JULY 2017

NEWSLETTER

International Regulatory Developments

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EUROPE

European WLTP Regulation and correcting Act published

On 7 July 2017, the new World harmonized Light vehicle Test Procedure (WLTP) Regulation was published in the Official Journal as Commission Regulation (EU) 2017/1151.

This Regulation amends the implementing Euro 5&6 Regulation (EC) No 692/2008 with the new WLTP-based Type I test which is described in the Annex XXI. The procedure is largely based on the UN Global Technical Regulation (GTR) 15 on WLTP.

A correcting act was subsequently published in the Official Journal on 24 July 2017 as Commission Regulation (EU) 2017/1347. The corrections relate to transitional provisions for durability demonstration tests that started on NEDC before the introduction of WLTP and on the applicable evaporative emissions test procedure until 1 September 2019.

The type-approval certification numbering system and implementation dates are as follows:

'Character	Emission standard	OBD standard	Vehicle category and class	Engine	Implementation date: new types	Implementation date: new vehicles	Last date of registration
AA	Euro 6c	Euro 6-1	M, N1 class I	PI, CI			31.8.2018
BA	Euro 6b	Euro 6-1	M, N1 class I	PI, CI			31.8.2018
AB	Euro 6c	Euro 6-1	N1 class II	PI, CI			31.8.2019
BB	Euro 6b	Euro 6-1	N1 class II	PI, CI			31.8.2019
AC	Euro 6c	Euro 6-1	N1 class III, N2	PI, CI			31.8.2019
BC	Euro 6b	Euro 6-1	N1 class III, N2	PI, CI			31.8.2019
AD	Euro 6c	Euro 6-2	M, N1 class I	PI, CI		1.9.2018	31.8.2019
AE	Euro 6c-EVAP	Euro 6-2	N1 class II	PI, CI		1.9.2019	31.8.2020
AF	Euro 6c-EVAP	Euro 6-2	N1 class III, N2	PI, CI		1.9.2019	31.8.2020
AG	Euro 6d-TEMP	Euro 6-2	M, N1 class I	PI, CI	1.9.2017 (*)		31.8.2019
BG	Euro 6d-TEMP-EVAP	Euro 6-2	M, N1 class I	PI, CI	1.9.2019	1.9.2019	31.12.2020
AH	Euro 6d-TEMP	Euro 6-2	N1 class II	PI, CI	1.9.2018 (*)		31.8.2019
BH	Euro 6d-TEMP-EVAP	Euro 6-2	N1 class II	PI, CI	1.9.2019	1.9.2020	31.12.2021
AI	Euro 6d-TEMP	Euro 6-2	N1 class III, N2	PI, CI	1.9.2018 (*)		31.8.2019
BI	Euro 6d-TEMP-EVAP	Euro 6-2	N1 class III, N2	PI, CI	1.9.2019	1.9.2020	31.12.2021
AJ	Euro 6d	Euro 6-2	M, N1 class I	PI, CI	1.1.2020	1.1.2021	
AK	Euro 6d	Euro 6-2	N1 class II	PI, CI	1.1.2021	1.1.2022	
AL	Euro 6d	Euro 6-2	N1 class III, N2	PI, CI	1.1.2021	1.1.2022	
AX	n.a.	n.a.	All vehicles	Battery full electric			
AY	n.a.	n.a.	All vehicles	Fuel cell			
AZ	n.a.	n.a.	All vehicles using certificates according to point 2.1.1 of Annex I	PI, CI			

(*) This limitation does not apply if a vehicle was type-approved in accordance with the requirements of Regulation (EC) No 715/2007 and its implementing legislation prior to 1 September 2017 in the case of category M and N1 class I vehicles, or prior to 1 September 2018 in the case of category N1 class II and III and category N2 vehicles, according to the last subparagraph of Article 15(4).

Key:

"Euro 6-1" OBD standard = Full Euro 6 OBD requirements but with preliminary OBD threshold limits as defined in point 2.3.4 of Annex XI and partially relaxed IUPR;
"Euro 6-2" OBD standard = Full Euro 6 OBD requirements but with final OBD threshold limits as defined in point 2.3.3 of Annex XI;
"Euro 6b" emissions standard = Euro 6 emission requirements including revised measurement procedure for particulate matter, particle number standards (preliminary values for PI direct injection);
"Euro 6c" emissions standard = RDE NOx testing for monitoring only (no NTE emission limits applied), otherwise full Euro 6 tailpipe emission requirements (including PN RDE);
"Euro 6c-EVAP" emissions standard = RDE NOx testing for monitoring only (no NTE emission limits applied), otherwise full Euro 6 tailpipe emission requirements (including PN RDE), revised evaporative emissions test procedure;
"Euro 6d-TEMP" emissions standard = RDE NOx testing against temporary conformity factors, otherwise full Euro 6 tailpipe emission requirements (including PN RDE);
"Euro 6d-TEMP-EVAP" emissions standard = RDE NOx testing against temporary conformity factors, otherwise full Euro 6 tailpipe emission requirements (including PN RDE), revised evaporative emissions test procedure;
"Euro 6d" emissions standard = RDE testing against final conformity factors, otherwise full Euro 6 tailpipe emission requirements, revised evaporative emissions test procedure.';

Regulation (EU) 2017/1347 also contains corrections to Commission Regulation (EU) No 582/2011 implementing Euro VI emissions standards for heavy-duty vehicles. For instance, the last date of registration of Euro VIC is changed to 31 August 2019.

Corrections to Commission Regulation (EU) 2017/1221 on evaporative emissions and to the vehicle type-approval framework Directive 2007/46/EC are also included.

The correcting act entered into force on the same day as the WLTP Regulation, on 27 July 2017.

The current Regulation (EC) No 692/2008, with NEDC-based Type I test, will be repealed from 1 January 2022.

The European WLTP act and the correcting act entered into force on 27 July 2017.

Commission Regulation (EU) 2017/1151 is at http://publications.europa.eu/resource/celex/32017R1151.ENG.pdfa1a.l_17520170707en00010643.pdf.

Commission Regulation (EU) 2017/1347 is at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1347&from=EN.

Third RDE Regulatory Package published

On 7 July 2017, the third Real-Driving Emissions (RDE) Act, Commission Regulation (EU) 2017/1154, was also published in the Official Journal as an amendment to the new WLTP Regulation (EU) 2017/1151.

It complements the first 2 RDE packages with provisions that take into account cold-start emissions, introduce the test protocol and limits for measuring real-world particle number (PN) emissions, take account of periodic regeneration events and make sure that provisions exist for hybrid electric vehicles, light commercial vehicles and small volume manufacturers.

Linked to the prohibition to use defeat devices, the third RDE Regulation includes provisions on the 'Extended

Documentation Package', which details the information to be disclosed by the OEM to the Type-Approval Authority on all Auxiliary Emissions Strategies (AES). The package remains strictly confidential and is kept by the granting type-approval authority for at least 10 years; it shall be transmitted to the Commission upon request.

The Conformity Factor on PN is set to 1.5, defined as 1+ 0.5 for the PEMS measurement error margin. It applies to all vehicles with a Euro 6 PN limit, i.e. diesel and Gasoline Direct Injection (GDI) vehicles, and is introduced for all new M and N1 class 1 vehicle type-approvals from 1 September 2017 and for all new vehicles on 1 September 2018 (one year later to both dates for N1 class II and III and N2 vehicles).

In order to ensure transparency, to allow comparison with values measured during independent testing and to allow for the development of incentive schemes by local or national authorities, four 'declared maximum RDE values' are added to the vehicles' Certificate of Conformity: for NOx and PN, for the total RDE trip and for the urban part.

All RDE results of vehicles fitted with periodic regeneration aftertreatment systems are to be corrected with the Ki factors developed in the WLTP procedure. The occurrence of a regeneration during the RDE trip may be verified based on expert judgement through cross-correlation of exhaust temperature, PN, CO_2 and O_2 measurements in combination with vehicle speed and acceleration; the RDE test may be voided if a regeneration did occur.

The Regulation also sets minimum numbers of vehicle emissions types to be tested on the RDE procedure for cold- and hot-start tests. The larger the PEMS test family, the higher the number of types to be tested.

A review clause is introduced for the Commission to include a robust and complete evaluation method for hybrid and plug-in hybrid vehicles with an aim to ensure that their RDE values are directly comparable to those of conventional vehicles. This method is planned to be part of the fourth RDE regulatory package.

