MARCH 2019

NEWSLETTER

International Regulatory Developments

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EUROPE

Parliament approves Post-2020 CO_2 Standards for Cars and Vans

On 27 March 2019, The European Parliament approved the provisional agreement struck in December 2018 on the new EU CO_2 emission standards for new passenger cars and new light commercial vehicles.

The agreement foresees that from 2030 onwards new cars will have to emit on average 37.5% less CO_2 (and new vans 31% less CO_2) compared to 2021. In addition, between 2025 and 2029 both cars and vans will be required to emit 15% less CO_2 on average.

The CO_2 reduction among the vehicle manufacturers remains based on the average mass of their vehicle fleet.

A review clause provides for a possible revision of the 2030 targets and for the introduction of binding CO_2 reduction targets for 2035 and 2040 onwards.

The 2025 benchmark for market share of the sales of newly registered Zero- and Low-Emission (<50 g CO_2/km) cars and vans is 15 %, and for 2030 35% for cars and 30% for vans. If a manufacturer meets these benchmarks, it will be rewarded with less strict CO_2 targets.

In 2023 the Commission will have to submit a report on the effectiveness of the Regulation.

MEPs adopted the provisional agreement with 521 votes in favour, 63 votes against and 34 abstentions.

The agreement can now be formally adopted by the Council before publication in the Official Journal.

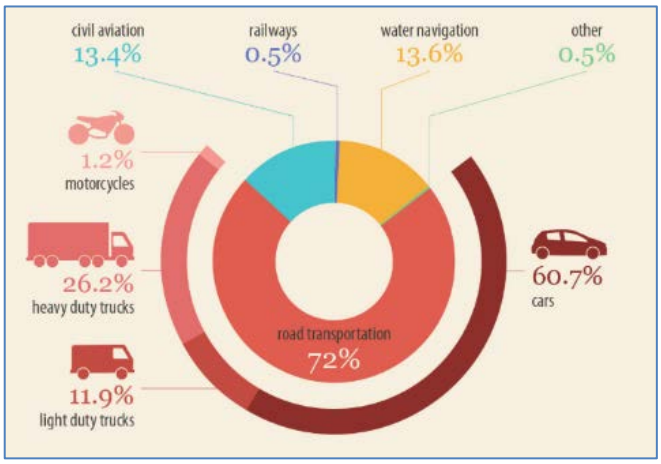
The approved agreement is at www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2019-0304+0+DOC+PDF+V0//EN.

Parliament Infographics on CO_2 Emissions from Cars

On 22 March 2019, ahead of the plenary vote on the post-2020 CO_2 standards for cars and vans, the European Parliament released some infographics illustrating facts and figures on CO_2 emissions from cars.

Transport is responsible for nearly 30% of the EU's total CO_2 emissions, of which 72% comes from road transport. As part of efforts to reduce CO_2 emissions, the EU has set a goal of reducing emissions from transport by 60% by 2050 compared to 1990 levels.

CO_2 emissions from passenger transport vary significantly depending on the transport mode. Passenger cars are a major polluter, accounting for 60.7% of total CO_2 emissions from EU road transport.

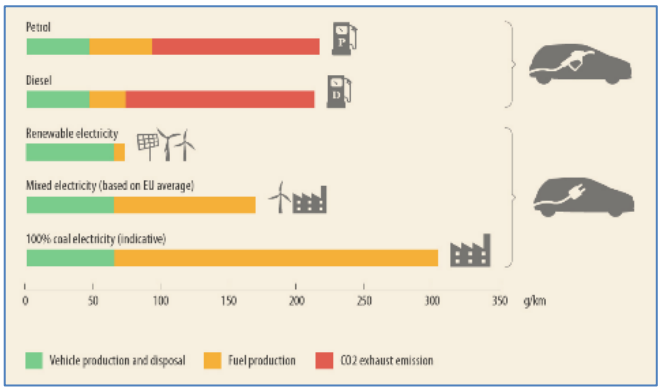


Transport CO_2 emissions in the EU – Emissions breakdown by transport mode (2016)

However, cars can be among the cleanest modes of transport if they carry at least four people, with only a train emitting less CO_2 per person travelling. With an average of 1.5 people per car in Europe, other modes of transport, such as buses, are currently a cleaner alternative.

There are two ways to reduce CO_2 emissions from cars: by making vehicles more efficient or by changing the fuel used. Today, most cars in Europe use petrol (52%); however, electric cars are gaining traction.

The production and disposal of an electric car is less environmentally friendly than a car with an internal combustion engine and the level of emissions from electric vehicles varies depending on how the electricity is produced. However, taking into account the average energy mix in Europe, electric cars are already proving to be cleaner than vehicles running on petrol. As the share of electricity from renewable sources is set to increase in the future, electric cars will become even less harmful for the environment.



Transport CO_2 emissions in the EU – Range of lifecycle CO_2 emissions for different vehicle and fuel types (2014)

The Parliament's infographics are at www.europarl.europa.eu/news/en/headlines/society/20190313STO31218/co2-emissions-from-cars-facts-and-figures-infographics.

Commission updates Automotive Unit Work Programme for 2019-2020

On 12 March 2019, the European Commission (EC) released an updated work programme for the automotive unit in the DG GROW.

It mentions that the EC will adopt in Q2 of 2019 a co-decision proposal to amend the Euro 6 Regulation. It results from the General Court ruling in December 2018 that annulled part of Regulation (EU) 2016/646 which established the conformity factors to progressively reduce the discrepancy between emissions measured in real driving and those measured in a laboratory. The Court finds that only the legislator itself could have introduced the conformity factors as they touch upon an essential element of the Euro 6 Regulation (EC) 715/2007.

According to the EC, the Court does not question the technical justification of the conformity factors. Therefore, and given that the current technological development still entails a discrepancy between emissions measured in real driving and those measured in a laboratory, it is appropriate to reintroduce the conformity factors as set out in Regulation (EC) No 692/2008 as amended by Regulation (EU) 2016/646.

In parallel, RDE package 5 combined with WLTP package 3 will be adopted. It will revise Regulation (EU) 2017/1151 and delete the RDE conformity factors as ruled by the General Court and make some final technical amendments of RDE. The latest changes of the UNECE GTR 15 Amendment 5 and some EU specific amendments of Regulation (EU) 2017/1151 for WLTP will also be updated. The Technical Committee Motor Vehicle (TCMV) is expected to adopt the proposal in Q3 of 2019 so that it can be adopted by the EC by the end of 2019.

When it comes to heavy-duty Euro VI, an update of Regulation 582/2011 with the introduction of a PEMS PN procedure and the inclusion of the cold-start during on-road measurements is scheduled for a vote in TCMV in June 2019 with adoption by EC in Q3 of 2019.

Finally, the EC work programme indicates that a working group on the development of post Euro 6/VI emission standards for light- and heavy-duty vehicles will start its work in mid-2019 with the objective of developing the technical work for these standards. The group will be assisted by two relevant studies. A technical proposal is foreseen in Q4 of 2020 while an EC proposal is targeted in early 2021.

The updated work programme is at https://circabc.europa.eu/ui/group/4273d650-b8a9-4093-ac03-18854fbba4b5/library/cb58acf6-0586-4067-86b9-7f12b562bc45/details.

Commission awards Post-Euro 6/VI Study to Emisia-led Consortium

On 29 March 2019, Emisia announced in its Newsletter that the CLOVE consortium was recently awarded a contract by the European Commission's DG GROW for the study on post-Euro 6/VI emission standards in Europe.

The CLOVE consortium is led by Emisia (Greece) and includes the Laboratory of Applied Thermodynamics (LAT) of the Aristotle University of Thessaloniki (Greece), TNO (the Netherlands), the Technical University of Graz (Austria), Ricardo (UK), FEV (Germany) and TÜV Nord (Germany) as key partners.

The scope of the study is to review the current regulatory framework for vehicle emission standards in Europe and identify areas, particularly in terms of testing protocols, that improvements may be brought.

Parliament Resolution on Recent Developments in 'Dieselgate' Scandal

On 28 March 2019, the European Parliament (EP) adopted at its plenary session a resolution on recent developments in the 'dieselgate' scandal.

The non-binding resolution urges EU countries to recall and withdraw the large number of polluting cars still on the road. The Parliament is concerned that the issue remains largely unsolved. For instance, the EP regrets the fact that the exchange programme and hardware retrofit requirements for German car manufacturers in Germany are not applied outside of Germany or to other car manufacturers in the EU. The EP calls on Member States and car manufacturers to coordinate mandatory hardware retrofits for non-compliant diesel vehicles, including SCR hardware retrofits, to cut NO_2 emissions and clean up the existing fleet, considering that the cost of these retrofits should be borne by the car manufacturer responsible.

The EP also calls on the Commission to proceed with the infringement procedures against Luxembourg, Germany, the UK and Italy, given that these procedures were launched more than two years ago, and to issue reasoned opinions.

The Parliament also regrets that the Commission has not submitted a comprehensive report addressing both the conclusions (in particular on the cases of maladministration and contravention of EU law) and the recommendations of the inquiry Committee on Emission Measurements in the Automotive Sector (EMIS). The EP calls on the Commission to immediately send them a comprehensive report, approved by the whole College of Commissioners, as required by Parliament in its resolution. The EP considers that the Commission should draw clear political

conclusions on the basis of the conclusions of the EMIS Committee.

