AECC

Newsletter

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INTERNATIONAL REGULATORY DEVELOPMENTS

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EUROPE

Parliament rejects Opposition to Real-Driving Emissions Agreement

On 3 February 2016 the European Parliament rejected a motion for a resolution tabled by the Environment Committee to oppose the Real-Driving Emissions (RDE) agreement settled on 28 October 2015 between the Commission and Member States.

Failing the required absolute majority by some 60 votes, the plenary decision confirms the two-step Conformity Factors (CF) of 2.1 on 1 September 2017/19 for new types and all new vehicles respectively, and of 1.5 on 1 January 2020/21. The CF of 1.5 is actually defined as 1.0 plus 0.5 for the measurement error margin.

Prior to the vote, Industry Commissioner Bieńkowska stated that the Commission is committed to initiate the review process of the error margin of the second CF already in 2017 with a view to achieve a CF of 1.0 as soon as possible and at the latest in 2023. She also noted that the Commission will support the European Parliament request to address future RDE and CF issues under delegated act (and not implementing act) which gives less power to Member States. The "Pot-Pourri" co-decision act that will transpose the Euro 6 Regulation into the Lisbon Treaty legislative format, and therefore will replace comitology with delegated and implementing acts, should be concluded without any delay, Bieńkowska added.

The motion for a resolution to oppose the RDE agreement required an absolute majority of 377 votes to pass. It was voted by 317 MEPs in favour, with 323 against and 61 abstentions.

Parliamentary Debate on Real-Driving Emissions

Prior to the plenary vote, on 18 January 2016, Members of the European Parliament debated on Real-Driving Emissions (RDE) in Strasbourg.

Some MEPs called on the Commission to put forward a revised proposal, as well as plans for a stronger type-approval system for vehicles in the EU. Others stressed the need to put the RDE test procedure into effect quickly, in order to bring down real-world emissions levels.

In her concluding remarks, Commissioner Bieńkowska said that vetoing the proposed measures would only prolong today's unsatisfactory car testing regime. She committed to activate the review process of the on-road emissions measurement uncertainty as soon as possible in 2017, which would mean a review of the 2020 Conformity Factor of 1.5 towards a lower value, and to propose some improvement to the existing type-approval process in the coming weeks *(see p. 4)*.

Following the debate, the European Automobile Manufacturers' Association (ACEA) reiterated that it fully agrees with the need for emissions to more closely reflect real-world conditions.

The debate can be watched at www.europarl.europa.eu/ep-live/en/plenary/video?debate=1453141616717.

Opinion of the Parliament's Legal Affairs Committee on RDE Agreement

On 1 February 2016 the Legal Affairs Committee of the European Parliament adopted its opinion on the motion for a resolution to veto the RDE legislative package.

The Committee, responsible for the interpretation and application of European Union law, considers that the introduction and application of Conformity Factors, at a level which would result in a de facto blanket derogation from the applicable Euro 6 emissions limits for a substantial period of time, run counter to the aims and content of the Euro 6 Regulation. It should therefore be considered ultra vires as exceeding the empowerment of the Commission.

The Commission is empowered only to supplement Regulation (EC) No 715/2007, and not to amend the emissions limit values, which should be considered as an essential element of the Regulation.

The opinion was agreed by 13 votes in favour, 12 against and no abstention.

The opinion is at www.europarl.europa.eu/sides/getDoc.do?pubRef=-%2f%2fEP%2f%2fNONSGML%2bCOMPARL%2bPE-576.813%2b01%2bDOC%2bPDF%2bV0%2f%2fEN.

Council approves RDE Package

Following the vote in the European Parliament on 3 February 2016, the Council of the EU approved on 12 February 2016 the second RDE package that includes Conformity Factors and introduction dates.

Publication of the second RDE package in the Official Journal is now awaited, as is the publication of the first RDE package detailing the on-road emissions test procedure.

Public Hearing on Real-Driving Emissions in European Parliament

On 23 February 2016 the Environment (ENVI) Committee of the European Parliament held a public hearing on Real-Driving Emissions (RDE).

MEP La Via (Italy, EPP), chair of the ENVI Committee, explained that the hearing was organised in order to inform MEPs on the development of RDE tests – in light of the ENVI Committee's future scrutiny of the third and fourth RDE packages – as well as in view of progress

on the proposal on the reduction of pollutant emissions from Euro 5 and 6 vehicles (so-called "pot-pourri" proposal).

Dr. Krasenbrink of the Joint Research Centre (JRC) Institute for Energy and Transport informed MEPs on the history of the development of RDE testing. He said that, as early as 2012, the JRC had flagged up that diesel posed problems with regard to NOx. In 2013-2014, the portable system road testing procedure showed that petrol was below emissions ceilings, even on the road, while there was a problem with diesel.

Mr. Resch of Deutsche Umwelthilfe (DUH), a German environmental organization, reported on activities documenting emissions infringements since 2007, and had already in 2011 presented a report to the German authorities on excessive emissions. He however voiced his concern that authorities refused to take the reports into account. Mr. Resch also told MEPs that all cars investigated exceeded the limits for emissions, and that defeat devices were not only installed in Volkswagen vehicles. He criticised the weakening of the binding limits in the 2nd RDE package, and called for the RDE test procedures to include temperature ranges as well as a cold start for urban environments and heavy loads.

Mr. Resch also advised to draw lessons from the experiences in the US, where consumer organisations had been able to receive financial compensation, and where a third 'secret' emissions test was used.

AECC's Executive Director Dirk Bosteels told MEPs that the first and second RDE packages will help to reduce the differences in emissions results from lab and road tests, and have the potential to improve air quality. He welcomed the Parliament's vote on the second RDE package and the Conformity Factors (CF), which would allow best available technology to be used and spread over time. Bosteels stated that AECC remains committed to contribute to the development of the 3rd and 4th RDE packages, and that newly developed Gasoline Particulate Filters (GPF) are the most effective way to reduce emissions of particulates from Gasoline Direct Injection engines, also in real-driving conditions.

Mr. Jonnaert, Secretary General of the European Automobile Manufacturers' Association (ACEA) stressed that there was a difference between the Volkswagen case, in which there was a violation of the rules, and the rest of the industry. He told the Committee that manufacturers would improve their communication with citizens. He also felt that there should be a coherent environmental policy, taking into account both air quality and climate change.

Jonnaert furthermore told MEPs that the current lab testing methodology was outdated, and that the differences between lab testing and RDE testing would remain as long as both the RDE and the Worldwide Harmonized Light Vehicles Test Procedure (WLTP) were not implemented. He welcomed the progress on both the WLTP as well as the RDE packages, despite the technological and financial challenges the latter brought. Jonnaert concluded that all RDE packages should be adopted, and that the future revision would ensure that the error margin was gradually reduced.

Mr. Carroll of the European Consumer Organisation (BEUC) highlighted health issues related to emissions and quoted consumers complaints feeling deceived by the automotive industry. He also expressed his opposition to the 2nd RDE package, indicating that it might set precedent for other industries and legislations. He said that he viewed legal action as the ultimate tool available to consumers in cases where legislation is not strong enough.

The hearing continued with questions from Members of the ENVI Committee. MEP Grossetête (France, EPP) stated that RDE testing was a step forward. MEP Gerbrandy (Netherlands, ALDE) asked the panel when a CF of 1 was envisaged, and whether the US Environmental Protection Agency's (EPA) 'secret testing' model could be introduced in the EU. MEP Eickhout (Netherlands, Greens) asked how much additional emissions are still emitted, as there are several exemptions related to test conditions in RDE tests. He also asked whether the technology is available which would attain a CF of 1 and what on-cost that would mean per vehicle. MEP Evi (Italy, EFDD) asked why cars exported to the US comply with stricter limits. MEP Dalli (Malta, S&D) asked about cold-start emissions exclusion and how long it would take before RDE tests reflected real-driving emissions. MEP Belet (Belgium, EPP) expressed his view that with the new rules, NOx would go down considerably. He also inquired about the retrofit option with new technology. MEP Dance (UK, S&D) asked when a CF of 1 would be likely, and why SCR catalysts used in US models were not used in European vehicles. MEP Szanyi (Hungary, S&D) suggested for the ENVI Committee to create a roadmap on how to get rid of all internal combustion engines and stop CO_2 and NOx emissions. MEP Guteland (Sweden, S&D) asked the panel about science and real data to guide future legislation.

