7 October 2025

ePURE reply to the call for evidence Revision of the CO2 emission standards for cars and vans

ePURE – the European Renewable Ethanol Association represents bioethanol producers from crops, wastes and residues committed to sustainable transition towards zero-emission mobility. Our 20 producing members operate about 50 state-of-the-art biorefineries across the EU and the UK, transforming primary agricultural biomass into renewable ethanol, high-protein animal feed, food, and other valuable co-products including biogenic CO_2. The EU bioethanol industry contributes every day to EU's economic well-being, climate objectives, foster energy independence, mobility transition and food security by reducing dependence to proteins imports and offering much-needed additional outlet to EU farmers hence enhancing the resilience of the agri-food systems. This **locally produced renewable energy** must continue to play a role in defossilizing our economy as several non-EU countries have been doing notably Brazil, the USA but also India inter alia.

In the light of the CO2 emission performance standards for new passenger cars and light commercial vehicles regulation, renewable ethanol - which is a recognised and certified sustainable renewable fuel alternative to oil - must be considered as a CO_2 neutral emission fuel which has its place to accelerate greenhouse gas emissions (GHG) reduction in transport. Renewable ethanol is **produced in the EU** and fosters economic and social development, particularly in rural areas. Also important, EU renewable ethanol is economically viable, affordable, already available at large scale, and can be used in existing cars and fleets, be it internal combustion engine or hybrids. By offering an alternative renewable fuel for existing ICEs and hybrids, bioethanol allows all EU citizens, including those with less purchasing power, to be actively part of the climate strategy while ensuring their mobility by offering them choices.

We wish to offer the following insights and recommendations, structured around six identified priorities.

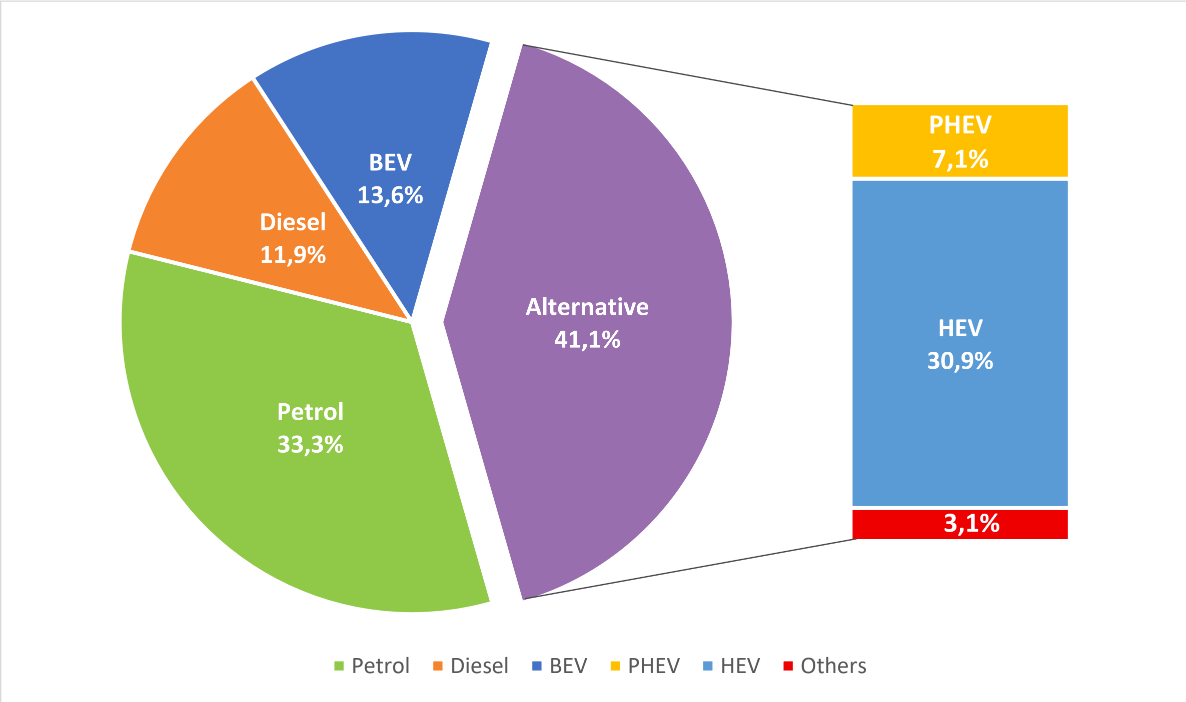
1. The CO_2 for cars and vans review should respect technology neutrality and recognise all alternatives based on GHG emission reduction