The EP welcomes the Court of Justice ruling of 13 December 2018, which concluded that the Commission had no power to amend, as part of the second RDE package, the NOx emissions limits set by the Euro 6 standard; it notes that the Court also concluded that the Commission failed to provide a sufficient technical explanation for the need to adjust the NOx emissions limits with the introduction of conformity factors and considers that the NOx emissions limits set by the Euro 6 standard are to be met under normal conditions of use and that the responsibility of the Commission is to design RDE tests so that they reflect real-world emissions. In that context, the Parliament regrets the decision of the Commission to appeal the judgment and asks the Commission to reverse its decision.

The resolution was adopted with 301 votes in favour, 181 against and 42 abstentions.

The Parliament resolution is at www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2019-0329+0+DOC+PDF+V0//EN.

EC Roadmap towards Clean Vehicles

On 18 March 2019, during the Automotive Industry Forum organised by the Romanian Presidency in Craiova, Romania, European Commissioner for the Internal Market, Industry, Entrepreneurship and SMEs Ms Elżbieta Bieńkowska handed over a roadmap towards clean vehicles to Mr Niculae Bădălău, Minister for Economy of Romania, representing the Presidency of the Council.

The roadmap, which the Commission has worked on jointly with national experts, lays out actions that Commission, EU countries and industry should take to realise a full shift to clean cars. The Juncker Commission has led the transition to low and zero-emission mobility. Three major legislative packages called 'Europe on the Move' and different measures to support alternative fuels, battery production and connected and automated driving build the core of the Commission efforts.

The objective of this roadmap defines various action areas including: the efficient implementation of new type-approval rules and emissions tests developed and proposed by the Commission; a quick delivery on the recalls of non-compliant cars; the creation of a cleaner car fleet by means of retrofitting; and improved consumer information and protection.

The Commission will work on the implementation of the roadmap with EU Member States. The Competitiveness Council at the end of May 2019 will offer a platform for EU countries to exchange views about the roadmap at political level.

The EC roadmap is at https://ec.europa.eu/growth/content/clean-mobility-commission-hands-roadmap-towards-clean-vehicles-over-council-presidency_en.

Commission replies to MEP Question on NO_2 Monitoring Stations and Limit

On 11 March 2019, Environment Commissioner Karmenu Vella replied to a written question by MEP Gesine Meissner (ALDE, Germany) on NO_2 monitoring stations and the European ambient air limit for NO_2.

According to the European Commission, the Ambient Air Quality Directives contain provisions on the macroscale and microscale siting of sampling points for the measurement of air quality. Accordingly, sampling points directed at the protection of human health shall be located in such a way that they provide data on the areas where the highest concentrations occur to which the population is likely to be exposed for a significant period. The provisions of the directives apply equally to all Member States. Where there is evidence that the monitoring and reporting is not done properly, the European Commission addresses this, including in infringement procedures.

The European Commission is currently assessing the Ambient Air Quality Directives as part of a Fitness Check. In this context, it also examines whether the limit values are set at a sufficiently stringent level which contributes to achieving the health and environmental objectives of air quality policy. The Fitness Check will be completed by the end of 2019 and its results will feed into the European Commission's reflections on whether the directives need to be revised or not.

Finally, the current EU limit value for NO_2 is based on the air quality guidelines by the World Health Organisation (WHO), which recommends an annual average NO_2 limit of 40 µg/m³. The WHO in 2013 carried out a complete and detailed review of evidence on health aspects of air pollution and confirmed that NO_2 negatively affects human health already at the concentration levels indicated by the WHO guidelines.

The Commission reply is at www.europarl.europa.eu/doceo/document/P-8-2019-000613-ASW_EN.html.

Parliament Study on Sampling Points for Air Quality Monitoring

On 18 March 2019, the European Parliament released a study prepared for the Environment Committee on sampling points for air quality and the representativeness and comparability of measurement in accordance with the Ambient Air Quality Directive (AAQD) 2008/50/EC.

This study, prepared by the Austrian environment agency (Umweltbundesamt), analyses the criteria for the location of monitoring sites in five Member States (Austria,

Germany, France, Italy and Poland) to identify ambiguous provisions that might lead to different assessments of air pollution exposure.

The AAQD requires a minimum number of monitoring sites per zone, depending on its air pollution levels and population density. In most of the analysed zones, the legal provisions for the minimum number of monitoring sites are fulfilled. However, in some zones $PM_{2.5}$ monitoring sites were missing.

Provisions of the AAQD for macroscale and microscale siting criteria for air quality monitoring sites should ensure representative and consistent monitoring strategies for air pollutants for all zones in Europe. Most of the analysed monitoring stations comply with the siting criteria. In several cases however, nearby trees could obstruct a free air flow.

However, with the exception of Germany, no documentation is available showing if the traffic-orientated monitoring stations cover the areas with the highest concentration per zone. Furthermore, none of the analysed Member States have prepared documentation showing whether monitoring sites reflect the general population exposure.

In most of the analysed Member States, the AAQD was directly transposed into national law, without amendments regarding the number and criteria for monitoring stations. Therefore, the ambiguities of the Directive provisions are also reflected in the national legislation.

The report provides recommendations to be addressed during the review process of the AAQD:

- Development of provisions for the identification of highest concentrations, including regular updates, modelling and/or passive sampling campaigns;
- Clarification of the ambiguities in the provisions regarding the microscale and macroscale siting criteria, as well as the number and distribution of monitoring stations;
- Provisions for the delivery of documentation (and regular update) of monitoring site selection, comprising requirements for a complete, thorough assessment, including modelling;
- Development of definitions for imprecise but crucial concepts, such as the "general population exposure" and provisions for the representativeness of monitoring sites;
- The impact of suggested changes to the provisions regarding monitoring locations should be substantiated by modelling or monitoring exercises;
- The number of $PM_{2.5}$ sites is considerably lower compared to PM_{10}, which does not reflect $PM_{2.5}$'s potential impact on human health. Their required minimum number should therefore be increased.
- Regarding air quality plans, requirements for diesel vehicles could be tightened in some zones, and a general reduction of the overall amount of traffic could be considered.

The Parliament study on AQ monitoring stations is at www.europarl.europa.eu/RegData/etudes/STUD/2019/631055/IPOL_STU(2019)631055_EN.pdf.

Commission takes Italy to Court over Air Pollution

On 7 March 2019, the European Commission decided to refer Italy to the Court of Justice of the EU in two separate cases regarding environment legislation; air pollution and waste water.

The first case concerns air pollution, and a failure to protect citizens against the effects of nitrogen dioxide (NO_2). The Commission is calling on Italy to respect agreed air quality limit values and take appropriate measures to cut pollution levels in ten agglomerations covering around 7 million people. The limit values for NO_2 set out under EU legislation on ambient air quality (Directive 2008/50/EC) had to be met in 2010.

This referral follows similar action against France, Germany, and the UK in May 2018, for similar failures to respect limit values for NO_2, and for failing to take appropriate measures to keep exceedance periods as short as possible.

In May 2018 Italy was also referred to the Court of Justice over persistently high levels of particulate matter (PM_{10}).

More info is at http://europa.eu/rapid/press-release_IP-19-1475_en.htm.

Parliament adopts Motion for a Resolution on Clean Air for All

On 13 March 2019, the European Parliament adopted a motion for a resolution on Clean Air for All, with 446 votes in favour, 146 against and 79 abstentions.

The Motion urges Member States to prioritise the implementation of coordinated actions and policies for improving air quality in urban areas. It points out that there is a need for a holistic approach to air pollution in European cities and calls on the Commission to put forward measures that enable the Member States to comply with the Ambient Air Quality Directive.

Amongst other things, it calls on the Commission to continue reducing NOx emissions of the car fleet by reviewing the conformity factor, as provided for by the second RDE package, annually and in line with technological developments, so as to bring it down to 1 as soon as possible, and by 2021 at the latest.

A number of amendments were rejected, including one urging the Commission to adapt the nitrogen dioxide limit value set in the ambient air quality Directive 2008/50/EC, in order to maintain ambitious clean air targets that do not necessitate the introduction of diesel bans.

The Parliament motion for a resolution is at www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2019-0186+0+DOC+PDF+V0//EN.

EEA Report on Europe's Urban Air Quality

On 18 March 2019, the European Environment Agency (EEA) published a report titled "Europe's urban air quality — re-assessing implementation challenges in cities".

This report analyses the implementation of EU air quality legislation at the urban level and identifies some of the reasons behind persistent air quality problems in Europe's cities. It is produced in cooperation with 10 cities involved in a 2013 Air Implementation Pilot project: Antwerp (Belgium), Berlin (Germany), Dublin (Ireland), Madrid (Spain), Malmö (Sweden), Milan (Italy), Paris (France), Plovdiv (Bulgaria), Prague (Czechia) and Vienna (Austria).

Five years on from the original assessment, the cities involved in the project have all improved their air quality management, particularly in their use of tools and methods to quantify the effects of proposed and implemented measures. In general, there is also an increased understanding of the sources of local air pollution.

Nevertheless, cities report that a number of important challenges remain, including communicating and engaging with citizens on air quality issues, and making the case for new air quality measures, including highlighting co-benefits for health, noise reduction and climate change mitigation and adaptation. The report also shows that achieving policy coherence across administrative and governance levels is challenging, as are efforts to generate political and public support for improving air quality beyond the minimum EU standards.

In the ten cities participating in the project, expanding district heating, promoting cycling, lowering speed limits and issuing congestion charges were the most common measures to improve local air quality. Other common initiatives included relocating industrial facilities, modernising household stoves and boilers, using cleaner fuels for heating, switching to cleaner buses or trams and introducing low-emission transport zones.

The EEA report is at www.eea.europa.eu/publications/europes-urban-air-quality.

