

NEWSLETTER

International Regulatory Developments

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EUROPE

EU Parliament discussed RDE Package 3 with Commission

On 7 November 2016 the European Parliament Committee on the Environment, Public Health and Food Safety (ENVI) held an exchange of views on the third Real-Driving Emissions (RDE) legislative package with the European Commission staff, Ms Szychowska and Dr Dilara (see picture) who also presented at the AECC General Assembly held on 26 October 2016. Members of the Committee of Inquiry into Emission Measurements in the Automotive Sector (EMIS) also joined the debate.

Ms Szychowska, Head of Unit in DG-Growth, explained that the 3rd RDE package would focus on the measurement of particle numbers (PN) during real-driving conditions, and would also cover cold starts, hybrids, regenerating events, the inclusion of Conformity Factors (CF) in the Certificate of Conformity of each vehicle to improve transparency, and elements of lesser importance such as provisions on small and ultra-small volume manufacturers.



The AECC data on performance of GPF indicating that a PN CF of 1.0 seems technically feasible for Gasoline Direct Injection (GDI) cars was quoted several times. The Commission clarified that this data does not account for the variability of Portable Emissions Measurement System (PEMS) instruments that has been assessed by the Joint Research Centre (JRC) in an extensive correlation study which concludes that an error margin of 50% currently exists. For that reason, the Commission wants to start RDE for PN with a CF of 1.5 and include a review clause to lower the value as PEMS-PN instruments improve.

Under the Commission's Better Regulation Agenda, a short public consultation on the draft measure will be organized by the Commission (see below) prior to the vote by Member States in the Technical Committee - Motor Vehicles (TCMV) currently expected on 20 December 2016. A scrutiny period will then start in Parliament and Council before the legislation is published in the Official Journal.

The parliamentary debate can be watched at www.europarl.europa.eu/ENVI_RDE_161107 (starts from 53'30).

Stakeholder Consultation on Third RDE Package and AECC Input

On 10 November 2016 the European Commission launched a stakeholder consultation on the third legislative package of Real-Driving Emissions (RDE).

This stakeholder consultation occurs at the end of the Inter-Service Consultation within the different Directorate Generals of the Commission and is part of its 'Better Regulation Agenda' to improve transparency.

The draft package 3 on RDE introduces a Conformity Factor for Particle Number at 1.5 (being 1 + error margin of 0.5) on 1 September 2017 for new types and on 1 September 2018 for all new vehicles.

It also adds the first 5 minutes of cold-start into the urban and the total trip emissions.

The draft text requires manufacturers to declare the maximum value of NOx and PN emissions guaranteed in RDE tests in the Certificate of Conformity of each vehicle sold.

With regard to defeat devices and emission control strategies, the draft text includes provisions on the extended documentation package that the OEM will be required to submit to the type-approval authority.

The third RDE package also includes a new Appendix 7c on the verification of trip conditions and calculation of the final RDE results for plug-in hybrid vehicles, some provisions on the use of the Ki factor to account for periodic regenerations, and some derogations for small volume manufacturers.

Finally, it requires the website with publicly accessible RDE results to allow a 'wildcard' search when not all vehicle identification parameters are known.

The results of the stakeholder consultation will feed into the Commission's work on the draft measure, which is provisionally expected to be presented to the Technical Committee - Motor Vehicles (TCMV) for vote on 20 December 2016.

The consultation is open until 8 December 2016 and is at https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2016-6339064_en.

AECC has provided feedback to the stakeholder consultation. AECC's position is based on project results which demonstrated that on the vehicles tested, which were equipped with either Diesel Particulate Filters (DPF) or Gasoline Particulate Filters (GPF), the Euro 6c PN limit ($6 \times 10^{11}/\text{km}$) was met in real-world, even under severe driving conditions and low ambient temperatures.

AECC also supports the Commission's proposal to include cold-start RDE directly in the assessment of RDE emissions in the urban phase, without weighing factors.

The AECC contribution is, next to other stakeholders' contributions, at https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2016-6339064/feedback_en.

TNO Symposium on Vehicle Emissions

On 3 November 2016 TNO (the Netherlands Organisation for Applied Scientific Research) organised a symposium on vehicle emissions in The Hague together with the Dutch Ministry of Infrastructure and Environment (IenM).

The key results of recent TNO reports were presented, including the main conclusions of the recently published RDW (Dutch Type-Approval Authority) report on on-road diesel emissions.

Presentations of the event are at www.tno.nl/symposiumvoertuigemissies2016/.

TNO also presented a report on the assessment of the strengths and weaknesses of the new Real Driving Emissions (RDE) test procedure.

The analysis, commissioned by the Dutch Ministry of Infrastructure and Environment, concludes that the combination of RDE packages 1 and 2 adopted and expected RDE packages 3 and 4 form a sound basis for substantial reductions of on-road exhaust emissions of new vehicles in the near future.

Strengths identified include the introduction of on-road measurements, the separate assessment of urban emissions, broad RDE test conditions, availability of accurate PEMS equipment and the inclusion of cold-start emissions. Weaknesses (or risks) include the dependence on RDE package 4 to achieve an efficient legislation, the lack of transparency in PEMS data normalisation tools, the presence of a transfer function concept, the fact that Conformity Factors could already be lowered since PEMS instrument are more accurate than assumed, and finally the continuous attempts to tighten the window of RDE test conditions.

The TNO RDE assessment report is at <http://publications.tno.nl/publication/34622349/F3ewol/TNO-2016-R11227.pdf>.

Further Developments in Parliament's EMIS Committee

On 8 November 2016 the Committee of Inquiry into Emission Measurements in the Automotive Sector (EMIS) held a hearing of Mr Heinz Zourek, former Director-General of DG-ENTR and Mr Carlo Pettinelli, Director in DG-GROW. This was followed by the hearing of Mr Jos Delbeke, Director General of DG- CLIMA.

Zourek stated that defeat devices were banned entirely except for the exemptions in the legislation adopted in 2007. He felt that the Regulation was not vague and neither Member States nor others had requested clarification. Pettinelli agreed that the Regulation was clear, and explained that the term 'normal driving condition' was vague by definition, as it had to cover multiple variables, such as altitude and temperature. It was for legislators to establish the principle and for type-approval authorities to apply it.

Zourek confirmed that the Commission was aware of the difference in emissions measured in a laboratory and on a road, however, thought at the time that this was due to engine optimisation and other legal methods. The difference

in measurements was nevertheless the reason why the Joint Research Centre (JRC) was asked to develop new test procedures.

Co-Rapporteur MEP Gerbrandy (ALDE, NL) asked the guests about email exchange indicating that civil servants of DG Enterprise were aware of 'cycle beating' in 2012. The Commission representatives however indicated that they were not informed about this. 'A Director General cannot read every email that is sent to his DG', Zourek added.

At the beginning of the second hearing, Delbeke, Director General of DG CLIMA, underlined the importance of the fact that the new CO₂ targets for cars and vans would be based on WLTP, instead of NEDC.

The Commission would strive for technology neutrality in the forthcoming CO₂ emission targets, he said, however it currently looked into promoting zero and low emission vehicles because of their benefits regarding CO₂ and pollutant emissions.

Delbeke also felt that market surveillance was needed, and informed MEPs that the opinion of the Scientific Advice Mechanism on the market surveillance of CO₂ emissions and fuel consumption was expected by the end of November 2016 (*see page 7*).

With regard to existing legislation, Delbeke felt that the current problem was the compliance provisions and enforcement at Member States level. For the future, he argued that it would be more important to have a legal basis for amending undesired flexibilities, than having an independent institution on market surveillance.

The hearing of Commission's representatives can be watched at www.europarl.europa.eu/EMIS_161108.

On 14 November 2016 the EMIS Committee heard Mr Karl Falkenberg, former Director General of DG-ENVI and Mr Daniel Calleja y Crespo, former Director General of DG-ENTR/GROW.

When asked for the delay in the new RDE test procedure, Falkenberg indicated that it was not caused by the discussions and tensions between Commission DGs, but rather the discussions with Member State experts in the technical committee (TCMV).

