Contribution to the consultation on the revision of the CO_2 emission standards for cars and vans

The Global Alliance Powerfuels welcomes the opportunity to contribute to the revision of CO_2 emission standards for cars and vans to ensure a clear pathway onwards towards zero-emission mobility. We believe that with the following recommendations, the revision of CO_2 standards for vehicles can not only contribute to a comprehensive regulatory climate, energy and transport framework enabling the EU to achieve the goal of climate neutrality by 2050, but can also set incentives for the market integration of innovative emission-mitigating technologies and renewable energy carriers, such as powerfuels.

The **Global Alliance Powerfuels** was founded in 2018 and is backed by 16 member organisations and an international network of partner institutions. It is coordinated by the Deutsche Energie-Agentur (dena) – the German Energy Agency. The strategic objective of the Alliance is to foster the development of a global market for powerfuels.

In our understanding, the term **powerfuels** denotes not only renewable hydrogen but all gaseous and liquid fuels from power-to-X processes that draw their energy content from renewable electricity. This includes, but is not limited to, synthetic gas (e.g. methane) and synthetic liquid fuels (e.g. methanol, ammonia, and Fischer-Tropsch products).

I. The role of powerfuels in defossilising light-duty road transport

Powerfuels (including hydrogen) complement the direct use of renewable energy and are crucial where direct electrification is not technologically feasible or economical. By offering climate-neutral options to a wide range of applications, powerfuels allow for more far-reaching de-fossilisation of all end-use appliances, across all sectors – thus enabling system-wide emissions reductions.

Despite the recent surge in electric vehicle (EV) sales across EU member states, significant continuous reductions of emissions, including those of passenger cars and vans, are still necessary to achieve the targeted GHG emission reduction of 90 % compared to 1990 levels by 2050 in the transport sector. Powerfuels can complement direct electrification in achieving these targets, either in fuel cell vehicles (FCEVs) or as pure or drop-in gaseous or liquid fuels for internal combustion engine (ICE) cars. As the latter are fully compatible with the existing distribution and storage infrastructure as well as the vehicle technology of ICEs, they can also replace fossil fuels in the currently used vehicles in the short term and thereby accelerate emissions reductions in the vehicle fleet. As energy carriers based on effective sector-coupling technologies, they can smoothen the transition from a fossil-based energy system to a renewable one and provide additional flexibility.

The relatively high investment costs and high production costs remain one of the main challenges of the market development of powerfuels. Sectors and applications currently facing high CO_2 abatement costs and therefore characterised by a comparatively high willingness to pay for effective and innovative emission reduction technol-

ogies can thus contribute significantly to the market ramp-up of these technologies at the early stage of industrial scaling. This is particularly true for the automotive industry, as the current CO_2 performance standards and excess emission premiums, which manufacturers pay if their average specific CO_2 emissions exceed their specific targets, serve as an indirect CO_2 pricing mechanism in the range of approximately € 475-600 per tonne of CO_2, depending on the assumed lifetime mileage[1]. Recognising the contribution renewable fuels such as powerfuels can make to reduce lifetime emissions of cars and vans in the revised CO_2 emission standards could thus provide an important stable investment signal for these technologies.

II. Policy recommendations

In light of the increased ambition of the EU's GHG emission targets for 2030 and the objective of achieving climate neutrality by 2050, which the Global Alliance Powerfuels is committed to, the review of CO_2 standards for cars and vans needs to ensure that these are aligned with reducing emissions in the transport sector by at least 90 % until 2050. The reviewed emission performance standards for 2025 and 2030 as well as those for the period after 2030 ought to effectively induce significant real-world emission reductions while also remaining attainable for manufacturers.

1. The current emission standards only address newly registered cars and vans but do not capture the fleet of existing vehicles. Furthermore, by focusing on technical efficiency and tailpipe emissions, other factors that also determine the emission levels of vehicles, including the CO_2 content of fuels, are not fully accounted for. The Global Alliance Powerfuels therefore advocates for a **more inclusive and integral regulation of CO_2 standards** for cars and vans, e.g. by acknowledging the role of renewable fuels such as powerfuels in reducing well-to-wheel emissions. Whether strengthened CO_2 targets remain attainable will also depend on available fulfilment options – the Global Alliance Powerfuels would support stricter targets for the period of 2030 onwards alongside the introduction of a crediting mechanism for powerfuels[2] (see 3).
2. The focus of the current EU CO_2 emission standards is on official type-approval emissions. However, it is important to **ensure that real-world emissions decrease over time**, which are significantly higher[3], even though the mandatory switch to WLTP values has narrowed the gap between real-world and official figures. Compliance with CO_2 vehicle standards and eligibility for incentives for low-emission performance should therefore gradually shift to being based on real-world emissions, e.g. by monitoring these via on-board fuel consumption meters and setting a maximum deviation of WLTP values from on road CO_2 emissions for individual manufacturers.

[1] OEMs currently pay a premium of € 95/g/km for exceeding their individual fleet targets. The above-mentioned CO_2 price is calculated by dividing this number by an average lifetime mileage of 160,000 –200,000 km and multiplying it by 10^6(to convert grams to tonnes). A lower CO_2 price is obtained when assuming a longer lifetime mileage and vice versa.
[2] Such a crediting mechanism should be introduced as part of the current revision of CO_2 standards, such that this additional fulfilment option would be available to manufacturers for meeting their respective post-2020 emission standards.
[3] This is particularly true for plug-in hybrid electric vehicles (HEVs)

3. The Global Alliance Powerfuels **supports the introduction of a crediting system** that would allow OEMs to voluntarily finance or procure **additional quantities of powerfuels** and **count the corresponding emission reductions against their respective fleet targets**. The powerfuels quantities should be credited to manufacturers' CO_2 targets according to their emission reduction potential[4], and would be brought into the market on top of the volumes suppliers are obligated to provide under the recast of the Renewable Energy Directive (RED II). Such a crediting system could therefore significantly boost demand for powerfuels, thereby providing a long-term secured market for suppliers and incentivising investments in innovative technologies (e.g. linked to the production of green hydrogen and derived products) as well as renewable fuel production facilities.

   The crediting mechanism should remain fully voluntary, implying that no minimum powerfuels/RFNBO quotas should apply for OEMs but that they will be provided with an additional fulfilment option for their respective CO_2 targets and hence additional flexibility. Fulfilment of the sustainability criteria for powerfuels/RFNBOs specified in the RED II and pertinent delegated acts should be a prerequisite for crediting them against the fleet targets. Furthermore, we recommend basing the crediting system on a 'front loading' approach: the proof of sustainability would have to be provided at the time of registration of new vehicles for accumulative emissions throughout their entire life cycle. Such a mechanism can contribute to significantly accelerating emission reductions in road transport, as emission reductions from replacing conventional fuels with powerfuels precede tailpipe emissions, which occur over the entire use phase and would already be accounted for.

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[4] Determined on the basis of the methodology for the assessment of GHG emission reductions of RFNBOs outlined in the outstanding delegated act to Art.28 RED II