EU Transport Scoreboard

On 19 March 2019, the European Commission published the 2019 edition of the 'EU Transport Scoreboard', a benchmark comparing how Member States perform in 30 categories covering all aspects of transport. The goal of the Scoreboard is to help Member States identify areas requiring priority investment and action.

The Scoreboard shows improvements in road safety, the uptake of renewable energy in transport and the punctuality of shipments across the EU.

Sweden tops the Scoreboard with high scores in 15 categories, followed by the Netherlands and Austria. While they have different strengths, these countries all share a solid framework for investment, good transport safety levels, and a good record for implementing EU law.

The Scoreboard brings together data from a variety of public sources (such as Eurostat, the European Environment Agency and the World Economic Forum). It can be consulted either by country or by topic (Internal Market, Investment and Infrastructure, Energy Union and Innovation, People).

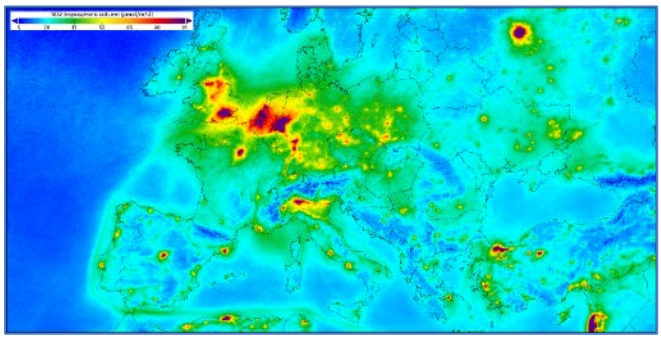
The EU Transport Scoreboard is at https://ec.europa.eu/transport/facts-fundings/scoreboard_en.

Copernicus Sentinel-5P Satellite reveals NO_2 Emissions released in Cities

On 12 March 2019, the European Space Agency (ESA) released new maps that use information from the Copernicus Sentinel-5P satellite and reveal NO_2 emissions being released into the atmosphere in cities and towns across the globe.

With air quality a serious concern, the Copernicus Sentinel-5P satellite was launched in October 2017 to map a multitude of air pollutants around the globe. The satellite carries the most advanced sensor of its type to date: Tropomi. This state-of-the-art instrument detects the unique fingerprint of atmospheric gases to image air pollutants more accurately and at a higher spatial resolution than ever before.

It has already delivered key information on SO_2 and CO. Now measurements gathered between April and September 2018 have been averaged to show exactly where NO_2 is polluting the air. NO_2 results from traffic and the combustion of fossil fuel in industrial processes. The image shows high levels of nitrogen dioxide in London, Paris, Brussels, western Germany, Milan and Moscow.



More info is at www.esa.int/spaceinimages/Images/2019/03/Nitrogen_dioxide_over_Europe.

10 Member States failed to transpose Rules on GHG Emissions from Fuels

On 8 March 2019, the European Commission in its monthly infringement package issued a reasoned opinion to ten Member States (Austria, Belgium, Cyprus, the Czech Republic, Finland, Greece, Latvia, Romania, Spain, and the UK) for failing to transpose EU rules on quality of petrol and diesel fuels into their national law.

The Directive (EU) 2015/652 lays down rules to calculate and report the greenhouse gas (GHG) emissions from fuels and other energy from non-biological sources. Accurate reporting is required so that the Commission can assess the performance of fuel suppliers in meeting their obligations under the Fuel Quality Directive (Directive 98/70/EC). The Fuel Quality Directive aims to achieve at least a 6% reduction of the GHG intensity of the fuel and energy supplied by the end of 2020. The calculation method also has the advantage of reducing the administrative burden on both suppliers and Member States.

Member States had to implement EU rules on the calculation and reporting of GHG emissions of fuels into their national legislation by 21 April 2017. The Commission had already sent a letter of formal notice to these Member States in May 2017. If the concerned Member States fail to act within two months from the receipt of the reasoned opinion, the case may be referred to the Court of Justice of the EU.

French Action Plan for Automotive Sector Transition

On 11 March 2019, the French Economy Ministry organised a meeting with car manufacturers, automotive suppliers, the presidents of the Regions and union representatives on the evolution of the automotive industry.

The Minister for Economy and Finances, Bruno Lemaire, called on participants to prepare for the evolution of the automotive sector in times of ambitious European objectives and to succeed in the energy and ecological transition.

An action plan was agreed upon, including a mapping of industrial sites threatened by powertrain evolution. A scientific study on real-driving CO_2, NOx and fine particle emissions of new diesel and gasoline vehicles will also be launched.

The outcome of the meeting (in French) is at https://minefi.hosting.augure.com/Augure_Minefi/r/ContenuEnLigne/Download?id=4350DBB1-4E7E-43AA-9A64-F43173AAAF81&filename=1085%20-%20R%C3%A9union%20au%20sujet%20de%20l%27%C3%A9volution%20de%20la%20fili%C3%A8re%20automobile.pdf.

France: Technology Scenarios for stopping ICE Vehicle Sales in 2040

On 20 March 2019, the French Parliamentary Office for the Evaluation of Scientific and Technological Choices published a draft report entitled "Technological scenarios for meeting the objective of stopping the sale of Internal Combustion Engine (ICE) vehicles in 2040".

The report was prepared together with IFPEN and the French Alternative Energies and Atomic Energy Commission (CEA).

Three scenarios were evaluated: median, pro-battery and pro-hydrogen. In the median scenario, advances in R&D on batteries and fuel cells are in line with the expectations of a majority of scientists. In the pro-battery scenario, they are faster than expected on the batteries, and costs fall faster. Similarly, in the pro-hydrogen scenario, progress on fuel cells and hydrogen tanks is accelerated, as is lowering prices. These scenarios are also based on common assumptions about the electricity mix (46% nuclear and 50% renewables in 2035), a carbon tax at €100/tonne in 2030 and €141/tonne in 2040, and a continuous increase in the prices of ICE vehicles.

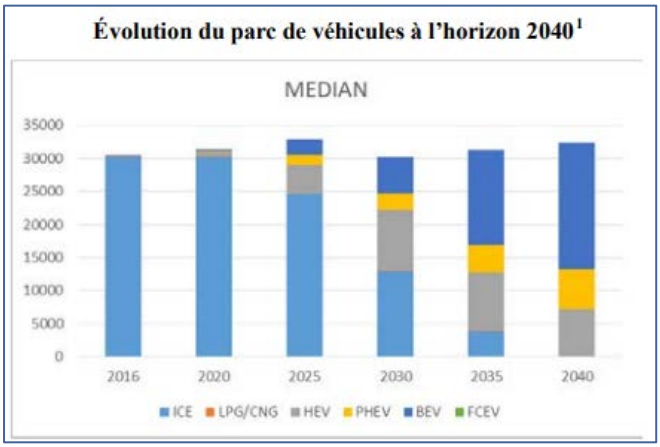
The evolution of the fleet of ICE vehicles is similar in the three scenarios, with a total disappearance of non-hybrid ICE vehicles in 2040, and some remaining small share of non-plug-in hybrid vehicles.

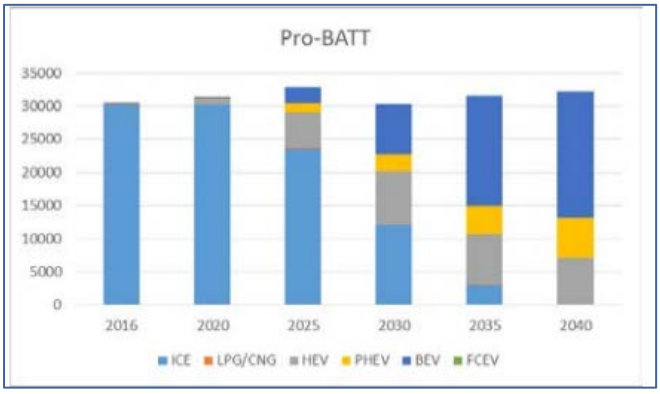
The pro-battery scenario leads to results similar to the median reference scenario. Sales of electrified vehicles are simply anticipated by a few years.

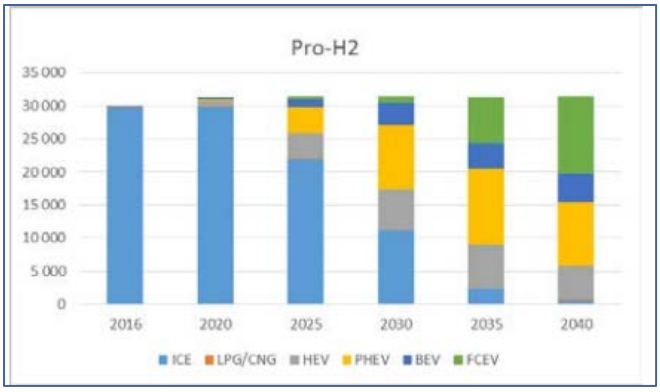
The pro-hydrogen scenario demonstrates that this technology could play an important role if two conditions are met: much faster than expected technical progress, allowing accelerated price declines, and strong public support (purchasing aid retained is €10 000 until 2040).

In all three scenarios, after an increase at the beginning of the period, CO_2 emissions are divided by five between

today and 2040, to meet the objectives of decarbonisation of transport, in particular carbon neutrality, in 2050.







The costs associated with this transition are very high, in the order of several hundred billion euros cumulated over a period of 20 years. The most important impact is linked to the gradual disappearance of the domestic tax on energy products or TICPE (in 2019, the TICPE should reach €37.7 billion, 45% going back to the general State budget and 33% to local authorities).

Costs related to the installation of the necessary infrastructure (charging stations and hydrogen stations) are estimated, for the various scenarios, between €30.7 billion and €108 billion.

