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EUROPE

State of the European Union Address from EU Commission President

On 15 September 2021, European Commission President Ms Ursula von der Leyen presented her State of the European Union (SOTEU) address to the European Parliament. She said that the "speed of events and the enormity of the challenges are sometimes difficult to grasp", going on to say that "in the gravest planetary crisis of all time, … we chose to go it together with the European Green Deal".

Speaking in more detail about progress in the past year, Ms von der Leyen said that the EU has turned its climate goals into legal obligations and is the first major economy to present comprehensive legislation in order to get it done. She added that the EU "will put a price on pollution…and will make sure that higher climate ambition comes with more social ambition".

Commission President von der Leyen went on to propose an additional €4 billion for climate finance for the least developed and most vulnerable countries for climate mitigation and adaptation.

The full State of the European Union address is at ec.europa.eu/info/sites/default/files/soteu_2021_address_en.pdf and a climate fact sheet can be downloaded from ec.europa.eu/commission/presscorner/detail/en/FS_21_4724.

Response to SOTEU Address from European Committee of the Regions

On 15 September, Mr Apostolos Tzitzikostas, President of the European Committee of the Regions, responded to the SOTEU address, stating that "we will not deliver these shared goals by taking a top-down approach" and that only by applying a bottom-up approach can Europe succeed and re-build citizens' support.

Mr Tzitzikostas added that not involving local actors – responsible for delivering 70% of all EU laws – sufficiently in the design and implementation of National Recovery and Resilience Plans is a threat to Europe's recovery, and that the Green Deal will only become reality if it happens at local and regional level with locally elected politicians.

The full CoR response can be found at cor.europa.eu/en/news/Pages/SOTEU-2021.aspx.

Regulation Specifying Data for Verifying CO_2 Emissions of New Heavy-duty Vehicles

On 2 September 2021, Commission Delegated Regulation (EU) 2021/1430 was published in the Official Journal of the European Union. This supplements Regulation (EU) 2018/956 by specifying the data to be reported by the Member States for the purposes of verifying the CO_2 emissions and fuel consumption of new heavy-duty vehicles.

The Regulation sets out the maximum time period for competent authorities of Member States to report test reports, information on an investigation to determine the cause of failure of a verification testing procedure, and results of an investigation, including information on the causes of failures linked to the certification of components, separate technical units or systems or to the operation of the simulation tool.

It also states a maximum period for authorities to provide testing reports bearing the number of the certificate on CO_2 emissions and fuel consumption related properties of an air drag family, as well as the related certificates.

The Regulation can be found at eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2021.309.01.0003.01.

Amendments to Annexes II and VII of Type-Approval Framework Regulation

On 6 September 2021, Commission Delegated Regulation (EU) 2021/1445 was published in the Official Journal of the European Union. This amends Annexes II and VII to Regulation (EU) 2018/858 concerning the type-approval framework.

Commission Delegated Regulation (EU) 2021/1445 amends Annexes II and VII of Regulation (EU) 2018/858 (Type Approval Framework) to take into account technological and regulatory developments. In particular, the measure amends the regulatory acts listed in Annex II of Regulation (EU) 2018/858 that contain the requirements with which vehicles, systems, components and separate technical units have to comply.

Similarly, the Regulation amends the regulatory acts listed in Annex VII of Regulation (EU) 2018/858 for which a manufacturer may be designated as a technical service and the specific conditions under which self-testing designation are to be used.

The measure will enter into force on 26 September. Regulation (EU) 2018/858 repeals and replaces Directive 2007/46/EC establishing the current framework for the type-approval of motor vehicles and their trailers, systems, components and separate technical units intended for vehicles.

The Regulation can be found at eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2021.313.01.0004.01.

Commission Presentation of "Fit for 55" Package to European Parliament

On 14 September 2021, Commission's Executive Vice-President Timmermans joined a European Parliament Plenary Debate on Fit for 55 following presentation of the IPCC Report.

Mr Anže Logar, Slovenian Ministry of Foreign Affairs, thanked the EC for the work done to deliver this package. The package should put forward the right policy mix and provide the right incentives to decarbonise the economy by stimulating investment and uptake of new technologies that can secure business and jobs. The socioeconomic impact of the policies will need to be closely examined as well. The Slovenian Council Presidency considers

these proposals are top priority as this is an opportunity for Europe to lead by example.

Mr Timmermans presented the "Fit for 55" package. He said the package proposes a holistic approach to the climate problem and there will ample time to discuss the individual measures that have been proposed. He added that the Commission is open to discuss these and to look for alternatives. He offered to the Parliament and Council to look at the Fit for 55 package as a whole and asked the co-legislators that if there are elements to change, they should help the Commission find alternatives that reach the same goal.

Some Members of the European Parliament (MEPs) joined the discussion.

MEP Liese (EPP, Germany), on behalf of the EPP Group, reiterated the EPP's support for the Fit for 55 proposals. In particular, he underlined support for the Commission's market-based approach and at the same time presenting social compensation.

MEP Canfin (Renew, FR), welcomed aspects of the Fit for 55 Package, including the carbon border adjustment mechanism and expanding the maritime sector to the EU ETS. He also raised scepticism over the proposed extension of the carbon market to buildings and transport, because, in his view, the political cost is very high and the climate impact is very low. Renew Europe will therefore make alternative proposals.

MEP Keller (Greens, DE) stressed the findings and messages of the recent IPCC report. While noting that the target of a 55% reduction in emissions by 2030 is not as ambitious as it could be, she underlined the need for the package to contain concrete measures that begin now. In the view of the Greens, phasing out free allowances, a kerosene tax and the end to the combustion engine, for example, cannot be delayed beyond 2030.

Following the interventions of individual MEPs, Executive Vice-President Mr Frans Timmermans once again took the floor. He thanked those who expressed a readiness to engage with the Commission and the Council on the proposals of the Fit for 55 package and spoke of four traps that should be avoided moving forward: not recognising that it will be difficult to reduce emissions; talking about the costs of action without acknowledging the costs of inaction; the rise of misinformation and science scepticism; and short-termism.

Further information can be found at ec.europa.eu/commission/commissioners/2019-2024/timmermans/announcements/european-parliament and on the climate debate at the EP plenary at europarl.europa.eu/news/en/press-room/20210910IPR12076/climate-change-meps-to-assess-eu.

European Transport Commissioner Exchange with TRAN Committee

On 27 September 2021, the Transport (TRAN) Committee of the European Parliament held a meeting, including discussion on the Fit for 55 Package with Commission Transport Commissioner Ms Adina Vălean.

MEP Delli (Greens, FR) introduced the topic, saying that reducing CO_2 emissions by 55% by 2030 and 90% by 2050 in the transport sector alone is unprecedented and very challenging. She noted that during the previous discussion held with the Commission there were several questions raised. It is particularly important to ensure that technologically speaking, we are moving in the right direction and with a just transition.

Ms Vălean said the package is ambitious and wide ranging. It impacts transport and its future from different angles. The package is based on three proposals acting as the industrial backbone of the package: more recharging infrastructure; technology neutral carbon intensity reductions; and boosting the alternative fuel market through demand-side measurements.

There were questions from co-ordinators of the different parliamentary groups regarding technology neutrality, crop-based biofuels, hydrogen, the phase-out of ICE vehicles and Euro 7.

Commissioner Vălean mentioned that there is an impact assessment comparing options for different CO_2 targets. She said the targets will deliver high benefits over the lifetime of the vehicle and also help achieve the overall objectives and provide air quality benefits. She expects that Euro 7 will complement the CO_2 proposals for cars. Ms Vălean said that the proposals are technology neutral as they call for infrastructure for gas, electricity and hydrogen.

The webstream of the committee meeting is at multimedia.europarl.europa.eu/en/committee-on-transport-and-tourism_20210927-1345-COMMITTEE-TRAN_vd.

Commission Presentation of "Fit for 55" Package to TRAN Committee

On 1 September 2021, the European Commission Deputy Director-General of Mobility and Transport (DG Move), Maja Bakran, presented the "Fit for 55" package to the Committee on Transport and Tourism at the European Parliament.

