eFUEL ALLIANCE – POSITION PAPER

'AMENDMENT OF THE REGULATION SETTING CO2 EMISSION STANDARDS FOR CARS AND VANS'

The eFuel Alliance fully supports the European Commission's assessment that all sectors will have to strengthen their efforts in reducing greenhouse gas (GHG) emissions significantly in order to achieve climate neutrality by 2050. Especially road transport has to play a key role as it accounts for a fifth of today's GHG emissions in the EU. Given the huge potential of promising climate-protection technologies that have not yet been exploited, such as renewable hydrogen and its derivate products, we believe that road transport can make a significant contribution to the defossilisation efforts in Europe.

One instrument to achieve GHG reductions in the transport sector is the revision of the CO_2 emission standards for cars and vans. We are convinced that a balanced mix of strict but achievable CO_2 emission standards and a level-playing field among all emission-reduction technologies will have the most positive impact on our climate. To determine the real contribution to climate protection a technology can make, the carbon footprint of a vehicle must ideally be assessed on the basis of its entire life cycle. A consideration of renewable fuels in the CO_2 emission standards is the first step to a more holistic and nested climate approach in transport.

Especially in light of the Commission's plan to raise the targets of the CO_2 emission standards to -50% in the year 2030 and -100% for 2035, it is even more important to allow a wide range of technologies to contribute to the CO_2 emission standards and consider the carbon footprint along the whole value chain. If renewable fuels are not considered in the CO_2 emission standards, the electric drivetrain is the only solution. This would be a risky strategy for reaching climate targets, and a one-sided policy for satisfying customers. A consideration of renewable fuels is only possible by introduction a voluntary crediting system for renewable fuels, which has been developed on behalf of the German Federal Ministry for Economic Affairs and Energy (BMWi).

RECOMMENDATIONS

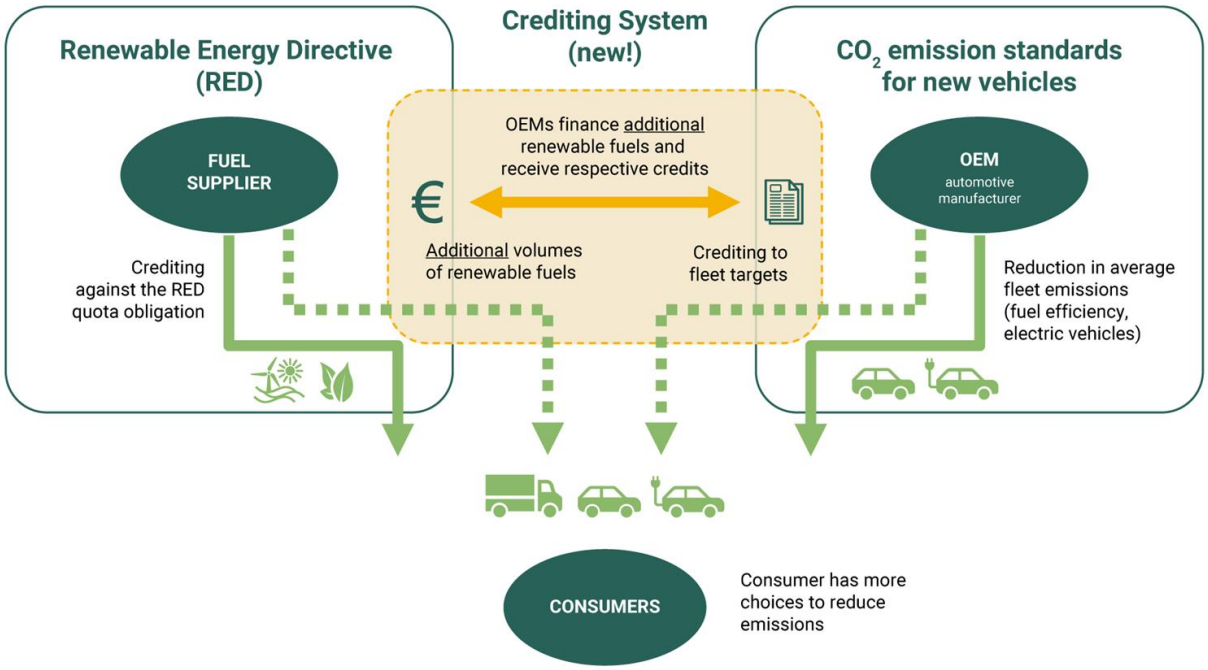
- ***Introduction of a voluntary crediting system for renewable fuels, which***
  - *…offers more climate neutral choices for customers such as hybrid vehicles,*
  - *…leads to more CO_2 reduction in comparison to electric vehicles only,*
  - *…is a first step towards a holistic life cycle assessment,*
  - *…can't undermine effectiveness and efficiency because it is voluntary,*
  - *…considers only additional amounts of renewable fuels,*
  - *…retain responsibilities, limitations, and sustainability criteria of the fuel industry,*
  - *…uses established processes and official authorities to verify fuel amounts,*
  - *…offers more solutions and a safety net for the automotive industry.*