To speed up defossilization of road transport and reduce our dependency on imported oil, the review of CO_2 standards for cars and vans must uphold the principle of **technology neutrality**, recognizing all proven pathways for greenhouse gas reduction. A truly effective policy framework should empower both vehicle-side innovations and fuel-based solutions to deliver climate benefits in tandem and offer citizens with choices of best performing options. Mario Draghi's report on EU competitiveness highlights the automotive sector's failure to adhere to this foundational principle. As we chart a path toward a climate-neutral road transport system, it is time for the Commission to reconsider the outdated assumption (based on a biased methodology measuring tailpipe emissions) that only e-mobility can deliver the necessary decarbonisation ambition in a **consumer-friendly manner**. Besides, automotive manufacturers and suppliers call for greater flexibility[1] and a market-driven strategy which can only occur with a technology neutral approach.

We therefore call for a revision of vehicle CO_2 standards that gives space to all sustainable and renewable fuels— not only e-fuels but including also Renewable Energy Directive (RED) compliant biofuels — and measure vehicles' emissions on a **full life cycle analysis taking into account the production of the vehicle and the energy it runs on**. This fair and comprehensive methodology is the only way to create the conditions for a **genuine decarbonization and/or defossilization** policy offering the largest options to better suit consumers' needs and means. A socially inclusive transition to climate neutrality should empower **all European citizens** from **all EU countries**, not just those who can afford new technologies in a few countries with heavy financial support.

[1] Auto makers and suppliers President's issue letter to EU to align green mobility strategy with changing world – ACEA, August 2025.