In his reply, Krasenbrink (JRC) told MEPs that in the proposed revision of the vehicles type-approval framework, the Commission would have a bigger role, and indicated that the JRC may perform control functions, including checking in-service conformity claims. He added that deviations of 30% between road and lab test emissions could be linked to testing procedures and equipment used.

Resch (DUH) told the Committee that best-available technology allowing to meet a CF of 1 should be used not only in the US but also in Europe.

Bosteels (AECC) replied that technology reducing NOx emissions such as SCR was originally introduced on Heavy-duty vehicles back in 2005 and enabled the OEMs to optimise their engines for fuel consumption. This SCR technology is, with LNT, available for NOx reduction on Light-duty vehicles. The Commission's Impact Assessment of the Euro 6 Regulation already then included cost estimates for NOx aftertreatment technologies. He noted that a CF below 1 is possible, demonstrated by Emissions Analytics, the on-going EULES project of DG-Environment or AECC's RDE data on GPF control of PN emissions. He also added that it is difficult to retrofit passenger vehicles due to engine management implications and packaging constraints in the vehicle, and that the focus for retrofit is therefore on buses and trucks. Finally he said that AECC will continue to generate the scientific and technical data needed for the decision making processes on future emissions regulations.

Jonnaert (ACEA) explained that different types of vehicles are manufactured for the EU and US markets, due to the difference in standards and test systems. He also noted that ACEA had suggested to copy the US test system at the start of the drafting of RDE legislation, however the Commission had decided to pursue an own testing method and system. The support of ACEA for RDE testing was reaffirmed, while stressing that 100% accurate RDE could never be measured due to external factors.

BEUC's Carroll finally acknowledged MEP Evi's opinion that European citizens were treated as 'second class citizens', especially with regards to the stricter NOx limits, fuel consumption figures and the compensation for consumers in the US.

The public hearing can be watched at www.europarl.europa.eu/news/en/news-room/20160218IPR14968/Committee-on-the-Environment-Public-Health-and-Food-Safety.

Contributions to the public hearing are available at www.europarl.europa.eu/committees/en/envi/events.html?id=20160122CHE00101.

Parliament Inquiry Committee on Automotive Emission Measurements

On 21 January 2016 the European Parliament approved the remit and composition of the new Committee of Inquiry into Emission Measurements in the Automotive Sector (EMIS).

The Committee will investigate the European Commission's alleged failure to keep test cycles under review; the alleged failure of the Commission and Member States' authorities to take proper and effective action to enforce and oversee enforcement of the explicit ban on "defeat devices"; the Commission's alleged failure to introduce tests reflecting the real-world driving conditions; the Member States' alleged failure to lay down provisions on effective, proportionate and dissuasive penalties applicable to manufacturers for infringements; and whether the Commission and the Member States had evidence of the use of "defeat mechanisms" before the Volkswagen scandal emerged on 18 September 2015.

The EMIS Committee includes 14 members from the EPP group, 12 S&D MEPs, 5 ECR, 4 ALDE, 3 Greens, 3 GUE/NGL, 2 EFDD, and 2 ENF. The MEPs elected to the Inquiry Committee were picked from the Parliament's Environment (ENVI), Internal Market and Consumer Protection (IMCO), Industry, Research and Energy (ITRE) and Transport (TRAN) Committees.

The EMIS Committee will hold its first meeting on 2 March 2016 and name its chair, co-chairs, and rapporteurs.

More information on the Committee is at www.europarl.europa.eu/committees/en/emis/home.html.

Commission proposes New Type-Approval Framework Regulation

On 27 January 2016 the European Commission released a proposal for a new Regulation on the Vehicles' Type-Approval Framework.

The Commission presented it as a "major legislative proposal to ensure car manufacturers comply strictly with all EU safety, environmental and production requirements."

At the moment, the EU sets the legal framework (Directive 2007/46/EC) but national authorities are fully responsible for checking car manufacturers' compliance. The draft Regulation on the approval and market surveillance of motor vehicles maintains the principle of mutual recognition, which is at the core of the EU single market, but addresses current flaws in the system.

The draft Regulation proposes to reinforce the independence and quality of type-approval testing by modifying the remuneration system to avoid any possible financial links between Technical Services and vehicle manufacturers. Member States should therefore establish a national fee structure for type-approvals and market surveillance costs. These fees shall be levied on the manufacturers who have applied for type-approval in the Member States concerned but not directly by the Technical Services. The proposal also foresees more stringent performance criteria for these Technical Services and that they are regularly and independently audited to obtain and maintain their designation. National Type-Approval Authorities will be subject to peer reviews to ensure that the relevant rules are implemented and enforced rigorously across the EU.

The proposal also introduces an effective market surveillance system to control the conformity of cars already in circulation. From the current framework focusing heavily on the approval of a vehicle type before it is placed on the market, it is proposed to move to a system where Member States and the Commission carry out compliance verification spot-checks of vehicles already on the market. All Member States should be able to take safeguard measures against non-compliant vehicles on their territory without waiting for the one that issued the type-approval to take action.

Also, the Commission proposes to reinforce the type-approval system with more European oversight. Under the draft Regulation, the Commission will have the power to suspend, restrict or withdraw the designation of Technical Services that are underperforming and too lax in applying the rules.

The Commission would also be able to carry out ex-post verification testing (through its Joint Research Centre – JRC) and, if needed, initiate recalls. The Commission will be able to impose penalties on car manufacturers and Technical Services.

The Commission will chair a 'Forum for Exchange of Information on Enforcement' which will coordinate the network of national authorities responsible for type-approval and market surveillance. The Forum will also have an advisory role to promote good practices, exchange of information on enforcement problems and penalties, cooperation, development of working methods and tools, development of an electronic information exchange platform, evaluation of harmonized enforcement projects and joint audits. The tasks and composition of the Enforcement Forum will be further specified by a Commission delegated act.

Finally, the proposal introduces an additional obligation on the OEM to allow access to the car's software protocols to reinforce the existing ban on defeat devices.

The co-decision proposal is at http://ec.europa.eu/growth/sectors/automotive/technical-harmonisation/eu/index_en.htm.

It will now be negotiated and agreed by the European Parliament and the Council.

A fact sheet on the Commission's actions to tighten rules for safer and cleaner cars, including the different RDE legislative packages, was also released on that day. It is at http://europa.eu/rapid/press-release_MEMO-16-168_en.htm.

The Netherlands take over Presidency of the Council of the EU

On 1 January 2016 the Netherlands took over the Presidency of the Council of the European Union from Luxembourg.

A "trio programme" was released on 30 December 2015 that draws up the agenda of the next three Presidencies of the EU Council, by the Netherlands (January-June 2016), Slovakia (July-December 2016), and Malta (January-June 2017). The programme focuses on five priorities: a Union of jobs, growth and competitiveness; a Union that empowers and protects all its citizens; working towards an Energy Union with a forward-looking climate policy; a Union of freedom, security and justice; and the Union as a strong global actor.

The three Presidencies will also focus on environmental issues such as developing a circular economy through calls for improved resource management in the areas of waste, water, air and biodiversity, while creating new green jobs and developing a more competitive resource-efficient economy.

The trio programme is at http://english.eu2016.nl/documents/publications/2015/12/30/trio-programme-2016-17.

EEA Report on Road Transport Emissions

On 27 January 2016 the European Environment Agency (EEA) released a non-technical guide explaining road transport emissions.

The new report gives a simplified explanation of the often complex information available on road transport emissions as well as the technologies to reduce them.

Standardised measurements are made in laboratories to check that vehicles meet the official requirements for exhaust emissions. However, the official procedures currently used in Europe are not representative of real-driving conditions, EEA said. For certain pollutants, there is a significant difference between official emission measurements and vehicle performance on the road. Nitrogen oxides (NOx), a major air pollutant which harms health and the environment, can be more than seven times higher under real-world driving conditions for new vehicles than in official tests. New vehicles similarly can emit up to 40% more carbon dioxide (CO_2) than official measurements would indicate. The report outlines three main reasons for these discrepancies: an outdated test procedure used in Europe that does not reflect real-world driving conditions; permitted 'flexibilities' in the current testing procedures that allow manufacturers to optimise certain testing conditions, and thereby achieve lower fuel consumption and CO_2 emission values; and several in-use factors which are driver-dependent (e.g. driving style) or driver-independent (e.g. environmental conditions).

