

# NEWSLETTER

International Regulatory Developments

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## EUROPE

### Europe's Air Quality Status 2022

On 1 April 2022, the European Environment Agency (EEA) published a briefing on the status of Europe's air quality.

The assessment shows that exceedances of air quality standards are common across the EU, with concentrations well above the latest WHO recommendations. Nevertheless, in 2020, lockdown measures adopted to minimise the spread of COVID-19 had a temporary impact on emissions of air pollution from road transport and led to improved air quality.

Despite reductions in emissions, in 2020 most of the EU's urban population was exposed to levels of key air pollutants that are damaging to health. Critically for health, 96% of the urban population was exposed to concentrations of fine particulate matter (PM<sub>2.5</sub>) above the WHO guideline of 5 µg/m<sup>3</sup>. In contrast, less than 1% of the urban population was exposed to PM<sub>2.5</sub> concentrations above the EU annual limit value of 25 µg/m<sup>3</sup>, highlighting the discrepancy between current EU policy objectives and the scientific evidence on when health effects occur.

Data shows that lockdown measures introduced in 2020 to stop or minimise the spread of COVID-19 led to reduced activity in the road transport, aviation and international shipping sectors, which in turn led to falls in emissions of air pollutants. NO<sub>2</sub> levels fell as a direct result of reductions in road transport. In major cities in France, Italy and Spain, annual mean concentrations of NO<sub>2</sub> fell by up to 25% in 2020, while in the month of April, concentrations fell by as much as 70% around roads normally busy with traffic. Nevertheless, 89% of the urban population was exposed to levels of NO<sub>2</sub> above the WHO guideline.

The EEA briefing is published at [eea.europa.eu/publications/status-of-air-quality-in-Europe-2022?utm\\_source=EEASubscriptions](https://eea.europa.eu/publications/status-of-air-quality-in-Europe-2022?utm_source=EEASubscriptions).

### European Commission Climate Pact Pledge

On 22 April 2022, the European Commission marked Earth Day 2022 with a Climate Pact pledge to become climate neutral by 2030. This involves achieving 'ambitious but realistic' goals, including making buildings more energy efficient, being smarter about work-related travel and making IT infrastructure greener.

The European Commission's North Star pledge involves making the institution climate neutral by 2030, reducing greenhouse gas emissions by around 60% compared to 2005 levels and compensating the remaining emissions with carbon removals. In addition to becoming climate neutral, the Commission also hopes to inspire other organisations to take action and become part of the climate solution.

The Commission's press release is available to read at [europa.eu/climate-pact/news/european-commission-takes-green-action-climate-pact-pledge-2022-04-22\\_en](https://europa.eu/climate-pact/news/european-commission-takes-green-action-climate-pact-pledge-2022-04-22_en).

### ITRE Opinion on Car and Van CO<sub>2</sub> Standards

On 25 April 2022, the Industry, Research and Energy (ITRE) Committee in the European Parliament published its opinion on the proposal for a regulation amending Regulation (EU) 2019/631 as regards strengthening the CO<sub>2</sub> emission performance standards for new passenger cars and new light commercial vehicles in line with the Union's increased climate ambition. This follows the vote in the ITRE Committee on 21 April.

The rapporteur for the opinion, MEP Riquet (Renew, FR), says he considers that by focusing exclusively on vehicle exhaust emissions, the regulation fails to provide an approach accounting for the overall carbon impact of cars and vans. The emphasis on certain emissions sources means that technologies are no longer put on an equal footing, thus breaking with the principle of technological neutrality.

While the rapporteur supports the electrification of the vehicle fleet and the move towards zero emissions, he fears that premature political decisions may underestimate the economic, industrial, social and ecological costs of this transition. He adds that battery-powered vehicles are not 'zero emission' in respect of the environment, given the carbon footprint of their manufacturing, the weight of vehicles, the origin of electricity, and the extraction and supply of materials.

The opinion goes on to say that it would be unwise to precipitously and radically outlaw one or more technical options that could prove useful in the future. It proposes that the target of 2035 needs to be slightly altered with a view to maintain the strong message to the sector that we must decarbonise while preserving sufficient leeway for the development of efficient alternative technologies. A review clause is thus introduced for 2027, when lawmakers will be better able to account for these uncertainties, technological progress and market developments.

The opinion also calls for the development of full life-cycle methodologies to complement the tailpipe emissions approach to ensure the effectiveness of this legislation in reducing emissions at Union level and promote the production of sustainable batteries, especially in terms of durability, efficiency, re-use and recycling. Given this situation, the opinion states the Commission should, by 31 December 2023 at the latest, draw up a harmonised methodology for reporting the carbon balance of the life-cycle of vehicles ('manufacture – use – scrapping') and the energy consumption ('extraction/production – transportation – consumption' or 'Well-to-Tank') in order to obtain an overview and thus ensure consistency of the means brought in pursuit of the Union's climate objectives.

The ITRE opinion can be read in full at [europarl.europa.eu/doceo/document/ITRE-AD-703089\\_EN.pdf](https://europarl.europa.eu/doceo/document/ITRE-AD-703089_EN.pdf).

## TRAN Vote on Car and Van CO<sub>2</sub> Standards

On 28 April 2022, the Transport and Tourism (TRAN) Committee in the European Parliament voted on amendments to the proposed CO<sub>2</sub> standards for new passenger cars and light-duty commercial vehicles. The TRAN Committee was tasked to provide an opinion on this dossier.

Compromise amendments on alternative fuels including the allowing the 'use of synthetic and alternative fuels' and their respective CO<sub>2</sub> emission savings to count towards the EU fleet targets for new vehicles was adopted.

Furthermore, members of the TRAN committee called for adjusting the 100% CO<sub>2</sub> emission reduction target proposed by the Commission for 2035 to a 90% target, compared to 2021 levels. The targets for 2025 and 2030 remain unchanged.

Within the European Parliament, the next step of the progress of this dossier is within the Environment, Public Health and Food Safety (ENVI) Committee, which is provisionally scheduled to vote on their draft Report on 11 May 2022.

## ENVI Structured Dialogue with Commissioner for Internal Market

On 21 April 2022, the European Parliament's Environment (ENVI) committee held a structured dialogue with Commissioner for Internal Market Mr Thierry Breton.

Mr Breton said that the Commission is making progress on the proposal for the Euro 7 standard, which it plans to adopt in July.

The Commission wants to reduce the emission limits according to the latest technological developments. It also wants to better understand the real conditions of emissions related to driving, in particular by using digital technologies.