New car registrations by fuel type in 2025



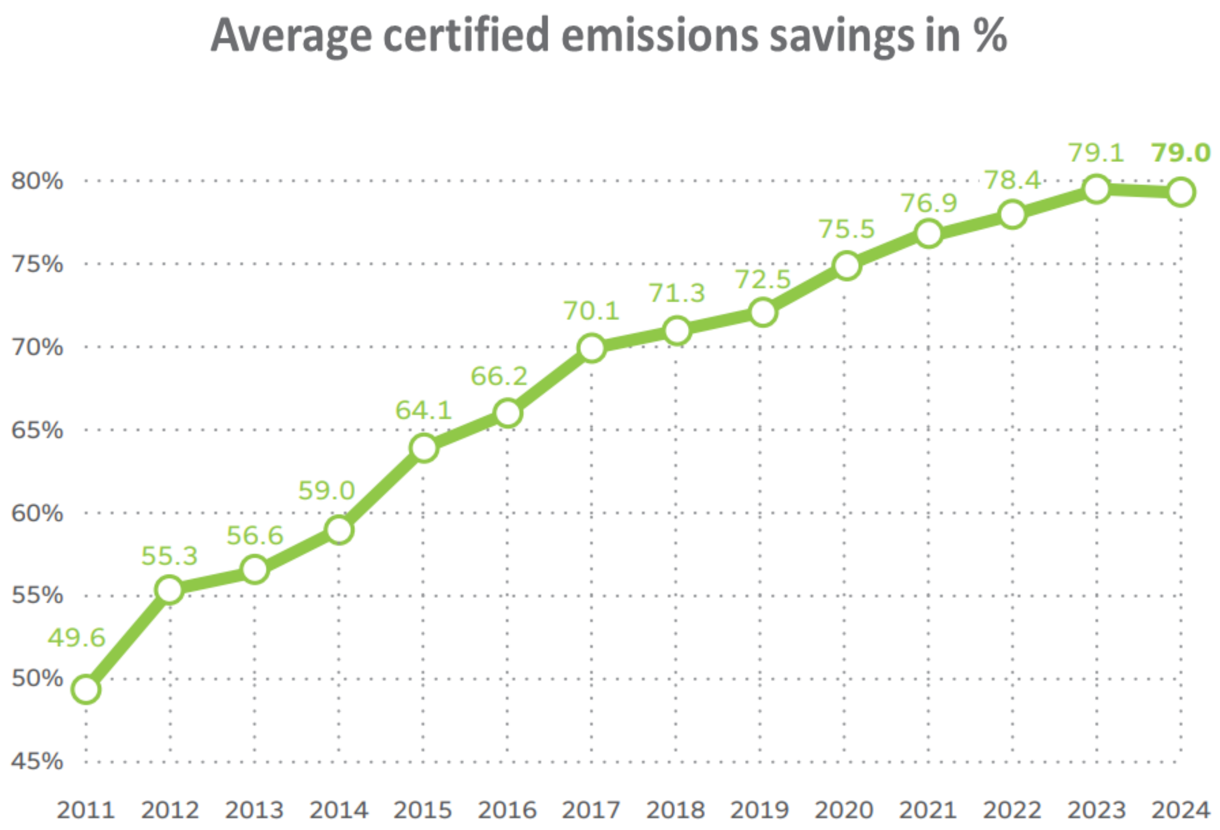
Source: ACEA, July 2025

Despite growing battery-electric vehicle (BEV) adoption, the majority of European consumers still purchase ICEs and hybrid vehicles. Given the growing lifespan of these vehicles, de-fossilising existing cars with CO_2-neutral liquid-fuels is crucial to achieve the EU climate goals and reduce our reliance on imported fossil oil. In the absence of low carbon liquid biofuels, these cars will continue to run on fossil fuels. EU Bioethanol's GHG emissions are measured on a full life cycle basis and already delivers on average more than 79% GHG reduction compared to fossil oil[2]. Innovations in production are already increasing the GHG-savings score of RED-compliant renewable ethanol, in some cases to more than 90% compared to fossil fuel. A wider adoption of higher ethanol blends, such as E20 and E85, could immediately lower road transport emissions and reduce costly fossil oil imports across the EU. A socially inclusive transition to carbon neutrality should empower **all European citizens**, not just those who can afford new technologies, and all countries, not just those that can afford new electric charging infrastructure. The Commission should preserve its ambitious GHG reduction targets but work on how they can concretely be achieved.

2. The use of sustainable renewable fuel complements the electrification of road transport

Citizens need choices to be an active part of the decarbonisation strategy. Both electric vehicles (BEV)and CO_2-neutral fuel vehicles (CNFVs) including those powered exclusively by sustainable, RED-compliant biofuels can play a pivotal role in reducing transport emissions. Creating fair market conditions between these technologies is crucial. While recent legislation has commendably raised climate ambition, more must be done on the ground to enable these changes. In an increasingly diverse propulsion landscape, all technologies that can demonstrably reduce GHG emissions should be recognised—including Plug-in Hybrid Electric Vehicles (PHEVs) and Range-Extender Electric Vehicles (REEVs).

[2] Production and use of renewable ethanol from ePURE members and other EU producers reduced greenhouse-gas emissions by an average of 79% compared to fossil fuels in 2024, according to the audited and certified producer data. ePURE press release, September 2025, EU renewable ethanol sets new record for greenhouse-gas reduction, confirming its importance for transport de-fossilisation



Source: ePURE, September 2025

The EU bioethanol industry has set out that production of sustainable fossil free fuels can be ramped up. A needed enabler for this to occur is the clear recognition in regulation that ICE, HEV and PHEV vehicles exclusively using sustainable renewable fuels can be very low in GHG footprint or even fully climate neutral. Significant volumes can be obtained from crop-based feedstocks and from renewable energy sourced in EU. Academic research consistently shows that the GHG reduction potential of this fuel-vehicle combination can match that of electric vehicles, especially when considering the entire lifecycle. Since the transition towards a fully electric mobility will be progressive, sustainable biofuels are a reliable, existing, economically viable and socially fair solution to reduce emissions of the transport sector in the short, medium and long term. They also allow continued use of Europe's existing vehicle fleet and infrastructure, avoiding costly and disruptive transitions.

3. Defining CO_2 neutral fuels in a robust and comprehensive framework

A future definition of CO_2-neutral fuels (CNFs) must inclusively reflect the full spectrum of sustainable renewable fuels. The European Commission should develop a comprehensive assessment framework that integrates the role of renewable fuels in CO_2-neutral fuel vehicles (CNFVs) alongside EVs. As it stands, the Commission's proposal defines CO_2-neutral fuels exclusively as e-fuels and sets a requirement for 100% GHG savings based on a well-to-wheel (WtW) methodology, including emissions from both fuel production and transport. This target is impossible to meet with current technologies and market conditions.

