

# NEWSLETTER

International Regulatory Developments

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## AECC-IPA Event in European Parliament

On 21 March 2023, AECC jointly with IPA, the International Platinum Group Metals Association, organised an event in the European Parliament on 'Harnessing the power of technology: Robust Euro 7 standards for cleaner air'.

The event was hosted by Mr Jens Gieseke, Member of the European Parliament for the EPP Group and shadow Rapporteur on the Euro 7 Regulation within the ENVI Committee.

The event attracted participation of representatives from the European Parliament, the European Council, European Commission, industry associations and NGOs.



The introductory remarks were given by MEP Gieseke. He emphasised Euro 7 is a unique opportunity to ensure truly clean vehicles on European roads, to support the Ambient Air Quality Directive in improving air quality in European cities and to ensure that all powertrains contribute to improved air quality.

Subsequently, Mr Dirk Bosteels, AECC Executive Director, gave an industry perspective into what is expected from Euro 7 emission standards.

AECC noted Euro 7 is technically feasible as AECC and IPA have demonstrated in their demo projects. He clearly stated the need for a swift adoption of Euro 7 and emphasised this is fundamental to further improving European cities' air quality as soon as possible.

AECC indicated the work conducted on the demo vehicles shows the capabilities of the emission control technology currently in production and their emission reduction performance using novel layouts. As these state-of-the-art technologies are currently in production, the cost of implementing such systems in view of the Euro 7 emission standards should be considered incremental.

AECC confirmed its commitment to support the Euro 7 legislative ordinary procedure that has started, as well as the development of the implementing regulations with sound scientific data from the vehicle demonstration programmes.



## EUROPE

### Amendment to Regulation 2017/1151 on LDV Type Approval Procedures

On 2 March 2023, Regulation 2023/443 was published in the Official Journal of the European Union. This amends Regulation 2017/1151 as regards the emission type approval procedures for light passenger and commercial vehicles. It also relates to Regulation No 715/2007 of the European Parliament and of the Council of 20 June 2007 on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information.

Amongst other changes to ensure alignment between regulations, the specific requirement to present information that the nitrogen oxides (NOx) pollution control devices reach sufficiently high temperature within 400 seconds at  $-7\text{ }^{\circ}\text{C}$  becomes redundant as all vehicles may now be tested at low ambient temperatures since the introduction of real driving emission (RDE) methodology. It should therefore be deleted.

The Regulation refers to a UN Regulation on Real Driving Emissions (RDE) which is being developed in the UN World Forum for Harmonization of Vehicle Regulations, with improvements in the structure and other elements of the RDE methodology. Those improvements have not yet been formally adopted, but as they represent the latest technical developments, it is necessary to introduce them in Regulation (EU) 2017/1151.

The Joint Research Centre (JRC) published two review reports in 2020 and 2021 on the assessment of the PEMS margins used in the RDE procedure representing the latest state of knowledge on the performance of portable emission measurement systems. It is therefore appropriate to lower the PEMS margins in line with the best available scientific knowledge contained in these reports. The lowering of the

PEMS margins should be accompanied by changes in the methodology of the calculation of the results of an RDE test.

The Regulation states that the Worldwide Harmonised Light-duty Test Procedure (WLTP) was first adopted in the UN World Forum for Harmonization of Vehicle Regulations as Global Technical Regulation (GTR) No 15 and later as UN Regulation No 154. Certain amendments have been introduced to the WLTP methodology in the UN in order to take into account the latest developments of technical progress. It is therefore appropriate to align the WLTP methodology laid down in Regulation (EU) 2017/1151 with the UN Regulation.

Based on recommendations by the JRC, it is appropriate to amend the respective test procedure for the conformity of production (CoP) assessment of carbon dioxide (CO<sub>2</sub>) emissions of vehicles, including the run-in procedure in order to allow for technical progress.

An update to the Type 5 test for verifying the durability of pollution control devices and updated OBD requirements is necessary to take into account the changes related to the WLTP.

The Regulation also states that recent studies show a significant difference between the average real-world CO<sub>2</sub> emissions of plug-in hybrid electric vehicles and their CO<sub>2</sub> emissions determined by WLTP. In order to ensure that the CO<sub>2</sub> emissions determined for such vehicles are representative of real driver behaviour, the utility factors applied for the purpose of the CO<sub>2</sub> emission determination at type approval should be revised. As a first step, new utility factors should be specified on the basis of available data. As a second step, those factors should be further revised, taking into account data from fuel consumption monitoring devices on-board such vehicles and collected in accordance with Commission Implementing Regulation (EU) 2021/392.

The full Regulation 2023/443 can be found at [eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L\\_.2023.066.01.0001.01](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2023.066.01.0001.01).

## Euro 7 Hearing in European Parliament

On 21 March, Mr Alexandr Vondra, Member of the European Parliament for the ECR group and Rapporteur on the Euro 7 Regulation within the ENVI Committee, hosted a public hearing on Euro 7 in the European Parliament.

The programme consisted of a panel on economic and technical aspects, comprising Ms Sigrid de Vries (ACEA) and Ms Raluca Marian (IRU), a panel on environmental and health aspects of Euro 7, with Ms Anna Krajinska (T&E), Mr Stijn Janssen (VITO) and Mr Thanasis Megaritis (Concawe), along with a panel on social and consumer aspects, with Mr Benjamin Denis (IndustriALL), Ms Laurianne Krid (FIA) and Mr Wolfgang Göbel (ECG).

Concluding remarks were given by ACEA President and CEO of Renault Group, Mr Luca de Meo.

## EC Policy Officer Post debunking Euro 7 Proposal Inaccuracies

On 22 March 2023, Dr Panagiota Dilara, Senior Expert and Team Leader for Clean Vehicles at the European Commission, published a post on LinkedIn to “debunk...inaccuracies” on the European Commission’s proposal on Euro 7.

Dr Dilara says that the additional cost for a Euro 7 car will not be € 2 000, but less than € 200. The high estimates are based on over-engineering a car in order to be compliant in all conditions of use, including biased driving (i.e., something driven intentionally in a not realistic way). She adds that biased driving is not tolerated in Euro 6 and will not be tolerated in Euro 7.

Euro 7 standards are not targeting a vehicle heavily loaded, going uphill only, at low temperatures, and with an aggressive driver. Dr Dilara explains that this would be an impossible engineering task but that the normally driven vehicle needs to comply with the limits. All these conditions may be tested, but one at a time. This gives the engineers a clear target.

She says that it is “simply not true” that vehicles will be stopped on the roads because sensors will say they emit more than the limits. A vehicle that emits significantly over the limit consistently will receive a warning and be given the opportunity to take the car into a garage and fix it.

As today, special purpose vehicles, like ambulances, emergency vehicles or police cars will get special rules to make sure that they can perform their duties.

Finally, Dr Dilara says that data from the vehicle will only be transmitted to the authorities completely anonymously, i.e., with no way to link specific data with a particular vehicle.

She concludes by explaining that the proposal was backed up by more than 1 700 pages of scientific studies, the “best team in Europe in emission inventories” performed the impact assessment modelling completely autonomously, and the Commission calculated additional savings of 9 to 24% for cars/vans and busses/lorries respectively compared to Euro 6 in 2035, rather than the 2-4% that Dr Dilara says has been quoted by others.

Dr Dilara’s LinkedIn post is at [linkedin.com/feed/update/urn:li:activity:7044352423691218944/](https://www.linkedin.com/feed/update/urn:li:activity:7044352423691218944/).

## EPRS Update on Euro 7 Emission Standards

On 31 March 2023, the European Parliamentary Research Service (EPRS) published an initial appraisal of the European Commission Impact Assessment (IA) accompanying its proposal for a Regulation on type-approval of motor vehicles and of engines and of systems, components and separate technical units intended for such vehicles, with respect to their emissions and battery durability (Euro 7).

The briefing states that it provides an initial analysis of the strengths and weaknesses of the European Commission's impact assessment (IA) accompanying the Euro 7 proposal, submitted on 10 November 2022 and referred to the Parliament's Committee on the Environment, Public Health and Food Safety (ENVI).

The document analyses following aspects of the IA: the problem definition, subsidiarity/proportionality, objectives, range of options considered, assessment of impacts, monitoring/evaluation, stakeholder consultation, supporting data and opinion of the Commission Regulatory Scrutiny Board.