Recommendations are drawn from the three scenarios studied

- Reaffirm technological neutrality
- Avoid dependence on Asian batteries
- Prepare for recycling and the second life of batteries
- Ensure the deployment of infrastructures
- Maintain purchase aids at a sufficient level.

The draft report (in French) is at www2.assemblee-nationale.fr/content/download/78251/801167/version/3/file/RAPPORT+CAP+2040.pdf.

German Bundestag approves Plan to avoid Disproportionate Diesel Car Bans

On 14 March 2019, legislators in Germany's Bundestag signed off on government proposals designed to restrict the implementation of diesel car bans in cities that only marginally breach EU air pollution limits.

The adopted law clarifies that traffic bans in areas with nitrogen dioxide (NO_2) pollution up to a value of 50 micrograms per cubic meter of air per annum are usually not required. In these areas, the European NO_2 air quality limit of 40 µg/m³ can usually be met within a reasonable period of time with other, more proportionate measures than traffic restrictions such as subsidies that the Federal Government has already decided, software updates, continuous fleet renewal and measures by local authorities. The limit of 40 µg/m³ is not changed by the adopted law. Ultimately, it remains up to local authorities to decide on the need for traffic prohibitions.

The adopted law makes it clear that low-emission diesel passenger cars with emission standards Euro 4 and 5 are exempted from traffic prohibitions if they emit lower NOx emissions than 270 mg/km in real driving, possibly after retrofit. Also, for proportionality reasons, vehicles meeting the Euro 6 standard will be excluded from any bans.

Some 249 lawmakers voted in favour and 198 against the proposal. The proposal now needs get sign off from Germany's upper house.

More info (in German) is at www.bmu.de/pressemitteilung/bundestag-beschliesst-einheitliche-regeln-fuer-umgang-mit-verkehrsverboten/.

Italian Tax Incentives for Low CO_2 Vehicles and Scrappage Scheme

On 4 March 2019, Italy notified the European Commission of an Inter-ministerial Decree on taxation and tax incentives to promote the purchase and registration in Italy of vehicles with low CO_2 emissions and to increase the scrapping of the most polluting vehicles.

The purpose of the draft Decree is to promote the purchase of vehicles with low CO_2 emissions, while at the same time boosting the scrapping of the most polluting

vehicles by granting the buyer an incentive, with which the seller sets off the purchase price.

More info is at http://ec.europa.eu/growth/tools-databases/tris/en/index.cfm/search/?trisaction=search.detail&year=2019&num=92&mLang=EN.

'Time to Breathe' Air Pollution Campaign for Outdoor Workers in London

On 12 March 2019, the British Safety Council launched the 'Time to Breathe' campaign, focusing on the quality of air breathed in by outdoor workers.

Time to Breathe is offering Canairy, the world's first free mobile app to help employers and workers minimise the risks of polluted air to outdoor workers. The app has been created in partnership between British Safety Council and King's College London and will provide real-time information about air pollution levels for London-based employers and workers. It calculates a user's hourly exposure to nitrogen dioxide, ozone and particulates ($PM_{2.5}$ and PM_{10}), drawing on King's Nowcast map of current air pollution in London, and compares these exposure levels to WHO guidance. It provides workers with information to help them avoid the worst levels of pollution during their work and gives employers insights to inform health risk assessments and work scheduling that will reduce exposure for the long-term.

More information on the campaign and app is at www.britsafe.org/campaigns-policy/time-to-breathe-air-pollution-campaign.

NORTH-AMERICA

Canadian Standards for Large Off-Road SI Engines and Stationary CI Engines

On 9 March 2019, Environment and Climate Change Canada published their proposed "Off-Road Compression-Ignition (Mobile and Stationary) and Large Spark-Ignition Engine Emission Regulations" in the Canada Gazette, Part I.

The proposed new emission standards apply to large spark-ignition (SI) engines and stationary compression-ignition (CI) engines. The regulations would also incorporate the existing standards for mobile off-road CI engines into one regulatory act. The proposed emission standards are aligned with those of the US EPA.

The proposed regulations would apply to three classes of engines that are imported into Canada or manufactured in Canada:

- Mobile CI engines: Emission standards for off-road mobile CI engines, as they exist in the "Off-Road CI Engine Emission Regulations" are maintained in the proposed regulations.
- Large SI engines developing more than 19 kW of power: New emission standards are proposed that would be aligned with the EPA Tier 2 standards for mobile large SI engines.
- Stationary CI engines with a displacement of less than 30 L/cylinder: New proposed emission standards would be aligned with the EPA Tier 4 standards for stationary CI engines. The proposal also provides flexibility in the form of less stringent Tier 2 or 3 standards for stationary CI engines destined for use in remote locations or as back-up sources of electricity.

It is expected that the proposed regulations would come into force approximately six months after publication of the final regulations in the Canada Gazette, Part II, which is targeted for Spring 2020.

From 2021 to 2035, the proposed Regulations are expected to result in cumulative emission reductions of approximately 179 500 tonnes of CO, 26 900 tonnes of NOx, and 10 600 tonnes of volatile organic compounds (VOCs) from LSI engines as well as 19 600 tonnes of non-methane HC + NOx and 900 tonnes of PM from SCI engines. The proposed LSI engine emission standards are also expected to result in reductions of greenhouse gas (GHG) emissions of about 133 000 tonnes of CO_2-equivalent.

The proposed standards are at www.gazette.gc.ca/rp-pr/p1/2019/2019-03-09/html/reg3-eng.html.

US EPA issues Proposal to increase Ethanol Blend in Gasoline Fuel

On 12 March 2019, the US Environmental Protection Agency (EPA) issued a proposed rulemaking that would allow the year-round sale of gasoline blended with up to 15% percent ethanol (E15).

Currently, most gasoline sold in the US contains 10% ethanol, with about 1% of filling stations selling E15. Previously, E15 was restricted under air pollution requirements between 1 June and 15 September.

In addition, EPA is also proposing regulatory changes to modify certain elements of the renewable identification number (RIN) compliance system under the Renewable Fuel Standard (RFS) program.

More info on the proposed rulemaking is at www.epa.gov/renewable-fuel-standard-program/notice-proposed-rulemaking-modifications-fuel-regulations-provide.

Fiat-Chrysler recalls more than 850 000 US Gasoline Passenger Vehicles

On 13 March 2019, the California Air Resources Board (CARB) announced that Fiat-Chrysler of America (FCA) is recalling more than 850 000 gasoline-powered passenger

cars and SUVs registered in the US due to a problem with their catalytic converters.

The recall was announced after an investigation by the CARB and the US Environmental Protection Agency (EPA). FCA is recalling these vehicles because they emit NOx above regulatory limits. FCA's own data and test results confirmed that the catalytic converters in these vehicles were malfunctioning. CARB testing helped the company find the appropriate solution to the problem.

There are about 50 000 of these vehicles in California. In most of the country this is a voluntary recall. But in California, drivers who fail to get the necessary repairs will not be able to register their vehicles.

The vehicles affected by this recall are 2011-2016 MY Dodge Journey (JC FWD), 2011-2014 MY Chrysler 200/Dodge Avenger (JS FWD), 2011-2012 MY Dodge Caliber (PM FWD CVT), and 2011-2016 MY Jeep Compass/Patriot (MK FWD CVT).

Because of the large number of vehicles and two generations of engines involved the actual recall will occur in phases, by model year: 2011 in Q1 2019, 2012 in Q2 2019, 2013/14 in Q3 2019, and 2015/16 in Q4 2019.

More info is at ww2.arb.ca.gov/news/fiat-chrysler-announces-recall-more-850000-passenger-vehicles.

US EPA 2018 Automotive Trends Report

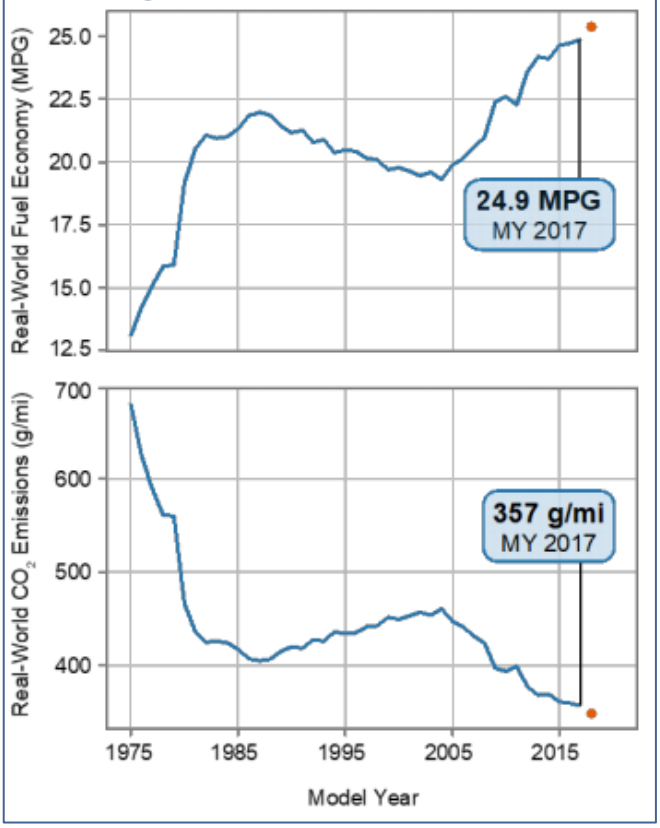
On 6 March 2019, the US Environmental Protection Agency (EPA) released a new annual report "2018 EPA Automotive Trends Report: Greenhouse Gas (GHG) Emissions, Fuel Economy, and Technology since 1975".