Regarding the difference between a defeat device and cycle beating, Falkenberg did not have a clear answer. He questioned the moral aspect of both, and indicated that he never thought that illegal practices existed, as he understood that under the responsibility of national test laboratories and type-approval authorities the legality of the texts would be controlled and respected.

Falkenberg added that the Commission thought that there was no legal case against cycle beating, and therefore focused on addressing the lack of clarity in the implementing legislation.

He indicated that uniform application of EU legislation could be improved by granting the Commission or an agency the authority to survey legal standards in Member States as well as their implementation.

Calleja also confirmed that all institutions were aware of the differences in emissions measured in laboratories and on the road, which was attributed to the outdated NEDC test cycle. All institutions furthermore agreed that the system needed to be changed, he added.

Calleja indicated that the Commission never received information that Member States failed to apply emissions legislation. When it did receive such information, the Commission would start infringement procedures, he assured MEPs, and referred to the case on mobile air-conditioning systems (MAC) in vehicles.

When asked whether a Commissioner or industry had tried to slow down the development of the RDE procedure, Calleja indicated that nobody in the Commission slowed down the development as it was their obligation to move forward with it. And while industry preferred a random cycle over the RDE procedure using PEMS, the Commission and Member States in the end decided for the latter.

Calleja agreed that the Commission had not done everything right, and reflected that it was focusing too much on changing the test procedures. However, he also pointed out that it was difficult for the Commission to do more, given the limited powers under the current legislation, while also being understaffed.

Calleja felt that a supervisory mechanism and stronger surveillance was currently needed. In this regard he underlined the importance of the proposal revising the type-approval framework. He also felt that the RDE procedure should be completed and that a new governance system was needed.

In the future, all technology used should respect environmental and safety standards, Calleja noted. The EU should furthermore not tell manufacturers how to design vehicles and the shift to clean transport is not going to happen overnight.

The hearing of former Commission Directors General can be watched at www.europarl.europa.eu/EMIS_161114.

On 23 November 2016 MEP Gieseke (EPP, Germany) was appointed as Co-Rapporteur for the draft Final Report of the EMIS Committee. MEP Gieseke took over from MEP Zalba Bidegain (EPP, Spain) who resigned. MEP Gieseke will prepare the draft Final Report of the EMIS Committee together with Co-Rapporteur Gerbrandy (ALDE, Netherlands).

On 24 November 2016 the EMIS Committee heard the French Minister for Environment, Ms Ségolène Royal.

Ms Royal introduced the French investigative committee on vehicle emissions (Royal commission) and its results, as well as (policy) measures implemented by France since the VW scandal.

The French investigations had not found any evidence for the use of a defeat device in the examined vehicles, she said, however a second round of investigations on seven vehicles is currently being conducted at IFPEN, and its results are expected in December 2016.

Royal added that an issue with a Renault vehicle was submitted to Court, in order to determine whether it had been intentional or not, whether it should be considered as a defeat device or optimisation and to what degree, and what sanctions should apply.



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Regarding the Real-Driving Emissions (RDE) dossier, Royal stated that the NOx Conformity Factors adopted by the Technical Committee - Motor Vehicles (TCMV) were unacceptable. She had requested the decision on RDE to be taken at Council level, and she regretted that the European Parliament had not opposed the measure. She called for the Conformity Factor to be adjusted as soon as possible, and to be set ambitiously.

MEP Gerbrandy asked Royal to explain why, while France had been one of the leading countries in watering down and delaying the RDE test procedure, she had been very vocal after the decision and had denied the role of the French representatives in the TCMV. Royal replied that French civil servants did not act under her instructions. She felt that decisions on test procedures should be taken at Council level, and that there were many issues where lobbying had to be restricted through restored transparency. MEP Gerbrandy however remarked that she was already Environment Minister when the French delegation had asked for a five year delay in the implementation of the RDE procedure during a TCMV meeting in November 2014.

Royal felt that the current problems were due to the lack of a European authority which would be able to approve and control national type-approval authorities and which would help to share good practice and reduce costs.

With regards to the future, Royal said that a transition to cleaner fuels was needed and that diesel should become a 'thing of the past'. Tax advantages for diesel should be abolished, and she informed MEPs that citizens in France receive a 10 000€ incentive when substituting an old diesel car for an electric one.

The hearing of Ms Royal can be watched at www.europarl.europa.eu/EMIS_161124.

On 24 November 2016 it was announced that the Final EMIS Report would consist of two parts. The first part would be a report, including a section which combines and analyses the evidence gathered during the inquiry, as well as a section on the conclusions of the inquiry regarding possible contraventions and maladministration in the implementation

of EU law. The second part would be a Motion for a Resolution containing recommendations for the future.

On 28 November 2016 the EMIS Committee heard Ms Ida Auken, former Danish Minister for the Environment between 2011 and 2014, time during which Denmark held the Council Presidency, in the first half of 2012.



Most of the discussions with MEPs focused on a letter Ms Auken had sent to former Commissioners Tajani (Industry) and Potočník (Environment), as well as their reply. Auken had sent the letter to inform the Commission that she had received information that the Euro 6 standards would not deliver NOx emission reductions in real-world conditions. She intended to exert political pressure in order to find solutions for air quality problems and speed up the Real-Driving Emission (RDE) procedure. At that time, it was however difficult to push for environmental legislation due to the economic crisis. Auken admitted that she felt 'quite alone', as no other Member State raised the issue, and only few countries shared the environmental concerns. In the letter, Auken stated that technology was used by European manufacturers in American vehicles to comply with US emission limits, while this was not used in vehicles marketed in Europe. The Commissioners responded by stating that, contrary to the European market, almost no light-duty diesel vehicles existed in the US market.

On RDE, although the decision on the conformity factor for NOx emissions had been taken after her tenure, the Danish position had regarded 2.1 as better than no RDE test procedure at all, although originally advocating for a more ambitious factor.

Auken felt that the defeat device scandal should lead to a shift in mobility and a transformation of the automotive industry. She furthermore expressed her hope that industry would start to play a different role, and would realise that ambitious legislation could push towards innovation which could improve the industry's competitiveness.

The hearing of Ms Auken can be watched at www.europarl.europa.eu/EMIS_161128.

On 28 November 2016 MEPs were scheduled to hold an exchange of views with former European Parliament Rapporteurs, Shadow Rapporteurs, and Rapporteurs for Opinions on Euro standards legislation. However, this part of the meeting was cancelled, due to the low number of MEPs that attended the meeting and the fact that only former

Rapporteur Bernd Lange (S&D, Germany) had confirmed his attendance. A written consultation will be conducted.

Stakeholder Consultations on NRMM Stage V Delegated Acts

On 10 November 2016 the European Commission launched a stakeholder consultation on the two delegated acts that will accompany the Stage V Regulation (EU) 2016/1628 for Non-Road Mobile Machinery (NRMM).

Two Delegated Commission Regulations have been drafted by the Commission. The first one covers technical requirements and test methods. It includes 17 annexes with provisions on tests procedures for emissions measurement; characteristics of the steady-state and transient test cycles; reference fuels; Conformity of Production (COP); methodology to include the deterioration factors; requirements on base and auxiliary emissions control strategies, NOx control and particulate control anti-tampering measures; performance requirements and test procedures for dual-fuel engines; acceptance of equivalent engine type-approvals; etc.

The second delegated act covers In-Service Monitoring (ISM) provisions with requirements on plans for monitoring in-service engines, test conditions, data sampling methods, test procedures and data validation, test data availability, confirmatory tests, reporting procedures, Portable Emissions Measurement System (PEMS) instrument, PEMS test procedure, data pre-processing, data validation checks, emissions calculations, conformity of the Electronic Control Unit (ECU) torque signal, and ECU data stream information.

The results of the stakeholder consultations will feed into the Commission's proposals, which are expected to be voted by Member States in the Technical Committee - Motor Vehicles (TCMV) on 20 December 2016.

The consultations are open until 8 December 2016 and are at https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2016-6327594_en (on technical requirements) and at https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2016-6285832_en (on In-Service Monitoring).

Commission's Report on Member States Investigations on Emissions

On 23 November 2016 the European Parliament's Committee of Inquiry into Emission Measurements in the Automotive Sector (EMIS) published a report provided by the European Commission on the Member States' investigations following the emission manipulation case.