In the meantime, a new Appendix 7c is introduced on the verification of trip conditions and calculation of the final RDE emissions result for Off-Vehicle Charging Hybrid Electric Vehicles (OVC-HEVs), i.e. plug-in hybrids. It is recommended to start the trip in charge-sustaining battery status to ensure that the combustion engine has been working for a minimum cumulative distance of 12 km under urban conditions. RDE gaseous and PN emissions are weighted by the ratio of CO_2 emissions on WLTP in charge sustaining mode and CO_2 emissions during the PEMS trip.

For light commercial vehicles, the speed range of rural driving is changed from 60-90 km/h to 60-80 km/h and speeds above 80 km/h fall in the motorway part.

Small volume manufacturers with worldwide annual production of less than 10 000 units will need to comply with Not-To-Exceed emissions limits only from 1 January 2020 (new types) and 2021 (all new vehicles). Until then, they should monitor RDE NOx and PN emissions.

Ultra-small volume manufacturers selling less than 1000 vehicles per year in the EU are exempted from the RDE provisions.

The 3rd RDE act enters into force on 27 July 2017. The third RDE Commission Regulation (EU) 2017/1154 is at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1154&from=EN.

NEDC-WLTP Correlation Acts for Cars and Vans published

On 7 July 2017, two new Regulations were published on the CO_2 correlation between NEDC and WLTP: Commission Regulations (EU) 2017/1153 for cars and (EU) 2017/1152 for vans.

The WLTP is to be phased in, starting with new vehicle types from 1 September 2017 and all vehicles from 1 September 2018 (for M and N1 vehicles). From 1 September 2019, when also end-of-series vehicles have been phased out, all new vehicles placed on the EU market will be tested for CO_2 and pollutant emissions according to WLTP.

The CO_2MPAS correlation tool, developed by the European Commission's Joint Research Centre (JRC) and described in these new Regulations, allows to verify compliance with the NEDC-based CO_2 targets once type-approval emissions are measured on WLTP.

The car CO_2 correlation act (EU) 2017/1153 is at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1153&from=EN.

The van CO_2 correlation act (EU) 2017/1152 is at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1152&from=EN.

On 28 July 2017, a corrigendum to Commission Regulation (EU) 2017/1152 was published in the Official Journal.

It corrects a reference in the article on entry into force of the new Regulation setting out the CO_2 NEDC-WLTP correlation methodology for vans.

The corrigendum on vans' CO_2 correlation is at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1152R(01)&from=EN.

Amending Regulation (EU) 2017/1231 was also published on 8 July 2017 to correct some elements of the new car CO_2 correlation act.

For example, in the case of M1 vehicles of 3 000 kg or more, manufacturers can, as for N1 vehicles, either derive NEDC road load coefficients from the WLTP tests or use the UN Regulation No 83 tabulated values.

Also, the calculation of the NEDC CO_2 reference value is simplified by removing the need for post-processing of the WLTP test results and the calculation of the delta between the correlation tool simulated WLTP CO_2 value and the

NEDC CO_2 value. This approach aims at reducing the risk for errors in the calculation of the reference values.

Amendment to the car CO_2 correlation act (EU) 2017/1231 is at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1231&from=EN.

New Evaporative Emissions Regulation for Light-Duty Vehicles published

On 7 July 2017, Commission Regulation (EU) 2017/1221 on the update Type 4 test on evaporative emissions was published in the Official Journal.

A number of shortfalls which undermine the efficacy of the evaporative emissions control need to be remedied in order to ensure a satisfactory level of environmental protection. Two new procedures for the aging of the carbon canister and for the definition of permeability of the fuel system are therefore introduced in the existing type-approval procedure. It also introduces E10 as the reference fuel as the increasing oxygenate content in EU gasoline fuel affects its vapour pressure.

The new Regulation on Type 4 test enters into force on 27 July 2017. The 'evap' Regulation (EU) 2017/1221 is at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1221&from=EN.

Parliament supports Ratification of Revised Gothenburg Protocol

On 5 July 2017, the European Parliament adopted the Report from the Environment Committee recommending the ratification of the revised Gothenburg Protocol.

Back in December 2013, the European Commission proposed, as part of its Clean Air package, for the Council to ratify the 2012 revision of the Gothenburg protocol, which is part of the UNECE Convention on Long-range Transboundary Air Pollution (LRTAP). The 2012 amendments to the Gothenburg protocol include notably more stringent emissions reduction commitments for 2020 and the first fine particulate matter ($PM_{2.5}$) emissions reduction commitments.

In the EU, the Gothenburg protocol is implemented through the National Emission Ceilings (NEC) directive.

630 MEPs voted in favour, 10 MEPs voted against, and 25 abstained.

Commission requests Clarification on Type-Approval Infringements

On 13 July 2017, the European Commission sent additional letters of formal notice to Germany, Greece, Luxembourg, Spain, and the UK requesting further information on their application of EU vehicle type-approval rules.

Following a careful assessment of the responses by Germany, Luxembourg, Spain, and the UK to the letters of formal notice sent in December 2016 (*see AECC Newsletter of December 2016*), the Commission is seeking additional clarity on why these Member States did not apply penalties to a car manufacturer that used defeat devices banned under EU law.

The Commission is also requesting further information from Greece about the national system of penalties set up in accordance with the type-approval Directive.

The Commission closed the case against Lithuania, considering that the penalty system put into place is compatible with EU legislation.

Alleged Collusion amongst German Car Manufacturers

On 21 July 2017, German News weekly *Der Spiegel* reported that Volkswagen, Audi, Porsche, BMW, and Daimler met in secret working groups dating back to the 1990s and allegedly colluded on specifications for AdBlue® tank size.

The chief spokesman for the European Commission said during a press conference on 24 July 2017 that the Commission would make sure "all pieces of this puzzle, from emissions to consumer protection, internal market, competition rules, all these different puzzles will be addressed in a way that is comprehensive and makes sense".

"Two years into the emissions scandal it is crucial for everybody, European consumers, a competitive car industry, and Member States to finally do their job and assume their obligations," he added.

Commission Vice President for Jobs, Growth, Investment and Competitiveness Jyrki Katainen will oversee efforts to clean up the automotive sector, coordinating work by Commissioner for the Internal Market Elżbieta Bieńkowska on vehicle type-approval rules, Commissioner for Justice Věra Jourová on consumer action and, possibly, Competition Commissioner Margrethe Vestager to break up the alleged cartel.

On 23 July 2017, BMW categorically rejected the accusations, adding that none of its vehicles had been manipulated to meet diesel emissions norms. From BMW's perspective, the objective of discussions with other manufacturers concerning AdBlue® tanks was the installation of the required infrastructure in Europe.

On 24 July 2017, Germany's Association of the Automotive Industry (VDA) said that allegations must be properly investigated. VDA also noted that standardization and standardization activities are generally neither harmful nor illegal within the industry.

VW issued a statement on 26 July 2017 noting that discussing the feasibility and standardization of technical solutions and safety standards with respect to new technologies where regulatory approaches are still pending is in many instances necessary and valid. It is quite common for car manufacturers all over the world to engage in an exchange on technical issues in order to

accelerate the pace and quality of innovations. Such cooperation exist in particular among car manufacturers on subjects and issues which do not involve competition-specific vehicle features.

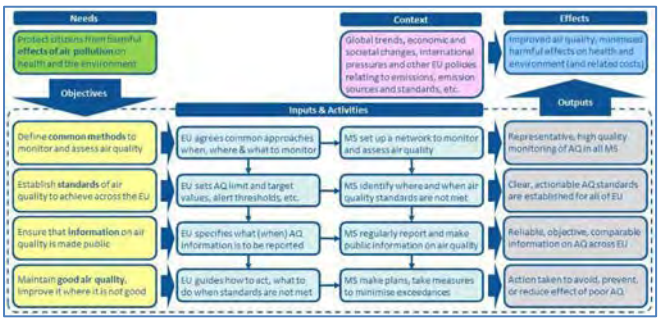
Fitness Check of the EU Ambient Air Quality Directives

On 26 July 2017, the European Commission published its roadmap of the evaluation and fitness check of the EU ambient Air Quality (AQ) Directives which will be carried out from the autumn of 2017 until the end of 2019.

