

## eFuels – A GLOBAL SOLUTION TO A GLOBAL CHALLENGE

### HARNESSING THE POTENTIAL OF eFUELS TO POWER A CLIMATE-FRIENDLY AND SUSTAINABLE GROWTH PROGRAMME OPEN TO ALL TECHNOLOGIES

Climate change is perhaps the greatest test of our time. Tackling this challenge and being part of a transition to a sustainable, modern and competitive economy are therefore high priorities for all our members. This holds true in the current challenging economic times, in which companies along entire supply chains are struggling with production and sales slumps, liquidity bottlenecks and impending insolvencies. Many people, too, struggle with existential worries, and an inability to plan for the future due to the COVID19 pandemic.

In order to revitalise and strengthen the European economy sustainably, the continuing crisis should now be used to promote investment in the business models of the future. We are ready to assist as partners in helping to create the regulatory framework and set the right incentives to put us on the road to climate neutrality in 2050. Any measures to overcome the looming economic crisis should aim at securing and creating jobs in line with our climate protection goals.

In doing so, the principle of being open to all technologies must be upheld to guarantee fair competition between different climate-friendly technological paths and to enable consumers to make affordable and climate-neutral choices. 'Doing one thing but not ignoring the other' – that is the approach we should adopt to ensure the consistent expansion of e-mobility and the use of e-fuels, both making an important contribution to climate protection. Effective climate protection is best promoted by establishing a level playing field among wide-ranging emission-reduction options. There is a particular need for technologies that can be deployed within the EU as well as in regions beyond Europe, regardless of their economic power, geography or technical expertise. Climate change constitutes a global challenge; hence we need global solutions.

### POTENTIAL OF CLIMATE-NEUTRAL eFUELS TO ACHIEVE CLIMATE TARGETS IS SUBSTANTIAL

One of the most promising options for reducing greenhouse gas emissions is the use of hydrogen and in particular its derivatives such as synthetic fuels, so-called eFuels (renewable fuels of non-biological origin - RFNBOs). The value chains of climate-neutral eFuels can make a significant contribution to generating long-term, sustainable growth and at the same time meeting the 2050 climate targets. The investment and job potential along the value-added chain of synthetic fuels is huge – in research and development, in mechanical and plant engineering and, last but not least, with a view to securing the continued existence of the automotive industry, its suppliers as well as the aftermarket. Studies have shown that the production and export of Power-to-X technologies and equipment could generate significant amounts of additional added value and create numerous new jobs.<sup>1</sup>

Synthetic fuels from renewable energy sources, hydrogen and CO<sub>2</sub> have considerable advantages: they can be easily stored and transported over long distances without energy loss, thus making it possible for the first time to use renewable electricity flexibly worldwide; they have a volumetrically high energy density; and they can be deployed in existing engines and infrastructures. eFuels can be added in any quantity to conventional

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<sup>1</sup> See also: Synthetische Energieträger – Perspektiven für die deutsche Wirtschaft und den internationalen Handel. Eine Untersuchung der Marktpotentiale, Investitions- und Beschäftigungseffekte. Study by Frontier Economics and the Institut der deutschen Wirtschaft (IW), September 2018. The study has shown that, in Germany alone, the production and export of Power-to-X technologies and equipment could generate 36.4 billion euros per year in additional added value and create up to 470,800 new jobs.

liquid fuels, such as petrol, diesel, or kerosene, without any problems, and can even replace them completely in the long run.

eFuels are deployable in all modes of transport – cars, trucks, aircraft, ships – across the board. They are also compatible with existing heating systems and can be used as a substitute for crude oil in the chemical industry. The defossilisation potential is therefore enormous. After all, more than 1.3 billion vehicles worldwide are currently powered by conventional combustion engines. In addition, there are some 22,000 aircrafts and 50,000 ships worldwide for which there are no viable technical alternatives in sight that can drive defossilisation forward with the same prospect of success. These existing fleets will continue to form the basis for mobility in the coming decades. eFuels are therefore ideally suited to helping achieve climate protection targets in the transport and heating markets.

To ensure adequate capacity, economies of scale must be realised to achieve sufficiently low costs. But the market volume will only be significant enough if eFuels are used in road transport, as well as in other sectors. In order to achieve our climate targets, we therefore believe it is essential to enable the market ramp-up of CO<sub>2</sub>-free hydrogen and its derivatives such as eFuels without delay and to create the necessary regulatory incentives quickly.