NEED FOR ACTION: IMPLEMENTATION OF A CREDITING SYSTEM FOR RENEWABLE FUELS

Introducing a crediting system for renewable fuels would create a level-playing field among wide-ranging emission reduction technologies that can help to reduce road transport sector emissions effectively and efficiently, while providing an additional and voluntary climate-effective option for car manufacturers to comply with the CO_2 Emission Standards, supporting the uptake of synthetic fuels. The Climate would benefit from climate-neutral synthetic fuels produced from renewable energy

sources that, in contrast to conventional fuels, do not release additional CO_2. Consumers would benefit from a greater portfolio of clean technologies and potentially local benefits for zero-/low-emission labelled cars. This would strengthen the demand-side of eFuels and ensure that additional volumes of synthetic fuels are being sold in the market.

There are already feasible proposals regarding the practical implementation of such a crediting system, in particular the report 'Crediting System for Renewable Fuels in EU Emission Standards for Road Transport'[1] by the consultancy Frontier Economics and the law firm Flick Gocke Schaumburg from May 2020, drafted for the BMWi.



The eFuel Alliance strongly supports such a mechanism and urges the European Parliament and the member states in the European Council to incorporate the crediting system for renewable fuels in the amended Regulation setting CO_2 emission standards for cars and vans (an appropriate amendment is presented below)**.**

WHY THE EU COMMISSION HAS REJECTED THE CREDITING SYSTEM

Although the crediting system of renewable fuels was explained to the EU commission several times in detail, it has rejected the consideration of renewable fuels in its proposal of the revision of the CO_2 standards of new passenger cars and vans published on 14th of July 2021. The Commission argues that such a crediting system would (1) blur responsibilities, (2) undermine the effectiveness and efficiency of the regulation and (3) increase the administrative burden and complexity.

First, the proposed crediting system only considers additional renewable fuel amounts, which are not used to comply with the targets of the fuel industry (Renewable Energy Directive). Therefore, a clear differentiation and definition of responsibilities between both regulations exist. However, if we want holistic solutions to fight climate change, we will need a regulative openness to link different sectors. Sector coupling technologies like eFuels need political bridges between the fuel and vehicle sector. The crediting system is the first logical step towards a holistic life cycle assessment.

Second, the Commission has not understood that a voluntary system can't undermine the effectiveness by logical reason. If eFuels are more expensive than electric vehicles, nobody will use them. For that reason, the cost analysis in the impact assessment is misleading and ultimately irrelevant. In addition, the cost analysis is only done in comparison to electric cars and does not include the comparison to

[1] For more information, also see: https://www.bmwi.de/Redaktion/DE/Downloads/C-D/crediting-system-for-renewable-fuels.html

penalties. Other important factors like customer needs or infrastructural requirements are not considered at all.

