

# NEWSLETTER

International Regulatory Developments

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## EUROPE

### ENVI Vote on Provisional Euro 7 Agreement and Timetable for Adoption in Parliament

On 11 January 2024, the Environment (ENVI) Committee of the European Parliament voted on the provisional Euro 7 trilogue agreement. It was approved with 55 votes in favour and 26 against. Details of the ENVI vote are at [europarl.europa.eu/cmsdata/279859/2024-01-11%20votes%20and%20roll-call%20votes%20-%20ENVI.pdf](https://europarl.europa.eu/cmsdata/279859/2024-01-11%20votes%20and%20roll-call%20votes%20-%20ENVI.pdf).

According to the latest Environment (ENVI) Committee timetable, the European Parliament is now expected to adopt the provisional Euro 7 agreement as its first reading position on the proposal during a plenary session to take place on 11 March 2024.

Meanwhile, the Belgian Presidency informed Council experts from the Council Working Party on Technical Harmonisation (Motor Vehicles) on the legal and linguistic revision of the provisional agreement during a meeting held on 25 January.

Once the European Parliament has adopted its position at first reading, the Council is expected to adopt the Parliament's position without debate and the Regulation would be formally adopted.

The ENVI Committee timetable (see page 10) is at [europarl.europa.eu/cmsdata/280180/envi-work-in-progress\\_22012024.pdf](https://europarl.europa.eu/cmsdata/280180/envi-work-in-progress_22012024.pdf).

### EU Official Journal Publication of UN Regulation on Real-Driving Emissions

On 12 January 2024, UN Regulation No 168 was published in the Official Journal of the European Union. This relates to the uniform provisions concerning the approval of light duty passenger and commercial vehicles with regards to real driving emissions (RDE) [2024/211].

The Regulation aims at providing a worldwide harmonized method to determine the levels of Real Driving Emissions (RDE) of gaseous compounds and particles from light-duty vehicles.

It applies to the type approval of vehicles of categories M1 with a reference mass not exceeding 2 610 kg and vehicles of categories M2 and N1 with a reference mass not exceeding 2 610 kg and a technical permissible maximum laden mass not exceeding 3 500 kg with regard to their Real Driving Emissions.

At the manufacturer's request, type approval granted under this Regulation may be extended from vehicles mentioned above to vehicles of categories M1 with a reference mass not exceeding 2 840 kg and vehicles of categories M2 and N1 with a reference mass not exceeding 2 840 kg and a technical permissible maximum laden mass not exceeding 3 500 kg and which meet the conditions laid down in this Regulation.

The full text is available to read at [eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L\\_202400211](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202400211).

### Provisional Agreement on Heavy-Duty Vehicle CO<sub>2</sub> Emissions

On 18 January 2024, negotiators from the European Council and European Parliament reached a provisional political agreement on CO<sub>2</sub> emission standards for heavy-duty vehicles (HDVs). The aim is to further reduce CO<sub>2</sub> emissions in the road transport sector and to introduce new targets for 2030, 2035 and 2040. The new rules will contribute to fulfilling the EU's 2030 climate ambitions and reaching climate neutrality by 2050.

The proposal also aims to encourage an increasing share of zero-emission vehicles (ZEVs) in the EU-wide HDV fleet, while ensuring that 'innovation in the sector and its competitiveness are preserved and enhanced.'

The co-legislators agreed to expand the scope of the regulation to make almost all new heavy-duty vehicles with certified CO<sub>2</sub> emissions – including smaller trucks, urban buses, coaches and trailers – subject to emission reduction targets. The provisional agreement also extends the scope of the regulation to vocational vehicles such as garbage trucks or concrete mixers at a later stage (2035). In addition, the Commission will analyse the possibility of including smaller lorries (under 5t) in the scope.

In line with the EU's climate objectives for 2030 and beyond, the Council and Parliament maintained the targets set by the Commission in its proposal for 2030 (45%), 2035 (65%), and 2040 (90%), in addition to the 2025 reduction target of 15% which was already provided for in the current regulation. These targets will apply to heavy trucks over 7.5t and coaches.

The proposed amendment introduces a 100% zero-emission target for urban buses by 2035, while setting an intermediate target of 90% for this category by 2030. The co-legislators agreed to exempt inter-urban buses from this target and place this type of HDVs under the general targets for coaches.

The effectiveness and impact of the amended regulation on the abovementioned targets will be reviewed by the Commission in 2027. The co-legislators added a series of provisions to make the review clause more comprehensive.

