

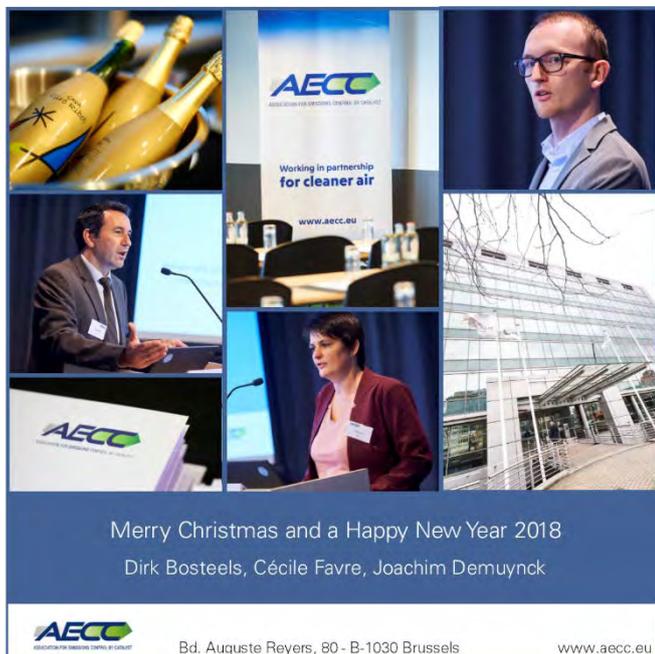
NEWSLETTER

International Regulatory Developments

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The AECC team wishes you and your family a happy and fruitful New Year. We look forward to working with you in 2018.



EUROPE

Provisional Agreement on Vehicle Type-Approval Framework Reform

On 7 December 2017, the Estonian Council Presidency and European Parliament representatives reached, after the fourth round of interinstitutional negotiations (trilogue), a provisional agreement on the reform of type-approval and market surveillance for motor vehicles.



The aim of the reform is to achieve a high level of safety and environmental performance of vehicles and to address the main shortcomings identified in the existing type-approval system. Important changes are introduced in three areas by strengthening 1) the quality of testing that allows a vehicle to be placed on the market through improved technical services; 2) market surveillance to control the conformity of vehicles already available on the market, with the possibility for Member States and the

Commission to carry out spot-checks on vehicles in order to detect failures at an early stage; and 3) the oversight of the type-approval process, in particular empowering the Commission to carry out periodic assessments on national type-approval authorities and through the establishment of a Forum for the exchange of information on enforcement, made up of representatives of national approval and market surveillance authorities.

The harmonised implementation of the new rules across the EU, by way of a Regulation instead of a Directive, will reduce differences in interpretation and application by national type-approval authorities and technical services.

The new market surveillance obligations will require every country to conduct a minimum number of checks on vehicles each year: 1 in every 40 000 new vehicles registered in that country the previous year (with a minimum of 5 tests). At least 20% of the checks will have to be emission-related tests, with verification of emissions under real driving conditions.

Those countries with fewer technical capacities to carry out the required tests will be able to agree with other countries to carry out the tests on their behalf. The regulation foresees an obligation for Member States to finance market surveillance activities. The fees for type-approval activities will be levied on manufacturers who have applied for type-approval.

The European Commission will be empowered to carry out tests and inspections of vehicles to verify compliance and react to irregularities immediately.

The Commission will also be able to impose administrative fines for infringements on manufacturers and importers of up to €30 000 per non-compliant vehicle.

The Commission will be empowered to carry out assessments of the procedures put in place by type-approval authorities every 5 years. It will also be able to participate in peer evaluation teams. Type-approval authorities however will not be subject to peer evaluation when they designate all their technical services on the basis of accreditation of internationally recognised standards. Summaries of the Commission assessments and peer evaluation outcomes will be made publicly available.

Furthermore, an advisory Forum for exchange of information on enforcement measures will be established with the purpose to harmonise different interpretations and practises among the member states. This Forum will also examine the outcomes of peer evaluations and Commission assessments. National authorities will have to submit a comprehensive overview of their planned market surveillance checks each year to the Forum.

The technical services will carry out the tests for type-approval under the responsibility of type-approval authorities. The position of technical services vis-à-vis manufacturers will be strengthened, and will include the

right and duty to carry out unannounced factory inspections and to conduct physical or laboratory tests.

On 20 December 2017, the provisional agreement was then endorsed by the Committee of the Permanent Representatives of the Governments of the Member States to the EU (COREPER).

The agreement now needs to be approved by the European Parliament's Committee on Internal Market and Consumer Protection (IMCO) and then voted in plenary. If approved by the Parliament, the Council will adopt the text without debate.

The final text of the Regulation will then be published in the EU Official Journal and will enter into force on 1 September 2020.

The text of the provisional agreement is not yet publicly available.

Draft Regulation on Vehicle's On-Board Fuel Consumption Measurement Device

On 12 December 2017, the European Commission published a draft amendment to the Euro 6 WLTP Regulation (EU) 2017/1151 introducing provisions for fuel and energy consumption measurement at type-approval of cars and vans.

The device for measuring the consumption of fuel and energy shall determine, store and make available data on the quantity of fuel and energy used for the operation of the vehicle. Requirements for the device are laid down in a new Annex XXII. The information has to be made available as signals through the On-Board Diagnostic (OBD) connector.

The fuel and energy consumption measurement device is required on new types of M1 and N1 class 1 vehicles from 1 January 2020 and on all new vehicles from 1 January 2021; in line with the introduction of Euro 6d. Respective dates of application are one year later for N1 vehicles of class 2 and 3.

The draft Regulation and Annex XXII are open for comments until 9 January 2018 and are at http://ec.europa.eu/info/law/better-regulation/initiatives/ares-2017-6091004_en.

Commission amends Euro 5 Delegated Acts for L-Category Vehicles

On 15 December 2017, the European Commission adopted a Delegated Regulation updating EU rules on type-approval of two- and three-wheel motor vehicles.

This amends Commission Delegated Regulation (EU) 44/2014 on vehicle construction and general requirements (RVCR) and Commission Delegated Regulation (EU) 134/2014 on environmental and propulsion unit performance requirements (REPPR), in order to take into account the results of the study validating the Euro 5 stage enforcement dates and emissions limits.

The Euro 5 cold/hot start weighing factors for L3e (two-wheel motorcycle), L4e (two-wheel motorcycle with sidecar), L5e (tricycle) and L7e-A (on-road heavy quad) vehicles with a $v_{max} < 130$ km/h is changed from 0.5/0.5 to 0.3/0.7, back to the Euro 4 values.

In the REPPR, a number of durability-related elements are amended: the classification requirements of the Standard Road Cycle for L-Category Vehicles (SRC-LeCV) is adapted; the use of the Approved Mileage Accumulation (AMA) driving cycle is phased out for L-category III vehicles (engine ≥ 150 cm³ and $v_{max} \geq 130$ km/h) from 1 January

2025; and the use of bench ageing according to the Standard Bench Cycle (SBC) is introduced as an alternative to the actual physical durability testing as fixed Deterioration Factors are expected to be deleted soon from the main Euro 4&5 Regulation (EU) 168/2013 – a co-decision procedure is expected in early 2018.