The report notes the set up by the Commission of a subgroup of the Type-Approval Authorities Expert Group (TAAEG) on Automotive Market Surveillance, which focuses on the coordination of the emissions measurement programmes announced by Member States as a follow-up of the VW case. It is said that the Joint Research Centre (JRC) has developed a testing protocol as well as an analysis tool for PEMS (Portable Emissions Measurement Systems) data within this group.

Because the information received from Member States in response to the Commission's inquiries in many cases is incomplete, the Commission is not in a position to provide the European Parliament with any substantial conclusions on the investigations and remedial actions at this point in time. The Commission will continue to closely monitor the activities of Member States in the context of their investigations as well as in terms of follow-up actions.

The Commission's report is at <https://polcms.secure.europarl.europa.eu/cmsdata/upload/a43da839-a24e-47eb-83aa-ad71afb2a9b2/2016.07.27%20-%20Annex%20-%20Commission%20Report%20on%20the%20Member%20States%20Investigation%20Following%20the%20Emission%20Manipulation%20Case.pdf>.

Study on Differences between EU and US Emissions Legislation

On 25 November 2016 the European Parliament released a comparative study on the differences between the EU and US legislation on emissions in the automotive sector that was requested by the Committee of Inquiry into Emission Measurements in the Automotive Sector (EMIS).

The study sets out an overview of technologies used in vehicles to comply with emissions legislation, as well as an overview of differences between the US and EU with regards to air quality emission standards; greenhouse gas emission legislation; type-approval structures; conformity of production; in-service performance verification; implementation and enforcement of legislation and its impact; and legislation on defeat devices.



Generally, it is felt that the EU system exhibits a number of structural weaknesses, in addition to the technical weaknesses of the NEDC test cycle. Some likely behavioural impacts were identified, including that manufacturers make maximum use of permitted flexibilities; and exploit the scope for choosing type-approval authorities they perceive to be more favourable. On the side of the regulators, there are few incentives to rigorous identification and pursuit of non-compliance; and the dispersal of responsibility among Member State authorities, and the absence of effective systems for sharing information between themselves and with the Commission, does not facilitate coordinated enforcement action.

The report recommends that:

- The flexibility for manufacturers to choose their regulator is removed;
- Oversight of implementation of environmental standards is placed in the hands of organisations with a clear environmental mission;
- Transparency on the use of emission control devices is improved, with manufacturers required to provide full

information on them to regulators, and seek prior approval of the use of any defeat devices under specific derogations;

- Greater clarity is provided on the duties of regulators both to monitor in-service performance, and to identify and pursue cases of non-compliance;
- Improved EU-level monitoring of the performance of type approval authorities (TAAs) is introduced, with the option of suspending a TAA's right to issue type-approvals in the event of persistent weaknesses in performance.

The Parliament study is at [www.europarl.europa.eu/RegData/etudes/STUD/2016/587331/IPOL_STU\(2016\)587331_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2016/587331/IPOL_STU(2016)587331_EN.pdf).

Parliament Committee discusses Type-Approval Framework

On 9 November 2016 the Internal Market and Consumer Protection (IMCO) Committee of the European Parliament discussed the draft report on the proposal to revise the vehicle type-approval framework and more than thousand amendments tabled.

Half of the amendments concerned the creation of an EU agency or body for type-approval and/or market surveillance activities.

EPP group Shadow Rapporteur MEP Štefanec (Slovakia) indicated that his group did not support the creation of an agency. He indicated to support the Commission's proposal, while increasing the Commission's power at the same time. He therefore supported the creation of the Forum, peer reviews of type-approval authorities, a much better use of the institutional framework, and a split fee structure in which Member States funded market surveillance.

S&D group Shadow Rapporteur MEP Schaldemose (Denmark) felt that based on findings of the EMIS Committee, Member States were currently not capable of their tasks and that EU oversight should be increased. The S&D group therefore proposes an agency on market surveillance which could also suspend type-approval authorities, if needed.

ALDE group Shadow Rapporteur MEP Charanzová (Czech Republic) agreed that the EU's market surveillance power should be strengthened, but was not convinced that creating an agency was the best way forward. Instead, she proposed that the Commission should be given the power to oblige Member States to test a vehicle, and as a follow-up step, to test a vehicle itself if it remained suspicious of the vehicle.

Greens/EFA group Shadow Rapporteur MEP Durand (France) regarded the links between manufacturers and Member States as the cause for the current problems, and called upon MEPs to wait for the results of the EMIS Committee, as well as the Opinions of the ENVI and TRAN Committees.

GUE/NGL group Shadow Rapporteur MEP de Jong (Netherlands) felt that competition among technical services and type-approval authorities should be addressed.

EFDD group Shadow Rapporteur MEP Zullo (Italy) suggested that, to prevent conflict of interest, the Joint Research

Centre (JRC)'s laboratory in Ispra should become the EU authority which would supervise all models on the market, and which would be able to apply sanctions.

The Commission welcomed the amendments strengthening its proposal, but underlined that it did not propose the creation of a European agency. At the end of the debate, Rapporteur MEP Dalton (ECR, UK) reiterated that he was open for any option that would strengthen EU oversight, but was not convinced that an agency would be the solution.

The vote of the IMCO Report was postponed to 26 January 2017 since neither the Environment nor the Transport Committees have yet adopted their respective Opinions on the dossier.

ENVI Committee Opinion on Vehicle Type-Approval Framework

On 29 November 2016 the European Parliament Committee for Environment, adopted its opinion on the revision of the vehicle type-approval framework.

356 amendments had been tabled in ENVI, covering a wide range of issues. Eight compromises were proposed by the Rapporteur MEP Fjellner (EPP, Sweden) on fees, obligations of market surveillance authorities and of Member States, compliance verification and the introduction of a European Vehicles Surveillance Agency, the forum for enforcement and exchange of information, audits of type-approvals and on technical services. An additional compromise on defeat devices and emission control strategies was tabled by a coalition of other political groups.

MEPs voted in favour of creating an EU agency to monitor vehicle compliance with environmental and safety rules before and after they are placed on the market.

The text was adopted by 59 votes in favour and 3 against.

The ENVI Opinion will feed the work of the lead Committee (IMCO) that is expected to vote its Report at the end of January 2017.

The adopted ENVI Opinion has not yet been published.

Parliament adopts Revised National Emission Ceilings (NEC)

On 23 November 2016 the European Parliament formally adopted the trilogue agreement on the revised National Emission Ceilings (NEC) Directive.

The new legislation sets out national emission reduction commitments for sulfur dioxide (SO₂), nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOC), ammonia (NH₃), and fine particulates (PM_{2.5}). The proposed pollution cuts would reduce health impacts of air pollution by around 50% by 2030.

During trilogue negotiations, Member States insisted on excluding methane from the scope of the Directive. However, the European Commission which had included methane in its original proposal could trigger a review on this point.

The resolution was approved by 499 votes to 177, with 28 abstentions.

The text will now have to be signed by the Council of the EU before it is published in the Official Journal.

The adopted text of the NEC Directive is at www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2016-0438+0+DOC+PDF+V0//EN.

Commission's Scientific Advice on Light-duty CO₂ Gap Closure

On 11 November 2016 the European Commission's High Level Group of Scientific Advisors released their report analysing how to close the growing gap between the type-approval measurement of CO₂ emissions from cars and vans in the laboratory and what they really emit on the road.

The Scientific Advisors' report includes more than ten references to AECC publications on Real-Driving Emissions of modern vehicles.

