OCTOBER 2017

NEWSLETTER

International Regulatory Developments

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EUROPE

High Level Group adopts GEAR 2030 Report

On 18 October 2017, after 2 years of consideration, the GEAR 2030 High Level Group (HLG), consisting of public and private sector representatives, adopted its report on the competitiveness and sustainable growth of the automotive industry in the EU.

The report offers recommendations on how the automotive industry can anticipate and adapt to current trends and long-term opportunities. The report presents 5 areas for the European automotive sector to address and makes a number of recommendations:

- new technologies and business models – requiring high investment;
- climate and health concerns – such as the need to reduce greenhouse gas and pollutant emissions;
- societal changes – changes in consumer behaviour with regard to cars;
- globalisation – remaining competitive and responding to international demand, as well as ensuring fair access to international markets;
- structural change – the impact on the workforce as the industry moves towards automated driving and low and zero emission vehicles.

While it will be for the industry itself to embrace the structural change required for maintaining competitiveness and meeting consumer demands, the report identifies opportunities for the Commission and EU countries to support the sector in this transition.

The transformation of the industry will significantly affect the workforce. The GEAR 2030 HLG highlighted the importance of helping workers acquire new skills through EU and national measures.

The report identifies two major areas in which the European industry must move forward to stay globally competitive: zero emission and zero emission-capable vehicles (ZEVs and ZECs) and connected and automated driving.

To reduce greenhouse gas emissions and air pollutants (NOx and particulates) by 2030, support must be provided for ZEVs and ZECs as they enter the market – but their success will be largely dependent on improved battery performance. The HLG therefore recommends that the Commission and EU countries work with industry to strengthen research, development and manufacturing of the next generation of batteries in the EU.

With the mandate of the HLG coming to an end, the Commission will now reflect on the recommendations and discuss policy options with relevant experts from EU countries, industry and other stakeholders. A number of initiatives are already in the pipeline, including a proposal for revised CO_2 standards for cars and vans for the post-2020 period in the framework of the second mobility package scheduled for November, and a push for a full value chain of batteries in Europe with large-scale battery cells production and the circular economy at the core.

The new GEAR 2030 report is at https://ec.europa.eu/docsroom/documents/26081.

On 19 October 2017, the European Automobile Manufacturers' Association (ACEA), the European Association of Automotive Suppliers (CLEPA) and the federation of trade unions (IndustriAll) jointly commented on the adoption of the GEAR 2030 report.

The three organisations are in favour of setting new and ambitious emission limits for the post-2021 period as a step towards achieving the EU's climate goals. This must be done in such a way that will create positive synergies between environmental objectives and the promotion of investment, thus boosting innovation and having a positive impact on employment. New standards should be economically and technologically achievable, and investment security for the industry has to be guaranteed.

Decarbonising road transport will require a number of different pathways, technologies and solutions. Technological neutrality is therefore essential to underpin Europe's manufacturing leadership. At present, electric vehicles represent less than 1.5% of new car sales. The three organisations therefore support the greater market uptake of zero- and low-emission vehicles. At the same time however, they warn about the risks of imposing a binding mandate, especially as achieving this would be dependent on factors that are outside the control of the sector, such as energy supply, charging infrastructure, consumer acceptance (which is related to range and affordability), public subsidies and access to raw materials.

The GEAR 2030 report did not look in detail at the social and employment impacts of the push to decarbonisation and the EU, and Member States, must be aware of, and address, the potential impact their choices could have. Unless managed well, one out of three jobs in the automotive industry could be at risk as they involve producing components for conventional powertrains. The transition to a low-carbon transport sector will indeed create new jobs (e.g. in information technology, deploying charging infrastructure), but these jobs will in most of the cases be created at another time, in another place and for other skill profiles than the manufacturing jobs that will become obsolete.

Corrigendum to RDE Regulatory Text published

On 4 October 2017, a corrigendum to the third RDE regulatory package, Regulation (EU) 2017/1154, was published in the Official Journal of the EU.

Amendments to Appendix 5 of Annex IIIA to Regulation (EU) 2017/1151 on the Moving Averaging Window data evaluation method (EMROAD) was erroneously referred to Appendix 4 on calculation of emissions. This is now corrected.

The corrigendum is at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1154R(01)&from=EN.

Legal Action against Commission on RDE Package 3

On 9 October 2017, the environmental group ClientEarth announced it has launched legal action against the European Commission, challenging the provisions on Auxiliary Emissions Strategies (AES) in the third RDE package.

Commission Regulation (EU) 2017/1154 requires car manufacturers to explain in an extended documentation package what effect any calibration of the emission control system (i.e. the AES) has on emissions to Type-Approval Authorities. That extended documentation package will remain strictly confidential. ClientEarth therefore said that the rules allow this information "to remain a secret between the manufacturer and the same discredited authorities which in the past have systematically failed to investigate excessive emissions and to enforce EU emissions rules."

As a consequence, ClientEarth is calling for the AES-related confidentiality provision of Regulation (EU) 2017/1154, to be annulled at the Court of Justice of the EU. The environmental lawyers believe the Regulation to be against EU access to environmental information law and against the international Aarhus Convention, which is designed to ensure transparency and public access to justice in environmental matters.

Public Consultation on Amendments to Motorcycle Euro 5 Regulation

On 16 October 2017, the European Commission launched a public consultation on a proposal to amend two delegated acts of the Euro 5 Regulation for L-category vehicles: Regulation (EU) No 44/2014 on vehicle construction and general requirements (RCVR), and Regulation (EU) No 134/2014 on environmental and propulsion unit performance requirements (REPPR).

The Commission proposal follows the publication of the comprehensive environmental effect study of the Euro 5 stage for two- and three-wheelers and quadricycles (*see AECC Newsletter of September 2017*).

Amendments are tabled on durability provisions for pollution control devices. The classification requirements of the Standard Road Cycle for L-Category Vehicles (SRC-LeCV) is adapted to ensure the correct application of those requirements; while the use of the Approved Mileage Accumulation (AMA) cycle for class III vehicles is phased out. Fixed Deterioration Factors (DF) are phased out by 2025. This is balanced by the introduction of bench ageing as an alternative to the actual physical durability testing with full or partial mileage accumulation.

Provisions of the evaporative emissions test are also amended according to the conclusions of the environmental effect study.

The consultation is open until 13 November 2017 and is at http://ec.europa.eu/info/law/better-regulation/initiatives/ares-2017-5040443_en.

Update on Trilogue Negotiations on Type-Approval Framework Regulation

On 11 October 2017, the European Parliament's Rapporteur on the revision of the vehicle Type-Approval framework Regulation, MEP Daniel Dalton (ECR, UK), updated the members of the Internal Market Committee (IMCO) about on-going trilogue negotiations over the file.

Interinstitutional negotiations (trilogues) between the European Parliament and the Council were held on 10 October 2017. The trilogue mainly focused on the following topics:

- Governance: improvements are needed in order to reach the objective set by the IMCO Committee of strengthening the role of national authorities in performing periodic assessments;
- Market surveillance: the Council has now agreed on the Commission's surveillance role.
- Sanctions and penalties: positions of the co-legislators are getting closer; nonetheless work is still needed to shed more clarity on the scope of liability in events of defective products.

Shadow Rapporteur MEP Stefanec (EPP, Slovakia) highlighted that the revision of the type-approval framework has to be considered as an opportunity to

strengthen common rules. In this sense, the European Parliament is committed to defend the role of the Commission in supervision and surveillance as proposed by the Commission.

Shadow Rapporteur Schaldemose (S&D, Denmark) warned IMCO Committee members about the risk of a postponement of the compromise agreement to next year due to the several technical issues that remain on the table.