This fitness check will look at the performance of EU AQ Directives (including Directive 2008/50/EC on PM_{10}, $PM_{2.5}$, NO_2, ozone, SOx, CO, and benzene) which set air quality standards and requirements to ensure that Member States adequately monitor and/or assess air quality on their territory, in a harmonised and comparable manner. The fitness check complements and builds on the extensive analysis developed as part of the 2013 air policy review, which informed the Clean Air Programme for Europe as well as the revised National Emission Ceilings (NEC) with reduction targets established under Directive 2016/2284/EU.

In line with the principles of Better Regulation, the fitness check will assess whether EU actions have been designed to achieve their objectives without entailing disproportionate costs and whether they continue to be justified.

The European Commission considers that an evaluation completed by 2020 is timely because, despite some AQ improvement in the EU, the European Environment Agency (EEA) still estimates that air pollution causes more than 400 000 premature deaths per year and because the World Health Organization (WHO) guidelines are, for several pollutants, more stringent than EU AQ standards.



The exercise will evaluate to what extent the ambient AQ Directives have:

- successfully defined methods to monitor and assess air quality in all Member States.
- established clear and actionable AQ standards that are in accordance with scientific advice to minimise harmful effects on human health and ecosystems.
- helped ensure that reliable, objective and comparable information on AQ and the attainment of AQ standards is made public and reported to the Commission.
- facilitated action to avoid, prevent or reduce the adverse effects of poor AQ, and triggered plans that have led to measurable improvements of AQ.

The five evaluation criteria outlined in the Better Regulation agenda are: relevance, effectiveness, efficiency, coherence, and EU value added.

Stakeholders will be consulted to confirm the topics and issues covered by this fitness check, gather factual information, data and knowledge about the implementation of AQ Directives, and to solicit views and opinions of stakeholders on the extent to which these Directives have successfully met, or are on track to meet, their different objectives.

The draft findings of the fitness check will be presented to Member States and key stakeholders at a dedicated workshop before finalisation. In addition, the Commission will explore opportunities to discuss with stakeholders this fitness check during events such as the Clean Air Forum in 2017 or Green Week 2018.

The roadmap of the AQ Directives fitness check is at http://ec.europa.eu/info/law/better-regulation/initiative/40557/attachment/090166e5b40536f3_en.

Commission to review Permits of Large Combustion Plants

On 31 July 2017, the European Commission announced it has adopted an implementing act that brings into effect "Best Available Technique" (BAT) conclusions for Large Combustion Plants.

The text tackles pollution from Large Combustion Plants (LCP) with a total thermal input of more than 50 MW, irrespective of the type of fuel used, such as power stations and district heating plants. LCP are responsible for about one third of air pollutants from industry and they represent, in total EU emissions from all activities, 46% of SO_2, 18% of NOx, 4% of PM_{10} and 39% of mercury.

Under the EU Industrial Emissions Directive (IED, 2010/75/EU) Member States have an obligation to ensure that large industrial facilities are operated in accordance with environmental permits issued by Competent Authorities. Such permits are required to be based on the application of BAT, i.e. those techniques that achieve a high level of protection of the environment as a whole and are developed to a scale that allows implementation within the relevant industrial sector under economically and technically viable conditions.

The adoption of BAT conclusions at the EU level assists Member States in this task and helps ensure a level playing field across the EU.

These LCP BAT conclusions have been developed over the course of five years' work by the European Integrated Pollution Prevention and Control Bureau, which is part of the European Commission´s Joint Research Centre (JRC), with a large group of technical experts from Member

States, the industry sector concerned and environmental NGOs.

The implementing act with LCP BAT conclusions is expected to be published soon in the Official Journal.

JRC inaugurates New Atmospheric Observatory Tower in Ispra

On 10 July 2017, a new state-of-the-art laboratory hosting the air pollution monitoring station was inaugurated at the Joint Research Centre (JRC) site in Ispra, Italy, in the presence of Mr Tibor Navracsics, the European Commissioner for Education and Culture, responsible for the JRC.

The Atmospheric Observatory is one of just two active European Monitoring and Evaluation Programme (EMEP) stations in Italy and it is one of the most advanced research-driven stations within the EMEP programme which underpins the Convention on Long-Range Transboundary Air Pollution (CLRTAP) under the United Nations Economic Commission for Europe (UNECE). It provides essential observations on air pollutants and greenhouse gases. The observations from the station also provide solid data which is used to assess the effectiveness and impact of European policies on the atmosphere.

The Atmospheric Observatory has been designed to become one of the pillars of European Research Infrastructures that address questions linked to climate change and air quality.

EEA Briefing on NEC Directive Reporting

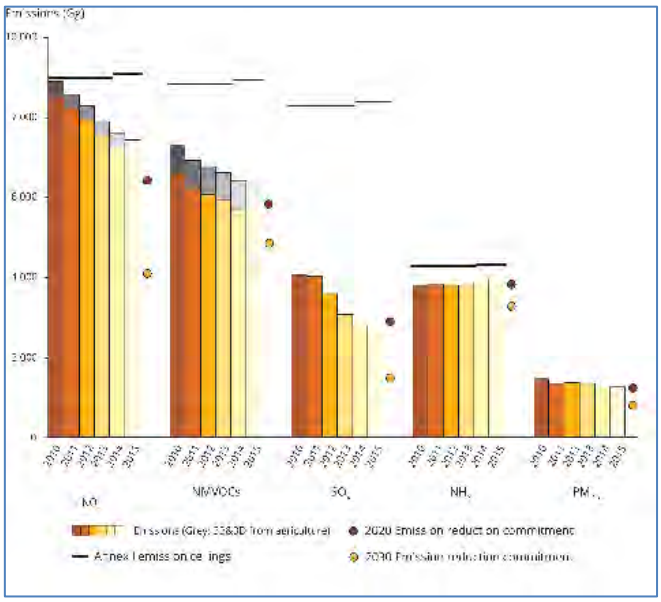
On 3 July 2017, the European Environment Agency (EEA) published a briefing on recent information reported by the EU Member States on the new EU National Emission Ceilings (NEC) Directive.

The EEA briefing gives a progress update on how Member States are meeting their emission ceilings under the NEC Directive. The briefing also provides an assessment of the projected emissions reported for 2020 and 2030 in relation to the Member States' reduction commitments for those years set in the new NEC Directive. The new NEC Directive restricts emissions for five key air pollutants: nitrogen oxides (NOx), Non-Methane Volatile Organic Compounds (NMVOCs), sulfur dioxide (SO_2), ammonia (NH_3) and fine particulate matter ($PM_{2.5}$).

Eleven Member States (Austria, Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Luxembourg, Spain, and Sweden) reported exceedances of their NEC Directive national ceilings for one or more pollutants in 2015. The new NEC Directive allows Member States under certain circumstances to 'adjust' downwards their reported emissions for compliance assessment with the national ceilings. In 2017, adjustment applications were submitted by nine Member States (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg and Spain). Following a review of these applications by the European Commission, and if approved, the number of Member States exceeding one or more emission ceilings in 2015 is expected to decrease from 11 to 5, with emissions from Belgium, Denmark, Finland, France, Ireland and Luxembourg now being below all of their respective ceilings. Austria would be very close to meeting all of its ceilings. Germany and Spain would still exceed their NH_3 ceilings.

For all years from 2010 to 2015, six Member States persistently exceeded their respective emission ceilings for NOx (Austria, Belgium, France, Germany, Ireland and Luxembourg).

Projected emissions show that 18 Member States do not consider themselves on track towards meeting their reduction commitments set for 2020 for NOx, NH_3, NMVOCs, SO_2, and/or $PM_{2.5}$ on the basis of the policies and measures they currently have in place. Similarly, 22 Member States are not on track to meet one or more of their 2030 commitments.



EU progress in meeting the 2010 emission ceilings and the 2020/2030 reduction commitments

For the EU as a whole, however, emissions for three pollutants (NMVOCs, SO_2, and $PM_{2.5}$) are already below the EU's own 2020 emission reduction commitment set for these pollutants. Only for NOx a further, more significant,

reduction is required in order to meet the 2020 reduction commitment. More substantial reductions are still needed for all pollutants if the EU is to achieve its 2030 emission reduction commitments.

The EEA briefing on the NEC Directive reporting is at www.eea.europa.eu/themes/air/national-emission-ceilings/nec-directive-reporting-status.

EEA Briefing on Financing Europe's Low-Carbon, Climate-Resilient Future

On 6 July 2017, the European Environment Agency (EEA) published a briefing on financing Europe's low-carbon, climate-resilient future.

