

NEWSLETTER

International Regulatory Developments

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EUROPE

ENVI Committee Vote on Air Quality Report

On 4 March 2021, the Environment (ENVI) Committee of the European Parliament voted on the report on implementation of the Air Quality Directives, looking at whether they have succeeded at improving air quality in the EU.

The resolution says that the EU clean air policy has been successful in driving down emissions and concentrations of most air pollutants in Europe and the Ambient Air Quality (AAQ) Directives have been effective in setting common EU air quality standards. At the same time, the Directives have been only partially effective in reducing air pollution and curbing its adverse effects on health, quality of life, and the environment. The report also highlights that a high number of Member States still do not fully comply with current air quality standards in spite of the start of infringement proceedings by the Commission and Court orders demanding compliance with the AAQ Directives.

MEPs call on Member States and the Commission to better enforce already existing standards and welcome the commitment in the European Green Deal to revise air quality standards. A careful assessment of new WHO standards is needed in order to decide whether to align EU air quality standards with those of the WHO.

According to the MEPs, revised air quality standards should also cover other non-regulated pollutants with demonstrated negative health and environment impacts in the EU, such as ultrafine particles, black carbon, mercury, and ammonia. They also call on the Commission to establish a watch list addressing substances or compounds of concern to the public or the scientific community on grounds of health, such as microplastics.

They also stress the need to guarantee that air quality is being measured in appropriate locations and at emissions sources in order to ensure correct estimation of air pollution. The resolution also calls for improved public information and awareness on air pollution.

The report was adopted with 43 votes for, 33 against and 3 abstentions. It is scheduled to be voted on at the EP Plenary session on 24-25 March 2021. The report can be found at europarl.europa.eu/doceo/document/A-9-2021-0037_EN.html.

Implementing Regulation on Monitoring and Reporting of Light-Duty CO₂ Data

On 5 March 2021, Commission Implementing Regulation (EU)2021/392 was published in the Official Journal of the EU. This relates to the monitoring and reporting of data relating to CO₂ emissions from passenger cars and light commercial vehicles pursuant to Regulation (EU)2019/631 of the European Parliament and of the Council and repealing Commission Implementing Regulations (EU)1014/2010, (EU)293/2012, (EU)2017/1152 and (EU)2017/1153.

The real-world fuel and energy consumption of new cars and vans will be collected as of 2021, making it possible to monitor the gap between type approval and actual CO₂ emissions, and will provide a better understanding of how vehicles perform under real-world driving conditions.

New cars placed on the EU market in 2021 will be equipped with an on-board measurement device that records the fuel or energy consumed by a vehicle when in use.

The Implementing Regulation provides for the collection of that data by manufacturers when vehicles are brought in for repairs or servicing, and by Member States when vehicles undergo periodic technical inspections. The first data will be collected from new vehicles sold in 2021 and be reported to the European Environment Agency (EEA) as of April 2022.

The data will be used to monitor the gap between CO₂ emissions determined at type approval by the relevant national authority before the vehicle is placed on the market, and a vehicle's real world CO₂ emissions to ensure that the gap does not grow over time. Measuring this gap will allow consumers to better understand how vehicles perform under real-world conditions and will help ensure that CO₂ emission reduction targets remain effective.

As of December 2022, the Commission will publish the real-world data every year in an aggregated format, with the aim of showing the difference between the average type approval and real world CO₂ emissions for each manufacturer's fleet of new vehicles.

The Implementing Regulation can be found at eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AAOJ.L.2021.077.01.0008.01.

Commission Response to Parliamentary Question on Fuel for Future Vehicle Fleet

On 29 March 2021, Mr Thierry Breton, European Commissioner for the Internal Market, responded to a question from MEP Ms Aurélie Beigneux (ID, FR) regarding fuel for electric vehicles but which stated that the 'EU is moving towards a ban on all internal combustion vehicles by 2035, which includes both new and second-hand vehicles. Ms Beigneux said that as more than 40% of electricity in Germany is generated using coal, an electric vehicle emits roughly the same amount of CO₂ as a diesel vehicle. She added that this raises questions about the a 'just transition', pollution caused by extracting the rare metals needed to build electric vehicles, and whether the Commission would increase its support for nuclear energy.