Regarding coherence between the Commission's proposal and the IA, it concludes that the IA is based on a broad range of extensive internal and external expertise, particularly the evaluation study of Euro 6/VI and the Euro 7 impact assessment support study. It draws on data from multiple sources, such as the World Health Organisation, the European Environment Agency, OECD, the Joint Research Centre (JRC), Eurostat and several stakeholder consultations. The briefing says the e IA admits a lack of data and some uncertainties with respect to cost estimations and is also transparent as regards the methodologies and main assumptions underlying each stage of the analysis. It adds that ample methodological information is provided in the annexes to ensure transparency, but the presentation of the highly technical issues at hand, namely the details entailing different impacts under the options, could have been made clearer for non-expert policy makers. In the same vein, the varying reference timeframes for (cumulative) comparative cost categories (e.g., 2021-2030, 2021-2040, 2025-2035, 2025-2050) do not facilitate a clear overview (even though the cost/benefit summary in Annex 3 does refer consistently to the 2025 - 2050 timeframe).

The EPRS finds that the proposal is in line with the findings of the IA, while partially readjusting the preferred option 3a. It says this is justified by the changed geopolitical and economic circumstances since 2021 when the bulk of the IA work was conducted.

The briefing is available to read at [europarl.europa.eu/RegData/etudes/BRIE/2023/740246/EPRS\\_BRI\(2023\)740246\\_EN.pdf](https://europarl.europa.eu/RegData/etudes/BRIE/2023/740246/EPRS_BRI(2023)740246_EN.pdf).

## Adoption of Regulation on CO<sub>2</sub> Emissions for New Cars and Vans

On 28 March 2023, the European Council adopted a regulation setting stricter CO<sub>2</sub> emission performance standards for new cars and vans. The new rules aim to reduce emissions from road transport that has the highest share of emissions from transport - and provide the right push for the automotive industry to shift towards zero-emission mobility while ensuring continued innovation in the industry.

The new rules set targets of 55% CO<sub>2</sub> emission reductions for new cars and 50% for new vans from 2030 to 2034 compared to 2021 levels, followed by 100% CO<sub>2</sub> emission reductions for both new cars and vans from 2035.

A regulatory incentive mechanism for zero- and low-emission vehicles (ZLEV) will be in place from 2025 until the end of 2029. As part of this mechanism, if a manufacturer meets certain benchmarks for the sales of zero- and low-emission vehicles it can be rewarded with less strict CO<sub>2</sub> targets. The benchmark is set at 25% for cars and 17% for vans.

The regulation contains a reference to e-fuels, whereby following a consultation with stakeholders, the Commission will make a proposal for registering vehicles running exclusively on CO<sub>2</sub>-neutral fuels, after 2035, in conformity with EU law, outside the scope of the fleet standards, and in conformity with the EU's climate neutrality objective.

The regulation includes a review clause that foresees that in 2026, the Commission will thoroughly assess the progress made towards achieving the 2035 100% emission reduction targets and the possible need to review them. The review will take into account technological developments, including with regard to plug-in hybrid technologies and the importance of a viable and socially equitable transition towards zero emissions.

The regulation includes other provisions such as gradually reducing the cap of emission credits that manufacturers can receive for eco-innovations that verifiably reduce CO<sub>2</sub> emissions on the road, to maximum 4g/km per year from 2030 until the end of 2034 (currently set at 7g/km per year).

In addition, a common EU methodology is included, to be developed by the Commission by 2025, for assessing the full life cycle of CO<sub>2</sub> emissions of cars and vans placed on the EU market, as well as for the fuels and energy consumed by these vehicles.

The press release and associated documents are at [consilium.europa.eu/en/press-releases/2023/03/28/ff55-council-adopts-regulation-on-co2-emissions-for-new-cars-and-vans/](https://consilium.europa.eu/en/press-releases/2023/03/28/ff55-council-adopts-regulation-on-co2-emissions-for-new-cars-and-vans/).

Alongside the announcement about the regulation, the Council published statements by Italy, Poland, Finland and the European Commission.

Italy said it does not believe that during the transition phase electrification should be the only route to achieving zero emissions. It adds that technological neutrality will allow Member States to use all solutions at their disposal to decarbonise the transport sector, depending on national circumstances and starting points. The use of renewable fuels which are compatible with combustion engines will ensure an immediate reduction in emissions without requiring disproportionate economic sacrifices from citizens. According to the Italian government, forcing electrification may, on the contrary, entail the risk of non-acceptance by the market, which could harm car and van producers. It would

also prevent the technological development of hybrid engines with a very low environmental impact.

Italy also believes increasing demand for renewable fuels will give the petrochemical sector an important opportunity to adapt.

It points out that it cannot support the proposed Regulation, saying that the Commission should ensure, on the basis of the monitoring, assessment and reporting referred to above, a rigorous and credible review of the targets in 2026, follow up on the provision for the registration, after 2035, of vehicles exclusively fuelled with zero CO<sub>2</sub> emission fuels, and a proposal to include in the Regulation mechanisms to account for the benefits, in terms of CO<sub>2</sub> emissions reduction, of renewable fuels.

Poland says it firmly opposes the adoption of the legislative act. It states it is not in favour of the new fees and burdens being passed on to citizens, e.g., by increasing the cost of access to fuels. Any additional costs resulting from the new burdens should be borne by manufacturers and not passed on to citizens. EU legislation should provide an incentive for car manufacturers to offer zero-emission vehicles at the lowest possible cost to citizens. It should also take into account the differing circumstances of the individual Member States so as to avoid exacerbating social stratification, poverty or exclusion.

Poland's view is that it cannot accept the inclusion of exemptions for manufacturers of certain luxury brands. It believes this is incompatible with the general principle that emissions should be reduced by all sectors in a manner which is socially fair. In times of crisis, derogations should be directed at the poorest citizens rather than at luxury car manufacturers.

Finland's concern is that gas-fuelled vehicles are not taken into account in the Regulation. For us, promoting the utilisation of biomethane in transport is important and during the negotiations we made a proposal for an incentive for gas-fuelled vehicles. The Finnish government also finds it vital that in the revision of the CO<sub>2</sub> standards for heavy-duty vehicles, technology neutrality is maintained.

In its statement, the European Commission says it is committed to a technologically neutral climate regulation in particular with respect to the regulation of CO<sub>2</sub> emission standards for cars and light duty vehicles. The Commission acknowledges and confirms the decision of the European Parliament and the Council to include recital 11 in the agreed compromise text of the revision of the Regulation setting CO<sub>2</sub> emission performance standards for new cars and vans. The Commission will take this recital as a starting point for respective legislative initiatives.

As a first step, immediately upon the adoption of the Regulation by the European Parliament and by the Council, the Commission submits an Implementing Regulation for type approvals of these vehicles, thereby setting up a robust

and evasion-proof type approval process for vehicles that are fuelled exclusively, in a permanent manner, with RFNBOs. The Commission says it will work for swift proceedings within the Technical Committee on Motor Vehicles (TCMV) and devote itself within the legal framework to a successful finalisation of the decision process.

The EC also will work without delay on the further implementation of recital 11. Following the consultation of stakeholders, the Commission also will propose in line with the legal empowerment in autumn 2023, a Delegated Act specifying how E-Fuels-only vehicles would contribute to the CO<sub>2</sub> emission reduction targets, in relation to the regulation of CO<sub>2</sub> emission standards for cars and light duty vehicles. In the case the co-legislators reject the proposal, the Commission will follow another legislative path such as a revision of the CO<sub>2</sub>-regulation to at least implement the legal content of the Delegated Act.

The national and EC statements are available to read at [data.consilium.europa.eu/doc/document/ST-6740-2023-ADD-1-REV-2/en/pdf](https://data.consilium.europa.eu/doc/document/ST-6740-2023-ADD-1-REV-2/en/pdf).

The European Parliament's Rapporteur MEP Jan Huitema (Renew, NL) expressed his pleasure that the agreement has now be endorsed by the Council, with the text of the agreement unchanged. He added that any possible future proposals concerning the use of e-fuels will be "thoroughly assessed, both on their content and their legal basis."

MEP Huitema's statement can be found at [europarl.europa.eu/news/en/press-room/co2-emissions-for-new-cars-and-vans-statement-by-ep-rapporteur](https://europarl.europa.eu/news/en/press-room/co2-emissions-for-new-cars-and-vans-statement-by-ep-rapporteur).

Responding to the agreement, the German Environment Ministry (BMUV) stated that the new regulation of the CO<sub>2</sub> fleet limits decided by the EU Member States is a great step forward for European climate protection.

It adds that the EU Commission has shown its willingness to create an option over the next few months to allow vehicles with combustion engines that run exclusively on CO<sub>2</sub>-neutral fuels outside of the fleet limits from 2035 to be registered. It explains that the EU Renewable Energy Directive (RED II) regulates that e-fuels may only be produced with renewable energy sources such as solar or wind power. Details on certification are regulated by a delegated regulation under RED II. In order to implement its specifications in national law, the BMUV will soon present a draft for the amendment to the 37th Federal Immission Control Ordinance.

