

NEWSLETTER

International Regulatory Developments

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Proper Maintenance of Diesel Cars on Diesel information Hub

The AECC's Diesel Information Hub has been complemented with a new page addressing why you must properly maintain your diesel car.

Keeping up to date with good maintenance practices helps to maintain exhaust emissions low and provide a safer driving experience. Two short animated videos are



therefore explaining how proper car maintenance and avoiding exhaust tampering remain essential to ensuring diesel vehicles meet emissions regulations standards.

The AECC [Diesel Information Hub](#) is aimed at contributing to the public discourse on the future of mobility and urban air quality by providing clear and concise information on the modern diesel engine. Visit the #dieselinformation hub at www.dieselinformation.aecc.eu.

EUROPE

Parliament Vote on Post-2020 CO₂ Standards for Cars and Vans

On 3 October 2018, the European Parliament adopted its report on the post-2020 CO₂ standards for cars and vans.

MEPs adopted a higher target for reducing CO₂ emissions for new cars than the Commission had tabled. MEPs agreed an EU fleet-wide reduction of 40% in 2030 compared to the 2021 level (the Commission has proposed 30%) with an intermediate target of 20% by 2025. Similar targets are set for new vans.

Manufacturers whose average CO₂ emissions exceed these targets would pay a fine to the EU budget, to be used for up-skilling workers affected by changes in the automotive sector, MEPs agreed.

Carmakers would also have to ensure that zero- and low-emission vehicles (ZLEVs, i.e. vehicles which emit less than 50g CO₂/km) have a 35% market share of sales of new cars and vans by 2030, and 20% by 2025.

In addition, the Parliament called on the Commission to table, within two years, plans for a real-world CO₂ emission test using a portable device, like that recently introduced for Real-Driving Emissions (RDE) of NO_x and particles. Until then, CO₂ emissions must be measured based on data from the cars' fuel consumption meters. The CO₂ RDE test must be up and running from 2023.

MEPs acknowledged that a socially acceptable and just transition towards zero-emission mobility requires changes throughout the automotive value chain, with possible negative social impacts. The EU should therefore promote skill development and reallocation of workers in the sector,

particularly in regions and communities most affected by the transition.

Finally, by the end of 2019, the Commission would have to propose legislation to provide consumers with accurate and comparable information on the fuel consumption, CO₂ and pollutant emissions of new cars. And from 2025, carmakers would have to report the lifecycle CO₂ emissions of new cars put on the market, using a common methodology.

The report was adopted with 389 votes in favour, 239 against, and 41 abstentions.

Trilogue negotiations have now started after the Council adopted its general approach (*see below*).

The Parliament report is at www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2018-0370+0+DOC+PDF+V0//EN.

Council Position on Post-2020 CO₂ Standards for Cars and Vans

On 9 October 2018, the Environment Ministers of the EU Member States agreed the Council position (general approach) on the Commission proposal to establish post-2020 CO₂ standards for cars and vans.

According to the Council position, average CO₂ emissions of new passenger cars registered in the EU would have to be, compared to 2021, 15% lower in 2025 (same as in Commission proposal) and 35% lower in 2030 (the Commission has proposed 30%). For vans, the Council maintained the targets as proposed by the Commission: 15% in 2025 and 30% in 2030. These are EU wide fleet targets. The CO₂ reduction effort would be distributed among manufacturers on the basis of the average mass of their vehicle fleet.

The Council agreed to adjust the Commission proposal on an incentive mechanism for zero- and low-emission vehicles such as fully electric cars or plug-in hybrid vehicles as regards passenger cars. The benchmark for cars for 2030 was raised from 30 to 35%.

The Council also agreed a specific incentive for manufacturers to sell zero- and low-emission cars in markets with a low market penetration of these vehicles. In concrete terms, there is a more favourable weighting for newly registered passenger cars in Member States where the share of zero- and low-emission vehicles is below 60% of the EU average.

For vans, the Council agreed to leave the Commission proposal unchanged.

The Council strengthened the provisions by obliging manufacturers to report CO₂ measured values instead of CO₂ declared values. The calculation of CO₂ targets will thus be based on 2021 measured WLTP values.

20 EU Member States voted in favour of the final compromise, with four against and four abstentions. The

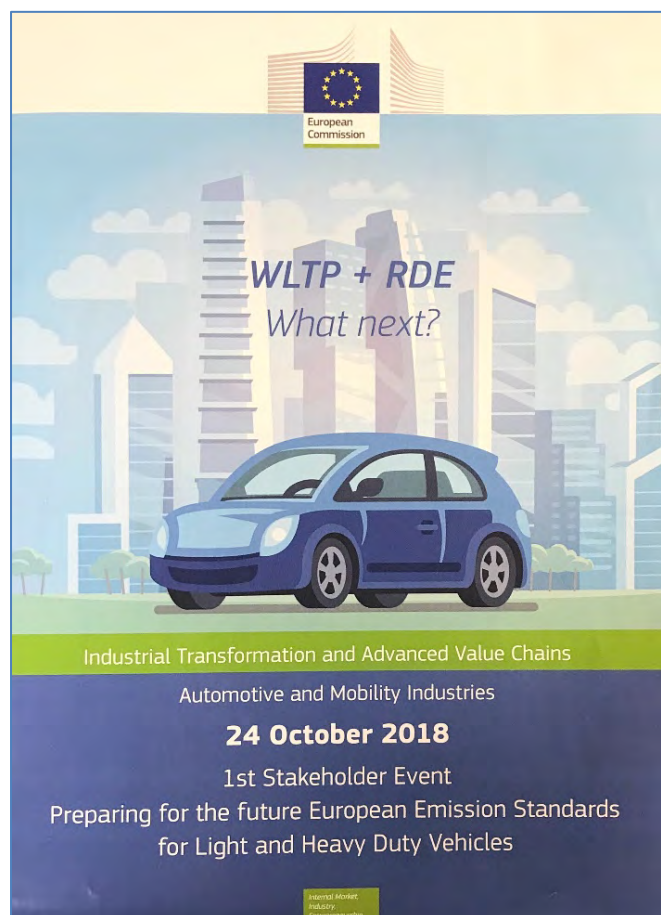
adoption of the Council position marks the start of trilogue negotiations with the European Parliament.

The Council General Approach is at <http://data.consilium.europa.eu/doc/document/ST-12903-2018-INIT/en/pdf>.

Post-Euro 6/VI Stakeholder Event

On 24 October 2018, the European Commission hosted a stakeholder event to prepare for the future European emission standards for light- and heavy-duty vehicles.

The Commission first reviewed lessons learned from developing the latest emission standards. The Joint Research Centre (JRC) of the Commission then presented a brief overview of their work on vehicle emissions outside of RDE conditions, remote sensing (a report is expected soon), sub-23 nm particles, non-exhaust particles and additional pollutants.



An academic experts meeting was held with the Commission two days before the meeting. Prof. Samaras (LAT, Greece) reported on the general consensus: we should move to in-use performance monitoring for compliance and enforcement over the lifetime of the vehicle; pollutant emissions have to be considered along with CO₂ and greenhouse gas emissions; and non-regulated emissions should be included in future regulations.

Experts felt that there is a need for a substantial increase in durability requirements, including market surveillance and in-service conformity requirements.

ACEA, JAMA, CLEPA, Concawe, the ICCT, T&E and ANEC (who represents consumers in standardization) presented their views. AECC gave an oral statement stressing EU industry competitiveness and air quality as key drivers, as agreed with members upfront.

Elements discussed for the future emissions standards included the need to ensure durability for the lifetime of vehicles; the need for proper enforcement; non-regulated pollutants; and the role of remote sensing and on-board monitoring. Generally, the Commission felt that we should not lose the positive momentum from RDE.

Presentations of the meeting, including the AECC statement, are at <https://ec.europa.eu/docsroom/documents/32164>.

Commission State of Play on EMIS Recommendations

On 22 October 2018, the European Commission report on the current state of play of recommendations made by the European Parliament's EMIS Committee (Emission Measurement in the Automotive Sector) was published by the Parliament.

The report provides an overview of action taken by the Commission on the different recommendations adopted in plenary in April 2017 but also a state of play of the recall actions related to NO_x emissions in the EU Member States.

Regarding adequate resources for improved market surveillance and oversight by the Joint Research Centre (JRC), the Commission noted that the JRC vehicle testing and market surveillance team is being strengthened with 22 additional experts, two additional dedicated facilities and state-of-the-art equipment, and a building built for that purpose to host these facilities. Works have started and are progressing well to ensure full availability at the time of entry into force of the new Regulation in 2020 (*see below*).

On the fourth package of RDE, the Commission notes that adoption of the RDE4/WLTP2 Regulation is planned in November 2018.

On defeat devices, the Commission notes that the rules contained in their "Guidance on the evaluation of auxiliary emission strategies and the presence of defeat devices" have been made compulsory for light-duty vehicles by inserting them in the WLTP Regulation (EU) 2017/1151. The Commission is also working on amendment of the Euro VI implementing Regulation to include such rules for heavy-duty vehicles. This amendment (Euro VIe) is expected to be adopted by the Commission in May 2019.

On remote sensing, the Commission has asked the JRC to investigate further whether remote sensing methodology may be used to identify vehicles with excess emissions. The first results of the study done in 2017 by the JRC are

promising, while the first report is expected in few months. The JRC will continue to work on the issue with the aim to set up a methodology that can be used EU-wide and in the future foster the establishment of a network.

The Commission aims to launch a pilot project (EP funding) on possible options for setting up an Ultra-Low Emission Vehicle (ULEV) label. The project would be expected to assess options for an Ultra-Low Polluting Vehicle (ULPV) scheme (including the possibility of a label) for cars that meet the Euro 6d-temp or later standard or that are certified to that level after retrofit. The project also foresees evaluation of certification and monitoring of such vehicles as well as the establishment of a European information exchange system including a database with all registered ULPV cars available for cities, regions and Member States for the implementation of Low Emission Zones (LEZ) policies or incentives.

With regard to the call for a fuel-neutral emission standard proposal, the Commission has already started to consult its expert groups and organised a meeting with academics and independent experts on 22 October 2018, followed by an open stakeholder event on 24 October 2018 (see above). Those events will provide input to the formulation of a study request to a contractor, as well as for shaping the issues that JRC will be called on to study. All input will be used to review the emission limits, both in qualitative as well as in quantitative terms. The studies will also assess the cost-benefit aspects of changing emission limits and the time needed for the industry to adapt its products.

The Commission report is at www.europarl.europa.eu/cmsdata/155520/State_of_play_recall_actions_EC_SPI_2018_43_EN.pdf.

JRC to build Two World-Class Emission Testing Facilities

On 10 October 2018, the Joint Research Centre (JRC) of the European Commission announced that a contract has been signed for the delivery of two new state-of-the-art emission testing facilities in Ispra, Italy.

The new laboratories will carry out the vehicle emissions compliance checks under the new European Type-Approval framework. The new facilities (called "VELA 10" and "VELA 11") are scheduled to start testing cars in 2020. The new building is expected to be ready in February 2019, when the installation of testing equipment can begin.

This is a substantial expansion to the activities of the JRC and its Sustainable Transport Unit, which is already recognised for its work in support to the new European emission legislation as well as research on electrical and hybrid cars. The JRC's existing Vehicle Emissions Laboratories (VELA 1 – 9) include chemical and physical analysis labs and nine major testing facilities capable of conducting emissions tests on a variety of vehicles.