Mr Breton replied that the Alternative Fuels Infrastructure Directive (AFID) will ensure that adequate charging and refuelling infrastructure for zero-emission vehicles exists in all urban and rural areas, and that the Commission does not intend to ban any propulsion technology.

Mr Breton went on to say that the Commission is addressing concerns related to sustainable sourcing of such raw materials through the Action Plan on Critical Raw Materials. He pointed out that Member States have the right to choose their energy mix and 'may include nuclear as part of their effort to achieve climate neutrality by 2050'.

The full question and answer are at europarl.europa.eu/doceo/document/E-9-2021-000075_EN.pdf and [europarl.europa.eu/RegData/questions/reponses_qe/2021/000075/P9_RE\(2021\)000075_EN.pdf](https://europarl.europa.eu/RegData/questions/reponses_qe/2021/000075/P9_RE(2021)000075_EN.pdf).

AECC Open Letter on Euro 7 Regulation and Sustainable and Renewable Fuels

On 24 March 2021, AECC sent an open letter to Commission Executive Vice-President and Commissioner for Climate Action Mr Timmermans, the Commissioner for Internal Market Mr Breton, Commissioner for Energy Ms Simson, Commissioner for Environment Mr Sinkevičius and Commissioner for Transport Ms Vălean as well as key EC staff involved in the dossiers.

The letter supports an ambitious proposal for future Euro 7/VII emission legislations for light- and heavy-duty vehicles. At the same time, it emphasises the important role for increased use of sustainable and renewable fuels.

AECC reaffirms its strong commitment to contribute to the discussion and to the development of challenging Euro 7/VII real-world emissions standards as well as ambitious Renewable Energy Directive and CO₂ reduction regulations that will incentivise the uptake of sustainable and renewable fuels.

Finally, AECC mentioned that it will continue to provide robust scientific data to discuss how to improve local air quality and to mitigate climate change whilst maintaining the global competitiveness of the European automotive industry through the application of modern emission control technologies to ICEs.

The AECC letter sent to the 5 EU Commissioners can be found at aecc.eu/wp-content/uploads/2021/03/210324-AECC-open-letter-on-Euro-7-and-renewable-fuels.pdf.

Report on Application of Alternative Fuels Infrastructure Directive

On 8 March 2021, the European Commission published a report to the European Parliament and Council on the application of Directive (EU)2014/94 on the deployment of alternative fuels infrastructure.

The report says that the Alternative Fuels Infrastructure Directive (AFID) has been instrumental in triggering the development of policies and measures for roll-out of alternative fuels infrastructure in Member States and that policy frameworks have started to help building a long-term forward-looking perspective on infrastructure for electricity, natural gas and hydrogen until 2030.

The Directive has had a positive impact on the uptake of alternatively fuelled vehicles and their infrastructure. The Commission's services analysis shows that the markets would have been less developed in a scenario without the Directive. However, the shortcomings of the current policy framework are also clearly visible: as there is no detailed and binding methodology for Member States to calculate targets and adopt measures, the level of ambition in target setting and supporting policies in place varies greatly between Member States.

The report goes on to say that the current infrastructure deployment level is sufficient to serve the low number of alternatively fuelled vehicles currently on the road. However, a comprehensive and complete network of alternative fuels infrastructure does not exist across the Union. In order to achieve the EU's more ambitious targets, the uptake of zero-emission vehicles and the related infrastructure needs to accelerate significantly in all market segments of light-duty and heavy-duty vehicles.

While technical specifications developed under the Directive have proven to be highly relevant, new needs for technical specifications under the Directive have emerged. These concern particularly the interoperability and transparent exchange of information among the different players within the electric vehicle charging ecosystem. Standards for recharging heavy-duty vehicles and refuelling liquid hydrogen are required.