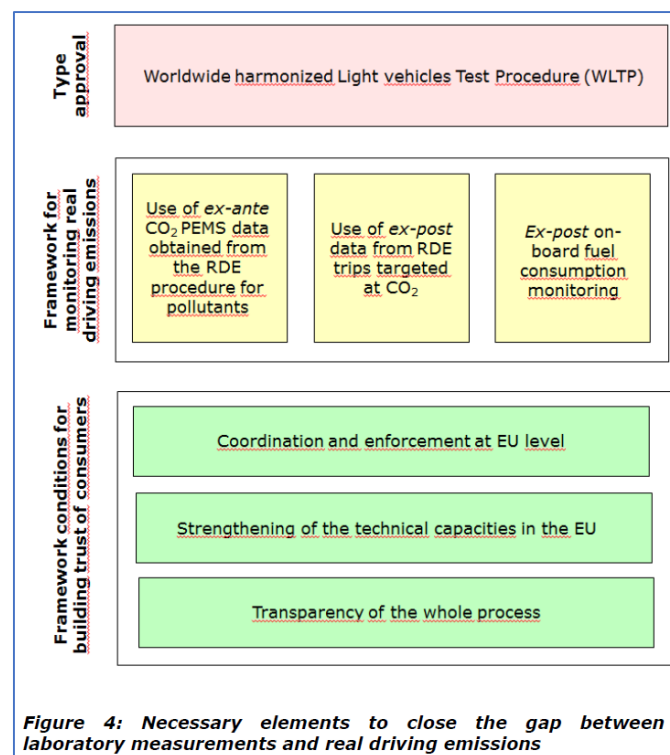


Figure 4: Necessary elements to close the gap between laboratory measurements and real driving emissions

The report concludes that in order to ensure the representativeness of the type-approval test, a framework for the monitoring of real-driving CO₂ emissions is required. This should consist of an exploitation of CO₂ data obtained from real-driving emissions testing for pollutants using Portable Emissions Measurement Systems (PEMS), the development of a targeted ex-post Real-Driving Emissions (RDE) methodology for CO₂, and the introduction of a formal reporting of fuel consumption from on-board vehicle diagnostic (OBD) systems.

In order to grow the trust of the consumer in the regulatory system and the car industry, and to guarantee a level playing field for car manufacturers, a number of framework conditions must be met. These include in particular the strengthening of regulatory oversight and technical capacity in Europe, and increased transparency of the whole process.

Legislation on CO₂ emissions from road transport should be designed in a way that stimulates innovation and is able to adapt to the increasing take-up of new technologies such as plug-in hybrid and electric vehicles.

The assumption that CO₂ emissions measured with the WLTP will be closer to real-world emissions is reasonable. However, while the WLTP has the potential to become a common reference globally, its further development is recommended with a formal review every five years to ensure that the gap between laboratory and real-world emissions is not growing.

The report also identifies additional scientific and analytical work that is particularly needed, such as an assessment of the extent to which CO₂ emission data obtained from the RDE procedure for pollutants can be used to monitor the gap; development of a targeted ex-post RDE methodology for CO₂ complementary to the WLTP in order to monitor the gap; development of standardised and accurate OBD systems for fuel consumption monitoring, data management and data analytics; and development of additional methods to capture the full life cycle of carbon emissions related to new types of vehicles powered by energy sources other than diesel and petrol.

The Scientific Opinion is intended to provide evidence-based guidance to a Commission policy proposal for post-2020 emission performance standards for light-duty vehicles (cars and vans), expected in 2017.

The report is at https://ec.europa.eu/research/sam/pdf/sam_co2_emissions_report.pdf.

EEA Report on EU Greenhouse Gas Emissions Trends and Projections

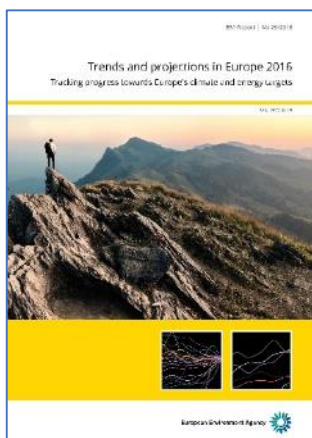
On 8 November 2016 the European Environment Agency (EEA) published the 2016 edition of the annual EEA report "Trends and projections in Europe".

The report confirms that the EU is well on track to meet its targets on greenhouse gas (GHG) emissions, renewable energy and energy efficiency set for 2020.

In 2014, GHG emissions were 23% less than in 1990. According to preliminary estimates, a decline in EU GHG emissions of 22% compared with 1990 is expected in 2015.

Progress at Member State level is more nuanced. In 2014, all Member States, except Malta, met their annual targets under the Effort Sharing Decision (ESD). According to preliminary estimates, a similar situation occurred in 2015.

The latest national projections indicate that by 2020, EU GHG emissions will be well below the 2020 target but that



Austria, Belgium, Denmark, Ireland and Luxembourg will not meet their national ESD target.

The report also shows that while projections from EU Member States predict further decreases in EU GHG emissions beyond 2020, the pace of these reductions will slow. Planned reductions by 2030 will only result in bringing EU emissions to levels between 26% and 29% below those of 1990. This falls short of the EU's 40% reduction target for 2030.

However, the agreed reform of the EU Emissions Trading Scheme (ETS) and policy proposals being discussed in the EU have not yet been taken into account in projections. These include new annual binding GHG emission targets for Member States for the 2021 to 2030 period; the integration of the land use, land-use change and forestry sector into the EU 2030 Climate and Energy Framework; and a European strategy to cut emissions from the transport sector.

Assuming the necessary emission cuts required to achieve the 2030 target actually take place, an even deeper reduction must be achieved between the 2030 target level (40% below 1990 levels) and the EU objective for 2050 (at least 80% below 1990 levels). This reduction will have to be two to three times greater than the decrease necessary between current levels and the 2030 target, which is itself greater than the one achieved since 1990.

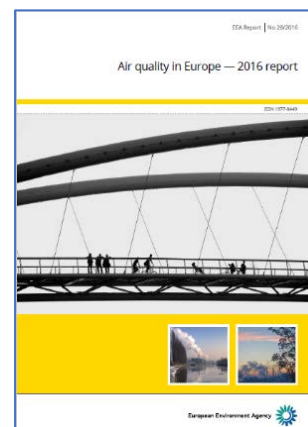
The EEA report is at www.eea.europa.eu/themes/climate/trends-and-projections-in-europe.

EEA Report on Air Quality in Europe

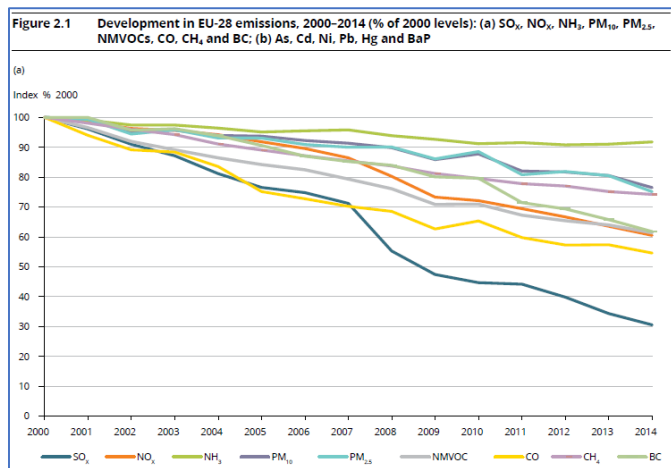
On 23 November 2016 the European Environment Agency (EEA) published a new report on European air quality.

The report presents an updated overview and analysis of the air quality in Europe from 2000 to 2014 based on data from official monitoring stations across Europe, and including more than 400 cities. While air quality is slowly improving, air pollution remains the single largest environmental health hazard in Europe.