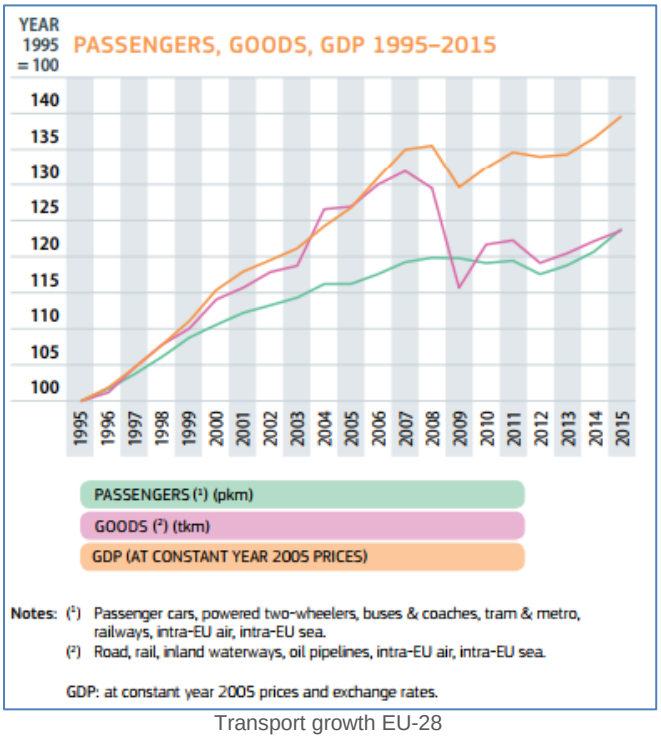
The next round of trilogue negotiations is scheduled for mid-November 2017.

Commission's Transport Pocketbook

The European Commission's Directorate General for Mobility and Transport (DG-MOVE) has published its 2017 statistical pocketbook on transport.

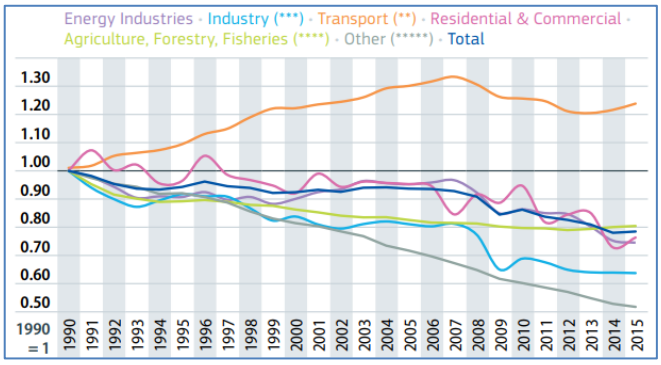
This publication provides an overview of the most recent and most pertinent annual transport-related statistics in Europe. It covers the EU and its 28 Member States and, as far as possible, the current EU candidate countries and the EFTA countries.

The content of this pocketbook is based on a range of sources including Eurostat, international organisations, national statistics and, where no data were available, own estimates. Own estimates have mainly been produced to get an idea of the EU total.



Transport growth EU-28

Statistics are provided on transport but also on energy and the environment.



GHG emissions EU-28 – by sector
(million tonnes CO_2 equivalent)

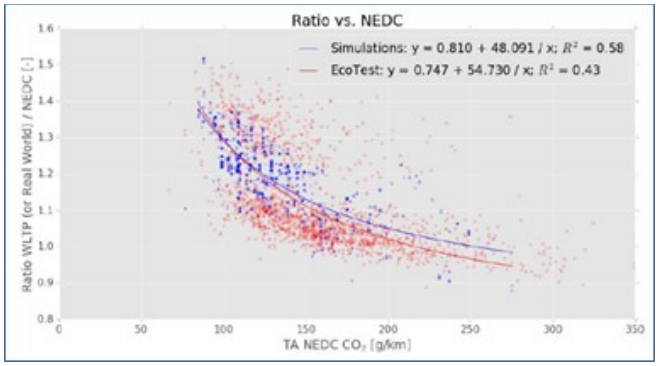
The transport pocketbook is at https://ec.europa.eu/transport/facts-fundings/statistics/pocketbook-2017_en.

JRC Study on WLTP Effects on EU Light-Duty Fleet CO_2 Emissions

On 25 October 2017, the European Commission's Joint Research Centre (JRC) published a study aimed at analysing the impact on the European light-duty vehicle fleet CO_2 emissions of the introduction of the Worldwide Light duty vehicle Test Procedure (WLTP) in the European vehicle type-approval process.

Conversion factors were calculated between NEDC and WLTP type approval CO_2 values that were used for the analytical work performed for the impact assessment of future WLTP-based CO_2 emission targets. The analysis was based on the reported 2015 CO_2 emissions from the European CO_2 Emissions Monitoring Database, and a collection of approximately 1200 vehicles, whose technical characteristics were available. The main findings are the following:

- The fleet-wide average ratio between WLTP and NEDC officially reported CO_2 emissions for conventional passenger cars for year 2015 fleet composition was estimated to be 1.21.
- The WLTP/NEDC ratio decreases as the NEDC CO_2 value increases. This ratio becomes around 1 at values of approximately 250 g CO_2/km in NEDC.



- A slightly higher ratio between WLTP and NEDC is observed for gasoline vehicles as compared to diesel ones, while there is a decreasing trend in the ratio with increasing mass, capacity, or power of the vehicle.

- Results for light commercial vehicles (LCVs) are expected to follow the same trend as passenger cars. However, the WLTP to NEDC ratios resulting from the calculations seem overall higher than those derived for passenger cars (especially for diesel vehicles, which however represent the vast majority of the fleet of LCVs).
- Battery electric vehicles (BEV), fuel cell vehicles (FCV) and hybrid vehicles show slightly higher WLTP/NEDC ratios than conventional vehicles and for BEVs and FCVs the dependency of the ratio from the size of the vehicle is less pronounced and opposite in sign, with bigger vehicles experiencing slightly higher ratios).

Category	Energy Ratio	Pure Electric Range Ratio	
		BEVs	FCVs
Small passenger cars	1.26	0.83	0.94
Medium passenger cars	1.28	0.81	0.92
Large passenger cars	1.30	0.80	0.91
Light-Commercial Vehicles[7]	1.21	0.86	0.98

- Different considerations hold for plug-in hybrid vehicles instead. Due to the difference in the two procedures (NEDC & WLTP) for calculating the final CO_2 emissions, after several analyses it resulted that the WLTP to NEDC ratio will quickly decrease as the size of the vehicle batteries will increase. Given the uncertainty in the market evolution, in the present report it was considered appropriate to assume that in the coming years the WLTP CO_2 emissions for plug-in hybrid vehicles will be very close to the NEDC ones.

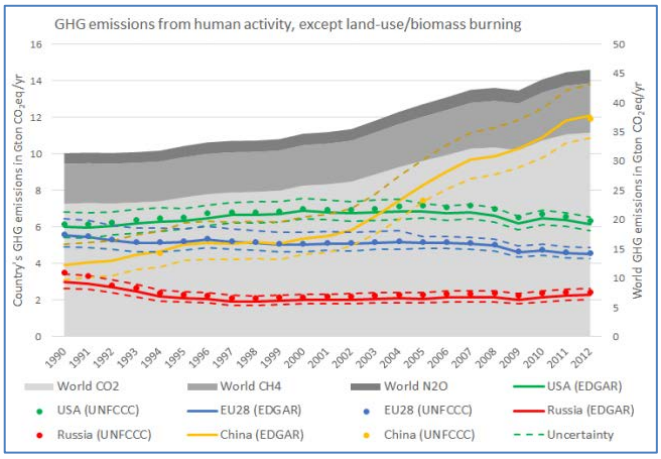
Considering that different sources show an increasing gap between real-world and NEDC fuel consumption as CO_2 emissions decrease, the fact that a similar trend is found also between WLTP and NEDC confirms that the new test procedure should be more representative of real-world emissions. In this light, the recent introduction of WLTP in the EU emission type-approval of light duty vehicles is crucial in order to reduce the gap between real-world and type-approval fuel consumption and CO_2 emissions.

The full report can be found at https://publications.europa.eu/en/publication-detail/-/publication/7ac4d4cb-b9f7-11e7-a7f8-01aa75ed71a1/language-en/format-PDF.