At the same time, the current CO_2 emissions standards for light-duty and heavy-duty vehicles are based on a tailpipe-only emissions approach (also known as Tank-to-Wheel, TtW), measuring only the emissions from the use phase of the vehicle. This leads to arbitrary and major regulatory inconsistency: while CO_2-neutral fuels are assessed on a strict WtW basis, other technologies (i.e. battery-electric vehicles) are assessed by their tailpipe emissions only, which do not apply to EVs. Thus, all the emissions stemming from the production of the car and its battery as well as during electricity generation, are completely ignored. This clear discrimination of all other options versus EVs constitutes a real hurdle to reducing road transport emissions and the EU's reliance on imported fossil oil.

The EU Green Deal targets "net-zero" GHG emissions, which explicitly includes both emissions and removals (e.g. through biogenic CO_2 uptake or industrial carbon capture). Not including renewable bioethanol in the definition of CO_2-neutral fuel would clearly be an additional inconsistency with this comprehensive EU approach to climate neutrality.

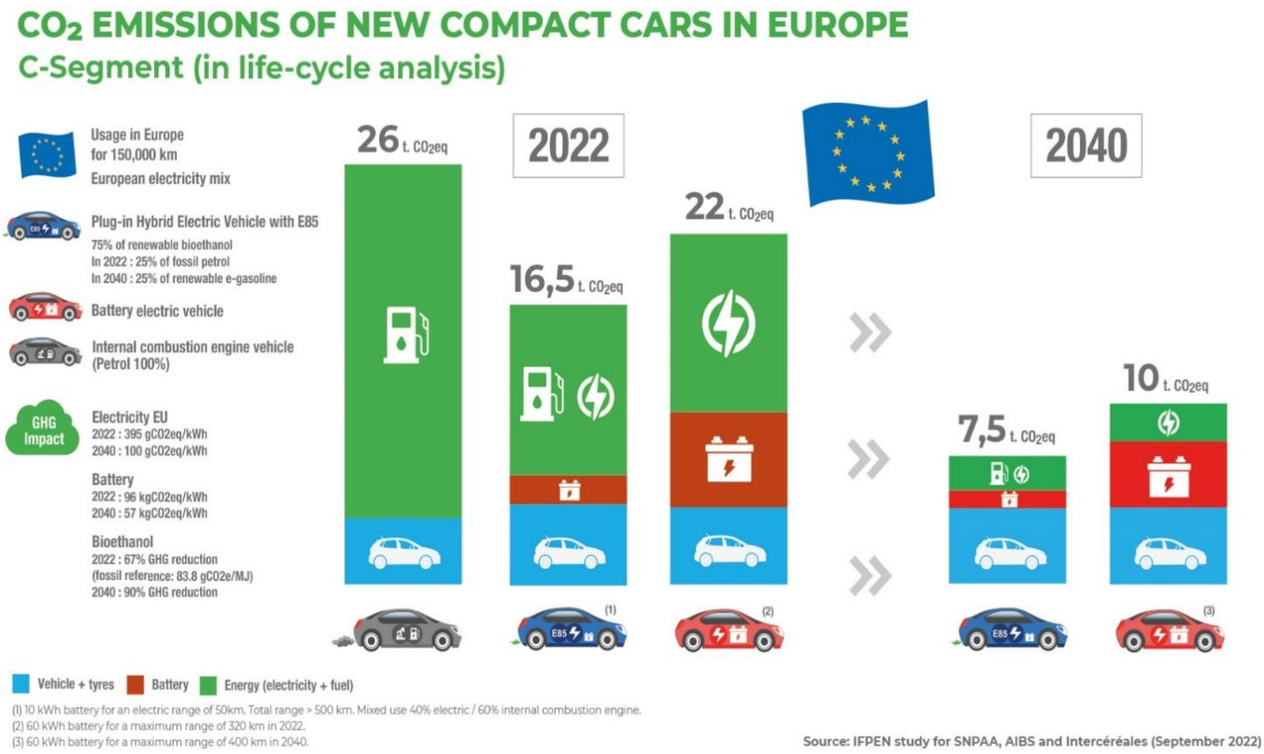
The Working Group on Monitoring Methodologies (WGMM) has established a balanced and practical definition stating that "CO2 neutral fuel" means all fuels defined by the Renewable Energy Directive (EU) 2018/2001, provided that they meet the sustainability criteria of that Directive and associated delegated acts, where the same amount of CO2 from biomass, ambient air or recycled carbon sources is bound in the fuel production as is released during combustion in the use phase. Those fuels shall include renewable and/or synthetic fuels, such as biofuel, biogas, biomass fuel, renewable liquid and gaseous transport fuel of non-biological origin or a recycled carbon fuel.

ePURE proposes an inclusive approach covering all sustainable renewable fuels of biological or synthetic origin that meet the sustainability and minimum GHG emission savings criteria of the Renewable Energy Directive. Reports of the WGMM[3] and the *Tour d'Europe*[4] highlight the feasibility and necessity of this comprehensive approach. While the scope of the current CO_2 emissions regulation may remain unchanged, fuels meeting RED criteria should be treated as CO_2-neutral in the use phase, aligning with both the RED and the EU Emissions Trading System (ETS).