In the RVCR, the functional provisions on On-Board Diagnostic (OBD) are amended to account for technical upgrade to new standards developed for the interface between generic scan tools and the vehicle; also the engine operation window for misfire detection is modified to ensure that the imposed requirements are technically feasible and some clarifications are made. New appendices are added to the OBD Annex XII to ensure the correct implementation of in-use performance ratios.

The measure will now be sent to the European Parliament and the Council for scrutiny. If no objections are raised during the next two months, the draft measure will then be published in the EU Official Journal and subsequently enter into force.

The draft Delegated Regulation and its annex are at http://ec.europa.eu/info/law/better-regulation/initiatives/c-2017-8469_en.

Draft Implementing Regulation on Heavy-Duty CO₂ Certification

On 12 December 2017, the European Commission issued a draft Implementing Regulation on the determination of CO₂ emissions and fuel consumption of heavy-duty vehicles.

This Regulation complements the legal framework for the type-approval of motor vehicles and engines with regard to emissions and vehicle repair and maintenance information established by Regulation (EU) No 582/2011 by laying down the rules for issuing licences to operate a simulation tool with a view to determining CO₂ emissions and fuel

Table Ap1-1.
L-vehicle category groups for SRC-LeCV

SRC Cycle classification	WTMC classification
1	Class 1
2	Class 2-1
2	Class 2-2
3	Class 3-1
4	Class 3-2*

consumption of new vehicles to be sold, registered or put into service in the EU and for operating that simulation tool and declaring the CO₂ emissions and fuel consumption values thus determined.

The draft Commission implementing regulation and its 11 Annexes are at http://ec.europa.eu/info/law/better-regulation/initiatives/c-2017-7937_en.

Council Presidency Mandate for Heavy-Duty CO₂ Monitoring Negotiations

On 15 December 2017, EU Member State Ambassadors, meeting in the COREPER, agreed on a mandate for interinstitutional negotiations on the Commission proposal on the monitoring and reporting of CO₂ emissions and fuel consumption of heavy-duty vehicles.

The European Commission submitted for codecision the legislative proposal to the European Parliament and Council on 31 May 2017, as part of the "Europe on the move" package (see *AECC Newsletter of June 2017*).

According to the Council's press release, the main elements of the mandate agreed include the following:

- ▶ Monitoring and reporting obligations would only apply to manufacturers of vehicle categories which have already been certified. The starting years for monitoring and reporting for each vehicle category will be fixed in the annex to the Regulation, which will be amended when the remaining vehicle categories are certified. The Commission will have seven years to set the starting years for all vehicle categories.
- ▶ A central EU register will be set up for gathering all data from authorities and manufacturers; data collected on CO₂ emissions and fuel consumption will be made available to the public, enhancing transparency in the transport sector, with the only possible exceptions related to the protection of personal data and fair competition. In particular, relevant data related to the aerodynamics of the vehicles (known as 'air drag value'), which is an important element for determining the fuel efficiency of a vehicle, will also be made available in a range format.

This decision on behalf of the Council means that the incoming Bulgarian Presidency will be able to start trilogue negotiations with the European Parliament once the Parliament has adopted its report. The adoption of the Environment Committee Report is scheduled in January 2018, with a view for a vote in plenary in February 2018.

Public Consultation on Heavy-Duty CO₂ Emissions

On 20 November 2017, the European Commission launched a public consultation on an inception impact assessment for the expected proposal on mandatory CO₂ emission limits for new Heavy-Duty Vehicles (HDV).

A certification procedure for the determination of the CO₂ emissions and fuel consumption of new HDVs at type-

approval was adopted in May 2017, using the results from the VECTO simulation tool which has been developed by the Commission since 2010. As part of the Europe on the Move set of initiatives, the Commission also adopted a proposal for the monitoring and reporting of such HDV CO₂ emissions and fuel consumption. The data collected will be made publicly available by the European Environment Agency (EEA), starting in 2020 to cover data monitored in 2019.

The European Commission is now working on an inception impact assessment that will look into different options for setting the first EU measures to actively curb CO₂ emissions from HDVs, including CO₂ emission standards. The impact assessment aims at finding the best policy option for setting the EU measures to actively curb CO₂ emissions from HDVs, including by CO₂ emission standards. The public consultation aims to gather the stakeholder views on the forthcoming legislative proposal.

The consultation is open until 29 January 2017 and is at <https://ec.europa.eu/eusurvey/runner/IA-HDV-CO2-2017>.

Parliament Report on EU Strategy for Low-Emission Mobility

On 14 December 2017, the European Parliament adopted a resolution on the European strategy for low-emission mobility.

Prior to the vote, MEPs held a debate on the Committee Report drafted by MEP Bas Eickhout (NL, Greens) and which involved the Transport and Environment Committees of the Parliament. During the debate, the work of the Rapporteur was applauded by the Commission, represented by the Commissioner for Environment, Mr Vella. All the political groups expressed their support for the Report, welcoming its effort to restore the EU's front-runner role in fighting climate change. However, Shadow Rapporteur Salini (EPP, Italy) and MEP Zlotowski (ECR, Poland) said the targets set for market take-up of Zero-Emissions Vehicles (ZEVs) in the Report were overambitious.

The Resolution outlines the Parliament's position on how to enhance the efficiency of the transport sector and the fairness of its pricing; how to boost investments on transport infrastructures; and how to empower citizens and reach a substantial paradigm shift in their behaviours.

In particular, the Parliament calls on the Commission to recognise the growing importance of measuring life-cycle emissions, from energy supply emissions through to manufacturing and end-of-life emissions and to incorporate incentives to account for life-cycle emissions. Also the Commission should introduce and improve CO₂ standards for all road vehicles. A minimum target for the share of ZEV should be requested from all manufacturers.

The Resolution stresses the importance of improving air quality in the EU and adhering to the EU ambient air quality limits, as well as to the levels recommended by the World Health organization (WHO). The Parliament calls on the

Commission to come forward with proposals for new technology-neutral Euro 7 emission limits applicable by 2025 for passenger cars and vans.

The paragraph calling on the European Commission to completely phase out new CO₂ emitting cars by 2035 was not approved.

The Resolution was adopted by a short majority of 301 MEPs in favour to 249 against and 25 abstentions.

The Parliament resolution is at <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2017-0503+0+DOC+PDF+V0//EN>.

Horizon 2020 Prize on Sustainable Fuels from Artificial Photosynthesis

On 12 December 2017, the European Commission launched the second of six European Innovation Council (EIC) Horizon Prizes, on Artificial Photosynthesis, run under Horizon 2020, the EU's research and innovation programme.

The €5 million award will go to a new solution for combining sunlight, water and carbon from the air through artificial photosynthesis that will produce a sustainable fuel. The challenge is to build a fully functional, bench-scale prototype of an artificial photosynthesis-based system which can produce a useable synthetic fuel.

Artificial photosynthesis, considered to be one of the most promising breakthrough technologies for producing clean energy, mimics the process of natural photosynthesis. By absorbing solar energy in the form of photons it produces fuels that can be stored and transported. Once fully developed, this technology will provide sustainable alternatives to fossil fuels for a range of applications in industry, housing and transport.