Commission Statement on Alleged Manipulation of CO₂ Emissions Test

On 16 October 2018, European Commissioner for Climate Action, Miguel Arias Cañete answered to a written question asked by MEP Bas Eickhout (the Netherlands, Greens) on alleged manipulation of CO₂ emission tests by certain manufacturers.

Following the entry into force of the new Worldwide-harmonised Light-vehicle Test Procedure (WLTP), the Commission has requested data on the type-approval tests performed by national authorities. The data received indicate that manufacturers may use the transition from the New European Driving Cycle (NEDC) procedure to the WLTP to inflate their WLTP emissions in 2020, Commissioner Cañete said.

The Commission does not intend to extend the investigation as the information collected is sufficient to support swift and effective action. As the sampled data do not cover all manufacturers, it is necessary to take into account the protection of the commercial interests of those concerned when considering requests for the disclosure of certain documents.

The Commission proposed three lines of action and informed the co-legislators thereof. Firstly, the reference point for the post-2020 CO₂ targets should be based on the emissions measured using WLTP, rather than those declared by manufacturers.

Secondly, the implementing legislation should ensure that the two test procedures are applied consistently and that all relevant data are made available.

Thirdly, the correct implementation and enforcement of the WLTP should be monitored and enforced.

The Commission has also proposed to monitor and assess the real-world representativeness of the WLTP using on-board fuel consumption monitoring devices. Whether these might also provide a robust basis for compliance assessment needs to be analysed. In any case, such an approach could not be immediately operational as the data collection procedure still needs to be elaborated.

Finally, using a real-world driving test to assess compliance with a not-to-exceed limit is not considered a workable option due to the variability of the CO₂ emissions under different driving conditions.

The reply of the Commission is at www.europarl.europa.eu/doceo/document/P-8-2018-004401-ASW_EN.html.

Parliament Committee's Debate on Clean Air for All

On 11 October 2018, the Environment Committee of the European Parliament discussed a draft motion for a resolution on the European Commission's communication on Clean Air for All.

The draft Motion for a Resolution was prepared by MEPs from all the main political groups including MEP Julie Girling (UK, EPP), MEP Seb Dance (UK, S&D), MEP Jadwiga Wiśniewska (Poland, ECR), MEP Catherine Bearder (UK, ALDE), MEP Keith Taylor (UK, Greens), MEP Anja Hazekamp (the Netherlands, GUE) and MEP Eleonora Evi (Italy, EFDD). All the co-Rapporteurs noted that the issue of clean air needs to be higher in the political agenda.

According to MEP Girling, the issue is not in the legislation, rather the implementation in Member States that is lacking. Nevertheless, she highlighted the importance of the ongoing review of the Ambient Air Quality Directives and called on the Commission to present robust results accompanied by concrete action points. MEP Seb Dance called for further actions at EU level to mitigate ammonia and methane emissions, especially from agriculture. MEP Jadwiga Wiśniewska noted that long-term and comprehensive solutions accompanied with adequate financing are needed to improve air quality. MEP Anja Hazekamp noted the necessity of reducing emissions from vehicles and industry as well as mitigating ammonia and methane emissions from agriculture.

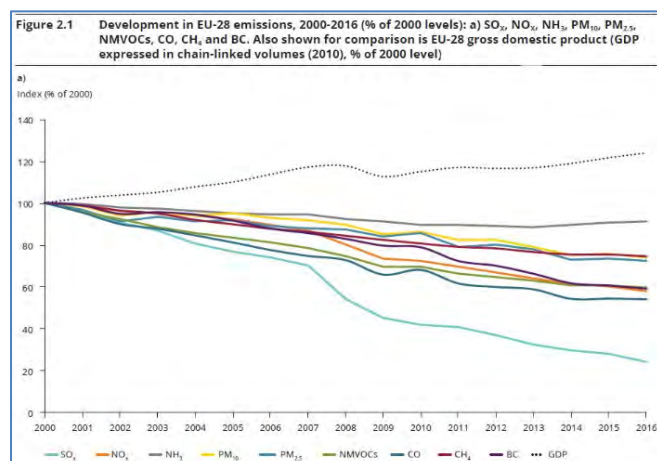
The vote on the motion for resolution is provisionally scheduled for 26-27 November 2018 in the ENVI Committee. The European Parliament would then vote on the Committee Report during the plenary session of 10-13 December 2018.

The draft motion for a resolution is at www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEE_ES/ENVI/RE/2018/10-10/1162034EN.pdf.

EEA Report on Air Quality in Europe

On 29 October 2018, the European Environment Agency (EEA) published its "Air Quality in Europe – 2018 report".

The report presents the latest official air quality data reported by more than 2500 monitoring stations across Europe in 2016. Despite slow improvements, air pollution continues to exceed EU and World Health Organization (WHO) limits and guidelines; and air pollution still poses a danger to human health and the environment.



Road transport is one of Europe's main sources of air pollution, especially of harmful pollutants such as nitrogen dioxide and particulate matter, according to the report. Emissions from agriculture, energy production, industry and households are also contributing to air pollution.

The annual limit value for NO₂ continues to be widely exceeded across Europe. In 2016, 7% of the EU-28 urban population lived in areas with concentrations above the annual EU limit value and the WHO guidelines. This is down from 9% in 2015. Exposure to NO₂ caused the premature death of an estimated 79 000 people across 41 European countries in 2015.

For PM_{2.5}, the percentage of the EU-28 urban population exposed stood at 6% in 2016, down from 7% the year before. But approximately 74% of the EU urban population were exposed to concentrations exceeding the stricter WHO guidelines. Exposure to PM_{2.5} caused the premature death of an estimated 422 000 people in 41 countries in 2015.

About 12% of the EU-28 urban population were exposed to O₃ levels above the EU's target value in 2016, which is a 30% decrease from 2015. However, the percentage of exposed urban population is still higher than the 7% recorded in 2014. Also, around 98% were exposed to levels exceeding the stricter WHO guidelines. Exposure to ozone caused the premature death of an estimated 17 700 people in 41 European countries in 2015.

The EEA air quality report is at www.eea.europa.eu/publications/air-quality-in-europe-2018.

On the same day, a briefing was also published, the 'EEA's health risk assessments of air pollution' which provides a detailed overview of how the EEA calculates its annual air quality health estimates that quantify the impacts of air pollution on population health.

The EEA briefing on health risk assessment is at www.eea.europa.eu/themes/air/health-impacts-of-air-pollution/assessing-the-risks-to-health.

Graz Declaration on Clean, Safe and Affordable Mobility for Europe

On 30 October 2018, the Austrian Presidency of the Council of the EU presented the Graz Declaration on "Clean, Safe and Affordable Mobility for Europe" to Environment and Transport Ministers of the EU Member States.

The declaration calls on Member States and the European Commission to step up their efforts by quickly implementing clean mobility measures in order to sustainably improve the health and quality of life of European citizens in cities and regions. The declaration emphasizes the importance of a shift to clean and zero-emission vehicles as well as the promotion of alternative fuels. Measures in the following areas are promoted: clean vehicles (rapid introduction of zero-emission vehicles and renewable fuel options),

mobility management and planning, active mobility to promote health and sustainability, safe and inclusive mobility, and multimodality and infrastructure

On clean vehicles, the market introduction of low- and zero-emission vehicles should accelerate, including the development of appropriate charging infrastructure, with a view to long-term carbon neutrality in Europe through public procurement, incentive systems and broad support programmes for transport actors. Funding and financial incentives at EU and national level should be used to provide support for accelerating the market introduction of low- and zero-emission vehicles, infrastructure and services for alternative fuels.

Emission regulations for road vehicles beyond 2030 should be further developed, with the aim of increasing the market uptake of low- and zero-emission vehicles in a way that is compatible with the efforts needed to meet the commitments under the Paris Agreement.

Electromobility should be promoted in all modes of transport.

Decarbonised sustainable fuel options should be further developed in Europe and the share of renewable energy in transport needs to be raised while strengthening security of supply and the competitiveness of European industry.

Environment and Transport Ministers agreed to work towards a “green deal” for mobility based on the Graz Declaration proposals to speed up deployment of clean vehicles and promotion of ‘active mobility’.

The Graz Declaration is at www.eu2018.at/latest-news/news/10-30-Meeting-of-environment-and-transport-ministers-was-dedicated-to-sustainable-mobility.html.

EU Climate Action Progress Report

On 26 October 2018, the European Commission adopted its EU Climate Action Progress Report “EU and the Paris climate agreement: Taking stock of progress at Katowice COP”.

The EU reduced its greenhouse gas emissions by 22% between 1990 and 2017, while the economy grew by 58% over the same period, however, amid robust economic growth, emissions increased slightly by 0.6% between 2016 and 2017, mainly in transport and industry. The EU nevertheless remains on track to meet its 2020 greenhouse gas emissions reduction target of a 20% reduction compared to 1990.

In 2018, the EU adopted a comprehensive set of climate legislation to deliver on its commitment to reduce its greenhouse gas emissions by at least 40% by 2030 as compared with 1990. In addition, the EU renewable energy and energy efficiency targets for 2030 were set to 32% and 32.5%, respectively.

If these agreed EU-level policies are fully implemented, EU emissions are estimated to be cut by around 45% by 2030. This would already be more than the EU has subscribed to

under the Paris Agreement and reaffirms the commitment to be at the forefront of global climate action. This is all the more important in the context the recent IPCC Special Report on global warming of 1.5 degrees, which will be taken into account in the preparations for the EU long-term strategy, said the Commission.

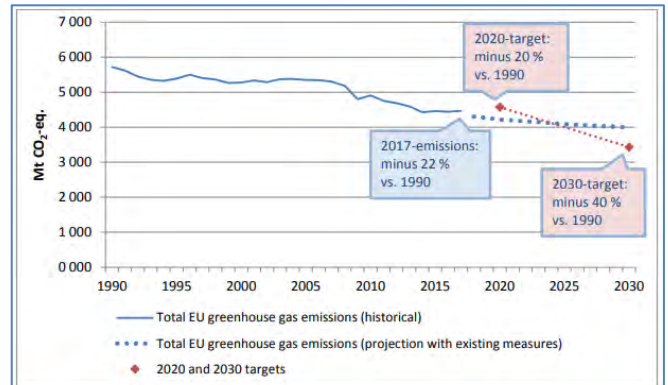


Figure 1: Total EU GHG emissions (historical emissions 1990-2017, projected emissions 2018-2030) (Mt CO₂-eq.) and GHG reduction targets.¹

The decoupling of economic growth and emissions continues. The EU economy now emits half as much CO₂ per unit of GDP as in 1990. These efficiency gains are largely thanks to significant investment in innovative low carbon technologies, showing that growth, employment and climate action can go hand in hand.

Over the past 4 years, EU greenhouse gas emissions were reduced by 3%. Most of the reduction has taken place in the energy supply sector where emissions are down by 11%, or 156 Mt, as compared to 2013. Lower emissions from energy use in buildings, waste management and energy use in industry have also contributed.

On the other hand, emissions from transport, agriculture and international aviation have increased over the last 4 years. Transport emissions have increased by 7%, or 60 Mt, as compared to 2013, mainly due to growing emissions from road transport.