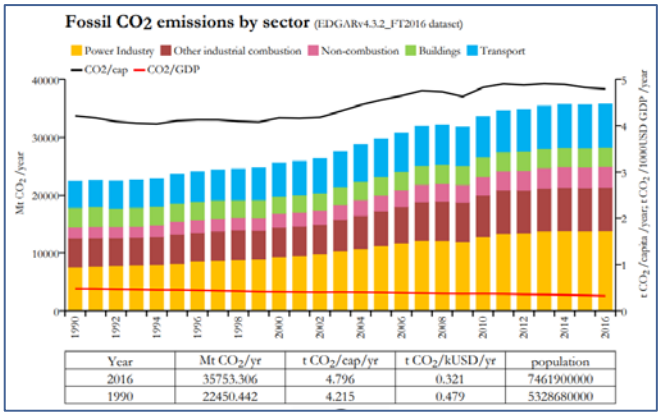
JRC Report on Global Emissions of Fossil CO_2 and Greenhouse Gas

On 20 October 2017, the Joint Research Centre (JRC) of the European Commission published a report on fossil CO_2 and greenhouse gas (GHG) emissions of all world countries.

The report, based on the JRC's Emissions Database for Global Atmospheric Research (EDGAR), provides updated results on the continuous monitoring of the three main GHG: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O).



Global GHG emissions continue to be dominated by fossil CO_2 emissions, which however show a slowdown trend since 2012, and were stalled for the third year in a row in 2016. Russia, China, the US and Japan further decreased their CO_2 emissions from 2015 to 2016, while the EU's emissions remained stable with respect to the previous year, and India's emissions continued to increase.



Year	Mt CO_2/yr	t CO_2/cap/yr	t CO_2/kUSD/yr	population
2016	35753.306	4.796	0.321	7461900000
1990	22450.442	4.215	0.479	5328680000

In 2016, the EU's CO_2 emissions were 20.8% below the levels in 1990 and 17.9% below the levels in 2005. Since 2015, the EU's CO_2 emissions have stabilised, representing 9.6% of global emissions.

Information on CH_4 and N_2O is only available until 2012, as international statistics on agricultural activities – the main source of these emissions – are not updated as frequently as on energy and industry-related activities. Uncertainty is also higher for these emissions than for CO_2 emissions. However, the data until 2012 shows a steady increase in global GHG emissions, with an overall increase of 91% from 1970 to 2012. CH_4 is mainly generated by agricultural activities, the production of coal and gas, as well as waste treatment and disposal. N_2O is mainly emitted by agricultural soil activities and chemical production. In the EU, 60% of the CH_4 and N_2O emissions are emitted by six countries – Germany, UK, France, Poland, Italy and Spain. The upward trend in CH_4 and N_2O emissions is also visible in the US, China, Japan and India.

The JRC report is at http://edgar.jrc.ec.europa.eu/booklet2017/CO2_and_GHG_emissions_of_all_world_countries_booklet_online.pdf.

EU Horizon 2020 Budget for 2018-2020

On 27 October 2017, the European Commission announced how it will spend €30 billion of the EU research and innovation funding programme Horizon 2020 during 2018-2020, including €2.7 billion to kick-start a European Innovation Council.

Over the next 3 years, the Commission will seek greater impact of its research funding by focusing on fewer, but critical topics such as migration, security, climate, clean energy and digital economy. Horizon 2020 will also be more geared towards boosting breakthrough, market-creating innovation.

€3.3 billion will go to low-carbon, climate resilient future; €1 billion to circular economy; €1.7 billion to digitising and transforming European industry and services; €1 billion to security union; and €200 million to migration.

€2.2 billion will be earmarked for clean energy projects in four interrelated areas: renewables, energy efficient buildings, electro-mobility and storage solutions, including €200 million to support the development and production in Europe of the next generation of electric batteries.

Another novelty is the introduction of the lump-sum pilot, a new, simpler approach to providing financial support to participants. It will shift the focus of ex-ante controls from financial checks to the scientific-technical content of the projects. The programme marks a step change in promoting Open Science by shifting from publishing research results in scientific publications towards sharing knowledge sooner in the research process. €2 billion will be channelled to support Open Science, and €600 million will be dedicated to the European Open Science Cloud, European Data Infrastructure and High Performance Computing.

More info is at http://europa.eu/rapid/press-release_MEMO-17-4123_en.htm.

EEA Report on Air Quality in Europe

On 11 October 2017, the European Environment Agency (EEA) published the 2017 edition of its 'Air Quality in Europe' report.

The report presents an updated analysis of air quality and its impacts, based on official data from more than 2500 monitoring stations across Europe in 2015. It reviews the progress made towards meeting the air quality standards established in the two European Ambient Air Quality Directives, and towards the long-term objectives of achieving levels of air pollution that do not lead to unacceptable harm to human health and the environment. It also presents the latest findings and estimates on population and ecosystem exposure.

Concentrations of PM continued to exceed the EU limit values in large parts of Europe in 2015. For PM_{10}, concentrations above the EU daily limit value were registered at 19% of the reporting stations in 20 of the 28 EU Member States; for $PM_{2.5}$, concentrations above the limit value were registered at 6% of the reporting stations in three Member States. A total of 19% of the EU-28 urban population was exposed to PM_{10} levels above the daily limit value and approximately 53% was exposed to concentrations exceeding the stricter World Health organization (WHO) Air Quality Guidelines (AQG) value for PM_{10} in 2015. This represents an increase compared with 2014, but the magnitude of the change may be considered as being within the expected year-to-year variability. Regarding $PM_{2.5}$, 7% of the urban population in the EU-28 was exposed to levels above the EU limit value, and approximately 82% was exposed to concentrations exceeding the stricter WHO AQG value for $PM_{2.5}$ in 2015. This represents a decrease compared with 2014 but is also within the expected year-to-year variability.

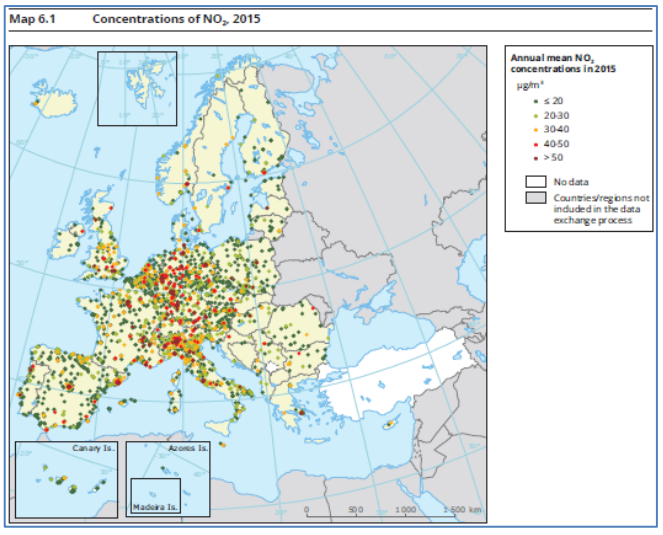
Table ES.1 Percentage of the urban population in the EU-28 exposed to air pollutant concentrations above certain EU and WHO reference concentrations (minimum and maximum observed between 2013 and 2015)

Pollutant	EU reference value (*)	Exposure estimate (%)	WHO AQG (*)	Exposure estimate (%)
$PM_{2.5}$	Year (25)	7-8	Year (10)	82-85
PM_{10}	Day (50)	16-20	Year (20)	50-62
O_3	8-hour (120)	7-30	8-hour (100)	95-98
NO_2	Year (40)	7-9	Year (40)	7-9
BaP	Year (1)	20-25	Year (0.12) RL	85-91
SO_2	Day (125)	< 1	Day (20)	20-38

Key: < 5 % | 5-50 % | 50-75 % | > 75 %

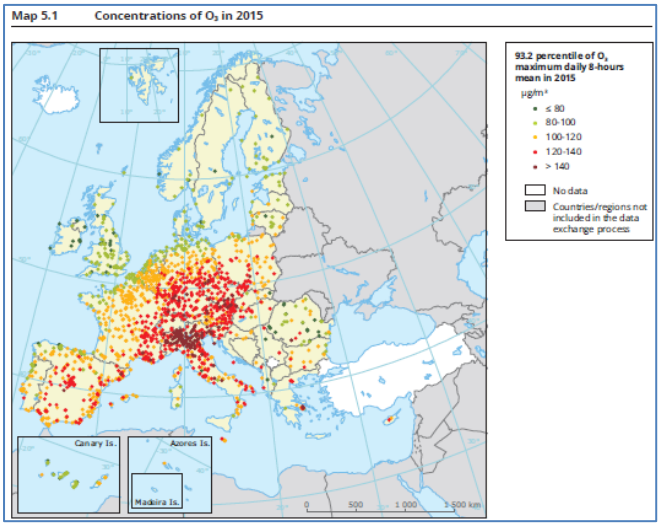
Notes: (*) In µg/m³; except BaP, in ng/m³.
The reference concentrations include EU limit or target values, WHO air-quality guidelines (AQGs) and an estimated reference level (RL).