Two important initiatives are planned in the EU to help ensure an improved consistency between the official vehicle emissions and real-world driving performance.

This includes updating the outdated official test procedure (NEDC) to one that is more representative of real-world emissions (WLTP), as well as the introduction of a procedure for measuring the Real-Driving Emissions (RDE) of vehicles on the road.

The EEA report is at www.eea.europa.eu/publications/explaining-road-transport-emissions.

Commission launches GEAR 2030

On 26 January 2016 the European Commission launched its new GEAR 2030 process to boost competitiveness and growth in the automotive sector.

The GEAR 2030 High Level Group will focus on three areas of work: the adaptation of the value chain to new global challenges, the automated and connected vehicles trade, and international harmonisation and global competitiveness.

Twelve Member States are involved in GEAR 2030: Germany, France, the UK, Italy, Poland, the Czech Republic, Romania, Spain, Slovakia, Belgium, the Netherlands, and Sweden.

Seven industry associations – the European Tyre & Rubber Manufacturers Association (ETRMA), the European Association of Automotive Suppliers (CLEPA), the European Automobile Manufacturers' Association (ACEA), the European Council for Motor Trades and Repairs (CECRA), the European Association of Motorcycle Manufacturers (ACEM), Insurance Europe, and the Federation of Automotive Aftermarket Distributors (FIGIEFA) – are also part, as well as six representatives of the civil society – industriALL (European Trade Union), Transport and Environment (T&E), Fédération Internationale de l'Automobile (FIA), the European Transport Safety Council (ETSC), the European Consumer Organisation (BEUC), and the European Road Transport Telematics Implementation Coordination Organisation (ERTICO).

AECC, the Association for Emissions Control by Catalyst, is there as an observer together with some other trade associations, the European Investment Bank, the Committee of the Regions, and the European Economic and Social Committee.

European Parliament Study on Transport Changes

On 5 February 2016 the European Parliament Directorate-General for Internal Policies published a study for the Transport and Tourism Committee: "The World is Changing. Transport, Too."

The study shows that mobility needs and patterns evolve; new transport services/systems emerge; transportation technologies aim to become more 'environmentally-efficient'. This transformation challenges the existing transport sector's structure and governance and calls for major changes in the regulatory framework.

The study is at www.europarl.europa.eu/RegData/etudes/STUD/2016/563424/IPOL_STU(2016)563424_EN.pdf.

Recommendation on Commission's Expert Groups Transparency

On 2 February 2016 the EU Ombudsman Emily O'Reilly asked the European Commission to further improve the transparency of its 800 plus expert groups, consisting of individuals, organisations, EU Member State and other public authorities.

The Ombudsman's strategic inquiry into the composition of expert groups was opened in May 2014. Expert groups are used to provide input to the Commission when preparing legislative proposals or policy initiatives, as well as in relation to the implementation of legislation, programmes and policies or the preparation of delegated acts.

The Ombudsman recognises that the Commission has, over the past years, made significant progress in trying to promote more balanced interest representation in its expert groups and increasing their transparency. The inquiry however concluded that the Commission should publish meeting agendas and background documents in advance, while minutes should normally include the positions expressed by group members and be published in a timely manner. This will enable citizens to see more clearly how expert advice feeds into EU policy-making. An expert group's deliberations may be kept confidential but only if objectively justified.

The Ombudsman asked the Commission to explain by 30 April 2016 how it intends to address her recommendations.

The recommendation is at www.ombudsman.europa.eu/en/cases/recommendation.faces/en/63441/html.bookmark.

Preliminary Results of French Inquiry on Automotive Emissions

On 14 January 2016 the French Minister of Ecology, Ms Ségolène Royal, released some preliminary results on the independent technical committee on automotive emissions launched in France after the Volkswagen scandal arose.

UTAC has now tested 22 vehicles out of the planned 100. An emissions defeat device has been confirmed on the 2 VW models tested but no similar defeat device has been detected on other manufacturers' cars tested to date. Emissions tests will continue.

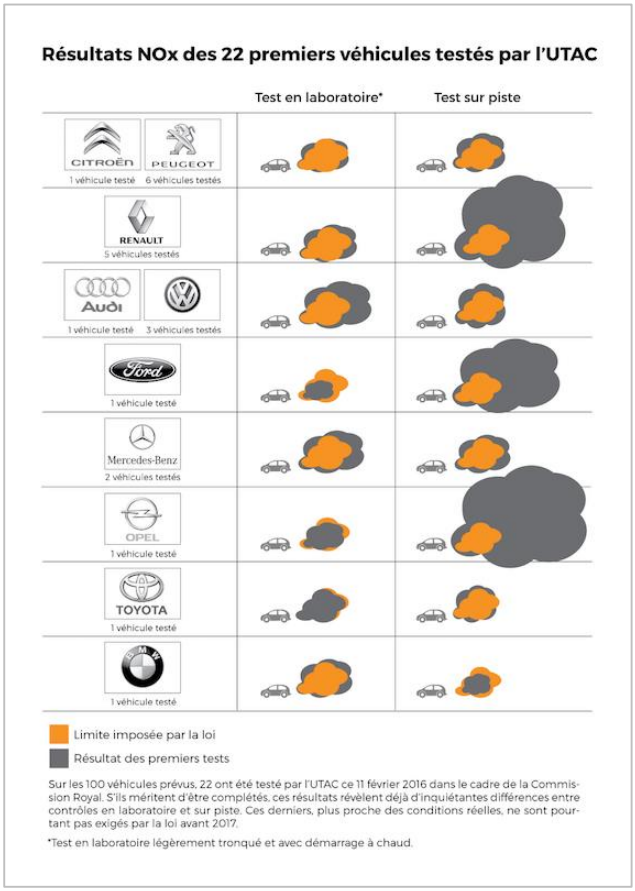
Ms Royal said that emissions tests run on a chassis dyno and on the track indicate that there are CO_2 and

NOx emissions exceedances on some vehicles of two foreign brands but also on Renault vehicles.

A statement released by Renault notes that "the on-going tests open the way for improvement solutions for future Renault vehicles and those already on the market, that will be presented in its Renault Emissions Plan aimed at improving the energy performance of [its] vehicles."

This was followed by the release of further details on those preliminary results, on 11 February 2016, by France Nature Environnement and Réseau Action Climat, two Non-Governmental Organizations (NGO) which are members of the independent committee.

The NGOs published an infographic comparing the results of the 10 vehicle brands tested to date (corresponding to the first 22 vehicles tested).



Preliminary results show wide disparities between laboratory emissions testing performed at different ambient temperatures and emissions measured on a track. According to the NGOs, these "first results confirm the suspicions of over-optimization of vehicles in lab tests to obtain their approval." The committee has already heard four car manufacturers: Opel, Ford, Renault and BMW.

Beyond the completion of the planned test campaign covering 100 vehicles, the NGOs and their European Federation Transport & Environment, are calling for deeper investigations and Real-Driving Emissions (RDE) to be part of the European vehicle type-approval process.

French Report on Air Pollution Public Policies

On 21 January 2016 the French Court of Auditors published a report on public policies to mitigate air pollution.

The report, requested by a Committee in the French Parliament's lower house, found that in France there is no clearly structured policy on air quality, but a number of heterogeneous tools stemming from the implementation of EU Directives. Several measures have had significant effects, such as air quality monitoring or the reduction of emissions from the industrial sector. Nevertheless, the "polluter pays" principle only applies to industry and energy production. Also, the subsidiarity principle does not fully apply, which damages the effectiveness of the various actions. In addition, national and local measures are not always coherent and this can delay or limit the implementation of effective tools.

The Court considered that the fight against air pollution requires a much greater involvement of all economic stakeholders, including citizens and made twelve recommendations.

Regarding road transport in particular the Court recommends to reconsider the heavy-duty tax to account for their impact on air pollution; to identify the pollution level of vehicles via a label; and to re-balance taxes on diesel and gasoline fuels by internalizing their external costs such as air pollutants and greenhouse gases.

The report (in French) is at www.ccomptes.fr/Accueil/Publications/Publications/Les-politiques-publiques-de-lutte-contre-la-pollution-de-l-air.

UK Report on Health Impact of Air Pollution

On 23 February 2016 the Royal College of Physicians (RCP) and the Royal College of Paediatrics and Child Health (RCPCH) in the UK released a report entitled 'Every breath we take: the lifelong impact of air pollution'.