Emissions from industrial processes have varied from year to year, showing no clear trend.

To support the low carbon transition, the EU integrates climate aspects in its budget. In 2017, 20% of the EU budget was spent on climate-relevant action. The Commission has proposed to increase this share in the next EU long-term budget to make 25% of all expenditure contribute to climate objectives in the period 2021-2027.

The EU Climate Action report is at https://ec.europa.eu/clima/sites/clima/files/news/20181026_act_en.pdf.

EEA Reports on Greenhouse Gas Trends and Projections

On 26 October 2018, the European Environment Agency (EEA) published its annual greenhouse gas ‘trends and projections in Europe’ package that support the Climate

The ENVI report on the HDV CO₂ standard is at www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A8-2018-0354+0+DOC+PDF+V0//EN.

Trilogue Agreement on Occupational Health Directive includes Diesel Exhaust

On 24 October 2018, the Council's Permanent Representatives Committee approved the provisional agreement reached with the European Parliament on the Directive on the protection of workers from the risks related to exposure to carcinogens or mutagens at work.

The directive amends an existing directive from 2004 by introducing exposure limits to 8 additional carcinogens or mutagens. These are: diesel engine exhaust emissions, mineral oils that have been used before in combustion engines, trichloroethylene, 4,4'-Methylenedianiline (MDA), epichlorohydrin, ethylene dibromide, ethylene dichloride, and Polycyclic Aromatic Hydrocarbons (PAHs) mixtures, particularly those containing benzo[a]pyrene.

The agreement sets an exposure limit value to diesel engine exhaust fumes of 0.05 mg/m³ measured in elemental carbon. This limit value will enter into force 2 years after the end of the transposition period, and 5 years after the end of the transposition period for the sectors of underground mining and tunnel construction.

Formal votes in Parliament plenary and adoption by the Council are still needed before publication of the revised Directive.

More info is at www.consilium.europa.eu/en/press/press-releases/2018/10/24/protecting-workers-council-sets-new-exposure-limits-for-8-additional-carcinogens-and-mutagens.

Parliament Report on Clean Vehicle Directive

On 10 October 2018, the Environment (ENVI) Committee of the European Parliament adopted its report on the Clean Vehicles Directive. The report was drafted by Rapporteur MEP Andrzej Grzyb (PL, EPP).

The Commission proposal was presented as part of the Commission's Mobility Package in November 2017, in the Communication "Delivering on low-emission mobility - A European Union that protects the planet, empowers its consumers, and defends its industry and workers". It amends Directive 2009/33/EC on the promotion of clean, energy-efficient road vehicles ("Clean Vehicles Directive") in public procurement tenders.

In the ENVI report, 'zero-emission vehicle' are defined as a vehicle with zero CO₂, NO_x and fine particles tailpipe emissions; 'low-emission vehicle' are defined as a vehicle whose Real-Driving Emissions (RDE) do not exceed 80% of the emission limits and with maximum CO₂ emissions of 50 g/km for M1, M2 and N1 vehicle and 25 CO₂ g/km for L-category vehicles.

Vehicles retrofitted to the clean vehicle standard can also be counted towards the achievement of the minimum procurement targets.

The text calls on the Commission to establish, no later than 31 December 2022, a methodology of counting life-cycle CO₂ emissions and of well-to-wheel CO₂ emissions of vehicles.

The report of MEP Grzyb was adopted with 38 votes in favour, 10 against and 7 abstentions.

On 25 October 2018, the European Parliament then endorsed the ENVI Report at its plenary meeting.

In addition to the ENVI report some exemptions for bio-methane powered light- and heavy-duty vehicles were adopted. This includes that at least 66% of the minimum procurement targets for clean heavy-duty vehicles would have to be met by zero-emission vehicles or by vehicles using natural gas in 2025 and 75% in 2030.

The Parliament endorsed the Report prepared by Rapporteur Grzyb by 400 votes in favour, 76 against, and 112 abstentions along with the mandate to enter into informal interinstitutional negotiations (trilogues) with the Council.

The EP report on the clean vehicle directive is at www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2018-0424+0+DOC+PDF+V0//EN.

Harmonized EU Fuel Labelling

On 12 October 2018, the European Commission issued a statement on the new harmonised set of fuel labels appearing across Europe.

Throughout all 28 EU Member States, the EEA countries (Iceland, Lichtenstein and Norway), the former Yugoslav Republic of Macedonia, Serbia, Switzerland and Turkey, a new common and harmonised set of fuel labels is now compulsory at all filling stations dispensing petrol, diesel, hydrogen, compressed natural gas (CNG), liquefied natural gas (LNG) or liquefied petroleum gas (LPG) fuels.

The same harmonised, clear and simple labels will also be compulsory for newly produced vehicles and will be shown on the fuel-filler caps. These new labels do not replace existing names and brands of fuels, nor quality, safety, and performance recommendations. The labels are based on industry standards and have been developed by European standardisation bodies with the participation of industry, consumer and civic society representatives.

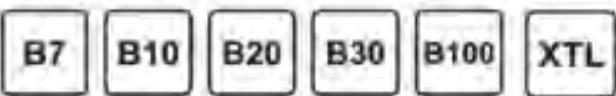
This initiative is taken on the basis of the Alternative fuels infrastructure Directive and is in line with the Commission's Action Plan on Alternative Fuels Infrastructure, adopted in November 2017, which sets out a number of support actions to accelerate the roll out of infrastructure, increase investments and improve consumer acceptance. It also complements the Juncker Commission's proposals "Europe on the Move" for a clean, safe and connected mobility.

The new labels are divided into three groups:

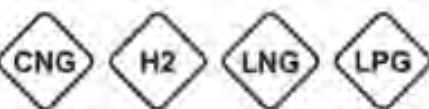
- Gasoline-type fuels: marked by an “E” inside a circle: E5, E10, etc (“E” stands for specific bio-components (ethanol) present in petrol);



- Diesel-type fuels: marked by a “B” inside a square: B7, B10, XTL, etc (“B” stands for specific biodiesel components present in diesel, the XTL stands for synthetic diesel and indicates that it is not derived from crude oil);



- Gaseous-type fuels, mentioning their specific subtype within a rhombus/diamond: e.g. CNG, LNG, LPG and H₂ (hydrogen);



More info is at http://europa.eu/rapid/press-release_MEMO-18-6102_en.htm.

Parliament Study on Air Quality and Traffic Practices

On 5 October 2018, the European Parliament released a study prepared by the Austrian Environment Agency (Umweltbundesamt) on air quality problems of cities and regions, which are often caused by traffic.

The study was commissioned by the Parliament’s Policy Department for Citizens’ Rights and Constitutional Affairs at the request of the Petitions Committee, which receives numerous petitions pertaining to the issues of air quality problems caused by traffic.

The analysis covers five petitions sent to the Committee between 2011 and 2018. These petitions address the cities and regions of Madrid (Spain), Antwerp and Brussels (Belgium), Lombardy (Italy), Marseille and Paris (France), and Valencia (Spain). The analysis of pollutant levels in these cities and regions shows that NO₂ levels are still above the limit value for the annual mean. PM₁₀ levels are however mostly in compliance, except for some cities in Lombardy. In general, pollutant levels are decreasing, but large cities and agglomerations will be in non-compliance for some years to come. The European Commission has launched infringement procedures against a number of Member States, including Belgium and Spain, and has referred six Member States to the Court of Justice of the EU, including France and Italy.

The petitions analysed within this study address vehicle traffic, especially (private) diesel vehicle traffic, as a major problem for urban air quality and human health.

All these cities and regions have implemented plans and strategies to improve air quality, which also include traffic related measures.

The cities and regions addressed traffic also within specific transport strategies to improve the traffic system in the city and its surroundings.

Best practice examples have already been partly implemented in the areas covered in this study. The main measures for traffic are: low emission zones, long-term strategies to foster “active modes” – bicycle traffic in particular, spatial planning and redistribution of public space, parking management schemes, promotion of public transport, tax schemes to discourage diesel vehicles, congestion charges, and measures to reduce emissions from ships.

PM₁₀ levels can be lowered by additionally implementing measures for domestic heating and construction sites.

The study recommends that policies to address the use of diesel vehicles, including trucks, should be further strengthened at the local and regional, but also at the national level, as diesel vehicles are major sources of air pollutants in many cities and regions.

The study on air quality and traffic practices is at [www.europarl.europa.eu/RegData/etudes/STUD/2018/604988/IPOL_STU\(2018\)604988_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2018/604988/IPOL_STU(2018)604988_EN.pdf).

Commission’s Roadmap for Fitness Check of End-of-Life Vehicles Directive

On 4 October 2018, the European Commission launched a public consultation on a fitness check roadmap of the End-of-Life Vehicles (ELV) Directive 2000/53/EC.

The EU’s rules on end-of-life vehicles aim to make dismantling, recycling and reusing these vehicles more environmentally friendly and to push manufacturers to make new vehicles without hazardous substances, so their parts can later be reused. The fitness check will assess how well the EU’s rules are working and whether they are delivering the expected benefits for the environment, the public and industry.

The fitness check will be conducted by DG-Environment and is scheduled to run until end of 2019.

The consultation on the roadmap is open until 1 November 2018 and is at https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2018-4731779_en.

Bulgaria, Poland and Slovakia call for Action on Export of Banned Vehicles

On 9 October 2018, during the Environment Council meeting, Bulgaria, Poland and Slovakia called for EU measures to tackle air pollution related to the import of used cars.

Despite the legislative measures adopted at national level, the increasing number of used internal combustion engine cars (especially diesel) imported from Member States with

higher average incomes, where some restrictions have been introduced for such vehicles, to Member States with lower average incomes, remains a pressing issue, they said. In Bulgaria between July 2017 and April 2018 the overall number of diesel cars, including new and used ones, increased by 7%.

A fair approach requires that the one who distorts the market should take the responsibility for such action, the three eastern EU Member States said. This means that the Member States introducing such bans should not be able to "export" cars that are not "retrofitted" and do not meet certain standards.

The statement on export of banned vehicles is at <http://data.consilium.europa.eu/doc/document/ST-12681-2018-INIT/en/pdf>.

EU to invest nearly €700 Million in Sustainable and Innovative Transport

On 1 October 2018, the European Commission proposed to invest €695.1 million in 49 key projects to develop sustainable and innovative transport infrastructure in Europe across all transport modes.

With the aim to support the objectives of the Clean Mobility package, the largest part of the funding will be devoted to modernising European air traffic management (€290.3 million), developing innovative projects and new technologies for transport (€209.5 million), as well as upgrading the railway network, maritime connections, and ports and inland waterways (€103.6 million).

Over €250 million of the Connecting Europe Facility (CEF) funding will be invested in 26 projects dedicated to developing new technologies in transport notably promoting alternative fuels, such as:

- greening the maritime transport link between Swinoujscie port in Poland and Ystad port in Sweden;
- deploying hydrogen public transport infrastructure in Denmark, the UK and Latvia;
- building a network of bio-liquefied natural gas (bio-LNG) stations on roads connecting southern Spain and eastern Poland, via France, Belgium, the Netherlands and Germany;
- developing zero-emission public transport services for Amsterdam airport, as well as electrifying urban and regional bus routes in Croatia, Italy, Slovenia and Slovakia.

More info is at https://ec.europa.eu/transport/themes/infrastructure/news/2018-10-01-cef_en.