The Commission official first provided a broad overview of the proposals making up the Fit for 55 package. Ms Bakran mentioned a key objective was to impose a price for carbon. For transport, the 2030 target means reducing the sector's emissions by 90% in 2050, which is the aim of the proposals concerning transport. Ms Bakran highlighted three dossiers included in the Fit for 55 package and for which DG Move was responsible: (1) the Alternative Fuels Infrastructure Regulation (AFIR), (2) ReFUEL EU aviation and (3) FuelEU maritime proposals. She also mentioned the Emissions Trading Scheme (ETS), revision of CO_2 performance standards for cars and vans, and the Energy Taxation Directive (ETD) proposals as other important dossiers which will have a big impact on the European transport sector.

MEP Bauzá Díaz (ES, Renew), on behalf of his group, raised concerns about the costs for companies and consumers, and if the proposals would lead to an increase in prices. He asked if the Commission has a specific and realistic plan when it comes to the social plan for implementing this climate legislation.

MEP Cuffe (IR, Greens), remarked that the intentions are good, but the proposals are not enough. On public charging facilities, he inquired as to why the Commission chose distances as the basis for targets and not population density. In addition, he raised concerns about the lack of focus on rail, and an overreliance on hydrogen. He also highlighted the need to focus on green hydrogen and stop supporting fossil fuels in general.

MEP Borchia (IT, ID), remarked that the infrastructure is not in place to make transport sustainable. Overall, he underlined that the social impact will be the fall-out of this package, and that those countries with the lowest income will likely have the most difficult transition.

MEP Chaibi (FR, GUE), underlined concerns on the social impacts, in particular, due to the rise in costs of petrol for low-income families relying on car transport.

The Commission's official, in reply to remarks made by MEPs, underlined that each proposal has its own impact assessment, and there is not a cumulative assessment for the package. On the proposed capacity for alternative fuels and whether it is sufficient for heavy-duty vehicles, the Commission believes that the mandatory targets should suffice. Ms Bakran said that charging infrastructure has been proposed taking safe and secure overnight parking into consideration. The aim is to ensure that sufficient infrastructure will be provided across Europe. Should demand for charging points increase, this would trigger additional investment.

Other MEPs intervened. MEP Thaler (AT, EPP) asked why the proposal does not reflect the use of a life-cycle assessment approach instead of only tailpipe on the CO_2 standards for cars and vans. MEP Ertug (DE, S&D) asked if the targets for heavy-duty vehicle charging infrastructure are enough as OEMs' projections are already showing significant volumes of electric vehicles in 2030.

MEP Gieseke (DE, EPP) underlined that the proposal for regulation for CO_2 standards will ban combustion engines; the EC is talking about the bigger picture but is not recognising reality as not all Member States will be able to cope with the costs. MEP Deparnay (DE, Greens) called for a ban on ICE vehicles by 2030 instead of 2035. MEP Warborn (SE, EPP) highlighted the error of imposing high taxes on petrol and diesel, claiming that is not for citizens to pay the cost for this proposal. MEP Garcia Munoz (ES, S&D) expressed concern over the re-skilling of the automotive industry workers. Finally MEP Delli (FR, Greens and chair of the TRAN Committee) mentioned this is a historic opportunity: either we go through the transition or we will be devastated; we have an urgent need for action, we don't need patches but a long term vision.

A video recording of the exchange in TRAN is available at multimedia.europarl.europa.eu/en/committee-on-transport-and-tourism_20210901-0900-COMMITTEE-TRAN_vd.

European Commission Letter of Intent regarding 2022 Legislative Plans

On 15 September 2021, European Commission President Ms von der Leyen and Commission Vice-President Mr Šefčovič wrote a Letter of Intent to European Parliament President David Sassoli and Slovenian Prime Minister Janez Janša, outlining its plans to deliver and implement the Commission's work programme.

The Letter of Intent says that the list draws inspiration from discussions with the European Parliament and the Council. It is not exhaustive and will be complemented by the upcoming Commission work programme, interinstitutional dialogue and the Joint Declaration of Legislative Priorities to be signed by the three institutions.

In the area of the European Green Deal, new initiatives for 2022 include legislative proposals on an EU framework for harmonised measurement of transport and logistics emissions and on carbon removal certification.

Euractiv reports Mr Christian Holzleitner, head of unit at DG-CLIMA as saying that "We need to think about the long-term perspective and the integration of carbon removals into our climate policies towards 2050,… and here, we are taking the first step with our legislative initiative on certification".

The Letter of Intent is available to read at ec.europa.eu/info/sites/default/files/state_of_the_union_2021_letter_of_intent_en.pdf
and the Euractiv report at euractiv.com/section/climate-environment/news/eu-plans-certification-scheme-for-carbon-dioxide-removals.

Informal Meeting of Transport and Energy Ministers

On 22 and 23 September 2021, informal meetings of European Union energy and transport ministers took place at Brdo pri Kranju in Slovenia. Along with Energy Commissioner Ms Kadri Simson and Commissioner for Transport Ms Adina Vălean, the ministers discussed the Renewable Energy Directive and the Energy Efficiency Directive as part of the "Fit for 55" climate and energy package, as well as the revised Alternative Fuels Infrastructure Regulation, which is also part of the "Fit for 55" legislative package.

The revision of the renewable energy directive proposes to increase the EU target for the share of energy from renewable sources to 40%. The directive strengthens existing measures relating to heating and cooling and complements them with new provisions on buildings and industry.

The energy ministers also discussed the recast energy efficiency directive, which proposes higher and binding targets at the EU level for 2030, leading to a 9% reduction in energy consumption by 2030 compared to the new 2020 baseline. Participants in the discussion agreed that, in order to support the achievement of this higher binding target, the indicative national contributions would need to be calculated based on a set of objective criteria reflecting the national circumstances of each Member State.

This was followed by a joint informal meeting of transport and energy ministers. They discussed policy measures and the regulatory framework for planning charging infrastructure for road transport and measures in the electricity sector. With transport accounting for almost a quarter of EU's greenhouse gas emissions and being the main cause of urban air pollution, the EU is focusing its efforts on supporting the growing demand for road transport, while reducing related emissions and promoting the use of electricity and renewable fuels.

The debate showed that the two sectors are about to face an important common challenge. The transport and energy sectors will have to work hand in hand to find and implement solutions to support e-mobility at regulatory, technological and implementation levels. A cross-sectoral approach will be the key to a sustainable transition and to optimising investments in both charging infrastructure and energy networks. Another important message from the debate was that in the transition to zero-carbon mobility care must be taken to maintain the competitiveness of the transport sector and European industry.

Transport ministers discussed key aspects of the proposal for a regulation on the deployment of alternative fuels infrastructure, part of the "Fit for 55" legislative package. They called for clear objectives and the deployment of wide public network of recharging and refuelling infrastructure for alternative fuels in transport.

The presiding Minister for Infrastructure, Jernej Vrtovec, stressed that a successful European transformation of mobility to alternative fuels required a wide public refuelling infrastructure network allowing easy and transparent use for all physical and commercial mobility users, who are aware of the importance of the transition to clean transport.

The transport ministers agreed on the need for sufficiently ambitious and coordinated infrastructure planning in the Member States, well adapted to the increased 2030 climate ambition targets. According to Minister Vrtovec, it is necessary to enable all alternative fuel vehicle users to travel smoothly across the European Union by speeding up the deployment of refuelling infrastructure in the EU. Mr Vrtovec pointed out that one of the key challenges is to advocate for a coordinated action between alternative fuel vehicle manufacturers, alternative fuel producers and refuelling infrastructure providers.

Reports of the meetings can be found at

slovenian-presidency.consilium.europa.eu/en/news/transport-and-energy-ministers-discuss-meeting-decarbonisation and slovenian-presidency.consilium.europa.eu/en/news/transport-ministers-promote-a-wide-public-refuelling-network.

