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EUROPE

Launch of AECC Light-Duty Gasoline CO₂ Emissions Video

On 12 January 2022, AECC launched a thought leadership video showing how we can further reduce the impact of gasoline vehicles on climate change.

The video explains that AECC and its project partners are developing a new gasoline demonstrator vehicle to achieve ultra-low pollutant levels under a wide range of driving conditions with a combination of catalytic converters in closecoupled and underfloor position, a catalysed particulate filter and advanced emission system controls.

In addition, it explains AECC is studying the performance of its demonstrator vehicle using sustainable renewable fuels, for example e-gasoline. This sustainable renewable fuel is produced from captured CO_2 and renewable electricity. The engine and the emission control technology are compatible with this sustainable and renewable fuel and the vehicle still achieves ultra-low pollutant emissions as with regular petrol.

It also emphasises that despite the many EU incentives supporting the use of these fuels, a specific framework will be needed to support the development of fuels with a low carbon footprint.

The video confirms that AECC and its members are fully committed to contributing to the European Commission's 2050 climate-neutral and zero-emission goals set out in the European Green Deal. Achieving this will need a regulatory framework that addresses the need for lower pollutant and greenhouse gas emissions as well as more sustainable and renewable fuels.



The video can be viewed on AECC's web site and YouTube channel

youtube.com/watch?v=fdlDsc-grpY.

French Presidency of the European Council

On 1 January 2022, the French Presidency of the European Council published its programme for the period from January to June. The three main ambitions are for a more sovereign

Europe, a new European model for growth and a humane Europe.

In the area of transport, the programme states that the transport sector is crucial to achieving climate neutrality in the Union by 2050 and to the Union's recovery. The Presidency is convinced of the need to create a timeline that is both ambitious and tenable in order to decarbonise our various modes of transport.

With regard to the European Green Deal, the French Presidency says it will actively continue work on the 'Fit for 55' package: the proposal for the Alternative Fuels Infrastructure Regulation (AFIR) setting mandatory targets for infrastructure deployment for alternative fuels for each mode of transport. It will also begin work on the "efficient and green mobility" legislative package.

The Presidency will continue work on the Regulation on CO_2 emission performance standards for vehicles.

The full programme can be found at presidence-francaise.consilium.europa.eu/media/en_programme.pdf.

Court of Justice Ruling on Regulation Fixing Emission Values for RDE Tests

On 13 January 2022, the Court of Justice (CoJ) of the European Union set aside the judgment of the General Court partially annulling the Commission regulation fixing emission values for real driving emissions tests for new light vehicles.

By adopting Directive 2007/46, the EU legislature established a harmonised framework for the approval of motor vehicles in order to facilitate their registration, sale and entry into service in the European Union. In the context of the 'Dieselgate' scandal, the European Commission set up a procedure for testing the real driving emissions (RDE) of light passenger and commercial vehicles, approved in accordance with the applicable legislation, in order better to reflect the emissions measured on the road. The requirements for the RDE tests were subsequently supplemented by Commission Regulation 2016/646, which sets limit values for emissions of oxides of nitrogen (NOx) which must not be exceeded during those tests ('the contested regulation').

The City of Paris, the City of Brussels and the Municipality of Madrid ('the respondents') each brought an action for annulment of the regulation at issue, in so far as it prevented them from imposing restrictions on the circulation of passenger vehicles in relation to their pollutant emissions. The Commission raised objections of inadmissibility against this, alleging that the regulation at issue was not of direct concern to the applicant cities within the meaning of the fourth paragraph of Article 263 TFEU. The actions brought by the cities were partially upheld by the General Court.

Ruling on appeals brought by the Federal Republic of Germany (Case C-177/19 P), Hungary (Case C-178/19 P) and the Commission (Case C-179/19 P), the Court of Justice sets



aside the judgment of the General Court and clarifies, in that context, the concept of 'direct concern' as a condition for the admissibility of an action for annulment brought by a regional entity of a Member State against an act of the European Union.

The Court examined whether the second subparagraph of Article 4(3) of Directive 2007/46, according to which Member States are not to 'prohibit, restrict or impede the registration, sale, entry into service or circulation on the road of vehicles ... if they satisfy the requirements of the [directive]', effectively prevents the applicant cities from exercising their powers to regulate the circulation of passenger vehicles in order to reduce pollution and, accordingly, whether, having regard to the relationship between that provision and the contested regulation, those cities must be regarded as being directly concerned by that regulation. To that end, the Court interpreted the provision at issue in the light of its wording, its context, the objectives pursued by the legislation of which it forms part, and relevant information concerning its legislative history.

The Court stated that that provision covers not only the circulation of vehicles in the territory of a Member State, but also other activities, such as the registration, sale and entry into service of vehicles. Such restrictions entail a general barrier to access to the vehicle market. the Court noted that the obligations imposed on Member States under Directive 2007/46 concern the placing on the market of motor vehicles and not their subsequent use.

The Court therefore concluded that the General Court erred in law in holding that the regulation at issue is of direct concern to the applicant cities.

The full judgement is available to read at curia.europa.eu/jcms/upload/docs/application/pdf/2022-01/cp220002en.pdf.

EC DG Grow Mobility Unit Head of Unit moving to DG Trade

On 22 December 2021, the European Commission decided to appoint Ms Joanna Szychowska as Director for the 'Asia, Services and Digital Trade, Investment and Intellectual Property' Directorate in the Directorate-General for Trade (DG TRADE).