German Government agrees on Diesel Action Plan

On 2 October 2018, the German coalition government announced that an agreement had been reached regarding old diesel vehicles.

German Ministers for the Environment Svenja Schulze and for Transport Andreas Scheuer said at a press conference that a combination of trade-in incentive schemes and retrofit options would be introduced for drivers of older diesels in and around the 14 German cities with the highest level of nitrogen dioxide (NO₂) pollution. Those cities are Munich, Stuttgart, Cologne, Reutlingen, Düren, Hamburg, Limburg an der Lahn, Dusseldorf, Kiel, Heilbronn, Backnang, Darmstadt, Bochum and Ludwigsburg.

In these priority cities, the Federal Government will implement support measures that include retrofitting heavy-duty municipal vehicles such as garbage trucks or street cleaning vehicles with Selective Catalytic Reduction (SCR) hardware as well as funding the retrofit of craftsmen and delivery vehicles with SCR systems. Eligible commercial vehicles are those between 2.8 and 7.5 tonnes, whose owners have their headquarters in one of the 14 affected cities or adjacent counties and commercial vehicle owners whose company has noteworthy contracts in the city.

The government also wants to tackle pollution from passenger cars but at the same time ensure mobility rights of citizens. As a compromise, the government established that Euro 4 and Euro 5 diesel vehicles that have NOx emissions below 270 mg/km should be allowed to drive in restricted traffic areas. If vehicles do not meet this criteria, two options are proposed:

- German car manufacturers will offer attractive exchange premiums or discounts to compensate for the loss of value that diesel vehicles have suffered because of the debate over their emissions.
- Owners of Euro 5 diesel vehicles can be retrofitted with an SCR system if a system is available to lower NOx emissions below 270 mg/km. The federal government expects the OEM to pay the costs, including installation. The government will establish the licensing requirements for such systems to be available on the market as soon as possible. The retrofit company will carry liability.

More info (in German) is at www.bmvi.de/SharedDocs/DE/Artikel/K/konzept-klarheit-fuer-dieselfahrer.html.

Germany to recall 100 000 Opel Diesel Cars

On 15 October 2018, Germany's Transport Ministry said it will order the recall of about 100 000 Opel vehicles from 2013 to 2016 as part of a diesel-emissions probe.

The announcement came after prosecutors searched the automaker's offices earlier in the day.

Germany's KBA motor vehicle authority found four software programmes capable of altering vehicle emissions in 2015 and ordered Opel to implement a software update in cars to remove them, the Transport Ministry said. "After a fifth software device was discovered in early 2018, which KBA found to be illegal, there is

currently an official hearing going on with the goal of imposing a mandatory recall for the Cascada, Insignia and Zafira models," the ministry said.

The transport ministry said Opel had dragged its feet on the hearing. The KBA had told Frankfurt prosecutors about the software device in April, it said. "The official recall of the affected roughly 100 000 vehicles will take place shortly," it added.

Opel said it rejected any accusation of using illegal defeat devices that can manipulate exhaust emission tests, also denying it was procrastinating.

German Court fines Audi for Diesel Emissions Manipulation

On 16 October 2018, the Munich II public prosecutor issued an administrative order against AUDI AG due to the use of defeat device software in V6 and V8 diesel vehicles.

The administrative order provides for a fine of €800 million in total. AUDI has accepted the fine.

"By the issuance of the administrative order further important proceedings in connection with deviations from regulatory requirements by VW group diesel vehicles will be finally terminated," the carmaker said.

Local Court requires Berlin to consider Old Diesel Bans

On 9 October 2018, the Berlin Administrative Court ruled that Berlin must update, by 31 March 2019, its Clean Air Plan with measures to ensure the NO₂ air quality limit of 40 µg/m³ is met as soon as possible in the Berlin metropolitan area.

This includes considering whether driving restrictions for diesel vehicles up to Euro 5/N are required on a total of 15 km of road (117 road sections).

More info (in German) at www.berlin.de/gerichte/verwaltungsgericht/presse/pressemitteilung/en/2018/pressemitteilung.747221.php.

Brussels Region consults on Future Ban of ICE Vehicles

On 19 September 2018, the Brussels Capital region organised a colloquium to mark the launch of a stakeholder consultation regarding a future ban of vehicles with Internal Combustion Engines in Brussels.

AECC was invited to participate. Five speakers, three from the Brussels region ministry for environment, one from the Brussels region mobility ministry and a medical doctor from Brussels university ULB, addressed the audience on NO_x, PM/PN, air quality, Low Emission Zones (LEZ), etc.

After the full implementation of the existing LEZ in 2025, Brussels is considering a progressive banning of all diesel vehicles by 2030, all gasoline and Liquefied Petroleum Gas (LPG) vehicles by 2035 and finally all gasoline hybrid and natural gas (CNG/LNG) by 2050.

A stakeholder consultation is open until 7 November 2018. The questionnaire (in French and Flemish) is at <https://fr.surveymonkey.com/r/BF2KQK7>.

Follow-up roundtables will be organised by the Brussels government between January and March 2019. A final colloquium is planned in April 2019.

Fifteen Low Emission Zones in France

On 8 October 2018, the French government announced it has agreed with 15 local authorities that they will restrict access to urban areas for dirtier vehicles as part of efforts to reduce nitrogen dioxide (NO₂) pollution.

Under the plan, by the end of 2020, the 15 cities (see map below), which represent 20 million inhabitants, will either introduce new low emission zone programmes or ramp up an existing plan to improve air quality.

Low Emission Zone access restrictions to the more polluting vehicles will refer to Crit'air labels based on the Euro standards to which the vehicles are certified.

Moreover, cities over 100 000 inhabitants will have to consider low-emissions zones under the government's new mobility law, yet to be released.

Cities will receive support from the government to implement their plans through automated control systems.



More info (in French) is at www.ecologique-solidaire.gouv.fr/sites/default/files/2018.10.08_DP_DeploiementZFE_vdef.pdf.

Denmark launches Air and Climate Plan

On 9 October 2018, Denmark launched a package of 38 initiatives, entitled Together for a Cleaner Future, aimed at improving air quality and achieving the country's goal of becoming carbon-neutral by 2050.

Many of the measures, which complement Denmark's Clean Energy Plan announced in June, focus on transport. The country intends to stop the sale of petrol and diesel cars by 2030 and the sale of plug-in hybrids by 2035. Incentives will be introduced to promote the sale and use of low-emission and zero-emission vehicles.

Under the plans, cars fuelled by diesel or petrol would have disappeared from Danish roads by 2050. The government also intends to increase the premium for sending old diesel cars to scrap. By 2025, all new buses and taxis in cities will be zero-emission vehicles.

Overall, 375 million Danish kroner (€50 million) has been allocated until 2022 to implement air and climate measures designed to meet Denmark's reduction requirement of 32-37 million tonnes of CO₂ until 2030.

The measures are yet to be formally adopted though.

A summary of the Danish air and climate plan is at <https://en.efkm.dk/media/12351/climate-air-proposal-summary.pdf>.

Supplement to UK Air Quality Plan for Nitrogen Dioxide

On 5 October 2018, the UK Government published a supplement to the UK plan for tackling roadside nitrogen dioxide (NO₂) concentrations.

Following the 2017 UK NO₂ air quality plan, the government legally directed 33 local authorities with NO₂ exceedances to develop a feasibility study. The supplement sets out the next steps the Government is taking in relation to each of these 33 local authorities.

Ten local authorities will now take forward new measures, developed with and funded by central government, to reduce pollution levels. These measures include:

- Retrofit of approximately 400 buses in total with technology to reduce harmful emissions in Dudley, Wolverhampton, Sandwell, Reading, Newcastle-under-Lyme and Portsmouth.
- Traffic management measures such as signal optimisation in Dudley, Sandwell, Wolverhampton and South Gloucestershire.
- Other measures such as behavioural change campaigns in Solihull and Leicester.

The supplement to the UK NO₂ plan is at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746100/air-quality-no2-plan-supplement.pdf.

Madrid's Sustainable Mobility Ordinance

On 5 October 2018, Madrid city council approved a sustainable mobility ordinance which sets a 30 km/h speed limit on 85% of the road network and restrictions on vehicle access to the city centre in order to improve air quality.

In addition to the 30 km/h limit on all roads except dual carriageways, the regulations establish a 20 km/h limit in areas where there is no raised pavement and give pedestrians priority over vehicles.

A low emissions zone in central Madrid will confine motor vehicle access to residents, deliveries, public service vehicles and to lower emissions vehicles going to and from public car parks. From 2025, older vehicles, which are not entitled to display an emissions sticker, will be unable to enter the city.

More info (in Spanish) is at <https://diario.madrid.es/blog/notas-de-prensa/el-pleno-aprueba-la-ordenanza-de-movilidad-sostenible>.

NORTH-AMERICA

CARB fines Company selling Illegal Used DPF for Trucks

On 1 October 2018, the California Air Resources Board (CARB) announced that LKQ Corporation has agreed to pay a \$294 000 (€253 000) penalty for selling illegal, used Diesel Particulate Filters (DPF), violating California's Aftermarket Parts and DPF Verification Regulations.

It is actually illegal to sell or install a used DPF in heavy-duty trucks in California. It is also illegal for a business to install one of these filters without being authorized by the filter manufacturer.

This sends a critical message to business owners as well as consumers that CARB is actively enforcing the state's Truck and Bus Regulation, which requires truck owners to clean up their fleets by installing 2010 or newer engines by 2023, as well as its regulations governing the use and sale of diesel filters.

ASIA PACIFIC

Indian Supreme Court prohibits Sales of Bharat Stage IV Vehicles from April 2020

On 24 October 2018, the Supreme Court of India ruled that no Bharat Stage IV (BS IV)-compliant vehicles should be permitted to be sold in India after 31 March 2020.

Automobile manufacturers had requested an extension of the deadline as it may take longer period of time to sell the stocks of non-BS VI compliant vehicles and to manufacture BS VI compliant vehicles, as the BS VI fuel would be available in India only from 1 April 2020.

However, the ruling stated that all automobile manufacturers in India have to dispose of the vehicles which conform to BS IV norms and have to adopt BS VI

norms. In view of a larger public interest, i.e. the health of citizens of India, the Supreme Court refused to give any extension of the deadline.

Malaysia delays implementing Euro 4M Fuel Standards

The Malaysian government has decided to postpone the implementation of Euro 4M gasoline specifications for the 95 RON grade to 1 January 2020.

The Malaysian-modified Euro 4 fuel specification dubbed "Euro 4M" would reduce the maximum allowable sulfur content in gasoline and diesel fuel from the current standard of 500 ppm to 50 ppm. The maximum allowable limit for benzene in gasoline would be reduced from 5% to 3.5%, while Reid Vapor Pressure (RVP), which measures gasoline volatility, would be reduced from 70 kPa to 65 kPa.

Malaysia's Domestic Trade and Consumer Affairs Minister Datuk Saifuddin Nasution said the decision to again postpone the implementation of Euro 4M fuel standards was made after a series of discussions between the government and petroleum companies, who asked for more time to ensure sufficient supply of Euro 4M compliant fuels.

The previous Malaysian government had originally planned to implement Euro 4M for RON 95 gasoline on 1 October 2018, Euro 5 diesel (10 ppm S) on September 2020 and Euro 5 gasoline (10 ppm S) on 1 September 2025.