The report establishes that around 40 000 deaths are attributable each year in the UK to exposure to outdoor air pollution. The health problems resulting from exposure to air pollution have a high cost to people who suffer from illness and premature death, to national health services and to business. In the UK, these costs add up to more than £20 billion (€25.6 billion) every year.

The report offers a number of reform proposals to tackle air pollution. These include:

- Polluter pays principle should apply. Political leaders at a local, national and EU level must introduce tougher regulations, including reliable emissions testing for cars.
- Local authorities need to act to protect public health when air pollution levels are high and have the power to take mitigation actions such as traffic restrictions.
- Air pollution monitoring results should be clearly and proactively communicated to the public.
- Quantify the relationship between indoor air pollution and health. A coordinated effort is required to develop and apply any necessary policy changes.
- Further research into the economic benefits of air pollution mitigation policies is needed.
- Lead by example within the UK National Health Service (NHS).

The report is at www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution.

Freight Programme to improve Air Quality in London

On 27 January 2016 Transport for London (TfL) launched a new programme to reduce emissions of London's freight and fleet operators: LoCITY.

The five-year programme is set to work across the industry to increase the availability and uptake of low-emission vans and lorries. It will bring together freight and fleet operators, vehicle manufacturers, fuel providers and the public sector. It will create new environmental operating standards and contractual clauses for procurement bodies.
LoCITY will also demonstrate, through research and real world trials, that using these cleaner vehicles will not negatively impact operations.

LoCITY will have three workstreams focusing on increasing the availability and affordability of low-emission vans and lorries; improving the alternative fuel infrastructure, such as electric charging points and the use of hydrogen fuel; and improving policies, procurement and land use planning to increase the use and viability of low-emission vans and lorries.

According to TfL, the LoCITY programme will support the Mayor of London's focus on improving air quality, and assist in efforts to increase the use of ultra-low emission vehicles in London.

More info is at www.LoCITY.org.uk.

UK Clean Bus Technology Fund for SCR Retrofit

On 3 January 2016 the UK Department for Transport (DfT) awarded £7 million (€9.5 million) to 18 local authorities across England to retrofit 439 buses with Selective Catalytic Reduction (SCR) technology to reduce NOx emissions in pollution hotspots.

The DfT said this new Clean Bus Technology Fund 2015 adds to the £20 million invested by the UK Government in retrofit schemes to improve air quality since 2011. This has ensured over 2000 buses have already been retrofitted across England.

The Clean Bus Technology Fund 2015 projects are at www.gov.uk/government/uploads/system/uploads/attachment_data/file/487583/clean-bus-technology-fund-projects-2015.pdf.

Air Quality in Germany in 2015

On 29 January 2016 the German Federal Environment Agency (UBA) published a report on air quality evaluation in Germany in 2015.

The report is based on preliminary data on PM_{10}, $PM_{2.5}$, NO_2, and ozone concentrations measured at air quality monitoring stations, that still need to be audited and confirmed.

From a long term perspective 2015 was one of the least polluted years for fine particles. The EU daily limit value (PM_{10} daily mean values may not exceed 50 µg/m³ more than 35 times a year) was exceeded only at two measuring stations close to traffic in Stuttgart and Berlin. Nevertheless, particulate emissions should be further reduced, UBA said, because the World Health Organization (WHO) recommends a significantly lower threshold value for particulates, which requires that the daily mean value for PM_{10} may not exceed 50 µg/m³ on more than three days per year. Only 23% of the monitoring stations complied with this recommendation.

High concentrations of ozone were measured for the first time in years. Measured levels were above the alarm threshold of 240 µg/m³. The highest measured value in 2015 (283 µg/m³) had not occurred since the hot summer of 2003. Compared to the prior ten years, 2015 had above-average levels of ozone but was still far from the high levels of pollution of the early 1990s.

Regarding NO_2, similar to previous years, around 60% of monitoring stations exceeded the 40 µg/m³ limit in 2015.

The UBA report (in German) is at www.umweltbundesamt.de/publikationen/luftqualitaet-2015.

Funding for DPF Retrofit of Cars and Vans in Germany

On 23 December 2015 Germany notified the European Commission that it will make funding available for the retrofit of passenger cars and light-commercial vehicles with Diesel Particulate Filters.

260€ per vehicle is available for the retrofit of pre-Euro 5 diesel cars initially registered before end of

2006 and vans registered up to 16 December 2009. The DPF must be retrofitted between 1 January 2016 and 30 September 2016 and must correspond either to particulate reduction level PM 01 (i.e. 0.1 g/km) or PM 0 to PM 4 (i.e. 100 mg/km to 5 mg/km) as defined in the Road Traffic Licensing Regulation (Straßenverkehrs-Zulassungs-Ordnung - StVZO).

DUH Report on NO_2 Measurements in Stuttgart

On 28 January 2016 the NGO Deutsche Umwelthilfe (DUH) released a new report on NO_2 measurements in Stuttgart, Germany.

NO_2 concentration measurements were conducted for DUH by the Institute of Environmental Physics of the University of Heidelberg between December 2015 and January 2016. Both stationary and mobile measurements were performed.

The report concludes that population can be exposed to annual average concentrations that are higher than the European limit of 40 µg/m³. Values between 40 and 50 µg/m³ are numerous (Hölderlin, Roman school, Catherine Hospital, Zeppelin Gymnasium). NO_2 concentrations on major roads are particularly high, but also places away from the main roads have significantly high extrapolated annual averages. Thus, a majority of the population is constantly exposed to these high concentrations of nitrogen dioxide.

The report also notes that some vehicle emission measurements in the urban area have shown that large differences can be found in the emissions of urban buses. Some buses (especially older models) have significantly higher emissions than newer buses. Nevertheless, the NO_2/CO_2 emission ratios from diesel cars are similar to or higher than those of older buses.

The DUH report (in German) is at

www.duh.de/uploads/media/2016-01-27_Bericht_NO2_Stuttgart.pdf.

All Buses equipped with DPF in Flanders

On 20 February 2016 the regional government of Flanders (Belgium) announced an investment of €27 million for the 'De Lijn' public transport operator to purchase 131 new buses.

The new buses will start being delivered in the autumn 2016 and will all be equipped with Euro VI engines. This means that from 2017 onwards, all 2200 buses operated by 'De Lijn' will be fitted with a Diesel Particulate Filter (DPF).

Italy in Infringement to Fuel Quality Directive

On 25 February 2016 the European Commission announced it has sent a reasoned opinion to Italy urging it to adopt and notify national transposition measures of the fuel quality Directive 2014/77/EU.

The purpose of the Directive is to update references to the petrol and diesel fuel technical standards sold within the EU. The Directive had to be implemented by 11 June 2015. Despite a letter of formal notice sent to Italy and other eight Member States on 22 July 2015, Italy is the only Member State that has not notified to the Commission its national measures to comply with these standards.

Italy now has two months to notify the Commission of the measures taken to transpose the Directive; otherwise, the Commission may decide to refer Italy to the Court of Justice of the EU. The Court may then decide to impose financial sanctions.

Oslo to ban pre-Euro 6/VI Diesels on Pollution Days

On 4 February 2016 the Oslo city Council in Norway adopted draft emergency regulations to reduce air pollution from traffic in Oslo during periods of particularly high air pollution by nitrogen dioxide, thereby also reducing the health burden.

The city said that on announced high pollution days, a temporary driving ban will apply on municipal roads to diesel cars, vans, lorries, combined vehicles, truck tractors, buses, and trucks. In addition, the use of cars with a registration number ending in even numbers will be prohibited on odd dates, and vice-versa.

There are however a number of exemptions: vehicles which are certified to Euro 6/VI; vehicles used for commercial purposes, including vehicles delivering goods to Oslo under some conditions still to be defined; vehicles transporting impaired persons; emergency vehicles; vehicles used in public service; patient transport; driving to and from the ferry transport; and transit.

The odd-even date scheme does not apply to electric vehicles and hydrogen vehicles but hybrid cars that use both diesel and electricity are not exempt from the driving ban.

Violation of the traffic restrictions will result in a fee of 1500 kr (€156).

The Oslo city Council notes that over the past fifteen years, there have been a total of seven episodes of high air pollution, lasting between four and ten days.

The draft Regulation is at

www.oslo.kommune.no/gate-transport-og-parkering/dieselforbud-og-datokjoring/.