Third, the proposed system, which also has been worked out in a legal perspective on behalf of the German Ministry of Economics, is using existing processes and certification institutes, which are already established for the fuel industry. In addition, the Commission is developing a *union database* for renewable fuels to track and verify renewable fuel volumes in a harmonized European system. For those reasons, we don't see any complexity or additional administrative burden.

As we see, the rejection of the voluntary crediting system is probably more political than science based. The Commission wants full electrification of new vehicles from 2035 onwards. The consideration of renewable fuels would open a not intended path. In doing so, the Commission has ignored key principles of the European internal market and freedom of choice for customers. Nobody knows how technologies will develop. How is the battery or electricity price in 2030? How will the charging infrastructure develop in Eastern Europe? Will we have a new dependence on China in terms on battery materials? Is the recycling issue solved? And finally, will the customer accept an "all-electric" world? **It is a super risky strategy to put all eggs in one basket and to bet heavily on the electric mobility as the only solution.** For those reasons, we urge the members of the parliament and the European council to correct the Commission proposal by amending a crediting system for renewable fuels.

MAIN ADVANTAGES AND PRINCIPLES OF A CREDITING SYSTEM

Car manufacturers' participation in such a system would be voluntary. Participants would be able to purchase certain amounts of alternative fuels, which have to be additional to existing amounts and meet the sustainability criteria of the Renewable Energy Directive (RED). Fuel suppliers are eventually responsible for supplying these fuels to the end customer. It is guaranteed that the amount of renewable fuels, which corresponds with the credits generated when purchasing the renewable fuels, is brought to the market and therefore making an actual contribution to the reduction of GHG emissions in the transport sector.

The proposed crediting system is aligned with existing regulations for the automotive and fuel sectors and is based on its positive contribution to climate action. It is therefore important to stress that the **proposed crediting system does not allow for double counting, i.e. credits can only be counted either against the renewable share under RED or against the fleet targets under the EU CO_2 emission standards regulation.** This means that distributors of renewable fuels and car manufacturers will have to decide which targets the fuels will be counted towards. The crediting system thereby ensures effective climate action, unlocks additional volumes of renewable fuels and therefore additional CO2 reductions in the transport sector.

Further climate benefits can be achieved by introducing a 'front-loading'. In that case, the OEM has to guarantee that the whole volume of renewable fuels is brought into the market at the time of the registration of the new vehicle. Hereby, the CO_2 reduction of the whole lifetime is brought forward by approx. 5 to 7 years. That helps member states to reach short-term climate targets and enables immediate investments.

Guaranteeing affordable individual mobility is also a very important point when revising any EU transport legislation. More options to meet the requirements under the CO_2 emission standards will also have a positive effect on costs for end customers in all EU member states, being respectful of a just transition to carbon-neutral mobility. Mobility concepts such as efficient plug-in hybrid vehicles are still possible after 2035 if the fuel consumption is fully compensated by applying the crediting system. Renewable fuels can contribute to a significant reduction of GHG effectively and affordably – right up to climate neutrality. With increased quantities of eFuels being added gradually to conventional fuels (thanks to their drop-in capability) and production costs falling thanks to economies of scale, eFuels would be affordable for consumers in every phase and also for hard-to-abate sectors like aviation and shipping.

Potential concerns that a crediting system could lead to reduced incentives for manufacturers to further invest in of efficiency improvements are unjustified. Electric mobility is a promising solution meeting a variety of mobility needs. **Introducing a crediting system will make more climate-neutral choices available without prompting an 'either or' in European climate-protection policy.** Providing investment security and a prospect for the use of renewable fuels will also encourage further developments regarding the efficiency of the used powertrain. Efficiency is not only important to reduce the overall CO_2 footprint over lifetime but also in terms of consumer acceptance and to reduce the total cost of ownership.

BROADER ASSESSMENT OF CARBON FOOTPRINT NEEDED

In its Impact Assessment, the European Commission states that a higher uptake of zero-emission vehicles is needed, and that necessary investment needs to be channelled to increase the uptake. **We support the promotion of battery electric vehicles as one option to reduce GHG emissions.** However, a narrow focus on 'zero-emission vehicles' as currently defined will not lead to the best results for our climate.