Commissioner Breton added that this means the EC will be in a position to produce in Europe the cleanest combustion engine vehicles in the world. As added-value shifts from motorisation to batteries and chips, the distributive impact across the entire automotive ecosystem will be massive. He said switching to electric cars involves the destruction of hundreds of thousands of jobs along the supply chain (about 600 000 for the EU). While major car manufacturers may diversify their sources of revenue and be present in several international markets, component manufacturers may only be active in specific market segments affected by the combustion engine ban.

The full text of Mr Breton's speech is available to read at [ec.europa.eu/commission/presscorner/detail/fr/SPEECH](https://ec.europa.eu/commission/presscorner/detail/fr/SPEECH).

## ENVI Exchange of Views with Commissioner Timmermans

On 28 April 2022, the Environment (ENVI) committee of the European Parliament held an exchange of views with European Commissioner Timmermans on the progress of several 'Fit for 55' dossiers being discussed in Parliament.

MEP Canfin (Renew, FR), Chair of the ENVI committee introduced the structured dialogue, informing members that this is the last exchange of views with Commissioner Timmermans before important votes within the ENVI committee in May. Three elements were discussed: 'Fit for 55', 'RePower EU' and 'Farm to Fork'.

Commissioner Timmermans referred to the climate crisis and said everything the Commission has been doing has become more urgent. The 'Fit for 55' package is a crucial aspect of cutting fuel demand. The package proposed will allow a 30% reduction of gas consumption in Europe and it is needed sooner rather than later. He offered the European Commission services support for the rest of the negotiation and hoped Parliament and Council will reach their positions before summer. This will allow a final political agreement of the package by the end of this year.

Commissioner Timmermans said that based on the current situation in Ukraine and the RePower initiative, the Commission is considering a higher target for renewables in the Renewable Energy Directive.

Referring to the CO<sub>2</sub> emission standards, he said electric cars are needed, as it is clear electric cars are cheaper to run and allow citizens to save a huge amount of fuel. These vehicles will be cheaper to buy at some point, he noted. Mr Timmermans added that it is important for the EP to follow the lead of MEP Huitema as well as from the automotive industry to support the transition.

MEP Glück (Renew, DE) asked Mr Timmermans why the European Commission has moved away from technological neutrality when it comes to cars. He noted that it is hard to understand why the Commission focuses only on one part of the solution.

The webstream on the exchange can be followed at [multimedia.europarl.europa.eu/en/webstreaming/envi-committee-meeting\\_20220428-0900-COMMITTEE-ENVI](https://multimedia.europarl.europa.eu/en/webstreaming/envi-committee-meeting_20220428-0900-COMMITTEE-ENVI).

## Future of Europe Detailed Proposals

On 29 and 30 April, the Conference on the Future of Europe Plenary session met for the last time and agreed to a set of 49 detailed proposals covering a wide range of subjects from climate change to health, migration and the EU in the world. This follows a yearlong journey of discussions, deliberations and collaboration by citizens from across Europe, on the kind of Europe they would like to live in.

The representatives of the European Parliament, the Council, the Commission and representatives from national Parliaments expressed consensus on the proposals. The citizens participating in the Plenary also expressed their positions on these proposals.

In the areas of climate change, energy and transport, proposed measures include promoting the purchase and sharing of electric vehicles, requiring urban development programmes for “greener” cities with lower emissions, with dedicated car-free zones in cities, without harming commercial areas, and improving existing transportation infrastructure from an ecological point of view. A further measure is to no longer subsidise fossil fuels after a transition period.

Following the conference, the European Parliament, the Council and Commission will examine how to follow up effectively on the proposals, each within their own spheres of competences and in accordance with the Treaties.

More information can be found at [europa.eu/commission/presscorner/detail/en/IP\\_22\\_2763](https://europa.eu/commission/presscorner/detail/en/IP_22_2763).

## Announcement of First 100 Cities for EU Cities Mission

On 28 April 2022, the European Commission published the list of the 100 EU cities that have been selected to be part of the EU Mission for 100 Climate Neutral and Smart Cities by 2030, also known as the Cities Mission. The designated cities come from all 27 EU countries, with 12 additional cities coming from countries associated or with the potential of being associated to Horizon Europe. The Cities Mission will now work with different stakeholders to ensure that the designated cities reach climate neutrality by 2030 and that they act as hubs for experimentation and innovation and enable all European cities to follow suit by 2050.

In addition to supporting the cities that are part of the EU’s Mission on Climate-neutral and Smart Cities by 2030, NetZeroCities will launch a series of Pilots to test innovative ideas and help drive rapid learning about how to achieve climate neutrality at city scale. NetZeroCities will also run a Twinning programme to enable peer learning and promote the replication of solutions between pilots and other European cities.

Following the selection of the cities, the next step will be the development of Climate City Contracts (CCC). These contracts, co-created with local stakeholders and citizens and supported by NetZeroCities, will contain a climate action and investment plan to reach climate neutrality by 2030.

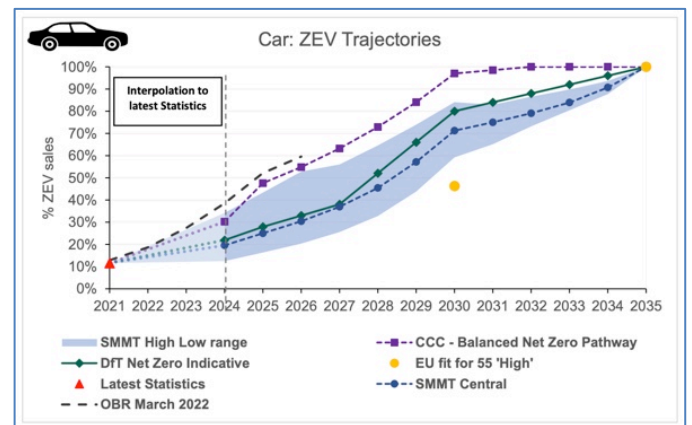
Full details of the Cities Mission can be found at [netzerocities.eu/2022/04/28/the-european-commission-announces-the-100-selected-cities-to-join-the-cities-mission/](https://netzerocities.eu/2022/04/28/the-european-commission-announces-the-100-selected-cities-to-join-the-cities-mission/).

## UK Consultation on Policy Design Features for Car and Van ZEV Mandate

On 7 April 2022, the UK government launched a consultation on the design features that could be included in a car and van regulation under its Net Zero Strategy.

The consultation document says that the aim in setting ZEV uptake trajectories to 2035 is to provide market certainty. The mandate is also intended to provide assurance that the government will meet its phase-out deadlines and carbon commitments.

A selection of stakeholder forecasts for the UK ZEV market trajectory is presented in the document.