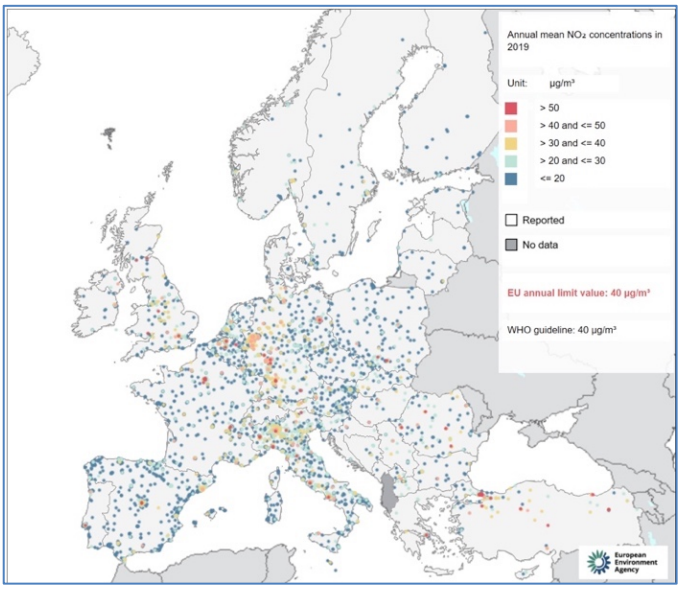
EEA Report on Europe's Air Quality Status

On 21 September 2021, the European Environment Agency (EEA) published its 2021 briefing on Europe's air quality status. This presents the latest official data for 2019, as well as provisional data for 2020, on concentrations of key air pollutants measured at more than 4 500 monitoring stations across 40 European countries.

The EEA data show that air pollution is still a major health risk for Europeans. In central and eastern Europe, the burning of solid fuels for domestic heating and industry results in high concentrations of both fine and coarse particulate matter, as well as benzo[a]pyrene, a known carcinogen. In bigger cities, high concentrations of nitrogen dioxide persist due to road traffic, with nitrogen dioxide (NO_2) linked to asthma and breathing problems. And, especially in southern Europe, pollutants emitted from human activities react in heat and sunlight to produce high concentrations of ground-level ozone.

Looking at particulate matter (PM_{10}), 21 countries (of which 16 were EU Member States) registered concentrations above the EU daily limit value in 2019, while 31 countries registered concentrations above the stricter World Health Organization (WHO) guideline from 2005. Seven countries (of which four were EU Member States) registered concentrations above the EU annual $PM_{2.5}$ limit value in 2019, while 28 countries registered concentrations above the 2005 WHO guideline.

With regard to NO_2, 22 countries (of which 18 were EU Member States) registered concentrations above the EU annual limit value in 2019, which is the same as the 2005 WHO guideline.



The EEA briefing is available to download from eea.europa.eu/highlights/air-pollution-still-too-high-1 and an up-to-date visualisation of European city air quality is at eea.europa.eu/themes/air/air-quality-and-covid19.

Revision of EU Air Quality Rules Stakeholder Meeting

On 23 September 2021, the European Commission's Directorate General on Environment (DG ENV) organised a hybrid stakeholder meeting -online and at the Charlemagne Building in Brussels- on 'Air Quality: Revision of EU Rules'.

The meeting was chaired by Mr F. Wakenhut, Head of Unit, Clean Air of DG Environment and it included presentations from the

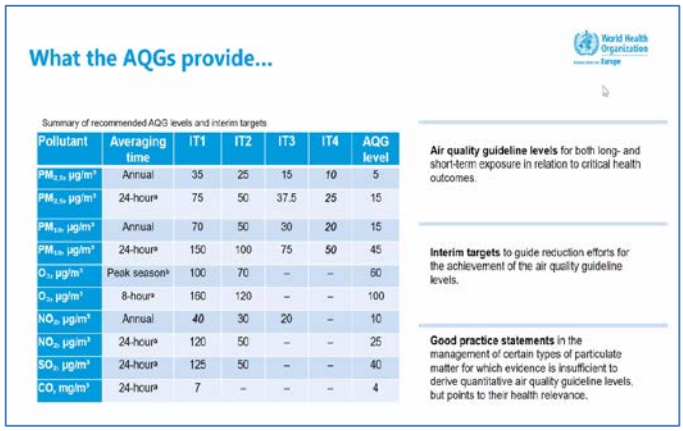
European Commission as well as from the World Health Organization (WHO).

Mr Wakenhut described the mandate received by the Commission to review the EU Air Quality Directive (AQD) based on achievements and shortcomings from the current directive. There is a high level of interest in the revision of the European AQD and all relevant sector of society have been involved in the consultations conducted so far.

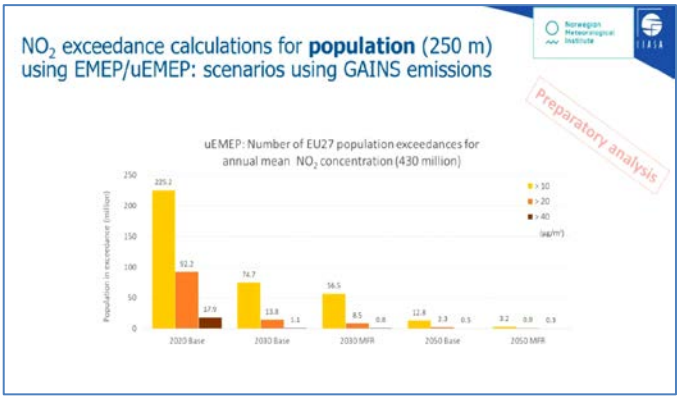
The European Commission is focusing on three pillars: ambient air quality, national emission reduction commitments directive and source specific emission standards. The pillars define the three policy areas: (1) closer alignment of air quality standards with scientific knowledge; (2) improving the air quality legislative framework; and (3) strengthening of air quality monitoring, modelling and plans.

The Commission mentioned it is planning to complete the impact assessment in the first half of 2022, and to have a proposal adopted at the end of the year.

World Health Organization (WHO), Dr Jarosińska, introduced the recently released WHO Air Quality Guidelines (AQG). The guidelines can be used as an evidence tool, to stimulate research and promote climate action.



The Commission's consultants presented the initial analysis conducted in each of the policy areas where the EU air quality rules will be assessed. In particular, on policy area 1, closer alignment of air quality standards with scientific knowledge, the European Commission highlighted the importance of the expected Euro 7 standards. The preparatory analysis presented by the consultants considers a significant reduction of NOx emissions (in general, not only from transport) from 2020 to 2050. The preparatory analysis currently considers vehicles' full compliance with Euro 6 and the impact of fleet electrification from the transport contribution.



On policy area 2, improving the air quality legislative framework, the Commission confirmed that its assessment will look closely into the interaction between the "Fit for 55" as well as the "Smart and Sustainable Mobility Strategy" dossiers to decide how the air quality rules should be framed. This includes how possible sanctions and penalties for non-compliance will be handled.

Regarding policy area 3, strengthening of air quality monitoring, modelling and plans, the consultants will evaluate monitoring tools, give clear guidance on when and how to measure as well as methodologies to develop air quality plans. Some stakeholders mentioned that public science needs to be considered.

DG ENV has launched a public consultation on the revision of the legislation and this will be open until 16 December 2021. Finally, the Commission confirmed that the EU Clean Air Forum will be held on 18-19 November in Madrid where further elements will be discussed. The second stakeholder meeting will be held during the first half of 2022.

More information on the stakeholder meeting is available at ec.europa.eu/environment/air/quality/revision_of_the_aaq_directives.htm and the public consultation can be accessed at ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12677-Air-quality-revision-of-EU-rules_en.

Study on Alternative Fuel Infrastructures for Heavy-duty Vehicles

On 28 September 2021, the European Parliament Policy Department for Structural and Cohesion Policies (Think Tank) published a study into alternative fuel infrastructures for heavy-duty vehicles, carried out on behalf of the TRAN Committee.