NORTH AMERICA

US files Complaint against Volkswagen for Clean Air Act Violations

On 4 January 2016 the US Department of Justice on behalf of the US Environmental Protection Agency (EPA) filed a civil complaint in federal court in Detroit, Michigan against the Volkswagen group.

The complaint alleges that nearly 600 000 diesel engine vehicles of Volkswagen, Audi, and Porsche brands had illegal defeat devices installed that impair their emission control systems and cause emissions to exceed EPA's standards, resulting in harmful air pollution. The complaint further alleges that Volkswagen violated the Clean Air Act by selling, introducing into commerce, or importing into the US motor vehicles that are designed differently from what VW had stated in applications for certification to EPA and the California Air Resources Board (CARB).

Consistent with EPA's Notices of Violation, issued on 18 September 2015 for 2-litre engines and 2 November 2015 for certain 3-litre engines, the complaint alleges that the defeat devices cause emissions to exceed EPA's standards during normal driving conditions. 499 000 2-litre engines and 85 000 3-litre engines sold in the US since 2009 are concerned.

"So far, recall discussions with the company have not produced an acceptable way forward. These discussions will continue in parallel with the federal court action", said Cynthia Giles, assistant administrator for enforcement and compliance assurance at EPA.

All this was followed by the rejection by CARB on 12 January 2016 of the recall plan submitted by VW for the 2-litre passenger vehicles sold in California between 2009 and 2015.

CARB said the VW's recall plan contains gaps and lacks sufficient detail. In particular, "the descriptions of proposed repairs lack enough information for a technical evaluation; and the proposals do not adequately address overall impacts on vehicle performance, emissions and safety."

CARB indicated that they will continue investigations and technical evaluations with EPA to return the vehicles to legally required emission levels, determine mitigation for past and future environmental harm, and assess penalties.

US EPA Clean Diesel Funding Assistance Program

On 25 February 2016 the US Environmental protection Agency (EPA) announced a $26 million (€23 million) funding opportunity for the Clean Diesel Funding Assistance Program.

The US EPA is soliciting proposals nationwide for projects that achieve significant reductions in diesel emissions in terms of tons of pollution produced by diesel engines and diesel emissions exposure, particularly from fleets operating in areas designated by the Administrator as poor air quality areas.

Eligible applicants include regional, state, local or tribal agencies, or port authorities with jurisdiction over transportation or air quality. Non-profit organizations may apply if they provide pollution reduction or educational services to diesel fleet owners or have, as their principal purpose, the promotion of transportation or air quality.

Applications are open until 26 April 2016.

More info is at www.epa.gov/sites/production/files/2016-02/documents/rfp-epa-oar-otaq-16-02_update.pdf.

Canada delays IMO Tier III NOx Standards for Smaller Marine Engines

On 23 December 2015 Transport Canada issued a bulletin on interim measures regarding compliance with IMO Tier III standards for smaller marine diesel engines.

The bulletin indicates that compliance with the IMO Tier III NOx emissions standards for marine diesel engines with a power rating between 130 and 750 kW is delayed by one year and will be required from 1 January 2017. Transport Canada explains that it results from indications from engine manufacturers based in the US that no such engine would be available by 1 January 2016.

While these interim measures are in place, Transport Canada will analyse IMO Tier III standards related issues such as the availability of compliant engines, current emission abatement technologies and the technical challenges.

The bulletin is at www.tc.gc.ca/media/documents/marinesafety/SSB-10-2015E.pdf.

CENTRAL & SOUTH AMERICA

Mexico fines Volkswagen for selling Cars without Environmental Certificates

On 15 February 2016 the Federal Attorney for Environmental Protection (PROFEPA) in Mexico issued a press release announcing that Volkswagen has been fined 168 million pesos (€8 million) for selling 45 000 vehicles without the required environmental certificates.

PROFEPA inspectors detected the breach of rules during a visit to Volkswagen in December 2015 when they checked information about the company's vehicles, according to the statement. The inspection found that the company had imported and sold 45 494

Audi, Bentley, Porsche, Seat and Volkswagen cars (model year 2016) without the required certificates that involve two Mexican standards on pollutant emissions (NOM-042-SEMARNAT-2003) and noise limits (NOM-079-SEMARNAT-1994) for new vehicles.

PROFEPA said the fine was unrelated to the ongoing investigation by the federal government into whether Volkswagen's diesel-powered cars, sold in Mexico between 2009 and 2015, contained unauthorized software that could defeat emissions control.

ASIA PACIFIC

India to introduce Bharat Stage VI in 2020

On 6 January 2016 the Indian Government decided to move forward the implementation of the Euro 6/VI-equivalent Bharat Stage (BS) VI emissions standard to 1 April 2020 directly from BS IV, therefore leapfrogging BS V.

The decision was taken at a meeting chaired by Transport Minister Nitin Gadkari and was attended by the Ministers of Petroleum, Environment and Heavy Industries. The Indian Supreme Court had already asked the Government to implement BS VI as soon as possible. India currently has BS III, equivalent of Euro 3/III specifications, across the country and BS IV in major cities. "BS-IV will be supplied in most big cities by April 2016 and all over the country from April 2017", Petroleum & Natural Gas Minister Dharmendra Pradhan said.

Previously, the fuels meeting BS IV specifications (50 ppm sulfur content) were to be supplied throughout the country by April 2017 and BS V grade fuel (10 ppm sulfur) by 1 April 2020.

The draft BS VI Regulation was published by the Ministry of Road Transport and Highways on 22 February 2016. It includes emissions standards for 4-wheelers less than 3.5 tons, and 4-wheelers above 3.5 tons, 2-wheelers, and 3-wheelers.

BS VI requirements for 4-wheelers align with Euro 6 (without any specific mentioning of Real-Driving Emissions requirements though) and Euro VI, for light-duty and heavy-duty vehicles respectively.

BS VI requirements for 2-wheelers align with the Euro 5 standard for L-category vehicles. 3-wheelers benefit from relaxed emissions limits.

OBD Stage II is required for all BS VI vehicles with final OBD thresholds introduced on 1 April 2023 for 4-wheelers.

The draft BS VI Regulation package is available at http://morth.nic.in/showfile.asp?lid=2005 and is open for comments until 23 March 2016.

Assessment of Traffic Restriction Measures on Air Pollution in Delhi

On 24 January 2016 the Central Pollution Control Board (CPCB) of the Indian Ministry of Environment & Forests released a report assessing the impact of the odd-even scheme on air quality of Delhi.

Traffic restrictions were implemented in Delhi from 1 to 15 January 2016, based on license plate odd-even numbers, with the objective of reducing air pollution. The odd-even scheme applied to four wheeler passenger/private cars only and public transport buses, two- and three-wheelers, trucks, and CNG cars were exempted from the scheme.

The assessment covered a number of pollutants (PM_{10}, $PM_{2.5}$, SO_2, benzene, O_3, NO_2 and CO) and concentrations measured during traffic restrictions measures were compared to the preceding period from 25 to 31 December 2015 and the following one from 16 to 21 January 2016. No clear trend and wide fluctuations were observed in the concentrations, CPCB said.

The assessment concluded that a comprehensive set of actions following an integrated approach is required to make substantial improvement in air quality.

The CPCB report is at http://cpcb.nic.in/upload/Latest/Latest_115_OddEvenScheme-02.pdf.

Beijing to upgrade Air Quality Monitoring System

On 22 February 2016 Xinhua, the Chinese state news agency, reported that Beijing will upgrade its air monitoring system, doubling the number of monitoring stations.

An extra 30 stations will be added to the 35 already in operation in places like schools, Zhang Dawei, director of the Beijing Municipal Environmental Monitoring Center, told Xinhua. He did not give a timeframe for when the new stations would be installed.

Beijing is also planning to build a web of ventilation corridors to facilitate air flow and expel smog and pollutants.

For Beijing and its surroundings, the government has set a target for 2020 of reducing pollution by 40% compared to 2013 levels.

China's Support for New Energy Vehicles

On 24 February 2016 the Chinese state news agency Xinhua reported that China's State Council announced a set of pro-new energy vehicle policies.

As part of efforts to achieve "revolutionary breakthroughs" in battery performance, China will encourage cooperation between enterprises,

universities and research institutions, according to a statement issued after a State Council meeting chaired by Premier Li Keqiang.

