

eFUELS ARE ESSENTIAL TO POWER A 'SUSTAINABLE AND SMART MOBILITY STRATEGY'

The eFuel Alliance welcomes the European Commission's 'Sustainable and Smart Mobility Strategy' and strongly supports its goals and the intention to make the transport system as a whole more sustainable.

In order to make its necessary contribution to achieving the EU's climate targets, mobility must transition as quickly as possible from fossil fuels to sustainable energy carriers and climate-protection solutions offering significant greenhouse gas (GHG) reduction. In the transport sector, which is one of the largest contributors to GHG emissions and still highly dependent on fossil fuels, rapid CO₂ reduction will only be possible through a combination of forward-looking emission-reduction pathways, enabling different technologies to complement each other. Effective climate protection is best promoted by establishing a level-playing field and keeping abatement costs as low as possible.

TECHNOLOGY-MIX TO SPEED UP DEFOSSILIDATION OF TRANSPORT

Climate change is a rapidly advancing global challenge. If we are serious about limiting global temperature rise to well below 2° Celsius, we cannot afford to disregard any technological option for cutting GHG emissions. Putting all our eggs in one basket and relying on a single technology would risk squandering precious time and threatening the achievement of the EU climate targets. Only a multi-solution strategy deploying different CO₂ reduction solutions will accelerate the defossilisation of our economy and transport in particular, while keeping individual mobility affordable. Therefore, what is needed is a technology mix that embraces renewable electricity for e-mobility, as well as advanced biofuels, eFuels, fuel cells and potentially other climate-protection solutions.

Including technologies such as sustainable renewable and low carbon fuels in road transport will speed up the defossilisation process decisively. By replacing fossil fuels, the deployment of eFuels can contribute to significantly reducing CO₂ emissions – initially by being blended with conventional fuels (drop-in capability), ultimately as a 100% substitute. An EU-wide blending of just 5% eFuels to conventional fuel would have resulted in a saving of 60 million tons of CO₂ in 2018 – equivalent to taking 40 million cars off the road for an entire year.

A stronger consideration of the role of renewable fuels in road transport would also allow the existing fleet of around 330 million vehicles with internal combustion engines (ICE) in Europe to be better integrated into climate protection efforts. This is essential to meet the EU climate targets since vehicles with an ICE will continue to dominate the vehicle fleet for many years to come. Sustainable renewable fuels are the only option to make the existing fleet stock climate neutral.

- ▶ ***As part of the upcoming Green Deal legislation, EU co-legislators should pursue a multi-solution strategy and create a level-playing field among multiple emission-reduction options in all modes of transport.***
- ▶ ***To accelerate the defossilisation of road transport, the electrification of our mobility needs to be complemented by a technology mix of additional climate protection solutions including sustainable renewable fuels.***

LARGE-SCALE DEPLOYMENT OF SUSTAINABLE FUELS IS NEEDED QUICKLY

The EU Commission's Flagship-Initiative 1 'Boosting the Uptake of Zero-Emission Vehicles, Renewable & Low-Carbon Fuels and related Infrastructure' is paramount to achieving climate neutrality in 2050. In its strategy the Commission sends a clear signal that sustainable renewable fuels must be deployed on a large scale as quickly as possible.

We fully support the intention to boost the use of renewable and low-carbon fuels and encourage the Commission to introduce a minimum quota of 5% for renewable fuels of non-biological origin

(RFNBOs), such as eFuels and hydrogen, for all transport sectors by 2030 as part of the revision of the Renewable Energy Directive (RED II). A separate, ambitious and feasible sub-target for RFNBOs would spark necessary investments and support their market ramp-up.

While the Renewable Energy Directive regulates the supply side for renewables, market-based instruments such as counting renewable fuels towards EU CO₂ fleet targets should complement and strengthen emission-reduction efforts on the demand side of sustainable renewable fuels. We therefore encourage the Commission to introduce a crediting mechanism as part of the revision of the CO₂ emission standards regulation. This instrument would unlock additional volumes of renewable fuels, enable extra GHG reductions in the transport sector, and thus ensure effective climate action. More options to meet the requirements under the CO₂ emission standards will also have a positive impact on costs for consumers in all EU member states, respecting a fair transition to carbon-neutral mobility.