MIDDLE-EAST

Israel plans to ban New Gasoline and Diesel Vehicles in 2030

On 9 October 2018, Israel's Energy Ministry unveiled a plan to end the sale of new gasoline and diesel fuelled cars by 2030 and replace them with electric vehicles and trucks running on natural gas.

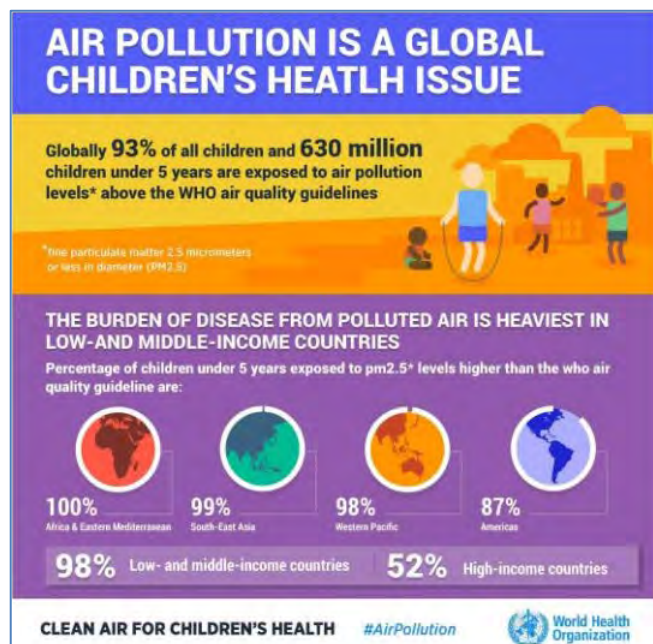
The move is a part of a broader policy to completely eliminate the reliance on coal, gasoline, and diesel by 2030. In 2014, electricity in Israel was produced through a fifty-fifty split between coal and natural gas. The goal for 2030 is to alter that to 83% natural gas and 17% renewable energy. Israel discovered offshore natural gas fields that may enable it to achieve energy independence and become an exporter of natural gas.

The Israeli government is expected to approve the plan by the end of this year.

UNITED NATIONS

WHO Report "Air Pollution and Child Health: Prescribing Clean Air"

On 29 October 2018, the World Health Organization (WHO) published a report on "Air pollution and child health: Prescribing clean air" on the eve of WHO's first Global Conference on Air Pollution and Health.



The report examines the heavy toll of both ambient (outside) and household air pollution on the health of the world's children, particularly in low- and middle-income countries.

WHO reveals that when pregnant women are exposed to polluted air, they are more likely to give birth prematurely, and have small, low birth-weight children. Air pollution also impacts neurodevelopment and cognitive ability and can trigger asthma, and childhood cancer. Children who have been exposed to high levels of air pollution may be at greater risk for chronic diseases such as cardiovascular disease later in life. But air pollution is damaging children's lung function even at lower levels of exposures.

One reason why children are particularly vulnerable to the effects of air pollution is that they breathe more rapidly than adults and so absorb more pollutants.

They also live closer to the ground, where some pollutants reach peak concentrations – at a time when their brains and bodies are still developing.

New-borns and young children are also more susceptible to household air pollution in homes that regularly use polluting fuels and technologies for cooking, heating and lighting.

Globally, 93% of the world's children under 15 years of age are exposed to ambient fine particulate matter (PM_{2.5}) levels above WHO air quality guidelines, which include the 630 million of children under 5 years of age, and 1.8 billion children under 15 years

In low- and middle-income countries around the world, 98% of all children under 5 are exposed to PM_{2.5} levels above WHO air quality guidelines. In comparison, in high-income countries, 52% of children under 5 are exposed to levels above WHO air quality guidelines.

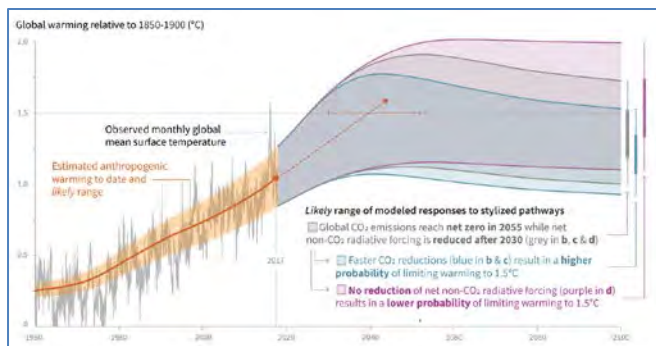
Air pollution is one of the leading threats to child health, accounting for almost 1 in 10 deaths in children under five years of age.

The WHO report is at www.who.int/ceh/publications/air-pollution-child-health/en.

IPCC Special Report on Global Warming of 1.5°C

On 8 October 2018, the Intergovernmental Panel on Climate Change (IPCC) adopted a special report on Global Warming of 1.5°C, including the impacts and associated risks of such a temperature increase.

Governments invited the IPCC to prepare the report when they adopted the 2015 Paris Agreement. The Paris Agreement sets a long-term goal of holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C. At that time, relatively little was known about the risks avoided in a 1.5°C world compared with a 2°C warmer world. According to the new report, limiting global warming to 1.5°C would require "rapid and far-reaching" transitions in land, energy, industry, buildings, transport, and cities. Global net human-caused emissions of CO₂ would need to fall by about 45% from 2010 levels by 2030, reaching 'net zero' around 2050. This means that any remaining emissions would need to be balanced by removing CO₂ from the air.



The report highlights a number of climate change impacts that could be avoided by limiting global warming to 1.5°C compared to 2°C, or more. For instance, by 2100, global sea level rise would be 10 cm lower with global warming of 1.5°C compared with 2°C. The likelihood of an Arctic Ocean free of sea ice in summer would be once per century with global warming of 1.5°C, compared with at least once per decade with 2°C. Coral reefs would decline by 70-90% with global warming of 1.5°C, whereas virtually all (>99%) would be lost with 2°C.

The IPCC Special Report and a summary for policymakers are at www.ipcc.ch/report/sr15.

Ahead of the publication, on 1 October 2018, the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP), as co-sponsors of the IPCC, issued a brief to provide context and explanation of key concepts about the landmark report.

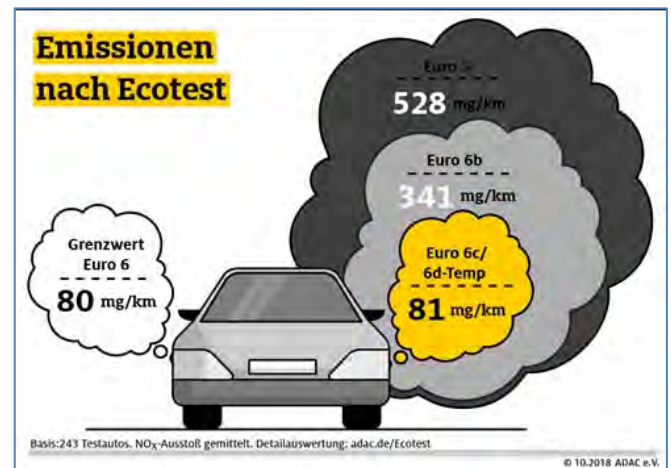
The WMO & UNEP brief is at https://library.wmo.int/doc_num.php?explnum_id=5188.

GENERAL

Euro 6d-temp Diesel Cars show Low NOx in ADAC Ecotest

On 9 October 2018, the German Automobile Club (ADAC) published an updated overview of the NOx performance of new diesel cars.

Based on 243 tests of Euro 6c and Euro 6d-temp vehicles, real-world NOx emissions measured on the ADAC Ecotest are in average at 81 mg/km, very close to the Euro 6 limit of 80 mg/km. This represents a tremendous improvement of real-world NOx emissions compared to Euro 5 and Euro 6b cars performance.



More info (in German) is at www.adac.de/rund-ums-fahrzeug/abgas-diesel-fahrverbote/fahrverbote/dieselfahrverbot-faq.

VCD List of Environmentally-Friendly Cars includes Euro 6d-temp Diesels

On 18 October 2018, the German environmentalist mobility club VCD published its 2018-2019 list of environmentally-friendly cars.

This list includes 61 passenger car models that emit comparatively low NOx emissions, low fuel consumption and can still drive in every German city centre in the coming years.

In addition to 21 fuel-efficient gasoline (for Direct Injection, only models with Gasoline Particulate Filter), eight gasoline hybrids, seven pure electric cars, two plug-in hybrids and a natural gas vehicle, the VCD also lists for the first time 22 diesel models. These diesels comply with the Euro 6d-temp emission standard and are fitted with an SCR catalyst.

All cars listed by the VCD emit a maximum of 135 g/km of CO₂ according to the new, more realistic test method WLTP. This corresponds to a consumption of 5.1 l/100 km of diesel and 5.7 l/100 km of gasoline. In addition, the driving noise of the cars is not more than 73 decibels.



The VCD list can be downloaded from www.vcd.org/themen/auto-umwelt/vcd-auto-umweltliste/vcd-auto-umweltliste-20182019.

FIA Study on VW Software Update

On 24 October 2018, FIA Region I reported on the results of a study investigating possible impacts of VW recall software upgrades on fuel consumption and driving behaviour.

The study was conducted by FIA Swiss member organisation, Touring Club Switzerland (TCS) who tested a station wagon Seat Exeo 2.0 TDI (EA189 engine, Model Year 2012) and covered more than 20 000km. Measurements were taken before and after the engine management software update.

The average consumption (5.74 l/100 km) remained unchanged, although the more frequent regeneration cycles resulted in a minimum additional fuel consumption of 0.33%. For short distances, the regeneration intervals remained virtually unchanged.

The manufacturer's improvements had a noticeable effect on the frequency of regeneration of the Diesel Particulate Filter. The DPF and the Exhaust Gas Recirculation valve had undergone virtually no visual changes.

No deficiencies attributable to the update were found. The eight testing drivers, that drove alternately during the test, noticed no differences in the behaviour of the vehicle.

FIA Region I welcomed the results of the study as positive news for consumers as it shows that consumption and operation of the engines have not been negatively affected.

ACEA Economic and Market Report: State of the EU Automotive Industry

On 11 October 2018, the European Automobile Manufacturers' Association (ACEA) published its Economic and Market Report for the second quarter of 2018.

According to the ACEA report, during the first half of 2018, the EU car market grew by 2.9% while half-year car volumes in the US went up by 1.4% and Chinese car sales

rose by 6.1%. Overall 40.4 million cars were sold worldwide, which is 3.7% more than in 2017.

In the first half of 2018, more than 56% of all new cars in the EU ran on petrol and only one out of every 60 cars sold across the EU was electrically-chargeable.

The ACEA report also includes the latest figures on the production and trade of passenger cars and commercial vehicles, both in Europe and around the world.

The ACEA economic and market report is at www.acea.be/uploads/statistic_documents/Economic_and_Market_Report_Q2_2018.pdf.

Report on achieving Sustainable Development Goals

On 17 October 2018, the Club of Rome published a new report prepared by the Stockholm Resilience Centre titled 'Transformation is feasible: how to achieve the Sustainable Development Goals (SDGs) within planetary boundaries'.



Figure 1.3 The UN 17 Sustainable Development Goals (SDGs), implemented by all the world's countries in 2016.