The transition to the low-carbon, climate-resilient economy that Europe is aiming for is also an investment challenge that depends on a substantial redirection of finance flows towards more sustainable investments, the EEA indicated. Meeting this challenge and harvesting the associated opportunities requires an improved knowledge base in terms of clear investment information at EU and national levels.

The EEA has assessed the state-of-play of climate finance tracking in Europe and has seen that few countries have translated their national climate and energy objectives into corresponding investment needs and plans. To date, only Belgium, the Czech Republic, Estonia, France, and Germany have a national approach in place to track spending on climate change mitigation and adaption.

The EEA briefing on low carbon financing is at www.eea.europa.eu/themes/climate/financing-europe2019s-low-carbon-climate.

Dutch Reports on Diesel Investigations and Auxiliary Emissions Strategies

On 10 July 2017, the Dutch Ministry of Infrastructure and Environment updated the House of Representatives of the Netherlands with two reports on diesel car emissions, one by the Dutch Type-Approval authority (RDW) and one by the independent research organization TNO.

The RDW reported on the outcome of the follow-up investigations of 16 vehicles from 7 manufacturers that were identified to have possible discrepancies in the emissions control systems during the initial investigation, published in 2016 (*see AECC Newsletter of September-October 2016*).

The RDW concludes for 14 cars that the reduced performance of the emissions control system was allowed under the engine protection exemption clause. In the case of the remaining two vehicles, the Suzuki *Vitara* and the Jeep *Grand Cherokee*, no engine protection measure can justify the reduced efficiency of the emissions control system. The RDW concludes that further research is therefore needed with the Jeep *Grand Cherokee*. For the Suzuki *Vitara*, the public prosecutor will have to judge the consequences.

MERK	HANDELSBENAMING	EMISSIECODE	FABRIKANT
Volvo	XC90	Euro 6	Volvo Car Corporation
Volvo	XC90	Euro 6	Volvo Car Corporation
Hyundai	I40	Euro 5	Hyundai / KIA Motor Group
KIA	Cee'd	Euro 5	Hyundai / KIA Motor Group
KIA	Optima	Euro 5	Hyundai / KIA Motor Group
KIA	Sorento	Euro 6	Hyundai / KIA Motor Group
Suzuki	Vitara	Euro 6	Suzuki Motor Corporation Japan / motor FCA
Suzuki	SX4	Euro 5	Suzuki Motor Corporation Japan / motor FCA
Opel	Mokka	Euro 5	Adam Opel GmbH / motor General Motors Corporation
Opel	Mokka	Euro 6	Adam Opel GmbH / motor General Motors Corporation
Chevrolet	Aveo	Euro 5	General Motors Corporation
Chevrolet	Orlando	Euro 5	General Motors Corporation
Chevrolet	Cruze	Euro 5	General Motors Corporation
Jeep	Grand Cherokee	Euro 5	Fiat Chrysler Automobiles (FCA)
Jeep	Wrangler Unlimited Van	Euro 5	Fiat Chrysler Automobiles (FCA)
Jeep	Wrangler Unlimited Van	Euro 5	Fiat Chrysler Automobiles (FCA)

The other report, from TNO, assesses the future risks of high NOx emissions from diesel vehicles operated outside of the RDE boundary conditions.

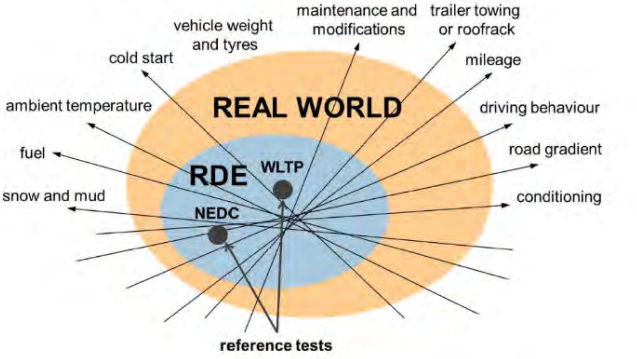


Illustration of how bandwidths of type approval testing, including RDE, do not cover all real-world conditions.

The study provides an overview of driving and vehicle conditions with possible high emissions. These include:

- Driving or starting in ambient temperatures lower than -7°C,
- Driving at altitudes higher than 1300 m,
- Trips or trip sections, deviating in time, distance and/or sequence of the road types compared to a valid RDE trip,
- Aggressive driving dynamics: Higher '$v*a_{positive}$' (speed multiplied with acceleration) values than allowed according to the RDE legislation,
- Incidental or prolonged motorway driving at higher speeds than 145 km/h,
- Traffic congestion on the motorway, and
- Towing a trailer or caravan.

In addition, the study provides guidance on how to detect and assess such situations and identifies possible technical abatement measures. Possible technical options to lower NOx emissions in these kinds of situations are identified as:

- Applying an alternative or additional emission control system/strategy such as a NOx storage catalyst for low exhaust temperatures, gaseous ammonia in the SCR system, a closed coupled SCR/DPF, or water injection,
- Improved temperature management, like improved insulation and rerouting the air flow to the engine, and
- (Mild) hybridization to avoid long idling and low load periods which cool down the catalyst.

The reports by RDW (in Dutch) and by TNO (in English) are available at www.tweedekamer.nl/kamerstukken/brieven_regering/detail?id=2017Z10211&did=2017D21191.

French Climate Plan introduced

On 6 July 2017, the French Minister for the Ecological and United Transition, Mr Nicolas Hulot, presented a climate plan to reach carbon neutrality by 2050.

France will take the initiative to propose at European level an ambitious Euro 7 standard and aims to end by 2040 the sale cars emitting greenhouse gas. The Government wants to build an internal coalition to promote this objective (the Netherlands and India are specifically listed as examples).

Petrol and diesel fuel excise duties will be converging by the end of the presidential mandate in 2022.

France will also encourage the replacement of older cars (pre-1997 diesel cars and pre-2001 petrol cars) with a bonus for the purchase of a cleaner and less fuel consuming vehicle, either new or second-hand.

France will support the development of alternative fuels (electricity, natural gas/biogas, hydrogen). Under the investments plan framework, a sustainable mobility fund will be set up to support recharging infrastructure development and innovative initiatives.

The purchase of gas fuelled heavy-duty vehicles will get some tax incentives.

Other announcements include closing the remaining coal-fired power plants by 2022; investing €4 billion to improve energy efficiency, including financial support for the poorest households to renovate their homes; and support for increasing carbon prices.

The French Climate Plan is at www.ecologique-solidaire.gouv.fr/sites/default/files/2017.07.06%20-%20Plan%20Climat.pdf.

French Consultation on Draft Decree on FlexFuel Retrofit Kits Certification

On 5 July 2017, the French Ministry for Environment launched a public consultation on a draft decree setting the legal framework for certifying FlexFuel retrofit modules.

France aims at promoting ethanol as a renewable energy in road transport and therefore wants to allow certification of aftermarket devices (or kits) that convert gasoline engine vehicles into Flexfuel vehicles that can then run on both normal market gasoline and on E85 (blend with up to 85% of ethanol). The draft decree applies to gasoline cars and light commercial vehicles that are at least Euro 3 and are compatible with E10 fuel, but it excludes vehicles fitted with Gasoline Particulate Filter (GPF).

The 'ethanol kit' supplier would have to guarantee the emissions control integrity and take over responsibility of OEM warranty in case of failure.

The consultation was open until 28 July 2017 and is at www.consultations-publiques.developpement-durable.gouv.fr/spip.php?page=article&id_article=1735.

Germany recalls 3.0l Diesel Porsche Cayenne and withdraws Type-Approval

On 27 July 2017, the German Transport Minister Alexander Dobrindt announced a recall of Porsche *Cayenne* models equipped with 3-litre diesel engines after finding potentially illegal emissions controlling software in the vehicles.

Mr Dobrindt said "We have examined the 3-litre TDI Euro 6 Porsche *Cayenne* vehicles; during tests these vehicles deploy a so-called 'warm-up strategy', which is not activated in real traffic. In our view that is a kind of test recognition, which we regard as a prohibited defeat strategy." The German government is therefore recalling 22 000 Porsche *Cayenne* in the EU, of which 7500 are registered in Germany.

Also, the type-approval for the 3.0-litre diesel Porsche *Cayenne* vehicles is withdrawn until updated software is available, which must be approved by the Federal Motor Vehicle Authority (KBA). The vehicle cannot be registered anywhere in the EU until then.