As part of a comprehensive 'Fit for 55' legislation package we further believe that an overhaul of the current energy taxation is long overdue. If the energy tax is levied on an environmentally relevant tax base, this promotes the use of sustainable, clean fuels instead of conventional fossil fuels and thus supports their market ramp-up. Under the current Energy Taxation Directive, fossil and renewable fuels are treated equally – a clear contradiction of climate ambitions.

- ▶ ***The revision of REDII should include an ambitious but feasible sub-target of 5% for hydrogen and sustainable synthetic fuels.***
- ▶ ***The EU Commission should implement a voluntary crediting system for sustainable renewable fuels in EU emission standards for road transport.***
- ▶ ***The current energy taxation needs to be revised by introducing genuine environmental criteria as a basis for calculation.***

LIFECYCLE ANALYSIS FOR A COMPREHENSIVE ASSESSMENT OF CO₂-REDUCTIONS

We strongly support employing a lifecycle analyses in all relevant legislative files to get a comprehensive view of the actual CO₂-reduction potential of a technology. Appropriate technologies for CO₂-reduction should be assessed on the basis of their entire lifecycle, and not based on very limited parts of it, such as considering only CO₂ emissions coming out of the tailpipe, while ignoring emissions occurring at earlier or later stages.

The eFuel Alliance strongly supports the roll out of battery-electric and 'zero-emission' vehicles as one option to reduce GHG emissions. This however will not be the only solution for road transport and must be complemented by promoting the use of eFuels across all sectors. To do so, we encourage the European co-legislators to broaden the current 'zero-emission vehicles' definition and to allow vehicles that are entirely powered by climate-neutral fuels to qualify as 'zero-emission vehicles'. These vehicles emit exactly the same amount of CO₂ that has been used to produce the energy carrier and are therefore net-zero or climate-neutral.

- ▶ ***Upcoming policy decisions regarding the promotion and deployment of CO₂ reduction technologies must be taken based on a lifecycle approach.***
- ▶ ***Vehicles that are entirely powered by sustainable climate-neutral fuels should qualify as zero-emission vehicles.***

CROSS-SECTORAL USE OF RENEWABLE FUELS IS VITAL

Limiting the use of sustainable renewable fuels only to those sectors where direct electrification is currently not feasible will not lead to the best possible results – either economically or ecologically. Without a doubt, these are important sectors where renewable fuels are needed quickly to effectively

curb GHG-emissions. However, given the low willingness to pay in these sectors, a market ramp-up and thus the availability of renewable fuels will not be achieved, at least not without significant subsidies. This is because the willingness to pay for climate-neutral products is currently only around EUR 30 per ton of CO₂ in aviation and energy-intensive industries – which corresponds to the current CO₂ price in the European emissions trading system – while it is 15 times higher in the automotive industry at around EUR 475 per ton of CO₂.¹ This disparity will only grow if the CO₂ emission standards for new vehicles are further increased without the recognition of renewable fuels within a crediting mechanism.

It is therefore vital to include road transport as a driving force for the market ramp-up of renewable fuels in order to achieve the necessary economies of scale that are essential for a significant price reduction of these energy carriers. Otherwise, the production costs will remain at a high level, jeopardising an affordable introduction of clean hydrogen and hydrogen-derived products for hard-to-abate sectors such as aviation and shipping. Affordable hydrogen and hydrogen-derived products will only become widely available if they can be produced in sufficiently high quantities to allow for the production of these fuels to be economic.

In addition, it is technically not possible to only produce e.g. eKerosene for aviation. Although the focus of production can be controlled to a desired product area, shorter and longer molecules are always produced during the reaction of CO₂ and green hydrogen. The co-products are separated in the refinery into different end products, namely gaseous and liquid fuels and combustibles, such as paraffin, diesel/heating oil and gasoline, but also solids, such as waxes/paraffins. Thus, eKerosene is only one of several end products of the refinery process. Production costs are incurred for all co-products. The most cost-effective production of eKerosene can therefore be achieved if the entire product range can be sold on the market. This requires suitable regulatory framework conditions for all target markets in order to achieve commercial viability for these products.