The report provides information about new light-duty vehicle GHG emissions, fuel economy, technology data, and auto manufacturers' performance in meeting the agency's GHG emission standards. The report includes content previously published in two separate reports; the "Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends Report" and the "GHG Manufacturer Performance Report." These reports have now been combined to provide a more comprehensive analysis.

According to the report, new vehicle estimated real-world CO_2 emissions are at a record low and fuel economy is at a record high. In Model Year (MY) 2017, the average estimated real-world CO_2 emission rate for all new vehicles fell by 3 g/mi to 357 g/mi (222g/km), the lowest level ever measured. Fuel economy increased by 0.2 miles per gallon to 24.9 mpg (9.8 l/ 100 km), achieving a record high.

Manufacturers have made significant improvements in fuel economy and CO_2 emissions over the last five years. Twelve of the thirteen largest manufacturers selling vehicles in the US market improved estimated real-world CO_2 emissions and fuel economy between MY 2012 and 2017. Overall, the industry improved CO_2 emissions by 21 g/mi and fuel economy by 1.3 mpg between MY 2012 and 2017.

Figure 2.1. Estimated Real-World Fuel Economy and CO_2 Emissions



Sport-utility vehicles (SUV) continue to gain market share, with truck SUVs achieving lower CO_2 emissions and higher fuel economy. Combined, car and truck SUVs captured a record high 43% market share in model year 2017. Truck SUVs improved fuel economy by 0.1 mpg and CO_2 emissions by 3 g/mi in MY 2017, while car SUVs essentially remained flat with no change in fuel economy and a slight increase in CO_2 emissions of less than 1 g/mi.

Average new vehicle fuel economy and horsepower continue to increase, while weight remains constant. In the two decades before MY 2004, technology innovation was generally used to increase vehicle power, and weight increased due to changing vehicle design, increased vehicle size, and increased content. However, since MY 2004 technology has been used to increase fuel economy (up 29%) and power (up 11%), while maintaining vehicle weight and reducing CO_2 emissions (down 23%).

Technological innovation in the automobile industry has led to a wide array of technology available to manufacturers to achieve CO_2 emissions, fuel economy, and performance goals. For MY 2018, EPA projected the following

technology share for large manufacturers: 31% penetration for turbocharged engines, 51% for gasoline direct injection, 22% for continuously variable transmissions, 36% for transmissions that have seven or more gears, 12% for cylinder deactivation, 28% for stop/start systems, 4% for hybrid vehicles, and 3% for plug-in hybrid vehicles/electric vehicles/fuel cell vehicles.

Finally, all large manufacturers are in compliance with the GHG standards through the 2017 model year.

The US EPA report is at www.epa.gov/automotive-trends.

Auto Parts Retailer fined for Illegal Aftermarket Parts sold in California

On 7 March 2019, the California Air Resources Board (CARB) announced that AZAA Investments, Inc., formerly known as AutoAnything, Inc., paid $1 million (€ 885 000) to resolve violations related to the sale of illegal aftermarket performance auto parts in California.

CARB investigators discovered that AutoAnything, a major online retailer, advertised and sold performance parts that modified emissions components, ultimately committing approximately 4000 violations between 2012 and 2015. Illegal parts included engine programmers, air intake systems and catalytic converters that were not approved by CARB for use on highway vehicles. These products can reduce fuel economy and increase emissions.

AZAA Investments, Inc. paid $1 006 250 to the California Air Pollution Control Fund which supports air pollution research and education. In addition, during the settlement process, AutoAnything was sold to a new owner. Along with the financial penalties imposed by the settlement, AZAA Investment Inc. is subject to a permanent injunction barring the sales of automotive parts and must notify CARB prior to resuming any related business activity.

More info is at ww2.arb.ca.gov/news/major-online-automotive-parts-retailer-pays-1-million-selling-illegal-aftermarket-parts.

US EPA settles with Three Auto Parts Suppliers over Clean Air Violations

On 7 March 2019, the US Environmental Protection Agency (EPA) announced settlements with three automotive parts manufacturers, headquartered in California, for violations of the Clean Air Act.

The companies allegedly manufactured or sold aftermarket auto parts that by-pass or disable required emissions control systems, otherwise known as defeat devices.

Car Sound Exhaust System, Inc., doing business as MagnaFlow, manufactured and sold 5674 aftermarket exhaust systems intended for model years 2001-2007 diesel trucks, that enabled removal of diesel oxidation catalysts. The company, headquartered in Oceanside, California, will pay a penalty of $612 849 (€542 000).

Flowmaster, Inc. sold 446 aftermarket exhaust system parts for motor vehicles that enabled the removal of catalytic converters on light-duty gasoline vehicles. The company, headquartered in Santa Rosa, California, will pay a $270 000 (€239 000) penalty.

Weistec Engineering, Inc. manufactured or sold 110 aftermarket exhaust components for light-duty gasoline vehicles that enabled the removal of catalytic converters. The company also developed and sold 13 custom files which allowed for the removal of catalytic converters by disabling certain emission-related trouble codes. The company, headquartered in Anaheim, California, will pay a penalty of $8500 (€7500).

More info is at www.epa.gov/newsreleases/us-epa-settles-three-california-auto-parts-companies-over-clean-air-act-violations.

ASIA PACIFIC

ICCT Comments on China's 2021-2025 Fuel Consumption Standards for Cars

On 11 March 2019, the International Council on Clean Transportation (ICCT) published the comments they provided to the Chinese Ministry of Industry and Information technology (MIIT) on the proposed China 2025 Phase 5 fuel consumption standards and fuel consumption evaluation methods and targets for passenger cars.

In the proposed standards, the average fuel consumption of new passenger cars is to be reduced to 4 l/100 km under the New European Driving Cycle (NEDC) in 2025.

The ICCT suggests extending the per-vehicle standards to all M1 vehicles rather than only those with a gross weight less than 3500 kg. The fleet-average standards should also extend to methanol vehicles and those which run on alternative fuels that are already covered by Phase 4 standards.

The standard sets flat limits for very heavy vehicles. This design ensures the heaviest vehicles are subject to a more stringent standard, therefore encouraging the advancement of fuel efficiency technologies in larger vehicles and helping to reverse the fleet-wide trend toward heavier vehicles. However, the minimum vehicle weight subject to the flat limit could be further reduced.

Also, the ICCT is concerned about the limitation of the proposed standards in promoting efficiency technologies and new energy vehicles in China and see great potential to improve the standard design. A number of suggestions are made.

The ICCT comments are at www.theicct.org/news/comments-chinas-proposed-2021-2025-fuel-consumption-limits-evaluation-methods-and-targets.

Chinese Hainan Province to ban Gasoline Vehicle Sales by 2030

On 5 March 2019, the provincial government of China's island province of Hainan announced they will ban the sale of gasoline-fuelled vehicles by 2030, in a bid to safeguard its environment and develop a modern economy.

Known as the oriental Hawaii thanks to its resorts and tropical landscapes, Hainan is set to become the country's largest pilot free trade zone.

According to the Hainan New Energy Vehicles Development Plan, Hainan will speed up the promotion of clean energy vehicles and has set specific targets and outlined a roadmap, becoming the first province to unveil such a timeline.

By 2020, all vehicles added or replaced in the public service sector, including government vehicles and buses, will use clean energy. New and replaced rental cars and vehicles used for postal service and logistics will be required to use new energy. Automobiles used for sanitation, tourist transport and urban-rural passenger transit will be replaced by clean energy vehicles by 2025, according to the plan.

A greater proportion of newly licensed private passenger cars will be new energy vehicles, with a 10% increase every year, eventually reaching 80% by 2025. Sales of gasoline-fuelled automobiles will be banned throughout the province by 2030.

More info is at www.chinadaily.com.cn/a/201903/07/WS5c80555ca3106c65c34ed316.html.

UNITED NATIONS

UN Global Environment Outlook

On 13 March 2019, the United Nations Environment Programme (UN Environment) launched its sixth Global Environment Outlook (GEO-6).

The document includes several calls to arms on air pollution. It says that air pollution, currently the cause of 6 to 7 million premature deaths per year, is projected to continue to have significant negative effects on health, and still cause between 4.5 and 7 million premature deaths annually by mid-century unless urgent action is taken.

The Air Policy section of the report concludes that 'A wide variety of policy approaches, including but not limited to planning regimes, emissions and technology standards, market interventions, public information and international cooperation, have been applied to the problems of air pollution, climate change, ozone depleting substances and persistent bioaccumulative and toxic chemicals. Lessons can be learned about each type of policy approach from applications to the four different problems at different geographical scales.

One lesson is that policy approaches must be adapted to specific contexts. There is no single model policy that is most appropriate for all settings. High-income countries rely on information-rich planning regimes and regulatory approaches backed by government enforcement capacity. These approaches may not be the most appropriate for settings where information is poor and enforcement capacity is lacking. In such settings, voluntary standards, market interventions and public information may prove more effective in decreasing emissions and hazardous exposures. To improve the effectiveness of such attempts to strengthen climate finance and reduce air pollution, development assistance will play a crucial role in capacity-building and green economy development. Capacity-building should focus on strengthening the technical and planning capabilities at local and national levels that are most relevant for anticipating the potential impacts of climate change and developing appropriate policy responses.

Air quality measures need to be combined with climate and energy measures, agricultural policy, transport policy and urban planning, with a focus on improving health and biodiversity. A key message and challenge is how to ensure that climate policies do not increase health risks (e.g. from biomass burning and diesel) and that air quality policy is climate neutral. Also, it is imperative to consolidate a multi- scale governance approach that aligns international, national and local actions.