The annual limit value for nitrogen dioxide (NO_2) continues to be widely exceeded across Europe, with around 10% of all the stations recording concentrations above that standard in 2015 in a total of 22 of the EU-28 countries. 89% of all concentrations above this limit value were observed at traffic stations. 9% of the EU-28 urban population lived in areas with concentrations above the annual EU limit value and the identical WHO AQG for NO_2 in 2015.



With regard to ozone, 18 of the EU-28 countries registered concentrations above the EU O_3 target value for the protection of human health in 2015. The share of stations measuring concentrations above this target value was 41%, higher than the 11% recorded in 2014, and the highest over the previous 5 years. The WHO AQG value for

O_3 was exceeded in 96% of all stations. Some 30% of the EU-28 urban population lived in areas in which the EU ozone target value threshold for protecting human health was exceeded in 2015. The proportion of the EU urban population exposed to O_3 levels exceeding the WHO AQG was significantly higher, comprising 95% of the total urban population in 2015.



Estimates of the health impacts attributable to exposure to air pollution indicate that $PM_{2.5}$ concentrations were responsible in 2014 for about 399 000 premature deaths in the EU-28, while NO_2 and O_3 concentrations were responsible for around 75 000 and 13 600 premature deaths respectively.

The EEA report is at www.eea.europa.eu/publications/air-quality-in-europe-2017.

Luxembourg and Slovakia in Breach of Ambient Air Quality Rules

On 4 October 2017, the European Commission called on Luxemburg and Slovakia to comply with European legislation on ambient air pollution.

EU rules on ambient air quality (Directive 2008/50/EC) requires Member States to assess air quality throughout their territory and to take measures to limit the exposure of citizens to pollutants. Since its entry into force, Luxemburg has not been able to ensure compliance with the binding limit values for NO_2 in Luxemburg-City.

Also, Slovakia failed to ensure an appropriate number and type of air quality monitoring points and to provide sufficient valid data.

As a result, the European Commission sent letters of formal notice to Luxembourg and Slovakia. Both countries have two months to reply.

Infringements on Deployment of Alternative Fuels Infrastructure

On 4 October 2017, the European Commission asked, in its monthly infringements package, nine Member States (namely Bulgaria, Denmark, Estonia, France, Lithuania, Malta, Poland, Romania and Sweden) to fully transpose EU rules on the deployment of alternative fuels infrastructure.

The main purpose of Directive 2014/94/EU is to establish a common framework for the large-scale roll-out of alternative fuels infrastructure in Europe. The European Commission considers that roll-out essential to reduce transport oil dependence, mitigate its environmental impact and thereby strengthen Europe's leadership in the fight against climate change.

The Directive sets out minimum requirements for the building-up of alternative fuels infrastructure, including recharging points for electric vehicles and refuelling points for natural gas and hydrogen. It had to be implemented by 18 November 2016 at the latest.

However, these Member States have only partially notified the Commission of measures transposing the Directive into national law. The 9 Member States now have two months to notify the Commission of such measures; otherwise, the Commission may decide to refer the case to the Court of Justice of the EU.

Commission calls on Romania to reduce Emissions from Petrol Vapour

On 4 October 2017, the European Commission sent a reasoned opinion to Romania for failing to communicate measures to reduce emissions from petrol vapour according to EU rules on air quality.

Directive 2014/99/EU limits the emission of volatile organic compounds from petrol into the air. Member States had to transpose an amendment to the Directive by 13 March 2016. Romania has still not notified the legal instruments enacting provisions on the testing of petrol vapour recovery systems into national law.

The Commission is, therefore, sending a reasoned opinion, and giving the Romanian authorities two months to reply. In the absence of a satisfactory response, the Commission may refer Romania to the Court of Justice of the EU.

London launches Euro 6 Cars' Real-World NOx Emissions Comparator

On 17 October 2017, London's Mayor, Mr Sadiq Khan, launched an online tool, the 'Cleaner Vehicle Checker', that provides information on real-world emissions of Euro 6 vehicles available on the UK market.

The scheme will provide consumers with information on whether a vehicle is performing as intended when driven in 'real world' conditions. The Cleaner Vehicle Checker rates new Euro 6 standard cars on a scale of A+ (best) to H (worst) based on the level of NOx emissions they produce on the road when measured by Emissions Analytics. A vehicle that emits less than 60 mg/km NOx on the road is ranked A+. There is already a number of MY2017 diesel cars that are classified A+, indicating a growing offer of clean diesel cars.

Make	Model	Model year	Fuel	Transmission	Body style	Engine size	Power	NO_x rating	Official CO_2 emissions
Audi	Q2	2017	Diesel	Automatic	SUV	2.0L	148BHP	A+	131 g/km
Audi	Q2	2017	Diesel	Automatic	SUV	1.6L	114BHP	A+	113 g/km
Audi	Q2	2017	Diesel	Automatic	SUV	1.6L	114BHP	A+	109 g/km
Audi	Q2	2017	Diesel	Automatic	SUV	2.0L	148BHP	A+	129 g/km
Audi	Q2	2017	Diesel	Manual	SUV	1.6L	114BHP	A+	118 g/km
Audi	Q2	2017	Diesel	Automatic	SUV	2.0L	148BHP	A+	125 g/km
Audi	Q2	2017	Diesel	Manual	SUV	1.6L	114BHP	A+	114 g/km
Audi	Q3	2017	Diesel	Automatic	SUV	2.0L	148BHP	A+	131 g/km
Audi	Q3	2017	Diesel	Manual	SUV	2.0L	148BHP	A+	129 g/km
Audi	Q3	2017	Diesel	Automatic	SUV	2.0L	148BHP	A+	140 g/km
Audi	Q3	2017	Diesel	Manual	SUV	2.0L	148BHP	A+	138 g/km
Audi	Q3	2017	Diesel	Automatic	SUV	2.0L	148BHP	A+	133 g/km
Audi	Q3	2017	Diesel	Manual	SUV	2.0L	148BHP	A+	132 g/km
Audi	Q5	2017	Diesel	Manual	SUV	2.0L	148BHP	A+	152 g/km
Audi	Q5	2017	Diesel	Manual	SUV	2.0L	148BHP	A+	150 g/km
Audi	Q5	2017	Diesel	Manual	SUV	2.0L	148BHP	A+	147 g/km
BMW	5 Series	2017	Diesel	Automatic	Saloon	3.0L	261BHP	A+	124 g/km
BMW	5 Series	2017	Diesel	Automatic	Estate	3.0L	261BHP	A+	144 g/km
BMW	5 Series	2017	Diesel	Automatic	Estate	3.0L	261BHP	A+	131 g/km
BMW	5 Series	2017	Diesel	Automatic	Saloon	3.0L	261BHP	A+	138 g/km

The launch coincides with a roadside testing programme in partnership with the TRUE Initiative (whose members include the FIA Foundation and the International Council on Clean Transportation – ICCT), which will monitor emissions from older cars currently driven on London's roads. This data will be used to create a further 'Used Vehicle Checker' function in 2018.

The 'Cleaner Vehicle Checker' is at www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/cleaning-londons-vehicles/newer-vehicle-checker.

Toxicity Charge enters into Force in London

On 23 October 2017, the new Toxicity Charge (or T-Charge) entered into force in London, UK.