4. Incorporating a Life-Cycle Analysis and a Carbon Correction Factor in the CO_2 emission standards review

Increasing the ambition of vehicle CO_2 standards alone is not enough to reach the climate ambition and unlock the potential of renewable fuels in road transport. What's required is a methodological shift from a tailpipe-emissions only metrics to a comprehensive and science-based assessment that captures the combined climate benefits of energy sources and powertrain technologies. The current approach to emission counting in the CO_2 emissions standards regulation does not address the defossilization potential of RED-compliant sustainable and renewable fuels.

[3] Working Group on Monitoring Methodologies. *Monitoring the use of CO2 neutral fuels in road transport, a cross-sectoral industry assessment*. 2024. URL.
[4] Tour d'Europe. [*title*]. 2025. URL.



Source: IFPEN study for Bioéthanol France, AIBS and Intercéréales, September 2022

Furthermore, the EU strategy of decarbonising road transport must not focus exclusively on EVs and neglect the wide range of additional environmentally sustainable transport options. Science-based calculation shows[5] that EVs, when subjected to life-cycle analysis (LCA), are not zero emission technologies and can emit more than an hybrid car running partly with electricity and E85. BEVs still entail significant embedded emissions from battery production and electricity generation, particularly in regions with carbon-intensive grids. LCA/WtW is a globally accepted, scientifically robust methodology, defined under ISO 14044:2006, which enables fair comparisons between different vehicle technologies. It provides a realistic understanding of GHG emissions across the full life cycle, rather than relying on selective tailpipe-only measurements. For instance, the energy mix used in battery production and the carbon intensity of electricity for recharging play critical roles in the overall footprint of electric vehicles.

Therefore, the upcoming CO_2 standards review must incorporate all technologies demonstrating GHG reductions in LCA. This inclusion necessitates recognition of renewable fuels as defined in RED, provided that they meet its stringent sustainability criteria.

In parallel, the review should introduce a Carbon Correction Factor (CCF) to reflect the share of CO_2-neutral fuels already in circulation. This would adjust vehicle emissions based on the actual use of sustainable fuels in the EU market. Each fuel type would be assigned a specific factor:

- A factor of 1 for 100% fossil fuel use;
- A factor of 0 for 100% CO_2-neutral fuel use;
- Intermediate values to reflect blended fuels.

This mechanism would offer a more accurate and equitable representation of actual emissions from the road transport sector, incentivising the uptake of renewable fuels while supporting a technology-neutral path to climate neutrality. It is worth recalling that a similar corrective approach has already existed in EU legislation: the CO_2 standards Regulation (Regulation (EC) No 443/2009 for light-duty vehicles[6] and Regulation (EU) No 510/2011 for

[5] Evaluation des performances sur véhicule de carburants renouvelables à haute teneur en éthanol, IFPen 2024,
[6] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009R0443

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light commercial vehicles[7]) included a specific CO_2 discount for flex-fuel vehicles (FFVs) until 2015. This discount was based on the availability of E85 infrastructure in a Member State. For example, if more than 30% of filling stations in a country offered E85, each FFV sold there benefited from a 5% CO_2 reduction for the purposes of compliance reporting under the CAFE framework. A comparable correction factor could today be extended to other fuels with a high renewable content, ensuring consistency with past regulatory practice while better reflecting real greenhouse gas performance.

5. Create a Low Emission Vehicles class recognition for vehicles running exclusively on CO_2 neutral fuels

EU legislation should remain coherent and formally recognise and support vehicles that run exclusively on CO_2-neutral fuels as part of the CO_2 emission standard framework. When assessed through a Life Cycle Analysis, there are no truly zero-emission vehicles, including BEVs. Therefore, in order to remain scientifically coherent, a Low Emission Vehicles class should encompass both BEVs and CNFVs, recognising their complementary roles in reducing overall life-cycle emissions. The Commission has already indicated its support for a move in this direction[8]. As the EU aims at gradually reducing emissions from its vehicle stock, policy should actively promote the exclusive use of CO_2-neutral fuels in compatible powertrains. This would also ensure that ICE vehicles, in existing and future vehicle fleet, can also contribute meaningfully to the 100% emission free target in 2035, provided they operate solely on fuels that meet stringent sustainability and GHG reduction criteria under the RED.