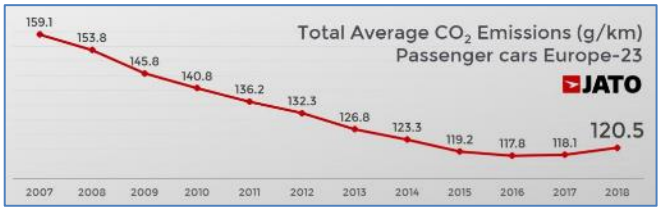
The UN Global Environment Outlook is at https://wedocs.unep.org/bitstream/handle/20.500.11822/27539/GEO6_2019.pdf.

GENERAL

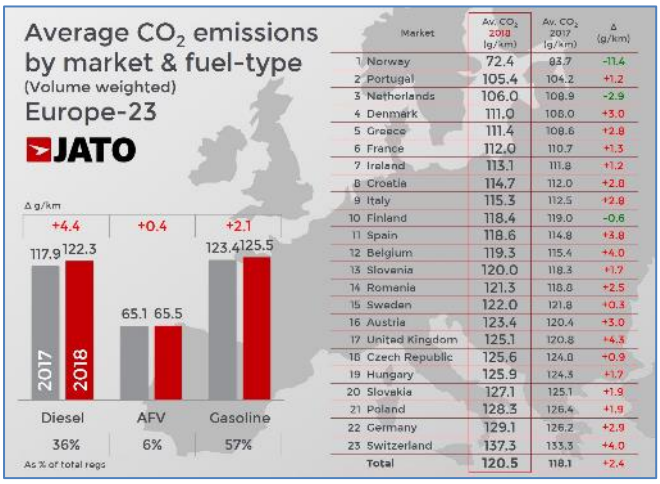
JATO Dynamics analyses New Car CO_2 Emissions Trend in Europe

On 4 March 2019, JATO Dynamics published an analysis of CO_2 emissions from new cars sold in Europe.

The total average of CO_2 emissions increased by 2.4 g/km to 120.5 g/km in 2018 – the highest average of the last four years.



Average CO_2 emissions from cars registered in Europe increased in 20 of the 23 markets analysed. The shift from diesel to gasoline cars accelerated the negative trend, with the latter posting a higher average.



Market	Av. CO_2 2018 (g/km)	Av. CO_2 2017 (g/km)	Δ (g/km)
1 Norway	72.4	83.7	-11.4
2 Portugal	105.4	104.2	+1.2
3 Netherlands	106.0	108.9	-2.9
4 Denmark	111.0	108.0	+3.0
5 Greece	111.4	108.6	+2.8
6 France	112.0	110.7	+1.3
7 Ireland	113.1	111.8	+1.2
8 Croatia	114.7	112.0	+2.8
9 Italy	115.3	112.5	+2.8
10 Finland	118.4	119.0	-0.6
11 Spain	118.6	114.8	+3.8
12 Belgium	119.3	115.4	+4.0
13 Slovenia	120.0	118.3	+1.7
14 Romania	121.3	118.8	+2.5
15 Sweden	122.0	121.8	+0.3
16 Austria	123.4	120.4	+3.0
17 United Kingdom	125.1	120.8	+4.3
18 Czech Republic	125.6	124.8	+0.9
19 Hungary	125.9	124.3	+1.7
20 Slovakia	127.1	125.1	+1.9
21 Poland	128.3	126.4	+1.9
22 Germany	129.1	126.2	+2.9
23 Switzerland	137.3	133.3	+4.0
Total	120.5	118.1	+2.4

At a brand level, Toyota was once again the leader among the top-sellers and posted an average below 100 g/km for the first time since tracking of the average CO_2 emissions began.

Make	Av. CO_2 2018 (g/km)	Av. CO_2 2017 (g/km)	Δ (g/km)	Position 2017
1 TOYOTA	99.9	101.2	-1.4	1
2 PEUGEOT	107.7	104.5	+3.2	2
3 CITROEN	107.9	105.5	+2.4	3
4 RENAULT	109.1	106.6	+2.5	4
5 NISSAN	110.6	115.8	-5.2	7
6 SUZUKI	114.2	114.9	-0.7	5
7 SKODA	116.7	115.9	+0.8	8
8 SEAT	116.9	118.0	-1.1	10
9 VOLKSWAGEN	118.8	119.5	-0.7	11
10 FIAT	119.2	115.6	+3.6	6
11 KIA	120.4	120.1	+0.4	12
12 DACIA	120.8	116.9	+3.9	9
13 HYUNDAI	123.3	122.0	+1.2	15
14 FORD	123.7	120.8	+2.9	13
15 OPEL/VHALL	125.6	123.4	+2.3	16
16 AUDI	127.6	124.3	+3.3	17
17 BMW	128.9	121.8	+7.1	14
18 VOLVO	130.0	124.3	+5.8	18
19 MAZDA	135.2	131.2	+4.0	20
20 MERCEDES	139.6	129.0	+10.5	19

More info it at www.jato.com/co2-emissions-rise-to-highest-average-since-2014-as-the-shift-from-diesel-to-gasoline-continues.

T&E Report on Limitations of New Fuel Economy Lab Tests

On 5 March 2019, Transport & Environment (T&E) published a new report titled "Get Real testing campaign: why new laboratory tests will do little to improve real-world fuel economy".

T&E commissioned the independent laboratory Emisia to test three cars (two gasoline and one diesel) using both NEDC and the new Worldwide Harmonized Light vehicle Test Procedure (WLTP). The results show an average difference of 12% between official type approval tests and Emisia's tests.

Conclusions indicate that the CO_2 emissions gap between the independently performed WLTP and NEDC tests is small, only 2% on average, compared with a 19% difference from the official CO_2 values declared by car manufacturers. This suggests the new WLTP test procedure is likely not sufficient to reduce or close the gap between official and real-world CO_2 emissions (which today is about 40%).

	Honda Civic X	Gap (%)	Ford Fiesta VII	Gap (%)	Opel Adam I	Gap (%)
Ind. WLTP vs ind. NEDC	135.3g/km vs 131.0g/km	+3%	150.0g/km vs 152.6g/km	-2%	156.5g/km vs 151.3g/km	+3%
Ind. WLTP vs official WLTP	135.3g/km vs 118.0g/km	+15%	150.0g/km vs 128.0g/km	+17%	156.5g/km vs 150.0g/km	+4%
Ind. vs official road load (energy demand)	14.3kWh/100km vs 13.0kWh/100km	+10%	14.2kWh/100km vs 13.3kWh/100km	+7%	13.8kWh/100km vs 12.5kWh/100km	+10%
Ind. vs official road load (CO_2 emissions)	131.5g/km vs 121.8g/km	+7%	150.1g/km vs 144.0g/km	+4%	156.5g/km vs 145.4g/km	+7%
Ind. real-world tests Smooth driving	120.6g/km[1]	-	153.1g/km	-	167.7g/km	-
Ind. real-world tests Dynamic driving	117.6g/km[1]	-	177.0g/km	-	210.1g/km	-

[1] The Honda Civic showed anomalous CO_2 results on the road which T&E cannot explain.

Source: Get Real Project & Emisia

The CO_2MPAS simulation tool used to turn WLTP values into the NEDC equivalent gives comparable results. The difference between the simulated NEDC-equivalent values and the independent NEDC tests on the three vehicles tested is around 1% on average, or as expected when the tool was designed. This suggests that the big discrepancies currently claimed by carmakers are 1) either a result of them manipulating downwards NEDC-declared CO_2 values or 2) manipulating upwards WLTP values to inflate the 2021 starting point for 2025/30 CO_2 reduction targets, or both. However, what is clear is that the discrepancy cannot be blamed on the CO_2MPAS tool.

The WLTP driving dynamics is more representative of real-world driving than the NEDC cycle. However, the WLTP laboratory cycle is still on the lower end of the driving dynamics range, when compared to an average PSA Group customer. Besides, driving dynamics is not the only factor affecting real-world fuel consumption and cannot on its own be used to judge a test's representativeness. Overall, the WLTP test procedure is an improvement compared to the previous NEDC procedure, but it still does not close the large gap with real-world driving CO_2 emissions.

According to T&E, it remains difficult for third parties to fully reproduce CO_2 tests and explain the differences in CO_2 performance, thus making robust and independent compliance monitoring impossible. Furthermore, the results also show that despite the introduction of the WLTP test procedure that closes some of the loopholes, carmakers can continue to exploit test flexibilities and manipulate lab tests, thus failing to produce representative real-world CO_2 values.

The T&E report is at www.transportenvironment.org/sites/te/files/publications/Get%20Real%20CO2%20report.pdf.

Fuel Economy in Major Car Markets: Technology and Policy Drivers

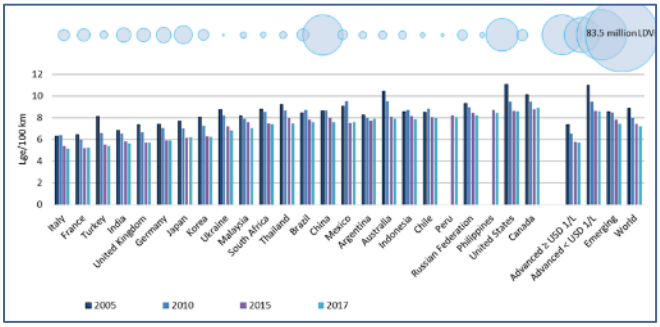
On 20 March 2019, the International Energy Agency (IEA), in collaboration with the International Council on Clean

Transportation (ICCT), and funded by the FIA Foundation, through the Global Fuel Economy Initiative GFEI (GFEI), published a report titled 'Fuel Economy in Major Car Markets: Technology and Policy Drivers 2005-2017'.