Ms Szychowska, a Polish national, has a long experience in regulatory processes and negotiations, a deep knowledge of EU industrial policy, as well as EU institutional matters and legislative procedures.

She is currently Head of Unit for `Mobility' in the Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW) where she is responsible for the competitiveness of the automotive, maritime and railway, industries. Prior to that, she headed the 'automotive and mobility industries' Unit after having managed the 'public procurement legislation' Unit in the same DG.

More information can be accessed at <u>ec.europa.eu/commission/presscorner/detail/en/mex_21_7083</u>.

TRAN Committee Draft Opinion on Car and Van CO₂ Performance Standards

On 4 January 2022, the Transport and Tourism (TRAN) Committee of the European Parliament published a draft opinion on the proposal for a regulation amending Regulation (EU) 2019/631 as regards strengthening the CO_2 emission performance standards for new passenger cars and new light commercial vehicles in line with the Union's increased climate ambition. The rapporteur is MEP Peter Vitanov (S&D, BG).

The draft opinion says that the rapporteur considers the need to substantially increase the ambition of the CO_2 standards for cars and vans and supports an end date of 2035 at the latest, by which time all new cars and vans on the EU market should be zero-emission. Therefore, the rapporteur proposes strengthening CO_2 emission targets starting from 2025, interim targets from 2027, and more ambitious targets from 2030.

The rapporteur considers that the process of phase out of fossil-fuelled vehicles needs to go hand in hand with phase in measures for the workers in the automotive sector. Therefore, the rapporteur proposes the amounts of the excess emissions premium to be considered as revenue assigned to the Social Climate Fund to mitigate any negative employment impact of the transition in the sector.

The document goes on to say that a successful transition to zero emission mobility requires a coherent policy framework for vehicles, infrastructures, electricity grids, employment programs, and economic incentives across EU, national, regional, and local levels. That goes together with the proper deployment of alternative fuels infrastructure, which should be put in place without delay. The rapporteur's view is that more infrastructure will increase competition and will likely reduce charging and refuelling costs. It will equally enable more zero- and low-emission vehicles to come into the market, driving down the vehicle costs.

The draft opinion is available to read at europarl.europa.eu/doceo/document/TRAN-PA-699331_EN.pdf.

TRAN Committee Exchange on Car and Van CO₂ Performance Standards

On 25 January 2022, the Transport and Tourism (TRAN) Committee of the European Parliament held an exchange on the opinion report for the amending Regulation (EU) 2019/631 as regards strengthening the CO_2 emission performance standards for new passenger cars and new light commercial vehicles.

MEP Petar Vitanov (S&D, BG), the assigned Rapporteur, summarised the document. He proposed strengthening the CO_2 targets from 2025, imposing interim targets in 2027 and



a more ambitious ones in 2030 for cars and vans. He said that whether the market will shift to zero emission vehicles (ZEV) is no longer the question and the OEMs are already committed. He added that it is the role of Parliament to provide certainty and predictability. The sooner these vehicles will become available in the second-hand market the sooner they will be affordable for the low-income groups. The phase out of fossil-fuelled vehicles needs to go hand in hand with measures to support companies and re-skill, and ambition must be aligned to infrastructure.

Several MEPs contributed to the debate. Those in the EPP and Renew groups were broadly in favour of maintaining the existing targets for 2025 and not introducing interim targets. There was also support for alternatives to fossil fuels to ensure a technology neutral approach.

MEPs in the S&D and Green parliamentary groups called for more ambitious targets to reduce CO₂ emissions and phase out the internal combustion engine.

Mr Alex Paquot of the EC's DG CLIMA said the CO_2 emissions standards are already delivering and added that changes are happening but need to be accelerated. The EC considers the ambition level of the proposal to be ambitious and realistic and is maintaining the 2025 target to leave time for industry to adapt. To ensure a clear pathway the EC is providing clarity and predictability with the date to a complete switch to zero emission vehicles. He said the EC is not proposing renewable carbon fuels for road transport and will maintain a tailpipe approach. Mr Paquot added that other sectors need them more, such as aviation and maritime.

The recording of the exchange can be watched at multimedia.europarl.europa.eu/en/webstreaming/tran-committeemeeting_20220125-0900-COMMITTEE-TRAN

TRAN Committee Exchange with EC Vice-President Timmermans on 'Fit for 55'

On 13 January 2022, the European Parliament's Transport and Tourism (TRAN) Committee met Executive Vice-President of the European Commission Mr Frans Timmermans to discuss the 'Fit for 55' package.

The chair of the TRAN Committee, MEP Delli (FR, Greens) mentioned we have a clear goal to achieve net-zero GHG emissions by 2050. The COP in Glasgow showed us the world is watching closely. Key political choices need to be made as to how can we guarantee infrastructure and have vehicles with reduced CO_2 emissions.

Vice-President Timmermans said transport is key. Emissions in transport are still going up, so we need to take the necessary measures, but many opportunities lie ahead. Transformation is inevitable, and with the right framework it can be economically and socially interesting to do it. Most of the proposals will be discussed with the European Commissioner for Transport as well. The climate target for 2030 spells out what the contribution of each sector should

be. He said Society supports the Commission and citizens understand that the costs of non-transition are far bigger. He noted that driving an electric car is already cheaper than driving a conventional one and referred Bloomberg's calculation that within five years EVs will be cheaper to buy than conventional vehicles.