Among other things, the Commission will also have to evaluate the possibility of developing a common methodology for the assessment and reporting of the full lifecycle CO<sub>2</sub> emissions of new HDVs and produce an assessment of the role of a carbon correction factor (CCF) in the transition towards zero-emission mobility in the HDV sector. The role of a methodology for registering HDVs exclusively running on CO<sub>2</sub>-neutral fuels will also be assessed in the review. None of these elements were however

introduced by the co-legislators at this review occasion, despite it being in the position of the European Parliament.

The provisional agreement will now be submitted to the Member States' representatives within the Council (Coreper) and to the Parliament's environment committee for endorsement. If approved, the text will then need to be formally adopted by both institutions, following revision by lawyer-linguists, before it can be published in the EU's Official Journal and enter into force.

The European Commission welcomed the agreement, saying that it sends a clear signal to manufacturers, transport operators and users to steer investments towards innovative zero-emission technologies and boost the rollout of recharging and refuelling infrastructure.

The European Council's press release can be found at [consilium.europa.eu/en/press/press-releases/2024/01/18/hdv-council-and-parliament-reach-a-deal-to-lower-hdv-co2-emissions](https://consilium.europa.eu/en/press/press-releases/2024/01/18/hdv-council-and-parliament-reach-a-deal-to-lower-hdv-co2-emissions). The European Parliament statement is at [europarl.europa.eu/news/en/pressroom/20240118IPR16893/deal-on-new-rules-to-reduce-hdv-co2-emissions](https://europarl.europa.eu/news/en/pressroom/20240118IPR16893/deal-on-new-rules-to-reduce-hdv-co2-emissions).

The European Commission press release is at [ec.europa.eu/commission/presscorner/detail/en/ip\\_24\\_287](https://ec.europa.eu/commission/presscorner/detail/en/ip_24_287).

## European Court of Auditors Report on Car CO<sub>2</sub> Emissions

On 24 January 2024, the European Court of Auditors (ECA) published a report on reducing CO<sub>2</sub> emissions from passenger cars.

The report finds that carbon dioxide emissions from the transport sector have continued to grow. In 2021, they accounted for 23 % of the EU's total greenhouse gas emissions, with passenger cars responsible for more than half.

The ECA says it aims to provide input for the Commission and stakeholders to make the implementation of the Cars CO<sub>2</sub> Regulation more efficient and effective in reducing new passenger car CO<sub>2</sub> emissions and help the EU meet its 2030 and 2050 climate targets.

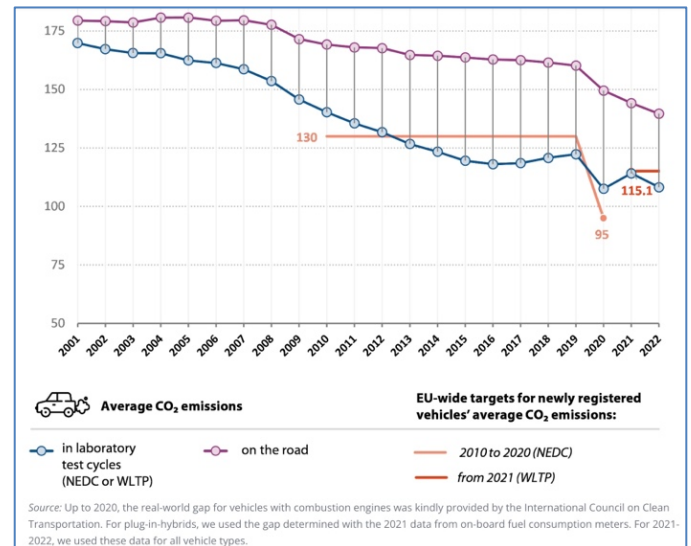
The report points out that while car CO<sub>2</sub> emissions data were collected and verified by the Commission in line with the Regulation, there is insufficient assurance on the accuracy of CO<sub>2</sub> emissions declared by manufacturers on certificates of conformity for new cars at the start of the process.

Firstly, it states that type-approval authorities in two of the three visited Member States did not carry out the required manufacturer checks, and the Commission only has limited information on these checks.