6. Ensure EU competitiveness, consumer choice, energy security and reduce crude oil imports

Assessing the real impact on EU competitiveness and sovereignty is essential to the ambition and the success of the CO_2 emission standards regulation. Businesses and consumers must be offered a range of technology options that meet their specific needs and be supported by policies that acknowledge their contribution to the energy transition. Flexibility is especially critical for Original Equipment Manufacturers (OEMs) who must adapt their production chain and vehicle portfolios to customers' demands and the realities of local infrastructure. Supporting a variety of low-carbon solutions ensures operational continuity, cost efficiency, and service reliability during the transition period. Allowing OEMs to deploy diverse technology pathways helps them remain competitive both in the EU and globally, while advancing climate goals in parallel. A narrow focus on electrification risks relocating jobs and added value outside the EU, as increasing numbers of battery electric vehicles, photovoltaic modules, and related technologies are imported from third countries, particularly China.

In contrast, European renewable ethanol production relies on domestically sourced biomass, ensuring that energy value is generated and retained within the EU economy. Growing domestic sourcing of sustainable feedstocks means affordable supply of renewable fuels is readily available, so Europeans would lower their reliance on energy or raw materials imports from third countries to make this transition. Not only renewable ethanol plays a strategic role in enhancing Europe's energy independence by replacing fossil fuels in road transport – since in 2024, 86.5% of the ethanol produced by ePURE members was used as transport fuel – but increasing the share of renewable energy in transport helps reducing GHG emissions, thus improving air quality. Higher biofuel blends reduce immediately over-reliance on fossil fuels and imported crude oil. By increasing the domestic production and use of sustainable ethanol, the EU strengthens the resilience of its energy systems and buffers against global oil market volatility. This localised value chain not only lowers the environmental footprint of transport fuels but also reduces the EU's exposure to external supply shocks, particularly in times of geopolitical uncertainty and crises such as Covid-19 pandemic.

[7] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32011R0510
[8] European Commission. *Regulation (EU) 2023/851 on strengthening the CO_2 emission performance standards for new passenger cars and new light commercial vehicles*. 2023. URL.

Beyond energy independence, EU renewable ethanol production delivers a wide range of additional benefits derived from the use of biomass[9]—including food crops—for non-food applications such as fuels, chemicals, and materials. It enhances a resilient and competitive EU agriculture by allowing farmers to sell crops to multiple markets, thereby increasing flexibility, reducing vulnerability to price fluctuations, and encouraging investments in innovation and sustainable practices. It also contributes to food security by providing protein-rich co-products, ensuring stable crop availability, and offering an emergency food reserve in times of crisis. In addition, renewable ethanol production secures thousands of jobs and stable income across Europe—both within the biofuels industry and throughout the wider agricultural and industrial value chain—while being deeply embedded in regional supply chains that support rural economies and foster Europe's industrial innovation.

Conclusion

We call on the Commission to deliver a review that captures the full spectrum of technological and market realities. The upcoming revision must acknowledge the essential role of CO_2-neutral fuels towards automaker's CO2 reduction targets. The need for a more neutral, flexible and pragmatic EU approach to de-fossilising road transport has never been clearer. Even beyond 2035, sustainable renewable fuels such as ethanol have an important role to play. Therefore, we urge the Commission to:

- Measure Light Duty Vehicles emissions on a full life cycle basis taking into account the production of the car and the energy it uses to genuinely reduce road transport emissions and offer choices to citizens and consumers.
- Recognise the essential contribution of CO_2-neutral fuels meeting strict RED sustainability criteria, such as crop-based ethanol, to reach the 2035 CO_2 reduction targets.
- Introduce a Carbon Correction Factor to reflect the share of CO_2-neutral fuels already in circulation.
- Create a new vehicle category exclusively powered by CO_2-neutral fuels meeting RED sustainability criteria.
- Leverage Europe's domestic feedstock potential will keep value creation in Europe and reinforce energy sovereignty while reducing its reliance on fossil imports.

[9] Nova Institute, study on 'Benefits of Using First-Generation Biomass for Food, Fuels, Chemicals and Derived Materials in Europe', September 2025

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