The report, which this year for the first time includes an online, interactive country data browser, reviews developments in fuel economy and highlights the changes which have shaped the modern global fleet of light-duty vehicles (LDVs) over a 12-year period.

Overall, global fuel economy has improved by an average of 1.7% per year over the past 12 years, although the rate of improvement has slowed to 1.4% in the past two years.

The global average fuel consumption of newly registered LDVs reached 7.2 litres of gasoline-equivalent per 100 kilometres (Lge/100 km) in 2017 within an LDV market where sales have grown by around 10% between 2015 and 2017. The average fuel consumption differs substantially among countries, ranging between 5.2 Lge/100 km and 8.9 Lge/100 km.



Fuel consumption measured in Lge/100 km, WLTP

Countries can be clustered in three main groups:

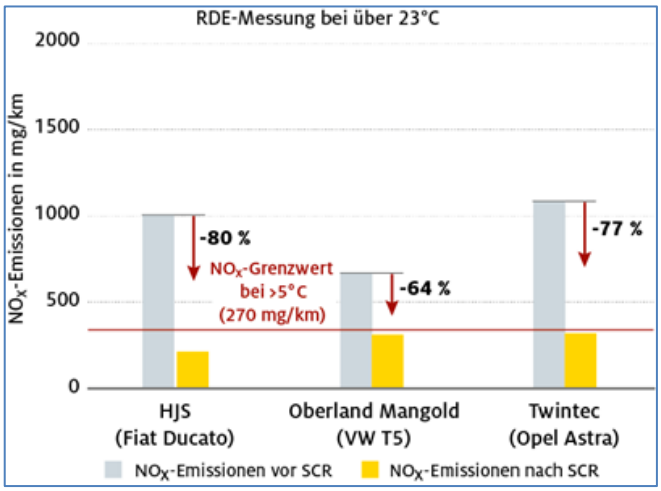
- Advanced economies with a gasoline price below USD 1/L - Australia, Canada and the US, where average fuel consumption is in the 7.9 to 9 Lge/100 km range.
- Advanced economies with gasoline prices above USD 1/L - EU, Turkey, Japan and Korea, where fuel use per kilometre ranges between 5.2 and 6.5 Lge/100 km.
- Emerging economies, with average fuel consumption in the 6.5 to 8.5 Lge/100 km range, with India - which has a fuel consumption of 5.6 Lge/100 km - as an outlier.

The IEA report is at www.iea.org/topics/transport/gfei/report/.

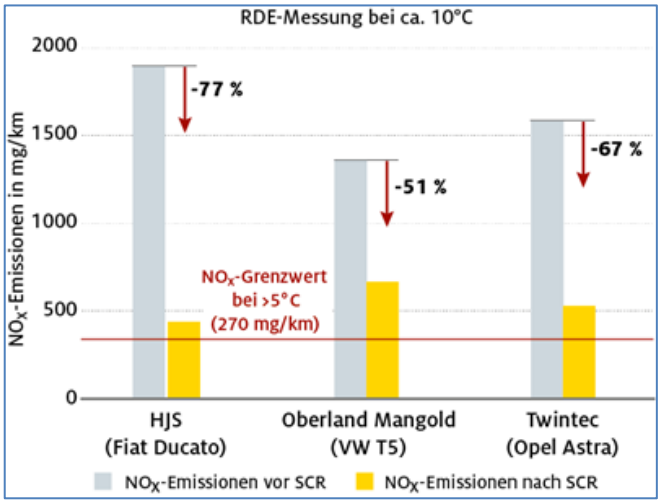
ADAC Study on SCR Retrofit Performance at various Temperatures

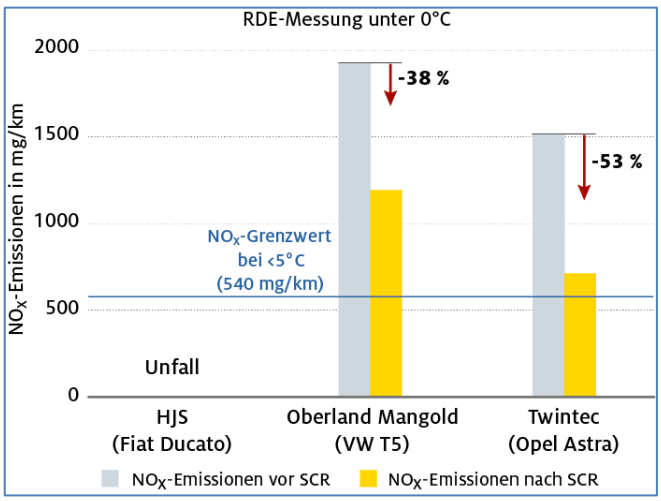
On 18 March 2019, the German Automobile Club ADAC published results of investigations into performance of SCR retrofit systems.

The ADAC tested three different hardware retrofit systems in a trial aimed at identifying the effects after 50 000 kilometres travelled. NOx emissions were reduced by up to 70% under warm weather conditions.



However, when temperatures dropped, the systems no longer complied with the limits set by the German government.





CO_2 emissions in all three cases rose more than the 6% increase allowed under political guidelines for retrofitting. Additional CO_2 emissions stood between 7 and 13%,

depending on the system and car model. Fuel consumption rose by 9% on average, the ADAC said.

More info (in German) is at www.adac.de/rund-ums-fahrzeug/abgas-diesel-fahrverbote/dieselkauf-abgasnorm/hardware-nachruestungen.

IEA Global Energy & CO_2 Status Report

On 26 March 2019, the International Energy Agency (IEA) published its 2018 Global Energy & CO_2 Status Report.

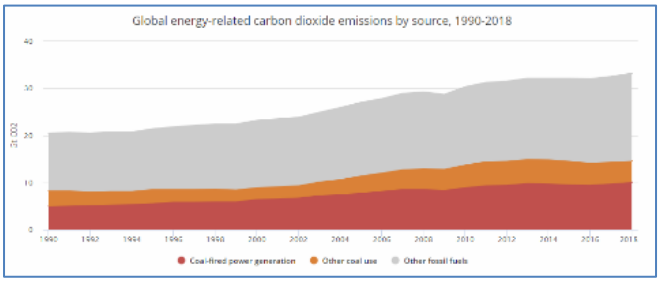
The report provides a high-level and up-to-date view of energy markets, including latest available data for oil, natural gas, coal, wind, solar, nuclear power, electricity, and energy efficiency.

Energy demand worldwide grew by 2.3% last year, its fastest pace this decade, driven by a robust global economy and stronger heating and cooling needs in some regions. Almost a fifth of the increase in global energy demand came from higher demand for heating and cooling as average winter and summer temperatures in some regions approached or exceeded historical records.

Natural gas posted the biggest gains and accounted for 45% of the rise in energy consumption. Gas demand growth was especially strong in the US and China.

Demand for all fuels increased, with fossil fuels meeting nearly 70% of the growth for the second year running. Solar and wind generation grew at double-digit pace, with solar alone increasing by 31%. Still, that was not fast enough to meet higher electricity demand around the world that also drove up coal use.

As a result, global energy-related CO_2 emissions rose by 1.7% to 33 Gigatonnes (Gt) in 2018. Coal-use in power-generation alone surpassed 10 Gt, accounting for a third of the total increase. Most of that came from a young fleet of coal power plants in developing Asia.

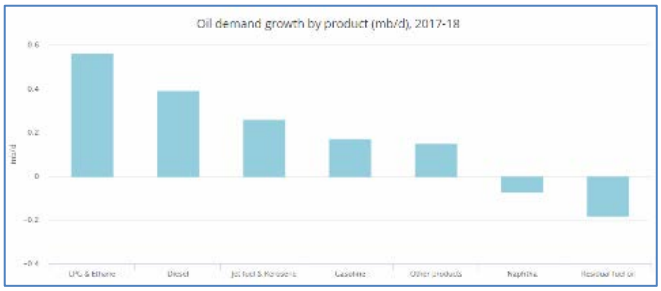


Global electricity demand grew by 4% in 2018 to more than 23 000 TWh. This rapid growth is pushing electricity towards a 20% share in total final consumption of energy. Increasing power generation was responsible for half of the growth in primary energy demand.

Renewables were a major contributor to this power generation expansion, accounting for nearly half of electricity demand growth. China remains the leader in renewables, both for wind and solar, followed by Europe and the US.

Together, China, the US, and India accounted for nearly 70% of the rise in energy demand around the world. The US saw the largest increase in oil and gas demand worldwide. Its gas consumption jumped 10% from the previous year, the fastest increase since the beginning of IEA records in 1971. The annual increase in US demand last year was equivalent to the UK's current gas consumption.

Oil demand grew 1.3% worldwide, with the US again leading the global increase for the first time in 20 years thanks to a strong expansion in petrochemicals, rising industrial production and trucking services.



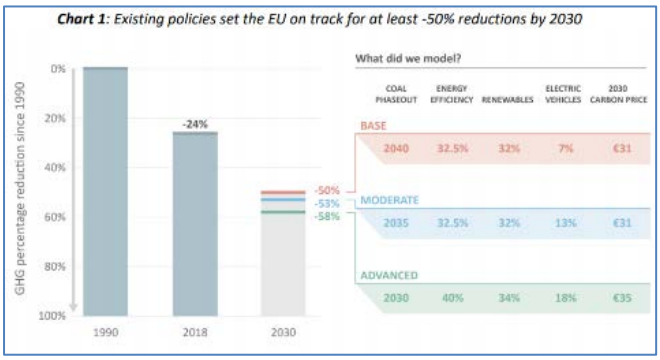
The IEA report is at www.iea.org/geco.