The BMUV press release is available (in German) at [bmuv.de/pressemitteilung/eu-mitgliedstaaten-machen-weg-fuer-emissionsfreie-pkw-ab-2035](https://bmuv.de/pressemitteilung/eu-mitgliedstaaten-machen-weg-fuer-emissionsfreie-pkw-ab-2035).

## Appointment of ENVI Rapporteur for Heavy-Duty CO<sub>2</sub> Performance Standards

On 23 March 2023, the European Parliament's Environment (ENVI) Committee appointed MEP Mr Yannick Jadot

(Greens/EFA, FR) as the committee's Rapporteur on the proposal to strengthen the CO<sub>2</sub> emission

performance standards for new heavy-duty vehicles. Following this appointment, on 28 March MEP Jens Gieseke (EPP, DE) was announced as Shadow Rapporteur. The draft Report would then be discussed by the Committee, following which MEPs may submit amendments. The Committee would subsequently vote on the draft Report and amendments in a view to adopt the Parliament's negotiating position.

The procedural file on the Regulation can be found at [oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2023/0042\(COD\)&l=en](https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2023/0042(COD)&l=en).

Meanwhile, according to the Commission's 'Have your Say' portal, the ex-post consultation on the proposal initially scheduled to close on 13 April is now expected to close on 19 May 2023 at midnight. The extension of the public consultation is due to the translation of relevant documents on the proposal into other official EU languages.

The link to the consultation is at [ec.europa.eu/info/law/have-your-say/initiatives/13168-Reducing-carbon-emissions-review-of-emission-standards-for-hdv\\_en](https://ec.europa.eu/info/law/have-your-say/initiatives/13168-Reducing-carbon-emissions-review-of-emission-standards-for-hdv_en).

## TRAN Draft Opinion on Revision of Ambient Air Quality Directive

On 2 March 2023, the Transport and Tourism (TRAN) committee of the European Parliament published its draft opinion on the proposed revisions to the Ambient Air Quality (AAQ) Directive. The Rapporteur is MEP Vera Tax (S&D, NL).

The Rapporteur states that the AAQDs revision will only be successful if it is closely linked to the objectives of the European Green Deal, the Zero Pollution Action Plan as well as ongoing and planned policies enhancing the sustainability and greening the transport sector. To this end, the Rapporteur proposes a number of amendments that intend to strengthen those aspects of the new directive, specifically in relation to transport-related measures.

This includes strengthening the transport-related elements that will be part of the information included in Member States' air quality plans for the improvement of ambient air quality. Notably, where the transport sector is part of the emission sources responsible for pollution, information on air pollution shall be broken down and reported per each mode of transport.

Member States shall also be obliged to report on all air pollution abatement measures that stem from the reduction of emissions from road, maritime, and air transport through the use of alternative fuels and deployment of alternative fuels infrastructure, as well as the use of economic incentives to accelerate their take-up.

In order to ensure that the AAQDs are fully aligned with the latest scientific findings on air pollutants, the Rapporteur

proposes that the Commission regularly commissions an independent review of the scientific evidence related to air pollutants and their effects on human health and the environment. The World Health Organization shall be closely involved in this process.

The draft opinion, including all amendments, is at [europarl.europa.eu/doceo/document/TRAN-PA-742298\\_EN.pdf](https://europarl.europa.eu/doceo/document/TRAN-PA-742298_EN.pdf).

## European Commission Guidelines on Improvement of Vehicle PTI

On 20 March 2023, the European Commission published a recommendation to improve the periodical technical inspection of vehicles. It says that with road transport being the largest source of air pollution in cities, accurate testing is key to ensure that vehicles are in line with emission standards throughout their lifetime. Harmonised testing also ensures fair competition amongst manufacturers.

As current testing methods are not adapted to more recent vehicles equipped with particle filters, they cannot ensure that vehicles with defective or tampered diesel particulate filters are detected during inspections. Certain Member States have therefore introduced or will soon introduce particle number (PN) measurement as part of their inspections. While those methods are similar, they however differ in certain aspects.

To ensure a coordinated approach across the EU, the Commission's guidelines define requirements related to the PN measuring equipment and procedure, metrological and technical requirements, and recommends a pass/fail limit.

Today's recommendations are based on existing methods developed by certain Member States, the findings of laboratory tests carried out by the Joint Research Centre of the Commission as well as a consultation of the Commission's Roadworthiness Expert Group. The guidelines apply to the periodic technical inspection of vehicles equipped with compression ignition engines and represent a first step towards harmonised PN measurement during roadworthiness testing.

The guidelines can be downloaded from [transport.ec.europa.eu/news/reducing-transport-emissions-ec-adopts-guidelines-improve-vehicle-pti-2023-03-20\\_en](https://transport.ec.europa.eu/news/reducing-transport-emissions-ec-adopts-guidelines-improve-vehicle-pti-2023-03-20_en).

## European Parliament Vote on Effort Sharing Regulation

On 15 March 2023, the European Parliament adopted with 486 votes to 132 and 10 abstentions the revision of the so-called Effort Sharing Regulation. It sets binding annual reductions for greenhouse gas (GHG) emission for road transport, heating of buildings, agriculture, small industrial installations and waste management for each EU Member State and currently regulates roughly 60% of all EU emissions.

The revised law increases the 2030 GHG reduction target at EU level from 30% to 40% compared to 2005 levels. For the first time, all EU countries must now reduce GHG emissions with targets ranging between 10 and 50%. The 2030 targets for each Member State are based on GDP per capita and cost-effectiveness. Member States will also have to ensure every year that they do not exceed their annual GHG emission allocation.

The European Parliament press release can be found at [europarl.europa.eu/news/en/press-room/20230310IPR77227/cc-parliament-votes-to-reduce-ms-emissions-by-40](https://europarl.europa.eu/news/en/press-room/20230310IPR77227/cc-parliament-votes-to-reduce-ms-emissions-by-40).

## Net-Zero Industry Act Proposal

On 16 March 2023, the European Commission proposed the Net-Zero Industry Act to scale up manufacturing of clean technologies in the EU and make sure the Union is well-equipped for the clean-energy transition. This initiative was announced by President von der Leyen as a part of the Green Deal Industrial Plan.

The Commission states that the Act will strengthen the resilience and competitiveness of net-zero technologies manufacturing in the EU and make its energy system more secure and sustainable. Its aim is that the Union's overall strategic net-zero technologies manufacturing capacity approaches or reaches at least 40% of the Union's deployment needs by 2030.

The Act is built on six pillars. It will set enabling conditions for investment in net-zero technologies by enhancing information, reducing the administrative burden to set up projects and simplifying permit-granting processes. In addition, the Act proposes to give priority to Net-Zero Strategic Projects, that are deemed essential for reinforcing the resilience and competitiveness of the EU industry,

It is also intended to accelerate CO<sub>2</sub> capture and facilitate access to markets. It will also enhance skills in the EU, along with fostering innovation. Finally, a Net-Zero Europe Platform will assist the Commission and Member States to coordinate action and exchange information, including around Net-Zero Industrial Partnerships.

The proposed Regulation now needs to be discussed and agreed by the European Parliament and the Council of the European Union before its adoption and entry into force.

Further information on the Act can be found at [ec.europa.eu/commission/presscorner/detail/en/ip\\_23\\_1665](https://ec.europa.eu/commission/presscorner/detail/en/ip_23_1665).

## Commission Proposal for Critical Raw Materials Act

On 16 March 2023, the European Commission proposed a "comprehensive set of actions" to ensure the EU's access to a secure, diversified, affordable and sustainable supply of critical raw materials, in the form of the Critical Raw Materials Act.

The press release states that while demand for critical raw materials is projected to increase drastically, Europe heavily relies on imports, often from quasi-monopolistic third country suppliers. The EU needs to mitigate the risks for supply chains related to such strategic dependencies to enhance its economic resilience, as highlighted by shortages in the aftermath of the Covid-19 and the energy crisis following Russia's invasion of Ukraine. This can put at risk the EU's efforts to meet its climate and digital objectives.

The Commission says the Regulation and Communication on critical raw materials adopted leverage the strengths and opportunities of the Single Market and the EU's external partnerships to diversify and enhance the resilience of EU critical raw material supply chains. The Critical Raw Materials Act also improves the EU capacity to monitor and mitigate risks of disruptions and enhances circularity and sustainability.

In addition to an updated list of critical raw materials, the Act identifies a list of strategic raw materials, which are crucial to technologies important to Europe's green and digital ambitions and for defence and space applications, while being subject to potential supply risks in the future. The Regulation embeds both the critical and strategic raw materials lists in EU law. The Regulation sets clear benchmarks for domestic capacities along the strategic raw material supply chain and to diversify EU supply by 2030.