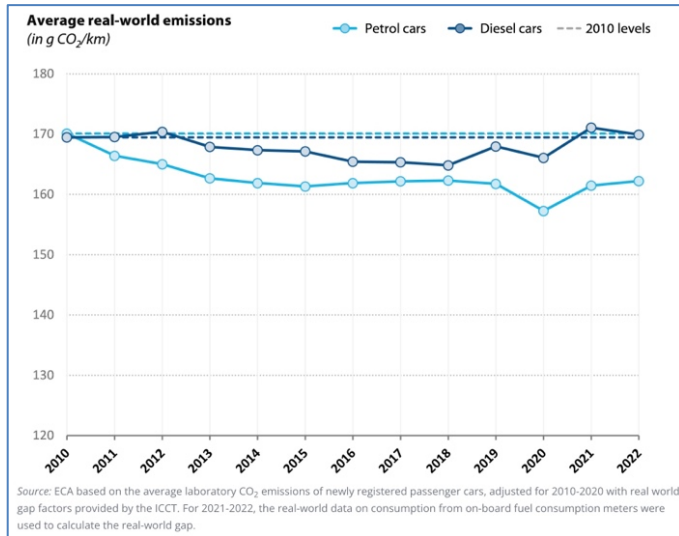
Secondly, according to the report, the Commission did not use the information on CO<sub>2</sub> emissions from pollutant emissions testing to assess the risk of incorrect CO<sub>2</sub> values.

The ECA says it observed delays in Member States' submission of the 2020 data, and detected issues that affected the completeness and accuracy of the data. The 'many exchanges between the European Environment Agency and Member States make the clearing of the data a cumbersome process. Nevertheless, the provisional data were published by the Commission in a timely fashion.' It states that the entire process takes too long, and the final data for 2020 were finally published almost one year after the regulatory deadline.

The report goes on to say that in the 2009-2019 period, the average real-world emissions of new vehicles did not drop, mainly because 'manufacturers focused on reducing emissions in the laboratory rather than on the road'. In 2017, a new laboratory test cycle that better reflected actual driving conditions became compulsory for new type-approved vehicles. This effectively 'closed many loopholes that had been created under the previous test cycle and narrowed the gap between laboratory and real-world emissions'. Since 2022, the Commission has been collecting information on real-world emissions from on-board fuel consumption meters installed in new vehicles. It therefore has information on the extent of the gap between laboratory and real-world emissions for new vehicles registered from 2021 onwards and would be able to monitor if this gap were to increase again.



From 2020, when more stringent emission targets started to apply, the ECA says it could see that the Cars CO<sub>2</sub> Regulation contributed positively to reducing real-world emissions from new vehicles, mainly due to the significant uptake of electric vehicles. At the same time, emissions from new combustion vehicles and plug-in hybrids remain an area of concern.



Finally, the ECA says it considers that the CO<sub>2</sub> emission reduction targets for new passenger cars and the EU's climate ambitions up to 2030 are not sufficiently well aligned. The key challenge for meeting emission reduction targets for 2030 and beyond will be to ensure a sufficient uptake of zero-emission vehicles. In particular, it will be important to address electric vehicle affordability, provide sufficient electric vehicle charging infrastructure, and secure the supply of raw materials to produce batteries.

The report makes three recommendations. Firstly it wants to see increased levels of assurance that vehicle CO<sub>2</sub> emissions do correspond to manufacturer-declared levels on certificates of conformity. It also wants to see better use of electronic tools for collecting and verifying car data, as well as refocusing the CO<sub>2</sub> emission reduction targets to address key elements that affect the CO<sub>2</sub> emissions from new passenger cars.

The full report is available to read at [eca.europa.eu/en/publications/SR-2024-01](https://eca.europa.eu/en/publications/SR-2024-01).

## ASIA-PACIFIC

### India Emission Test Regulations for BS VI Compliant Vehicles

On 5 January 2024, India's Ministry of Road Transport and Highway announced that all bi-fuel vehicles with flex fuel option will have to undergo tests for both gaseous pollutants as well as particulate mass and number while hydrogen-run vehicles will have to undergo tests only for emissions of nitrogen oxides (NOx).

According to the notification, particulate mass and number limits for vehicles with positive ignition engines including hybrids shall apply only to vehicles with direct injection engines.

Vehicles fuelled with biodiesel blends up to 7% will be tested with reference to diesel (B7) and vehicles fuelled with

biodiesel blends above 7% will be tested with respective blends.

The ministry has given manufacturers the option to select either Gasoline (E10) or Gasoline (E20) as fuel for type approval and conformity of production tests.

As per the notification, the conformity of production period for each vehicle model including its variants shall be once a year and at least 50% of vehicle models, rounded to nearest integer value, produced from a particular plant per year shall be selected randomly from a dealer's location or warehouse for tests.

The notification further said that the exhaust gas sampling for the vehicle under test should start at the intimation of the engine start up procedure and that the driving cycle shall be at a maximum speed of 90km/h.

A report on the ministry's notification is at [economictimes.indiatimes.com/industry/auto/auto-news/road-ministry-notifies-emission-test-standards-for-vehicles](https://economictimes.indiatimes.com/industry/auto/auto-news/road-ministry-notifies-emission-test-standards-for-vehicles).