The government then sets out its preferred uptake trajectory, with 80% ZEV car penetration in 2030 and 100% in 2035.

2024: 22%	2025: 28%	2026: 33%	2027: 38%	2028: 52%	2029: 66%
2030: 80%	2031: 84%	2032: 88%	2033: 92%	2034: 96%	2035: 100%

For vans, it is looking at 52% ZEV in 2030 and 100% in 2035.

2024: 8%	2025: 11%	2026: 14%	2027: 25%	2028: 34%	2029: 43%
2030: 52%	2031: 62%	2032: 71%	2033: 81%	2034: 90%	2035: 100%

The consultation then looks at certification as well as the operation of the ZEV mandate, exemptions, derogations and enforcement.

It also considers how to regulate CO<sub>2</sub> emissions in the new non-ZEV fleet. The CO<sub>2</sub> emissions part of the regulation will be in place primarily to prevent any part of the fleet being left ‘unregulated’. In principle, it is not intended to drive significant reductions to the CO<sub>2</sub> emissions of new conventional vehicles, but to avoid increases. Manufacturers should then be able to focus their new investments, research, and development in technology to accelerate the shift to fully zero emission vehicles. The CO<sub>2</sub> emissions regulation would be a fixed target with no tradeable elements.

The consultation is open for responses until 10 June and is available to read in full at

[gov.uk/government/uploads/file/1067041/technical-consultation-on-zero-emission-vehicle-mandate-policy-design.pdf](https://www.gov.uk/government/uploads/file/1067041/technical-consultation-on-zero-emission-vehicle-mandate-policy-design.pdf)

## UK Policy Paper on Atmospheric Implications of Increased Hydrogen Use

On 8 April 2022, the UK government published a policy paper on the atmospheric implications of increased hydrogen use. This is based on a study commissioned by the Department for Business, Energy & Industrial Strategy (BEIS) and conducted by the University of Cambridge and the National Centre for Atmospheric Sciences with the University of Reading.

The report says that there is an increasing body of evidence that leakage of hydrogen to the atmosphere will have an indirect warming effect on the climate and so should be minimised. While hydrogen is not a greenhouse gas itself, it reacts with other species such as methane, ozone, and water vapour in the atmosphere to increase their global warming potential (GWP).

The future change in methane (CH<sub>4</sub>) concentration in the atmosphere will depend both on the hydrogen-induced change in lifetime and the changes in methane emissions which would follow adoption of a hydrogen economy. An increase in the atmospheric concentration of hydrogen, assuming no change in other emissions, will increase tropospheric ozone (O<sub>3</sub>). The study goes on to say that hydrogen leakage will lead to increases in water vapour throughout the atmosphere, with potentially significant increases in the stratosphere.

Regarding radiative forcing, it says that adoption of hydrogen as an energy source could reduce emissions of carbon dioxide and provide a significant climate benefit. However, increases in tropospheric ozone, water vapour and methane, consequent on increases in atmospheric hydrogen, would all tend to increase radiative forcing, partially offsetting the climate benefits of a switch to hydrogen. The net top-of-atmosphere radiative forcing will depend strongly on the hydrogen leakage rate, on any associated reduction in methane emissions and on the extent of co-emission benefits.

The study's estimate of the hydrogen GWP for a 100-year time horizon is  $11 \pm 5$ , which is more than 100% larger than previously published calculations. The authors conclude that leakage of hydrogen into the atmosphere during production, storage, distribution and use will partially offset some of the benefits of a hydrogen-based economy. Minimisation of leaks therefore needs to be a priority if hydrogen is adopted as a major energy source.

The full report can be found at [gov.uk/government/uploads/attachment\\_data/file/1067144/atmospheric-implications-of-increased-hydrogen-use.pdf](https://www.gov.uk/government/uploads/attachment_data/file/1067144/atmospheric-implications-of-increased-hydrogen-use.pdf)

## Renewable and Low-Carbon Fuels Value Chain Industrial Alliance

On 6 April 2022, the European Commission announced the establishment of the Renewable and Low-Carbon Fuels Value Chain Industrial Alliance. The alliance is a new initiative that focuses on boosting production and supply of renewable and low-carbon fuels in the aviation and waterborne sectors.

The ultimate objective of the alliance is to ensure that aviation and waterborne transport have sufficient access to renewable and low carbon fuels, while taking into account the future use of these fuels in road transport, and thus contributing to a reduction in the transport sector's greenhouse gas (GHG) emissions by 90% by 2050. For this to happen, the Commission says that effective exchange and coordination of actors across the value chain is needed to ensure that opportunities and barriers to market action are clearly identified, and a pipeline of suitable projects can be generated.

The work of the alliance will be supported by an Alliance Secretariat, which for the first year is run by FuelsEurope, together with Hydrogen Europe.

Full details can be found at [transport.ec.europa.eu/transport-themes/europe/renewable-and-low-carbon-fuels-value-chain-industrial-alliance\\_en](https://transport.ec.europa.eu/transport-themes/europe/renewable-and-low-carbon-fuels-value-chain-industrial-alliance_en).

## New Market Surveillance Laboratories at JRC

On 1 April 2022, the European Commission's Directorate General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW) and the Joint Research Centre (JRC) inaugurated the Vehicle Market Surveillance Laboratory in Ispra, Italy.

The Vehicle Market Surveillance Laboratory will serve the European Commission in its task to organise and carry out tests and inspections to verify that vehicles, systems, components and separate technical units comply with the relevant environmental and safety requirements.



The event was attended by some Members of the European Parliament, as well as representatives of several Member States and European Commission staff.

In the opening, Mr Nicklas, Head of DG GROW's Mobility unit, said JRC has helped over the last 20 years to develop the EU regulation for emissions. The JRC has supported the development of Euro 6/VI standards and defined the new test cycles for light- and heavy-duty (WLTP and WHTC). The laboratories have been the basis for the Real Driving Emissions (RDE) testing as well as the CO<sub>2</sub> standards and VECTO for heavy-duty. The new laboratories will have a big impact on the new market surveillance. Tests will be needed to support the development of Euro 7.