It specifies that at least 10% of the EU's annual consumption will be extracted internally, at least 40% processed within the EU and 15% recycled. In addition, the Regulation sets a limit of not more than 65% of the Union's annual consumption of each strategic raw material at any relevant stage of processing should be from a single third country.

To ensure resilience of the supply chains, the Act provides for the monitoring of critical raw materials supply chains, and the coordination of strategic raw materials stocks among Member States. Certain large companies will have to perform an audit of their strategic raw materials supply chains, comprising a company-level stress test.

The proposal states that efforts to improve sustainable development of critical raw materials value chains will also help promoting economic development in third countries and also sustainability governance, human rights, conflict-resolution and regional stability.

Member States will need to adopt and implement national measures to improve the collection of critical raw materials rich waste and ensure its recycling into secondary critical raw materials. Member States and private operators will have to investigate the potential for recovery of critical raw materials from extractive waste in current mining activities but also from historical mining waste sites.

The document acknowledges that the EU will never be self-sufficient in supplying such raw materials and will continue to rely on imports for a majority of its consumption.

International trade is therefore essential to supporting global production and ensuring diversification of supply. The EU will need to strengthen its global engagement with reliable partners to develop and diversify investment and promote stability in international trade and strengthen legal certainty for investors.

The proposed Regulation will be discussed and agreed by the European Parliament and the Council of the European Union before its adoption and entry into force.

More details are available from [ec.europa.eu/commission/presscorner/detail/en/ip\\_23\\_1661](https://ec.europa.eu/commission/presscorner/detail/en/ip_23_1661).

## Agreement on Charging and Fuelling Stations for Alternative Fuels

On 28 March 2023, MEPs and the Swedish Presidency of the Council agreed on mandatory national targets for the deployment of infrastructure for alternative fuels for cars and trucks. A provisional agreement was reached between Parliament and Council negotiators that updates EU rules on infrastructure for alternative fuels, the Alternative Fuels Infrastructure Regulation (AFIR). It seeks to expand the deployment of recharging or alternative refuelling stations for cars, trucks and even stationary planes and “bring Europe closer to its climate neutral ambitions by 2050.”

The informal deal sets minimum mandatory national targets for the deployment of alternative fuels infrastructure and asks EU countries to present their plans on how to achieve them.

The press release says that during the negotiations, MEPs managed to secure that electric charging pools for cars with at least a 400 kW output will have to be deployed at least every 60 km along core TEN-T network by 2026, with the network’s power output increasing to 600 kW by 2028. The requirement to have a charging station every 120 km is set for trucks and buses, but these stations should be installed on half of main EU roads by 2028 and with a 1400kW to 2800 kW power output depending on the road. It will also be complemented by two charging stations for trucks in safe and secure parking places as of 2028.

The negotiators also agreed to have hydrogen refuelling stations along core TEN-T network deployed at least every 200 km by 2031.

MEPs ensured that the Commission will set up an EU “database” on alternative fuels data by 2027 to provide consumers with information on the availability, waiting times or price at different stations.

More information on the agreement is at [europarl.europa.eu/news/en/press-room/202303271PR78504/fit-for-55-deal-on-charging-and-fuelling-stations-for-alternative-fuels](https://europarl.europa.eu/news/en/press-room/202303271PR78504/fit-for-55-deal-on-charging-and-fuelling-stations-for-alternative-fuels).

## Parliament and Council Agreement on Renewable Energy Directive

On 30 March 2023, the European Parliament and Council provisionally agreed to reinforce the EU Renewable Energy Directive. The Commission says the deal brings the EU one step closer to completing the ‘Fit for 55’ legislation to deliver the European Green Deal and the REPowerEU objectives. The agreement raises the EU’s binding renewable target for 2030 to a minimum of 42.5%, up from the current 32% target and almost doubling the existing share of renewable energy in the EU.

The EC states that the agreement reaffirms the EU’s determination to gain its energy independence through a faster deployment of home-grown renewable energy, and to meet the EU’s 55% greenhouse gas emissions reduction target for 2030. A massive scaling-up and speeding-up of renewable energy across power generation, industry, buildings and transport will reduce energy prices over time and decrease the EU’s dependence on imported fossil fuels.

The agreement includes targets and measures to support the uptake of renewables across various sectors of the economy. It reinforces the regulatory framework for renewable energy use in transport (14.5% greenhouse gas intensity reduction or 29% share of renewable energy in final energy consumption), including a combined sub-target of 5.5% for advanced biofuels and renewable fuels of non-biological origin, including a minimum level of 1% for renewable fuels of non-biological origin. These targets support the EU’s ambitions on renewable hydrogen roll-out.

The Commission’s press release can be found at [ec.europa.eu/commission/presscorner/detail/en/ip\\_23\\_2061](https://ec.europa.eu/commission/presscorner/detail/en/ip_23_2061).

## Consultation on EU Climate Target for 2040

On 31 March 2023, the European Commission published a consultation document on the EU climate target for 2040.

The call for evidence states that it is now more important than ever for the EU to get and stay on track to climate neutrality and resilience. It says setting a 2040 target for EU greenhouse gas reductions will impact many economic sectors and territories in the EU. It may require policy responses in many fields beyond climate policy, such as social and labour market policies. The Commission says energy will play a central role in this process as its production and use (including by households, industry, services and transport, including maritime and aviation) account for more than 75% of total emissions.

The European Climate Law (Article 4) calls on the Commission to make a proposal to set an intermediate Unionwide climate target for 2040 with a view to achieving the climate neutrality objective by 2050 and to publish a report on the projected indicative GHG budget<sup>4</sup> for 2030-2050. This initiative aims at proposing the 2040 climate



target, in view of an amendment to the European Climate Law. The consultation goes on to say that the proposed target will be crucial in sending a clear signal to stakeholders on the way forward. It will strengthen certainty and predictability for political choices and investment decisions. It will be the corner stone of the future preparation of the post-2030 policy framework to ensure that the EU's GHG emissions actually decrease towards climate neutrality by 2050. Without a 2040 climate target, the EU would be at risk of missing its domestic climate objective for 2050 and possibly undermine its capacity to spur climate action internationally.

The Commission will collect the views of key stakeholders through a 12-week public consultation, which closes on 23 June 2023. These views will be integrated into the impact assessment on the 2040 climate target.

Feedback can be submitted at [ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13793-EU-climate-target-for-2040\\_en](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13793-EU-climate-target-for-2040_en).

## Commission Proposal for Regulation on NRMM Approval and Surveillance

On 30 March 2023, the European Commission proposed a Regulation to facilitate the use of non-road mobile machinery (NRMM) such as cranes, harvesters, forklifts, snow cleaners on public roads. These rules will ultimately replace the different regulatory regimes that currently exist in Member States.

The Commission says that by harmonising at EU level, the technical requirements for the approval of non-road machinery, the new rules will contribute to remove fragmentation in the Single Market and eliminate barriers to the free circulation of such machinery, while ensuring a high level of road safety.

The proposed Regulation is intended to complete the Single Market for non-road mobile machinery, reduce administrative burden and costs for stakeholders, ensure proportionality and legal certainty, and finally establish more effective market surveillance.

Further information can be found at [ec.europa.eu/commission/presscorner/detail/en/ip\\_23\\_2046](https://ec.europa.eu/commission/presscorner/detail/en/ip_23_2046).

## Renewable and Low-Carbon Fuels Value Chain Industrial Alliance Workshop

On 29 March 2023, the Renewable and Low-Carbon Fuels (RLCF) Value Chain Industrial Alliance held its first workshop, discussing the latest developments within the industry and presenting projects in areas such as feedstock sourcing, fuel production, and the uptake of aviation and maritime fuels.

The workshop was divided into four sessions, each moderated by the Chair of an Alliance Roundtable. The first focused on production and sourcing and was moderated by

Mr Tobias Block from eFuels Alliance. The other sessions focused on aviation and maritime fuel supply, along with financing and the pipeline of projects.

European Commissioner for Transport Ms Adina Vălean opened the event and welcomed a high-level panel involving Mr Luis Cabra, president of FuelsEurope, Mr Davide Cucino, vice-president for European Union Affairs at FINCANTIERI, Mr Eric Dalbiès, senior executive vice-president R&T and Innovation at Safran, and Mr Jorgo Chatzimarkakis, CEO of Hydrogen Europe.

In coming weeks and months, the Alliance will focus on advancing its project development toolkit. This includes technology benchmarks, business model assessment tools, and bankability checklists. The call for project proposals is expected by September 2023, which is also when the next General Assembly is planned.