The deadline for applications is 3 February 2021.

More information is at https://ec.europa.eu/research/eic/index.cfm?pg=prizes_sunfuel.

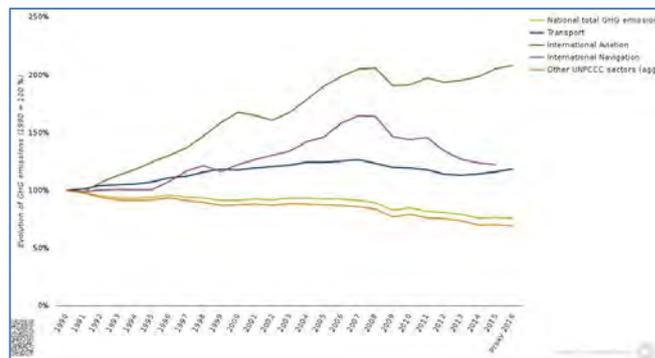
EEA Briefing on Transport and Environment Reporting Mechanism

On 5 December 2017, the European Environment Agency (EEA) published a briefing on the Transport and Environment Reporting Mechanism (TERM).

According to the report, the EU transport sector is making mixed progress towards meeting its environmental, health and climate policy targets. In particular, the need to manage rising greenhouse gas (GHG) emissions means increased efforts are required to meet long-term transport targets. Since 2014, the EU's transport GHG emissions have increased. In 2016, provisional data show GHG emissions (including international aviation but excluding maritime shipping) were 25% higher than in 1990.

The average CO₂ emissions of new passenger vans and cars in 2016 were below the respective target paths for 2020 and 2021, although considerable reductions still need

to be made in the coming years to meet future targets. Although sales of new diesel passenger cars have decreased in recent years, the share of diesel used in road transport (including for freight transport by heavy-duty vehicles) has continued to rise, amounting to more than 66% of total fuel sales in road transport in 2015, compared with 51% in 2000.



Oil consumption by the transport sector will need to fall by more than two-thirds to meet the objective of reducing consumption by 70% by 2050 compared with 2008 levels.

The share of renewable energy in transport in the EU rose from 6.7% in 2015 to 7.1% in 2016, lower than the 10% target set for 2020. Just three Member States (Austria, Finland and Sweden) have already reached the 10% goal.

The EEA briefing on TERM 2017 is at www.eea.europa.eu/themes/transport/term/monitoring-progress-of-europes-transport.

EEA 2017 Report on Renewable Energy in Europe

On 18 December 2017, the European Environment Agency (EEA) published a report on the 2017 update on renewable energy in Europe.

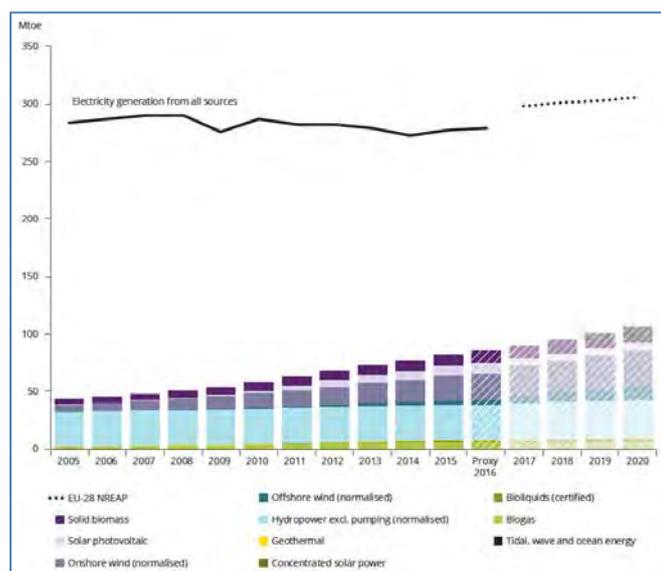
This report outlines the progress renewable energy sources (RES) made in 2015 in the EU as a whole, and at country, market sector and technology level. It also provides early EEA estimates regarding developments at all of these levels in 2016. The report confirms that the EU remains on track to reach its 20% RES share target for 2020, despite RES growth across the EU having recently slowed.

The share of renewables in the EU final energy use increased from 16.1% in 2014 to 16.7% in 2015, and to an expected 16.9% in 2016, according to EEA estimates. The share of renewables grew despite a back-to-back increase in total energy consumption in 2015 and 2016. Over the period 2005-2014, the



share of renewable energy sources in the EU's gross final energy consumption increased, on average, by 6.7% annually. However, in 2015, this growth rate slightly decreased to 6.4%, and in 2016 to 5.9%, over the entire period.

Renewable energy accounted for 86% of new EU electricity-generating capacity in 2016. Worldwide, the figure was about 62%. The EU currently stands as a global leader in renewable power capacity per capita, having outpaced the rest of the world in the past decade in transforming its energy system, the report states.



The EEA report also shows that the share of renewables in final energy consumption varies widely within the EU. It ranges from more than 30% in Austria, Denmark, Finland, Latvia and Sweden to less than 9% in Belgium, Luxembourg, Malta, the Netherlands and the UK.

Heating and cooling remains the dominant market sector for renewables in Europe in both absolute and relative terms, followed by electricity generation. In the EU transport sector, renewable energy only made up about 7% of all energy use in 2015 and 2016 with the bulk coming from biofuels.

The EEA report on renewable energy is at www.eea.europa.eu/publications/renewable-energy-in-europe.

GEAR 2030 Strategy Report on EU Automotive Industry Competitiveness

On 4 December 2017, the European Commission published a report, prepared by Ricardo under the GEAR 2030 Strategy 2015-2017, providing a comparative analysis of the competitive position of the EU automotive industry and the impact of the introduction of autonomous vehicles.

The report assesses the external competitiveness of the EU automotive industry to 2030 and beyond in the face of shifting market and regulatory drivers in six key competitive markets: EU, China, India, Japan, South Korea and the US. It covers seven vehicle segments comprising

passenger cars (M1 category split into entry-level, mid-range and luxury segments), light commercial vehicles (N1 category) and L-category vehicles (split into light two-wheelers, two-wheeled motorcycles and light/heavy quadricycles).

The study assesses the impacts of the changes in regulation expected in the baseline but also models alternative scenarios representing the implementation of more ambitious regulation in the EU, at different stages, and with varying levels of ambition, as the EU increases its regulatory ambition to match or exceed the global leading regulatory standards. A scenario was also developed to understand the impacts for EU OEMs of a unilateral strengthening of regulations occurring in one of the EU's main export markets, China. It models the situation in which manufacturers from countries which match the regulatory ambition in China (including the EU in the higher-ambition regulatory scenarios) are able to adapt quicker to the regulatory shock, as they have already invested heavily in (for example) zero-emissions vehicle technologies.

Overall, significant challenges lie ahead for the EU automotive sector, but a very positive picture is painted if regulation is tightened in the EU alongside appropriate support from the EC in this period of change and uncertainty, in order for the industry to be able to capitalise on the opportunities presented.