Drivers of older, more polluting petrol and diesel vehicles will pay the new £10 T-Charge plus the £11.50 Congestion Charge (C-Charge) – a total of £21.50 (€24) – every weekday they drive in the zone between 7 am and 6 pm.

The T-Charge affects vehicles that do not meet the Euro 4 standards for both PM and NOx emissions. London estimated that, since 1 January 2017, these polluting vehicles have made around 2.6 million trips within the zone, contributing to London's toxic air.

To help motorists find out whether their vehicle is eligible to the T-Charge, Transport for London (TfL) has an online tool available on their website at www.tfl.gov.uk/t-charge.

TfL monitoring data showed that since London Mayor, Mr Sadiq Khan, announced the T-Charge in February 2017 the daily number of older, more polluting vehicles driving into the Congestion Zone has decreased by about 15%. TfL expects that the T-Charge will result in a further drop, with around 40% of motorists upgrading their vehicles and around 10% switching to alternatives like public transport in the first year.

TfL will use a camera-based mechanism for enforcement of the T-Charge, monitoring both diesel and petrol vehicles.

London Mayor asks Compensation for Negative Impact of Diesel Vehicles

On 6 October 2017, the Mayor of London, Sadiq Khan, announced that he has written to the UK Secretary of State for Transport and to UK chiefs at BMW, Mercedes-Benz and Volkswagen urging them to take serious action on diesel emissions.

The Mayor is calling on vehicle manufacturers to contribute to his Air Quality Fund, similarly to their commitment of £223 million (€250 million) in Germany, in recognition of the negative impacts their diesel vehicles have on air quality and public health in London.

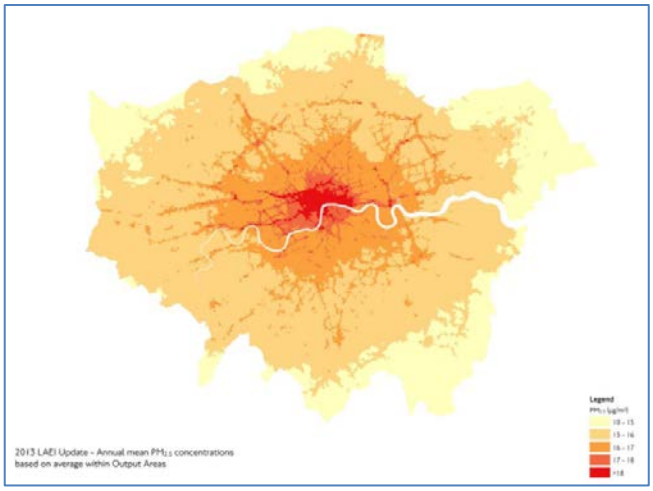
Sadiq Khan has also written to the Secretary of State for Transport, Chris Grayling, as part of his continued lobbying of Government to do more to tackle the environmental public health crisis. He is calling on Government to secure contributions from vehicle manufacturers on the same scale as the £24 billion received from Volkswagen (including fines, compensation and other settlements) in the US and £223 million from German car manufacturers in Germany. So far, the UK Government has only secured £1 million of funding.

More info is at www.london.gov.uk/press-releases/mayoral/mayor-urges-compensation-for-toxic-diesels.

London Report on $PM_{2.5}$ Exposure

On 4 October 2017, the Greater London Authority (GLA) published a report on exposure to $PM_{2.5}$ in London.

The report discusses the findings of research undertaken by the GLA and Transport for London (TfL) into the extent of $PM_{2.5}$ pollution in London, and assesses the potential for meeting World Health Organisation (WHO) guidelines by 2030.



The analysis found that at present all Londoners are exposed to concentrations higher than WHO air quality guidelines, but, if $PM_{2.5}$ reduction measures within the Mayor's Transport Strategy and London Environment Strategy are accompanied by cooperation on a national and international level, the guideline limit is achievable by 2030.

A big component of $PM_{2.5}$ in London actually comes from regional, and often transboundary (non-UK) sources.

Of the local London $PM_{2.5}$ sources the biggest contributor by far is road transport, accounting for over half of local contributions. While these emissions are mainly related to tyre and brake wear, the introduction of the T-charge (requiring vehicles that do not meet minimum exhaust emission standards to pay a £10 (€11) daily charge), the Ultra-Low Emission Zone and cleaning up the bus and taxi fleets are expected to reduce $PM_{2.5}$ emissions coming from road transport. The next biggest local London source is Non-Road Mobile Machinery (NRMM), which is also being addressed by the world's first NRMM Low Emission Zone.

As the number of zero emissions vehicles increases and exhaust emissions fall, the proportion of transport emissions that come from road, tyre and brake wear increases. By 2030, an estimated 90% of PM emissions from road transport will be from tyre and brake wear.

The report is at https://data.london.gov.uk/dataset/pm2-5-map-and-exposure-data.

Slovenia announces ICE Cars Phase-Out Plan

On 16 October 2017, the Slovenian Government announced targets for the phase-out of internal combustion engine cars.

By 2025, new cars and vans will have to have a total carbon footprint of less than 100 g/km of CO_2 to be allowed for first registration.

After 2030, cars with an internal combustion engine running on petrol or diesel will no longer be eligible for first-time registration in Slovenia, the Government said, as the limit for a car's total carbon footprint will then be reduced to 50 g/km of CO_2.

With these measures, Slovenia is planning to promote an increase in the number of electric and hybrid vehicles, and vehicles using fossil fuels with a lower impact on the environment than today's vehicles.

The government of Slovenia further explained that with the constant strong increase in traffic, measures must be taken to secure a 9% decrease in greenhouse gas emissions from traffic by 2030, relative to 2020. Traffic on some sections has actually doubled since 2005 and freight transport is projected to grow by 60 and to 80% by 2030. Car traffic is projected to increase by 30%.

Therefore, if Slovenia is to achieve its alternative fuels targets by 2030, it has to ensure that at least 17% of the cars travelling on its roads are electric or connected hybrid vehicles (200 000 vehicles), 12% of light commercial vehicles are electric (11 000 vehicles), a third of all buses run on compressed natural gas (1150 buses) and almost 12% of heavy freight vehicles (just over 4300 vehicles) run on liquefied natural gas.

ASIA PACIFIC

China limits Sale of Domestic Diesel Fuel to 10 ppm Sulfur Cap

On 31 October 2017, China announced it would stop domestic sales of diesel with sulfur content higher than 10 ppm, typically used by construction equipment and tractors, from 1 November 2017.

The move, announced just ahead of the winter season when pollution levels spike as more coal is used for heating purposes, could prompt oil companies in the country to ship overseas surplus higher-sulfur diesel in the coming months. "Companies may have extra high-sulfur diesel to sell as they replace storage tanks with cleaner fuel," said a fuel marketing manager with PetroChina. However, the official pointed out that refiners had been mostly expecting this move and were ready to produce diesel adhering to the so-called China 5 standard that allows a maximum sulfur content of 10 ppm. The challenge will be in the execution of the ban, an oil analyst said, which follows a move earlier this year to stop sales of diesel with more than 50 ppm of sulfur and a 10-ppm cap on diesel used by automobiles.

South Korea to implement In-Use Diesel NOx Emissions Testing Scheme

On 18 October 2017, the South Korean Ministry of Environment announced that revisions to the enforcement strictures of the Clean Air Conservation Act will be implemented.

The revisions will require select categories of newly manufactured diesel vehicles that are registered in Seoul, Incheon and 15 cities throughout Gyeonggi Province to be inspected for nitrogen oxide emissions when receiving a full check-up any time after 1 January 2021. The vehicular categories are: passenger vehicles, 35-passenger minimum transit vehicles, 10-ton minimum GVWR (gross vehicle weight rating) trucks and special purpose vehicles (ambulances, construction vehicles, etc). Once the revisions are implemented, vehicles that are found to exceed the prescribed limits for NOx emissions will need to have their SCR system and LNT devices inspected and fixed.