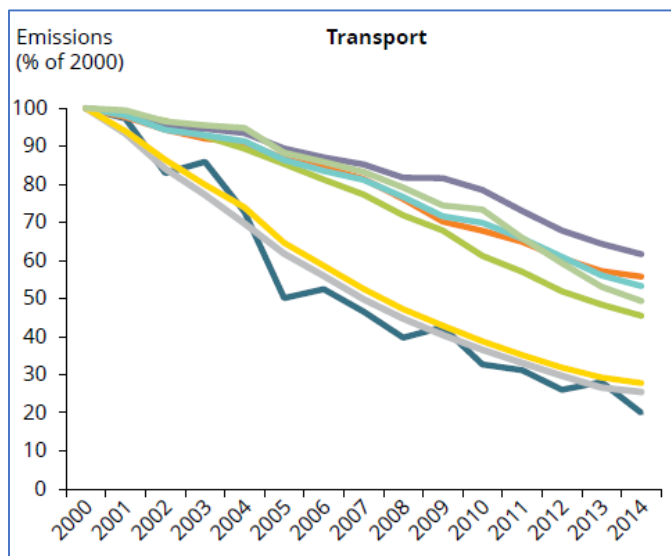
The report states that transport, industry, power plants, agriculture, households and waste management all contribute to Europe's air pollution. Emissions of the main air pollutants in Europe have declined in recent decades, resulting in generally improved air quality across the region. However, certain sectors have not reduced their emissions enough to meet air quality standards or have even increased emissions of some pollutants. For example, emissions of nitrogen oxides (NO_x) from road transport have not decreased sufficiently to meet air quality standards in many urban areas. Emissions of PM_{2.5} and benzo(a)pyrene (BaP) from coal and biomass combustion in households and from commercial and institutional buildings have been sustained



and are the main contributors to total PM and BaP emissions in the EU. Furthermore, emissions of ammonia (NH₃) from agriculture remain high and contribute to sustained PM levels and some high PM episodes in Europe.



The EEA report shows that in 2014 around 85% of the urban population in the EU was exposed to fine particulate matter (PM_{2.5}) at levels deemed harmful to health by the World Health Organization (WHO). In 2014, 7% of the urban population in the EU-28 was exposed to NO₂ concentrations above the WHO and EU standards (both are identical), with 94% of all exceedances occurring due to traffic.



The report also provides new estimates of the health impacts of the most harmful air pollutants based on 2013 data. Exposure to PM_{2.5} was responsible for about 467 000 premature deaths in 41 European countries in 2013. Within the EU, premature deaths exceeded 430 000. The estimated impacts of nitrogen dioxide (NO₂) and ground-level ozone (O₃) exposure were around 71 000 and 17 000 premature deaths respectively in Europe.

The EEA is at www.eea.europa.eu/publications/air-quality-in-europe-2016.

French Report on 2015 Air Quality Assessment

On 27 October 2016 the French Environment Ministry published its annual assessment of air quality for 2015.

The report states that the air quality has significantly improved over the last 15 years, with fewer zones with concentrations above limits. The report however states that the improvements are fragile as they depend on specific weather conditions.

As in 2013 and 2014, limits were exceeded in 2015 for 7 of the 12 monitored pollutants in 8 of the 34 zones. PM₁₀, NO₂ and O₃ exceedances are recurrent. The report furthermore stresses that there were two main pollution exceedances: one for particulates in March 2015 and one for O₃ near the end of June 2015 - beginning of July 2015.

The report concludes with an overview of local and EU-wide measures being taken to control pollution sources.

The report (in French) is at www.statistiques.developpement-durable.gouv.fr/fileadmin/documents/Produits_editoriaux/Publications/Datalab/2016/datalab-bilan-de-la-qualite-de-l-air-en-france-en-2015-octobre-2016.pdf.

Commission adopts "Clean Energy for All Europeans" Package

On 30 November 2016 the European Commission adopted its "Clean Energy for All Europeans" package that aims at keeping the EU competitive as the clean energy transition is changing global energy markets.

The Clean Energy package legislative proposals cover energy efficiency, renewable energy, the design of the electricity market, security of electricity supply and governance rules for the Energy Union. In addition the Commission proposes a new way forward for Ecodesign as well as a strategy for connected and automated mobility. The package also includes actions to accelerate clean energy innovation and to renovate Europe's buildings. It provides measures to encourage public and private investment, promote EU industrial competitiveness and mitigate the societal impact of the clean energy transition.

The Commission proposed a recast of Directive 2009/28/EC on the promotion of the use of energy from renewable sources. The proposal lays down the principles according to which Member States can ensure that the share of renewable energy in the EU final energy consumption reaches at least 27% by 2030 in a cost-effective manner across the three sectors of electricity, heating and cooling, and transport.

The share of food-based biofuels used in transport will be cut from its maximum of 7% in 2021. According to the proposal, the contribution of food-based biofuels will have to be limited to 3.8% in 2030. European transport fuel suppliers will need to provide an increasing share of advanced biofuels, rising to at least 3.6% in 2030.

The Clean Energy package is at <https://ec.europa.eu/energy/en/news/commission-proposes-new-rules-consumer-centred-clean-energy-transition>.

NORTH-AMERICA

California Heavy-Duty Low NOx Activities

On 3 November 2016 the California Air Resources Board (ARB) held a public workshop to discuss potential changes to the Heavy-Duty engine and vehicle emission standards, test procedures, warranty, and other related Heavy-Duty programs.

A key measure in the ARB's Mobile Source Strategy is the establishment of low NOx standards that result in a 90% reduction in NOx emissions compared to the emissions of today's diesel engines. This measure is critical for attaining US federal health-based air quality standards for ozone in 2023 and 2031 in the South Coast and San Joaquin Valley air basins, and fine particulate matter (PM_{2.5}) standards in the next decade. Under this measure, ARB staff also plans to develop regulatory amendments to improve the certification requirements to better reflect emission control under low load urban driving operations, to improve engine and emission control system durability, and to expand and improve the in-use compliance testing program.

ARB staff is currently in the process of evaluating existing regulations affecting new and in-use heavy-duty engines and vehicles to determine potential revisions to these regulations to better control NOx emissions.

The workshop also included a presentation on the ARB-SwRI Low NOx Project research project that assesses the feasibility of lower NOx emissions through a combination of engine calibration, exhaust thermal management strategies, and advanced aftertreatment systems.

Presentations of the ARB workshop are at www.arb.ca.gov/msprog/hdlownox/hdlownox.htm.

US EPA Confirms 2025 Cars and Light Trucks Greenhouse Gas Standards

On 30 November 2016 the US Environmental Protection Agency (EPA) proposed to maintain the Greenhouse Gas (GHG) standards for cars and light trucks unchanged.

The decision was based on extensive technical analysis that shows automakers are well positioned to meet GHG emissions standards for model years 2022-2025 at or below the costs originally expected in 2012.

The 2025 standard drops GHG emissions to 166 grams per mile (103 g/km), a reduction of 34% compared to 2016 levels.

More information is at www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas-ghg.

ASIA PACIFIC

ECMA's 9th International Conference on Emissions Control Technologies in India

On 9 and 10 November 2016 the Emission Controls Manufacturers Association ECMA, AECC's sister association in India, held its 9th International Conference on

"Emission Control Technology for Sustainable Growth" ECT-2016 in New Delhi.

Several OEMs and ECMA members presented their strategies and their emissions control technologies to meet the future Bharat Stage VI legislation that is scheduled to enter into force from April 2020 for all new types of vehicles in India. In addition, the topics of retrofit and fuel quality were considered in dedicated conference sessions.

AECC's Dirk Bosteels gave two presentations: one on the Euro 6/VI legislations in Europe and another one on AECC's experience with the new Euro 6 legislative procedure on Real-Driving Emissions (RDE) testing. He also participated in the closing session on 'accountability and responsibilities to improve ambient air quality'. He stressed the need to consider the latest Euro emissions stages, being Euro 6/VI and the new Stage V legislation for Non-Road Mobile Machinery, as well as UNECE standards, such as the Regulation No. 132 on retrofit systems, for the future legislative developments in India.

All presentations of ECT 2016 are at www.ecmaindia.in/eventsdetails.aspx?mpgid=41&pgidtrail=42&Eventsid=11.

China adopts Environmental Improvements Guidelines

On 15 November 2016 national guidelines on environmental improvements were approved at a China State Council executive meeting presided by Premier Li Keqiang, *Xinhua News Agency* reported.

According to the guidelines for environmental protection during the 13th Five-Year Plan period (2016-2020), China will improve environmental protection and restoration to ensure a greener, more sustainable development.

China over-achieved its goal in environment protection for the 12th Five-Year Plan (2011-2015), with carbon emissions dropping by 20%. The new guideline makes it clear that equally strong efforts are required both in environmental protection and restoration, while minimizing industrial disruption to the environment. They set the goals of a more environmental-friendly way of living, considerable reduction of major pollutants, and a sounder ecological system by 2020. Red lines will be drawn on emissions control, and the Chinese Government will encourage energy-efficient industries. It also gives priority to air, water and soil protection. Institutional innovation and modern regulatory measures in environmental protection and restoration are required. Investment and participation by local governments and business communities will be welcomed and the Government plans to offer more diverse financing channels.