Minister Dobrindt added that there is also a high probability that the VW brand's *Touareg* SUV using a 3-litre diesel engine has similar software installed. "This has not yet been checked by us and will now be carried out immediately", he added.

UK Plan for Roadside NO_2 Concentrations

On 26 July 2017, the UK Government published a "plan for roadside NO_2 concentrations" prepared by the Department for Environment, Food & Rural Affairs (Defra) and Department for Transport (DfT).

The plan is focused on delivering roadside NO_2 compliance. Next year, a comprehensive Clean Air Strategy addressing other sources of air pollution will be published.

The shift to ultra-low and zero-emission vehicles is well under way, and will continue to gather pace over the coming years as we move towards 2040, by which point the UK Government will end the sale of all new conventional petrol and diesel cars, the plan says.

The UK Government will require councils to produce local air quality plans which reduce NO_2 levels in the fastest possible time. Local authorities will be able to bid for money from a new Clean Air Fund and will have access to a range of options such as changing road layouts to reduce congestion, encouraging uptake of ultra-low emissions vehicles, and retrofitting public transport. If these measures are not sufficient to ensure legal compliance, local authorities may also need to consider restrictions on polluting vehicles using affected roads. The Government will provide £255 million (€285 million) to implement local authorities plans, in addition to the £2.7 billion (€3 billion) already committed.

In Clean Air Zones, only vehicles which meet the emissions standard below will be able to drive into the zone free-of-charge. Fully electric or hydrogen fuel cell vehicles will be exempted from charge.

Table 5: Charging Clean Air Zone minimum emission standards

Vehicle type	Clean Air Zone minimum emission standards
Buses and coaches	Euro VI
Heavy goods vehicles	Euro VI
Vans	Euro 6 (diesel) or Euro 4 (Petrol)
Cars	Euro 6 (diesel) or Euro 4 (Petrol)
Motorcycles and mopeds (optional)	Euro 3

Regarding road charging, other options should be exhausted before opting for it. Any restrictions or charging on polluting vehicles should be time-limited and lifted as soon as air pollution is within legal limits and the risk of future breaches has passed.

The UK Government will also issue a consultation in the autumn of 2017 to gather views on measures to support motorists, residents and businesses affected by local plans – such as retrofitting, subsidised car club memberships, exemptions from any vehicles restrictions, or a targeted scrappage scheme for car and van drivers. The measures considered will need to target those most in need of support, provide strong value for the taxpayer, and be resistant to fraud.

Also, under proposed new laws, vehicle manufacturers found to be using defeat devices on their vehicles to cheat emissions tests could face criminal and civil charges, with fines of up to £50 000 (€56 000) for every device installed.

Finally, from August 2017, Driver and Vehicle Standards Agency (DVSA) roadside checks of lorries will include emissions cheat devices. DVSA will give the driver and operator ten days to fix the emissions system if they find it has been tampered with. If not done, DVSA will issue a fine and stop the vehicle.

The UK plan on NO_2, an overview of the plan, and a technical report are at www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017.

In order to establish low emission light commercial vehicles as an alternative to diesel-powered vans, a public consultation was launched on 26 July 2017 on proposals that would allow category B (car) licence holders to drive a slightly heavier vehicle, if it is powered by a low emission technology.

This would help compensate for lost payload capacity due to the added weight and size of alternative fuel technologies.

The public consultation on alternatively fuelled light commercial vehicles is open until 18 October 2017 and is at www.gov.uk/government/consultations/category-b-driving-licence-derogation-for-alternatively-fuelled-commercial-vehicles.

Flemish Media highlights DPF Removal Issue in Belgium

On 3 July 2017, the Flemish media VRT reported that car technical inspections in Belgium do not detect illegal DPF removal.

The VRT journalists tested the Belgian technical inspection. After removing the DPF from their diesel car, the technical inspection concluded that their vehicle was nevertheless completely in order.

The inspectors recognise that their inspection methods are obsolete and ask for better and more up-to-date tests. The Flemish Minister of mobility, Ben Weyts, will ask inspection centres to do additional visual checks.

A video of the investigations is at http://deredactie.be/cm/vrtnieuws.english/News/1.3014387.

NORTH-AMERICA

CARB Final Settlement with VW

On 20 July 2017 the California Air Resources Board (CARB) announced that it filed a consent decree for its final settlement with VW.

The car manufacturer will be required to pay an additional $153.8 million (€132 million) to California over the company's use of illegal "defeat devices" in 2009-2016, 2.0 and 3.0 litre diesel passenger cars. The amount represents penalties for air quality violations and the costs of CARB's investigations.

It comes on top of more than $422 million (€362 million) VW must pay into a national trust to mitigate environmental harm in California, $800 million (€685 million) in Zero Emission Vehicle (ZEV)-related investments that VW must perform in California, $25 million (€21 million) VW has paid to CARB to support ZEV investment programmes, consumer relief including restitution and modification or buy back of the affected vehicles, $86 million (€74 million) it has paid to the California Attorney General's office for civil penalties and costs, and any additional mitigation payments VW is required to make if it fails to modify or buy back at least 85% of the subject vehicles in California.

This additional consent decree is subject to court approval.

US EPA and CARB approve VW Emissions Fix for 2-litre Gen 1 Diesels

On 27 July 2017, the US Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) approved a fix for the Generation 1 Volkswagen diesel cars covering model years 2009-2014.

The fix will include hardware and software upgrades on 326 000 cars, including replacing a catalyst.

VW still needs to obtain approval for a resale plan for the 2009-2014 model diesel vehicles after making repairs, something that is expected in the coming weeks. US

regulators said extensive testing shows the fix will not affect "vehicle reliability or durability."

US EPA proposes to maintain Current NO_2 Ambient Standards

On 14 July 2017, the US Environmental Protection Agency (EPA) proposed, based on a review of the full body of scientific evidence, to retain the current national ambient air quality standards (NAAQS) for NO_2.

The NAAQS for NO_2 are a 1-hour standard at 100 parts per billion (ppb), based on the 98th percentile of the annual distribution of daily maximum 1-hour NO_2 concentrations averaged over three years, and an annual standard at a level of 53 ppb.

The last review of the primary NO2 NAAQS was in 2010. In that review, the US EPA supplemented the existing primary annual NO_2 standard by establishing a new short-term standard with a level of 100 ppb.

More info is at www.epa.gov/no2-pollution/primary-national-ambient-air-quality-standards-naaqs-nitrogen-dioxide.

ICCT Paper on Diesel Engines in the US

On 10 July 2017, the International Council on Clean Transportation (ICCT) published a paper on diesel engines in the US providing an analysis of advanced diesel engine technology developments and trends. The paper results from a collaboration between ICCT and automotive parts suppliers.

ICCT said that improved aftertreatment systems are rapidly reducing the cost of complying with emissions standards, and further cost-reducing advances are expected. While the efficiency advantage of diesels over gasoline engines is narrowing, diesel engine developments are also occurring and will further improve diesel efficiency.

Several engine and emission control system improvements are leading to lower cost and higher benefit diesel options, the report indicates. These developments include better turbochargers, engine downsizing and down-speeding, higher pressure fuel lines and more capable injectors, a suite of thermal management and friction-reducing technologies, and reduced-cost exhaust aftertreatment devices. As with gasoline engines, diesel engines may soon benefit from 48V electrical systems and electric boosting (with superchargers or turbochargers).

The combination of improved engines and less expensive aftertreatment will likely lead to advanced diesels costing around $300 (€265) less than the 2012 US Environmental Protection Agency (EPA) rulemaking anticipated for 2025, while providing the same, or greater, reductions in fuel consumption. Adding mild hybridization and electric boosting increases both costs and benefits, at a minor increase in cost per percent fuel consumption reduction.

Diesels have two significant advantages over gasoline engines, the ICCT said: they will always have significantly higher fuel economy, and their ability to haul cargo and tow cannot be matched.