According to the report, if the world's nations continue with the same efforts as in the recent decades we will not achieve SDGs by 2030, nor 2050. By 2030, in the business-as-usual scenario, the world's success score on SDGs will be only 10 out of 17, up from 9 in 2015.

The main problems are that satisfying the social SDGs with conventional policy tools will lead to very large human footprints in terms of resource use and pollution outputs, and to increasing inequity.

World leaders shall, as a matter of urgency, explore transformative change measures to increase the likelihood of meeting more SDGs by 2030 and to achieve global sustainability by 2050.

Transformative change is possible, through five strategies that seem to be powerful ways to reach most SDGs within most planetary boundaries. The five measures are:

- accelerated renewable energy growth sufficient to halve carbon emissions every decade,

- accelerated productivity in sustainable food chains,
- new development models in the poor countries,
- unprecedented inequality reduction, and
- investment in education for all, gender equality, health, family planning.

There is no silver bullet. Attaining the SDGs within planetary boundaries will require an integrated mix of policy levers. Behavioural transformation is also required, particularly in the rich parts of the world. Humanity can avoid planetary breakdown by postponing consumption growth by one year.

The report is at www.stockholmresilience.org/download/18.51d83659166367a9a16353/1539675518425/Report_Achieving%20the%20Sustainable%20Development%20Goals_WEB.pdf.

OPEC's World Oil Outlook 2018

On 23 September 2018, the Organization of the Petroleum Exporting Countries (OPEC) launched its 2018 World Oil Outlook (WOO) in Algiers, Algeria.

First published in 2007, the OPEC WOO offers a thorough review and assessment of the medium- and long-term prospects to 2040 for the global oil industry, as well as analysis of various sensitivities that have the potential to impact the petroleum industry in the years ahead.

Highlights from the WOO report include that all forms of energies will be required in the future; it is not about choosing one form of energy over another. Oil is expected to remain the fuel with the largest share in the energy mix throughout the forecast period to 2040.

Total primary energy is set to expand by 33% between 2015 and 2040, driven predominantly by developing countries, which see almost 95% of the overall energy demand growth.

Natural gas witnesses the largest demand growth in absolute terms, and renewables the largest growth in percentage terms.

Long-term oil demand has been revised upward for the second consecutive year, with total demand at over 111.7 mb/d in 2040. Demand growth is driven by non-OECD regions, which see a huge increase of around 23 mb/d to 2040.

The total vehicle fleet – including passenger and commercial vehicles – is projected to increase to around 2.4 billion in 2040. The majority of the growth continues to be for conventional vehicles, but the long-term share of electric vehicles in the total fleet is projected to expand and reach a level of around 13% in 2040, supported by falling battery costs and policy support.

There is no expectation for peak oil demand over the forecast period to 2040. Long-term demand growth comes mainly from the petrochemicals (4.5 mb/d), road transportation (4.1 mb/d) and aviation (2.7 mb/d) sectors. The share of OPEC crude in the global oil supply is estimated to increase from 34% in 2017 to 36% in 2040.

Global refinery additions are projected mainly in developing regions, led by the Asia-Pacific and the Middle East, but also Africa and Latin America.

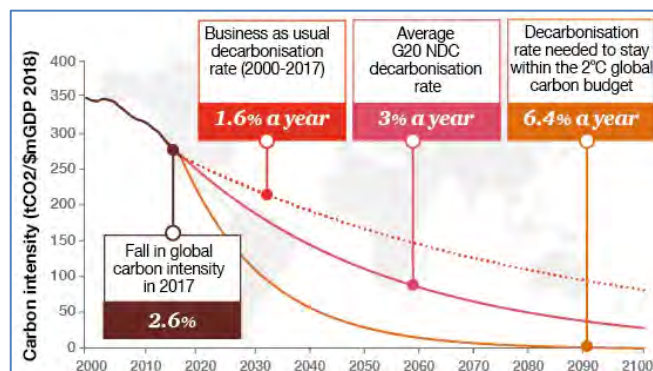
Fast evolving trade patterns for crude oil and refined products will continue to evolve, driven initially by additional flows from the USA and Canada, and in the long-term by the Middle East, mostly attributed to increasing imports to the Asia-Pacific.

The OPEC World Oil Outlook is at <https://woo.opec.org/index.html>.

PWC Report on Low Carbon Economy Index

On 4 October 2018, financial services firm PWC issued its annual analysis of the transition to a low carbon economy.

In 2017, global Gross Domestic Product (GDP) grew by 3.8%, largely due to rapid growth in emerging economies such as China and India. This economic growth went hand in hand with a rise in global energy demand of 2.1%; more than twice the rate in 2016. As most of the increased energy demand was met with fossil fuels, global emissions are now on the rise again – by 1.1% – having plateaued for the past three years.



Carbon intensity continued to fall at a rate consistent with the previous few years, at 2.6%. But even this falls short of the 3% average decarbonisation rate needed to meet the national targets pledged in the 2015 Paris Agreement. The gap between the current decarbonisation rate and that needed to limit global warming to 2°C is widening. It is now 6.4% per year for the rest of this century.

There seems to be almost zero chance of limiting warming to well below 2°C (the main goal of the Paris Agreement), though widespread use of carbon capture and storage technologies may make this possible, PWC concludes.

The PWC report is at www.pwc.co.uk/sustainability-climate-change/assets/pdf/low-carbon-economy-index-2018-final.pdf.

RESEARCH SUMMARY

Effects of Emissions and Pollution

Non-atopic eczema in elderly women – Impact of air pollution and genes, Anke Hüls, et al.; *Journal of Allergy and Clinical Immunology* (in press), doi: 10.1016/j.jaci.2018.09.031.

The impacts of pollution control measures on PM_{2.5} reduction: Insights of chemical composition, source variation and health risk, Huang Zheng, et al.; *Atmospheric Environment* (15 January 2019), Vol. 197, pp. 103-117, doi: [10.1016/j.atmosenv.2018.10.023](https://doi.org/10.1016/j.atmosenv.2018.10.023).

Air pollution, student health, and school absences: Evidence from China, Siyu Chen, et al.; *Journal of Environmental Economics and Management* (in press), doi: [10.1016/j.jeem.2018.10.002](https://doi.org/10.1016/j.jeem.2018.10.002).

Long-term exposure to low concentrations of air pollutants and hospitalisation for respiratory diseases: A prospective cohort study in Australia, Farhad Salimi, et al.; *Environment International* (December 2018), Vol. 121 Part 1, pp. 415-420, doi: [10.1016/j.envint.2018.08.050](https://doi.org/10.1016/j.envint.2018.08.050).

The association of traffic-related air and noise pollution with maternal blood pressure and hypertensive disorders of pregnancy in the HOME study cohort, Clara Sears, et al.; *Environment International* (December 2018), Vol. 121, Part 1, pp. 574-581, doi: [10.1016/j.envint.2018.09.049](https://doi.org/10.1016/j.envint.2018.09.049).

Short-term exposure to air pollution: Associations with lung function and inflammatory markers in non-smoking, healthy adults, Luc Dauchet, et al.; *Environment International* (December 2018), Vol. 121, Part 1, pp. 610-619, doi: [10.1016/j.envint.2018.09.036](https://doi.org/10.1016/j.envint.2018.09.036).

Multiple pregnancies and air pollution in moderately polluted cities: Is there an association between air pollution and fetal growth? Anne-Sophie Mariet, et al.; *Environment International* (December 2018), Vol. 121, Part 1, pp. 890-897, doi: [10.1016/j.envint.2018.10.015](https://doi.org/10.1016/j.envint.2018.10.015).

Socioeconomic inequalities in urban and transport planning related exposures and mortality: A health impact assessment study for Bradford, UK, Natalie Mueller, et al.; *Environment International* (December 2018), Vol. 121, Part 1, pp. 931-941, doi: [10.1016/j.envint.2018.10.017](https://doi.org/10.1016/j.envint.2018.10.017).

Long term effect of air pollution on incident hospital admissions: Results from the Italian Longitudinal Study within LIFE MED HISS project, M. Gandini, et al.; *Environment International* (in press), doi: [10.1016/j.envint.2018.10.020](https://doi.org/10.1016/j.envint.2018.10.020).

Estimation of PM_{2.5} mortality burden in China with new exposure estimation and local concentration-response function, Jin Li, et al.; *Environmental Pollution* (December 2018), Vol. 243 Part B, pp. 1710-1718, doi: [10.1016/j.envpol.2018.09.089](https://doi.org/10.1016/j.envpol.2018.09.089).

The association between short-term ambient air pollution and daily outpatient visits for schizophrenia: A hospital-based study, Zhen Liang, et al.; *Environmental Pollution* (January 2019), Vol. 244, pp. 102-108, doi: [10.1016/j.envpol.2018.09.142](https://doi.org/10.1016/j.envpol.2018.09.142).

Association between ambient air pollution and Parkinson's disease: systematic review and meta-analysis, Cheng-Yang Hu, et al.; *Environmental Research* (January 2019), Vol. 168, pp. 448-459, doi: [10.1016/j.envres.2018.10.008](https://doi.org/10.1016/j.envres.2018.10.008).

Association between fine particulate matter and oral cancer among Taiwanese men, Yu-Hua Chu, et al.; *Journal of Investigative Medicine* (in press), doi: [10.1136/jim-2016-000263](https://doi.org/10.1136/jim-2016-000263).

Association of Prenatal Exposure to Ambient and Traffic-Related Air Pollution With Newborn Thyroid Function, Caitlin Howe, et al.; *JAMA Network Open* (2018), Vol. 1 (5) : e182172, doi: [10.1001/jamanetworkopen.2018.2172](https://doi.org/10.1001/jamanetworkopen.2018.2172).

Short-term effects of fine particulate matter and ozone on the cardiac conduction system in patients undergoing cardiac catheterization, Siqi Zhang, et al.; *Particle and Fibre Toxicology* (2018), Vol. 15:38, doi: [10.1186/s12989-018-0275-z](https://doi.org/10.1186/s12989-018-0275-z).

Genotoxic and epigenotoxic effects in mice exposed to concentrated ambient fine particulate matter (PM_{2.5}) from São Paulo city, Brazil, Antonio de Oliveira, et al.; *Particle and Fibre Toxicology* (2018), Vol. 15:40, doi: [10.1186/s12989-018-0276-y](https://doi.org/10.1186/s12989-018-0276-y).

Pollution and children's health, Philip Landrigan, et al.; *Science of The Total Environment* (February 2019), Vol. 650, Part 2, pp. 2389-2394, doi: [10.1016/j.scitotenv.2018.09.375](https://doi.org/10.1016/j.scitotenv.2018.09.375).

Monetized health benefits attributable to mobile source emission reductions across the United States in 2025, Philip Wolfe, et al.; *Science of The Total Environment* (February 2019), Vol. 650, Part 2, pp. 2490-2498, doi: [10.1016/j.scitotenv.2018.09.273](https://doi.org/10.1016/j.scitotenv.2018.09.273).

Investigating the effects of multiple exposure measures to traffic-related air pollution on the risk of breast and prostate cancer, Maryam Shekarrizfard, et al.; *Journal of Transport & Health* (December 2018), Vol. 11, pp. 34-46, doi: [10.1016/j.jth.2018.09.006](https://doi.org/10.1016/j.jth.2018.09.006).