UNITED NATIONS

Global Strategy on Low-Sulfur Fuels and Cleaner Diesel Vehicles

On 17 November 2016 the Climate and Clean Air Coalition (CCAC) High Level Assembly adopted the "Global Strategy to Introduce Low-Sulfur Fuels and Cleaner Diesel Vehicles".

Most industrialized countries have implemented standards for improved diesel fuel quality and engine emission controls. Many low-and middle-income countries have also begun implementing roadmaps for cleaner diesel fuels and vehicles. However, today more than half of the world's countries still use high-sulfur fuels and even more countries lack advanced diesel vehicle standards.

The Global Strategy provides a cost-effective global roadmap to reduce small particulate matter and black carbon emissions from the global on-road diesel fleet by 85% through the introduction of low-sulfur fuels and cleaner diesel vehicles.

The Global Strategy calls on all countries which have not yet done so to introduce action plans for the immediate introduction of low-sulfur diesel fuels of 50 parts per million (ppm) or less by 2025, with 10 ppm as the final target by 2030, and for the introduction of Euro IV or equivalent vehicle emissions standards, with Euro VI standards or equivalent as the final target.

The implementation of the Global Strategy will prevent an estimated 100 000 premature deaths per year by 2030 globally, increasing to 500 000 premature deaths per year by 2050. The net present value of the health gains to 2050 in terms of avoided mortalities is estimated at \$18 trillion (€17 trillion), with a 16/1 return on investment in cleaner diesel fuels and engines.

It will also reduce cumulative emissions of diesel black carbon by an estimated 7.1 million tons through 2050.

The Global Strategy is at www.ccacoalition.org/en/resources/global-strategy-introduce-C2-A0low-sulfur-fuels-and-cleaner-diesel-vehicles.

GENERAL

ICCT Report on Euro 6 Vehicles' On-Road Emissions

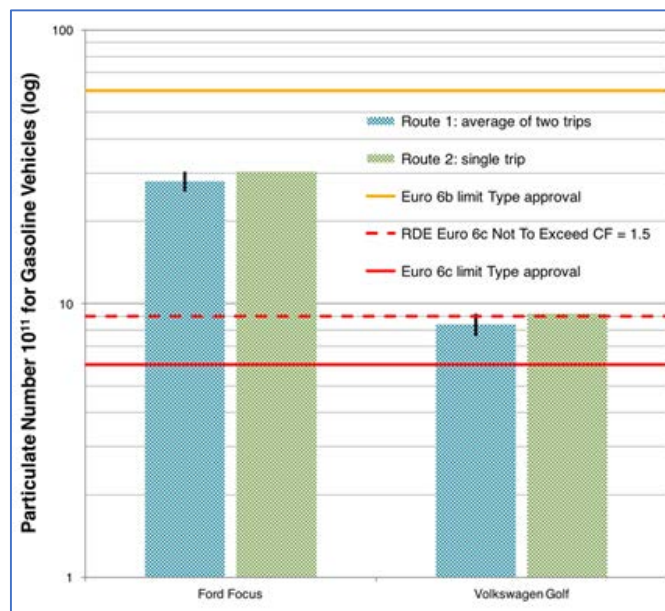
On 14 November 2016 the International Council on Clean Transportation (ICCT) released a report prepared by Emissions Analytics on on-road CO₂ and exhaust emissions from Euro 6 passenger cars in the EU.

The report summarizes results from on-road testing of seven Euro 6 gasoline and diesel vehicles carried out by Emissions Analytics. Tests were conducted between 2015 and 2016 and included measurements of emissions of CO, CO₂, NO, NO₂ and particulates.

The vehicles selected for testing were a Ford Focus, VW Golf, Citroën C4, Mercedes C220, Vauxhall Astra, VW Transporter and VW Caddy C20. The Ford Focus and the VW Golf were Gasoline Direct Injection (GDI) vehicles, while the rest were diesel.

Overall, emissions of NO_x and CO₂ varied greatly, although all VW diesel and both GDI vehicles fell below, or were very close to, the future RDE conformity factors for NO_x. These findings indicate that low real-world NO_x emission levels are achievable with current technology, if applied correctly, the ICCT concludes.

The ICCT also notes that the PN results in this study suggest that for at least some GDI vehicles, further reduction of fine and ultrafine particulates will be necessary under upcoming regulations, either through the use of a more advanced injection technology that produces fewer particulates or a Gasoline Particulate Filter (GPF).



The ICCT report on Euro 6 cars' emissions is at www.theicct.org/sites/default/files/publications/Euro%206%20on-road%20testing_ICCT_technical%20report_20160929.pdf.

Executive Analysis of Real Driving Emissions and their Implementation

Frost & Sullivan has released a new report on various analysis of testing procedures and emissions regulation standards globally.

A comparative analysis has been done to understand the changes of emissions testing procedures, including the change from the New Emissions Driving Cycle (NEDC) to the Worldwide harmonized Light vehicles Test Procedure (WLTP), and outcomes of adopting new Real-Driving Emissions (RDE) test procedures. Various testing processes have been discussed along with their impact on the passenger vehicle market. Extensive analysis, which covers the future market trends and upcoming market regions, has been done in the study.

The Frost & Sullivan's report can be purchased at www.researchandmarkets.com/research/dqbb/rs/executive.



DUH Report on Emissions from Chainsaws and Trimmers

On 14 November 2016 the environmentalist NGO Deutsche UmweltHilfe (DUH) released a new report on emissions from power saws and trimmers.

The DUH has been examining exhaust emissions of motorised chainsaws and trimmers every year since 2013. In 2016, 18 of the 24 tested device types significantly exceeded the limit values for HC+NOx (total of hydrocarbon and nitrogen oxide emissions). Only seven of the 33 devices tested complied with the current limit value Stage II of the Non-Road Mobile Machinery Directive 97/68/EC.

On seven of the tested machines it was not possible to find or read the type-approval number.

In six of the devices bought on the German market, the carburettor could be unrestrictedly adjusted by the user.

Six out of the seven devices from Sweden failed to meet the required combined emission limit value for HC and NOx. The device from HP Schou A/B (model: GARDEN 77749) exceeds the legal limit by 600%, another from Clas Ohlson AB (model: CO TECH YT 9071A) by nearly 500%.

The DUH therefore calls for market surveillance authorities to spring into action.

The DUH report is at www.duh.de/projekte/projekte/handgefuehrte-maschinen/english-version/.



ICCT Paper on European Non-Road Mobile Machinery Stage V Regulation

On 21 November 2016 the International Council on Clean Transportation (ICCT) published a policy update on European Stage V standards for Non-Road Mobile Machinery (NRMM).

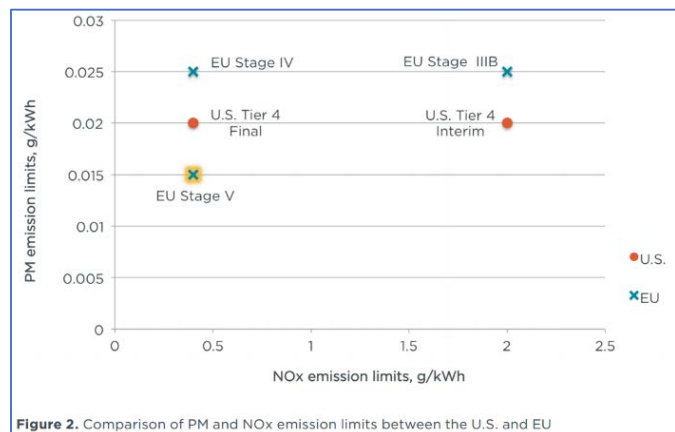


Figure 2. Comparison of PM and NOx emission limits between the U.S. and EU

toughest emission standards for NRMM which will tighten restrictions and set stricter limits on emissions of particulate matter. Stage V includes a new particle number (PN) limit and is expected to force manufacturers to equip non-road engines of between 19 kW and 560 kW with diesel particulate filters, the ICCT says.