### Removal of Electric Vehicle Incentives in New Zealand

On 14 December 2023, the recently elected New Zealand government passed legislation repealing the so-called 'Ute Tax' and Clean Car Discount for all vehicles registered after 31 December 2023.

The scheme was announced in June 2021, creating fees for the buyers of newly imported combustion engine vehicles, with that money going towards rebates for electric cars or plug-in hybrids.

On 16 January 2024, the government announced that the exemption from road user charges (RUC) for owners of light electric vehicles (EVs) and plug-in hybrids will end from 1 April.

The Transport Minister says that as electric vehicles have reached 2% of the light vehicle fleet, now is the time to remove the exemption.

The announcements are at [beehive.govt.nz/release/bill-repeal-'ute-tax'-passed](https://beehive.govt.nz/release/bill-repeal-'ute-tax'-passed) and [beehive.govt.nz/release/electric-vehicles-pay-road-user-charges](https://beehive.govt.nz/release/electric-vehicles-pay-road-user-charges).

## UNITED NATIONS

### New UN Regulation for Electric Van Batteries

On 11 January 2024, the UNECE's Working Party on Pollution and Energy (GRPE) agreed on the conditions required for batteries fitted to electric vans. The proposal will now be submitted to the UNECE-hosted World Forum for Harmonization of Vehicle Regulations (WP.29) for adoption in June 2024.



It builds on the adoption of the United Nations General Technical Regulation No. 22 providing minimum performance requirements for the battery durability of electrified light-duty vehicles by the World Forum in March 2022.

The proposal sets out two targets for batteries fitted to electric vans. According to the first target, they will be required to last at least five years or 100 000 kilometres, without losing more than 25% of their initial capacity. According to the second target, they will need to last for eight years or 160 000 kilometres, with the maximum battery capacity loss of up to 35%.

Work to develop a similar regulatory requirement for heavy duty vehicles is ongoing at UNECE and is expected to be submitted for consideration by the World Forum in the second half of 2024.

The announcement of the agreement is at [unece.org/circulareconomy/press/draft-un-legislation-electric-vehicle-battery](https://unece.org/circulareconomy/press/draft-un-legislation-electric-vehicle-battery).

## GENERAL

### Reaction to Provisional Agreement on HDV CO<sub>2</sub> Emission Standards

Following the provisional trilogue agreement on heavy-duty vehicle CO<sub>2</sub> emission standards, impacted trade industries reacted to the outcome.

The European Automobile Manufacturers' Association (ACEA) says that although it fully supports an ambitious decarbonisation agenda, the agreed implementation timeline remains extremely challenging in the absence of vital enabling conditions.

The association states that to achieve targets by 2030, more than 400 000 battery-electric and hydrogen-powered vehicles will have to be on the road, and at least one-third of all new registrations must be zero-emission models. According to ACEA, Europe needs at least 50 000 suitable charging stations (the majority being Megawatt Charging Systems) and at least 700 hydrogen refilling stations to make the equation work.

It adds that it is encouraged by the agreement for an earlier comprehensive review date (2027) than initially proposed by the Commission and to continue zero and low-emission vehicle (ZLEV) incentives until 2029. ACEA says it will continue to closely monitor the uptake of crucial enabling conditions to ensure targets are met, and calls on the European Commission and Member States to equally commit to monitoring progress to ensure expected shortcomings are addressed early to jointly deliver on the shared decarbonisation goal.

CLEPA, the European Association of Automotive Suppliers, says that while the political agreement positively includes electrified trailers and hydrogen engines, it falls short of embracing carbon neutral fuels. It goes on to say that the

review and assessment of the regulation will be essential to ensure the feasibility of the interim and longer-term targets which are the most ambitious targets to date and will be extremely challenging to achieve.

Associations representing the fuel industry express their disappointment in the outcome of the discussions.

FuelsEurope says that the trilogue has failed to take on board the Parliament proposal on CO<sub>2</sub>-Neutral Fuels (CNF). It says it trusts that the EU Institutions will recognise the benefits of a complementary route to electrification for the decarbonisation of the HDV sector. It adds that a delay in investments for CO<sub>2</sub>-Neutral Fuels is not only compromising the possibility to decarbonise new vehicles and existing fleets but is also putting at risk the synergies needed for an accelerated scale-up of renewable fuels for aviation and maritime, as per the EU targets.

In its response, the eFuel Alliance describes the decision not to include the use of CO<sub>2</sub>-neutral fuels in the Regulation as "incomprehensible, but also contrary to all economic reason." The alliance also states that there is an urgent need for several technology paths to ensure the operability of the logistics sector. It questions the financing of the transition to electric vehicles, as well as pointing out the need for significant increases in charging and fuelling infrastructure.