More battery charging facilities will be built, with the sector receiving increased investment and subsidies, the State Council pledged. Other measures include increasing the share of electrified vehicles in the public transportation system and enhancing their quality.

New energy vehicles should account for over 50% of annual new vehicle purchases of government organs and public institutions, the statement said, not giving a time horizon though.

An earlier guideline by the State Council said China will build more than 12 000 new charging stations before 2020 to fulfil the demands of over 5 million electrified vehicles.

Australian Discussion Paper on Vehicle Emissions

On 11 February 2016 the Australian Vehicle Emissions Ministerial Forum released a Discussion Paper for public comment to examine ways to reduce the health and environmental impacts from motor vehicle emissions.

The Vehicle Emissions Discussion Paper seeks views on measures to achieve the Australian Government's greenhouse gas emissions reduction targets, air quality objectives, and improvements in energy productivity in the context of road vehicles. It explores issues associated with mandatory noxious emissions and fuel efficiency (CO_2) standards, education and information for consumers, alternative fuels and electric vehicles, financial incentives, fleet purchasing policies, and emissions testing arrangements.

Submissions received will inform options to be considered by the Australian Government to address vehicle emissions.

The discussion paper is open for comments until 8 April 2016 and is at https://infrastructure.gov.au/roads/environment/forum/files/Vehicle_Emissions_Discussion_Paper.pdf.

UNITED NATIONS

UNEP Transport Newsletter

On 12 January 2016 the United Nations Environment Programme (UNEP) published the first issue of its UNEP Transport Newsletter.

The newsletter will be published on a quarterly basis and will include news and updates on UNEP transport projects such as the Partnership for Clean Fuels and Vehicles (PCFV) and the Global Fuel Economy Initiative (GFEI).

The UNEP Transport newsletter is at www.unep.org/Transport/newsletter/issue1_2016.html.

GENERAL

HEI Report on Health Effect of New Technology Diesel Engines

The Health Effects Institute (HEI) published on 23 December 2015 an executive summary of the Advanced Collaborative Emissions Study (ACES), a comprehensive examination of emissions and health effects of New Technology Diesel Engines (NTDE) capable of meeting US 2007/2010 and EURO VI/6 diesel emissions standards.

The report presents the main findings of the three phases of the ACES project and places the results in the context of health risk assessment.

HEI concludes that the ACES results demonstrate the effectiveness of aftertreatment technologies used in the modern diesel engines: they greatly reduce the emissions of PM, NOx, and NO_2, and the levels of other toxic components of NTDE, when tested in the laboratory using FTP and more stringent testing cycles. After a lifetime of exposure, NTDE do not produce tumours in rats, unlike older diesel engines without aftertreatment. Thus, the ACES results demonstrate the effectiveness of DPFs, not only in greatly diminishing the amount of PM from new technology engines, but also in reducing the toxicity of new diesel engines significantly as compared with old ones.

The report is at http://pubs.healtheffects.org/view.php?id=447.

Debate on the Future of Diesel Cars

On 17 February 2016 Green Budget Europe organized in the European Parliament an event titled 'What future for diesel cars?'

Green Budget Europe, a European expert platform promoting the shift in taxation away from labour and on to pollution and non-renewables, invited three panellists: Prof Eckard Helmers of the Trier University of Applied Sciences, Greg Archer of Transport & Environment (T&E) and Paul Greening of ACEA, the European Automobile Manufacturers' Association.

Prof Helmers focused on black carbon emissions from diesel cars which has a higher global warming potential than CO_2 but is not accounted for in European climate change policy. He cited tests in France that found that 75% of diesel cars have their engine not working properly. A German study also indicates that a number of DPF-equipped diesel cars have had their Diesel Particulate Filter removed. By taking a different technological path, and progressing hybrids instead of diesel since the early 1990s, Japan now commands a substantial climate lead over Europe in producing low-CO_2 cars for the mass market. Japan's CO_2 emissions

from new cars are 16% lower, with Japan overtaking Europe in 2013, Prof Helmers highlighted. CO_2 emissions from a new car in Europe average 128 g/km, as compared to 108 g/km in Japan.

ACEA's Greening stressed the robustness of DPF under proper usage of diesel cars and added that Real-Driving Emissions (RDE) requirements will ensure that diesel becomes really clean. RDE will nevertheless impact the small vehicles segment and small diesel cars are expected to become less cost-competitive than equivalent gasoline, hybrids or electric ones.

T&E's Archer said diesel will never be clean, nonetheless because of the fuel manufacturing which is more energy-intensive than gasoline refining. Nevertheless, he suggested to tackle seriously the issue of DPF removal.

More info is available at http://green-budget.eu/what-future-for-diesel-cars.

ICCT Report on Real-World Fuel Consumption of European Cars

On 14 January 2016 the International Council on Clean Transportation (ICCT) published a report on real-world fuel consumption of popular European passenger cars.

The study compares official fuel consumption values with actual, real-world performance for 20 popular vehicle models. Since 2009, reductions in official fuel consumption values for these 20 models range from 8 to 30%. On-road measurements, however, indicate that 8 of the 20 made little to no improvement in real-world fuel efficiency. Five models achieved more than a 10% reduction in real-world fuel consumption, relative to 2009.

According to the ICCT, the trend toward increasingly unrealistic fuel consumption values can be traced back to the exploitation of flexibilities in the current vehicle testing procedure. While the Worldwide harmonized Light Vehicles Test Procedure (WLTP), scheduled to be introduced in the EU in 2017, will help align official and real-world fuel consumption values, it will not by itself solve the problem of unrealistic fuel consumption values.

The ICCT recommends further actions such as in-use conformity testing of randomly selected vehicles on the road and the establishment of an EU-wide type-approval authority.

The ICCT report is at http://theicct.org/sites/default/files/publications/ICCT_Real-worldFC-EUcars_28122015.pdf.

DUH Report on NOx Emissions of Euro 6 Diesel Fiat 500X

On 9 February 2016 the German environmental group Deutsche Umwelthilfe (DUH) published NOx emissions results of a Euro 6 diesel Fiat 500X.

The car tested for DUH at the Biel University in Switzerland was a Euro 6 diesel Fiat 500X 2.0-litre 4x4 – model year 2015, using Exhaust Gas Recirculation (EGR) and fitted with a Diesel Oxidation Catalyst (DOC), a Lean NOx Trap (LNT), and a Diesel Particulate Filter (DPF) to control pollutant emissions. Test cycles performed with the car included cold and hot start NEDC, CADC (Artemis), and hot start WLTC.

NOx emissions of 105 to 133 mg/km were measured on the regulatory cold start NEDC; these were the lowest NOx emissions measured, however exceeding the Euro 6 limit of 80 mg/km. Hot-start NEDC NOx emissions were 8 to 13 times higher; while CADC and WLTC NOx emissions were 17 times higher.

The test report is at www.duh.de/uploads/media/090216_PM_emission_measurements_Fiat_EN.pdf.

ICCT Report on Heavy-Duty Emissions Control Technology Costs

On 29 February 2015 the International Council on Clean Transportation (ICCT) published a report on "costs of emission reduction technologies for Heavy-duty Diesel vehicles".

The report presents the manufacturing costs of emission control technology used to meet recent US and European emission standards for Heavy-duty diesel engines and vehicles. The costs assessed include both the in-cylinder technologies to control engine-out emissions and the aftertreatment technologies that act on the exhaust stream. The report focuses on the primary technology pathway that was or is in widespread commercial use, to provide reasonable cost estimates for the increasingly sophisticated technology packages used in each regulatory stage.

The analysis treats Euro II and US 1994 standards, the first in which 500 ppm sulfur diesel was required in each region, as the baseline for technology determination and cost estimation. In the final regulatory stage considered, Euro VI and US 2010, the two regions are again well aligned in fuel sulfur levels, emissions limits, and technology pathways. While the interim regulatory steps and their incremental costs differ, the cumulative costs for compliance with Euro VI or US 2010 (compared to Euro II or US 1994) are the same: $6937 (€6400) in inflation-adjusted 2015 currencies. A conservative approach was used in the analysis, which

does not incorporate learning, scaling or emerging technologies, the ICCT said.

Reduction in CO_2 emissions and fuel consumption have been observed in spite of the implementation of stringent Euro VI and US 2010 standards. The strong benefits and reasonable costs of full implementation of Euro VI and US 2010 standards, along with some of the downsides and the reduced cost-effectiveness of the interim standards, suggest that other regions should move as quickly as possible to harmonize with these world-class standards, the ICCT concluded.