Several MEPs questioned the different proposals included in the package. MEP Thaler (EPP, AT) mentioned green steel is more expensive than commercial steel and that the automotive industry has no incentive to buy this as the carmakers' CO_2 target regulation is only considering tank-towheel (TtW) emissions. MEP Delli asked about Euro 7 and if the Vice-President could give a clear idea on what the Commission will propose and if the proposal will not be postponed again.

MEP Salini (EPP, IT) and MEP Katainen (Renew, FI) asked about role of renewable fuels, while MEP Riquet (Renew, FR) asked if the EC will analyse the consistency of the entire package towards adoption as each legislative element is discussed separately during the ordinary legislative procedure.

Vice-President Timmermans said he is responsible for ensuring consistency is kept throughout the procedure, but also added that MEPs have the responsibility to ensure this when proposing amendments. This is also the case for the Council. He said the EC will come with further elements to clarify the transition pathway for clean transport soon. On efuels for cars, he said these will be a lot more expensive and need more electricity and will still lead to pollution. He said even the most conservative OEMs have 'woken up' and are transitioning fast to electric vehicles. Legislation should stimulate purchase of the least polluting vehicles in the coming years, including for ICE vehicles. Euro 7 will address that.

Finally, Mr Timmermans said that for marine he is excited by developments of running ships on ammonia that is produced from solar panels around the world.

More information on the exchange can be found at europarl.europa.eu/news/en/press-room/20211124IPR18015/fit-for-55transport-meps-to-quiz-commission-vp-timmermans.

TRAN Committee Election of Chair and Vice-Chairs

On 24 January 2022, the Transport and Tourism Committee (TRAN) at the European Parliament renewed its leadership team for the next two and half years.

On this occasion they have elected the TRAN Chair and four Vice-Chairs. MEP Delli (Greens, FR) has been re-elected as Chair to this important committee.

The four Vice-Chairs were also re-elected; MEP Ujhelyi (S&D, HU), MEP Gieseke (EPP, DE), MEP Ameriks (S&D, LV) and MEP Oetjen (Renew, DE)



ENVI Committee Exchange on CO₂ Emissions from Cars and Vans

On 13 January 2022, the European Parliament's Environment, Public Health and Food Safety (ENVI) Committee exchanged on the draft report prepared by MEP Huitema (Renew, NL) concerning amending Regulation (EU) 2019/631. This relates to strengthening the CO_2 emission performance standards for new passenger cars and new light commercial vehicles in line with the Union's increased climate ambition.

Rapporteur MEP Huitema explained the report and several MEPs expressed their disappointment with it. Some expressed their concerns with the increased CO₂ reduction targets proposed in the report. Within these, MEP Gieseke (EPP, DE) emphasised that is not yet possible to ban internal combustion engines (ICEs) by 2035. He said this should be reviewed in 2028 and called for technology neutrality to be maintained. MEP Konecna (GUE, CZ) said we should continue with ICEs with some modifications, avoiding disturbance to customers as much as possible. MEP Liese (EPP, DE) also mentioned there will be a role for synthetic fuels, even it is only for niche applications. Legislation should not block this but should allow it to happen. He invited the rapporteur to work towards a solution with the EPP.

Mr Paquot (EC DG-CLIMA) said it is clear that strengthening the standards is key and that current standards are already delivering a clear increase in zero-emission vehicles. These changes should only accelerate the market penetration of electrified models. He said the elements the rapporteur mentioned are fully in line with the objectives of the European Commission. He addressed three main items: the Commission considers the proposal to be ambitious as well as realistic; it is important to ensure a good transition; and renewable fuels are important, but these are already supported by other EU policy.

MEP Canfin (Renew, FR) reminded the committee about the deadline for amendments which is 25 January 2022.

The draft report can be accessed at <u>europarl.europa.eu/doceo/document/ENVI-PR-697678_EN.pdf</u>.

ENVI Committee Election of Chair and Vice-Chairs

On 26 January 2022, the Environment, Public Health and Food Safety Committee (ENVI) at the European Parliament renewed its leadership team for the next two and half years.

With 81 Members, ENVI is today the largest committee in the European Parliament. The ENVI committee is set to further grow and reach 88 members. This is a strong symbol and a clear signal underlining the need for the EU to move forward faster and with more ambition to fight against climate change. On this occasion they have elected the ENVI

Chair and four Vice-Chairs. MEP Canfin (Renew, FR) has been re-elected as Chair to this important committee.

The four Vice-Chairs were also re-elected; MEP Eickhout (Greens, NL), MEP Luena (S&D, ES), MEP Motreanu (EPP, RO) and MEP Hazekamp (The Left, NL)

ITRE Committee Draft Opinion on Car and Van CO₂ Performance Standards

On 14 January 2022, the Industry, Research and Energy (ITRE) Committee of the European Parliament published a draft opinion on the proposal for a regulation amending Regulation (EU) 2019/631 as regards strengthening the CO₂ emission performance standards for new passenger cars and new light commercial vehicles in line with the Union's increased climate ambition. The Rapporteur for the ITRE opinion is MEP Dominique Riquet (Renew, FR).

The Rapporteur considers that by focusing exclusively on vehicle exhaust emissions, the regulation fails to provide an approach accounting for the overall carbon impact of cars and vans. He would prefer a broader carbon accounting system considering the life cycle of vehicles and fuel/energy, which would better reflect the true environmental impact of the various technologies involved.