NORTH AMERICA

California opposes Weaker Federal Automobile Emissions Standards

On 5 October 2017, the California Air Resources Board (CARB) filed comments challenging federal efforts to re-open evaluation of greenhouse gas (GHG) emissions standards for light-duty vehicles of model years 2021-2025.

The comments to the US Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) state that any weakening of these

rules presents a threat to the health of Americans, the environment and the US economy.

Weakening the GHG standards will cost consumers money at the pump, and exposes them more to the effects of volatile gas prices. The standards also provide a foundation for further addressing the threat posed by climate change, illustrated most recently by the increased intensity of the current hurricane season.

Based on the best available information, CARB is looking ahead to more ambitious standards for model years after 2025. It is vital that the federal agencies continue to coordinate their work with CARB to achieve the critical public health, economic, and national security goals set by our governing statutes, CARB said.

The CARB comments are at ww2.arb.ca.gov/sites/default/files/2017-10/state-of-ca-comments-reconsider-ldghg-mte-.PDF.

California fines Bombardier for failing to disclose Adjustable Engine Calibration

On 25 October 2017, the California Air Resources Board (CARB) announced that Bombardier has been fined for importing and delivering illegal vehicles in violation of state law.

Bombardier, a Canada-based company that designs, manufactures and sells recreational vehicles, power sports engines and other motorized equipment, failed to disclose that it programmed the engines of Can AM 450 model All-Terrain Vehicles (ATV) in years 2008 -2009 in such a way that consumers could access a high-performance racing programme by simply cutting a single wire attached to the engine.

Variable or adjustable calibrations within the emission control system that allow owners to change how the engine runs may result in enhanced vehicle performance, but could also significantly increase smog-forming emissions, CARB said. Such adjustable calibrations are prohibited by California law if they are not disclosed to CARB prior to the vehicle's approval for sale. They are also prohibited if the emission control systems make it possible for vehicle owners or dealerships to make adjustments outside the certified configuration.

Bombardier will pay $587 000 (€500 000) to the California Air Pollution Control Fund to support air pollution research, and $196 000 (€167 000) to the San Joaquin Valley School Bus Supplemental Environmental Project to help fund purchase of cleaner school buses.

US Approval of Emissions Fix for VW Generation 2 3.0l Diesel SUVs

On 23 October 2017, the US Environmental Protection Agency (EPA) and California Air Resources Board (CARB) announced they have reached an agreement with Volkswagen, Audi, and Porsche for appropriate emissions modifications for the Generation 2 (2013-2016) 3.0 l diesel Sport Utility Vehicles (SUVs).

These vehicles were originally sold with an undisclosed "defeat device" which neutralized part of the vehicles' emissions control systems.

The fix approved for generation 2.1 SUV vehicles requires both software and hardware updates, while the fix approved for generation 2.2 SUV vehicles requires only software updates. More detail on the models that are covered by each of these fixes is in the table below.

	Vehicle Models	Fix Description
Generation 2.1 SUVs	VW Touareg (Model Year 2013-2014) Porsche Cayenne (Model Year 2013-2014) Audi Q7 (Model Year 2013-2015)	Software update plus hardware modification.
Generation 2.2 SUVs	VW Touareg (Model Year 2015-2016) Porsche Cayenne (Model Year 2015-2016)	Software update only.

The modifications announced affect more than 7000 vehicles in California. The companies have yet to propose an appropriate repair for 3000 or so 3.0 l Gen 1 vehicles (MY 2009-2012) in California. The companies have proposed modifications for about 5600 more 3.0 l diesel passenger cars. Those modifications are being evaluated.

The automakers will contact vehicle owners to offer them the modifications and an extended warranty free of charge.

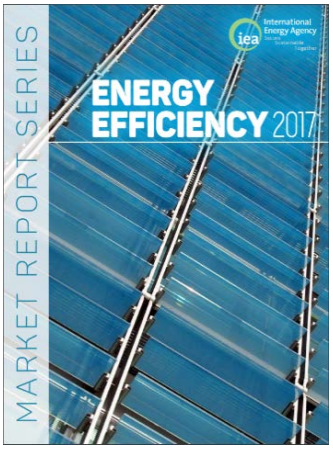
The notification is at www.arb.ca.gov/msprog/vw_info/vw-diesel-info/2017_1019_30l_announce_draft_dk_mf.pdf.

GENERAL

IEA 2017 Report on Energy Efficiency

On 5 October 2017, the International Energy Agency (IEA) published the report 'Energy Efficiency 2017' which examines the trends, indicators, impacts and drivers of energy efficiency progress worldwide.

Global energy intensity – the energy used per unit of Gross Domestic Product (GDP) – fell by 1.8% in 2016, a sign the global economy generated more value from its energy; this confirms the strong progress seen since the start of the decade.



But this progress masks some concerning policy trends. While efficiency codes and standards grew to cover about 32% of global energy use in 2016, nearly all of the increase in coverage came from existing policies and over two-thirds of global energy use is still not covered. The IEA's Efficiency Policy Progress Index also reveals that the strength of policies increased at their slowest

rate in recent years and rates of progress vary significantly across countries.

The report highlights potential areas for further policy action. For example, only four countries regulate the efficiency of trucks, and space-cooling demand is rising fastest in countries with the weakest air-conditioning efficiency regulation.

The report also details why more efficiency action is needed, highlighting the significant benefits to the global economy, energy system and environment. Improvements in energy intensity have been the most significant factor in keeping global greenhouse gas emissions flat over the last three years. The success of decarbonisation efforts around the world hinges on integrating energy efficiency policies, renewables and other tools into the energy system through a harmonised policy approach. The world would have used 12% more energy in 2016 without the efficiency improvements achieved since 2000, which is equivalent to adding another EU to the global energy market.

This year's IEA report also includes a special country focus on Indonesia, the largest energy consumer in Southeast Asia.

The IEA Energy Efficiency 2017 report is at www.iea.org/publications/freepublications/publication/Energy_Efficiency_2017.pdf.

Bus Powertrain Comparison Study

On 28 September 2017, the French Public Transportation Central Procurement (Centrale d'Achat du Transport Public or CATP) released a study comparing buses powertrains to help comparing diesel buses to alternative energy options, with regard to pollution and real costs.

In addition to gas and hybrids already considered in a previous report, the study also integrates new energies emerging in France (ethanol, bio-diesel, Hydrotreated Vegetable Oil, etc.) as well as electricity and its various modes of operation: recharging at the depot or by opportunity, rental or purchase of batteries, with or without internalization of infrastructure costs, etc.

The study concludes that diesel, although 'condemned' in the medium term, remains the best technology and the most economically efficient. A case study showed that Euro VI diesel offers the best way to initiate the energy transition in the short term. Because it is more affordable, the Euro VI diesel engine makes it possible to replace the oldest and therefore the most polluting ones. New fuels that can or cannot substitute diesel such as Gas-To-Liquid or ethanol also offer an alternative worth to be followed.

Natural Gas Vehicles offer a cost of ownership close to the Euro VI diesel vehicle. Fixed installations needed, in particular in workshops, constitute however a substantial budget to take into account. NGVs are interesting from an environmental point of view but low-speed CO and CO_2 emissions are problematic. The biogas sector around local methanation is worth following as it could be a relevant development.

Technologies	Coût de possession sur 15 ans	Coût du véhicule pour 1 000km	Les +	Les -
Diesel €6	521 874 €	870 €/1 000km	Technologie connue et maitrisée.	- Emissions Nox, HC, CO et particules- Image dégradée
GNV	+3 %	895 €/1 000km	Baisse des émissions, Coût énergétique.	- Emissions CO et CO2 à faible vitesse
GNV avec installation (base de 20 véhicules)	+ 7%	937 € / 1000km	Baisse des émissions, Coût énergétique.	- Emissions CO et CO2 à faible vitesse
Ethanol	+ 10 %	965 €/1 000km	Baisse des émissions, Economie circulaire.	- Consommation +40%, - Coût maintenance +20%
Hybrides	+ 20 %	1 088 €/1 000km	Coût énergétique.	- Coût de possession

The hybrid sector tends to develop in particular versions that are able to drive in electric mode inside urban areas or traffic restricted zones. This trend is likely to further develop while costs of ownership are rather high.