The Commission says that from a consumer perspective, using alternative fuels infrastructure needs to be as easy as the use of conventional refuelling infrastructure. This requires that information on the location as well as prices to be charged are available and that the payment is seamless. The current policy framework has shortcomings and consumers can face problems particularly when travelling across borders.

In addition, public financing for publicly accessible recharging or refuelling points needs to be continued and be focused on those parts of the network where private investments will not be profitable to achieve the Commission's objectives of having at least 1 million publicly accessible recharging and refuelling points deployed by 2025.

Further action at EU level is also required to ensure that the deployment of interoperable and user-friendly recharging and refuelling infrastructure goes hand in hand with the need for an accelerated uptake of vehicles and fuels in all transport modes.

This requires a strengthening of the current policy framework at EU level to achieve the increased climate ambition of the European Green Deal and to avoid further barriers to market growth. The Commission is in the process of carrying out an Impact Assessment for the revision of the Alternative Fuels Infrastructure Directive and will duly consider the findings of this report as well as those of the ongoing evaluation of the Directive in this context.

The report can be found at ec.europa.eu/transparency/regdoc/rep/1/2021/EN/COM-2021-103-F1-EN-MAIN-PART-1.PDF.

Stakeholder Event on Renewable Energy Directive

On 22 March 2021, the DG Energy (DG-ENER) of the European Commission organised a second stakeholder event regarding the review of the Renewable Energy Directive (RED). The EC noted it will not reply to questions at this stage. It is not yet in a position to present the preferred options as the impact assessment is currently ongoing, with the EC proposal expected by June 2021.

The outcome of the stakeholder consultation was presented. There was a clear recognition of the importance of renewable energy to deliver on EU climate ambition (98% of participants). Overall target and transport are the two top priorities for change. There was clear support from business organisations that RED needs to be more ambitious. A large number of respondents are said to support encouraging hydrogen and e-fuels, but with some constraints.

During a dedicated session on transport, two keynote presentations were given. It was discussed that all solutions will be needed to achieve the goals; renewable fuels have a role in addition to electrification. Several stakeholders were given the floor to give a short intervention. Several biofuel stakeholders asked for regulatory certainty and asked the EC not to implement a ban of crop-based fuels.

Information on the review of Directive (EU)2018/2001 and the public consultation can be found on the EC website ec.europa.eu/energy/topics/renewable-energy/renewable-energy-directive/overview_en and a short summary of the feedback received through the open public consultation can also be found at ec.europa.eu/energy/sites/default/files/summary_opc.pdf.

TRAN Draft Report on Sustainable and Smart Mobility Strategy

On 24 March 2021, the Transport and Tourism (TRAN) Committee of the European Parliament published a draft report on the EC's Sustainable and Smart Mobility Strategy. The Rapporteur for the report is MEP Ismail Ertug (S&D, DE).

The report calls on the Commission to aim for higher numbers of zero emission light- and heavy-duty vehicles by 2030 and to propose more stringent CO₂ standards and air pollutant emission standards. It underlines that zero-emission fuels, such as clean hydrogen and synthetic fuels, should be used in accordance with the 'energy efficiency first' principle, mainly for those transport modes where direct electrification is not possible or not yet market-ready.

The full draft report is at europarl.europa.eu/doceo/document/TRAN-PR-691072_EN.pdf.

Nine Member States Call for Acceleration of Petrol and Diesel Phase-Out

On 10 March 2021, nine Member States sent a joint call to the European Commission for an accelerated EU-wide transition to

zero-emission vehicles, including through a phase-out date for the sale of new petrol and diesel cars in the EU. The nine countries backing this call are Denmark, Austria, Belgium, Greece, Ireland, Luxembourg, Malta, The Netherlands and Lithuania.