MEP Riquet supports the electrification of the vehicle fleet and the move towards zero emissions, but fears that premature political decisions may underestimate the economic, industrial, social and ecological costs of this transition. He says betting everything on a single technology would at the same time undermine other sectors by causing major industrial disruptions in R&D, employment and European competitiveness.

The Rapporteur concludes that the target of 2035 (for phaseout of the internal combustion engine) needs to be slightly altered with a view to maintain the strong message to the sector that we must decarbonise while preserving sufficient leeway for the development of efficient alternative technologies. A review clause is thus proposed for 2027, when he says lawmakers will be better able to account for these uncertainties, technological progress and market developments.

The draft ITRE opinion can be found at <u>europarl.europa.eu/doceo/document/ITRE-PA-703089_EN.pdf</u>.

Death of David Sassoli, President of the European Parliament

On 11 January 2022, the death of the President of the European Parliament MEP David Sassoli (S&D, IT) was announced.





President Sassoli was a Member of the European Parliament since 2009 and was elected President in July 2019 for the first half of the legislature. He adopted extraordinary measures enabling the European Parliament to carry out its duties and exercise its prerogatives under the Treaties during the course of the pandemic. He also played a prominent role in championing an ambitious long-term EU budget and effective recovery facility.

President Sassoli underlined in his speech at the European Council in December that "What Europe needs, and needs most of all, is a new project of hope. I think we can build that project on the basis of a powerful three-pronged approach: a Europe that innovates; a Europe that protects; and a Europe that illuminates."

A ceremony to honour his memory will take place on Monday 17 January at the opening of the European Parliament's plenary session in Strasbourg.

As outlined in the EP Rules of Procedure, the interim Presidency will be ensured by the first Vice-President of the Parliament, MEP Metsola (EPP, MT), in the days leading up to the election of a new President. As originally planned before the sudden passing of President Sassoli, the election of the President for the second half of the mandate will take place on Tuesday 18 January during the Strasbourg plenary.

Further information is available at europarl.europa.eu/news/en/press-room/20220111IPR20708/presidentsassoli-to-be-honoured

Election of European Parliament President

On 18 January 2022, MEP Roberta Metsola (EPP, MT) was elected President of the European Parliament until 2024. Ms Metsola won the election in the first voting round, where she received an absolute majority of 458 votes out of 690 cast in the remote secret vote, among three candidates. President Metsola will lead the Parliament in the second half of the current legislative term, until a new Parliament is constituted following the 2024 European Elections.

Born in Malta in 1979, Roberta Metsola who has been an MEP since 2013, is the youngest EP President ever elected. She became First Vice-President in November 2020 and was Parliament's acting President after President Sassoli passed away on 11 January.

The press announcement is at <u>europarl.europa.eu/news/en/press-room/roberta-metsola-elected-new-</u>

president-of-the-european-parliament.

EEA Single Programming Document for 2022-2024

On 21 December 2021, the European Environment Agency (EEA) published its single programming document for 2022-2024. This contains the agency's mission statement as well as providing details of new tasks and objectives for the years ahead.

Under the Eighth Environment Action Programme (8th EAP) proposal put forward at the end of 2020, the European Commission added several new tasks to the EEA's work programme for 2021 and onwards. For 2022, under the 8th EAP, the Commission had proposed that the EEA should support new monitoring methods for real-world fuel consumption and emissions from light- and heavy-duty vehicles, but as resources have already been provided in 2021, the work will commence early.

Under the recently adopted European Climate Law, which enshrines the EU's climate neutrality objective set out in the EGD, the EEA will support the reporting of progress towards climate neutrality and the monitoring and evaluation of progress on adaptation under the regulation.

The document is available to read at <u>eea.europa.eu/publications/single-programming-document-2022-2024?utm_source=EEASubscriptions&utm_medium=RSS.</u>

Swedish Transport Agency Report on In-Service Conformity Testing in 2020

On 17 December 2021, the Swedish Transport Agency (STA) released its final report on In-service Conformity (ISC) testing of light duty vehicles according to EU Regulation 2017/1151 as amended by Regulation (EU) 2018/1832.

This final report summarises ISC testing in 2020 conducted by manufacturers, third parties and the Swedish Transport Agency. The report describes results of 36 vehicles tested by the STA and four vehicles tested by third parties. Only one of the vehicles failed the ISC test.

The report can be accessed at

transportstyrelsen.se/globalassets/global/vag/fordon/fordonsregler/typg odkannanden/english/isc-testing-2020-report_final.pdf.



NORTH AMERICA

US EPA Passenger Vehicle Greenhouse Gas Standards

On 20 December 2021, the United States Environmental Protection Agency (US EPA) finalised the federal greenhouse gas (GHG) emissions standards for Model Years (MY) 2023 to 2026 light-duty passenger cars and trucks. The final standards are more stringent than originally proposed in response to the many comments received from states, environmental and consumer groups. EPA says the final rule also delivers more net benefits to consumers than the proposed rule, 'showcasing how zero-emission vehicles are more affordable and more efficient for consumers'. The rule is expected to be published in the Federal Register before 2 January 2022, with a start date of MY2023.

EPA is planning to initiate a separate rulemaking to establish multi-pollutant emission standards under the Clean Air Act for MY 2027 and later that it says will speed the transition of the light-duty vehicle fleet toward a zero-emissions future consistent with President Biden's Executive Order, "Strengthening American Leadership in Clean Cars and Trucks."