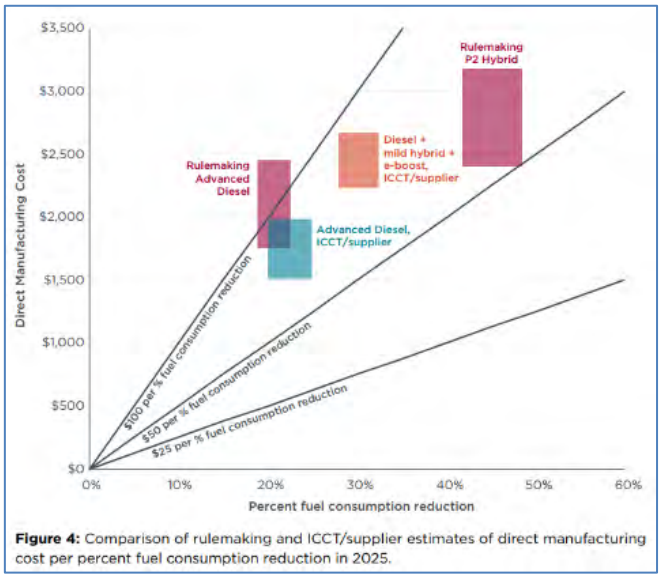


Figure 4: Comparison of rulemaking and ICCT/supplier estimates of direct manufacturing cost per percent fuel consumption reduction in 2025.

The ICCT paper on diesel engines is at http://theicct.org/sites/default/files/publications/Diesel-Engines_ICCT-Working-Paper_10072017_vF.pdf.

ASIA PACIFIC

Hanoi plans to ban Motorbikes by 2030

On 4 July 2017, the *BBC* reported that the Hanoi city council in Vietnam voted to ban motorcycles by 2030 to mitigate air pollution and cut congestion.

The decision swiftly divided the city where two-wheelers are the main means of transportation. Five million motorbikes are driving in Hanoi today.

The ban does not include cars which are an increasingly popular choice in Vietnam. A report in the *Thanh Nien News* found there were 750 new cars sold in Vietnam a day in the first half of 2016, compared to 8000 new bikes a day.

GENERAL

Belgian Automobile Federations launch Website on WLTP

On 12 July 2017, the Belgian and Luxembourgish automobile and cycle federation FEBIAC and the Belgium automobile sector federation TRAXIO launched a new website dedicated to the World harmonized Light vehicle Test Procedure (WLTP): www.toutsurlewltp.be.

The website aims at explaining, in French and in Dutch, the procedure for the measurement of emissions and fuel consumption of new light-duty vehicles.

VDA Report on Impacts of Combustion Engine Registration Ban

On 18 July 2017, the German Association of the Automotive Industry (VDA) published a report prepared by the Ifo Institute on effects on the German car industry of a possible ban on registration of new cars and light-duty trucks with internal combustion engines from 2030 onwards.

The study addresses three elements: 1) jobs - quantification of the potential detrimental effects and risks of such a ban for the productivity and employment in the German industry, 2) innovation - German automotive industry's incentives to innovate in the areas of combustion engines as well as alternative propulsion systems, and 3) environment - analysis of the effects of a ban on CO_2 emissions in particular.

In 2015, at least 457 000 employees were involved in producing types of products which would be directly affected by the ban (e.g. diesel engines). This is equivalent to 7.5% of the overall manufacturing employment in Germany. The biggest share of these employees (426 000) work in the automotive industry itself. If product groups would be included which are indirectly affected (e.g. transmission systems), the number of potentially affected jobs rises by 163 000 or an additional 3% of overall manufacturing employment. These jobs are mainly clustered in the metal industry. 102 000 employees in metal processing produce parts destined for vehicles with combustion engines.

Among the 457 000 directly affected jobs, 31 000 would be particularly at risk, situated at small and medium-sized enterprises. These firms would face sizeable difficulties compared to large companies when it comes to developing new alternative fields of business against the background of a major shift in propulsion technology.

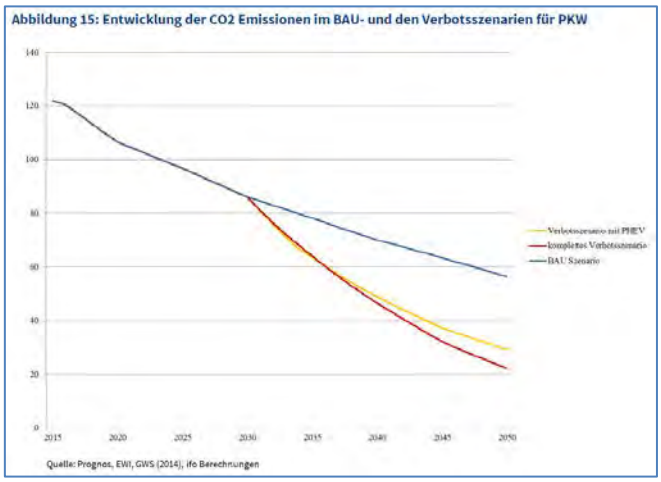
On innovation, the report looks at German patent data for combustion engines and alternative technologies over the period 1995-2015. Germany's share of patents among the leading automotive nations in the most recent period 2010-2015 is quite high. It was the highest in the area of electric vehicles, with 34% of patents; a similar position is observed with regard to hybrid vehicles (32%). Among German combustion engine patents (40%), more than two-thirds of all inventions focus on making engines more fuel-efficient. Hence, the report argues that there is no evidence of lacking innovation incentives in the area of alternative propulsion technologies compared to competing countries.

VDA therefore recommends focusing on the required infrastructure and demand-oriented policy measures rather than banning combustion engines.

Finally, on CO_2 emissions, the Ifo Institute developed a well-to-wheel (WTW) emissions model for cars and light commercial vehicles until 2050. Based on the model, a combustion engine registration ban would lead to a CO_2 emissions reduction of about 32% over the period 2030-2050 compared to a Business-As-Usual (BAU) scenario. This assumes that reduction targets in electricity generation are achieved at the same time.

The study points out that even in the BAU scenario, a reduction in CO_2 emissions of about 53% is achieved due to expected technological advances and the composition of the vehicle fleet.

From 2031 onwards, 3.3 million new electric vehicles are required to compensate for the otherwise newly registered vehicles with combustion engines. This is to be compared to the predicted 250 000 new electric vehicles in the BAU scenario. According to Ifo Institute, this would put enormous pressure on the charging infrastructure.



The VDA report is at www.vda.de/dam/vda/Medien/DE/Presse/Pressemeldungen/ifo-Studie_Auswirkungen-eines-Zulassungsverbots-von-Verbrennungsmotoren/ifo-Studie_Auswirkungen%20eines%20Zulassungsverbots%20von%20Verbrennungsmotoren.pdf.

Daimler to recall 3 Million Diesel Cars and improve NOx Emissions

On 18 July 2017, Daimler announced a substantial expansion of the on-going voluntary recall to three million diesel cars.

Since March 2017, Mercedes has offered its customers of compact-class cars an improvement in NOx emissions for one engine version. In order to effectively improve the emissions of additional model series, Daimler has now decided to extend the service action to include over three million Mercedes vehicles.

The measures to be taken for nearly all Euro 5 and Euro 6 vehicles in Europe will be carried out in close cooperation with the German regulatory authorities. The company is investing about €220 million and the service actions involve no costs for the customers. The implementation of the

measures will be starting in the next weeks. Due to the large number of vehicles this will continue over a longer period of time.

Daimler said it will continue to make a significant contribution to the improvement of air quality in cities and to climate protection with the systematic electrification of its vehicles, with mobility services, and with increasingly clean combustion engines. Diesel engines will continue to play an important role for a long time yet due to their significantly higher efficiency than gasoline engines.

Audi announces Emissions Software Retrofit Programme for Diesel Cars

On 21 July 2017, Audi announced a retrofit programme for Euro 5 and Euro 6 diesel cars in Europe and other markets outside of the US and Canada.

Audi said that a total of up to 850 000 cars worldwide with six-cylinder and eight-cylinder diesel engines (V6/V8 TDI) will get new software. This will further improve their emissions in real driving conditions beyond the current legal requirements without incurring any cost for customers. The action will take place in close consultation with Germany's Federal Motor Transport Authority (KBA). In this way, Audi intends to reduce overall emissions, especially in urban areas.

The service also applies to the Porsche and Volkswagen models that are fitted with the same types of engines and will be carried out free-of-charge for all customers.

BMW to update Software of Euro 5 Diesel Cars

On 23 July 2017, BMW issued a statement to categorically reject accusations of collusion on emissions control and AdBlue® tank size (*see above*). BMW also announced its commitment to conduct a voluntary software upgrade of suitable Euro 5 diesel passenger cars.

The emissions control upgrade will be at no cost to customers. It is part of a comprehensive and joint plan of measures involving municipalities and the industry, to further improve inner-city air quality without across-the-board driving bans.