In addition, the countries are encouraging the Commission to put forward ambitious and cost-effective policies to support an accelerated and balanced shift towards zero-emission vehicles through EU legislation allowing Member States to take action at national level to incentivise early phase-out of new petrol and diesel cars and vans. They also want 'ambitious and cost-effective regulation' at EU level, including a significant strengthening of the CO₂ emissions performance standards for new passenger cars and for new light commercial vehicles. Strengthening recharging and refuelling infrastructure for zero-emission vehicles will also be needed.

A press release is available from the Danish Ministry of Transport website at trm.dk/en/english-articles/denmark-and-eight-eu-ms-call-on-eu-to-accelerate-phase-out-of-petrol-and-diesel-cars/.

Restrictions on Heavy-Duty Vehicle Traffic in Tyrol

On 16 March 2021, European Transport Commissioner Ms Vălean responded to a question from MEPs Mr Marco Campomenosi and Mr Paolo Borchia (both ID, IT) regarding restrictions on heavy-duty traffic crossing the Brenner Pass. The question specifically related to an order issued by the Governor of the Land of Tyrol which further tightened the ban on night transit to include Euro VI heavy-duty vehicles on the A12 Inntal motorway.

The MEPs say that the new bans do not provide exemptions for the transit of vehicles powered by alternative fuels such as LPG or LNG, but only those powered by electricity or hydrogen. They ask whether the Commission considers that strengthening the rules prohibiting transit through Tyrol constitutes an infringement of the principle of free competition within the single market, and they go on to question why it not yet taken any formal action and what it intends to do to resolve this issue.

Ms Vălean responded that Austria is obliged to take measures to improve air quality in the Inn valley as long as the limit values related to nitrogen dioxide (NO₂) given in Directive 2008/50/EC on ambient air quality and cleaner air for Europe are exceeded. However, those measures have to be proportionate when they restrict fundamental EU principles such as the free movement of goods or services. She stated that the Commission is assessing whether the extension of the night driving ban on the A12 motorway to Euro VI vehicles transiting Tyrol is proportionate and will take appropriate action should it find that this is not the case.

The parliamentary question can be found at europarl.europa.eu/doceo/document/E-9-2020-006500_EN.pdf with Ms Vălean's reply at europarl.europa.eu/doceo/document/E-9-2020-006500-ASW_EN.pdf.

Introduction of Particle Counter Test in Belgian PTI

On 31 March 2021, Belgian news agency BELGA reported the three regions of Belgium agreed that, at latest 1 July 2022, a particle counter test will be used during the annual vehicle inspection of diesel cars.

Currently, the vehicle inspection is not able to detect diesel cars with defective or removed particulate filters, but the particle counter test (PN measurement) does.

The regions have agreed on specifications for the vehicle inspection centers, which will be able to purchase equipment to specifically check for particulate filter fraud. In a first phase, all vehicles and vans with a diesel engine from Euro standard 5b and more recent are checked. In time, the ministers want to study whether this measure can be extended to trucks, buses and petrol vehicles.

When a vehicle emits more than 1 million particulate matter per cubic centimeter, it gets a red card. The particulate filter is then broken or removed and must therefore be replaced within fourteen days. After that, the car must be inspected again. If a vehicle emits less than 250,000 particulate matter per cubic centimeter, it will receive a green card. A transition period of 2 years is provided for cars that are in the gray zone between 250,000 and 1 million particulate matter.

The focus of the measure is mainly on fraudsters who deliberately remove the filter or have it removed.

Court Ruling on United Kingdom Air Pollution

On 4 March 2021, the Court of Justice of the European Union (CJEU) ruled that United Kingdom has failed to meet its obligations on air quality.

The ruling states that, by systematically and persistently exceeding, in 16 zones of the UK, the annual limit value for Nitrogen Dioxide (NO₂), as well as the hourly limit value for NO₂ in Greater London since the entry into force of those limit values on 1 January 2010, the UK has failed to fulfil its obligations under the combined provisions of Article 13(1) and of Annex XI to Directive (EU)2008/50/EC of the European Parliament and of the Council of 21 May 2008, on ambient air quality and cleaner air for Europe.