Assessment of EU Climate Policies to curb CO_2 Emissions by 2030

On 25 March 2019, climate think-tank Sandbag released a report in which new modelling shows that existing policies put Europe on track for CO_2 emission cuts of at least 50% by 2030 compared to 1990.

This report uses the established E3ME model from Cambridge Econometrics to investigate how recently agreed climate and energy policies would change EU greenhouse gas emissions reductions. The model shows that when the EU's new climate policies are included - especially including Member State coal phase-outs - EU emissions will fall faster than previously predicted. The EU will therefore massively overshoot its current 40% CO_2 reduction target for 2030.

In addition to the baseline scenario, a "Moderate" scenario gave a 53% cut, and an "Advanced" scenario gave a 58% cut. In order to achieve the step up from 50%, five model assumptions critical to climate ambition were adapted: coal phase-out dates, energy efficiency, renewable energy penetration, electric vehicle penetration and carbon pricing. Emissions reductions above 58% are possible if further policies or more ambitious changes are considered.



According to the report there is therefore a substantial opportunity for confidently adjusting the existing 2030 target, to go beyond the new business as usual of a 50% cut.

The Sandbag report is at https://sandbag.org.uk/wp-content/uploads/2019/03/Halfway-There-March-2019-Sandbag.pdf.

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Effects of Emissions and Pollution

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FORTHCOMING CONFERENCES

SAE World Congress Experience (WCX)

9-11 April 2019, Detroit, USA
www.sae.org/attend/wcx

Integer Emissions Summit & AdBlue® Forum China

7-9 May 2019, Shanghai, China
www.integer-research.com/conferences/ies-china-2019/

International VDI Conference: Electrified Off-Highway Machines

14-15 May 2019, Düsseldorf, Germany
www.vdi-wissensforum.de/en/event/electrified-off-highway-machines/
The conference will focus on developments on electrified powertrains and battery technology specifically used in off-highway machines, and their implications on safety, standardization, maintenance and life cycle cost.

Ultrafine Particles – Air Quality and Climate

15-16 May 2019, Brussels, Belgium
www.ufp.efca.net
International Symposium of the European Federation of Clean Air and Environmental Protection Associations (EFCA).

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.

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.

40th International Vienna Motor Symposium

16-17 May 2019, Vienna, Austria
https://wiener-motorensymposium.at
AECC, IPA and IAV will present a joint paper on "Integrated Diesel System Achieving Ultra-Low Urban NOx Emissions on the Road"

International Conference on Calibration Methods and Automotive Data Analytics

21-22 May 2019, Berlin, Germany
www.iav.com/termine/tagungen/international-calibration-conference

The Path towards Euro 7 Conference

21-23 May 2019, Stuttgart, Germany
www.euro7conference.com
The conference is organized by the publishers of Engine Technology International magazine and will bring together leading experts to present exclusive papers about the numerous technologies and engineering solutions that exist to help gasoline and even diesel engines meet possible future emission targets.

10th AVL International Commercial Powertrain Conference

22-23 May 2019, Graz, Austria
www.avl.com/icpc
The conference will tackle the challenges that the commercial vehicle industry is facing globally. How will emission legislation, trend for electrification and digitalization affect the powertrains of the future?

2nd Asia-Pacific Diesel Engine and Emission Summit 2019

23-24 May 2019, Bangkok, Thailand
www.borscon.com/2019apde/en/index.asp
The conference will discuss emission standards and technology roadmaps of Asia-Pacific countries, emission technologies, and the future of the diesel engine.

10th Emission Control

4-5 June 2019, Dresden, Germany
http://wordpress.emission-control-dresden.de

Integer Emissions Summit & AdBlue® Forum Asia Pacific

5-6 June 2019, Tokyo, Japan
www.integer-research.com/conferences/ies-apac-2019

31st International AVL Conference "Engine & Environment"

6-7 June 2019, Graz, Austria
www.avl.com/engine-environment
The conference will focus on three thematic blocks: production, storage, transport/distribution of energy carriers; energy storage media in the vehicle; and the main focus will be laid on the consequences for the powertrain portfolio.

SIA Paris 2019 Power Train & Electronics

12-13 June 2019, 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.

8th International Congress on Combustion Engines

17-18 June 2019, Krakow, Poland
www.congress.ptnss.pl
The main topics of the congress include fuel injection systems and mixture formation; combustion processes control in SI and CI engines; engine thermal loading and utilization of heat released; alternative fuels; emission measurements and aftertreatment; alternative sources of power; engine testing, durability, reliability and diagnostics; modelling and optimization of engine processes; and global trends in engine technology.

ETH Conference on Combustion Generated Nanoparticles

18-20 June 2019, Zurich, Switzerland
www.nanoparticles.ch
The conference serves as an interdisciplinary platform for expert discussions on all aspects of nanoparticles, freshly emitted from various sources, aged in ambient air, technical mitigation aspects, impact of particles on health, environment and climate and particle legislation.

Integer Emissions Summit & AdBlue® Forum Europe

25-27 June 2019, Munich, Germany
www.integer-research.com/conferences/ies-europe-2019

India & ASEAN Diesel Powertrain Summit

26-28 June 2019, Chennai, India
www.fiveoit.com/iadp
India & ASEAN Diesel Powertrain Summit 2019 is dedicated to providing the next 5-10 years of policy direction and supporting technological innovations as well as exploiting the market opportunities in India and ASEAN countries.

Combustion Aerosol Conference & Cambridge Particle Meeting 2019

26-28 June 2019, Cambridge, UK
https://aerosol-soc.com/events/combustion-conference-2019
The conference focuses on the fundamentals of particle formation, combustors and engine technology, emissions and emissions measurements and regulation and regulated emissions.

5th International FEV Conference Diesel Powertrain 3.0

2-3 July 2019, Rouen, France
www.fev.com/coming-up/fev-conferences/fev-conference-diesel-powertrains-30/introduction.html
The conference will highlight that the modern Diesel engine still represents a favourable platform for a highly-valuable future propulsion system unit even under changing regulatory boundary conditions and an altering market environment.
AECC will give a keynote presentation on "Consistent low NOx emissions on the road: Reality with modern Diesel vehicles"

SAE Powertrains, Fuels and Lubricants

26-29 August 2019, Kyoto, Japan
www.pfl2019.jp

14th International Conference on Engines & Vehicles

15-19 September 2019, Capri, Italy
www.sae-na.it
Topics of the conference include engine modelling and diagnostics; engine combustion; new engines, components, actuators and sensors; hybrid and electric powertrains and eco-CAV; fuels and lubricants; and exhaust aftertreatment and emissions.

IAQM Routes to Clean Air

16-17 September 2019, London, UK
https://iaqm.co.uk/event/rtca19/

The Institute of Air Quality Management (IAQM) presents Routes to Clean Air 2019, where air quality, public health and transport professionals share their experiences of improving traffic emissions. Speakers will discuss a range of topical issues offering their insight into the steps required to improve air quality, including best practice examples and practical challenges faced during implementation.

3rd Annual Real Driving Emissions Forum

24-25 September 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.

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.

European Transport Conference

9-11 October 2019, Dublin, Ireland
www.aetransport.org
The conference attracts transport practitioners and researchers from all over Europe where they can find in-depth presentations on policy issues, best practice and research findings across the broad spectrum of transport.

13th Conference on Gaseous Fuel Powered Vehicles

22-23 October 2019, Stuttgart, Germany
https://fkfs-veranstaltungen.de/3/conference-on-gaseous-fuel-powered-vehicles

3rd International FEV Conference Zero CO_2 Mobility

7-8 November 2019, Aachen, Germany
www.fev.com/coming-up/fev-conferences/fev-conference-zero-co2-mobility/introduction.html
Deadline for abstract: 31 May 2019

Integer Emissions Summit USA

12-13 November 2019, Indianapolis, USA
www.integer-research.com/conferences/ies-usa-2019/

POLIS Annual Conference

27-28 November 2019, Brussels, Belgium
www.polisnetwork.eu/2019conference
Europe's leading event on sustainable urban mobility in cities and regions
Deadline for abstract: 19 May 2019

EU Clean Air Forum

28-29 November 2019, Bratislava, Slovakia
https://ec.europa.eu/info/events/eu-clean-air-forum-2019-nov-28_en
The European Commission is organizing the 2nd Clean Air Forum in close collaboration with the Ministry of Environment of the Slovak Republic. It will focus on three themes: air quality and energy; air quality and agriculture; and clean air funding mechanisms.

Internal Combustion Engines and Powertrain Systems for Future Transport

11-12 December 2019, West Midlands, UK

http://events.imeche.org/ViewEvent?code=CON6849

The 2019 conference will provide a forum for IC engine, fuels and powertrain experts to look closely at developments in powertrain technology required to meet the demands of the low carbon economy

SAE World Congress Experience (WCX)

21-23 April 2020, Detroit, USA
Info will be at www.sae.org/attend/wcx

TRA2020

27-30 April 2020, Helsinki, Finland
https://traconference.eu/
TRA, The Transport Research Arena is the biggest European Research and Technology Conference on transport and mobility. In 2020 TRA is themed "Rethinking transport - towards clean and inclusive mobility" and brings together the experts from around the world to discuss the newest innovations and the future of mobility and transport.
Deadline for abstract: 30 April 2019

SAE Powertrains, Fuels and Lubricants

22-24 September 2020, Krakow, Poland
Info will be at www.pfl20.org
Call for abstracts opens in August 2019
Deadline for abstract: 18 February 2020