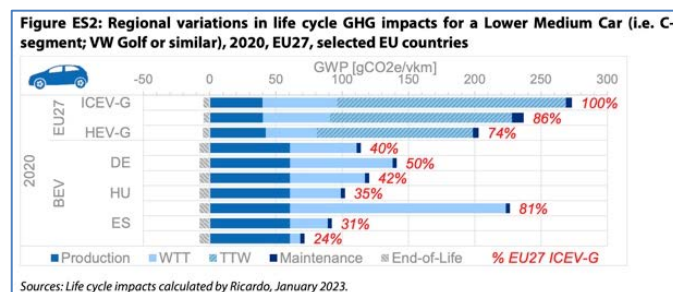
A press release on the workshop is at [transport.ec.europa.eu/news/first-rlcf-workshop-developments-and-projects-boost-production-and-supply2023-04-03\\_en](https://transport.ec.europa.eu/news/first-rlcf-workshop-developments-and-projects-boost-production-and-supply2023-04-03_en).

## Vehicle Life Cycle Study for European Parliament Transport Committee

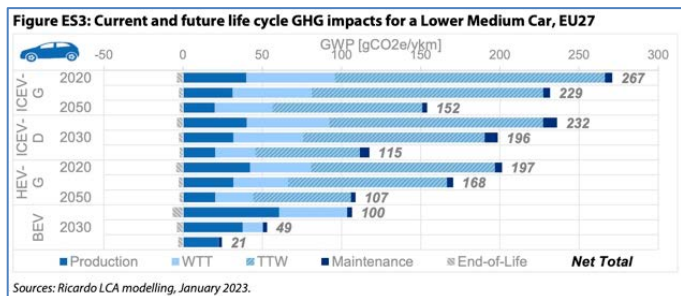
On 27 March 2023, the European Parliament's Policy Department for Structural and Cohesion Policies published a report by Ricardo on 'Environmental challenges through the life cycle of battery electric vehicles.' This was carried out on behalf of the Transport & Tourism (TRAN) Committee.

The literature review indicates broad agreement that battery electric vehicles (BEVs) tend to exhibit significantly lower life cycle greenhouse gas (GHG) impacts than internal combustion engine vehicles (ICEVs), despite initially higher manufacturing emissions.

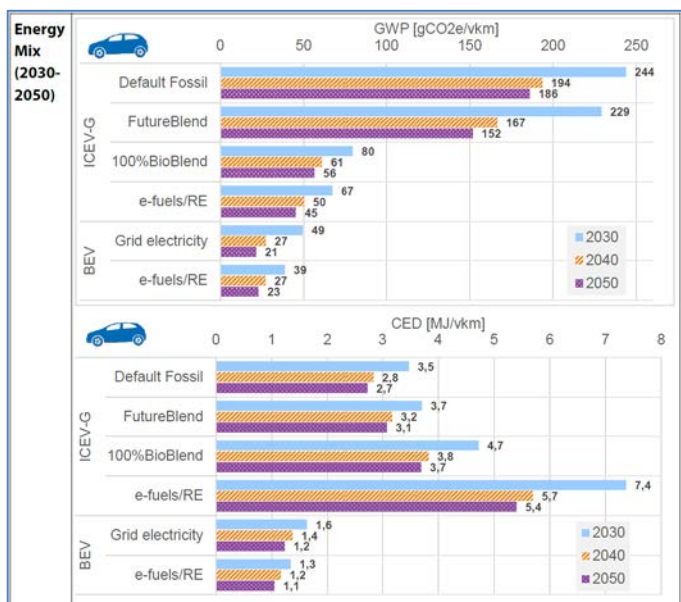
The study's life cycle assessment (LCA) modelling indicates that a typical current BEV car already saves over ~60% kgCO<sub>2</sub>e/km compared to an equivalent conventional gasoline car in average EU conditions. Significant life cycle GHG emissions reductions were also found across different situations and countries.



Analysis of the future outlook shows that, by 2030, average BEV GHG impacts in the EU27 could be 78% lower than those of an equivalent conventional gasoline car (and reach 86% lower by 2050). Future modelling is done in line with the EU's 'Fit for 55' package.



A comparison of alternative low carbon fuel/energy options for gasoline ICEVs and BEVs is conducted within the sensitivity analysis of the report. The report highlights that it is likely that large scale deployment of e-fuels or biofuels in road transport will still have higher emissions than a move to BEVs.



The report says that decisive EU policy action will be needed to maximise BEV benefits and mitigate risks, including an ambitious policy agenda around circular economy approaches for vehicle components (especially batteries) and further research in battery technology.

It concludes that tailpipe CO<sub>2</sub> emissions regulations provide a suitable regulatory framework. However, LCA reporting should be encouraged.

The study and summary can be downloaded from [europarl.europa.eu/thinktank/en/document/IPOL\\_STU\(2023\)733112](http://europarl.europa.eu/thinktank/en/document/IPOL_STU(2023)733112).

## Assessment of Potential of Sustainable Fuels in Transport

On 31 March 2023, the European Parliament's Policy Department for Structural and Cohesion Policies published an assessment of the potential of sustainable fuels in transport. The study was carried out by Trinomics on behalf of the Parliament's Transport & Tourism (TRAN) Committee.

The study says that sustainable fuels will be suitable for different transport modes and transport applications, depending on their technical specifications, their sustainability characteristics including feedstock availability, their cost-competitiveness and their technology readiness. It does however state that, given the global limitation of resources, the shift to sustainable fuels should be first driven by a significant increase in energy efficiency. They should be primarily dedicated to transport sub-sectors that cannot be easily electrified, i.e., aviation, shipping, and – possibly – part of heavy-duty road transport.

**Table E51 - Match making between fuels and transport modes - Summary of all factors**

Fuel	Feedstock	Mode and range								
		Aircraft		Maritime transport		Heavy duty road		Light duty road		
		Short	Long	Short	Long	Short	Long	Short	Long	
Biofuels	Biochemical, liquid	Conventional	Priority	Priority	Priority	Priority	Priority	Priority	Priority	Priority
		Advanced	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges
	Biochemical, methane	Advanced	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges
	Oleochemical	Conventional	Priority	Priority	Priority	Priority	Priority	Priority	Priority	Priority
Thermochemical, liquid		Advanced	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges
	Thermochemical, methane	Advanced	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges
	H <sub>2</sub> (biomass gasification)	Advanced	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges
		Advanced	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges
RFNBOs	Renewable H <sub>2</sub>		Priority	Priority	Priority	Priority	Priority	Priority	Priority	Priority
	E-hydrocarbons		Priority	Priority	Priority	Priority	Priority	Priority	Priority	Priority
	E-methanol		Priority	Priority	Priority	Priority	Priority	Priority	Priority	Priority
	E-Ammonia		Priority	Priority	Priority	Priority	Priority	Priority	Priority	Priority
Others	Fossil H <sub>2</sub> , with C sequestration		Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges
	Nuclear H <sub>2</sub>		Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges
Direct electrification	RCFs (to drop-in liquid fuels)		Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges
			Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges	Challenges

Legend: Priority (Green), Likely (Yellow), Possible (Orange), Challenges (Red), Low priority (Dark Red).  
||||||| Needs technological progress and/or scale up

The authors point out that biofuels are cheaper than renewable e-liquids, but they face availability limitations exacerbated by competing demand in the bioeconomy and sustainability constraints with respect to land use. Renewable e-liquids could be among the most relevant options by 2050 if the carbon they use is sustainably sourced, thanks to the fact that they do not require changes to infrastructure or powertrains. Challenges remain however with the high reliance on large-scale renewable electricity production, low energy efficiency, high production costs, and low technology readiness of some of their enabling technologies (such as direct air capture).

According to the study, renewable hydrogen could technically be a viable fuel for heavy-duty road, short-range aircraft and shipping, although important challenges remain with the low energy density, costs required for infrastructure development and high-risk profiles of related investments.

The study concludes that existing policies and the set of policy proposals in 'Fit for 55' tackle most of the barriers to accelerate the shift to sustainable fuels, the deployment of the required infrastructure and the changes in vehicle powertrain technologies. The EU's policy to support sustainable fuels shall seek to further enhance technological development, foster industrial transformation, and strengthen re-distributional measures without compromising sustainability.

The study is available to read at [europarl.europa.eu/RegData/etudes/STUD/2023/733103/IPOL\\_STU\(2023\)733103\\_EN.pdf](http://europarl.europa.eu/RegData/etudes/STUD/2023/733103/IPOL_STU(2023)733103_EN.pdf).

## European Court of Justice Ruling on Defeat Devices

On 21 March 2023, the Court of Justice of the European Union (CJEU) issued a ruling on whether the purchaser of a vehicle equipped with an unlawful defeat device has a right to compensation from the car manufacturer where that device has caused damage to that purchaser.