It goes on to say that by failing to adopt, as from 11 June 2010, appropriate measures to ensure compliance with the limit values for NO₂ in all those zones, the UK has failed to fulfil its obligations under the combined provisions of Article 23(1), read alone and in conjunction with Annex XV to Directive (EU)2008/50, and in particular the obligation laid down in the second subparagraph of Article 23(1) of that directive, to ensure that the period of exceedance of limit values is kept as short as possible.

The detailed court ruling is at curia.europa.eu/juris/document/document.jsf?text=&docid=238474&pageInd ex=0&doclang=EN&mode=lst&dir=&occ.

NORTH AMERICA

National Academies to Study LCA Methods of Low Carbon Fuels

It has been announced that a committee of the National Academies of Sciences, Engineering, and Medicine will conduct a study on the current methods for life cycle analyses (LCA) of low carbon transportation fuels in the US. Low carbon fuel standards, such as the Federal Renewable Fuel Standard and the California Low Carbon Fuel Standard (LCFS), are major U.S. programmes for reducing greenhouse gas (GHG) emissions from transportation fuels. These standards rely on LCA as a tool to estimate fuel GHG emissions. However, current LCAs differ notably in how they are implemented, with disagreements pertaining to data quality, modelling approaches, and key assumptions.

The National Academies aims to develop a reliable and coherent approach for applying LCA to low carbon fuel standards via the methodological assessment. In carrying out its assessment, the committee will identify the general characteristics and capabilities of GHG emissions estimation methods that would be commonly needed across various types of low-carbon fuels programmes applied at a national level.

Further details of the study are available at nationalacademies.org/our-work/current-methods-for-life-cycle-analyses-of-low-carbon-fuels.

Air Quality Impacts of Biodiesel in USA

On 17 March 2021, the International Council on Clean Transportation (ICCT) published a white paper on the air quality impacts of biodiesel in the United States.

The report says that although the majority of the on-road vehicle fleet in the United States is fuelled by gasoline, diesel combustion makes up an overwhelming share of vehicle air pollution emissions.

This study presents a meta-analysis of air pollution changes from vehicles and engines running on biodiesel blends in the United States relative to a conventional diesel baseline. It draws from a comprehensive literature review of exhaust emission testing and performance studies and analyses changes in NO_x, PM, CO, and HC for U.S.-relevant feedstocks. Unlike previous analyses, ICCT says that the study also assesses the impacts of fuel injection systems, engine horsepower, and emission control technologies on biodiesel exhaust emissions.

When the analysis is restricted to only studies reflecting modern conditions, ICCT finds that the biodiesel NO_x effect for B20 increases to 4% due to the introduction of ultra-low sulfur diesel (ULSD) and common-rail fuel injection systems.

Table ES-1. Biodiesel exhaust emissions study comparison. Data reported in percent change in emissions between B20 and petroleum diesel fuel.

Pollutant	EPA (2002)	EPA (2010)	Hoekman & Robbins (2012)	This study (all data)	This study (modern conditions)
NOx	2%	2%	1%	2%	4%
PM	-10%	-16%		-6%	Insignificant
HC	-21%	-14%		-4%	7%
CO	-11%	-13%		Insignificant	10%

Under modern conditions, the analysis also finds that a 20% biodiesel blend (B20) increases HC and CO by 7% and 10% respectively and does not reduce PM compared to conventional diesel. The NGO says that this new finding presents a striking contrast with the conclusions in EPA’s 2002 meta-analysis that biodiesel sharply reduces emissions of all these pollutants.

The ICCT concludes that these updated results should inform the U.S. EPA’s future rulemakings relating to the Renewable Fuel Standard.

The ICCT white paper can be downloaded from theicct.org/publications/us-biodiesel-impacts-mar2021.

ASIA PACIFIC

Implementation of Euro 5 in Vietnam

On 7 March 2021, it was reported that the Vietnamese Ministry of Transport had announced implementation of Euro 5 emissions standards from 1 January 2022.