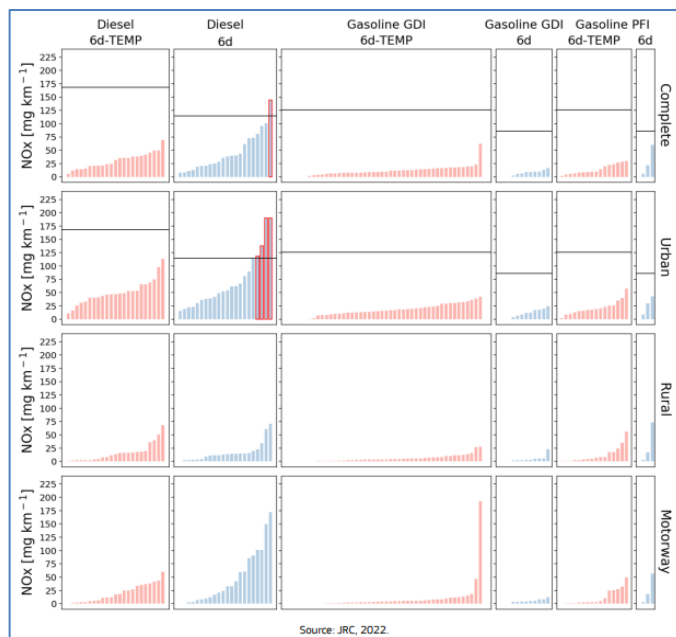
European Commissioner for Internal Market, Mr Breton emphasised the need to understand that what JRC is doing is critical for safety but also for the internal market, for consumers, markets and to keep a level playing field. He said the automotive industry was the driving force for innovation, now it is back again, as electrification and hydrogen powertrains are being developed. That is why this centre is very important for today's and tomorrow's innovation. Mr Breton went on to say the transition to electrified powertrains does not mean we will stop designing or manufacturing thermal engines in Europe. European companies can sell to other markets which will continue using the technology, such as Africa or Asia. Hybrid cars will support the transition in other regions of the world as well.

More information can be found at [joint-research-centre.ec.europa.eu/events/inauguration-vehicle-market-surveillance-laboratory-2022-04-01\\_en](https://joint-research-centre.ec.europa.eu/events/inauguration-vehicle-market-surveillance-laboratory-2022-04-01_en).

## Results of 2020-21 European Commission Vehicle Emissions Testing

On 1 April 2022, the European Commission's Joint Research Centre (JRC) published results of the 2020-21 vehicle emissions testing programme.

For In-Service Conformity testing, including both the JRC and the third-party tests five exceedances were found and correspond to five different vehicles from three different families, whose conformity must be checked by the responsible authorities. Adding the JRC tests to those conducted by third parties, five tests exceeded the limit for a total number of 138 tests, which represents a pass rate greater than 96%.



For market surveillance testing, most of the tests conducted by the JRC were dedicated to the compliance verification of tailpipe emissions requirements (on WLTP and RDE) and to the detection of Auxiliary Emissions Strategies whose environmental impact was significant enough to be detected.

The non-compliances under regulated conditions (WLTP and RDE) regarded three Positive Ignition (PI, gasoline) vehicles out of 40 vehicles tested (corresponding to a share of compliant vehicles of approximately 93%). Auxiliary Emissions Strategies (AES) exhibiting an environmental impact classified as "high" (and therefore confirmed from documentary checks with the responsible authorities) were found primarily for gasoline vehicles. The AES mostly found on gasoline vehicles and being responsible for elevated CO emissions under certain driving conditions is the so-called fuel enrichment. It is claimed to be necessary to protect some engines and their after-treatment under high engine load conditions and was found to be approved by the approval authorities. However, the JRC notes that conditions for their approval should be exercised with extreme care as the environmental impact of that AES can be significant.

The full JRC report can be downloaded from [publications.jrc.ec.europa.eu/repository/handle/JRC128360](https://publications.jrc.ec.europa.eu/repository/handle/JRC128360).

## ITRE Discussion on Amendments of Renewable Energy Directive

On 20 April 2022, the European Parliament's Industry, Research and Energy (ITRE) Committee discussed the amendments to the draft Report on the proposal for a Directive amending Directive (EU) 2018/2001 (Renewable Energy Directive). ITRE is the Lead Committee on this proposal.

MEP Markus Pieper (EPP, DE), Rapporteur on the file, called on the Commission to complete an impact assessment on the revised headline target as soon as possible, underlining that it should be ready before the summer break. The Shadow Rapporteurs then spoke.

MEP Nicolás González Casares (S&D, ES) welcomed the ambition to raise the renewable energy share target to 45% by 2030, but stressed that this must only consider those energy sources which are truly renewable. He also stated that negotiations on the renewable energy sub-target for the transport sector are going in the right direction.

MEP Christophe Grudler (Renew Europe, FR) underlined the importance of ensuring that the Directive is as ambitious as possible. As regards permitting, he requested the introduction of clearer indications in the legal text to facilitate the fast and effective deployment of renewable energy projects. Mr Grudler also stressed the need to develop a better system for guarantees of origin for energy from renewable sources and asked MEPs to focus on innovation and flexibility to improve renewable energy technologies.

MEP Ville Niinistö (Greens/EFA, FI) pointed out that the priorities of the Greens/EFA group on this file are to keep the scope of the Directive only restricted to renewables, to increase the proposed targets, and to reinforce the binding nature of the targets.

MEP Evžen Tošenovský (ECR, CZ), emphasised that the technology neutrality principle should be respected in light of the uncertainty regarding the future development of renewable energy technologies.

MEP Sira Rego (GUE/NGL, ES) called for further ambition in the renewable energy share target which, in the view of the GUE/NGL group, should be 50% by 2030 and 100% by 2040.

For the Commission, Ms Mechthild Wördsdörfer (Deputy Director-General, DG ENER) noted that the Commission is working 'full speed' on its complementary analysis to the impact assessment, taking into account the revised headline target and the higher energy prices context. She welcomed the amendments calling for a higher level of ambition for the renewable energy targets. Ms Wördsdörfer said that the Commission does not want to include in the Directive any other energy source than renewable energy, both for the target and the sub-targets. She then noted that the Commission is very concerned about the proposed inclusion of low-carbon hydrogen in the text of the Directive, adding that the definition of low-carbon hydrogen should be addressed in the context of the hydrogen and decarbonised gas market package, keeping the focus of this Directive on renewables.

The Committee is provisionally scheduled to vote on the draft Report and amendments on 13 July 2022, with the ENVI Committee (associated) expected to vote on the draft Opinion and any tabled amendments during a meeting on 16 May. Once both the European Parliament's Committee and

the Council have finalised their position on the proposal, informal negotiations with the aim of reaching a first reading agreement on the proposal are then expected to begin.

The ITRE draft report can be found at [europarl.europa.eu/doceo/document/ITRE-PR-719550\\_EN.pdf](http://europarl.europa.eu/doceo/document/ITRE-PR-719550_EN.pdf).

## Proposal for Regulation on Ecodesign for Sustainable Products

On 30 March 2022, the European Commission proposed a Regulation on Ecodesign for Sustainable Products.