The Court concludes that the relevant provisions of Directive 2007/46 establishing a framework for the approval of motor vehicles (the Framework Directive) establish a direct link between the car manufacturer and the individual purchaser of a motor vehicle intended to guarantee to the latter that that vehicle complies with the relevant EU legislation. Consequently, the Court considers that the provisions of the Framework Directive, read in conjunction with those of Regulation No 715/2007, protect, in addition to public interests, the specific interests of the individual purchaser of a motor vehicle vis-à-vis the manufacturer of that vehicle where that vehicle is equipped with a prohibited defeat device. The Member States are therefore required to provide that the purchaser of such a vehicle has a right to compensation from the manufacturer of that vehicle.

The detailed CJEU press release is available to read at [curia.europa.eu/jcms/upload/docs/application/pdf/2023-03/cp230051en.pdf](https://curia.europa.eu/jcms/upload/docs/application/pdf/2023-03/cp230051en.pdf).

## UK Consultation on ZEV Mandate and Car and Van CO<sub>2</sub> Emissions Regulation

On 30 March 2023, the UK government published a consultation on the final proposed regulatory framework for a zero emission vehicle (ZEV) mandate and non-zero emission vehicle CO<sub>2</sub> regulation.

The ZEV mandate will apply to all manufacturers responsible for the type-approval of cars or vans registered in the UK, irrespective of the type approval route. Manufacturers that are part of a group of connected undertakings may choose to form a closed pool and participate as a group. Small volume manufacturers (selling fewer than 2 500 cars or vans annually in the UK) will be exempted from targets until the end of 2029.

The proposed minimum ZEV target trajectory for new cars sold begins at 22% in 2024, increasing to 80% in 2030 reaching 100% in 2035. The proposed minimum ZEV target trajectory for new vans sold begins at 10% in 2024 and reaches 70% in 2030 on the way to 100% in 2035. The legislation being proposed will cover ZEV and non-ZEV requirements in the 2024-2030 period; legislation covering the 2031-2035 period will be introduced at a later point, but it is intended that the legislative minimum trajectories will be at least as ambitious as set out in current trajectories.

**Table 1. Annual targets for ZEV sales shares from 2024-2035 for cars**

Year	2024	2025	2026	2027	2028	2029
Target	22%	28%	33%	38%	52%	66%
Year	2030	2031	2032	2033	2034	2035
Target	80%	84%*	88%*	92%*	96%*	100%*

\*Target will be set out in future legislation.

The government says the goal of this new regulatory framework is to support the rapid shift toward ZEVs and provide market certainty for the automotive, chargepoint and energy sectors and their supply chains. Additional research and development into further incremental improvements to combustion engine efficiency technologies is no longer a key objective. The framework includes a CO<sub>2</sub> emissions standard applying to new non-ZEV cars and vans to ensure they do not become less efficient and more polluting over time.

The consultation proposes that manufacturers' non-ZEV CO<sub>2</sub> emissions targets for the car and van schemes will be determined by the average CO<sub>2</sub> emissions ratings of new non-ZEV cars and vans sold by that manufacturer in 2021. These targets would be constant for the duration of the regulation and would not be adjusted according to weight, powertrain mix or other factors.

**Table 6. CO<sub>2</sub> targets for years 2024-2027 under 3 proposed scenarios for a hypothetical manufacturer averaging 150 gCO<sub>2</sub>/km for new cars sold in 2021**

Scenario	2021	2024	2025	2026	2027
Flat	150	150	150	150	150
Tightening	150	150	147.0	144.1	141.2
Lightweighting	150	150	142	140	139

The consultation runs until 24 May and can be found at [gov.uk/government/system/uploads/attachment\\_data/file/1147356/zev-mandate-co2-emissions-regulation-consultation.pdf](https://gov.uk/government/system/uploads/attachment_data/file/1147356/zev-mandate-co2-emissions-regulation-consultation.pdf).

## NORTH AMERICA

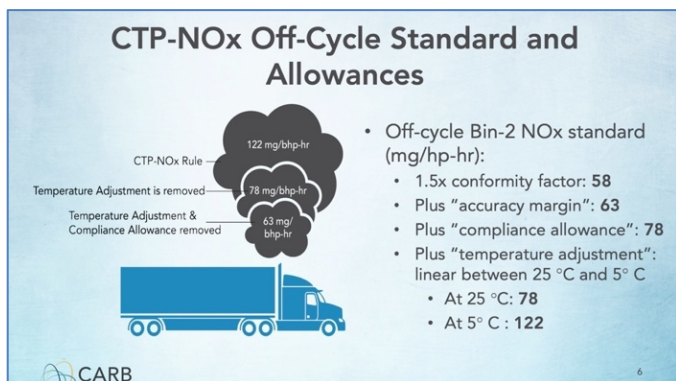
### CARB Workshop on Comparison of State and Federal Truck Programmes

On 3 March 2023, the California Air Resources Board (CARB) held a workshop to present a comparison of the California Heavy-Duty Omnibus Regulation and the EPA's Clean Trucks Plan (CTP) NO<sub>x</sub> Rule.

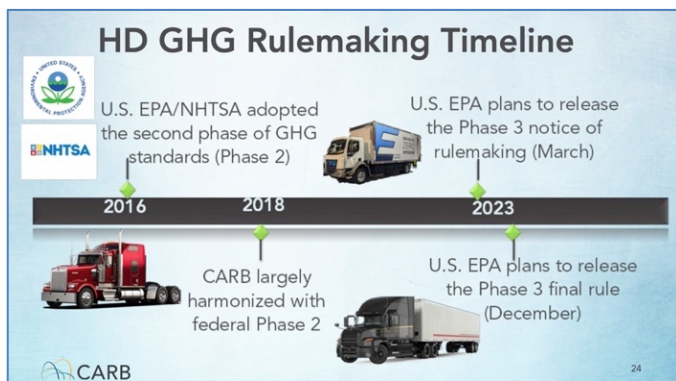
In a presentation, CARB staff identified two key differences between the California and federal regulations.

The first is the interim NO<sub>x</sub> compliance allowance for in-use testing. This was introduced as an interim measure for heavy heavy-duty engines (HHDEs) in the proposed rule with a model year 2023 sunset date, and finalised as a provision for medium heavy-duty engines in the final rule as 'interim' provision with no sunset date.

The second difference highlighted is the temperature adjustment to off-cycle NO<sub>x</sub> standards, which CARB states was introduced in the final rule without seeking public comment.



The presentation goes on to say that federal and California heavy-duty emission standards have been harmonised since model year 1991, and then highlights what CARB sees as the potential impacts of harmonisation. It looks at the compliance allowance, field ageing and temperature adjustment.



CARB concludes that alignment with the CTP-NOx rule would lead to around 1-5 tons per day of NOx benefit losses in 2037 for California because of the compliance allowance and temperature adjustment. In order to offset those losses, it claims it would need to see very high nationwide zero-emission penetration (e.g., sleeper cabs sales around 30% in 2027, ramping up to 70% in 2037).

The full presentation can be found at [arb.ca.gov/sites/default/files/2023-03/March\\_3\\_Workshop\\_Slides\\_V03022023.pdf](http://arb.ca.gov/sites/default/files/2023-03/March_3_Workshop_Slides_V03022023.pdf).

## US EPA Waivers for California Truck Rules

On 31 March 2023, the US Environmental Agency (EPA) issued a decision that grants two requests for waivers of pre-emption regarding four California Air Resource Board (CARB) regulations related to California's heavy-duty vehicle and engine emission standards.

Under the Clean Air Act, California is afforded broad discretion to adopt emissions requirements to meet their significant air quality challenges, but they must seek waivers from EPA for new motor vehicle emission standards. In this instance, CARB requested two waivers for regulations relating to heavy duty vehicles and engines. After reviewing the technical information provided by CARB, reviewing

comments submitted by the public, and applying the limited authority for review under section 209 of the Clean Air Act, EPA determined it appropriate to grant the waiver and authorisation requests.

The first waiver addresses the 2018 Heavy-duty Warranty Amendments, which extend the emissions warranty periods for 2022 and subsequent model year on-road heavy-duty diesel engines and for 2022 and subsequent model year diesel vehicles with a gross vehicle weight rating exceeding 14 000 pounds powered by such engines.

The second covers the Advanced Clean Trucks (ACT) Regulation, which requires that manufacturers produce and sell increasing quantities of medium- and heavy-duty zero-emission vehicles (ZEVs) and near zero emission vehicles (NZEVs) in California.

EPA has also conducted a public comment process regarding CARB's Heavy-Duty Omnibus Low NOx Regulation which establishes criteria pollutant exhaust emission standards for nitrogen oxide (NOx) and particulate matter (PM) as well as other emission-related requirements for new 2024 and subsequent model year on-road medium- and heavy-duty engines and vehicles. CARB has asked EPA for additional time before the Agency acts on the waiver request for this regulation. EPA expects to act upon this waiver request as appropriate.