Under Prime Ministerial Directive on enhancing air pollution control - No 03/CT-TTg dated 18 January 2021 - the Ministry of Transport is also requested to urgently develop a national programme to develop means of environmentally friendly transport and public transport.

A report on the announcement is at en.vietnamplus.vn/vietnam-strictly-controls-vehicle-emissions-to-improve-air-quality/197192.vnp.

Review of Commercial Vehicle Fuel Consumption Standards in China

On 28 March 2021, the International Council on Clean Transportation (ICCT) published a white paper looking at the evolution of commercial vehicle fuel consumption standards in China, with recommendations for the future.

The ICCT says that China’s fuel consumption standards for heavy-duty vehicles (HDVs) have progressed since Stage 1 was first introduced in 2012, and Stage 4 standards are currently in development. However, to date there has been no independent retrospective assessment of the impact of Stage 1 and Stage 2 standards, including whether they spurred any reduction in the fuel consumption of HDVs. This study analyses data from 10.5 million trucks and buses in the period 2012 to 2017.

ICCT’s results show that Stage 1 and Stage 2 standards had only a limited impact on the certified fuel consumption of trucks and buses in China. After Stage 2 was introduced, some HDV segments

exhibited only a slight downward trend in fuel consumption, and others even a slight upward trend. Additionally, because a significant portion of the vehicles certified to Stage 2 were already compliant with Stage 3 fuel consumption limits, the actual improvement in certified fuel consumption across the fleet as a result of Stage 3 will likely be less than the tightening of the standards suggests.



The NGO says that based on this, Stage 4 is an opportunity to set a technology-forcing regulation that would force cost-effective new technologies into the market and improve the competitiveness of Chinese manufacturers in international markets. Moreover, a key finding is that the flexibilities given to manufacturers during the fuel consumption certification have a significant impact on the certified fuel consumption. It states that including road gradient in the certification drive cycle would be beneficial for the real-world representativeness of the certification process and for incentivising important fuel-saving technologies that thrive on mountainous topographies. ICCT also believes that China’s fuel consumption certification could benefit from shifting from chassis dynamometer testing toward vehicle simulation.

The white paper can be found at theicct.org/sites/default/files/publications/Commercial-vehicles-china-evolution-mar2021.pdf.

GENERAL

Launch of “This is So Exhausting” Podcast

On 10 March 2021, the first episode of the “*This is So Exhausting*” podcast featured Dr Phil Blakeman speaking about the powertrain changes globally in light and heavy vehicles, the issues we need to manage during the energy transition, and the opportunities for companies who are able to offer technologies that meet new OEM and customer needs. The podcast reflects on the achievements of the last two decades, where diesel engines have gone from having ‘just a muffler in the exhaust to advanced but reliable SCR systems with near zero emissions’.

The podcast is hosted by Tim Cheyne and George Ade-onjobi of Argus Media and can be found at thisissoexhausting.podbean.com/?mkt_tok=NTg0LUJVVyY02MDYAAAF7uuWsy4QXTb5EmsaUecVL2cYSMQxzt.

Health Alliance Letter to MEPs

On 18 March 2021, a group of health-focused NGOs published a letter sent to all MEPs, calling for urgent greater effort for clean air for health.

The Health and Environment Alliance (HEAL), the International Association of Mutual Benefit Societies (AIM), the European Federation of Allergy and Airways Diseases Patients' Associations (EFA), the European Public Health Alliance (EPHA), the European Respiratory Society (ERS), and the Standing Committee of European Doctors (CPME) all signed the letter.

The communication contained four main demands, including supporting the full alignment of EU standards with WHO guidelines and the latest available science. The NGOs also want to broaden the scope of air quality standards to include mercury, black carbon, ultra-fine particles and ammonia. Alongside this, they would like to see regulatory action to address indoor air quality.