The study says that because of their greenhouse gas (GHG) emission reduction potential, alternatively fuelled low and zero emission trucks will play a major role in realising the EU Green Deal and the 55% GHG reduction target for 2030. It is therefore essential that there is sufficient and widespread recharging and refuelling infrastructure available.

It points out that for trucks the Alternative Fuels Infrastructure Directive (AFID) is geared mainly to alternative fuels like Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG). Given the Green Deal decarbonisation target, the Think Tank states that AFID should shift its focus to creating refuelling infrastructure

for battery electric trucks (BET) and hydrogen fuelling infrastructure. It does say however, that at present there is only minimal publicly accessible refuelling and recharging infrastructure for BETs and hydrogen-fuelled trucks.

The study lists a number of what it calls key areas for EU action, shown below.

Key areas for EU action

1. An increase in investment security for investors.
2. A reduction in lead times by removing anydisproportionate permit requirements.
3. A reduction of long procedures and lead times.
4. Bringing stakeholders together in a coordinated approach.
5. Seeking synergies and smart solutions.
6. Development of information and reservation systems.
7. Striving for standardisation and harmonisation.
8. Ensuring all EU Member States are on board.
9. Decarbonisation potential of renewable fuels (biofuels and e-fuels) in diesel engines should not be overlooked.

The study can be found at europarl.europa.eu/RegData/etudes/ATAG/2021/690889/IPOL_ATA(2021)690889_EN.pdf.

First Anniversary of Green City Accord

On 22 September 2021, the European Commission celebrated that one year after its launch, the Green City Accord has now reached a milestone of 73 cities including the 9 new cities that signed the political commitment at a high-level hybrid ceremony.

When welcoming the new signatories on board, EU Commissioner for Environment, Oceans and Fisheries, Virginijus Sinkevičius highlighted the commitment of the cities that signalled their intention to make improvements in five key environmental areas - air, water, nature and biodiversity, circular economy, and waste, and noise. In signing the Green City Accord, city leaders agree to take further action to protect the natural environment and to achieve ambitious goals by 2030 in these five key areas.

The Commission press release can be found at ec.europa.eu/environment/news/european-commission-celebrates-73-signatories-green-city-accord-one-year-after.

DPF Retrofit on Cars and Vans in Denmark

On 10 September 2021, an Order on certain retrofitted particulate filters in Denmark was published.

The Order lays down provisions for the retrofitting of particulate filters on passenger cars and vans approved according to Euro 4, Euro IV, or lower Euro standards. It includes technical requirements for particulate filters for retrofitting of such vehicles and requirements for testing methods for particulate filters for retrofitting. In addition, the Order lays down requirements for documentation of particulate filter retrofitting as well as requirements for the vehicles to subsequently be inspected.

Act No 590 of 13 May 2019 to amend the Environmental Protection Act established a legal basis for the introduction of low emission zones with stricter environmental requirements for diesel-powered lorries, buses, and vans. The requirements for lorries, buses, and vans used in the low emission zones will be tightened in stages until 1 July 2025. There is a need to set requirements for retrofitted particulate filters on diesel-powered passenger cars and vans, as there are currently no particulate filters nor an approval scheme for particulate filters that can be retrofitted on most of the vehicles in question.

The Order is available to read at ec.europa.eu/growth/tools-databases/tris/en/search/?trisaction=search.detail&year=2021.

Czech Letter to Commission regarding Euro 7 Emission Standards

On 22 September 2021, Euractiv reported that Czech Prime Minister Karel Havlíček has written a letter to European Commission Vice-president Frans Timmermans and Commissioner Thierry Breton regarding the upcoming Euro 7 emission standards regulation.

Czech Prime Minister Havlíček is reported to have said that Euro 7 "seems to be almost impossible to implement" and that the proposal of new emissions standards has to be proportional, cost-beneficial, and feasible.

Euractiv says that according to the Czech government, stricter regulation and higher prices of new vehicles will force people to keep their old cars.

The report can be found at euractiv.com/section/politics/short_news/czechia-asks-commission-to-rethink-new-emissions-standards-for-cars/.

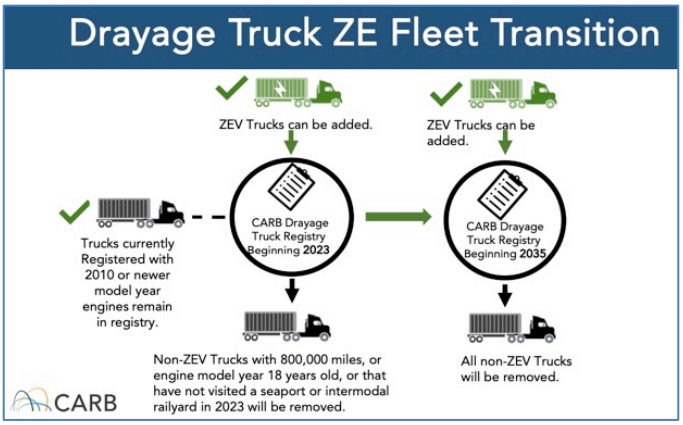
NORTH AMERICA

CARB Advanced Clean Fleets Regulation Workshop

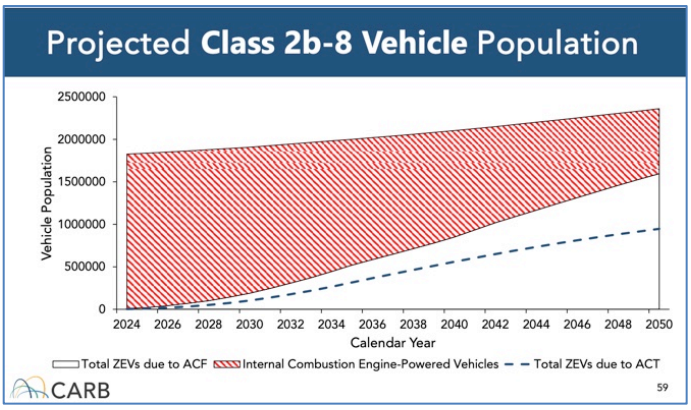
On 9 September 2021, the California Air Resources Board (CARB) held a workshop on its Advanced Clean Fleets (ACF) Regulation. The regulations will require public and private truck fleet operators to purchase an increasing number of zero-emission models beginning in 2024. CARB expects to adopt the rules sometime next year, with the first fleet rule taking effect in 2023. The ACF rule is intended to complement CARB's landmark Advanced Clean Trucks (ACT) regulation the Board adopted last June, which requires medium- and heavy-duty truck makers to begin selling a certain percentage of zero-emission models beginning in model year 2024.

For public fleets, beginning in 2025, 50% of the total new annual vehicle purchases by public agencies that do not solely serve low-population areas of the state must be zero-emission vehicles. By 2027, all vehicles purchased by public agencies in the state must be zero-emission vehicles.

For drayage fleets, beginning in November 2023, all drayage trucks (HD trucks that operate in seaports and intermodal railyards) must be registered with the state drayage truck database as legacy vehicles. All new drayage trucks registered must have a zero-emissions powertrain and be a zero-emission vehicle. The term "zero-emissions powertrain" is defined to include only all-electric or hydrogen fuel cell powertrains. From 1 January 2035 all drayage trucks must be zero-emission vehicles.



Owners of fleets of certain vans, trucks and work vehicles in California must make zero emission vehicles an increasing percentage of their fleet, starting in 2025, with different schedules for different types of vehicles. regulated fleets will need to be 100% zero emission starting in 2035 for box trucks or vans, two-axle buses, and yard tractors; by 2042 all regulated fleets must be composed of 100% zero emission vehicles.



As of Model Year 2040, manufacturers who sell new medium- and heavy-duty on-road vehicles in California only may sell zero emission vehicles, with the only exception being authorised emergency vehicles.

Workshop details, including staff presentation, are at arb.ca.gov/our-work/programs/advanced-clean-fleets/advanced-clean-fleets-meetings-events.