The ACEA press release is at [acea.auto/press-release/trucks-and-buses-eu-agrees-on-most-ambitious-co2-reduction-targets-globally/](https://acea.auto/press-release/trucks-and-buses-eu-agrees-on-most-ambitious-co2-reduction-targets-globally/).

CLEPA's statement can be found at [clepa.eu/mediaroom/substantial-additional-investments-will-be-needed-to-reach-ambitious-co2-standards-for-trucks/](https://clepa.eu/mediaroom/substantial-additional-investments-will-be-needed-to-reach-ambitious-co2-standards-for-trucks/).

The FuelsEurope release is available to read at [fuelseurope.eu/publications/publications/a-missed-opportunity-postponing-the-decision-on-cnff-will-delay-investment](https://fuelseurope.eu/publications/publications/a-missed-opportunity-postponing-the-decision-on-cnff-will-delay-investment).

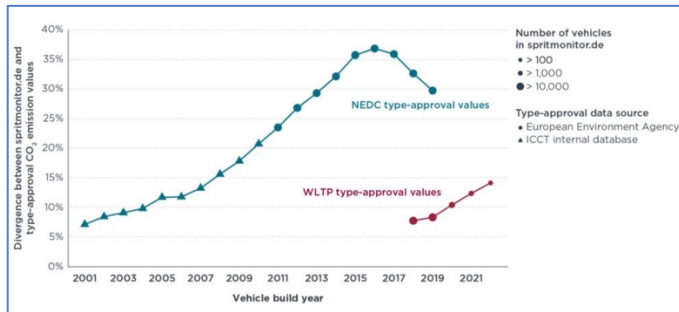
The response of the eFuel Alliance is at [efuelalliance.eu/fileadmin/Downloads/Pressemitteilungen\\_2024/20240118\\_PM\\_HDV\\_EN\\_fin.pdf](https://efuelalliance.eu/fileadmin/Downloads/Pressemitteilungen_2024/20240118_PM_HDV_EN_fin.pdf).

### ICCT Analysis of Real-World CO<sub>2</sub> Emissions

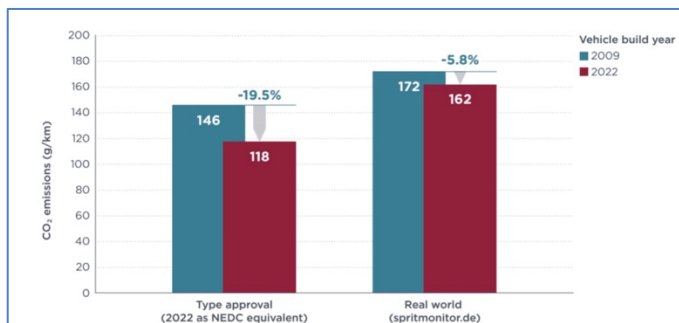
On 30 January 2024, the International Council on Clean Transportation (ICCT) published a white paper investigating how the gap, or divergence, between official and real-world data on CO<sub>2</sub> emissions from passenger cars in the EU has developed since introducing a new type-approval test procedure, the Worldwide harmonized Light vehicles Test Procedure (WLTP).

It says the results indicate that there is a growing divergence between real-world and WLTP CO<sub>2</sub> emissions data for internal combustion engine cars and hybrid cars, as observed for New European Driving Cycle (NEDC) type-approved vehicles in the past. ICCT's analysis shows a divergence of 7.7% for WLTP in 2018 compared to 32.7% for NEDC. However, the gap between real-world and official CO<sub>2</sub> emissions increased by over 80% in the 5 years since the introduction of the WLTP, reaching 14.1% in 2022.

The NGO says this growing gap diminishes the effectiveness of the European Union's CO<sub>2</sub> standards in reducing tailpipe CO<sub>2</sub> emissions from cars and vans. ICCT's explanation for this is that it is because CO<sub>2</sub> reduction goals are implemented by setting lower targets for official CO<sub>2</sub> emissions. The growing gap between official and real-world emission values, however, leads to a lower reduction in real-world CO<sub>2</sub> emissions than intended by the regulators.



The analysis is based on official CO<sub>2</sub> emission data reported by the European Environment Agency (EEA) combined with real-world fuel-consumption information from more than 160 000 combustion engine and conventional hybrid cars reported by consumers on the spritmonitor.de platform.



**Figure 2.** Reduction of internal combustion engine and hybrid car type-approval and real-world CO<sub>2</sub> emissions since the adoption of CO<sub>2</sub> standards in the EU in 2009 and 2022. WLTP CO<sub>2</sub> emissions in 2022 were converted to NEDC-equivalent values using a conversion factor of 1.21.