The group wants to see 'a swift legislative process reflecting the urgency to act', with completion of the legislative process by the European Commission and the EU co-legislators resulting in the health benefits of the EU Green Deal being breathable by the end of the current legislature 2019-2024.

Alongside regulatory action to control emissions and improve air quality, they call for information requirements to be strengthened and harmonised, to ensure that air quality information is accessible, timely and accurate, while the links between air pollution and adverse health outcomes are highlighted. Information should also be tailored to specific vulnerable groups of the population, such as patients living with chronic respiratory, cardiovascular diseases and diabetes.

The letter is available to read at env-health.org/wp-content/uploads/2021/03/Lopez-report_plenary_MEPS.pdf.

Review of 11th VERT Forum

The 11th meeting of the VERT forum was held virtually on 25 March 2021. Nearly 250 participants attended the VERT Forum.

The conference was opened by K. Boulouchos, who pointed to the prospect of synthetic fuels offering solutions for carbon neutral internal combustion engine mobility long before 2050. The remaining challenges for controlling emissions were explored in depth by N. Heeb and Z. Kanji and extended to sub-23 nm particle metrology by H. Burtscher and J. Spielvogel. AECC's J. Demuynck demonstrated the potential for post-Euro 6 emission control technologies. But retrofit technology is also de-demanded for the fields of large engines.

In January 2021, The Netherlands mandated a particle number test at low idle for diesel engines with particulate filters, as L. Zuidgeest described. I. Cureño/C. Dominguez showed that in Mexico City this also applies to petrol engines without filters. M. Schrieffl showed the potential for improvement through measurements and calculations and he as well as J. Spielvogel and G. Sandhu described corresponding new measuring devices.

In the session on emissions legislation, A. Friedrich defined the most important requirements for the post-Euro 6 legislation and A. Dimaratos described the status of this new legislative process.

Presentations from the VERT Forum can be downloaded from www.vert-dpf.eu/j3/index.php/60-11th-vert-forum-2021.

RESEARCH SUMMARY

Effects of Emissions and Pollution

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FORTHCOMING CONFERENCES

SAE WCX Digital Summit

13-15 April 2021, Online

sae.org/attend/wcx

9th AVL Large Engines Techdays

21-22 April 2021, Online

avl.com/large-engines-techdays

42nd International Vienna Motor Symposium

28-30 April 2021, Online

wiener-motorensymposium.at/en

CLEPA Materials Regulations Event

4-5 May 2021, Online

clepa.eu/events/clepa-materials-regulations-event-2021

Integer Vehicle Emissions Live

15-17 June 2021, Online

argusmedia.com/en/conferences-events-listing/integer-vehicle-emissions-live

Hydrogen and P2X European Conference

16-17 June 2021, Copenhagen, Denmark (postponed from February 2021)

fortesmedia.com/hydrogen-p2x-2020,4,en,2,1,4.html

24th ETH Conference

22-24 June 2021, Online

nanoparticles21.scg.ch

Cambridge Particle Meeting

25 June 2021, Online

cambridgeparticlemeeting.org/2021

ICE 2021 - 15th International Conference on Engines & Vehicles

12-16 September 2021, Naples, Italy

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SAE Powertrains, Fuels & Lubricants Digital Summit

28-30 September 2021, Online

[sae.org/attend/virtual-events/pfi](https://www.sae.org/attend/virtual-events/pfi)

30th Aachen Colloquium Sustainable Mobility

4-6 October 2021, Aachen, Germany

aachener-kolloquium.de/en/?idU=1

SAE Heavy-Duty Diesel Emissions Control Symposium

5-6 October 2021, Gothenburg, Sweden (postponed from October 2020)

[sae.org/attend/heavy-duty-diesel-emissions-control-symposium](https://www.sae.org/attend/heavy-duty-diesel-emissions-control-symposium)

EU Sustainable Energy Week

25-29 October 2021, Online

eusew.eu/

Powertrain Systems for Net-Zero Transport

7-8 December 2021, London, UK

events.imeche.org/ViewEvent?code=CON7242

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