CARB Letter to US EPA on Fuel Efficiency Standards

On 27 September 2021, the California Air Resources Board (CARB) wrote to the US Environmental Protection Agency (EPA) to urge the EPA to adopt more stringent standards than proposed by the agency, in order to recover emissions reductions lost in the period after the Trump Administration rolled back the so-called Obama National Program Standards. Others have followed, and the California-led initiative has been joined by a number of states, including New York, Illinois, Maryland, Massachusetts, New Jersey, and Pennsylvania; and cities, including the New York City, Los Angeles, San Francisco, Denver and others.

CARB says that it urges the agency to adopt the most stringent standards feasible. All the proposed standards (see AECC Newsletter of August 2021) – the preferred alternative, the more stringent alternatives, and thus necessarily the less stringent alternative - are technologically feasible. It adds that the US EPA has a legal obligation to follow the science and the Clean Air Act and cut emissions as deeply as possible. The California body says that Alternative 2, a return to the National Program standards with an improvement of those standards for model year 2026 by an additional 10 grams of carbon dioxide per mile, would maximize the reduction in emissions. However, CARB recognizes that U.S. EPA may determine additional lead time is appropriate; if so, the best option is to adopt a standard at least as stringent as its preferred alternative for model year 2023 and greater stringency thereafter, along the lines of Alternative 2 for later model years, with additional reductions required in model year 2026 to recoup further lost emission reductions.

CARB concludes by saying that the ingenuity of engineers and scientists has improved vehicle emission technology and significantly reduced emissions of greenhouse gases and other pollutants. In many instances these improvements pay for themselves in fuel savings, and in all ways their benefits to public health and welfare far outweigh their costs. Automobile manufacturers are already including in their vehicles the technologies to meet these proposed standards, including in other markets. The proposed standards will ensure they accelerate deployment in California, according to CARB.

The CARB letter can be found at arb.ca.gov/sites/default/files/2021-09/2021-9-27-final-CARB-Restored-MY-2023-2026-USEPA-GHG-Stds-RWC-9-27-21.pdf.

ASIA PACIFIC

Court Ruling on Air Pollution in Jakarta

On 16 September 2021, the Central Jakarta District Court ruled that President Joko Widodo and his administration must tighten regulations and impose greater supervision and enforcement regarding poor air quality in Indonesia's capital city.

In a landmark ruling, the court found that the president, the Ministry of Environment and Forestry, the Ministry of Health, the Ministry of Home Affairs as well as the governors of Jakarta and its two neighbouring provinces, Banten and West Java had violated the law by allowing Jakarta's air quality to deteriorate. All seven are defendants in a lawsuit lodged by a number of Jakarta citizens who demanded that the government at both the national and city level tighten regulations on air quality standards, which they see

as too lenient. They are also pushing for better supervision and sanctions for offenders.

The court ordered the president to "tighten the national air quality standards so that they are sufficient to protect people's health, the environment and the ecosystem, including the health of sensitive groups within the population, in line with scientific and technological developments". The three ministers were told to formulate an action plan to improve Jakarta's air quality as well as impose tighter supervision on the governors of Jakarta, Banten and West Java regarding their efforts to curb the pollution.

A report on the ruling is available to read at channelnewsasia.com/asia/indonesia-government-guilty-lawsuit-unhealthy-air-quality-jakarta-2182141.

UNITED NATIONS

Launch of WHO Global Air Quality Guidelines

On 22 September 2021, the World Health Organization (WHO) launched new Global Air Quality Guidelines (AQGs). The WHO says that these new guidelines provide clear evidence of the damage air pollution inflicts on human health and recommend new air quality levels to protect the health of populations by reducing levels of key air pollutants, some of which also contribute to climate change.

WHO Director General Dr Tedros Adhanom Ghebreyesus opened the press conference by saying that there is nothing more essential for life than air and that because of pollution, the act of breathing contributes to 7 million deaths each year. He said that the new guidelines provide a practical tool for air quality standards to inform and strengthen policy sectors including transport. WHO is dedicated to supporting countries to help them reduce air pollution. Mr Ghebreyesus added that this is not a job for health sector alone and that engagement of sectors of the economy is needed.

Dr Hans Henri Kluger, the WHO's Regional Director for Europe said that the nature of the challenge calls for enhanced and immediate action because clean air is a political choice and a societal responsibility. The last time WHO published the guidelines was 2006 and in the intervening years there has been a substantial increase in evidence on how and to what degree air pollution impacts our health. Almost all updated guidelines are now lower than they were 15 years ago. Mr Kluge said that the guidelines also indicate a stepwise approach so a benefit can be seen for those countries that need to implement these guidelines slowly.

In this guideline update, recommendations on AQG levels are formulated, together with interim targets, for $PM_{2.5}$, PM_{10}, ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide.

Pollutant	Averaging time	Interim target				AQG level
		1	2	3	4	
$PM_{2.5}$, µg/m³	Annual	35	25	15	10	5
	24-hour[a]	75	50	37.5	25	15
PM_{10}, µg/m³	Annual	70	50	30	20	15
	24-hour[a]	150	100	75	50	45
O_3, µg/m³	Peak season[b]	100	70	–	–	60
	8-hour[a]	160	120	–	–	100
NO_2, µg/m³	Annual	40	30	20	–	10
	24-hour[a]	120	50	–	–	25
SO_2, µg/m³	24-hour[a]	125	50	–	–	40
CO, mg/m³	24-hour[a]	7	–	–	–	4

[a] 99th percentile (i.e. 3–4 exceedance days per year).
[b] Average of daily maximum 8-hour mean O_3 concentration in the six consecutive months with the highest six-month running-average O_3 concentration.

WHO says that it is important to note that the air quality guidelines recommended in previous WHO air quality guidelines for pollutants and those averaging times not covered in this update remain valid. This includes the short averaging times for nitrogen dioxide, sulfur dioxide and carbon monoxide that were included in Global update 2005.

Pollutant	Averaging time	Air quality guidelines that remain valid
NO_2, µg/m³	1-hour	200
SO_2, µg/m³	10-minute	500
CO, mg/m³	8-hour	10
	1-hour	35
	15-minute	100

The report says that as yet, insufficient data are available to provide recommendations for AQG levels and interim targets for specific types of particulate matter, including black carbon. It acknowledges however, that due to health concerns related to these pollutants, actions to enhance further research on their risks and approaches for mitigation are warranted.

WHO will launch a report on 7 October containing mitigation actions to reduce air pollution levels. This will also be presented at the COP26 conference.

The updated air quality guidelines can be found at apps.who.int/iris/bitstream/handle/10665/345329/9789240034228-eng.pdf?sequence=1&isAllowed=y.

Global Assessment of Air Pollution Legislation

On 2 September 2021, the United Nations Environment Programme (UNEP) published "Regulating Air Quality: The first global assessment of air pollution legislation". UNEP states that improved air quality is "key to tackling the triple planetary crisis of climate change, biodiversity loss, and pollution and waste".

UNEP says that air quality continues to deteriorate despite the increase in laws and regulations seeking to address air pollution. Its findings on air quality legislation in 194 countries and the

European Union (EU) reveal that despite the international movement of pollutants which impact air quality, only one third of the countries studied have legal mechanisms for managing or addressing transboundary air pollution.

Using Air Quality Guidelines developed by the World Health Organisation (WHO), the report examines legal measures for determining whether air quality standards are being met and what procedures exist if they are not. According to the study, 43% of countries lack a legal definition for air pollution and 31% have yet to adopt legally mandated ambient air quality standards (AAQS). Moreover, 37% of States do not legally require national air quality monitoring mechanisms, which it says are critical to understand how air quality affects national populations.

UNEP adds that many countries now have constitutional provisions that potentially allow for the establishment of rights to clean air in law. It says that information on air quality is a well-established right in many countries and, in various parts of the world, public interest litigation is improving air quality policies.