Model Year	Cars CO2 (g/mile)	Light Trucks CO2 (g/mile)	Fleet CO2 (g/mile)
2022 (SAFE reference)	181	261	224
2023	166	234	202
2024	158	222	192
2025	149	207	179
2026 and later	132	187	161
Total change 2022-2026	-49	-74	-63

The agency states that the standards provide adequate lead time for manufacturers to comply at reasonable costs. EPA's analysis shows manufacturers can comply with the final standards with modest increases in the numbers of electric vehicles entering the fleet. By MY 2026, EPA projects that the final standards can be met with sales of about 17% electric vehicles (EVs), and wider uptake of advanced gasoline engine and vehicle technologies available today.

The EPA press release can be found at epa.gov/newsreleases/epa-finalizes-greenhouse-gas-standards-passenger-vehicles-paving-way-zero-emissions.

NHTSA Repeal of SAFE I Rule

On 21 December 2021, the US department of Highway Transportation's National Traffic Safety Administration (NHTSA) published a document finalising its proposal to repeal in full "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program," published September 27, 2019 (SAFE I Rule), in which NHTSA codified regulatory text and made additional pronouncements regarding the pre-emption of state and local laws related to fuel economy standards.

After evaluating all public comments submitted for this Proposal, the Agency is repealing all regulatory text and appendices promulgated in the SAFE I Rule.

In the SAFE I Rule, NHTSA and EPA finalized a joint agency action relating to the state regulation of greenhouse gas (GHG) emissions from motor vehicles and state mandates for zero emission vehicles (ZEVs). In that action, NHTSA codified regulatory text and appendices, which expressly declared that certain types of state regulation were pre-empted due to a perceived irreconcilable conflict with the Agency's fuel economy standards. In addition, the Agency published further statements in the preambles of the SAFE I rulemaking, which described various types of state regulations as pre-empted. As part of the SAFE I action, EPA also withdrew portions of a waiver that EPA had previously extended to the California Air Resources Board (CARB) under Section 209 of the Clean Air Act to regulate new motor vehicle emissions through GHG standards and a ZEV mandate.

The Final Rule document can be read in full at https://www.nhtsa.gov/files/2021-12/CAFE-Preemption-Final-Rule-Web-Version-tag.pdf.

CARB Workshop on Amendments to On-Road Motorcycle Regulations

On 12 January 2022, the California Air Resources Board (CARB) held a public workshop to discuss amendments to its On-Road Motorcycle (ONMC) regulations. Changes in the proposal were made using cost-benefit analyses based upon stakeholder feedback, the testing of additional motorcycles over the past year using CARB, EPA and EU certification fuels, and evaporative testing performed collectively by CARB, the US EPA, ECCC and MECA.

The primary proposal remains the adoption of current Euro 5 standards and test procedures which were implemented in the EU in 2020. Staff had initially proposed harmonisation with Euro 5 starting in MY2023 but this has been pushed back with new engine families complying in MY2024 and carryover engine families in MY2025.

CARB is now proposing only to add fuel system monitoring starting in MY2028, rather than seven additional OBD monitoring requirements beyond Euro 5. CARB has also retained its proposed extended useful life mileage of 50 000km for Class III (179cc and above) compared to the Euro 5 standard of 35 000km.

Details of the workshop, including presentation, are at <u>arb.ca.gov/onmc-meetings-workshops</u>.

US EPA Enforcement of Aftermarket Defeat Devices

On 20 January 2022, the US EPA announced its enforcement and compliance accomplishments for FY 2021. One of the six national compliance initiatives is Stopping Aftermarket



Defeat Devices for Vehicles and Engines. EPA says that known sales of defeat devices for certain diesel trucks after 2009 and before 2020 resulted in more than 570 000 tons of excess NOx and 5 000 tons of excess particulate matter (PM) over the lifetime of the trucks.

EPA estimates that as a result of 'full delete' actions on diesel pickup trucks, i.e., installing a tuner to enable full removal of emissions controls, oxides of nitrogen (NOx) emissions increased by 310 times, non-methane hydrocarbons (NMHC) increased 1,140 times, carbon monoxide (CO) 120 times and particulate matter (PM) emissions were 40 times higher than they should have been.

More information can be found at <u>epa.gov/enforcement/national-compliance-initiative-stopping-aftermarket-defeat-devices-vehicles-and-engines.</u>

SOUTH-CENTRAL AMERICA

Extension of Brazil's Emissions Deadlines

On 30 December 2021, the Brazilian Ministry of the Environment (Ibama) published an order extending the validity of Vehicle or Engine Configuration Use Licenses (LCVMs) issued for models that do not meet the new L7 pollutant emission limits, but which were not assembled due to force majeure (in this case the unavailability of specific components, caused by the semiconductor crisis, and the lack of materials, caused by the economic crisis).

According to the agency, national vehicles of phase L6 whose manufacture began before 31 December 2021 may have an assembly completed by 31 March 2022 and marketed by 30 June 2022. According to Ibama, "the unfinished vehicles in the yards of the automobile manufacturers in Brazil, with the LCVM expired, would generate a stock that would have to be destroyed – which would even lead to an environmental liability problem, in addition to the economic, social, and legal impacts resulting from the scrapping contract in cases where the cars had already been marketed."