ICCT goes on to make recommendations to 'prevent the gap from growing and mitigate excess CO<sub>2</sub> emissions.' It wants the European Commission to develop a mechanism to prevent further growth of the gap, and advocates the use of on-board fuel and energy consumption monitoring (OBFCM) devices, saying that the availability of OBFCM real-world consumption data would support applying the correction mechanism starting in 2027. The real-world fuel consumption estimates could be displayed on vehicle efficiency labels for consumers, with anonymised OBFCM data being made publicly available. Finally, ICCT says OBFCM could be made mandatory for electric vehicles to ensure the availability of real-world energy consumption data.

The ICCT white paper can be downloaded from [theicct.org/publication/real-world-co2-emission-values-vehicles-europe-jan24/](https://theicct.org/publication/real-world-co2-emission-values-vehicles-europe-jan24/).

## IEA Report on Role of E-fuels in Decarbonising Transport

In December 2024, the International Energy Agency (IEA) published a report on the role of e-fuels in decarbonising transport. The report presents a techno-economic assessment of a family of emerging e-fuel technologies. It assesses the implications in terms of needed cost reductions, resources and infrastructure investments of an assumed ambitious goal of achieving a 10% share of e-fuels in aviation and shipping by 2030.

It states that rapid deployment of low-emission fuels during this decade will be crucial to accelerate the decarbonisation of the transport sector. IEA points out that significant electrification opportunities are available for the road transport sector, while the aviation and marine sectors continue to be more reliant on fuel-based solutions for their decarbonisation.

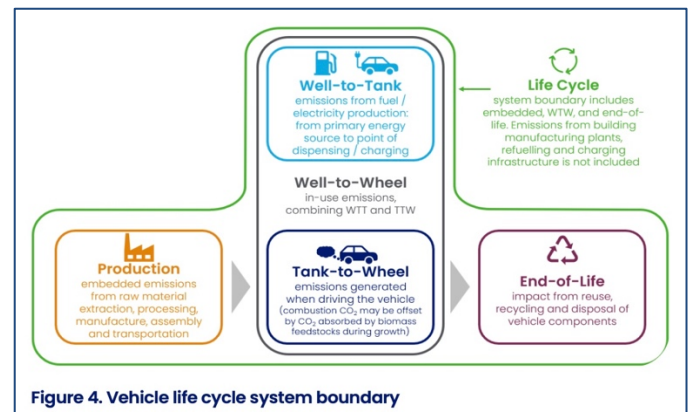
The report goes on to say that fuels obtained from electrolytic hydrogen, or e-fuels, could be a viable pathway and scale up quickly by 2030, underpinned by a massive expansion of cheaper renewable electricity and anticipated cost reductions of electrolyzers. Low-emission e-fuels can add to the diversification of decarbonisation options that are available for aviation and shipping and there exists a big potential synergy with biofuels production, especially in the form of biogenic CO<sub>2</sub> utilisation.

IEA concludes that governments need to take bolder action to stimulate demand for low emission e-fuels.

The report can be downloaded from [iea.org/reports/the-role-of-e-fuels-in-decarbonising-transport](https://iea.org/reports/the-role-of-e-fuels-in-decarbonising-transport).

## Zemo Report on Role of Renewable Fuels in meeting Net Zero

On 17 January 2024, the Zemo Partnership published a vehicle life cycle greenhouse gas (GHG) emissions study to show the role of renewable fuels in meeting net zero.

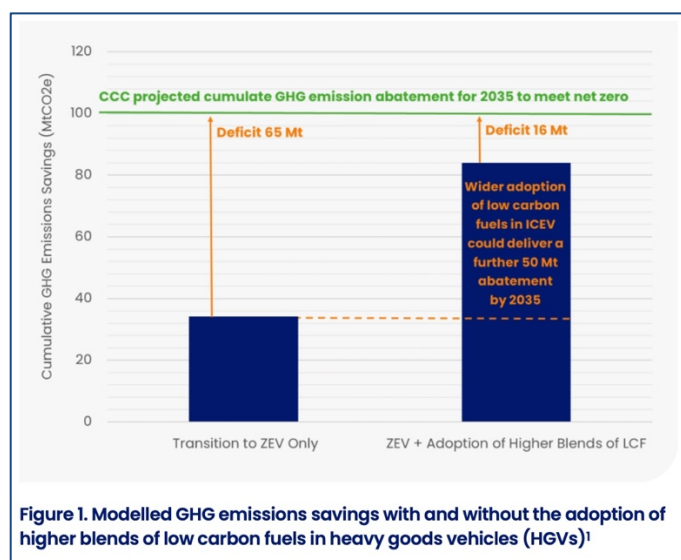


**Figure 4.** Vehicle life cycle system boundary

Zemo's analysis shows that in all vehicle segments modelled, renewable fuels offer significant GHG emissions

savings when compared with conventional, predominantly fossil-content fuels. According to the report, some renewable fuels applications show greater life cycle GHG emissions savings than current battery electric vehicles using grid electricity, though 'rapid decarbonisation of UK power supplies will continue to shift the balance in favour of electrification over time.'