The ICCT report is at www.theicct.org/sites/default/files/publications/ICCT_costs-emission-reduction-tech-HDV_20160229.pdf.

Impact Assessment of Heavy-Duty Vehicles' CO_2 Emissions

On 18 January 2016 the new Brussels-based Impact Assessment Institute (IAI) published a study scrutinizing the impact assessment of the European Commission on CO_2 emissions from Heavy-duty vehicles.

Generally, reducing CO_2 emissions from Heavy-duty vehicles is more challenging than predicted by the European Commission, IAI said.

Central to the Commission's conclusions was a projected 35.1% cost-effective CO_2 emission reduction potential by 2030. The IAI study identified two main analytical gaps which significantly reduce this cost-effective potential. The calculation of combined CO_2 reduction measures did not consider the inherent overlaps and the cost of advanced propulsion technology had been substantially underestimated. The resulting figures support a CO_2 emission reduction potential of only 20%.

The Commission's impact assessment additionally anticipates that CO_2 reduction measures will be significantly less expensive in practice than its own projections, citing studies on CO_2 emissions of passenger cars. According to IAI, this expectation has not been substantiated with direct evidence.

The study is at www.impactassessmentinstitute.org/#!hdv-co2-study/c1ar5.

ExxonMobil's 2016 Energy Outlook

On 25 January 2016 ExxonMobil released its new report 'The Outlook for Energy: a View to 2040'.

Global energy demand will increase by 25% between 2014 and 2040, driven by population growth and economic expansion, the oil company said. At the same time, energy efficiency gains and increased use of renewable energy sources and lower carbon fuels, such as natural gas, are expected to help reduce by half the carbon intensity of the global economy.

According to ExxonMobil, oil and natural gas are expected to make up nearly 60% of global supplies in 2040, while nuclear and renewables will be approaching 25%. Oil will provide one third of the world's energy in 2040, remaining the No. 1 source of fuel, and natural gas will move into second place.

Global energy demand from transportation is projected to rise by about 30%, and practically all the growth will be in non-OECD countries. Sales of new hybrids are expected to jump from about 2% of new-car sales in 2014 to more than 40% by 2040, when one in four cars in the world will be a hybrid. Average fuel economy will rise from 25 to about 45 miles per gallon (i.e. average fuel consumption will reduce from 9.4 l/100 km to 5.2 l/100 km).

The report is at http://corporate.exxonmobil.com/en/energy/energy-outlook.

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FORTHCOMING CONFERENCES

L'évolution de la réglementation automobile pour répondre aux contraintes environnementales actuelles et futures

8 March 2016, Paris, France

www.sia.fr/evenements/50-evolution-reglementation-automobile-pour-repondre-contraintes-environnementales-actuelles-futures

The conference will present the ins and outs of vehicle certification, with a focus on pollutants and CO_2 emissions. The aim is to expose issues and developments of automobile regulation.

26th CRC Real World Emissions Workshop

13-16 March 2016, Newport Beach (CA), USA

www.crcao.org/workshops/26th_RWE_Workshop/Index.html

The objective of the workshop is to share information about recent and ongoing research on real world emissions.

10th International Conference on Air Quality - Science and Application

14-18 March 2016, Milan, Italy

www.airqualityconference.org

The conference brings together participants from the air quality, climate and health research and user communities to discuss the latest research advances, new applications and highlight important implications for policy and users.

AVL Seminar Expert Training Portable Emissions Measurement Systems (PEMS)

15 March 2016, Pfungstadt, Germany

www.avl-fahrzeugmesstechnik.de

6th International PEMS Conference & Workshop

17-18 March 2016, Riverside (CA), USA

www.cert.ucr.edu/events/pems

Discussion topics will include: What level of accuracy is needed to identify deviations from regulation? Are road-side measurements sufficient or are on-vehicle measurements needed for determining outliers? How can you manage larger datasets from PEMS or a community of users to advance our understanding? Do we need better education, applications, or protocols? What are the future needs such as micro PEMS/sensors, or new measurements such as particle number?

Air Pollutant Emissions and Air Quality: Complex Links

5 April 2016, Paris, France

www.citepa.org/fr/journee-etudes

The CITEPA workshop will discuss phenomena that can lead to local pollutant concentrations peak events (measured locally) which do not correlate with emissions (annual estimates at national scale).

1st Integer Emissions Summit & AdBlue® Forum Asia Pacific 2016

6-7 April 2016, Seoul, South Korea

www.integer-research.com/conferences/ies-apac-2016

Discussion will cover challenges for the Heavy-duty commercial vehicle manufacturers in Asia Pacific, key issues affecting AdBlue® business in Asia Pacific, the marine emissions control technology market, future off-highway emissions regulations and its impact on the Asia Pacific industry, and how emissions control regulations and technology innovations will shape the on- and non-road industries.

31st BAUMA 2016

11-17 April 2016, Munich, Germany

www.bauma.de

31st edition of the world's leading trade fair for construction machinery, building material machines, mining machines, construction vehicles and construction equipment.

SAE 2016 World Congress & Exhibition

12-14 April 2016, Detroit, Michigan, USA

www.sae.org/congress

6th European Transport Research Conference – Moving Forward: Innovative Solutions for Tomorrow's Mobility

18-21 April 2016, Warsaw, Poland

www.traconference.eu

The conference topics address the main challenges in transport and mobility of people and goods with respect to energy, environment, safety and security as well as socio-economic issues.

7th AVL Large Engines TechDays

19-20 April 2016, Graz, Austria

www.avl.com/large-engines-techdays

Forum for information, exchange and discussion for the large engine industry community, representing manufacturers, suppliers and users.

37th International Vienna Motor Symposium

28-29 April 2016, Vienna, Austria

www.xn--vk-eka.at/index_en.htm

The conference will discuss latest results in worldwide engine and powertrain development, fuel cell, hydrogen and infrastructure, fuels and components, drivetrain electrification, connectivity, autonomous driving, hybrid technology, Real-Driving Emissions (RDE), CO_2 reduction, and exhaust emissions control.

Health Effects Institute 2016 Annual Conference

1-3 May 2016, Denver (CO), USA

www.healtheffects.org/annual.htm

9th Integer Emissions Summit & AdBlue® Forum China 2016

10-12 May 2016, Shanghai, China

www.integer-research.com/conferences/ies-china-2016/

The conference will address Asia's unique emissions control challenges and examine cost-effective, regulation compliant emissions reduction strategies.

Advanced Emission Control Concepts for Diesel Engines 2016

10-12 May 2016, Bonn, Germany

www.emission-control-diesel.com

The conference will discuss methodologies to fulfil RDE requirements, future emission targets, and latest emission reduction technologies. It is co-located with the international conference "Emission Control Concepts for Gasoline Engines".

Advanced Emission Control Concepts for Gasoline Engines 2016

10-12 May 2016, Bonn, Germany

www.emission-control-gasoline.com

The conference will discuss the latest legislative updates and technical developments for gasoline engines aimed at reducing and controlling emissions. It is co-located with the conference "Advanced Emission Control Concepts for Diesel Engines".

5th International Exhaust Emissions Symposium

19-20 May 2016, Bielsko-Biała, Poland

www.bosmal.com.pl/News/7/167/5th+Emissions+Symposium.html

Main topics of the symposium include emissions legislation - for all automotive sectors, fuel economy, new methods of PM testing, compounds which are potential candidates for emissions regulation, emissions test equipment (including PEMS), emissions reduction technology, aftertreatment system and catalyst technologies for the various automotive sectors, emissions simulation, powertrain development and electrification, IC engine test method development, vehicular fuel development, alternative fuels, fuel additives and fuel blends, gaseous fuels: CNG & LPG, engine oil development, commercial vehicles, heavy-duty and off-road engines and vehicles, and synergies and shared challenges/solutions for the automotive sectors.

CTI 14th International Conference: Exhaust Systems

23-25 May 2016, Frankfurt, Germany

http://cti.euroforum.de/en/events/exhaust_systems

21st International Transport and Air Pollution (TAP) Conference

24-26 May 2016, Lyon, France

http://tap2016.sciencesconf.org

The aim of TAP 2016 will be "Towards energy transition and cleaner transport" and their implication to air quality, with an emphasis on the exhaust and non-exhaust emissions from transport modes, emission control and technologies, transport, energy consumption and greenhouse gas emissions, urban and suburban air quality, and transport policies and mobility challenges towards cleaner cities. Modes addressed include road, rail, air, waterborne, and cross-modality.