The EPA announcement is at [epa.gov/newsreleases/epa-grants-waivers-californias-highway-heavy-duty-vehicle-and-engine-emission](https://www.epa.gov/newsreleases/epa-grants-waivers-californias-highway-heavy-duty-vehicle-and-engine-emission).

## US EPA Automotive Trends Report

On 9 March 2023, the US EPA published its Automotive Trends Report for 2022.

In model year 2021, the average estimated real-world CO<sub>2</sub> emission rate for all new vehicles fell by 2 g/mi to 347 g/mi, the lowest ever measured. Real-world fuel economy remained at a record high 25.4 mpg. Since model year 2004, CO<sub>2</sub> emissions have decreased 25%, or 114 g/mi, and fuel economy has increased 32%, or 6.1 mpg.

Since model year 2004, the combination of technology innovation and market trends have resulted in average new vehicle fuel economy increasing 32%, horsepower increasing 20%, and weight increasing 4%. Footprint has increased 5% since EPA began tracking it in model year 2008.

Over the last five years, seven of the fourteen largest manufacturers selling vehicles in the U.S. decreased new vehicle estimated real-world CO<sub>2</sub> emission rates. Five manufacturers increased new vehicle CO<sub>2</sub> emission rates between model years 2016 and 2021.

The report can be downloaded from [epa.gov/automotive-trends/highlights-automotive-trends-report](https://www.epa.gov/automotive-trends/highlights-automotive-trends-report).

## UNITED NATIONS

### Meeting of UNECE World Forum for Harmonisation of Vehicle Regulations

The 189<sup>th</sup> session of the UN World Forum for the Harmonisation of Vehicle Regulations (WP.29) was held at the Palais des Nations in Geneva from 7 to 9 March 2023.

The World Forum celebrated its 70<sup>th</sup> anniversary as well as the 65<sup>th</sup> anniversary of the establishment of the 1958 UN Agreement.

Several high-level speeches reflecting the occasion were held on the first half-day of the WP.29 session.

More information is at <https://unece.org/transport/vehicle-regulations/world-forum-harmonization-vehicle-regulations-wp29>.

### IPCC Synthesis Report on Climate Change

On 21 March 2023, the Intergovernmental Panel on Climate Change (IPCC) published its Synthesis Report outlining the urgency of taking more ambitious action to reduce losses and damages to nature and people through climate change. The report says there are multiple, feasible and effective options to reduce greenhouse gas emissions and adapt to human-caused climate change, and they are available now.

The IPCC says that keeping warming to 1.5°C above pre-industrial levels requires deep, rapid and sustained greenhouse gas emissions reductions in all sectors. Emissions should be decreasing by now and will need to be cut by almost half by 2030, if warming is to be limited to 1.5°C.

It adds that the solution lies in climate resilient development. This involves integrating measures to adapt to climate change with actions to reduce or avoid greenhouse gas emissions in ways that provide wider benefits.

For example: access to clean energy and technologies improves health, especially for women and children; low-carbon electrification, walking, cycling and public transport enhance air quality, improve health, employment opportunities and deliver equity. The economic benefits for people's health from air quality improvements alone would be roughly the same, or possibly even larger than the costs of reducing or avoiding emissions.

The IPCC concludes that changes in the food sector, electricity, transport, industry, buildings and land-use can reduce greenhouse gas emissions. At the same time, they can make it easier for people to lead low-carbon lifestyles, which will also improve health and wellbeing. A better understanding of the consequences of overconsumption can help people make more informed choices.

The press release can be found at [ipcc.ch/report/ar6/syr/downloads/press/IPCC\\_AR6\\_SYR\\_PressRelease\\_en.pdf](https://ipcc.ch/report/ar6/syr/downloads/press/IPCC_AR6_SYR_PressRelease_en.pdf) with links to the summary report at [ipcc.ch/report/ar6/syr/](https://ipcc.ch/report/ar6/syr/).

## GENERAL

### Remote Testing of Vehicles in Port of Antwerp-Bruges

On 9 March 2023, the Port of Antwerp-Bruges published information on remote sensing carried out on vehicles in and around the port. The press release says that remote sensing was tested at several locations in the port of Antwerp. A team of experts determined the emissions of about 235 000 passing cars, vans and trucks. Road inspectors and police officers also organised enforcement campaigns. Trucks for which it was deduced from the measurement results that the installation to limit harmful emissions was not working were removed from traffic and additionally checked and, where necessary, reported.

The report says that it is much more efficient to select vehicles for checking after measuring in real driving conditions. In a check without pre-selection, defects or fraud were found in only about 2% of the vehicles. Thanks to remote sensing, it says this rose to 52%.

It goes on to say that measurement setups close to the departure point of trucks do not yield the best results, as trucks there still drive with a cold engine. The emissions at that time are lower than the average emissions of a warmed-up engine of a truck driving at full speed. Based on the measurements, the researchers estimate that a truck driving around with a non-working SCR catalytic converter emits the same emissions as 15 trucks that are in order. In the case of particulate filter fraud, this can amount to more than a hundred times as much.

Transport & Mobility Leuven was appointed for the measurements and the GDPR-compliant processing of the data. They worked together with the company Opus Remote Sensing Europe from Spain for the measurements and with the International Council for Clean transportation for the processing of the data.

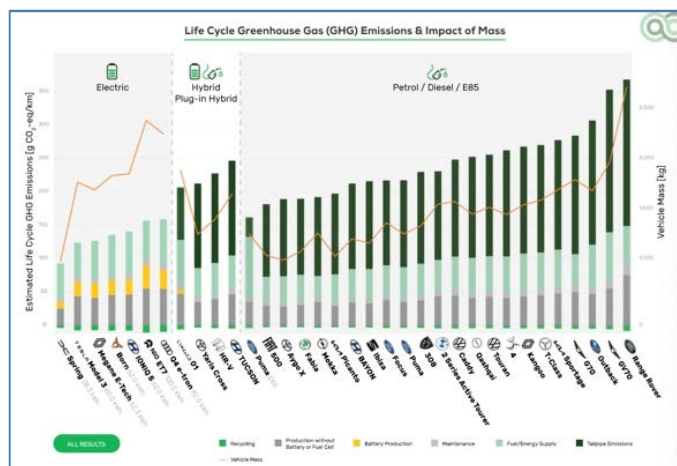
The press release is at [newsroom.portofantwerpbruges.com/remote-sensing-spoort-gericht-vervuilende-voertuigen-op](https://newsroom.portofantwerpbruges.com/remote-sensing-spoort-gericht-vervuilende-voertuigen-op).

### Green NCAP Life Cycle Assessment Results

On 23 March 2023, Green NCAP published results of the Life Cycle Assessment (LCA) of greenhouse gas emissions and primary energy demand of the cars tested in 2022. Green NCAP tested 34 cars with different powertrain types: battery electric, hybrid electric, conventional petrol and diesel, and one vehicle that runs on alternative fuel. The LCA calculations used the interactive Life Cycle Assessment tool that is available for consumers on Green NCAP's website.

The calculations are made based on the average energy mix of the 27 EU Member States and the UK, and an average mileage of 240 000 km over 16 years. Green NCAP's results show that the current and continuous trend towards larger and heavier cars, significantly increases the negative impact on climate and energy demand. This drives not only a rise in fuel and electric energy consumption, but also creates a wider footprint in vehicle and battery production.

LCA results from the 34 tested cars show that battery electric vehicles are ahead in reducing greenhouse gases with 40-50% lower emissions compared to conventional petrol cars, depending on the model chosen. In terms of primary energy demand, the differences between electric and conventional cars are smaller. The hybrid electric sport utility vehicles (SUVs) that were tested, have higher fuel consumption and due to increased emissions in the usage phase, have life cycle values in the range of 200-240 g CO<sub>2</sub>-equivalent/km and an estimated 0.85-1.0 kWh/km. These numbers lie between the values of a large electric SUV and a conventional petrol- or diesel-powered counterpart. The bio-ethanol (E85) operated car, as compared to the same car in petrol mode, has greenhouse gas emissions reduced to a level closer to the range of battery electric cars.



Green NCAP says these calculations show the considerable differences between each car's impact on the environment, but they also reveal the significant influence of mass on greenhouse gas emissions and primary energy demand. In general, battery electric vehicles emit significantly less greenhouse gases over their lifetime, but some of the gains are lost due to their increased weight.

Green NCAP has performed additional numerical simulations based on real-world Green NCAP measurements. These studies show that all three powertrain types (electric BEV, non-rechargeable hybrid HEV and conventional ICEV), when their mass increases, have the same relative rise in energy consumption of about 2% per 100 kg. However, their absolute consumption figures are very different.