Finally, the electric sector is progressing rapidly both from a technical and industrialization point of views. However, feedbacks are limited and costs are high. It will take a few more years to see this promising alternative being truly operational. Hydrogen fuel cell buses is a complementary technology to the electric option for which interest needs to increase to further develop.

The bus comparison study (in French) is at www.catp.fr/wp-content/uploads/2017/09/Etude-comparative-des-diff%C3%A9rentes-motorisations-de-bus-2017.pdf.

ICCT Global Status Update on Fuel Cell Vehicles and Hydrogen Infrastructure

On 4 October 2017, the International Council on Clean Transportation (ICCT) published a synthesis of information regarding the global development of hydrogen (H_2) fuelling infrastructure.

The paper assesses the development of H_2 fuelling infrastructure networks around the world, compiles data on the current state of development of fuel cell vehicle technology, and summarizes research on hydrogen fuelling infrastructure, technology pathways, station planning, and funding from prominent fuel cell vehicle development markets. Much of the data and analytical research are based on work done in California, Europe, Japan, and Korea due to more extensive study and activity in these regions.

Fuel cell vehicle technology is progressing, opening up greater possibilities for low-carbon transport. Reductions in fuel cell cost, volume, and mass, and H_2 storage cost have greatly contributed to enabling the initial fuel cell market entrants. Fuel cell vehicle efficiency advantages, the ability to produce H_2 from renewable sources, and fuel cell vehicles' long-range and quick-fuelling capability make H_2 fuel cells a promising long-term option for a decarbonised transport sector. The use of H_2 fuel cells for heavy-duty

applications is relatively unexplored but could be especially promising as a zero-emission prospect where plug-in batteries will be more difficult.

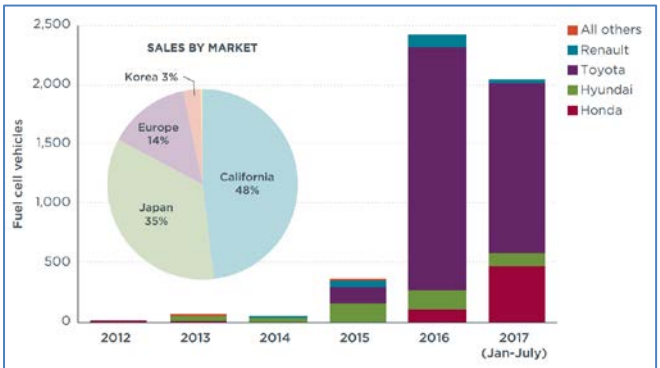


Figure 1. Fuel cell vehicle deployments for 2012 through mid-2017, by company and locale.

Uncertainty about when low-cost H_2 from renewable-energy sources will emerge is a key challenge for fuel cell vehicles. Industry will need to bear a greater burden of H_2 infrastructure investments over time. Finally, the multifaceted nature of developing H_2 infrastructure underscores the need for public-private consortia with regular collaboration.

The ICCT report on H_2 infrastructure is at http://theicct.org/sites/default/files/publications/Hydrogen-infrastructure-status-update_ICCT-briefing_04102017_vF.pdf.

Report on Impact of Change from NEDC to WLTP on Post-2020 CO_2 Targets

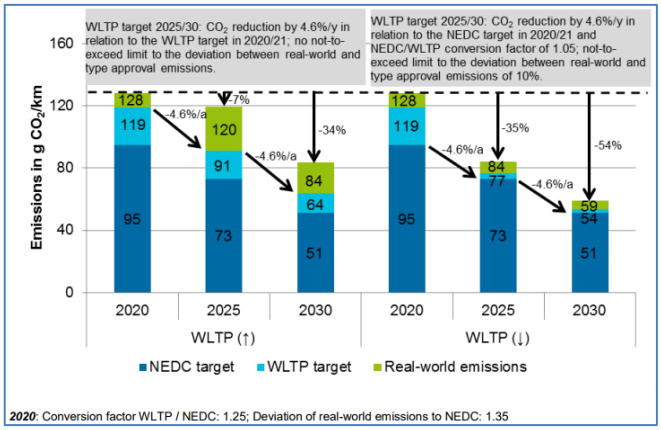
On 16 October 2017, the Öko Institute released a new report titled 'The changeover from the NEDC to the WLTP and its impact on the effectiveness and the post-2020 update of the CO_2 emission standards'.

According to the Öko Institute the changeover to WLTP will lead – if at all – to minor reductions of real-world emissions in 2020. However, while a gap between type approval measurements and real-world emissions will remain, WLTP does reflect real-world emissions more accurately than the current NEDC procedure.

In order to make the regulation more effective and to exploit the potential of real-world emission reduction, it should be linked to suitable RDE and in-use testing procedures, as well as a not-to-exceed limit for deviations between type approval measurements and real-world emissions.

Possible impacts of two different approaches for updating the CO_2 target value after 2020 were evaluated. Both scenarios are based on the European Parliament's suggested target corridor of 68-78 g CO_2/km (NEDC) in 2025. In the scenario WLTP (↑), the 2025 target value is defined in relation to the 2020/21 target value according to the proposition of the European Parliament (approx. 5% per year). The scenario does not stipulate a not-to-exceed limit for the deviation between measurements and real-life emissions. In the scenario WLTP (↓), an absolute WLTP target value is defined by applying the ICCT's conversion factor of 1.05 to the Parliament's proposed NEDC-based target value. Additionally, a maximum deviation of 10% between WLTP measurements and real-world emissions is enforced.

The approaches are especially distinct in 2025: the conversion factor of 1.05 would yield an absolute WLTP target value of 77 g CO_2/km, while the percentage reduction over 2021 would lead to a WLTP target of 91 g CO_2/km. When comparing real-world emissions, the importance of enforcing a limit on real-world to type approval emissions deviations becomes apparent (120 g CO_2/km vs. 84 g CO_2/km in 2025).



2020: Conversion factor WLTP / NEDC: 1.25; Deviation of real-world emissions to NEDC: 1.35

The report is at www.oeko.de/fileadmin/oekodoc/Changeover-NEDC-to-WLTP.pdf.

Economic Report on Low Carbon Mobility in Germany

On 12 October 2017, the European Climate Foundation released a report titled 'Low-Carbon Mobility in Germany: Challenges and Economic Opportunities'.

According to the report, the transition from petroleum-based energy sources to renewably sourced energy is good for Germany's economy and for net employment. Replacing imported oil with domestically-produced energy will keep many billions of euros recirculating in the German economy. The transition to these energy sources will also create new jobs, for example in manufacturing and installing the charging infrastructure, but will ultimately reduce jobs in manufacturing of internal combustion engines (ICEs).

Profound understanding of the changes to training and skillsets is needed to facilitate a just transition. However, Germany is unlikely to achieve its ambitious CO_2 reduction target for transport in 2030 solely via changes to new vehicles. Sustainable low-carbon mobility needs a systemic approach, taking into account solutions and transport modes beyond the automotive sector. New technologies, such as low-carbon fuels, and digital innovations, like shared & connected mobility, will play a key role in this task. This means all solutions that can contribute to achieving the decarbonisation goals by 2050

should be considered, and should be promoted where effective and efficient.

Total cost of ownership of Zero-Emission Vehicles (ZEVs) could converge, under certain scenarios, to that of combustion-engined vehicles until 2030, and in some particular use-cases (e.g. taxis) will reach cost parity even much earlier. To make the transition to low-carbon mobility successful, governments will need to encourage this convergence and should consult with industries and other stakeholders.