More details can be found at gov.br/ibama/pt-br/assuntos/noticias/2021/veiculos-comercializados-a-partir-de-2022-emitirao-menos-poluentes.

ASIA-PACIFIC

Real-World Emissions Performance of Bharat Stage VI Truck and Bus

On 20 December 2021, the International Council on Clean Transportation (ICCT) published a working paper evaluating emissions of a BS VI truck and bus, based on Part IV of India's AIS 137 and the Euro VI-D and E provisions.

In addition, researchers conducted a comprehensive, noexclusions-based assessment at different engine loads and speeds. Both the truck and the bus were found to be well under the limits for nitrogen oxides (NOx) emissions using

India's AIS provisions. When the Euro provisions were applied, however, the NOx emissions increased for both vehicles and more so for the bus, which showed emissions 1.75 to 2.2 times higher than the WHTC limit, depending on the test parameters. The opposite was found for particle number (PN) emissions, as the bus had lower PN emissions than the truck on all routes.



ICCT says that overall, results show that India's AIS provisions have some large gaps to cover when compared with the latest Euro VI-E provisions and do not capture emissions during cold start or urban operations well. The NGO says that for ISC testing in India to capture all emissions from real-world driving, the findings suggest that: (1) the power threshold needs to be lowered to 5%; (2) all cold-start emissions must be included; and (3) the percentile for data evaluations should be increased to 100%.

The full report can be downloaded from theicct.org/publications/india-hdv-pems-testing-dec21.

New Zealand Government Consultation on Road User Charges

On 28 January 2022, the New Zealand Ministry of Transport published a consultation document 'Driving Change: Reviewing the Road User Charges System'.

The document says that other than road damage, other externalities, such as air or water pollution, noise pollution, road damage, accidents, or congestion are not explicitly considered when setting Road User Charges (RUC). It therefore wants to consider some of these costs, 'especially those associated with greenhouse gas emissions'.

The government acknowledges that decarbonising land transport is going to be challenging and a comprehensive set of measures will be needed to achieve the reductions recommended by the Climate Change Commission.

It goes on to say that one of the main reasons to allow climate policy or greenhouse gas emissions to be considered when setting RUC rates is that vehicles powered by lowcarbon fuels are currently more expensive than their fossil fuel counterparts. They either require the use of fuels that are more expensive to purchase, such as biofuels, or require the purchase of new and more expensive vehicles, as in the case of EVs.



Providing an exemption or reduced rate of RUC could help support and promote the uptake of new fuels. This assistance would most likely be through exempting vehicles subject to RUC (as happens with EVs), or through charging a lower RUC rate than equivalent petrol or diesel vehicles, to offset higher operating costs. The document adds that if the intent is to support technologies or fuels that are currently more expensive than existing fuels, but which assist with reducing greenhouse gas emissions, then the government would need to consider whether RUC could be used to support the use of biofuels.

The consultation is open until 22 April 2022, and can be accessed from

transport.govt.nz/consultations/road-user-charges-consultation/.

GENERAL

ICCT Blog on Leveraging EU's CO₂ Regulation for Heavy-Duty Vehicles

On 6 January 2022, the International Council on Clean Transportation (ICCT) published a blog outlining its views on how the EU should better leverage its existing heavy-duty CO_2 legislation. This is based on 'lessons learned' from the 2019-2020 certification data published in June 2021.

Firstly, ICCT says that the EU should increase the stringency of the CO_2 standards to drive technology adoption. The certification data suggests that the improvements required to meet the 2025 target can largely be achieved by exploiting the low-hanging fruit technologies and with little-to-no deployment of zero-emission vehicles. It adds however that zero-emission vehicles (ZEVs) are the only way to quickly and substantially decarbonise transport.

ICCT goes on to say that setting the appropriate stringency for the standards will ensure that only technologies that deliver real-world benefits are further exploited. To this end, on-board fuel and energy consumption monitoring (OBFCM), as well as market surveillance activities such as in-service testing, will be crucial in ensuring the effectiveness of the CO_2 legislation.

The second area that ICCT would like to see addressed is that the scope of the legislation should be widened to increase CO_2 emission savings. The heavy-duty vehicle (HDV) CO_2 standards currently cover only the four heaviest truck segments, which represent about 65% of newly registered HDVs in the EU. Recent analysis from ICCT shows that extending the regulation to all trucks and trailers would increase the current CO_2 emission savings by up to 50%.

ICCT says that its analysis of the certification data showed an overall greater adoption of advanced technologies in segments that are subject to reduction targets. Extending the scope of the regulation could drive the adoption of such technology in all HDV segments and incentivise a more rapid

transition to zero-emission HDVs in the easy-to-electrify segments, such as urban trucks and buses.



Finally, ICCT says that the EU should better capture realworld use cases in the certification procedure. The European legislation segments the market according to the vehicles' technical characteristics – i.e., weight, length, axle configuration, cabin type, etc. – but it 'does little to account for different use cases'. ICCT claims that better capturing the spectrum of heavy-duty vehicle use cases in the certification procedure will enable the introduction of targets that are more representative of different use cases' emission reduction potentials. It will also help address the gap between certified and real-world emissions and assess the charging and refuelling infrastructure needs as the industry transitions to zero-emission vehicles.

The blog is available to read at theicct.org/blog/staff/three-ways-to-leverage-hdv-co2-hdv-reg-jan22.