## **SOCIALLY ACCEPTABLE AND AFFORDABLE MEASURES**

Consumers' wallets should also be kept in mind. Many people in the EU and beyond currently do not know what the future holds, either in terms of their own jobs and prosperity or the overall economic situation. This inevitably means financial insecurity and in times of such great uncertainty, consumers should not be burdened with additional costs. Instead, pragmatic solutions must be found that are also affordable.

Here, too, eFuels have a decisive advantage, as they can be used in all existing energy systems, including heating, and in the current vehicle fleets. For consumers this means no conversion costs, no problems in adapting to new technologies, instead: an easy and familiar handling process of a safe energy carrier. High-quality and reliable distribution infrastructure can still be utilised, making this switch accessible and acceptable. Europe's transition to sustainable electricity is being achieved by making the generation process climate neutral. The electricity produced remains the same. Likewise, we can have a climate-neutral effect across existing vehicle fleets and heating systems by changing the energy source, rather than the infrastructure. This makes climate protection and energy transition more acceptable.

## **CREATING AN INVESTMENT FRAMEWORK FOR CLIMATE-FRIENDLY TECHNOLOGIES LIKE eFUELS**

### *Crediting greenhouse gas reduction from eFuels towards the EU fleet targets*

One of the key measures to enable market take-off and scale effects for green hydrogen and its derivatives is the ability of eFuels to be counted towards the CO<sub>2</sub> fleet targets for passenger cars and light and heavy-duty vehicles. The forthcoming review of the regulation of CO<sub>2</sub> emission standards for these vehicles, which is being brought forward as part of the Green Deal and is now due in June 2021, should therefore focus on technologies that drive innovation and sustainable growth. This can best be achieved by including additional compliance options, primarily by recognising the use of synthetic and advanced alternative fuels produced from renewable energy.<sup>2</sup>

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<sup>2</sup> How such a crediting system could be implemented in practice has already been scientifically studied: Crediting System for Renewable Fuels in EU Emission Standards for Road Transport. Study by Frontier Economics and Flick Gocke Schaumburg, May 2020.

### Reducing energy tax on e-fuels

Another key element in the creation of a market-based framework for synthetic fuels is the review of the Energy Tax Directive, which is also due to take place soon. If energy tax is levied on an environmentally relevant tax base, this will promote the use of eFuels instead of conventional fuels. By amending EU energy tax legislation a CO<sub>2</sub> pricing system could be created that would encourage the demand for climate-neutral fuels.

### Securing European technological leadership by creating a comprehensive EU hydrogen economy

The production and application of hydrogen-based products, such as eFuels, can put Europe at the forefront of global technological innovation and thus enhance the competitiveness of Europe as an industrial base. To do this, it needs the right regulatory framework and market conditions. It is up to the European Union to take a comprehensive approach in establishing the necessary production requirements and ensuring regulatory recognition, including for eFuels.

### Promoting the industrial production of eFuels

By supporting pilot projects, eFuel production on an industrial scale should be achieved as quickly as possible. A market ramp-up can also be promoted by means of tendering procedures, and volume commitments, that would provide investors with added security.

## **LIFE CYCLE ANALYSIS AS A BASIS FOR ASSESSING ACTUAL CO<sub>2</sub> EMISSIONS**

Irrespective of the discussion about an end to the internal combustion engine, which has been announced in the EU-Commission's 2030 Climate Target Plan – it is a fact that a large number of vehicles will continue to be powered by such engines for many years to come, especially in economically weaker regions. eFuels offer the opportunity to continue operating these cars in a climate-neutral way and thus to make a significant contribution to CO<sub>2</sub> reduction. In the view of the eFuel Alliance, the only way to achieve climate neutrality in 2050 is by recognising and promoting the various greenhouse gas reduction technologies whose sustainability can be determined on the basis of an analysis along the entire life cycle<sup>3</sup>. This is the only way to reliably calculate the CO<sub>2</sub> emissions that actually occur over the entire period of production and use, and thus identify their actual climate protection potential.

## **CONCLUSION: PROMOTING eFUELS AS AN ECONOMIC AND CLIMATE PROTECTION DRIVER**

The success of Europe's energy transition depends on a simultaneous transformation of the economy and society through the introduction of sustainable and affordable solutions that find public acceptance. In this context, eFuels provide an excellent opportunity to help meet sectoral climate objectives in the transport and the heating markets, to strengthen Europe as an industrial hub, guarantee security of energy supply and facilitate affordable, clean, mobility.

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<sup>3</sup> For more information on life cycle CO<sub>2</sub>-emissions, also see: Die CO<sub>2</sub>-Gesamtbilanz für Antriebstechnologien im Individualverkehr heute und in Zukunft – Lebenszyklusanalyse als Basis für zielführende Klimapolitik und Regularien. Frontier Economics, November 2019.