Given that 'zero emission' is currently measured from 'tank-to-wheel', only a specific and limited part of the vehicle's lifecycle is actually taken into account when measuring the GHG emissions. Only GHGs coming out of the tailpipe are considered whereas GHG emissions occurring at earlier or later stages, i.e. during the vehicle production or the generation and provision of its operating power, are being ignored. For climate protection it is irrelevant at what stage of a car's lifecycle CO_2 emissions occur. Policy decisions should ideally be taken based on a lifecycle approach.

This is also acknowledged in Recital 50 of Regulation (EU) 2019/631:
'It is important to assess the full life-cycle emissions from passenger cars and light commercial vehicles at Union level. To that end, the Commission should no later than 2023 evaluate the possibility of developing a common Union methodology for the assessment and the consistent data reporting of the full life-cycle CO_2 emissions of such vehicles placed on the Union market. The Commission should adopt follow-up measures, including, where appropriate, legislative proposals.'

PROVIDING 'REGULATORY BRIDGES' FOR MORE HOLISTIC APPROACH

A first, important step to achieving a more holistic approach is **to provide a bridge between the fuel regulation and the vehicle regulation**. The most effective path to climate neutrality is creating a level-playing field among all emission-reduction solutions, building on and coordinating existing legislation (RED – supply side, and CO_2 emission standards – demand side). A crediting system of renewable fuels in the CO_2 standards emissions for new vehicles would present such a regulatory bridge.

In future, further "regulatory bridges" could lead to a more linked and holistic political framework, which results in more effective climate protection. For instance, climate-friendly steel or logistics could be an additional option for the automotive industry as well. In this way, more and more parts along the value chain could be included until a full life-cycle assessment is achieved.

In its Impact Assessment, the Commission raises awareness that the cost of CO_2 emissions to society must be sufficiently considered. We therefore support the Commission's intention to take into account the emissions over the entire vehicle lifecycle. To reduce the overall GHG emissions, a comprehensive look at the actual CO_2 emissions of a vehicle is needed.

INCREASING INVESTMENT INCENTIVES – MAINTAINING TECHNOLOGICAL LEADERSHIP

The EU also intends to amend the current regulatory framework to provide the market with long-term investment security and to maintain the technological leadership and competitiveness of the EU's automotive value chain. The eFuel Alliance strongly agrees with the assessment of the Commission that additional security for investors is needed to strengthen the European automotive value chain. A long-time planning perspective is crucial to attract and to channel investments. This is especially true for hydrogen and its derivatives, which is why the provision of added security should not be limited to

only one climate-protection technology. Just the export of machinery and equipment to produce electricity-based synthetic energy sources could create 1.2 million new jobs.[2]

If Europe focuses too narrowly on the promotion of only electric vehicles, it is likely to lose its technological leadership in areas where Europe has been at the forefront of innovation over the last century. A voluntary crediting system would provide the automotive industry with an additional, climate-effective option to reduce CO_2 emissions from their fleets. A fair competition between emission-reduction technologies is vital. Especially where the market ramp up of the electric mobility faces challenges and difficulties other climate-neutral options must be available.

eFUELS – A SOLUTION THAT CAN BE DEPLOYED THROUGHOUT THE EU

To achieve the ambitious climate targets, we need solutions that work everywhere, regardless of a country's economic power, geography, or technical requirements. If emission-reduction solutions are only applicable in a few member states that can afford a complete exchange of the current fleet stock and infrastructure, the EU misses out on a great opportunity to reduce CO_2 emissions in the transport sector. A mix of e-mobility, sustainable and advanced biofuels, eFuels, fuel cells and potentially other emission-reduction technologies will not only reduce GHG emissions effectively, it will also help to safeguard the single market for vehicles.