The study authors recommend that transport policy and legislation should be more directly informed by vehicle life cycle GHG emissions data, and not focused solely on mitigating tailpipe emissions. They add that a one-size-fits-all approach to road vehicle applications is unlikely to be the optimal solution to road transport decarbonisation, at least in the short to medium term.



Zemo also says that organisations developing their fleet decarbonisation strategies should also consider vehicle life cycle GHG emissions, as in some circumstances, 'renewable fuels can achieve greater GHG emissions savings for the available budget than battery electric vehicles.'

The report's message to operators of electric vehicles is that they should also consider the size and capacity of the batteries used in their vehicles and optimise these depending on the use case. It concludes that larger, heavier batteries offer improved vehicle range, but emit more GHG emissions during production, increase vehicle consumption and may also reduce payload capacity.

The report, and a link to an upcoming webinar, are at [zemo.org.uk/news-events/news-new-study-shows-significant-greenhouse-gas-savings-can-be-made-by-switching-4603.htm](https://zemo.org.uk/news-events/news-new-study-shows-significant-greenhouse-gas-savings-can-be-made-by-switching-4603.htm).

## Green NCAP Category Winners for 2023

On 18 January 2024, Green NCAP announced its Category Winners of 2023 'so consumers can make an environmentally conscious choice in the segment that best suits their personal needs.'

In achieving five-star ratings, all Green NCAP's top performers are electric. However, in awarding Category Winners for 2023, Green NCAP has included categories for Diesel and Petrol to recognise carmakers that are 'committed to introducing cleaner and more efficient engine designs.' The definition of the Category Winners is not based on Life Cycle Assessment (LCA) but on the measurement results of a vehicle's tailpipe pollutant emissions, the fuel or energy consumption it needs to drive, and the sum of direct greenhouse gas output and the emissions related to the production and supply of the fuel/energy.

Commenting that "the new Euro 7 regulation will not lead to the huge step forward in emissions control as originally foreseen", Green NCAP says the "responsibility for cleaner air might just lie more on the shoulders of industry rather than on regulators."

Full details can be found at

[greenncap.com/press-releases/green-ncap-announces-category-winners-for-2023](https://greenncap.com/press-releases/green-ncap-announces-category-winners-for-2023).

## Health Effects Institute Report on Mobile Monitoring of Air Pollution

In January 2024, the Health Effects Institute (HEI) published a report analysing scalable multipollutant exposure assessment using routine mobile monitoring platforms.

Researchers at the University of California, Berkeley evaluated the use of mobile monitoring for several air pollution mapping and exposure assessment applications. The team compared measurements collected through mobile monitoring with measurements collected at fixed-site locations and used the mobile monitoring data to develop maps of estimated potential exposure. They evaluated and compared such data and approaches in Oakland, California, and Bangalore, India. HEI concluded that in both locations, they produced relatively reproducible maps of traffic-related air pollution with data from relatively few repeated drive passes.

The study is available to download from

[healtheffects.org/publication/scalable-multipollutant-exposure-assessment-using-routine-mobile-monitoring-platforms](https://healtheffects.org/publication/scalable-multipollutant-exposure-assessment-using-routine-mobile-monitoring-platforms).

## RESEARCH SUMMARY

### Effects of Emissions and Pollution

Acute and continuous exposure of airborne fine particulate matter (PM<sub>2.5</sub>): diverse outer blood-retinal barrier damages and disease susceptibilities, Yuzhou Gu, et al.; *Particle and Fibre Toxicology* (2023), Vol. 20, 50, doi: [10.1186/s12989-023-00558-2](https://doi.org/10.1186/s12989-023-00558-2).

Nanoparticle emissions from the transport sector: health and policy impacts – the nPETS concept, Ulf Olofsson, et al.; *Transportation Research Procedia* (2023), Vol. 72, pp. 248-255, doi: [10.1016/j.trpro.2023.11.401](https://doi.org/10.1016/j.trpro.2023.11.401).

Historical and future health burden attributable to PM<sub>2.5</sub> exposure in China, Yang Bai, et al.; *Atmospheric Environment* (in press), doi: [10.1016/j.atmosenv.2024.120363](https://doi.org/10.1016/j.atmosenv.2024.120363).