Over the last ten years, the average weight of vehicles sold has increased by about 9% or around 100 kg. According to the European Automobile Manufacturers' Association (ACEA), in 2022, 9.3 million vehicles were sold, out of which 12.2% were battery electric. Green NCAP calculates that, assuming eight million vehicles are on average 100 kg heavier, the impact of this weight increase on the climate is the equivalent of about 200 000 extra cars on European roads.

The Green NCAP press release can be found at [greenncap.com/press-releases/green-ncap-the-size-of-your-car-does-matter/](https://greenncap.com/press-releases/green-ncap-the-size-of-your-car-does-matter/).

## Health Sector NGO Letter on Ambient Air Quality Directives

On 17 March 2023, a group of health organisations wrote to MEPs on the Environment, Public Health and Food Safety Committee (ENVI) with recommendations for science-based air quality standards to improve public health. The ENVI committee is currently considering the proposal to revise the EU's ambient air quality directives (AAQD).

The NGOs want to see the level of ambition increased, with full alignment of the EU's air quality standards with the WHO recommendations and the latest science by 2030 at the latest. They want to see full alignment for all pollutants included in the World Health Organization's (WHO) 2021 guidelines, namely fine particulate matter (PM<sub>2.5</sub>), particulate matter (PM<sub>10</sub>), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>) and ozone (O<sub>3</sub>). The letter also urges support for legally binding limit values.

In addition to this, the group calls for protection of vulnerable groups and for the most health-protective enabling framework. In order to achieve this, it wants to see the risk of compliance delays closed and an independent review of the evidence regularly carried out by the WHO, as the core of the review mechanism foreseen.

The letter is available to read in full at [env-health.org/wp-content/uploads/2023/03/AAQD\\_letter-to-ENVI-MEPs.pdf](https://env-health.org/wp-content/uploads/2023/03/AAQD_letter-to-ENVI-MEPs.pdf).

## IEA 2022 Report on Global CO<sub>2</sub> Emissions

On 2 March 2023, the International Energy Agency (IEA) published its 2022 report on global CO<sub>2</sub> emissions.

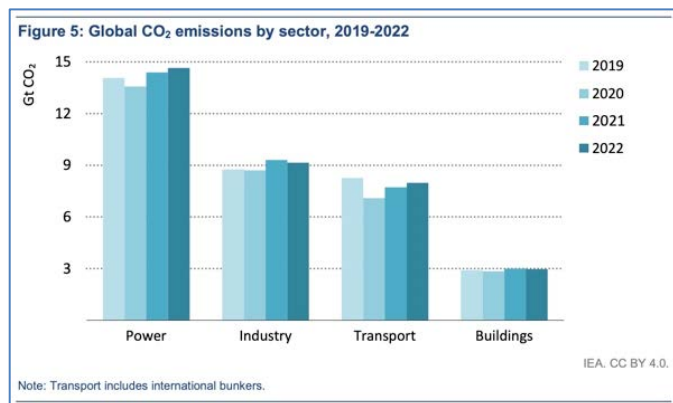
Global energy-related carbon dioxide emissions rose by under 1% in 2022 – less than initially feared – as the growth of solar, wind, electric vehicles (EVs), heat pumps and energy efficiency helped limit the impacts of increased use of coal and oil amid the global energy crisis.

Although the rise in emissions last year was far smaller than the exceptional jump of over 6% in 2021, IEA says emissions still remain on an unsustainable growth trajectory, calling for stronger actions to accelerate the clean energy transition and

move the world onto a path towards meeting its energy and climate goals.

At a global level, CO<sub>2</sub> emissions from power and transport (including international bunkers) grew by 261 Mt and 254 Mt, respectively, more than offsetting reductions from industry and buildings.

Total transport emissions increased by 2.1% (or 137 Mt), driven by growth in advanced economies. Nonetheless, emissions would have been higher without the accelerating deployment of low-carbon vehicles. Electric car sales surpassed 10 million in 2022, making up over 14% of global sales. If all new electric cars on the road had been typical diesel or gasoline cars, the report says global emissions last year would have been another 13 Mt higher.



In contrast to the global growth in transport sector emissions, China's transport emissions registered a 3.1% decrease in 2022. Covid-19 measures were strongly reinforced in comparison to 2021, including total lockdowns in major cities and restrictions on crossing prefecture or province boundaries. At the same time, electric car sales reached 6 million in 2022, preventing further emissions from diesel and gasoline cars.

The IEA report is available to download from [iea.org/reports/co2-emissions-in-2022](https://www.iea.org/reports/co2-emissions-in-2022).

## RESEARCH SUMMARY

### Effects of Emissions and Pollution

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## FORTHCOMING CONFERENCES

### WCX SAE World Congress Experience

18-20 April 2023, Detroit, USA

[sae.org/highlights/wcx](https://sae.org/highlights/wcx)

### 44<sup>th</sup> International Vienna Motor Symposium

26-28 April 2023, Vienna, Austria

[wiener-motorensymposium.at/fileadmin/Media](https://wiener-motorensymposium.at/fileadmin/Media)

### SAE Heavy-Duty Diesel Sustainable Transport Symposium

3-4 May 2023, Gothenburg, Sweden

[sae.org/attend/heavy-duty-diesel-sustainable-transport-symposium](https://sae.org/attend/heavy-duty-diesel-sustainable-transport-symposium)

**AECC will have a presentation.**

### Fuel Science – From Production to Propulsion

23-25 May 2023, Aachen, Germany

[fuelcenter.rwth-aachen.de/cms/Fuelcenter/Austausch/~smxp/Int-Konferenz](https://fuelcenter.rwth-aachen.de/cms/Fuelcenter/Austausch/~smxp/Int-Konferenz)

### AVL Vehicle & Environment Conference

25-26 May 2023, Graz, Austria

[avl.com/-/vehicle-environment?j=3464186&sfmc\\_sub](https://avl.com/-/vehicle-environment?j=3464186&sfmc_sub)

### SIA Powertrain 2023

14-15 June 2023, Paris, France

[sia.fr/evenements/302-sia-powertrain-2023](https://sia.fr/evenements/302-sia-powertrain-2023)

### ETH Conference on Combustion-Generated Nanoparticles

20-22 June 2023, Zurich, Switzerland

[nanoparticles.ch/](https://nanoparticles.ch/)

### Stuttgart International Symposium

4-5 July 2023, Stuttgart, Germany

[fkfs-veranstaltungen.de/en/events/stuttgart-symposium](https://fkfs-veranstaltungen.de/en/events/stuttgart-symposium)

### Cenex-LCV

6-7 September 2023, Millbrook, United Kingdom

[cenex-lcv.co.uk](https://cenex-lcv.co.uk)

### International Conference on Engines and Vehicles for Sustainable Transport

10-14 September 2023, Capri, Italy

[ice2023.info](https://ice2023.info)



## FISITA World Congress 2023

12-15 September 2023, Barcelona, Spain  
[fisita.com/diary/fisita-world-congress-2023](https://fisita.com/diary/fisita-world-congress-2023)

## International Transport and Air Pollution Conference

25-26 September 2023, Gothenburg, Sweden  
[ivl.se/tapase](https://ivl.se/tapase)

## Aachen Colloquium Sustainable Mobility

9-11 October 2023, Aachen, Germany  
[aachener-kolloquium.de/en/attend/speaker/call-for-papers.html](https://aachener-kolloquium.de/en/attend/speaker/call-for-papers.html)

## FEV Zero CO<sub>2</sub> Mobility Conference

7-8 November 2023, Berlin, Germany  
[fev-live.com/zero-co2-mobility](https://fev-live.com/zero-co2-mobility)

**Deadline for abstracts 16 June 2023**

## Heavy-Duty, On- and Off-Highway Engines

7-8 November 2023, Nuremberg, Germany  
[atzlive.de/en/events/heavy-duty-on-and-off-highway-engines/](https://atzlive.de/en/events/heavy-duty-on-and-off-highway-engines/)

## POLIS Annual Conference

29-30 November 2023, Leuven, Belgium  
[polisnetwork.eu/2023-annual-polis-conference/](https://polisnetwork.eu/2023-annual-polis-conference/)

## IMEchE Powertrain Systems for a Sustainable Future conference 2023

29-30 November 2023, London, United Kingdom  
[events.imeche.org/ViewEvent?code=CON7568#msdyntrid=P31DYp9\\_uO9BcgMpB1eDYE\\_yyLahi1N1sHwWz0Zd1JU](https://events.imeche.org/ViewEvent?code=CON7568#msdyntrid=P31DYp9_uO9BcgMpB1eDYE_yyLahi1N1sHwWz0Zd1JU)