The ICCT paper on Stage V is at www.theicct.org/sites/default/files/publications/EU-Stage-V_policy%20update_ICCT_nov2016.pdf.

ICCT Report on Light-duty Vehicles' CO₂ Gap

On 16 November 2016 the International Council on Clean Transportation (ICCT) published the 2016 update of their report titled 'From laboratory to road'.

This fourth update of the 'From Laboratory to Road' series, which focuses on the real-world performance of new European passenger cars and compares on-road and official CO₂ emission values, adds another year of data (2015), one new country (France), two new data sources (Allstar fuel card and Fiches-Auto.fr), and approximately 400 000 vehicles to the analysis.

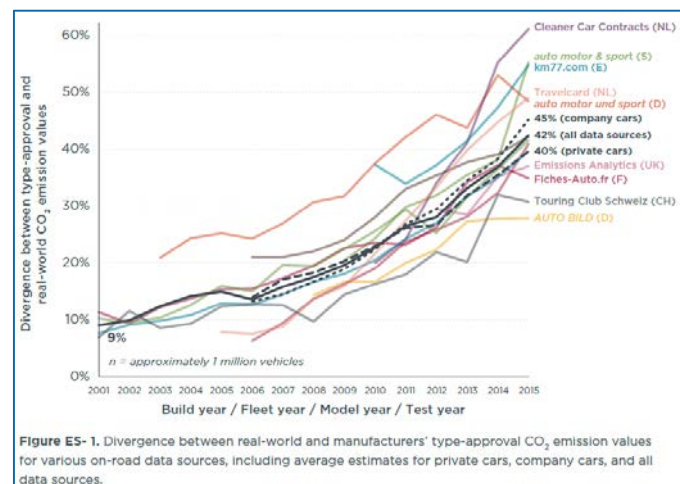


Figure ES-1. Divergence between real-world and manufacturers' type-approval CO₂ emission values for various on-road data sources, including average estimates for private cars, company cars, and all data sources.

The divergence between type-approval and real-world CO₂ emissions of new European cars continues to grow. Data on approximately 1 million vehicles from 13 data sources and seven countries indicate that the divergence increased from approximately 9% in 2001 to 42% in 2015.

While the ICCT believes that the Worldwide harmonized Light vehicles Test Procedure (WLTP), which will replace the current test procedure in 2017, is a step in the right direction, the WLTP is not a silver bullet and will not close the gap on its own.

A number of policy and research actions are therefore recommended to monitor and close the gap, including official measurements of real-world CO₂ emissions; more research on the real-world performance of plug-in hybrid electric vehicles, light commercial vehicles, and heavy-duty vehicles; independent surveillance testing of vehicles; and increased data transparency.

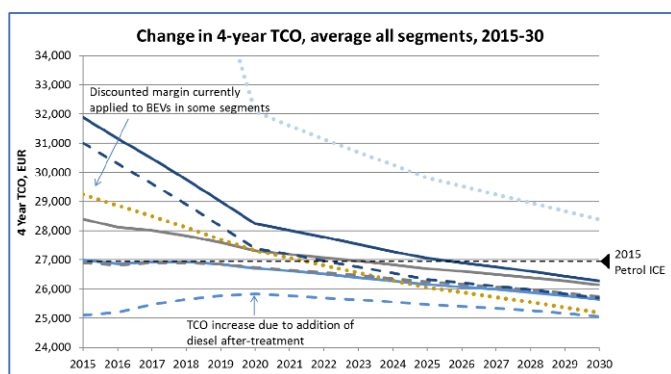
The ICCT report on CO₂ divergence is at www.theicct.org/sites/default/files/publications/ICCT_LaboratoryToRoad_2016.pdf.

BEUC Study on Fuel-Efficient Cars in the 2020s

On 28 November 2016 BEUC, the European Consumer Organisation, released a study conducted by EnergyEfficient on “Low carbon cars in the 2020s: Consumer impacts and EU policy implications”.

The key findings of the study are that:

- Electric vehicles will drop in price substantially. By 2024 the average four-year cost of running an electric vehicle should match, if not be lower, than a petrol car.
- Over the lifetime of a petrol or diesel car bought in 2025 compared to one in 2015, consumers could save on average between €4400 and €9400.
- Used car owners will benefit the most from reduced fuel costs. This is due to cars losing their value rapidly in the first few years and in turn meaning they only pay a fraction of the manufacturing costs.
- New technologies will not hit the market by themselves; binding EU CO₂ reduction targets are essential for incentivising the deployment of fuel-efficient technologies.
- Whether or not energy prices are high or low in the future, all consumers will benefit from cars being more efficient and the knock on impacts of reducing demand for energy.



The BEUC report and a summary are at www.beuc.eu/publications/beuc-pr-2016-018_future_fuel_efficient_cars_set_to_boost_consumer_saving_s.pdf.

ICCT Report on 2025-2030 CO₂ Reduction Technologies for LDVs

On 21 November 2016 the International Council on Clean Transportation (ICCT) published a report presenting detailed results and methodology of a study using computer simulation modelling, vehicle tear-down analysis, and additional supplementary data to estimate compliance costs of potential vehicle CO₂ emission standards for the European passenger car and light-commercial vehicle fleets in 2025-2030.

The report describes the methodology behind and the results obtained by a study to develop CO₂ cost curves for the European passenger car and light commercial vehicle fleets in 2025-2030, and to estimate compliance costs for a

series of potential vehicle CO₂ emissions or fuel-efficiency standards.

Vehicle technologies covered include direct injection, single-stage and two-stage turbocharging combined with engine downsizing, variable valve-lift and timing, cam-profile switching, exhaust-gas recirculation (EGR), cooled EGR, two-stage and fully variable compression ratio, Miller/Atkinson Cycle, low-friction design, 12 V start-stop technology, 48 V belt starter-generator, full-parallel P2 hybrid, 7-speed and 10-speed dual-clutch transmissions, vehicle mass reduction up to a maximum of 20%, 35% rolling-resistance reduction, 20% aerodynamic drag reduction, plug-in hybrid, battery electric, and fuel-cell electric vehicles.

The study concludes that the range of combustion engine technologies is sufficient to reduce the fleet average CO₂ emissions in 2025 to meet a target of 70 g/km (measured on the NEDC) with few or possibly no electric vehicle sales and at an average per-vehicle cost increment between €1000 and €2150, compared to the 2014 baseline.

A passenger car standard of 40 g/km could be achieved by 2030 at an average per-vehicle cost increment of between €1600 and €3000. Reaching that target would require that electric vehicles make up a large share of new vehicle sales.

The study also found that if manufacturers pursued a least-cost technology strategy of switching to electric vehicles earlier, rather than seeking first to exhaust the potential of combustion engine technologies, it would reduce the compliance costs of a 70 g/km CO₂ emissions target in 2025 by €200 to €500 per vehicle.

With respect to light commercial vehicles, CO₂ standards as low as 90-100 g/km (on NEDC) can be achieved with few or no electric vehicles in the new-vehicle market. A CO₂ target of 110 g/km in 2025 will lead to an average cost increment of €1000 to €3000 per vehicle, while a 90 g/km standard in 2025 will cost on average between €2500 and €4000 per vehicle. Costs would be €250 to €1000 lower when pursuing a least-cost technology pathway and transitioning to electric vehicles earlier.

The ICCT report is at www.theicct.org/sites/default/files/publications/EU-Cost-Curves_ICCT_nov2016.pdf.

The primary CO₂ and associated technology cost data used in the development of the cost curves are from simulation modelling and bottom-up cost estimation work performed for the ICCT by the engineering consultancy FEV.

Detailed results of FEV's analysis can be found at www.theicct.org/sites/default/files/publications/PV-LCV-Powertrain-Tech-Analysis_FEV-ICCT_2015.pdf.

ICCT Briefing on 2020-2030 European CO₂ Standards for New Cars and Vans

On 21 November 2016 the International Council on Clean Transportation (ICCT) published a concise overview of the EU's vehicle CO₂ emission reduction requirements, targets for 2025-2030 that are coming under consideration, and

current best projections of vehicle-specific CO₂ reduction technology potential and costs in that time frame.