This proposed rule will set new requirements to make products more durable, reliable, reusable, upgradable, repairable, easier to maintain, refurbish and recycle, and energy and resource efficient. In addition, product-specific information requirements will ensure consumers know the environmental impacts of their purchases.

The proposal will enable rules to be set for any physical good placed on the market, or put into service, including intermediate products. Only a few sectors, such as food, feed, and medicinal products, are exempted. To ensure the right priorities are set in a transparent and inclusive way and ensure involvement of relevant parties, the Commission will launch a public consultation on the categories of products to be selected under the first Ecodesign for Sustainable Products Regulation working plan by the end of 2022.

**Key actions for circular and sustainable products:**

				
Make products greener, circular and energy efficient through <b>ecodesign requirements</b>	Improve products <b>environmental sustainability information</b> for consumers and supply chain actors by introducing <b>Digital Product Passports</b>	<b>Prevent destruction</b> of unsold consumer products	Promote <b>sustainable business models</b>	Set mandatory requirements for <b>green public procurement</b>

Further information on the proposal can be found at [ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_2013?pk\\_campaign=ENER\\_Newsletter\\_APRIL\\_2022](http://ec.europa.eu/commission/presscorner/detail/en/ip_22_2013?pk_campaign=ENER_Newsletter_APRIL_2022) and [ec.europa.eu/commission/presscorner/detail/en/ganda\\_22\\_2014](http://ec.europa.eu/commission/presscorner/detail/en/ganda_22_2014).

## NORTH AMERICA

### US New Vehicle Fuel Economy Standards for Model Year 2024-26

On 1 April 2022, the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced new, landmark fuel economy standards which follow President Biden's executive order to 'drive American leadership forward on clean cars'.

The new Corporate Average Fuel Economy standards require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026, the strongest cost savings and fuel efficiency standards to date. The new standards will increase fuel efficiency 8% annually

for model years 2024-2025 and 10% annually for model year 2026. They will also increase the estimated fleetwide average by nearly 10 miles per gallon for model year 2026, relative to model year 2021.

The NHTSA announcement can be found at [nhtsa.gov/press-releases/usdot-announces-new-vehicle-fuel-economy-standards-model-year-2024-2026](https://www.nhtsa.gov/press-releases/usdot-announces-new-vehicle-fuel-economy-standards-model-year-2024-2026).

## Hearing on US EPA Heavy-Duty Clean Trucks NPRM

On 12 April 2022, the US EPA held an online hearing on its NOx reduction proposal for heavy-duty vehicles and engines (see AECC Newsletter of March 2022). During the meeting, various stakeholders commented on the proposed new standard.

The Truck and Engine Manufacturers Association (EMA) is reported to have said that it supports the adoption of stringent, single step, reduced NOx standard, a low-load cycle, enhanced in-use test procedures, and cost-effective improvements to extend an emissions warranty in useful life periods. It added that EPA's proposed rule in its current form is not technically feasible, cost effective, or customer acceptable, meaning that 'critical fleet turnover will be delayed, and customers will keep their higher emitting trucks longer'.

Support for Option 2 was expressed by freight operators, questioning the proposed timelines to achieve NOx reductions and saying that 'over-ambitious emissions standards' have created unreliable equipment.

In contrast, California environmental regulators told EPA they believed the proposed rule does not go far enough in regulating NOx or create an effective pathway to a national electric truck future. The California Air Resources Board (CARB) reportedly expressed concern that the Option 2 proposal would stall progress far short of what is possible and that EPA is 'proposing to dramatically weaken selective catalytic reduction inducement that discourage emission system tampering'.

In the view of the Diesel Technology Forum, 'today's generation of diesel technology has been a success story, having achieved over a 98% reduction in nitrogen oxides and particulate matter over previous generations. It added that the proposed rule must enable continued investment in the next generation of diesel technology.

A report on the US EPA hearing can be found at [tnews.com/articles/epas-new-nox-reduction-proposal-debated-hearing](https://tnews.com/articles/epas-new-nox-reduction-proposal-debated-hearing).

## UNITED NATIONS

### IPCC Sixth Assessment Report on Mitigation of Climate Change

On 4 April 2022, the Intergovernmental Panel on Climate Change (IPCC) published its Sixth Assessment Report, 'Climate Change 2022: Mitigation of climate change'.

In 2010-2019 average annual global greenhouse gas emissions were at their highest levels in human history, but the rate of growth has slowed. IPCC says that without immediate and deep emissions reductions across all sectors, limiting global warming to 1.5°C is beyond reach. It does however point to increasing evidence of climate action.

In 2019, approximately 34% of total net anthropogenic GHG emissions came from the energy supply sector, 24% from industry, 22% from agriculture, forestry and other land use (AFOLU), 15% from transport and 6% from buildings.

The report states that cities and other urban areas also offer significant opportunities for emissions reductions. These can be achieved through lower energy consumption (such as by creating compact, walkable cities), electrification of transport in combination with low-emission energy sources, and enhanced carbon uptake and storage using nature. There are options for established, rapidly growing and new cities.

According to the report, limiting warming to around 1.5°C (2.7°F) requires global greenhouse gas emissions to peak before 2025 at the latest, and be reduced by 43% by 2030; at the same time, methane would also need to be reduced by about a third. Even if we do this, it is almost inevitable that we will temporarily exceed this temperature threshold but could return to below it by the end of the century.

The IPCC press release can be found at [ipcc.ch/report/ar6/wg3/resources/press/press-release](https://www.ipcc.ch/report/ar6/wg3/resources/press/press-release).

## GENERAL

### AECC Presentation at Vienna Motor Symposium

From 27 to 29 April 2022, the 43<sup>rd</sup> International Vienna Motor Symposium took place at the Hofburg in Vienna.

On 28 April, AECC's EU Scientific and Technical Manager, Dr. Joachim Demuynck presented a joint AECC-IAV-Aramco paper "Zero-impact emissions from a gasoline car with advanced emission controls and e-fuels".

The AECC demonstration car - built with the support of the AECC members and the IPA - was showcased outside the Hofburg and conference delegates had the opportunity to experience a test drive.





An advanced emission control system was implemented on the gasoline demonstrator vehicle with a 48 V mild-hybrid powertrain, including among other items: a close-coupled Three-Way Catalyst (TWC), active thermal management with an Electrically Heated Catalyst (EHC), a Gasoline Particle Filter (GPF) and Ammonia Slip Catalyst (ASC) operation, in addition to improved lambda control to optimise TWC performance.