The report provides recommendations to strengthen air quality governance as well as guiding countries to effectively address air pollution and contribute to achieving the Sustainable Development Goals (SDGs). Air quality commitments include a common legal framework globally for ambient air quality standards and key regional international legal instruments on air quality, particularly in the EU, which require individual signatory countries to develop relatively robust legal systems of air quality control.

Following this assessment, practical guidance is being developed by UNEP under the Montevideo Environmental Law Programme to expand its assistance to countries to address the air pollution crisis.

UNEP's air pollution assessment can be downloaded from news.un.org/en/story/2021/09/1099042.

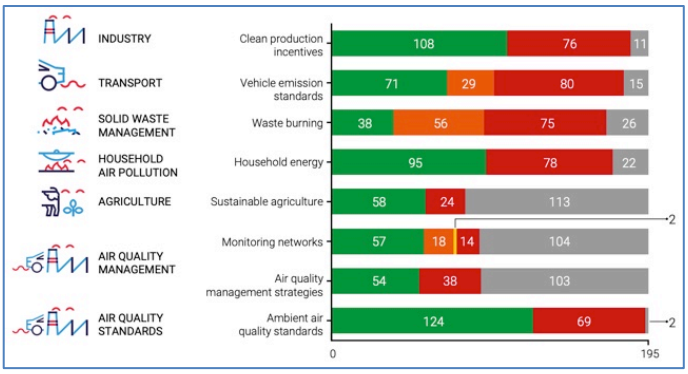
Global Summary of Policies and Programmes to reduce Air Pollution

On 7 September 2021, the United Nations Environment Programme (UNEP) published 'A Global Summary of Policies and Programmes to Reduce Air Pollution'. This report complements its global assessment of air pollution legislation.

This global report provides a review of policy actions of Member States per the mandate provided by UNEA Resolution 3/8 on Preventing and reducing air pollution to improve air quality globally. It builds on the United Nations Environment Programme (UNEP) 2016 report Actions on Air Quality which provided an overview of actions undertaken by countries around the world, focusing on a set of measures that if adopted would significantly improve air quality.

This 2021 report assesses actions in key sectors that contribute to air pollution, focusing on industrial emissions, transportation, solid waste management, household air pollution and agriculture emissions. It also provides an overview of non-sectoral air quality management actions, including air quality frameworks, strategies, standards and monitoring.

The graphic below shows the progress towards adoption of key actions that can significantly improve air quality.



The report says that policies to reduce emissions from the on-road transportation sector remain critical in countries (especially their urban areas) around the world. The past five years have shown progress, with 18 additional countries adopting emission standards equivalent to Euro 4/IV or higher, bringing the total to 71 countries. Twenty-nine countries have vehicle standards in place, but they are not yet up to the Euro 4/IV standard.

UNEP tracks progress on tailpipe standards as well as fuel quality, which is a key aspect of successful implementation of vehicle emission standards. The report highlights that there is still significant progress to be made with regards to fuel quality.

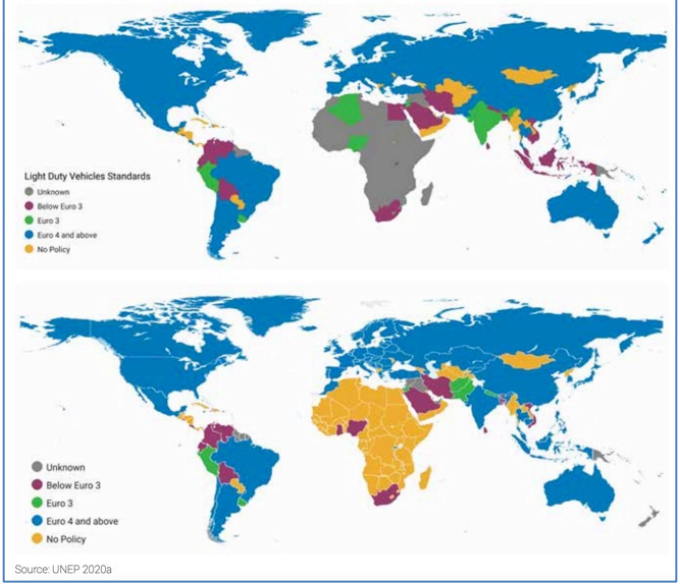


Figure 13. Map of light-duty tailpipe standards in 2016 (Top) and 2020 (Bottom)

Source: UNEP 2020a

The report adds that sectoral measures need to be supported by enabling policy frameworks (including air quality standards) and air quality management capacities. The 2016 assessment found gaps in terms of the accompanying laws and regulations that would facilitate the implementation and enforcement of air pollution standards and strategies. In order to address these gaps and assess progress going forward, the 2021 report introduces two key air quality management aspects into its analysis: (i) air quality management strategies, and (ii) air quality monitoring.

The responses received indicate that three key approaches are being used to implement air quality management strategies: most commonly a national air quality action plan, followed by sectoral plans, clean air acts and other approaches, sometimes combined. In 2020, 124 countries (about two thirds) were found to have ambient air quality standards, compared with 107 countries in the 2016 report. More than one fifth of countries are in the process of reviewing or updating those standards and nearly another fifth have plans to introduce standards in legislation in the near future.

UNEP concludes that while progress can be observed across the sectors in adopting key policies and actions that are known to reduce air pollution, significant gaps remain. The Actions on Air Quality report acknowledges the barriers in day-today implementation of air quality management programmes, including staff retention, capacity gaps, and affordability and maintenance challenges of air quality monitoring equipment. Countries are also facing larger, systemic challenges such as financing gaps that can result in an inability to invest in data analysis, and a lack of enforcement capacity when policies and actions are adopted.

The full report is available to read at wedocs.unep.org/bitstream/handle/20.500.11822/36694/AAQ_GSP_PRAP.pdf.

GENERAL

Standard on PEMS Performance Assessment

On 21 September 2021, the European Committee for Electrotechnical Standardization (CENELEC) published standard EN 17507 'Road vehicles - Portable Emission Measuring Systems (PEMS) - Performance assessment'.

This new standard, developed by 'CEN/TC 301 - Road vehicles', aims to qualify the measurement uncertainties of portable particle emission measurement systems (PEMS) used in real driving tests. The qualification of the different components of PEMS is of particular importance in the context of the tightening of particulate emissions thresholds. EU legislation foresees the definition of tolerated emission thresholds by taking measurements of an uncertainty factor, based on the objective precision of the portable measuring means. CENELEC says that, thanks to the new standard, this precision is now set to improve and the uncertainty factor to be reduced.

The CENELEC press release is at cencenelec.eu/news-and-events/news/2021/eninthespotlight/2021-09-21-new-en-17507.

Comparison of NOx emissions from Diesel, Natural Gas and Electric Vehicles

On 1 September 2021, the International Council on Clean Transportation (ICCT) published a briefing paper comparing NOx emissions from heavy-duty diesel, natural gas and electric vehicles. The briefing compares the capabilities of the three powertrain types in meeting an ultra-low NOx standard across four key areas: feasibility, cost, health impacts, and climate impacts, and relates these to upcoming ultra-low NOx regulations in California and across the USA.

On the subject of feasibility, ICCT points out that an extensive fuelling infrastructure already exists for diesel vehicles, which dominate the US heavy-duty vehicle market. The technology to achieve ultra-low NOx emissions has been demonstrated, although the ultra-low NOx SCR-based emissions control system is more complex than existing diesel emissions control systems as it requires additional catalysts, sensors, injectors, and thermal management. Few public natural gas fuelling stations are available in California or nationwide and significant infrastructure investment would be required to support significant numbers of heavy-duty natural gas vehicles. Both compression and spark ignition engines are capable of achieving ultra-low NOx emissions with the use of aftertreatment. Electric vehicles represent less than 0.1% of the HDV fleet in California and a much smaller proportion of the total US fleet. ICCT says the key question regarding the feasibility of electric vehicles is whether there will be commercially available models in all HDV segments within the time frame of the US regulation in 2027. The briefing points out that must comply with the California Air Resources Board's (CARB) Advanced Clean Truck (ACT) rule, which also takes effect in 2024 and requires electric vehicle adoption in all HDV segments.