We need to keep in mind that the energy transition needs to be affordable and should not overwhelm European citizens, especially people with lower incomes or those living in rural or economically weaker regions. If climate-protection measures do not receive broad support from the European citizens, the EU runs the risk of missing the ambitious climate targets.

The second-hand vehicle market mentioned in the EU Commission's Inception Impact Assessment is also very important in that context. Consumers in lots of European countries simply cannot afford to replace their (potentially older) car by a new one. Since eFuels help to defossilize the stock, without the need to replace the current car or infrastructure, the energy transition can be made affordable for all people. Therefore, an uptake of climate-neutral fuels in the near future is needed. The revision of the CO_2 emission standards for cars has the potential to be one of the main drivers for such a market uptake.

CONSIDERING THE INTERNATIONAL DIMENSION

One issue often debated in the context of eFuels is their efficiency. It is suggested that by using electric energy directly, battery electric vehicles will always have a higher degree of efficiency. However, this perspective does not take into account the international dimension of the production of hydrogen and eFuels and is therefore misleading. The efficiency of the electricity's end usage is not the only criteria to assess the actual efficiency. It is also important how efficiently electricity can be produced from renewable energies, and then made usable.[3] For example, a windmill in Patagonia is generating four times more electricity than a windmill in Germany. The better capacity factor in proper regions is compensating most of the efficiency losses of the eFuel production. **In order to achieve a global energy transition and to leverage the potential from regions where large amounts of climate-neutral electricity are available, international cooperation and an import strategy on a global scale are needed.**

CONCLUSION AND AMENDMENT

As a CO_2-neutral alternative to conventional fossil energy carriers, eFuels can make a decisive contribution to the global energy transition. With the CO_2 emission standards regulation being one of the decisive regulations to promote or prevent the use of renewable fuels, the EU should take the opportunity to introduce a crediting system for renewable fuels in the fleet target regulation. Therefore,

[2] See https://www.efuel-alliance.eu/fileadmin/Downloads/2021-02-25_Synthetische_Kraftstoffe_EN_Final_update__IW_.pdf

[3] For more information, also see: 'Comprehensive efficiency of technologies in the transport sector', study by Frontier Economics, October 2020. https://www.frontier-economics.com/media/4297/rpt-frontier-uniti_mwv_effizienz-antriebssysteme_26-10-2020-stc.pdf. The study comes to the conclusion that, if eFuels come from regions that are rich in sun and wind, the usage efficiency of battery-powered electric vehicles is almost on par with vehicles powered by eFuels.

the following amendment is needed, which has been developed by the consultancy Frontier Economics and the law firm Flick Gocke Schaumburg on behalf of the German Ministry of Economics:

New article 11a:

Use of synthetic and alternative fuels

(1) Upon application by a manufacturer, CO2 savings achieved through the use of synthetic and advanced alternative fuels (hereinafter “alternative fuels”) shall be considered in accordance with paragraphs 2 and 3 of this Article.
The total contribution of this use to reducing the average specific emissions of CO2 of a manufacturer may be up to [tbd] g/km.

The Commission is empowered to adopt delegated acts in accordance with Article 17 in order to amend this Regulation by adjusting the cap referred to in the second subparagraph of this paragraph with effect from 2025 onwards to take into account technological developments while ensuring a balanced proportion of the level of that cap in relation to the average specific emissions of CO2 of manufacturers.

(2) Instead of being included in a manufacturer’s average specific CO2 emissions as referred to in paragraph 1 of this Article, CO2 savings achieved through the use of alternative fuels may be allocated to individual vehicles which are technically capable of using the credited alternative fuel in accordance with Regulation (EC) 715/2007.

(3) Each Member State shall record for each calendar year the quantities of alternative fuels placed on the market by a manufacturer, or the quantities of alternative fuels allocated to a manufacturer, and shall provide appropriate certification of these quantities and the resulting CO2 savings by correspondingly applying the certification and documentation procedure laid down in Directive (EU) 2018/2001.