Mortality burden attributable to exceptional PM<sub>2.5</sub> air pollution events in Australian cities: A health impact assessment, Lucas Hertzog, et al.; *Heliyon* (January 2024), Vol. 10, Issue 2, e24532, [doi: 10.1016/j.heliyon.2024.e24532](https://doi.org/10.1016/j.heliyon.2024.e24532).

## Air Quality, Sources and Exposure

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## Transport, Climate Change and Emissions

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## FORTHCOMING CONFERENCES

### International Engine Congress

27-28 February 2024, Baden-Baden, Germany

[atlive.de/en/events/international-engine-congress/information/information-for-speakers/call-for-papers](https://atlive.de/en/events/international-engine-congress/information/information-for-speakers/call-for-papers)

### On-Board Diagnostics Symposium - Europe

12-14 March 2024, Amsterdam, Netherlands

[sae.org/attend/obd-europe/registration](https://sae.org/attend/obd-europe/registration)

### VERT Forum

22 March 2024, Dübendorf, Switzerland

[vert-dpf.eu/j3/index.php/start-page/events](https://vert-dpf.eu/j3/index.php/start-page/events)

### 10<sup>th</sup> AVL High Power Systems Conference

17-18 April 2024, Graz, Austria

[avl.com/en/events/avls-10th-high-power-systems-conference?sfmc\\_id=120623423](https://avl.com/en/events/avls-10th-high-power-systems-conference?sfmc_id=120623423)

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

24-26 April 2024, Vienna, Austria

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

### SIA High Performance Hydrogen Internal Combustion Engine

16 May 2024, Orléans, France

[sia.fr/evenements/346-high-performance-hydrogen-internal-combustion-engine](https://sia.fr/evenements/346-high-performance-hydrogen-internal-combustion-engine)

### 27<sup>th</sup> ETH Nanoparticles Conference

10-14 June 2024, Zürich, Switzerland

[npc24.scg.ch/?idU=4](https://npc24.scg.ch/?idU=4)

### Fuel Science: From Production to Propulsion

11-13 June 2024, Aachen, Germany

[tme.rwth-aachen.de/cms/TME/Der-Lehrstuhl/Aktuelle-Veranstaltungen/~pmdn/12-FSC-Konferenz-2024/?lidx=1](https://tme.rwth-aachen.de/cms/TME/Der-Lehrstuhl/Aktuelle-Veranstaltungen/~pmdn/12-FSC-Konferenz-2024/?lidx=1)

**Deadline for abstracts 29 February 2024**

### SIA Powertrain International Conference

19-20 June 2024, Lille, France

[event.fourwaves.com/79651605-96c9-454f-9129-fe5986450f40/pages](https://event.fourwaves.com/79651605-96c9-454f-9129-fe5986450f40/pages)

### CLEPA Materials Regulations and Sustainability Event

27-28 June 2024, Frankfurt, Germany

[clepa.eu/events/clepa-materials-regulations-and-sustainability-event-2024](https://clepa.eu/events/clepa-materials-regulations-and-sustainability-event-2024)

### Stuttgart International Symposium on Automotive and Engine Technology

2-3 July 2024, Stuttgart, Germany

[fkfs-veranstaltungen.de/index.php?id=100](https://fkfs-veranstaltungen.de/index.php?id=100)

### New Materials for future Mobility (NeMMo)

3-4 July 2024, Nantes, France

[sia.fr/evenements/?year=2024](https://sia.fr/evenements/?year=2024)

### International Congress on Catalysis

14-19 July 2024, Lyon, France

<https://www.icc-lyon2024.fr>

### Thermo- and Fluid Dynamics Processes for Clean Propulsion Powerplants

10-13 September 2024, Valencia, Spain

[cmt.upv.es/#/thiesel2024](https://cmt.upv.es/#/thiesel2024)

### Rostock Large Engine Symposium

12-13 September 2024

[rgmt.de](https://rgmt.de)

## Emissions Analytics Non-Road Powertrains and Fuels

18-19 September 2024, Munich, Germany

[conferences.emissionsanalytics.com/nonroad-eu](https://conferences.emissionsanalytics.com/nonroad-eu)

**Deadline for abstracts 5 April 2024**

## Aachen Colloquium Sustainable Mobility

7-9 October 2024, Aachen, Germany

[aachener-kolloquium.de/en](https://aachener-kolloquium.de/en)

**Deadline for abstracts 15 February 2024**

## POLIS Conference 2024

27-28 November 2024, Karlsruhe, Germany

[polisnetwork.eu/2024-annual-polis-conference](https://polisnetwork.eu/2024-annual-polis-conference)