Regarding cost, ICCT says that CARB analysis projects that the regulation will add about $8 500 (€7 140) to the cost of a Class 8 diesel truck, or less than 5% of the vehicle cost. CARB has also calculated that the benefits of the CARB ultra-low NOx rule would outweigh the additional costs by a 7 to 1 ratio. The cost of the added aftertreatment for spark-ignited natural gas vehicles to meet the ultra-low NOx standard is said to be nominal, approximately $400 (€337) per engine, although the upfront capital cost of CNG vehicles is typically around $10 000 (€8 423) higher than for a comparable diesel truck. Although electric vehicles incur no incremental cost for meeting the ultra-low NOx standard, the upfront capital cost of an electric HDV is significantly higher than either a heavy-duty diesel or natural gas vehicle being sold today.

On the health impacts of the respective technologies, ICCT says that health impacts from diesel vehicle exhaust can occur if NOx emissions in actual use are significantly higher than certified emissions. It states that the CARB regulation takes account of real-world driving but does little to address the issues of poor maintenance and tampering with aftertreatment systems. The briefing points out that for spark ignited natural gas engines, the main health impacts are likely to come from high particulate and ammonia emissions, as well as potentially higher NOx emissions in real-world operation than in testing. Electric vehicles produce no tailpipe emissions but do create additional emissions upstream where the electricity (or hydrogen in the case of FCEVs) is produced.

Finally, on the subject of climate impacts, the report points out that the majority of the climate impact from diesel vehicles comes from CO_2 produced in combustion, although California and the U.S. EPA both have standards in place to reduce greenhouse gas (GHG) emissions. These standards will help to decrease the per-vehicle CO_2 emissions of new heavy-duty diesel vehicles by roughly 25% to 50% from 2010 to 2027. The climate impacts of natural gas and natural gas vehicles come from two factors, methane leakage and the source of the natural gas, primarily from fossil sources. Electric vehicles are powered by either electricity from the power sector (BEVs) or hydrogen (FCEVs). For BEVs, the climate impacts will depend heavily on the carbon intensity of the grid.

ICCT concludes that Diesel, natural gas, and electric heavy-duty vehicles can all be designed to limit tailpipe NOx emissions to ultra-low levels required by California's soon-to-be finalised omnibus rule. The costs to do so are similar on a total cost of ownership basis. Of the three technologies, the report says that electric vehicles have the lowest overall health and climate impacts, although it is unlikely to be possible to transition to a 100% electric HDV fleet within the time frame of the regulation (2027). In this case, the next best short-term option for meeting ultra-low NOx requirements is diesel.

The ICCT briefing paper can be found at theicct.org/sites/default/files/publications/low-nox-hdvs-compared-sept21.pdf.

Analysis of Extending EU Heavy-Duty CO_2 Standards to Other Truck Segments

On 8 September 2021, the International Council on Clean Transportation (ICCT) published a working paper examining the additional benefits that would result from extending the CO_2 standards to these other segments under several alternate scenarios.

ICCT says that the study finds that extending the current CO_2 emissions reduction targets of 15% and 30% by 2025 and 2030, respectively, to vehicle groups 1, 2, 3, 11, 12, and 16, which are already covered by the certification procedure would lead to additional savings of 18%, or 36 megatonnes of CO_2, compared to current policies.

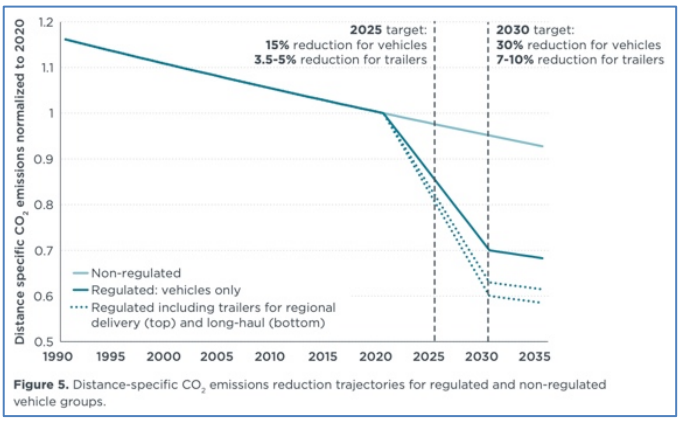


Figure 5. Distance-specific CO_2 emissions reduction trajectories for regulated and non-regulated vehicle groups.

It adds that applying specific CO_2 performance targets to semi-trailers with a box body would drive the adoption of emissions reduction technologies. Additional savings of up to 24%, or 49 megatonnes of CO_2, could be obtained by setting standards that would mandate a 10% improvement in the CO_2 performance of semi-trailers by 2030.

Finally, ICCT states that including light and medium lorries into the scope of the CO_2 standards would lead to additional savings of 5%, or 9 megatonnes of CO_2, compared to adopted policies. Additionally, extending the targets to buses – which will also be covered by the upcoming amendments of the CO_2 certification procedure – would lead to further CO_2 benefits.

The working paper is available to download from theicct.org/publications/extending-eu-hdv-co2-standards-sept21.

ICCT Analysis of Heavy-Duty CO_2 Standards Baseline Data

On 30 September 2021, the International Council on Clean Transportation (ICCT) published a working paper analysing the heavy-duty CO_2 standards baseline data from trucks in the EU. This is intended to understand how the industry currently performs compared to the targets set out by the European Commission and to inform the discussions on the review of the standards that will take place in 2022.

The study found that while the fuel consumption values across the different truck subgroups oscillated between 24 L/100 km and 33 L/100 km, the specific CO_2 emissions showed greater variation. Urban delivery trucks with a 4×2 axle configuration (4-UD) emitted on average 307 gCO_2/t-km, over five times as much as long-haul tractor-trailers (5-LH) with emissions of 57 gCO_2/t-km.

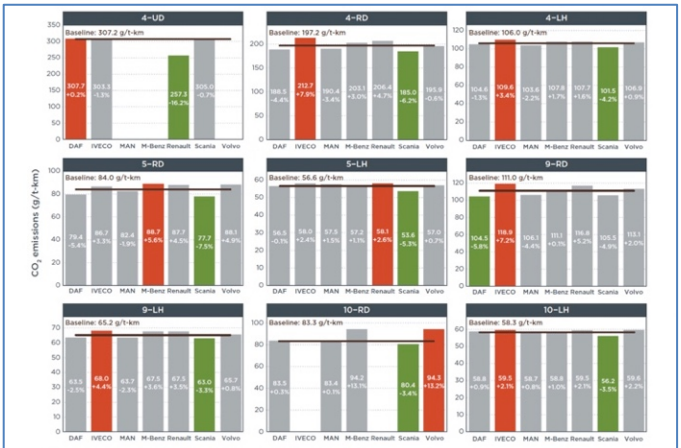
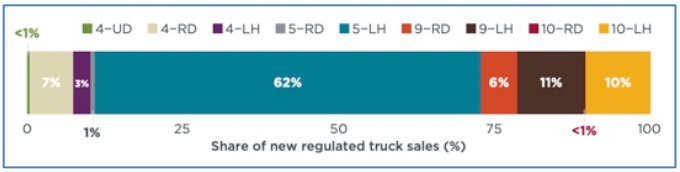


Figure 6. CO_2 emissions of the top-selling brands in each subgroup during the baseline period. The green bar highlights the brand with the lowest emissions in the subgroup, and the red bar the brand with the highest emissions. The data labels show the percent deviation with respect to the baseline.

ICCT says that during the first reporting period, a total of 47 zero-emission trucks were registered by the top-selling brands in the regulated groups. There were no low-emission trucks – defined as having less than half the baseline CO_2 emissions of the respective subgroup – registered.