Air Quality, Sources and Exposure

Continuous monitoring, compositions analysis and the implication of regional transport for submicron and fine aerosols in Beijing, China, Hanyu Zhang, et al.; *Atmospheric Environment* (December 2018), Vol. 195, pp. 30-45, doi: [10.1016/j.atmosenv.2018.09.043](https://doi.org/10.1016/j.atmosenv.2018.09.043).

Investigating impact of emission inventories on PM_{2.5} simulations over North China Plain by WRF-Chem, Xiaoyan Ma, et al.; *Atmospheric Environment* (December 2018), Vol. 195, pp. 125-140, doi: [10.1016/j.atmosenv.2018.09.058](https://doi.org/10.1016/j.atmosenv.2018.09.058).

Magnetic biomonitoring with moss bags to assess stop-and-go traffic induced particulate matter and heavy metal concentrations, Jukka Limo, et al.; *Atmospheric Environment* (December 2018), Vol. 195, pp. 187-195, doi: [10.1016/j.atmosenv.2018.09.062](https://doi.org/10.1016/j.atmosenv.2018.09.062).

A study of model night time ozone bias in air quality modelling, Xiangshang Li, et al.; *Atmospheric Environment* (December 2018), Vol. 195 pp. 210-228, doi: [10.1016/j.atmosenv.2018.09.046](https://doi.org/10.1016/j.atmosenv.2018.09.046).

Temporal and spatial variability of traffic-related PM_{2.5} sources: Comparison of exhaust and non-exhaust emissions, Cheol-Heon Jeong, et al.; *Atmospheric Environment* (1 February 2019), Vol. 198, pp. 55-69, doi: [10.1016/j.atmosenv.2018.10.038](https://doi.org/10.1016/j.atmosenv.2018.10.038).

Evaluation of vehicle emission in Yunnan province from 2003 to 2015, Wendai Lv, et al.; *Journal of Cleaner Production* (January 2019), Vol. 207, pp. 814-825, doi: [10.1016/j.jclepro.2018.09.227](https://doi.org/10.1016/j.jclepro.2018.09.227).

Reduction measures for air pollutants and greenhouse gas in the transportation sector: A cost-benefit analysis, Yong-Hong Liu, et al.; *Journal of Cleaner Production* (January 2019), Vol. 207, pp. 1023-1032, doi: [10.1016/j.jclepro.2018.10.094](https://doi.org/10.1016/j.jclepro.2018.10.094).

Policy norms and proposed ways to achieve goals of Indian vehicle emission program, Rutvik Lathia and Sujal Dadhaniya; *Journal of Cleaner Production* (January 2019), Vol. 208, pp. 1339-1346, doi: [10.1016/j.jclepro.2018.10.202](https://doi.org/10.1016/j.jclepro.2018.10.202).

Influential factors of public intention to improve the air quality in China, Bitian Fu, et al.; *Journal of Cleaner Production* (in press), doi: [10.1016/j.jclepro.2018.10.192](https://doi.org/10.1016/j.jclepro.2018.10.192).

Landscape pattern as an indicator of urban air pollution of particulate matter in Poland, Damian Łowicki, et al.; *Ecological Indicators* (February 2019), Vol. 97, pp. 17-24, doi: [10.1016/j.ecolind.2018.09.050](https://doi.org/10.1016/j.ecolind.2018.09.050).

Six sources mainly contributing to the haze episodes and health risk assessment of PM_{2.5} at Beijing suburb in winter 2016, Xianmang Xu, et al.; *Ecotoxicology and Environmental Safety* (December 2018), Vol. 166, pp. 146-156, doi: [10.1016/j.ecoenv.2018.09.069](https://doi.org/10.1016/j.ecoenv.2018.09.069).

Considering future regional air quality impacts of the transportation sector, Michael MacKinnon, et al.; *Energy Policy* (January 2019), Vol. 124, pp. 63-80, doi: [10.1016/j.enpol.2018.09.011](https://doi.org/10.1016/j.enpol.2018.09.011).

Blue skies in the making: Air quality action plans and urban imaginaries in London, Hong Kong, and San Francisco, Patrick Gross, *Energy Research & Social Science* (February 2019), Vol. 48, pp. 85-95, doi: [10.1016/j.erss.2018.09.019](https://doi.org/10.1016/j.erss.2018.09.019).

The influence of residential and workday population mobility on exposure to air pollution in the UK, Stefan Reis, et al.; *Environment International* (December 2018), Vol. 121, Part 1, pp. 803-813, doi: [10.1016/j.envint.2018.10.005](https://doi.org/10.1016/j.envint.2018.10.005).

Global Sources of Fine Particulate Matter: Interpretation of PM_{2.5} Chemical Composition Observed by SPARTAN using a Global Chemical Transport Model, Crystal Weagle, et al.; *Environ. Sci. Technol.* (2018), Vol. 52 (20), pp. 11670-11681, doi: [10.1021/acs.est.8b01658](https://doi.org/10.1021/acs.est.8b01658).

Satellite-based land-use regression for continental-scale long-term ambient PM_{2.5} exposure assessment in Australia, Luke Knibbs, et al.; *Environ. Sci. Technol.* (in press), doi: [10.1021/acs.est.8b02328](https://doi.org/10.1021/acs.est.8b02328).

PM_{2.5} source apportionment for the port city of Thessaloniki, Greece, Dikaia Saraga, et al.; *Science of The Total Environment* (February

2019), Vol. 650, Part 2, pp. 2337-2354, [doi: 10.1016/j.scitotenv.2018.09.250](https://doi.org/10.1016/j.scitotenv.2018.09.250).

How parked cars affect pollutant dispersion at street level in an urban street canyon? A CFD modelling exercise assessing geometrical detailing and pollutant decay rates, J. Gallagher and C. Lago; *Science of The Total Environment* (February 2019), Vol. 651, Part 2, pp. 2410-2418, [doi: 10.1016/j.scitotenv.2018.10.135](https://doi.org/10.1016/j.scitotenv.2018.10.135).

PM_{2.5} concentration and composition in the urban air of Nanjing, China: Effects of emission control measures applied during the 2014 Youth Olympic Games, Mirella Miettinen, et al.; *Science of The Total Environment* (February 2019), Vol. 652, pp. 1-18, [doi: 10.1016/j.scitotenv.2018.10.191](https://doi.org/10.1016/j.scitotenv.2018.10.191).

Emissions Measurements and Modelling

Impact of road grade on real driving emissions from two Euro 5 diesel vehicles, Maria Costagliola, et al.; *Applied Energy* (December 2018), Vol. 231, pp. 586-593, [doi: 10.1016/j.apenergy.2018.09.108](https://doi.org/10.1016/j.apenergy.2018.09.108).

Design and rapid prototyping of a closed-loop control strategy of the injected mass for the reduction of CO₂, combustion noise and pollutant emissions in diesel engines, A. Ferrari, et al.; *Applied Energy* (December 2018), Vol. 232, pp. 358-367, [doi: 10.1016/j.apenergy.2018.09.028](https://doi.org/10.1016/j.apenergy.2018.09.028).

Effects of injector spray angle on combustion and emissions characteristics of a natural gas (NG)-diesel dual fuel engine based on CFD coupled with reduced chemical kinetic model, Jun Shu, et al.; *Applied Energy* (January 2019), Vol. 233-234, pp. 182-195, [doi: 10.1016/j.apenergy.2018.10.040](https://doi.org/10.1016/j.apenergy.2018.10.040).

On-road measurements and modelling of vehicular emissions during traffic interruption and congestion events in an urban traffic corridor, Arti Choudhary and Sharad Gokhale; *Atmospheric Pollution Research* (in press), [doi: 10.1016/j.apr.2018.09.008](https://doi.org/10.1016/j.apr.2018.09.008).

Comparative studies on combustion, performance and emission characteristics of a two-wheeler with gasoline and 30% ethanol-gasoline blend using chassis dynamometer, P. Sakthivel, et al.; *Applied Thermal Engineering* (January 2019), Vol. 146, pp. 726-737, [doi: 10.1016/j.applthermaleng.2018.10.035](https://doi.org/10.1016/j.applthermaleng.2018.10.035).

Experimental investigation of a compression ignition engine operating on B7 direct injected and hydrous ethanol fumigation, Giovanni Telli, et al.; *Energy* (December 2018), Vol. 165, Part 2, pp. 106-117, [doi: 10.1016/j.energy.2018.09.171](https://doi.org/10.1016/j.energy.2018.09.171).

Combined effect of inlet pressure, total cycle energy, and start of injection on low load reactivity controlled compression ignition combustion and emission characteristics in a multi-cylinder heavy-duty engine fueled with gasoline/diesel, Weiqiang Han, et al.; *Energy* (December 2018), Vol. 165, Part 2, pp. 846-858, [doi: 10.1016/j.energy.2018.10.029](https://doi.org/10.1016/j.energy.2018.10.029).

Occurrence of organic phosphates in particulate matter of the vehicle exhausts and outdoor environment – A case study, Monika Fabiańska, et al.; *Environmental Pollution* (January 2019), Vol. 244, pp. 351-360, [doi: 10.1016/j.envpol.2018.10.060](https://doi.org/10.1016/j.envpol.2018.10.060).

Effect of injection strategies on particulate matter structures of a turbocharged GDI engine, Marco Potenza, et al.; *Fuel* (February 2019), Vol. 237, pp. 413-428, [doi: 10.1016/j.fuel.2018.09.130](https://doi.org/10.1016/j.fuel.2018.09.130).

Combustion performance and pollutant emissions analysis of a diesel engine fueled with biodiesel and its blend with 2-methylfuran, Helin Xiao, et al.; *Fuel* (February 2019), Vol. 237, pp. 1050-1056, [doi: 10.1016/j.fuel.2018.09.146](https://doi.org/10.1016/j.fuel.2018.09.146).

Analysis of real driving gaseous emissions from light-duty diesel vehicles, Hwan Chong, et al.; *Transportation Research Part D: Transport and Environment* (December 2018), Vol. 65, pp. 485-499, [doi: 10.1016/j.trd.2018.09.015](https://doi.org/10.1016/j.trd.2018.09.015).

Emissions Control, Catalysis, Filtration

Catalytic reduction of NO by CO over B-site partially substituted LaM_{0.25}Co_{0.75}O₃ (M=Cu, Mn, Fe) perovskite oxide catalysts: The correlation between physicochemical properties and catalytic performance, Yaohui Wu, et al.; *Applied Catalysis A: General*

(November 2018), Vol. 568, pp. 43-53, [doi: 10.1016/j.apcata.2018.09.022](https://doi.org/10.1016/j.apcata.2018.09.022).

Steady State and Lean-Rich Cycling Study of a Three-Way NOx Storage Catalyst: Modeling, Mengmeng Li, et al.; *Applied Catalysis B: Environmental* (March 2019), Vol. 242, pp. 469-484, [doi: 10.1016/j.apcatb.2018.09.094](https://doi.org/10.1016/j.apcatb.2018.09.094).

Promoting Diesel Soot Combustion Efficiency by Tailoring the Shapes and Crystal Facets of Nanoscale Mn₃O₄, Fei Ji, et al.; *Applied Catalysis B: Environmental* (March 2019), Vol. 242, pp. 227-237, [doi: 10.1016/j.apcatb.2018.09.092](https://doi.org/10.1016/j.apcatb.2018.09.092).