SIA Powertrain: The clean compression ignition engine of the future

1-2 June 2016, Rouen, France

www.sia.fr/evenements/12-sia-powertrain-rouen-2016

The topics to be addressed include new Diesel engines for passenger cars, commercial vehicles, Heavy-duty trucks, off-road, industrial applications, and range extenders; downsizing, fuel injection technology, combustion processes, turbocharging, air & EGR management systems and exhaust aftertreatment; electrification and hybridization; innovative concepts for emissions and CO_2 reduction; engine, vehicle tests & calibration techniques; new fuels and lubricants; future emission regulations; environment and air quality; eco-mobility; and worldwide market evolution.

8th Emission Control 2016 – Real Driving Emissions

2-3 June 2016, Dresden, Germany

http://emission-control-dresden.de

The conference will focus on the control of exhaust emission, fuel consumption and energy management of the vehicle during dynamic driving conditions (Real-Driving-Emissions) which shall be qualified to achieve the optimum for the entire vehicle system.

NOx and Particulate Real Drive Emissions (RDE)

6-10 June 2016, Leeds, UK

www.engineering.leeds.ac.uk/short-courses/automotive/diesel-particulates-NOx-emissions-UK/index.shtml

The course was previously titled as "Diesel Particulates and NOx Emissions".

28th CIMAC World Congress

6-10 June 2016, Helsinki, Finland

www.cimaccongress.com

The congress will address large diesel and gas engines, covering also turbine applications.

6th Freiburg Workshop "Air Pollution and models"

7-8 June 2016, Freiburg, Germany

www.ivu-umwelt.de

28th International AVL Conference "Engine & Environment"

9-10 June 2016, Graz, Austria

www.avl.com/engine-environment-2016

The topic of the conference is "Powertrains for the Chinese market: a challenge for the global automotive industry".

Cambridge Particle Meeting 2016

10 June 2016, Cambridge, UK

www.cambridgeparticlemeeting.org/

Deadline for abstracts: 15 April 2016

20th ETH Conference on Combustion Generated nanoparticles

13-16 June 2016, Zurich, Switzerland

http://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.

Deadline for abstracts: 2 April 2016

Diesel Powertrains 3.0

14-15 June 2016, Leipzig, Germany

www.fev.com/fev-conferences/fev-conference-on-diesel-powertrains-30.html

The international conference will highlight current developments in the Light-Duty Diesel Powertrain segment with a widespread list of topics, offering multiple interesting paths for best compliance with upcoming demands.

Engine Emissions Measurement

20-24 June 2016, Leeds, UK

www.engineering.leeds.ac.uk/short-courses/automotive/engine-emissions-measurement/index.shtml

The course is directed at both emissions legislation compliance and at engine and catalyst development for low emissions. The course also covers the fast growing area of in-vehicle emissions measurement for real world driving emissions measurement. Several areas are covered that are currently not regulated in Europe but are in the USA and may be regulated in future in Europe. This includes VOC speciation for ozone forming potential evaluation as well as air toxics and PAH speciation of diesel articulates for carcinogenic toxic emissions evaluations.

12th Integer Emissions Summit & AdBlue® Forum Europe 2016

21-23 June 2016, Brussels, Belgium

www.integer-research.com/conferences/ies-europe-2016

The conference will address emissions control strategy and technology for the on-road, non-road and marine sectors.

6th International Conference on MinNOx

22-23 June 2016, Berlin, Germany

www.iav.com/MinNOx

MinNOx has become an internationally established conference, focusing on minimizing nitrogen oxide emissions from combustion engines using exhaust gas aftertreatment.

3rd International Specialist Conference: Sensors for Exhaust Gas Cleaning and CO_2 Reduction

28-30 June 2016, Leipzig, Germany

www.sv-veranstaltungen.de/site/fachbereiche/2nd-international-specialist-conference-sensors-for-exhaust-gas-cleaning-and-co2-reduction/?lang=en

Top issues include opportunities and risks of the modification of exhaust gas systems with delete kits, capacitive soot sensors: particle filter OBD monitoring, new ePM sensor for the recognition of particle emissions, new NOx sensor design for OEM applications, and sensor technology in exhaust gas cleaning of medium-speed large motors.

12th International CTI Conference: SCR Systems / Off-Highway applications

5-7 July 2016, Stuttgart, Germany

http://cti.euroforum.de/en/events/scr_systems_2016

6th International Congress on Ceramics (ICC6)

21-25 August 2016, Dresden, Germany

www.icc-6.com

ICC6 topics include ceramic materials and systems for energy conversion and storage; additive manufacturing; novel, green and energy efficient processing and manufacturing technologies and new equipment trends; cellular and porous ceramics; new trends in silicate and traditional ceramics; materials and process diagnosis for quality assessment/non-destructive testing; bioceramics and medical applications; ceramic coatings for structural, environmental, functional and bioapplications; nanoscaled ceramics and composites; functional ceramic materials and systems; advanced structural ceramics and their applications; precursor-derived ceramics; max phases and ultra-high temperature ceramics; ceramic matrix composites; transparent and

luminescent materials; and ceramic materials and systems for thermoelectric applications.

SAE 2016 Heavy-Duty Diesel Emissions Control Symposium

20-21 September 2016, Gothenburg, Sweden

www.sae.org/events/hddec

The programme will focus on regulatory facts and trends, technical information and the latest strategies regarding Heavy-duty diesel emissions control technologies.

20th International Forum on Advanced Microsystems for Automotive Applications (AMAA 2016)

22-23 September 2016, Berlin, Germany

www.amaa.de

The conference theme will be "Smart systems for the automobile of the future". Topics include some discussion on how to minimize CO_2 and pollutant emissions.

FISITA 2016 World Automotive Congress

26-30 September 2016, Busan, South Korea

www.fisita2016.com

FISITA 2016 will focus on energy-efficiency, safety, eco-friendly technology, and connectivity.

VPC – Simulation und Test 2016

27-28 September 2016, Hanau, Germany

www.atzlive.de/VPC-Simulation-und-Test-201618--MTZ-Fachtagung/konferenzen/761.html

The conference will discuss the challenges of Real-Driving Emissions (RDE).

Deadline for abstract: 18 March 2016

NGV Global 2016 Conference

4-7 October 2016, St Petersburg, Russia

www.ngvglobal.org/events/ngv-global-2016-conference-and-exhibition

25th Aachen Colloquium

10-12 October 2016, Aachen, Germany

www.aachener-kolloquium.de

The Aachen colloquium on automobile and engine technology provides a wide range of technical presentations addressing current challenges of the vehicle and engine industry.

GreenPort Congress 2016

11-14 October 2016, Venice, Italy

www.greenport.com/congress

The congress will discuss alternative fuels for port infrastructure and maritime transport; reducing the carbon footprint of the logistics chain; port reception facilities/dust/noise/air emissions; circular economy; and industrial symbiosis.

9th Integer Emissions Summit & DEF Forum USA 2016

25-27 October 2016, Chicago, USA

www.integer-research.com/conferences/ies-usa-2016

The conference will host dedicated streams examining the regulatory and emissions reduction challenges for Heavy-duty commercial vehicles, off-highway vehicles, Light-duty vehicles and passenger cars, marine vessels, and DEF Forum.

14th FAD-Conference

3-4 November 2016, Dresden, Germany

www.fad-diesel.de/news/14th_FAD_Conference

The conference will discuss state of the art, new technologies as well as innovative ideas in the field of exhaust aftertreatment.

Ricardo Motorcycle Conference 3.0 – Riding Future Technologies

7 November 2016, Milan, Italy

www.motorcycleconference.com

The conference will explore the current trends and needs of the motorcycle world, including the challenges relating to future emissions legislation, latest developments of rider assistance systems and urban mobility.

Deadline for abstract: 15 April 2016

Advanced Fuels for Sustainable Mobility

9-10 November 2016, Aachen, Germany

www.fev.com/fev-conferences/fev-conference-advanced-fuels-for-sustainable-mobility.html

The FEV conference will discuss future-oriented developments in engine technology, fuels and fuel system components.