EHN Position Paper on Air Pollution and Cardiovascular Diseases

On 3 July 2017, the European Heart Network (EHN), a Brussels-based alliance of heart foundations throughout Europe, published a position paper on outdoor air pollution and cardiovascular diseases.

The EHN recommendations are:

- Clean air needs to be promoted and incentivised across all policy areas, including in the area of urban planning. It also needs to be part of the framework of a comprehensive EU strategy for the prevention and control of chronic diseases.
- The EU must bring forward robust legislation tackling ambient air concentrations to protect health, cut healthcare costs and save lives; to that end EU should revise the ambient air quality directive and adopt the World Health Organization (WHO) Air Quality Guideline values as Limit Values.
- EU Member States must fulfil their obligations and ensure compliance with EU legislation; they should drastically increase their efforts to achieve better national emission targets, including pricing, investments, and regulatory measures; and perform a health impact assessment for new policy developments, in particular for urban planning.

The EHN position paper is at www.ehnheart.org/component/downloads/downloads/2537.

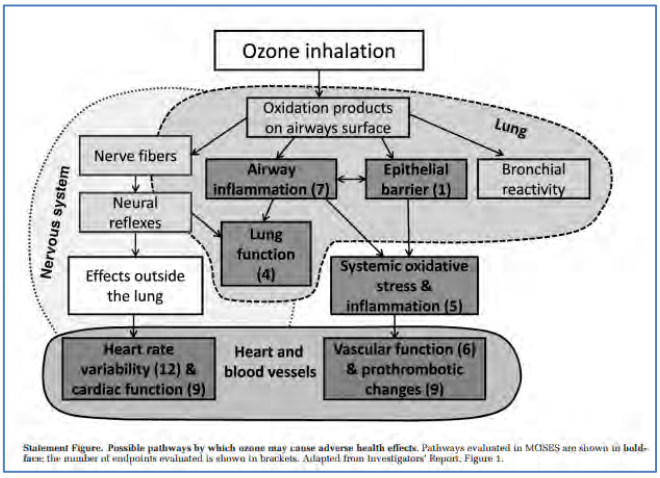
HEI Report on Health Effects from Ozone Exposure

On 6 July 2017, the Health Effects Institute (HEI) published a report on "Multicenter Ozone Study in oldEr Subjects (MOSES): Part 1. Effects of Exposure to Low Concentrations of Ozone on Respiratory and Cardiovascular Outcomes".

Although ozone has been documented to have respiratory effects, MOSES was designed to test whether ozone also has short-term cardiovascular effects at present-day ambient levels (70 parts per billion (ppb) is the current US National Ambient Air Quality 8-hour Standard).

Cardiovascular and respiratory characteristics were monitored in 87 healthy, older volunteer participants who were exposed to 0, 70, or 120 ppb of ozone for 3 hours while exercising moderately.

The study concludes that there was no convincing evidence that ozone exposure affected the primary cardiovascular endpoints identified by the investigators. Also, no responder subgroups could be identified in which ozone elicited cardiovascular effects that were not evident in the group as a whole.



Statement Figure. Possible pathways by which ozone may cause adverse health effects. Pathways evaluated in MOSES are shown in boldface; the number of endpoints evaluated is shown in brackets. Adapted from Investigators' Report, Figure 1.

The observed lack of cardiovascular effects may not be generalizable to the overall adult population, which

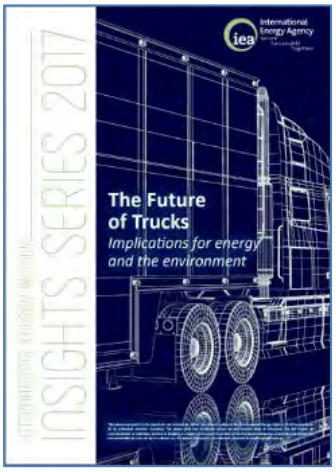
includes people who are less healthy and who are exposed to multiple pollutants for long periods of time.

There were moderate effects on lung function and on two markers of lung injury and inflammation in the healthy, older adults (a population that had not often been studied in the past), a result that provides confirmation of ozone effects on the lung at concentrations similar to the current air quality standard.

The HEI report on ozone exposure's health effect is at www.healtheffects.org/publication/multicenter-ozone-study-older-subjects-moses-part-1-effects-exposure-low-concentrations.

IEA Report on the Future of Trucks

On 3 July 2017, the International Energy Agency (IEA) launched a new report on the future of trucks and the implications for energy and the environment.



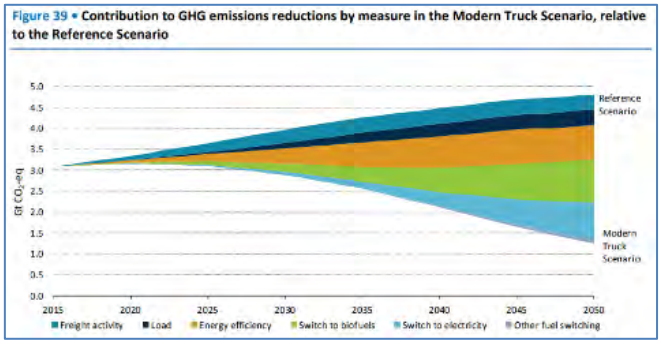
Road freight vehicles are a key enabler of global economic activity and play an essential role in delivering all types of goods or commodities from their points of production to the factories and industries that use or transform them, or to their final points of sale. They are a central source of global oil demand today: at around 17 million barrels per day (mb/d), oil demand from road freight vehicles accounts for around one fifth of global oil demand – equivalent to the current oil production of the US and Canada combined.

Road freight transport relies primarily on diesel, which accounts for more than 80% of its oil use. Road freight vehicles alone accounted for about 80% of the global net increase in diesel demand since 2000, and make up about half of global diesel demand today. As a result, road freight today accounts for more than 35% of transport-related CO_2 emissions, and around 7% of total energy-related CO_2 emissions.

Road freight transport is set to continue to drive global oil demand growth. Without further policy efforts, oil demand from road freight vehicles is set to rise by 5 mb/d to 2050.

In the Reference Scenario, global road freight activity is expected to increase by a factor 2.4, driven by robust GDP growth, bringing up oil demand. Emerging and developing countries in Asia, in particular China and India, account for about 90% of the net increase in road freight oil demand over the projection period, equivalent to around 30% of total oil demand growth from all sectors.

Reducing future growth of oil demand from road freight vehicles is a challenging, but possible task; opportunities arise from three main areas. The Modern Truck Scenario sets out a plausible, yet ambitious, vision to modernise road freight transport. It capitalises on the opportunities for systemic improvements in operations and logistics across all aspects of road freight, vehicle efficiency improvements, and support for the use of alternative fuels. In the Modern Truck Scenario, the energy intensity of vehicle operations (in energy used per tkm) drops by more than one-third in 2050 compared to the Reference Scenario. Improvements to logistics and road freight operations reduce tkm by 13% in 2050 and total vehicle activity (measured in vehicle-kilometres) by more than 20%. Energy efficiency and alternative fuels, including electrification, lead to a reduction in energy intensity of 34% in 2050 compared to the Reference Scenario. The result is that direct CO_2 emissions from road freight transport decline by 2.5 Gt in 2050, or 75%, relative to the Reference Scenario.



The IEA report is at www.iea.org/publications/freepublications/publication/TheFutureofTrucksImplicationsforEnergyandtheEnvironment.pdf.

ICCT Report on the Effect of a Decline in EU Diesel Market Share on Emissions

On 5 July 2017, the International Council on Clean Transportation (ICCT) released a report on the effect of a future decline in diesel market share on tailpipe CO_2 and NOx emissions in Europe.

Despite the anticipated decline in diesel car sales, future CO_2 standards in the EU can still be met even if the new car diesel share falls as low as 15% by 2025, the ICCT said. In the "exhausting combustion engine technology" scenario, diesel vehicles are replaced by advanced gasoline vehicles (including hybrid vehicles) and (when the diesel share falls below 25%) also partly by electric vehicles. In the "transitioning to electric vehicles earlier" scenario, manufacturers comply with the target by offering more electric, hybrid, and advanced gasoline vehicles in place of diesels. In both cases, the required investment in vehicle efficiency technologies increases but is counterbalanced if taking into account the cost savings when moving away from diesel engines. This is because the production costs of diesel engines are generally greater than their gasoline counterparts, considering the higher temperatures and pressures for the diesel combustion process as well as more complex exhaust aftertreatment systems.