Publication of HEI Global Health Study

On 21 January 2022, the Health Effects Institute published details of a global health study in its HEI Update newsletter. According to HEI, this provides the first comprehensive global estimates of contributions from the most common sources of air pollution to people's exposure to fine particles and to the world's burden of disease from various causes.

The study team estimated source contributions at global, world region, and national scales. The investigators found that major sources of fine particles varied substantially by country, with notable contributions from energy generation, windblown dust, international shipping, and agriculture sectors in certain locations.

The study team has made all input data and results publicly available to support the active development of finer-scale air quality management strategies that focus on specific source sectors. UN Environment has already used the data from the GBD MAPS Global Project to highlight the importance of key sources of outdoor fine particulate matter as part of its Clean Air Day.

More information on the study can be found at <u>healtheffects.org/system/files/hei-update-winter-2022.pdf</u>.



RESEARCH SUMMARY

Effects of Emissions and Pollution

Exposure to air pollutants during pregnancy and after birth increases the risk of neonatal hyperbilirubinemia, Jialu Zhuang, et al.; *Environmental Research* (April 2022), Vol. 206, 112523, <u>doi:</u> 10.1016/j.envres.2021.112523.

Exposure to combustion derived particulate matter exacerbates influenza infection in neonatal mice by inhibiting IL22 production, Avinash Kumar, et al.; *Particle and Fibre Toxicology* (2022), Vol. 18, 43, doi: 10.1186/s12989-021-00438-7.

Exposure to environmentally relevant concentrations of ambient fine particulate matter ($PM_{2.5}$) depletes the ovarian follicle reserve and causes sex-dependent cardiovascular changes in apolipoprotein E null mice, Ulrike Luderer, et al.; *Particle and Fibre Toxicology* (2022), Vol. 19, 5, <u>doi:</u> 10.1186/s12989-021-00445-8.

Associations between long-term exposure to low-level air pollution and risk of chronic kidney disease—findings from the Malmö Diet and Cancer cohort, Yiyi Xu, et al.; *Environment International* (February 2022), Vol. 160, 107085, <u>doi: 10.1016/j.envint.2022.107085</u>.

Air Quality, Sources and Exposure

Air pollution scenario analyses of fleet replacement strategies to accomplish reductions in criteria air pollutants and 74 VOCs over India, Haseeb Hakkim, et al.; *Atmospheric Environment: X* (January 2022), Vol. 13, 100150, doi: 10.1016/j.aeaoa.2022.100150.

Air pollution in an urban street canyon: Novel insights from highly resolved traffic information and meteorology, Laura Ehrnsperger and Otto Klemm; *Atmospheric Environment: X* (in press), <u>doi:</u> 10.1016/j.aeaoa.2022.100151.

Reduction in daily ambient PM_{2.5} pollution and potential life gain by attaining WHO air quality guidelines in Tehran, Zhouxin Yin, et al.; *Environmental Research* (in press), <u>doi: 10.1016/j.envres.2022.112787</u>.

Source apportionment of particle number concentrations: A global review, Philip Hopke, et al.; *Science of The Total Environment* (May 2022), Vol. 819, 153104, <u>doi: 10.1016/j.scitotenv.2022.153104</u>.

Emissions Measurements and Modelling

Solid particle number emissions of 56 light-duty Euro 5 and Euro 6 vehicles, Tero Lähde, et al.; *Journal of Aerosol Science* (January 2022), Vol. 159, 105873, <u>doi: 10.1016/j.jaerosci.2021.105873</u>.

Particle emissions from mobile sources: Discussion of ultrafine particle emissions and definition, David Kittelson, et al.; *Journal of Aerosol Science* (January 2022), Vol. 159, 105881, <u>doi:</u> 10.1016/j.jaerosci.2021.105881.

The role of the driving dynamics beyond RDE limits and DPF regeneration events on pollutant emissions of a Euro 6d-temp passenger vehicle, Z. Toumasatos, et al.; *Journal of Aerosol Science* (March 2022), Vol. 161, 105947, doi: 10.1016/j.jaerosci.2021.105947.

Kerbside NOx and CO concentrations and emission factors of vehicles on a busy road, Mengyuan Chu, et al.; *Atmospheric Environment* (February 2022), Vol. 271, 118878, <u>doi:</u> 10.1016/j.atmosenv.2021.118878.

Real driving energy consumption and CO₂ & pollutant emission characteristics of a parallel plug-in hybrid electric vehicle under different propulsion modes, Yachao Wang, et al.; Energy (April 2022), Vol. 244, 123076, doi: 10.1016/j.energy.2021.123076.

A review on influence of age of vehicle and vehicle traffic on air pollution dispersion, G.Sharmilaa and T. Ilango; *Materials Today* (in press), <u>doi:</u> 10.1016/j.matpr.2021.12.188.

Variation of spatio-temporal distribution of on-road vehicle emissions based on real-time RFID data, Yonghong Liu, et al.; *Journal of Environmental Sciences* (June 2022), Vol. 116, pp. 151-162, <u>doi:</u> 10.1016/j.jes.2021.07.018.

Assessment of carbonyl and PAH emissions in an automotive diesel engine fueled with butanol and renewable diesel fuel blends, Silvana Arias, et al.; *Fuel* (May 2022), Vol. 316, 123290, <u>doi:</u> 10.1016/j.fuel.2022.123290.