The GEAR 2030 competitiveness report is at <https://publications.europa.eu/en/publication-detail/-/publication/24c9ad0e-da38-11e7-a506-01aa75ed71a1/language-en/format-PDF/source-52926290>.

2017 EU Industrial R&D Investment Scoreboard

On 4 December 2017, the Joint Research Centre (JRC) of the European Commission published the 2017 EU Industrial Research & Development (R&D) Investment Scoreboard.

The scoreboard comprises the 2500 companies investing the largest sums in R&D in the world in 2016/17. These companies, based in 43 countries, each invested over €24 million in R&D for a total of €741.6 billion, which is approximately 90% of the world's business-funded R&D. They include 567 EU companies accounting for 26% of the total, 822 US companies for 39%, 365 Japanese companies for 14%, 376 Chinese for 8% and the rest-of-the-world (RoW) for 13%.

EU companies' R&D growth is led by automotive together with ICT and health whereas in non-EU companies it is led



by the ICT and health industries. For the 4th consecutive year the top R&D investor is the German manufacturer Volkswagen (€13.7bn).

The 2017 Scoreboard includes an analysis of the 10-year economic and R&D performance of the top R&D investors showing that:

- The EU share of world R&D remained constant at 26%, whereas at sector level, significant changes in EU's R&D shares are observed, namely an increase in the automobiles sector (from 36% to 44%) and a decrease in aerospace & defence (from 48% to 42%).
- Compared to their non-EU counterparts, EU companies outperform or perform comparably in size (of R&D and sales) and R&D intensity for aerospace & defence, automobiles and pharmaceuticals. In biotechnology, software and IT hardware though the EU shows persistent weaknesses in most indicators.
- In terms of productivity (net sales/employee ratio), EU and US companies showed similar overall performance (ca. 14% increase in both net sales and employment). However contrasting productivity changes are observed in the automobile sector, with +17% in the EU compared to -15% in the US.

The EU R&D investment scoreboard is at <http://iri.jrc.ec.europa.eu/scoreboard17.html>.

Amendment to End-of-Life Vehicles Directive

On 16 November 2017, Commission Directive (EU) 2017/2096 was published in the Official Journal; it amends Annex II of Directive 2000/53/EC on end-of-life vehicles.

It specifies new limits, scopes and expiry dates for exemption for lead, hexavalent chromium, mercury and cadmium in various automotive parts and components.

Commission Directive (EU) 2017/2096 is at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017L2096&qid=1512569787424&from=en>.

New Register of Delegated Acts

On 12 December 2017, the EU launched a new online register to improve transparency and allow tracking EU decisions taken in the form of delegated acts.

Delegated acts are a form of secondary legislation which is used, for example, to update technical requirements in legislation. The European Parliament and the Council empower the European Commission to draft delegated acts, which are then submitted to them. Parliament and Council are able to reject draft delegated acts.

The new interinstitutional register of delegated acts offers a complete overview of the lifecycle of this process. It allows users to search and follow the development of delegated acts from the planning stage conducted by the Commission, up until the final publication in the Official Journal. The register also illustrates the various steps taken

by the European Parliament and the Council as well as the work of Commission expert groups such as the Technical Committee Motor Vehicles (TCMV) involved in the preparation of delegated acts.

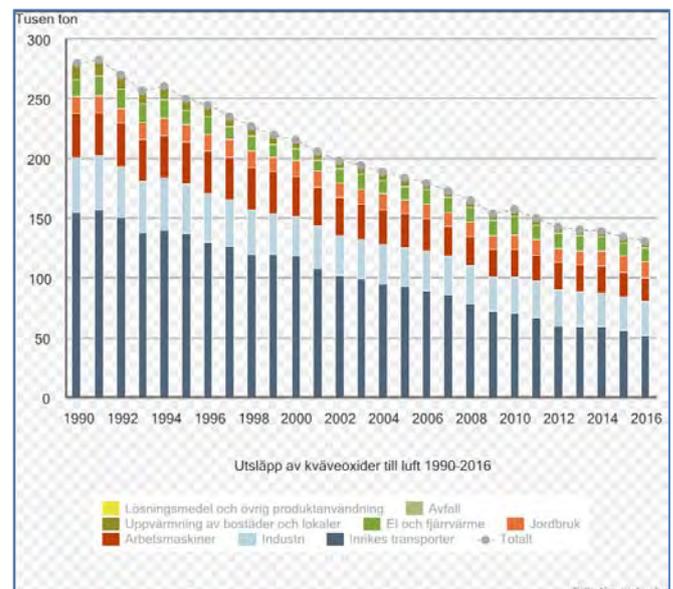
The Register, available in all official languages, allows users to subscribe and receive notifications about the development of specific delegated acts which they are interested in.

The Register of Delegated Acts is at <https://webgate.ec.europa.eu/regdel/#/home>.

Air Quality in Sweden

On 5 December 2017, the Swedish Environmental Protection Agency (EPA) published air pollutant emissions data for nitrogen oxides (NO_x), Volatile Organic Compounds (VOCs), sulfur dioxide (SO₂), ammonia, carbon monoxide (CO), ultrafine particles (PM_{2.5}) and heavy metals.

NO_x emissions have more than halved since 1990. Emissions were about 131 000 tonnes in 2016. Between 2015 and 2016, emissions fell by almost 3%. The major sources of NO_x emissions are road traffic, industry and work machinery. International shipping is also a very significant source, but it is not included in national emissions. The aggregate emissions have fallen in all sectors, mainly in the transport sector thanks to catalytic converters, despite the fact that emissions from diesel-powered cars have increased sharply. The tax on NO_x, introduced in 1992, has contributed to the reduction of emissions from electricity and heat production.



VOC emissions in Sweden have more than halved since 1990 while SO₂ emissions have reduced by 82% in the same period. Ammonia emissions mainly come from agriculture and manure management in particular and have only reduced by 12% since 1990. PM_{2.5} emissions have halved over the last 26 years. Finally, Emissions of mercury, lead, cadmium and other metals have fallen

sharply. Emissions of mercury were estimated to be approximately 412 kg in 2016, which is a decrease of about 73% since 1990.

The Swedish EPA report is at www.naturvardsverket.se/Sa-mar-miljon/Klimat-och-luft/Statistik-om-luft/Utslapp-av-luftfororeningar.

Swedish Super-Green Vehicles

On 21 December 2017, the Swedish Government notified the European Commission of a new Ordinance on super-green vehicles and defines the bonus part of a bonus-malus system that aims to promote market uptake of vehicles that have a limited impact on the environment.

According to the Ordinance super-green vehicles are passenger cars, light-duty vehicles or light-duty buses that are type-approved with CO₂ emissions below or equal to 60 g/km or operate with gas fuels other than Liquefied Petroleum Gas (LPG).

The bonus is linear. Each gram/kilometer of CO₂ is multiplied by 833 and then this result is subtracted from 60 000. The highest bonus level for a super-green vehicle that has zero CO₂ tailpipe emission is therefore a maximum of SEK 60 000 (€6000). A bonus of at least SEK 10 000 (€1000) is awarded to a super-green vehicle operating with gas fuels other than LPG. If such a car also meets the CO₂ emission limit of 60 g/km, the car can be awarded a bonus according to the linear scale.