The results show ultra-low pollutant emissions achieved with a significant reduction of the initial cold-start peak compared to already low Euro 6d level, and near-zero emissions after the initial cold-start peak. Similar ultra-low pollutant emissions are measured with sustainable renewable fuels, which enable significant reduction of the Well-to-Wheel (WtW) CO<sub>2</sub> emissions. Results were shown for Blue Gasoline and e-gasoline.

The paper and presentation are available from [aecc.eu/wp-content/uploads/2022/04/2022-33\\_AECC\\_Vienna\\_paper.pdf](https://aecc.eu/wp-content/uploads/2022/04/2022-33_AECC_Vienna_paper.pdf) and [aecc.eu/wp-content/uploads/2022/05/220427-AECC-IAV-Aramco-Vienna-presentation-final.pdf](https://aecc.eu/wp-content/uploads/2022/05/220427-AECC-IAV-Aramco-Vienna-presentation-final.pdf).

## Emissions Analytics Research on Gasoline Particles in EU and US

On 31 March 2022, Emissions Analytics (EA) published research showing the extent of the difference between American and European or Chinese gasoline vehicles. The report says that focus on small, ultrafine particles in the European regulations has driven gasoline exhaust filter adoption in a way that has not happened in the US, where particulate mass measurement has primacy, and effectively ignores these ultrafines.

Emissions Analytics's testing shows that a gasoline vehicle with a filter emits around  $0.9 \times 10^{11}$  particles per mile (90 billion), but without a filter it is about  $6.3 \times 10^{11}$  (630 billion). With about 300 million internal combustion engine (ICE) vehicles likely to be on the road on average over the next ten

years, each driving an average of 10 000 miles per year, EA estimates the total number of 'unnecessary' particles emitted to US air to be  $1.6 \times 10^{24}$ , or 1.6 septillion particles.



The emissions values described above are the result of programme run by Emissions Analytics in 2021 that tested apparently similar pairs of vehicles between the US (without GPFs) and Europe (with GPFs). The US vehicles were tested in Michigan, and the European vehicles in the UK. Four pairs of gasoline vehicles were tested. These vehicles were drawn from different manufacturers and where the models were near-identical in technical specification and model year between the two regions. In each case, the Europe vehicle was equipped with a GPF, while the US vehicle was not.

Each vehicle was then tested on similar on-road routes in the two countries to allow the comparison of their particle mass and number emissions.

The results were highly consistent between the four vehicles. They were also consistent between different types of driving, from urban cold start to highway warm start. The average reduction in particle number was 86% across the different vehicles and driving. EA states that as the vehicle specifications were near-identical in other respects, it is very likely that the improvement is due to the GPF.

Further information on EA's testing is available to read at [emissionsanalytics.com/news/the-septillion-particle-problem-literally](https://emissionsanalytics.com/news/the-septillion-particle-problem-literally).

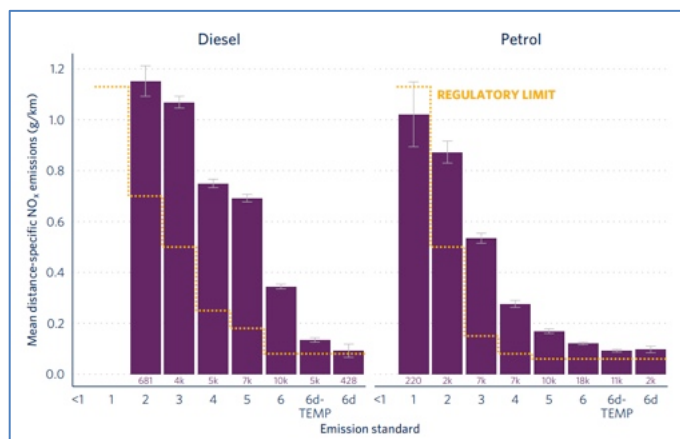
## TRUE Analysis of Light-Duty Vehicle Emissions in Warsaw

On 6 April 2022, TRUE (The Real Urban Emissions Initiative) highlighted the impact of old and imported used vehicles on urban air quality in Warsaw and recommended actions for the city to take to address its real-world emissions.

The study, supported by Clean Air Fund and carried out by TRUE partner International Council on Clean Transportation, collected over 220 000 real-world emissions of in-use vehicles on the streets of Warsaw. Analysis of this dataset found that the average age of imported second-hand vehicles operating in Warsaw, which made up 32% of the total light-duty vehicle measurements, is 13 years, more than double that of domestic vehicles, and their average mileage is 1.5 times that of domestic vehicles. Moreover, the average air pollutant emissions from these vehicles are two to three times those from domestic vehicles.

The analysis demonstrates actions targeting the oldest and highest-emitting vehicle groups can have an outsized impact on reducing air pollutant emissions while affecting only a small portion of the Warsaw fleet. Although diesel passenger cars certified to standards below Euro 4 only make up 6% of the fleet in Warsaw, restricting their use in the city would remove vehicles responsible for 18% of the total NOx emissions and 37% of the total PM emissions. Restricting pre-Euro 4 petrol passenger cars, which make up 11% of the car fleet, would remove vehicles responsible for 38% of CO and 35% of HC emissions.

The TRUE report says that progressive access restrictions that expand to diesel vehicles certified to Euro 4 and Euro 5 and petrol vehicles certified to Euro 4 would further reduce NOx and PM emissions. Diesel passenger cars in these groups account for 27% of the total NOx and 28% of the total PM emissions, while making up only 13% of the total measurements.



The findings show that if Warsaw were to adopt a 7-year age limit for taxis in the city, similar to requirements in place for Brussels' taxi fleet, 43% of taxis would be over the age threshold. This portion of the taxi fleet is responsible for significant proportions of its overall emissions, for example, 87% of all diesel NOx emissions and 75% of all petrol HC emissions.

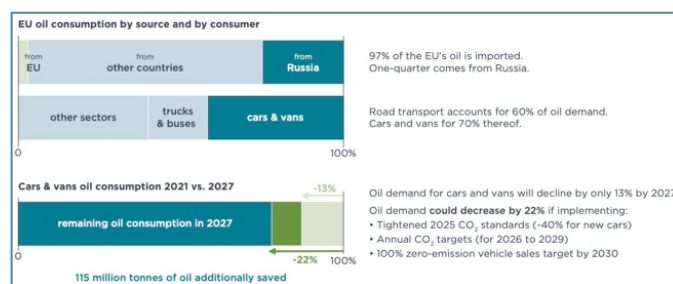
The TRUE report can be downloaded from [trueinitiative.org/blog/2022/april/imported-used-ldv-in-warsaw-emit-2-3-times-as-much-pollution-as-domestic-vehicles](https://trueinitiative.org/blog/2022/april/imported-used-ldv-in-warsaw-emit-2-3-times-as-much-pollution-as-domestic-vehicles).