Emissions Control, Catalysis, Filtration

Experimental investigation of urea injection strategy for close-coupled SCR aftertreatment system to meet ultra-low NOx emission regulation, Liu Shiyu, et al.; *Applied Thermal Engineering* (in press), <u>doi:</u> 10.1016/j.applthermaleng.2021.117994.

Effect of SCR downsizing and ammonia slip catalyst coating on the emissions from a heavy-duty diesel engine, Yunhua Zhang, et al.; *Energy Reports* (November 2022), Vol. 8, pp. 749-757, <u>doi:</u> 10.1016/j.egyr.2021.12.009.

Advances in emission control of diesel vehicles in China, Guangyan Xu, et al.; *Journal of Environmental Sciences* (in press), <u>doi:</u> 10.1016/j.jes.2021.12.012.

Effect of catalyzed diesel particulate filter and its catalyst loading on emission characteristics of a non-road diesel engine, Yunhua Zhang, et al.; *Journal of Environmental Sciences* (in press), <u>doi:</u> 10.1016/j.jes.2021.12.028.

Effects of high octane additivated gasoline fuel on Three Way Catalysts performance under an accelerated catalyst ageing procedure, J. Herreros, et al.; *Fuel* (March 2022), Vol. 312, 122970, <u>doi:</u> 10.1016/j.fuel.2021.122970.

Impacts of catalyst coating on the filtration performance of catalyzed wall-flow filters: From the viewpoint of microstructure, Qiang Lyu, et al.; *Separation and Purification Technology* (March 2022), Vol. 285, 120417, doi: 10.1016/j.seppur.2021.120417.

Effect of redox promoters (CeO_x and CuO_x) and surface sulfates on the selective catalytic reduction (SCR) of NO with NH₃ by supported V₂O₅-WO₃/TiO₂ catalysts, Mingyu Guo, et al.; *Applied Catalysis B: Environmental* (June 2022), Vol. 306, 121108, <u>doi:</u> 10.1016/j.apcatb.2022.121108.

Progress on metal-support interactions in Pd-based catalysts for automobile emission control, Yidan Cao, et al.; *Journal of Environmental Sciences* (in press), <u>doi: 10.1016/j.jes.2022.01.011</u>.

Recent progress in the selective catalytic reduction of NOx with NH₃ on Cu-SAPO-34 catalysts, Magdalena Jabłońska; *Molecular Catalysis* (January 2022), Vol. 518, 112111, <u>doi: 10.1016/j.mcat.2021.112111</u>.

Transport, Climate Change & Emissions

A review on management of waste three-way catalysts and strategies for recovery of platinum group metals from them, Shiqiang Sun, et al.; *Journal of Environmental Management* (March 2022), Vol. 305, 114383, doi: 10.1016/j.jenvman.2021.114383.

A comprehensive review on the current trends, challenges and future prospects for sustainable mobility, Thangaraja Jeyaseelan, et al.; *Renewable and Sustainable Energy Reviews* (April 2022), Vol. 157, 112073, doi: 10.1016/j.rser.2022.112073.



Life cycle CO_2 footprint reduction comparison of hybrid and electric buses for bus transit networks, Antonio García, et al.; *Applied Energy* (February 2022), Vol. 308, 118354, <u>doi:</u> 10.1016/j.apenergy.2021.118354.

Optimal electrification level of passenger cars in Europe in a batteryconstrained future, Ehsan Shafiei, et al.; *Transportation Research Part D: Transport and Environment* (January 2022), Vol. 102, 103132, <u>doi:</u> 10.1016/j.trd.2021.103132.

FORTHCOMING CONFERENCES

European Industry Days 8-11 February 2022, Online circabc.europa.eu/ui/group/4273d650-b8a9-4093-ac03-18854fbba4b5/library/0b17eb9b-ef61-45b0

12th International AVL Emissions and Energy Forum 1-2 March 2022, Ludwigsburg, Germany avl.com/web/de/-/int-avl-emissions-and-energy-forum

12th VERT Forum 24 March 2022, Online vert-dpf-eu.zoom.us/meeting/register/tZEsc-ihgzsrGtaPWg0VxUAmH68oepSXkgbg

SAE WCX World Congress 5-7 April 2022, Detroit, USA and Online sae.org/attend/calls-for-papers

Vienna Motor Symposium 27-29 April 2022, Vienna, Austria wiener-motorensymposium.at/en **AECC will make a presentation.**

CITA International Conference 1-2 June 2022, Amsterdam, Netherlands <u>citainsp.org/cita-conferences</u>

SIA Powertrain & Electronics 15-16 June 2022, Rouen, France sia.fr/evenements/263-sia-powertrain-energy-rouen-2022 **AECC will make a presentation**.

The ETH Conference on Combustion-Generated Nanoparticles 12-14 July 2022, Zurich, Switzerland nanoparticles.ch

Catalysis and Automotive Pollution Control (CAPoC12) **NEW DATES** 29-31 August 2022, Brussels, Belgium <u>capoc.ulb.ac.be</u>

SAE Powertrains, Fuels and Lubricants 6-8 September 2022, Krakow, Poland sae.org/binaries/content/assets/cm/content/attend/2022/pfl

31st Aachen Colloquium Sustainable Mobility 10-12 October 2022, Aachen, Germany <u>aachener-kolloquium.de/en</u>

Transport Research Arena 2022 14-17 November 2022, Lisbon, Portugal traconference.eu/about-tra