The ICCT notes that the 2021 CO₂ target for new passenger cars in the EU of 95 g/km as measured on the NEDC is equivalent to approximately 109 g/km under the new WLTP procedure. The transition to the WLTP should reduce the gap between official and real-world CO₂ emission levels to about 23%, so that the average real-world CO₂ emissions of new cars by 2021 is expected to be around 134 g/km.

If the EU set a 2025 target of 78 g/km (equivalent to approximately 90 g/km under the WLTP) as recommended as “indicative range” by the European Parliament in 2013, and a 2030 target of 60 g/km (about 69 g/km in WLTP terms), the average real-world CO₂ emissions of new cars by 2030 would be about 90 g/km. This projection assumes that the gap between official and real-world CO₂ emission levels will increase from 23% to 31% between 2020 and 2030 as manufacturers exploit loopholes and flexibilities in the WLTP, such as those embedded in new options for determining road load.

The resulting average 2014-2030 annualized CO₂ emission reduction rate for new cars would be 3.9%, and the overall reduction in annual CO₂ emissions for all passenger cars on the road between 2005 and 2030 would be 24%.

If the EU were to set a lower 2025 target for CO₂ emissions of 68 g/km (about 78 g/km under the WLTP) and a 2030 target of 42 g/km (about 48 g/km WLTP) and, in addition, were to complement the WLTP with a real-world testing procedure conformity factor to limit the gap between official and real-world CO₂ emissions to a maximum of 15%, the average real-world CO₂ emissions of new cars by 2030 would fall to about 55 g/km. The resulting average 2014-2030 annualized rate of reduction in CO₂ emissions from new cars would be 6.8%, and the overall reduction in annual CO₂ emissions for all passenger cars on the road between 2005 and 2030 would be 35%.

The ICCT briefing is at www.theicct.org/sites/default/files/publications/ICCT_EU-CO2-stds_2020-30_brief_nov2016.pdf.

ICCT Report on Fuel Efficiency Potential of Heavy-duty Trucks

On 2 November 2016 the Global Fuel Economy Initiative (GFEI) published a report prepared by the International Council on Clean Transportation (ICCT) on potential gains from known efficiency technologies in new freight-hauling tractor-trailers and rigid delivery trucks. The paper presents a rationale for introducing and upgrading Heavy-duty vehicle efficiency standards in major markets.

A baseline tractor-trailer and a representative rigid delivery truck were developed for the 2015 EU, US, Brazil, India, and China fleets. The baseline fuel consumption was determined over region-specific duty cycles and payloads. The phase-in of technology packages into world truck markets was modelled over the 2020 through 2040 timeframe in order to determine the potential for improvement in each market. Three possible emissions and fuel consumption reduction

scenarios were developed to quantify the range of possible benefits over time.

Full deployment of heavy-duty vehicle efficiency technology would result in energy savings of close to 9 million barrels of oil per day, equivalent to almost 2 billion tonnes of avoided CO₂ emissions annually, in 2035. China and India each represent about one quarter of these potential long-term oil savings and climate benefits due to their growing freight activity. The US, Europe, and Brazil have the next most potential energy and carbon savings from realizing their technology potential.

The findings of this study present a rationale for introducing and upgrading heavy-duty vehicle efficiency standards in major markets around the world.

The ICCT paper on HDV fuel efficiency potential is at www.globalfueleconomy.org/media/404893/gfei-wp14.pdf.

IEA World Energy Outlook 2016

On 16 November 2016 the International Energy Agency (IEA) published the World Energy Outlook 2016.

The report notes that as a result of major transformations in the global energy system that will take place over the next decades, renewables and natural gas are the big winners in the race to meet energy demand growth until 2040. Pledges made for the Paris Agreement on climate change indicate that the era of fossil fuels appears far from over and reaching more ambitious climate goals remains a challenge.

In the long-term, investment in oil and gas remain essential to meet demand and replace declining production, but the growth in renewables and energy efficiency lessens the call on oil and gas imports in many countries. Increased LNG shipments also change how gas security is perceived. At the same time, the variable nature of renewables in power generation, especially wind and solar, entails a new focus on electricity security.

Global oil demand continues to grow until 2040, mostly because of the lack of easy alternatives to oil in road freight, aviation and petrochemicals, according to the report. However, oil demand from passenger cars declines even as the number of vehicles doubles in the next quarter century, thanks mainly to improvements in efficiency, but also biofuels and rising ownership of electric cars.

The IEA World Energy Outlook 2016 is at www.iea.org/bookshop/720-World_Energy_Outlook_2016.

Claim against Truck Manufacturers' Cartel

On 14 November 2016 litigation company Bentham Europe proposed to fund legal action on behalf of truck purchasers who are victims of the European truck cartel.

In July 2016 the European Commission found that truck manufacturers MAN, Volvo/Renault, Daimler, Iveco and DAF have colluded by manipulating truck prices for 14 years and by passing-on to their customers the costs of compliance with stricter EU emission rules. For these breaches, the Commission imposed a record fine of €2.93 billion. MAN avoided a fine by informing the Commission of the cartel (see *AECC Newsletter of July-August 2016*).

Bentham Europe estimates that around 10 million trucks were sold in the EU during the cartel period and that, within that number, and based on estimates of overcharges attributed to previous cartels, buyers of medium and heavy trucks were overcharged by an estimated €10 500 per truck. The company is determined to bring the opportunity to recover the overcharges to the attention of as many truck purchasers as it can and enable these victims of the cartel collectively to seek redress. The scale of overcharging could exceed an estimated €100 billion.

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SAE 2017 Light Duty Emissions Control Symposium

23-24 January 2017, Washington DC, USA

www.sae.org/events/ldc

12th CONCAWE Symposium

20-21 March 2017, Antwerp, Belgium

www.concawe.eu/calendar/24/17/Save-the-Date-12th-Concawe-Symposium

The symposium will explore scientific and technical challenges for the production and use of petroleum refined products in the EU in the 21st century.

NGV Global 2017 Conference

20-23 March 2017, Rotterdam, Netherlands

www.ngv2017.com

SAE 2017 World Congress

4-6 April 2017, Detroit, USA

www.sae.org/congress

Real Driving Emissions

19-20 April 2017, Amsterdam, Netherlands

www.bisgrp.com/portfolio/conferences/automotive/real-driving-emissions

38th International Vienna Motor Symposium

27-28 April 2017, Vienna, Austria

<https://wiener-motorensymposium.at/en/home/>

Topics for the symposium include latest findings in engine development, on new engines, fuel cells, hybrid technology, exhaust gas treatment and Real-Driving Emissions (RDE).

NO_x and Particulate Real Drive Emissions (RDE)

15-19 May 2017, Leeds, UK

<https://engineering.leeds.ac.uk/short-course/20>

This course concentrates on engine technology for low emissions, fuel requirements and aftertreatment techniques.

29th International AVL Conference "Engine & Environment"

1-2 June 2017, Graz, Austria

www.avl.com/engine-environment-2017

Competition of powertrain systems to reduce CO₂ and emissions 2020/2025.

International Conference SIA Powertrain

7-8 June 2017, Versailles, France

www.sia.fr/evenements/66-sia-powertrain-versailles-2017

The conference will focus on the low CO₂ spark ignition engine of the future and its hybridization.

21st ETH-Conference on Combustion Generated Nanoparticles

19-22 June 2017, Zürich, Switzerland

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.

www.nanoparticles.ch

Deadline for abstract: early April 2017

Engine Emissions Measurement

19-23 June 2017, Leeds, UK

<https://engineering.leeds.ac.uk/short-course/22>

This course is directed at both emissions legislation compliance, and at engine and catalyst development for low emissions.

VII International Congress on Combustion Engines

27-29 June 2017, Poznan, Poland

www.congress.ptnss.pl/

The congress is organized by the Polish Scientific Society of Combustion Engines (PTNSS). The main topics of the congress include fuel injection systems and mixture formation; combustion processes control in SI and CI engines; emissions measurements and aftertreatment; engine testing, durability, reliability and diagnostics; and global trends in engine technology.

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.

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