The Ordinance also contains necessary provisions for the administration of the bonus.

The proposed entry into force date for the ordinance is 1 July 2018.

The Swedish Ordinance is at <http://ec.europa.eu/growth/tools-databases/tris/en/index.cfm/search/?trisaction=search.detail&year=2017&num=597&mLang=en&CFID=3922081&CFTOKEN=abc2fdce097ebf04-11B34399-BE58-42AC-9E610836E3A7A16B>.

Germany orders recall of VW 3-Litre Diesel Euro 6 Touareg

On 8 December the German Federal Motor Transport Authority (KBA) ordered a mandatory recall of Volkswagen 3.0 l Diesel Euro 6 Touareg Sport Utility Vehicles (SUV).

According to the KBA, two inadmissible defeat devices have been detected. The emissions control warm-up strategy observed on the NEDC regulatory cycle is mostly not activated in real driving conditions. In addition, under certain conditions a strategy is used on vehicles with SCR systems which limits the use of AdBlue®.

Conformity of the vehicles produced needs to be restored. The recall is affecting 57 600 vehicles worldwide, of which 25 800 are registered in Germany.

Volkswagen has presented to the KBA a new engine software for the affected vehicles. The software update has been checked and approved by the KBA. The manufacturer is now requested to recall affected vehicles already on the market and retrofit them accordingly.

The Touareg action follows a recall by German authorities in July 2017 of 22 000 Porsche Cayenne SUVs in Europe, the Touareg's sister model which uses the 3-liter engine developed by Audi.

Affected owners are contacted by VW. In addition, one can check if their vehicle is affected by the recall at <http://info.volkswagen.de/de/de/home.html>.

Environmental Impact of Low Emission Zone in Leipzig

On 14 December 2017, the Saxon State Office of the Environment, Agriculture and Geology (LfULG) published a study conducted by the Leibniz Institute for Tropospheric Research (TROPOS) on the impact on the air quality of the Low Emission Zone (LEZ) in Leipzig, Germany.

The LEZ in Leipzig was established in March 2011, allowing only access of diesel vehicles of Euro 4 (German green sticker) and higher with few exceptions.

The ban of older vehicles and subsequent modernization of the car fleet resulted in slightly reduced PM₁₀ and PM_{2.5} concentrations. However, the mass concentration of black carbon (soot particles) decreased by 60% at the street site. Furthermore, also the number concentration of ultrafine particles decreased by approximately 70%.



Despite modernized diesel vehicles, nitrogen oxides (NO_x) concentrations did not follow these trends and remained nearly constant. The main achievement of the Low Emission Zone was therefore the improvement of air quality by the reduction of ultrafine particles.

The study (in German) is at <https://publikationen.sachsen.de/bdb/artikel/29757%20>.

France updates Specifications of Fatty Acid Methyl Esters (FAME)

On 7 December 2017, France notified the European Commission of the updated specifications of Fatty Acid Methyl Esters (FAME) that may be blended to diesel fuel.

Cold-resistance characteristics are also amended for FAME to be blended to obtain B7 or lower fuels, and for FAME to be blended to obtain fuels with FAME content of more than 7% (v/v).

The new FAME specifications are at <http://ec.europa.eu/growth/tools-databases/tris/en/index.cfm/search/?trisaction=search.detail&year=2017&num=573&dLang=EN>.

French Action Plan on Diesel Industry

On 7 December 2017, the French Minister for Economy and Finance, Mr Bruno Le Maire, chaired a roundtable on the topic of the rapid decline in diesel vehicle sales.

Representatives of the sector (plateforme de l'automobile – PFA) as well as major players Bosch, Delphi, PSA and Renault attended the roundtable.

The French Government shared with industry a first diagnosis concerning the industrial and social consequences of the decline in sales of new diesel vehicles. Several phenomena can explain that rapid decline: an increased awareness to health impacts of air pollutants, a tightening of controls and regulations leading to an increase in the cost of diesel vehicles, a convergence of taxation between diesel and gasoline, which will be achieved by 2021 in France.

An agreement was reached between the Government and industry for the implementation of an action plan. It will be taken to regional level and includes three main objectives:

- make a precise inventory of the impact of the decline in sales of diesel vehicles, in particular on Small and Medium Enterprises (SME) suppliers;
- enable the French automotive sector to position itself on new sources of added value: improvement of existing engines (petrol and diesel) as well as new engines, to enable them to meet tightening regulations on greenhouse gas and pollutants emissions; technological developments to improve the environmental performance of vehicles; and development of new mobility services; and
- find suitable solutions to preserve jobs and skills on each of the most impacted sites.

A progress report will be made in March 2018, during a meeting of the strategic committee of the automotive sector in order to put the strategy of the sector into perspective in the face of technological changes: evolution of engines, autonomous vehicle development, and battery strategy.

French Decree on Certification of FlexFuel Retrofit Kits

On 15 December 2017, a Decree was published in the French Official Journal on certification requirements for retrofit boxes converting gasoline vehicles to 'super-ethanol' E85.

The decree is almost identical to the draft text which was submitted to public consultation last summer (see *AECC Newsletter of July 2017*). Vehicles that are eligible are E10-compatible gasoline-powered passenger cars or light commercial vehicles that meet at least the Euro 3 standard and whose tax capacity is less than or equal to 14 hp. Gasoline vehicles equipped with a particulate filter are excluded as a precaution.

Superethanol-E85 contains between 65 and 85% of bioethanol, the balance being gasoline. According to ePure, it reduces CO₂ emissions by 66% in average compared to fossil fuel, and emits virtually no particles.

With the publication of the decree, manufacturers will now be able to certify their kits. The tests (to be carried out by UTAC) notably verify that the CO₂ and pollutant emissions of the converted vehicle meet its original standards. The manufacturer's warranty replaces that of the manufacturer.

The order also allows the owner of the vehicle to have the fuel change reported on the registration document of the vehicle, allowing in most regions a tax exemption of 100% or 50%.

The French Decree on FlexFuel kits is at www.legifrance.gouv.fr/eli/arrete/2017/11/30/TRER1734649A/jo/texte.

Brixton Clean Bus Zone in London, UK

On 12 December 2017, the Mayor of London, Mr Sadiq Khan, delivered a Low Emission Bus Zone in one of the most polluted areas of London: Brixton Road.

The new clean bus zone, running from Brixton Hill via Stockwell Road and Streatham High Road to Streatham Place, carries 130 000 passengers a day on a total of 450 buses on 23 scheduled routes. The routes travel close to a number of primary schools as well as past Brixton Tube station which sees over 50 000 passengers a day enter and exit via Brixton Road. The polluted Brixton to Streatham route exceeded hourly legal levels of NO₂ on 539 occasions in 2016 and breached annual legal pollution limits already by 5 January 2017. Under EU rules, the hourly NO₂ limit should not be exceeded more than 18 times a year.

It is the second of 12 Low Emission Bus Zones to be introduced in heavily polluted areas across London. The first zone launched on Putney High Street in March 2017. After less than six months, the Putney route has seen a 90% reduction in hourly pollution level breaches and early analysis suggests a 40% reduction in annual NO₂ concentrations at Putney High Street.