ICCT goes on to say that the data also showed that the variations in CO_2 emissions across manufacturers can be explained by different rates of technology adoption. The top performing models had efficiencies over the WHTC of around 44%. Natural gas engines had much lower thermal efficiencies than diesel. The best performing model only reached 38.1% efficiency over the WHTC. ICCT says that at the vehicle level, this low engine efficiency largely offsets the potential gains from the lower carbon content of natural gas.

The full report is available to download from theicct.org/publications/eu-hdv-co2-standards-baseline-data-sept21.

T&E Report on Euro VI Truck Emissions in Spain and Proposals for Euro VII

On 6 September 2021, Transport & Environment (T&E) published a report analysing emissions of Euro VI trucks in Spain over a three-year period. Between 2017 and 2019, NOx emissions from 587 light and heavy trucks were analysed using remote sensing in Madrid and Barcelona.

T&E says that around a third of EURO VI trucks measured are high NOx emitters. Of the 587 measurements of light (3.5 to 12t, N2) and heavy (12t+) trucks, 169 exceeded the 7g/kg of fuel NOx remote sensing threshold above which the trucks are likely to be exceeding the legal NOx emission limits. T&E accepts that no conclusions can be drawn as to the reason for high emissions but says that it shows the Euro VI regulation fails to cover many normal on-road driving conditions such as low-speed driving and cold-start. Furthermore, it says, the regulation itself does little or nothing to prevent tampering with emission critical systems.

T&E concludes with recommendations for the Euro VII regulation expected at the end of this year. It proposes lowering the emission limits for all pollutants to the lowest technically feasible levels and improving the heavy-duty on road Portable Emissions Measurement Systems (PEMS) testing procedure to cover all on-road driving conditions. T&E also calls for the introduction of a low load, low speed emission test to ensure that trucks respect the emission limits when driving in cities.

Further recommendations are for extended emission durability requirements to cover the entire truck lifetime, along with the introduction of robust anti-tampering measures to prevent tampering with SCR systems. T&E also wants the European Commission to develop a harmonised remote sensing procedure and publicly accessible cross-border database to allow the Commission, Member States and cities to monitor the EU's vehicle fleet emissions and assist in identifying problem vehicles for further testing.

The report can be read in full at transportenvironment.org/sites/te/files/publications/_RS%20briefing%20high%20emitters%20review%20copy.docx_.pdf.

ICCT Review of Proposal for amending CO_2 Targets

On 23 September 2021, the International Council on Clean Transportation (ICCT) published a briefing on a review and evaluation of the European Commission proposal for amending the CO_2 targets for new cars and vans.

The document summarises and evaluates the key elements of this proposal before it enters the political negotiation process between the European Parliament and the Council. The EC proposal strengthens the current 2030 CO_2 targets, from -37.5% to -55% for new passenger cars and from -31% to -50% for new vans, both relative to a 2021 baseline. In addition, the proposal introduces a new 2035 CO_2 target of -100% for new cars and vans, again relative to a 2021 baseline. The 2025 target remains unchanged at -15% for both new cars and vans. The EC does not propose any interim targets nor a transition to annual instead of stepwise target values.

The ICCT briefing states that benefits for consumers and society could be increased by a factor of four by introducing higher ambition standards. In addition, additional CO_2 reductions are achievable at a lower cost than stated in the Commission's proposal. The ICCT analysis concludes that the most impactful strategies to increase the emission reductions for new cars and vans are to increase the 2030 CO_2 reduction target to at least 70%,

to increase the 2025 CO_2 reduction target to at least 30%, and to switch to annual CO_2 targets after 2025.

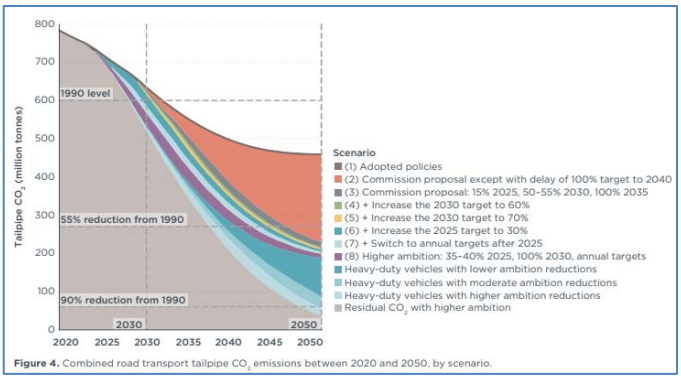


Figure 4. Combined road transport tailpipe CO_2 emissions between 2020 and 2050, by scenario.

Furthermore, the ICCT also suggests that in order to further maximise the benefits of CO_2 reductions, the Commission should consider phasing out zero-and low-emission vehicle credits earlier than 2030 or to raise the benchmark target for 2025 to 20% and to limit any credits to battery electric and fuel cell vehicles. It recommends the Commission should also introduce a real-world driving correction mechanism for manufacturers' CO_2 target performance by 2025 and to adjust type approval CO_2 values based on real-world on-board monitoring data. In addition, the Commission should update the vehicle mass adjustment factor as well as the reference mass used in the regulation on an annual basis.

The ICCT review can be found at theicct.org/sites/default/files/publications/fit-for-55-review-eu-sept21.pdf.

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Understanding the impact of poison distribution on the performance of Diesel oxidation catalysts, Miren Agote-Arán, et al.; *Applied Catalysis B: Environmental* (in press), doi: 10.1016/j.apcatb.2021.120684.

Boosting diesel soot catalytic combustion via enhancement of solid(catalyst)-solid(soot) contact by tailoring micrometer scaled sheet-type agglomerations of CeO_2-ZrO_2 catalyst, Zhengzheng Yang, et al.; *Combustion and Flame* (in press), doi: 10.1016/j.combustflame.2021.111700.

Modelling Investigation of the Thermal Treatment of Ash-Contaminated Particulate Filters, Chung Lao, et al. ; *Emiss. Control Sci. Technol.* (2021), doi: 10.1007/s40825-021-00197-z.

Fabrication of self-supporting structures made of washcoat materials (γ-Al_2O_3-CeO_2) by ceramic stereolithography: Towards digital manufacturing of enhanced catalytic converters, Setareh Zakeri, et al.; *Materials & Design* (November 2021), Vol. 210, 110115, doi: 10.1016/j.matdes.2021.110115.

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The challenge of forecasting the role of biofuel in EU transport decarbonisation at 2050: A meta-analysis review of published scenarios, David Chiaramonti, et al.; *Renewable and Sustainable Energy Reviews* (April 2021), Vol. 139, 110715, doi: 10.1016/j.rser.2021.110715.

FORTHCOMING CONFERENCES

ASME Internal Combustion Engine Fall Conference
13-15 October 2021, Online
event.asme.org/ICEF?utm_source=dieselnet_directory&utm_medium=display&utm_campaign=06_24_icef

EU Sustainable Energy Week
25-29 October 2021, Online
eusew.eu

FVV Autumn Conference
8-9 November 2021, Nürburg, Germany
fvv-net.de/en/events/fvv-autumn-conference-2021/

5th International FEV Conference Zero CO_2 Mobility
15-17 November 2021, Aachen, Germany
cevolver.eu/5th-int-fev-conference-zero-co2-mobility/

EU Clean Air Forum
18-19 November 2021, Madrid, Spain and Online
ec.europa.eu/environment/events/eu-clean-air-forum_en

POLIS Annual Conference
1-2 December 2021, Gothenburg, Sweden
polisnetwork.eu/2021-annual-polis-conference

Powertrain Systems for Net-Zero Transport
7-8 December 2021, London, UK
events.imeche.org
AECC will make a presentation.

SAE WCX World Congress
5-7 April 2021, Detroit, USA and Online
sae.org/attend/calls-for-papers

Catalysis and Automotive Pollution Control (CAPoC12)
6-8 April 2022, Brussels, Belgium
capoc.ulb.ac.be

CITA International Conference
1-2 June 2022, Amsterdam, Netherlands
citainsp.org/cita-conferences

8th International MinNOx Conference
Spring/Summer 2022, Berlin, Germany (postponed from June 2021)
iav.com/en/events/minnox