As a result, the net compliance cost for reaching a 70 g/km NEDC-based target by 2025 would decline by €10 to €280 per vehicle if the diesel market share were to drop to a level as low as 15%.

As a co-benefit, the ICCT estimated that NOx emissions from diesel cars would be 60 000 to 260 000 tons lower by 2030 if the new car diesel market share in the EU dropped to 15% by 2025. This represents a 10 to 28% reduction, compared to a baseline scenario, and is equivalent to the NOx emissions inventory in a country the size of the Netherlands, the ICCT indicated.

The ICCT report is at www.theicct.org/sites/default/files/publications/Shifting-gears-EU-diesel-futures_ICCT-white-paper_06072017_vF.pdf.

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FORTHCOMING CONFERENCES

European Aerosol Conference (EAC) 2017
28 August-1 September 2017, Zürich, Switzerland
www.gaef.de/EAC2017
The scientific program is organized around five main topics: aerosol technology, atmospheric aerosol studies, aerosol measurement techniques, aerosol and health, and basic aerosol processes.

2nd Annual Emission Control Forum for Non-Road Mobile Machinery
7-8 September 2017, Frankfurt, Germany
https://tbmgroup.eu/product/2nd-annual-emission-control-forum-for-non-road-mobile-machinery
This Forum will discuss best practices on how to meet Stage V regulations requirements at the lowest cost possible, how to conduct In-Service Monitoring data analysis, learn about future state-of-the-art aftertreatment and SCR technologies; about electro-hybrid mobile machines; discuss harmonisation strategies of emission regulations and how to prepare best for future emissions regulations.

13th International Conference on Engines & Vehicles (ICE2017)
10-14 September 2017, Capri, Italy
www.sae-na.it/index.php/en/2016-03-19-14-13-16/2016-03-19-14-14-16/welcome
Topics to be addressed include engine modelling and diagnostics; engine combustion; new engines, components, actuators & sensors; hybrid and electric powertrains; fuels and lubricants; and exhaust aftertreatment and emissions.

Emissions 2017
12-13 September 2017, Frankfurt, Germany
https://gamcinc.com/conferences/emissions/?id=1
The forum will address advances in emission technology and management systems related to OEMs, suppliers (all tiers), component manufacturers, governmental and non-governmental agencies.

10th Integer DEF Forum USA 2017
26-28 September 2017, San Antonio, USA
www.integer-research.com/conferences/def-forum-usa-2017

2017 Aachen Colloquium Automobile and Engine Technology
9-11 October 2017, Aachen, Germany
www.aachener-kolloquium.de
The congress provides a wide range of technical presentations addressing current challenges of the vehicle and engine industry.

7th Integer Emissions Summit & AdBlue® Forum India 2017
11-12 October 2017, New Delhi, India
www.integer-research.com/conferences/ies-india-2017
The conference will examine the progress made towards Bharat VI a year on from the government's announcement regarding plans to implement the stringent emissions standards by 2020.

GreenPort Congress 2017
11-13 October 2017, Amsterdam, Netherlands
www.greenport.com/congress
The Congress aims to highlight innovations in equipment and technology to allow port users to adhere to policy, whilst illustrating practical solutions through case studies from the global logistics chain.

5th International Conference Real-Driving Emissions
16-18 October 2017, Berlin, Germany
https://real-driving-emissions.iqpc.de
The IQPC RDE conference will discuss the latest state of affairs around the implementation of RDE procedures in Europe, with a special focus on its consequences for engine and exhaust technology and further developments on local and global markets.
AECC will give a presentation on latest results from a Real-Driving Emission testing campaign

SAE 2017 International Powertrains, Fuels and Lubricants Meeting
16-19 October 2017, Beijing, China
www.sae.org/events/pfl

G.STIC 2017 – Global Science, Technology & Innovation Conference
23-25 October 2017, Brussels, Belgium
www.gstic.org
The objective of this conference is to underpin the technological discussions in the UN and other international forums as they relate to the Sustainable Development Goals, the climate goals and Means of Implementation.

3rd Annual Automotive Exhaust Systems Summit
26-27 October 2017, Munich, Germany
http://vonlanthengroup.com/en/events/3rd-annual-automotive-exhaust-systems-summit.html
Key practical learning points of the summit include insights on the best-practices and latest innovative technologies for exhaust systems; new challenges relating to selective catalytic reduction; control concepts and systems for exhaust gas

aftertreatment; the exhaust sensors market's effect on automotive industry trends; the role of tomorrow's exhaust systems, future power trains, and future energy carriers for clean mobility; and emissions legislation and the future requirements.

10th Integer Emissions Summit USA 2017
7-8 November 2017, Pittsburgh, USA
www.integer-research.com/conferences/ies-usa-2017

15th FAD-Conference
8-9 November 2017, Dresden, Germany
www.fad-diesel.de/conference-2017
The FAD conference will focus on drive technologies and environmental impact; Real-Driving Emissions – milestones of implementation; exhaust aftertreatment for on-road applications; contributions of science and research; emission concepts for non-road diesel engines; exhaust aftertreatment for gas engines; special requirement of exhaust aftertreatment for hybrid drives; emission strategies and solutions for large engines; new exhaust aftertretment concepts; service time and aging of exhaust aftertreatment systems; and future fuels and exhaust aftertreatment.

1st International FEV Conference Zero CO_2 Mobility
9-10 November 2017, Aachen, Germany
www.fev.com/index.php?id=805
The conference on Zero CO_2 Mobility will discuss the potential and performance of various forms of energy storage – from battery technologies to eco- and e-fuels.

22nd International Transport and Air Pollution Conference (TAP 2017)
15-16 November 2017, Zurich, Switzerland
http://tapconference.org
The conference topics include exhaust and non-exhaust emissions from transport modes (measurements and modelling); urban and suburban air quality; energy demand and greenhouse gas emissions from transport modes; and transport policies and mobility challenges of the future.

Clean Air Forum
16-17 November 2017, Paris, France
www.euconf.eu/clean-air/index.html
The European Clean Air Forum, organized by the European Commission, will provide a basis for structured dialogues, exchange of knowledge and good practices, and to enhance capacity of relevant stakeholders to improve air quality. It aims to reflect on the development of policies, projects and programmes in the context of air pollution and air quality, and facilitate the implementation of European, national and local air policies. It will focus on three themes: air quality in cities; agriculture and air quality and clean air business opportunities.

Heavy-Duty, On- and Off-Highway Engines 2017
28-29 November 2017, Augsburg, Germany
www.atzlive.de/en/events/heavy-duty-on-and-off-highway-engines
Main subject areas of the conference include new diesel, gas, and dual-fuel engines, electrification, and reducing pollution.

10th International AVL Exhaust Gas and Particulate Emissions Forum
20-21 February 2018, Ludwigsburg, Germany
www.avl.com/web/de/-/10th-international-avl-exhaust-gas-and-particulate-emissions-forum

AECC will give a presentation on Real-Driving Emissions from a Gasoline Plug-in Hybrid vehicle with and without a Gasoline Particulate Filter.

11th International Conference on Air Quality – Science and Application
12-16 March 2018, Barcelona, Spain
www.airqualityconference.org
The conference brings together participants from the air quality, climate and health research and other stakeholder communities to discuss the latest research advances, new applications and highlight important implications for policy and users.
Deadline for abstract: 13 October 2017

WCX18: SAE World Congress Experience
10-12 April 2018, Detroit, USA
www.wcx18.org
Deadline for abstract: 1 September 2017

8th AVL Large Engines TechDays
11-12 April 2018, Graz, Austria
www.avl.com/-/8th-avl-large-engines-techda-1

39th International Vienna Motor Symposium
26-27 April 2018, Vienna, Austria
https://wiener-motorensymposium.at
Deadline for abstract: 30 September 2017

SIA Powertrain 2018: the New Compression Engine for Passenger Cars & Commercial Vehicles
16-17 May 2018, Rouen, France
www.sia.fr/evenements/93-sia-powertrain-rouen-2018
The conference will support the automotive community in providing an overall picture of state-of-the-art technologies and by anticipating future development challenges. Reflecting the ongoing focus shift in transportation decarbonisation to a well-to-wheel basis, new topics will be introduced on alternative powertrain energy types (sustainable liquid and gaseous fuels) and fuel cells.
Deadline for abstract: 2 October 2017

40th International Vienna Motor Symposium
16-17 May 2019, Vienna, Austria
https://wiener-motorensymposium.at