Ten more Low Emission Bus Zones will follow Brixton and Putney. The remaining zones will be delivered by 2020.

Poland has to transpose EU Legislation on improving Air Quality

On 7 December 2017, the European Commission urged Poland to transpose EU rules on the reference methods, data validation and location of sampling points for the assessment of ambient air quality (Commission Directive (EU) 2015/1480).

The Directive updates a number of data quality objectives and reference methods for measuring certain air pollutants. It also complements the criteria for the assessment of ambient air quality data and the siting of sampling points.

Member States were required to transpose this Directive by 31 December 2016. As Poland has not done so, the Commission sent a reasoned opinion and gave Polish authorities two months to reply. In the absence of a satisfactory response, the Commission may refer Poland to the Court of Justice of the EU.

Austria has to transpose Rules on Alternative Fuels Infrastructure

On 7 December 2017, the European Commission called on Austria to fully transpose EU rules on the deployment of alternative fuels infrastructure (Directive 2014/94/EU).

The main purpose of the Directive is to establish a common framework for the large-scale roll-out of alternative fuels infrastructure in Europe. This is considered essential to reduce dependence on transport oil, mitigate its environmental impact and deliver on the European Strategy for Low-Emission Mobility.

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. However, Austria has only partially notified the Commission of measures transposing the Directive into national law.

Austria now has 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.

Lithuania announces Air Quality Action Plan

On 29 December 2017, the Environment Minister of Lithuania, Mr Kęstutis Navickas, announced the launch of a national air pollution reduction & management plan.

The plan will be drawn up in accordance with the EU Air Quality Directive and the National Emission Ceilings Directive. By 2020, Lithuania will have to cut emissions of SO₂ by 55%, NO_x by 48%, non-metallic volatile organic compounds (NMVOCs) by 32%, fine particulate matter by 20%, and ammonia by 10%, compared to 2005 levels. In addition, between 2020 and 2030 additional emissions reduction will need to be achieved, namely 5% SO₂, 3% NO_x, 15% NMVOC, and 16% fine particulates.

The Environment Minister expects to have the plan to curb air pollution prepared and approved by the end of 2018.

NORTH-AMERICA

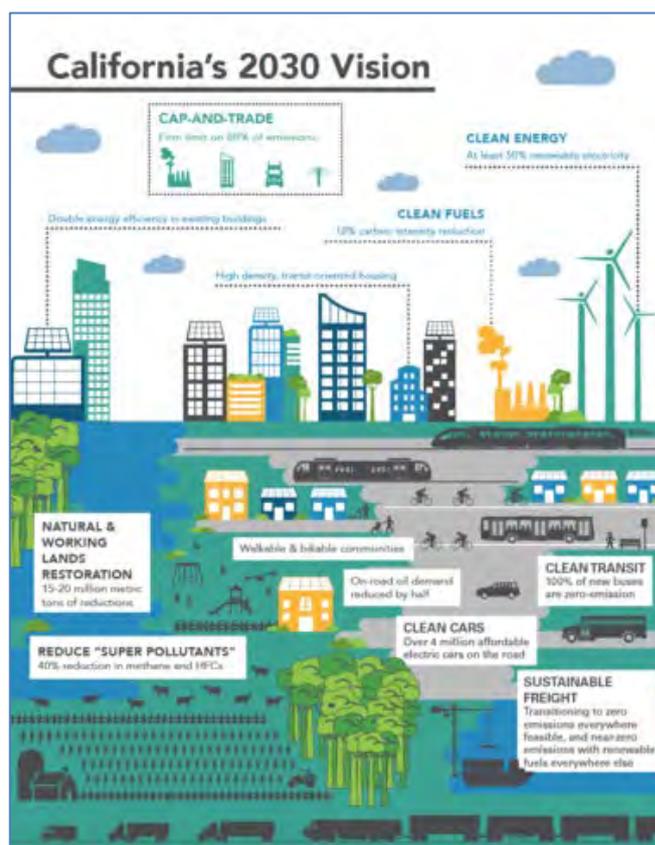
California 2017 Climate Change Scoping Plan

On 14 December 2017, the California Air Resources Board (CARB) adopted the 2017 Climate Change Scoping Plan.

The plan sets California on an ambitious course to reduce climate-changing gases an additional 40% below 1990 levels by 2030. This will require California to double the rate

at which it has been cutting climate-changing gases. According to the plan the State could save as much as \$11 billion (€9.3 billion) in avoided environmental damage from carbon pollution in 2030.

Implementing this scoping plan will ensure that California's climate actions continue to promote innovation, drive the generation of new jobs, and achieve continued reductions of smog and air toxics.



The ambitious approach draws on a decade of successful programmes that address the major sources of climate-changing gases in every sector of the economy:

- More clean cars and trucks: The plan sets out far-reaching programs to incentivize the sale of millions of zero-emission vehicles, drive the deployment of zero-emission trucks, and shift to a cleaner system of handling freight state-wide.
- Increased renewable energy: California's electric utilities are ahead of schedule meeting the requirement that 33% of electricity comes from renewable sources by 2020. The Scoping Plan guides utilities to 50% renewables.
- Slashing super-pollutants: The plan calls for a significant cut in super-pollutants such as methane and hydrofluorocarbons (HFC) refrigerants, which are responsible for as much as 40% of global warming.
- Cleaner industry and electricity: California's renewed cap-and-trade programme extends the declining cap on emissions from utilities and industries and the carbon allowance auctions. The auctions will continue to fund

investments in clean energy and efficiency, particularly in disadvantaged communities.

- **Cleaner fuels:** The low carbon fuel standard will drive further development of cleaner, renewable transportation fuels to replace fossil fuels.
- **Smart community planning:** Local communities will continue developing plans which will further link transportation and housing policies to create sustainable communities.
- **Improved agriculture and forests:** The scoping plan also outlines programmes to reduce emissions from agriculture, forests and other natural lands.

More info is at ww2.arb.ca.gov/news/carb-approves-plan-meet-californias-bold-climate-and-air-quality-goals.

CARB approves Funding Plan for Clean Cars, Trucks and Buses

On 14 December 2017, the California Air Resources Board (CARB) approved a \$663 million (€563 million) low-carbon transportation plan to increase the use of clean cars, heavy-duty trucks, buses and freight equipment.

The plan allocates \$398 million (€338 million) to incentivize clean heavy-duty vehicles and off-road equipment, including \$188 million (€160 million) to promote the sale of clean trucks and buses through voucher incentives, driving the continued deployment of hybrid, low-NOx, and zero-emission trucks and buses.

\$265 million (€225 million) will go to passenger vehicles and transportation equity, including \$140 million (€119 million) to the Clean Vehicle Rebate Project, which offers up to \$5000 (€4250) in vehicle rebates for the purchase or lease of new, eligible zero-tailpipe emission and plug-in hybrid vehicles. The remaining \$125 million (€106 million) will go to transportation equity projects focused on disadvantaged communities and low-income consumers. These include programs to scrap and replace older vehicles with up-to-date clean cars, cleaner school buses, and more electric car-sharing projects in disadvantaged communities.