A novel insight into the preparation method of Pd/Ce_{0.75}Zr_{0.25}O₂-Al₂O₃ over high-stability close coupled catalysts, Min Sun, et al.; *Applied Surface Science* (15 February 2019), Vol. 467-468, pp. 723-739, [doi: 10.1016/j.apsusc.2018.10.190](https://doi.org/10.1016/j.apsusc.2018.10.190).

In-Use Performance and Durability of Particle Filters on Heavy-Duty Diesel Trucks, Chelsea Preble, et al.; *Environ. Sci. Technol.* (2018), Vol. 52 (20), pp. 11913-11921, [doi: 10.1021/acs.est.8b02977](https://doi.org/10.1021/acs.est.8b02977).

Ce doping to Cu-SAPO-18: Enhanced catalytic performance for the NH₃-SCR of NO in simulated diesel exhaust, Shuai Han, et al.; *Microporous and Mesoporous Materials* (March 2019), Vol. 276, pp. 133-146, [doi: 10.1016/j.micromeso.2018.09.027](https://doi.org/10.1016/j.micromeso.2018.09.027).

Transport, Climate Change & Emissions

Comparison of light-duty transportation fuels produced from renewable hydrogen and green carbon dioxide, Dominik Bongartz, et al.; *Applied Energy* (December 2018), Vol. 231, pp. 757-767, [doi: 10.1016/j.apenergy.2018.09.106](https://doi.org/10.1016/j.apenergy.2018.09.106).

Modelling road transport technologies in future scenarios: Theoretical comparison and application of Well-to-Wheels and Input-Output analyses, Matteo Rocco, et al.; *Applied Energy* (December 2018), Vol. 232, pp. 583-597, [doi: 10.1016/j.apenergy.2018.09.222](https://doi.org/10.1016/j.apenergy.2018.09.222).

European-wide study on big data for supporting road transport policy, Elena Paffumi, et al.; *Case Studies on Transport Policy* (in press), [doi: 10.1016/j.cstp.2018.10.001](https://doi.org/10.1016/j.cstp.2018.10.001).

A review of China's road traffic carbon emissions, Linling Zhang, et al.; *Journal of Cleaner Production* (10 January 2019), Vol. 207, pp. 569-581, [doi: 10.1016/j.jclepro.2018.10.003](https://doi.org/10.1016/j.jclepro.2018.10.003).

The role of vehicle lifetime extensions of countries on global CO₂ emissions, Yuya Nakamoto, et al.; *Journal of Cleaner Production* (10 January 2019), Vol. 207, pp. 1040-1046, [doi: 10.1016/j.jclepro.2018.10.054](https://doi.org/10.1016/j.jclepro.2018.10.054).

Biofuels journey in Europe: Currently the way to low carbon economy sustainability is still a challenge, Sophia Darda, et al.; *Journal of Cleaner Production* (20 January 2019), Vol. 208, pp. 575-588, [doi: 10.1016/j.jclepro.2018.10.147](https://doi.org/10.1016/j.jclepro.2018.10.147).

Impact of bus electrification on carbon emissions: the case of Stockholm, Maria Xylia, et al.; *Journal of Cleaner Production* (1 February 2019), Vol. 209, pp. 74-87, [doi: 10.1016/j.jclepro.2018.10.085](https://doi.org/10.1016/j.jclepro.2018.10.085).

Driving for decarbonization: Assessing the energy, environmental, and economic benefits of less aggressive driving in Lisbon, Portugal, Marta Faria, et al.; *Energy Research & Social Science* (January 2019), Vol. 47, pp. 113-127, [doi: 10.1016/j.erss.2018.09.006](https://doi.org/10.1016/j.erss.2018.09.006).

Public responses to an environmental transport policy in Sweden: Differentiating between acceptance and support for conventional and alternative fuel vehicles, Johan Jansson and Zeinab Rezvani; *Energy Research & Social Science* (February 2019), Vol. 48, pp. 13-21, [doi: 10.1016/j.erss.2018.09.009](https://doi.org/10.1016/j.erss.2018.09.009).

A Review on Energy, Environmental, and Sustainability Implications of Connected and Automated Vehicles, Morteza Taiebat, et al.; *Environ. Sci. Technol.* (2018), Vol. 52 (20), pp. 11449-11465, [doi: 10.1021/acs.est.8b00127](https://doi.org/10.1021/acs.est.8b00127).

Methanol as a fuel for internal combustion engines, Sebastian Verhelst, et al.; *Progress in Energy and Combustion Science* (January 2019), Vol. 70, pp. 43-88, [doi: 10.1016/j.peccs.2018.10.001](https://doi.org/10.1016/j.peccs.2018.10.001).

Life cycle environmental impacts and carbon emissions: A case study of electric and gasoline vehicles in China, Ang Yu, et al.; *Transportation Research Part D: Transport and Environment*

(December 2018), Vol. 65, pp. 409-420,
[doi: 10.1016/j.trd.2018.09.009](https://doi.org/10.1016/j.trd.2018.09.009).

Emission rates of intermodal rail/road and road-only transportation in Europe: A comprehensive simulation study, Arne Heinold and Frank Meisel, *Transportation Research Part D: Transport and Environment* (December 2018), Vol. 65, pp. 421-437,
[doi: 10.1016/j.trd.2018.09.003](https://doi.org/10.1016/j.trd.2018.09.003).

Modelling energy consumption of electric freight vehicles in urban pickup/delivery operations: analysis and estimation on a real-world

dataset, Chiara Fiori and Vittorio Marzano; *Transportation Research Part D: Transport and Environment* (December 2018), Vol. 65, pp. 658-673, [doi: 10.1016/j.trd.2018.09.020](https://doi.org/10.1016/j.trd.2018.09.020).

Reaching 30% plug-in vehicle sales by 2030: Modeling incentive and sales mandate strategies in Canada, Jonn Axsen and Michael Wolinetz; *Transportation Research Part D: Transport and Environment* (December 2018), Vol. 65, pp. 596-617,
[doi: 10.1016/j.trd.2018.09.012](https://doi.org/10.1016/j.trd.2018.09.012).

FORTHCOMING CONFERENCES

Ricardo Motorcycle Conference 5.0

5 November 2018, Milan, Italy

<https://motorcycle.ricardo.com/motorcycle-conference>

A niche annual event that brings together leading global motorcycle industry experts to discuss new technologies and future drivers within the motorcycle and urban mobility arenas.

Integer Emissions Summit USA 2018

6-7 November 2018, Indianapolis, USA

www.integer-research.com/conferences/ies-usa-2018/

16th FAD-Conference "Challenge – Exhaust Aftertreatment for Diesel Engines"

7-8 November 2018, Dresden, Germany

<https://fad-diesel.de/event/16-fad-konferenz-herausforderung-abgasnachbehandlung-fuer-dieselmotoren/>

2nd International FEV Conference Zero CO₂ Mobility

13-14 November 2018, Aachen, Germany

www.fev.com/coming-up/fev-conferences/fev-conference-zero-co2-mobility/introduction.html

The conference will offer a platform for strategic discussion on the potential and performance of various forms of energy storage – from battery technologies to eco- and e-fuels.

10th Better Air Quality Conference

14-16 November 2018, Kuching, Malaysia

<http://baq2018.org>

The 10th Better Air Quality (BAQ) is themed, Regional Action, Global Impact. It is organized by Clean Air Asia, the Clean Air Forum Society of Malaysia (MyCAS), Malaysia's Ministry of Natural Resources and Environment, and the Natural Resources and Environment Board of Sarawak.

2018 Polis Conference on "Transport innovation for sustainable cities and regions"

22-23 November 2018, Manchester, UK

www.polisnetwork.eu/2018conference

AECC will give a presentation on Modern, Real-Driving Emissions (RDE)-compliant cars: Key to improving urban air quality

4th Annual Automotive Exhaust Systems Summit

29-30 November 2018, Düsseldorf, Germany

<http://vonlanthengroup.com/en/events/4th-annual-automotive-exhaust-systems-summit.html>

Key practical learning points of the summit include insights on the best practices and latest innovative technologies for exhaust systems, virtual exhaust development, latest advanced design tools, exhaust sensors, real-time OBD, simulation, exhaust heat recovery system development, future diesel engine exhaust systems and diesel exhaust gas aftertreatment, the role of tomorrow's exhaust systems, future powertrains, and future energy carriers for clean mobility, emissions legislation and future requirements, and exhaust emissions of hybrid vehicles.

4th Annual Future of Transport Conference

4 December 2018, Brussels, Belgium

www.eu-ems.com/summary.asp?event_id=4379&page_id=9766

The conference will focus on the technological innovations revolutionising the transport sector and redefining Europe's mobility systems. Topics discussed will include the pan-European implementation of intelligent transport systems; the development of clean and safe mobility; towards a fully multi-modal transport system; how public service providers are adapting to a digitalised mobility sector; and what should the EU's priorities be in 2019 and beyond?

8th China International Diesel Engine Summit 2018

4-6 December 2018, Beijing, China

www.borscon.com/2018de8/cn/index.html

The summit will cover what is happening in the diesel engine industry in China, with focus on the policies and regulations for efficiency, emission, and fuel consumption which are of the industry's top concern currently, as well as latest technologies, future trends and burgeons of innovative business models.

3rd Annual Real Driving Emissions Forum

19-20 March 2019, Berlin, Germany

www.rde-realdrivingemissions.com

The Forum will showcase the forefront practices and approaches towards RDE and Energy Consumption reduction, compliance with recent update of the legislation on RDE, main automotive technology trends based on cost-and-energy-efficient solutions.

Future Diesel Engine Summit China 2019

27-28 March 2019, Shanghai, China

www.fiveoit.com/desc/#/desc/home

EU Green Week High-Level Summit

15-17 May 2019, Brussels, Belgium

https://ec.europa.eu/info/events/eu-green-week-2019_en

The 2019 EU Green Week will be focusing on the implementation of EU environmental legislation, highlighting the benefit of EU environmental policies and showing their benefits for citizens.

23rd International Transport and Air Pollution (TAP) Conference

15-17 May 2019, Thessaloniki, Greece

www.tapconference.org

The theme of TAP2019 is 2020-2030: Transport in critical transition. Indeed, this decade will determine whether transport systems will succeed in moving ahead, fulfilling their sustainability targets.

Deadline for abstract: 7 November 2018

40th International Vienna Motor Symposium

16-17 May 2019, Vienna, Austria

<https://wiener-motorensymposium.at>

International Conference on Calibration Methods and Automotive Data Analytics

21-22 May 2019, Berlin, Germany

www.iav.com/termine/tagungen/international-calibration-conference

Deadline for abstract: 7 December 2018

SIA Paris 2019 Power Train & Electronics

12-13 June 2018, Port-Marly, France

www.sia.fr/evenements/136-sia-power-train-electronics-2019

To support the automotive industry in the transition towards ever more environmentally friendly mobility, a new automotive event in France named SIA power train & Electronics broadens the scope of the Powertrain Conference to include electric traction technologies, along with internal combustion engines (ICE), low carbon fuels, and transmissions.

28th Aachen Colloquium Automobile and Engine Technology

7-9 October 2019, Aachen, Germany

www.aachener-kolloquium.de

The congress provides a wide range of technical presentations addressing current challenges of the vehicle and engine industry.