- ▶ ***Affordable and adequate capacities of sustainable renewable fuels will only become available if they can be produced in sufficiently high quantities to allow for the production of these fuels to be economic.***
- ▶ ***A cross-sectoral and broad application of sustainable renewable fuels, including road transport, is vital to reduce their price significantly.***

TECHNICAL EFFICIENCY NOT THE ONLY CRITERION FOR CLIMATE PROTECTION SOLUTIONS

Narrowing the concept of efficiency to the use of direct electricity only is not, in our view, appropriate to securing a comprehensive regulatory framework that enables the most efficient, effective, and climate-friendly applications possible. We don't dispute the fact that more green electricity is needed to produce eFuels than to operate an electric vehicle. However, we would like to take a broader perspective and to offer a more comprehensive approach to the efficiency debate.

Today, a rigid focus on technical efficiency is no longer appropriate, when renewable energy is no longer a scarce commodity from a global perspective and can be easily stored and transported as eFuels. At the same time, with the decline of conventional fossil fuel-based power generation, the new challenge will be to provide renewable energy at any location at the right time. Since significant parts of Central Europe will most likely continue to rely on energy imports to meet its demand for fossil fuel alternatives, the efficiency debate should therefore also consider the location of the most efficient production of carbon-neutral energy carriers.

¹ The willingness to pay in the automotive industry is derived from the penalties car manufacturers have to pay per vehicle if their average emissions exceed the specified fleet-wide targets: for cars and vans, the penalty is 95 EUR/g CO₂/km times the number of new vehicles, which equates to a CO₂ price of about 475-600 EUR per ton CO₂, depending on the assumed lifetime mileage of the vehicle.

In North Africa for example, due to better solar radiation and higher and more frequent average wind speed, the capacity factor of renewable energy plants is three times higher than in Germany. Green hydrogen from North Africa, in the form of eFuels, that can be easily and cheaply transported to the refueling station via existing infrastructures (tank lorries, pipelines, petrol stations) and used in existing vehicles, thus compensating for a large part of the efficiency losses in energy conversion.

For economic reasons, it therefore makes sense for eFuels to be imported in significant quantities and thus not compete with the scarce quantities of renewable electricity needed in Central Europe for direct power applications such as e-mobility. In this way, the global potential of renewable energies is better exploited and European investments can be focused on regions with the best production potential.

- ▶ ***Insisting on the ‘efficiency-first principle’ is questionable when renewable energy can be produced, stored, and transported globally in large quantities in cost-efficient ways.***
- ▶ ***As conventional fossil fuel generation is phased out, the challenge of the future will be to distribute renewable energy in the most efficient, cost-effective and smart manner.***

INDIVIDUAL MOBILITY NEEDS TO REMAIN AFFORDABLE ACROSS THE EU

We need to keep in mind that the energy transition needs to be affordable to gain the acceptance of European citizens, especially of people with lower incomes or those living in rural or economically weaker regions. Not all European countries have the same potential to deploy e-mobility and make it accessible to most of their population. 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 will miss out on a great opportunity to reduce CO₂ emissions in the transport sector.

With increased quantities of eFuels being added gradually to conventional fossil fuels, and production costs falling due to economies of scale eFuels would be affordable from the very beginning of this process for consumers as well as for hard-to-abate sectors like aviation and maritime. Renewable synthetic fuels are therefore a cost-effective and economic CO₂ reduction option that can increase consumer acceptance of the clean energy transition.

- ▶ ***Guaranteeing affordable individual mobility is vital for consumers’ acceptance of a clean energy transition when revising any EU climate policy legislation.***
- ▶ ***A wide use of sustainable renewable fuels will have a positive effect on costs for end users in all EU member states, enable consumers to make affordable, carbon-neutral choices and facilitate a just transition to carbon-neutral mobility.***
- ▶ ***If climate-protection measures do not receive broad support from the European citizens, the EU runs the risk of missing its ambitious climate targets.***

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 130 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.