While the incentive funding largely comes from the state's cap-and-trade program, other funding is provided by the state's Air Quality Improvement Program, the Volkswagen diesel emissions scandal settlement and the new Zero and Near-Zero Emission Warehouse Program.

More info at ww2.arb.ca.gov/news/california-air-resources-board-approves-663-million-funding-plan-clean-cars-trucks-buses.

SOUTH-AMERICA

Peru moves to Euro 4/IV Emission Standards

On 30 November 2017, Peru adopted the Supreme Decree No. 010-2017-MINAM presented by the Ministry of Environment, which establishes maximum permissible limits of atmospheric emissions for vehicles.

As of 1 April 2018, vehicle emission standards will be Euro 4/IV, Tier 2 and EPA 2007. This measure will contribute to the reduction of pollutants from motor vehicles, leading to improved air quality, with benefits to health and the environment.

It is estimated that emissions of nitrogen oxides will be reduced by up to 35% and particulate matter (PM_{2.5}) by up to 70%.

The regulation complements the recently adopted Supreme Decree No. 025-2017-EM of the Ministry of Energy and Mines, which regulates the reduction of sulfur content below 50 ppm in gasoline.

ASIA PACIFIC

India Court rejects Exemption of Two-Wheelers from Odd-Even Restrictions

On 12 December 2017, India's National Green Tribunal (NGT) rejected Delhi Government's plea seeking an exemption for two-wheelers if the odd-even vehicle rationing formula is introduced in the national capital in order to control pollution.

In its observation, the tribunal said that the exemption of two-wheelers would be against the spirit of the odd-even policy. It further said that exemption would only defeat the purpose of the scheme as there are close to 6 million two-wheelers plying in the national capital, carry less number of passengers and are more polluting as they meet older emission norms. The tribunal has also asked the Delhi Transport Corporation (DTC) to introduce more buses in its fleet in the national capital according to India's Supreme Court order and further improving public transport system. It had earlier asked for a solution from Delhi, Haryana, Punjab, Rajasthan and Uttar Pradesh for combating pollution.

On 6 December 2017 the tribunal had slammed governments in Delhi and nearby states over their plan to deal with air pollution and asked them to file a detailed document on how they plan to tackle the severe problem.

The Delhi Government, in response, had filed a plan recommending their odd-even formula, ban on construction sites and disallowing children from playing outdoors when air quality gets severely worse.

MIDDLE EAST

Low Emission Zones in Israel

On 22 November 2017, the Israel Ministry of Environmental Protection announced that a joint program is underway in Haifa aimed at preventing the entrance of polluting vehicles into the city.

Haifa is becoming the first city in Israel to establish a Low Emission Zone (LEZ) with all residential areas in Haifa being covered by the LEZ.

In the first stage, beginning in February 2018, polluting vehicles weighing over 3.5 tons will be prohibited from entering and parking in the LEZ, unless fitted with a diesel particulate filter (DPF).

In the second stage, from January 2019 onwards, the restrictions will also apply to polluting vehicles weighing less than 3.5 tons, unless fitted with a DPF. These include taxi cabs and commercial cars.

Later, on 27 December 2017, the Jerusalem City Council approved a Municipal Bylaw which is intended to allow the enforcement of a LEZ in the city centre.

The bylaw is intended to restrict the entry of heavy and polluting vehicles into the city centre. Cameras and a computerized system will ensure enforcement and allow for the analysis of data through the vehicles' license plates.

A first information stage will begin on 1 July 2018, when drivers will be sent messages informing them that polluting vehicles are prohibited from entering the reduced emission area. In the second stage, beginning on 1 January 2019, the ban will enter into effect.

Public transportation has been given a six month delay, such that public vehicles will be banned from the reduced emission area from 1 July 2019 onwards.

In the bylaw, polluting vehicles are defined as any vehicle weighing over 3.5 tons, containing a diesel engine, and registered until 2005; excluding vehicles fitted with a DPF. The proposed bylaw in Jerusalem does not apply, in the current stage, to private vehicles weighing under 3.5 tons.

Six months after the plan is first implemented, the Municipality intends to expand the LEZ further.

GENERAL

FuelsEurope Studies on RDE-compliant Diesel Cars and Air Quality

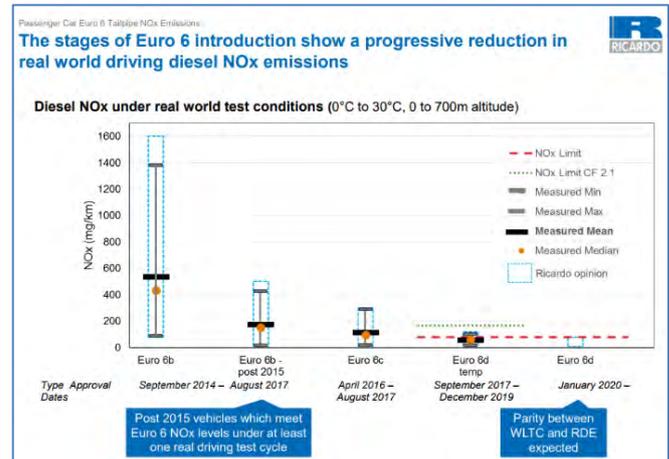
On 4 December 2017, the EU petroleum refining industry's association FuelsEurope issued a press release on two recent studies on Real-Driving Emissions (RDE)-compliant diesel cars and their impact on air quality in Europe.

The Ricardo study "Expected Light Duty Vehicle Emissions from Final Stages of Euro 6" shows that the vehicles tested on a high speed and highly dynamic RDE test will achieve regulated conformity factors under real world driving and moderate RDE ambient conditions.

According to the other study by AERIS "An analysis of future Urban Air Quality Compliance - Real Driving Emissions and Zero Emission Vehicles Scenarios", based on the results of the Ricardo tests, fleet turnover to EURO 6d cars will improve urban air quality in a way which is almost indistinguishable from widespread zero-emission vehicles deployment.

The AERIS model indicates that for latest technology diesel cars, exhaust Particulate Matter is now a diminishingly small contributor to Urban Air Quality problems. PM

emissions from road vehicles will be dominated by brake and tyre wear regardless of the powertrain technology. For NO₂ the model shows that, for both the Euro 6d and the ZEV scenarios, out of the 2400 monitoring stations in the EU, 99% are expected to be compliant with regulated NO₂ emissions limit by 2030.



A summary of the two studies of FuelsEurope is at www.fuelsEurope.eu/wp-content/uploads/2017/12/Media-briefing-slides.pdf.

Automotive Industry and Cities discuss Urban Vehicle Access Restrictions

On 5 December 2017, a workshop was jointly organised by Polis, the network of cities and regions on transport innovation, the European Automobile Manufacturers' Association (ACEA), the European Council for Automotive R&D (EUCAR) and the European Road Transport Research Advisory Council (ERTRAC) to explore solutions to exchange views, experiences and different perspectives on urban vehicle access regulations (UVARs).

Cities and auto manufacturers, as well as representatives of regions, research organisations, transport operators, motorists, shippers and retailers were present.