## ICCT Paper on Car and Van Standards as Means for Reduction of Oil Imports

On 19 April 2022, the International Council on Clean Transportation (ICCT) published a fact sheet looking at CO<sub>2</sub> performance standards as a means to reduce dependence on oil imports.

The European Union (EU) relies on imports for 97% of its oil demand. One-quarter of these oil imports come from Russia, which is more than from any other country. ICCT says that in the absence of increases in domestic production or other sources of oil imports, eliminating the EU's dependence on Russian oil requires cutting the EU's oil demand by at least one-quarter by 2027 compared to current levels.

It goes on to say that road transport is the largest consumer of oil products in the EU, accounting for about 60% of total oil demand. Cars and vans account for more than 70% of oil consumption for road transport, making them the single largest consumer of oil products in the EU. Yet, under currently adopted policies, ICCT states that annual oil demand for cars and vans is projected to decline by only 13% from 2021 to 2027. For gasoline and diesel vehicles, tailpipe CO<sub>2</sub> emissions and oil consumption are directly linked. In mid-2021, the European Commission proposed more ambitious CO<sub>2</sub> standards for new cars and vans. However, according to ICCT, without modifications the European Commission's regulatory proposal will have little impact on oil demand before 2030, since it does not change the 2025 targets currently in place and fails to include interim targets between 2025 and 2030.



A 40% reduction of tailpipe CO<sub>2</sub> emissions for new cars in 2025 can be achieved by increasing the market share of battery-electric vehicles to about one-quarter of sales. In parallel, the fuel consumption of the remaining new combustion engine cars needs to improve by about 3% per year between now and 2025.

ICCT also calls for the introduction of annual targets to prevent vehicle manufacturers 'taking advantage of stepwise targets to sell outdated technology and maximise profits before rapidly introducing new technology before the standards take effect'.

Finally, the NGO proposes moving up the target of 100% zero-emission car and van sales to earlier than 2035, thereby maximising savings for consumers and society.

The ICCT document is available to read at [theicct.org/wp-content/uploads/2022/04/fs-eu-co2-standards-oil-imports-apr22.pdf](https://theicct.org/wp-content/uploads/2022/04/fs-eu-co2-standards-oil-imports-apr22.pdf).

## First Life Cycle Assessment Results from Green NCAP

On 21 April 2022, Green NCAP announced its first Life Cycle Assessment (LCA) results, examining the real environmental impact of some of Europe's most popular cars in order to help car buyers make more informed and sustainable choices.

Green NCAP's LCA involves estimations based on the available data and state-of-the-art scientific methodology, developed by JOANNEUM RESEARCH and peer-reviewed by the PAUL SCHERRER INSTITUTE. A unique feature of Green NCAP's approach is said to be the use of realistic, comprehensive, and precise vehicle measurements to estimate the impact of the vehicle's use phase.

To demonstrate the value of the LCA approach, Green NCAP has calculated the estimated total life cycle greenhouse gas emissions and primary energy demand for the 61 recent cars tested in the programme in the period 2019-2021. This batch includes vehicles of all sizes and types, including conventional petrol and diesel, full-electric and hybrid-electric cars. For the comparative analysis, a nominal vehicle lifetime of 16 years and a total driven mileage of 240 000 km are assumed. The calculations are based on the current forecast about changing average energy mix of the 27 European Union Member States and the United Kingdom, cancelling out the effect that local energy supply has on the cars' LCA values. For each model, the transportation process flow and the output are summarised in a LCA factsheet.

Overall, the results show that total estimated greenhouse gas emissions and primary energy demand, and the respective contributions at different phases and time in the life cycle, may vary significantly depending on the propulsion system, the energy carrier and other factors. Green NCAP makes its life cycle assessment details available for information purposes only, without ranking of better or worse cars. The next step, coming soon, is the launch of an interactive LCA platform, allowing consumers to examine LCA results based on their own local parameters and car use.

With the impact on global warming and total primary energy demand, Green NCAP's LCA accounts for the most relevant environmental aspects. However, other environmental effects of pollutant emissions like NO<sub>x</sub>, SO<sub>2</sub>, particulate matter and their consequential impacts like acidification, ozone formation, and toxicity to humans are not considered. The life cycle impact of a transport system on water demand, pollution of water or soil are also not included in the assessment yet.

More detail of the LCA analysis can be found at [fia.com/news/green-ncap-releases-its-first-life-cycle-assessment-results](https://fia.com/news/green-ncap-releases-its-first-life-cycle-assessment-results).

## RESEARCH SUMMARY

### Effects of Emissions and Pollution

Circulatory metabolites trigger ex vivo arterial endothelial cell dysfunction in population chronically exposed to diesel exhaust, Wenting Cheng, et al.; *Particle and Fibre Toxicology* (2022), Vol. 19, [doi: 10.1186/s12989-022-00463-0](https://doi.org/10.1186/s12989-022-00463-0).

Long-term exposure to air pollution and mortality in a Danish nationwide administrative cohort study: beyond mortality from cardiopulmonary disease and lung cancer, Rina So, et al.; *Environment International* (in press), [doi: 10.1016/j.envint.2022.107241](https://doi.org/10.1016/j.envint.2022.107241).

Long-term air pollution exposure and incident stroke in American older adults: A national cohort study, Tszshan Ma, et al.; *Global Epidemiology* (in press), [doi: 10.1016/j.gloepi.2022.100073](https://doi.org/10.1016/j.gloepi.2022.100073).

### Air Quality, Sources and Exposure

Analysis of the lockdown effects due to the COVID-19 on air pollution in Brescia (Lombardy), Elza Bontempi, et al.; *Environmental Research* (September 2022), Vol. 212, 113193, [doi: 10.1016/j.envres.2022.113193](https://doi.org/10.1016/j.envres.2022.113193).

Quantifying factors affecting contributions of roadway exhaust and non-exhaust emissions to ambient PM<sub>10-2.5</sub> and PM<sub>2.5-0.2</sub> particles, Vasileios Matthaios, et al.; *Science of The Total Environment* (in press), [doi: 10.1016/j.scitotenv.2022.155368](https://doi.org/10.1016/j.scitotenv.2022.155368).

Source apportionment of children daily exposure to particulate matter, Susana Almeida, et al.; *Science of The Total Environment* (in press), [doi: 10.1016/j.scitotenv.2022.155349](https://doi.org/10.1016/j.scitotenv.2022.155349).