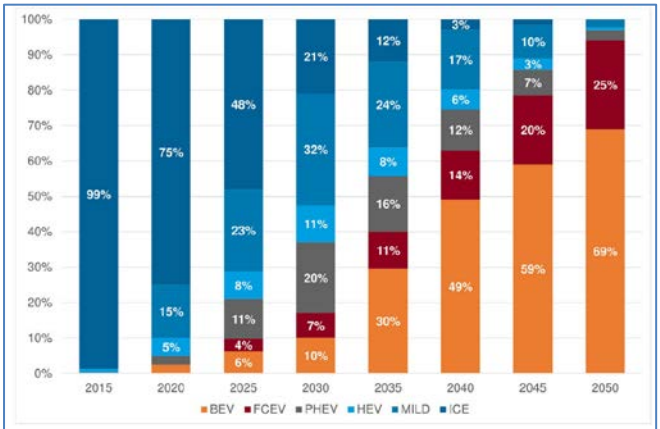


Figure 2. The central scenario for deployment of new vehicle technologies represents an averaging of projections by the expert panel.

The transition to low-carbon mobility causes a wide range of impacts to employment across several sectors. Employment in the automotive sector will remain stable until 2030 in the central scenario of the study (where climate goals are met through a balanced mix of hybrids, plug-in vehicles and increasingly efficient ICEs). After 2030, the transition to e-mobility will increase employment in sectors such as construction and infrastructure, but will ultimately impact the whole automotive value chain. Predictions from 2030 onward face multiple challenges requiring profound analysis. The future location of battery manufacturing will have some impact on the economic outcome. If Germany wants to maximise the value from the transition to low-carbon mobility, it should seek to encourage domestic battery production by providing a supportive policy environment.

The report is at https://europeanclimate.org/low-carbon-mobility-in-germany-challenges-and-economic-opportunities.

ICCT Briefing on EU 2020-2030 CO_2 Standards for New Cars and Vans

On 26 October 2017, the International Council on Clean Transportation (ICCT) published a briefing on 2020-2030 CO_2 standards for new cars and light-commercial vehicles in the EU.

The briefing notes that CO_2 standards have proven effective for driving down test cycle emission levels of new vehicles in recent years. To meet agreed climate targets, the annual CO_2 reduction rate for vehicles coming to the market in 2020-2030 needs to be significantly higher than in previous years. In addition, the gap between official test cycle and real on-road emission levels needs to be reduced by putting a stronger emphasis on regulatory enforcement.

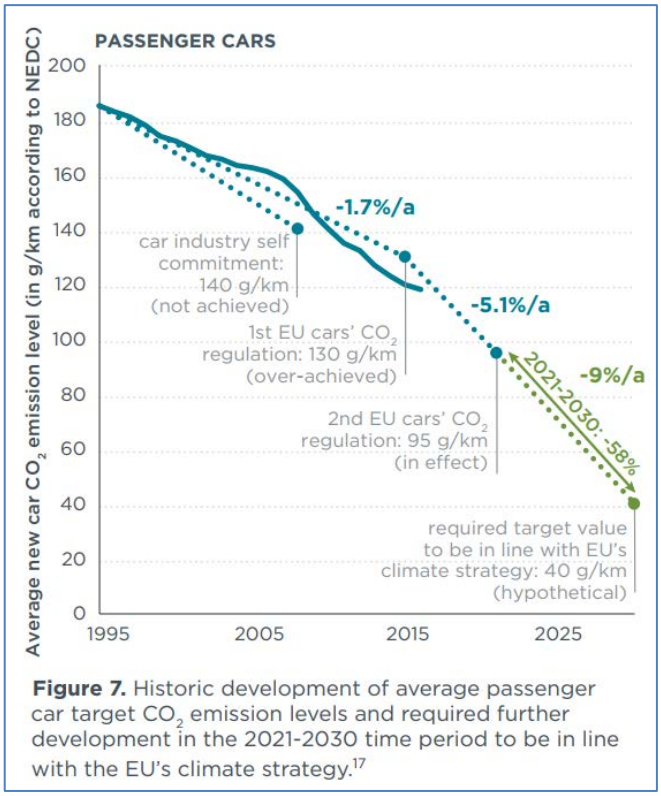


Figure 7. Historic development of average passenger car target CO_2 emission levels and required further development in the 2021-2030 time period to be in line with the EU's climate strategy.[17]

From a technical and economic perspective, stronger CO_2 reduction efforts are feasible. A 70 g/km NEDC target for new cars by 2025 can be reached largely without electrification and within a payback period of two to four years; however, accelerated deployment of electric vehicles will help to further reduce compliance cost for meeting 2020-2030 CO_2 emission targets.

A 17% electric vehicle share by 2025 would reduce compliance cost by approximately €350 per vehicle. A lower share of diesel cars will be no hurdle for greenhouse gas reductions and is likely to drive further acceleration of electric vehicles' deployment and further reduced compliance cost.

The ICCT briefing is at http://theicct.org/sites/default/files/publications/ICCT_Post-2020-CO2-stds-EU_briefing_20171026.pdf.

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FORTHCOMING CONFERENCES

7th International Symposium on Development Methodology

14-15 November 2017, Wiesbaden, Germany
www.avl.com/web/de/-/7th-international-symposium-on-development-methodology
Topics of this event include development methodology from theory and practice of vehicle and powertrain development (simulation, approach, calibration, modelling and optimization, data post processing, etc.) and development methodology for current legislative or technology issues, e.g. RDE (Real Driving Emissions).

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.

Future of Transport 2017. Towards clean, connected and competitive Transport in Europe

6 December 2017, Brussels, Belgium
www.future-transport.eu

The conference will develop the debate around transportation in Europe by focusing on the innovation emerging as a result of technical and digital progress.

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.

WCX18: SAE World Congress Experience

10-12 April 2018, Detroit, USA
www.wcx18.org

8th AVL Large Engines TechDays

11-12 April 2018, Graz, Austria
www.avl.com/-/8th-avl-large-engines-techdays
Electrification, New Fuels and Power Sources: Boom or Doom for Large Engines?

TRA 2018 – A Digital Era for Transport

16-19 April 2018, Vienna, Austria
www.traconference.eu
Key focus areas of TRA 2018 will be how digitalisation is transforming transport & mobility systems; decarbonisation & future growth – how to change our mobility system & remain competitive; and shaping the new mobility landscape – a vision for transport & mobility for Europe.

39th International Vienna Motor Symposium

26-27 April 2018, Vienna, Austria
https://wiener-motorensymposium.at
Outstanding lecturers from all over the world will present the latest findings in engine development and, amongst other topics, will report on new engines, fuel cells, hybrid technology, exhaust gas treatment and real driving emissions (RDE).

7th Freiburg Workshop 'Luftreinhaltung und Modelle'

15-16 May 2018, Freiburg, Germany
www.ivu-umwelt.de/front_content.php?idcat=3

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.

22nd ETH- Conference on Combustion Generated Nanoparticles

18-21 June 2018, Zurich, Switzerland
www.nanoparticles.ethz.ch
The conference serves as an interdisciplinary platform for expert discussions on all aspects of nanoparticles, freshly emitted from various sources, aged in ambient air, technical mitigation aspects, impact of particles on health, environment and climate and particle legislation.

7th International MinNOx Conference

19-20 June 2018, Berlin, Germany
www.iav.com/MinNOx
Topics of the conference include: exhaust emission legislation, MinNOx systems in diesel, gasoline and hybrid powertrains from passenger car to heavy-duty as well as off-highway applications; global optimization of engine and MinNOx systems to reduce both NOx and CO_2 emissions; innovative ideas and methods for the development, modelling or control of component and overall systems; emission control technologies; boundary conditions for operating MinNOx systems monitoring and diagnostics of MinNOx systems; and potential for cost reduction of future concepts.
Deadline for abstract: 19 January 2018

37th FISITA World Automotive Congress: Disruptive Technologies for Affordable and Sustainable Mobility

2-5 October 2018, Chennai, India

www.fisita-congress.com
The congress topics include powertrain & emissions, fuels & lubricants, noise & vibration, vehicle dynamics, active and passive safety, electric & hybrid vehicles, autonomous & connected vehicles, manufacturing & materials, vehicle concepts, and sustainability.

2018 Aachen Colloquium Automobile and Engine Technology

8-10 October 2018, Aachen, Germany
www.aachener-kolloquium.de
The congress provides a wide range of technical presentations addressing current challenges of the vehicle and engine industry.

40th International Vienna Motor Symposium

16-17 May 2019, Vienna, Austria
https://wiener-motorensymposium.at