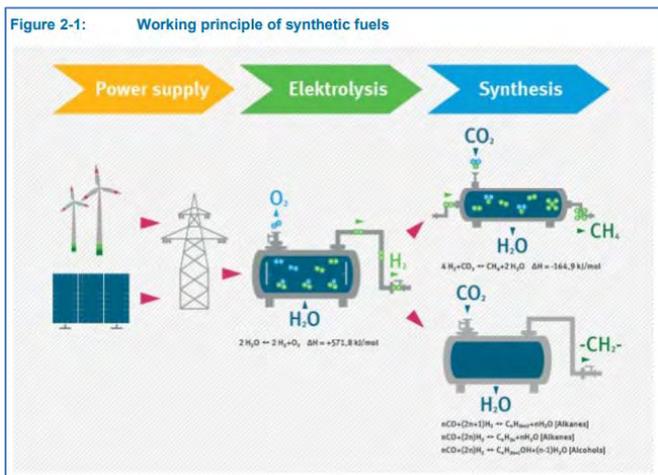
Discussions focused on the local societal challenges and policy drivers behind urban vehicle access regulations. Also on the agenda was how stakeholders can cooperate on the short-term, for instance through the exchange of best practices or public-private cooperation for local policy making, as well as on the long-term, such as conducting joint research on smart and sustainable mobility technologies.

With regard to the variety of types of UVARs in place across Europe, the stakeholders agreed on the need for more consistency and transparency. Participants called on the European Commission not only to continue funding the European initiative to centralise information on which cities apply access regulations (www.urbanaccessregulations.eu), but to provide a comprehensive analysis of these measures (what characteristics they have, which vehicles are covered by them, and so on).

Report on Sustainability Criteria for Transport Synthetic Fuels

On 11 December 2017, the Öko-Institut published a report outlining sustainability criteria for synthetic fuels used in transport.

The electricity-based production of hydrogen and hydrogen-based liquid and gaseous synthetic fuels can potentially lead to significant additional CO₂ emissions and other negative environmental effects (e.g. increasing water scarcity), the report warns.



To achieve significant CO₂ emissions savings through the use of hydrogen and synthetic fuels in transport compared to conventional fuels, their production must be based on additional renewable energy generation, and in order to ensure long-term sustainability, only atmospheric carbon sources should be used.

To ensure that the use of hydrogen and synthetic fuels has a positive climate impact and only sustainably produced hydrogen and synthetic fuels are used to substitute conventional fossil fuel in transport, appropriate sustainability criteria need to be established. If the EU intends to account hydrogen and synthetic transport fuels towards EU renewable energy targets and as a contribution to meeting the fuel blending obligation, such sustainability criteria and respective certification schemes should be established, similar to the existing EU biofuels criteria.

Sustainability criteria should address the overall CO₂ balances of hydrogen and synthetic fuels, based on lifecycle assessments that take into account the upstream emissions of electricity production required for all production processes, including CO₂ capture and water desalination, where required.

In order to avoid negative sustainability impacts similar to the introduction of crop-based biofuels, the process for the development of such criteria and the establishment of a respective certification scheme should be initiated in the near future, before a large market for synthetic fuels develops.

The Öko-Institut report is at www.oeko.de/fileadmin/oekodoc/Sustainability-criteria-for-synthetic-fuels.pdf.

RESEARCH SUMMARY

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FORTHCOMING CONFERENCES

21st Forum on Eco-Innovation – Air Quality

5-6 February 2018, Sofia, Bulgaria

http://ec.europa.eu/environment/ecoinnovation2018/1st_forum

The Forum will examine eco-innovative solutions for improving air quality. In particular, air pollution originating from energy use, transport and agriculture will be addressed. The issue of how to secure financing for eco-innovative solutions will also be discussed. This event is jointly organized by the European Commission's Directorate General for Environment and the Ministry of Environment and Water of the Republic of Bulgaria.

New Direct Injection 2-Stroke Engines Conference

15 February 2018, Rueil-Malmaison, France

http://ifp-school.com/upload/docs/application/pdf/2017-12/di_2-stroke_conference_program_brochure.pdf

Sessions of the conference will address from micro to small 2-stroke engines; poppet valves DI 2-stroke engines; DI 2-stroke engines for motorcycles and range extender; and innovative DI 2-stroke engines from concept to production.

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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.

2nd Real-Driving Emissions Forum

6-7 March 2018, Amsterdam, Netherlands

www.bisgrp.com/portfolio/conferences/automotive/2nd-annual-real-driving-emissions-forum

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.

Integer Emissions Summit & AdBlue[®] Forum Asia Pacific 2018

14-15 March 2018, Tokyo, Japan

www.integer-research.com/conferences/ies-apac-2018

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.

Integer Emissions Summit & AdBlue[®] Forum China 2018

5-7 June 2018, Beijing, China

www.integer-research.com/conferences/ies-china-2018

Connectivity – Key to future emission and consumption reduction in vehicle and powertrain?

7-8 June 2018, Graz, Austria

www.avl.com/-/30th-international-avl-conference-engine-environment-2018

On the one hand, connectivity enables predictive and adaptive management of energy and emissions with advantages regarding energy consumption, emissions, wear and durability thanks to the online monitoring of all relevant system parameters. On the other hand, the subject "Online Vehicle" necessitates stricter requirements being placed on data security and also causes a paradigm shift in the development and validation of vehicles. The questions "what does networking make possible, what is meaningful, and how do we control the corresponding risks" pose quite possibly the most intriguing range of topics in automotive development today.

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 CO₂ 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

Integer Emissions Summit & AdBlue[®] Forum Europe 2018

26-28 June 2018, Brussels, Belgium

www.integer-research.com/conferences/integer-emissions-summit-adblue-forum-europe-2018

The summit will cover emissions control for heavy-duty commercial vehicles, non-road mobile machinery, light-duty vehicles and passenger cars, and the European AdBlue[®] market.

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.

SAE Heavy Duty Diesel Emissions Control Symposium

16-17 October 2018, Gothenburg, Sweden

<https://hddec18.org>

At the bi-annual symposium, the very latest trends in global emissions control legislation and the implications of these regulations on engine and after treatment technology will be discussed.

CAPoC11

29-31 October 2018, Brussels, Belgium

<http://capoc.ulb.ac.be>

The International Congress on Catalysis and Automotive Pollution Control will discuss applications and requirements of catalysis in automotive emission control such as catalyst and sorption technologies; particulate emission control for both diesel and gasoline engines; aftertreatment for gaseous HC, H₂ and renewable or reformulated fuel mixtures; emission control for natural-gas and dual-fuel engines; emission control for hybrid vehicles; off-cycles emissions and unregulated

pollutants (e.g. greenhouse gases); materials for catalysts, washcoat and fuel-borne catalysts; modelling of aftertreatment systems and catalyst characterization; integrated emission control systems, on-board diagnostics; sustainable fuel technologies; and innovative technologies (new materials, recovery of precious metals).

Deadline for abstract: 15 February 2018

10th Better Air Quality Conference

14-16 November 2018, Kuching, Malaysia

Info will be at <http://baqconference.org>

40th International Vienna Motor Symposium

16-17 May 2019, Vienna, Austria

Info will be at <https://wiener-motorensymposium.at>