The Member States shall decide which of the fuels listed in Articles 2(27), (28) and (33) to (37) of Directive (EU) 2018/2001 may be allocated and for which of these fuels to issue credits. The Member States shall ensure that credits are issued only for quantities that meet the requirements of Directive (EU) 2018/2001 and where it is ensured that no simultaneous allocation takes place against the reduction targets set out in Article 25(1) of Directive (EU) 2018/2001.

The credits must indicate the issuing Member State, their period of validity, and the quantity and type of alternative fuel for which they were issued. The credits must be tradable.
With a view to minimising the risk of single quantities being claimed more than once in the Union, Member States and the Commission shall strengthen cooperation among national systems, including, where appropriate, the exchange of data. Where the competent authority of one Member State suspects or detects a fraud, it shall, where appropriate, inform the other Member States.

(4) The amount of the savings referred to in paragraphs 1 and 2 shall be calculated in accordance with Annex I, Part C.

New Annex Part C:

Calculation of the CO2 savings achieved through the use of alternative fuels pursuant to art. 11a

The total (origin) of all CO2 savings credits ($credit_{total}$) in g in year t pursuant to Art. 11a shall be calculated using the formula:

$$credit_{total,t} = \sum_k \left(fuel_{k,t} \times CO2_{ref} \times CO2saving_k \right) + banking_{t-1}$$

The total (usage) of all CO2 savings credits is also calculated using the formula:

$$credit_{total,t} = credit_{fleet,t} + \sum_j credit_{vehicle,j,t} + banking_t$$

The CO2 reduction amount in g credited in year t to the specific average emissions in accordance with Article 11a(1) (reduction $amount_{fleet}$) shall be calculated using the formula:

$$reduction\ amount_{fleet,t} = \frac{creditfleet,t}{mileage \times vehicles_t}$$

The CO2 reduction amount credited in year t to an individual vehicle "j" in accordance with Article 11a(2) (reduction $amount_{vehicle,j,t}$) shall be calculated using the formula:

$$reduction\ amount_{vehicle,j,t} = \frac{credit_{vehicle,j,t}}{mileage}$$

Where:

$\sum_k(.)$	*Total of all alternative fuels placed on the market across all fuel types*
$\sum_j(.)$	*Total of all CO_2 reductions credited to individual vehicles pursuant to Article 11a(2)*
$fuel_{k,t}$	*Contributed or allocated quantity in MJ of an alternative fuel k placed on the market in year t*
$CO2_{ref}$	*CO_2 emission comparator for fossil fuels in g/MJ pursuant to Annex V of Directive (EU) 2018/2001*
$CO2saving_k$	*Greenhouse gas emissions saving of each alternative fuel pursuant to Annex V of Directive (EU) 2018/2001 in comparison to fossil fuels in %*
$banking_t$	*SAAF credits not used and transferred by a manufacturer in year t*
$credit_{fleet,t}$	*Total emission reduction credits in g CO_2 credited in year t pursuant to Article 11a(1)*
$credit_{vehicle,j,t}$	*Emission reductions in g CO_2 credited to vehicle j in year t pursuant to Article 11a(2)*
mileage	*Average expected lifetime distance driven in km of a manufacturer's newly registered vehicles that can use the fuels placed on the market pursuant to Article 11a(2). The Commission shall adopt, by means of implementing acts, provisions for the calculation of the average lifetime mileage of new vehicles in accordance with the examination procedure referred to in Article 16(2).*
$vehicles_t$	*Number of vehicles registered by a manufacturer in year t*

ABOUT THE eFUEL ALLIANCE

The eFuel Alliance is a stakeholder initiative committed to promoting the political and social acceptance of eFuels and to securing their regulatory approval. We represent more than 150 companies and associations along the value chain of eFuel production. We stand for fair competition and a level-playing field for all relevant emission reduction solutions. We are clearly committed to more climate protection and aim to win broader recognition of the significant contribution eFuels can make in the drive for sustainability and climate protection. Our goal is to facilitate the industrial production and widespread use of carbon neutral fuels made from renewable energy sources.