-13th-vert-forum-march-21th-2022-conference&catid=8)

### WCX SAE World Congress Experience

18-20 April 2023, Detroit, USA

[sae.org/highlights/wcx](http://sae.org/highlights/wcx)

### 44<sup>th</sup> International Vienna Motor Symposium

26-28 April 2023, Vienna, Austria

[wiener-motorensymposium.at/fileadmin/Media](http://wiener-motorensymposium.at/fileadmin/Media)

### SAE Heavy-Duty Diesel Sustainable Transport Symposium

3-4 May 2023, Gothenburg, Sweden

[sae.org/attend/heavy-duty-diesel-sustainable-transport-symposium](http://sae.org/attend/heavy-duty-diesel-sustainable-transport-symposium)

**AECC will have a presentation.**

### Fuel Science – From Production to Propulsion

23-25 May 2023, Aachen, Germany

[fuelcenter.rwth-aachen.de/cms/Fuelcenter/Austausch/~smxp/Int-Konferenz](http://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](http://avl.com/-/vehicle-environment?j=3464186&sfmc_sub)

### SIA Powertrain 2023

14-15 June 2023, Paris, France

[sia.fr/evenements/302-sia-powertrain-2023](http://sia.fr/evenements/302-sia-powertrain-2023)

### Cenex-LCV

6-7 September 2023, Millbrook, United Kingdom

[cenex-lcv.co.uk](http://cenex-lcv.co.uk)

### FISITA World Congress 2023

12-15 September 2023, Barcelona, Spain

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