### Emissions Measurements and Modelling

Gasoline and diesel passenger car emissions deterioration using on-road emission measurements and measured mileage, Jack Davison, et al.; *Atmospheric Environment: X* (April 2022), Vol. 14, 100162, [doi: 10.1016/j.aeaoa.2022.100162](https://doi.org/10.1016/j.aeaoa.2022.100162).

Challenging Conditions for Gasoline Particulate Filters (GPFs), Barouch Giechaskiel, et al.; *Catalysts* (2022), Vol. 12(1), [doi: 10.3390/catal12010070](https://doi.org/10.3390/catal12010070).

Evaluation of small off-road diesel engine emissions and aftertreatment systems, Cavan McCaffery, et al.; *Energy* (in press), [doi: 10.1016/j.energy.2022.123903](https://doi.org/10.1016/j.energy.2022.123903).

Impact of low carbon fuels (LCF) on the fuel efficiency and NO<sub>x</sub> emissions of a light-duty series hybrid commercial delivery vehicle, Antonio García, et al.; *Fuel* (August 2022), Vol. 321, 124035, [doi: 10.1016/j.fuel.2022.124035](https://doi.org/10.1016/j.fuel.2022.124035).

Analysis of passenger vehicle pollutant emission factor based on on-board measurement, Cheng-kang Gao, et al.; *Atmospheric Pollution Research* (in press), [doi: 10.1016/j.apr.2022.101421](https://doi.org/10.1016/j.apr.2022.101421).

Comprehensive chemical characterization of gaseous I/SVOC emissions from heavy-duty diesel vehicles using two-dimensional gas chromatography time-of-flight mass spectrometry, Xiao He, et al.; *Environmental Pollution* (July 2022), Vol. 305, 119284, [doi: 10.1016/j.envpol.2022.119284](https://doi.org/10.1016/j.envpol.2022.119284).

Pentanol/diesel fuel blends: Assessment of inhalation cancer risk and ozone formation potential from carbonyl emissions emitted by an automotive diesel engine, Silvana Arias, et al.; *Fuel* (August 2022), Vol. 321, 124054, [doi: 10.1016/j.fuel.2022.124054](https://doi.org/10.1016/j.fuel.2022.124054).

Primary Organic Gas Emissions in Vehicle Cold Start Events: Rates, Compositions and Temperature Effects, Zhining Zhang, et al.; *Journal of Hazardous Materials* (in press), doi: [10.1016/j.jhazmat.2022.128979](https://doi.org/10.1016/j.jhazmat.2022.128979).

## Emissions Control, Catalysis, Filtration

Low-temperature NO<sub>x</sub> reduction over hydrothermally stable SCR catalysts by engineering low-coordinated Mn active sites, Xing Zhou, et al.; *Chemical Engineering Journal* (August 2022), Vol. 442, 136182, doi: [10.1016/j.cej.2022.136182](https://doi.org/10.1016/j.cej.2022.136182).

VetaDetect: Vehicle tampering detection with closed-loop model ensemble, Pirooska Haller, et al.; *International Journal of Critical Infrastructure Protection* (in press), doi: [10.1016/j.ijcip.2022.100525](https://doi.org/10.1016/j.ijcip.2022.100525).

Effect of diesel particulate filter regeneration on fuel consumption and emissions performance under real-driving conditions, Yuhang Huang, et al.; *Fuel* (July 2022), Vol. 320, 123937, doi: [10.1016/j.fuel.2022.123937](https://doi.org/10.1016/j.fuel.2022.123937).

Design and development of automotive catalytic converter using non-nobel catalyst for the reduction of exhaust emission: A review, Kuldip Patel, et al.; *Materials Today: Proceedings* (in press), doi: [10.1016/j.matpr.2022.03.350](https://doi.org/10.1016/j.matpr.2022.03.350).

Recovery of platinum from diesel catalysts by combined use of H<sub>2</sub>O<sub>2</sub>/HCl leaching and adsorption, Paolo Trucillo, et al.; *Journal of Environmental Chemical Engineering* (in press), doi: [10.1016/j.jece.2022.107730](https://doi.org/10.1016/j.jece.2022.107730).

## FORTHCOMING CONFERENCES

### EU Green Week

30 May-5 June 2022, Brussels and Online  
[ec.europa.eu/environment/eu-green-week-2022\\_en](https://ec.europa.eu/environment/eu-green-week-2022_en)

### CLEPA Aftermarket Conference

1-2 June 2022, Brussels  
[clepa.eu/events/clepa-2022-aftermarket-conference](https://clepa.eu/events/clepa-2022-aftermarket-conference)

### CITA International Conference

1-2 June 2022, Amsterdam, Netherlands  
[citainsp.org/cita-conferences](https://citainsp.org/cita-conferences)

### SIA Powertrain & Electronics

15-16 June 2022, Rouen, France  
[sia.fr/evenements/263-sia-powertrain-energy-rouen-2022](https://sia.fr/evenements/263-sia-powertrain-energy-rouen-2022)  
**AECC will make a presentation.**

### ETH Conference on Combustion-Generated Nanoparticles

21-23 June 2022, Online  
[nanoparticles.ch](https://nanoparticles.ch)

### Cambridge Particle Meeting

24 June 2022, Cambridge, UK and online  
[cambridgeparticlemeeting.org](https://cambridgeparticlemeeting.org)

### Catalysis and Automotive Pollution Control (CAPoC12)

29-31 August 2022, Brussels, Belgium  
[capoc.ulb.ac.be](https://capoc.ulb.ac.be)

### SAE Powertrains, Fuels and Lubricants

6-8 September 2022, Krakow, Poland  
[sae.org/attend/pfl](https://sae.org/attend/pfl)

### 3<sup>rd</sup> SAENA Conference on Sustainable Mobility

25-28 September 2022, Catania, Italy  
[universitacusano.com/csm2022](https://universitacusano.com/csm2022)

### 31<sup>st</sup> Aachen Colloquium Sustainable Mobility

10-12 October 2022, Aachen, Germany  
[aachener-kolloquium.de/en](https://aachener-kolloquium.de/en)  
**AECC will make a presentation.**

### Transport Research Arena 2022

14-17 November 2022, Lisbon, Portugal  
[traconference.eu/about-tra](https://traconference.eu/about-tra)

### POLIS Annual Conference

30 November – 1 December 2022, Brussels, Belgium  
[polisnetwork.eu/2022-annual-polis-conference](https://polisnetwork.eu/2022-annual-polis-conference)

### AVL Vehicle & Environment Conference

25-26 May 2023, Graz, Austria  
[avl.com/-/vehicle-environment?i=3464186&sfmc\\_sub](https://avl.com/-/vehicle-environment?i=3464186&sfmc_sub)