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E-fuels' environmental credentials under discussion in Europe

Published: July 2, 2022

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Online version: <https://www.wheels-alive.co.uk/e-fuels-environmental-credentials-discussed-in-germany/>



A traditional petrol forecourt... For the future, carbon-neutral synthetic 'e-fuels' are being developed as an alternative to fossil-based products, to power most vehicles with internal combustion engines...



Could synthetic fuels help us?

Kim says: "In Germany, across Europe and elsewhere – including in the U.K. – there is much discussion about carbon-neutral e-fuels/synthetic fuels as an alternative to fossil-based liquid fuels, working alongside electric propulsion to help arrive at 'net zero' more quickly than a change to electromobility alone.

You might like to read about the recent exchange of views in Germany and the overall 'state of play' in Europe with regard to e-fuels/synthetic fuels (below), as covered in two recent press releases issued by UNITI Bundesverband mittelständischer Mineralölunternehmen e.V. (Federal Association of Medium-Sized Mineral Oil Companies e.V.)"

First: In their press release dated 23rd June (translated into English) they say:

'Berlin, June 23, 2022 – The lobby organization "Transport & Environment" sums up in a paper published today that cars with e-fuels are far less environmentally friendly than electric cars. However, an initial factual analysis exposes the document as an opinion piece far removed from the facts.

UNITI Bundesverband mittelständischer Mineralölunternehmen e.V. criticises a new paper published by the lobby organization Transport & Environment. UNITI CEO Elmar Kühn: "It seems that T&E is less concerned with a factual comparison of the CO2 emission balances of e-fuel operated vehicles with battery electric vehicles, but rather with one-sided and hardly objective opinion making with regard to Germany's positioning in the EU Council of Ministers regarding a combustion ban and the crediting of e-fuels within the framework of CO2 fleet regulation."

Initial essential basic assumption is wrong

The T&E analysis contains a whole series of points that do not stand up to even a first critical examination. Even a basic premise of the paper, according to which e-fuels should



be produced in Europe and thus with the European electricity mix, which also contains fossil components and which would worsen their CO₂ balance, is wrong. This is because e-fuels should not be produced in Europe, but mainly in wind and sun-rich regions, such as Australia or South America, using only green electricity. “A comparison of CO₂ balances that ignores this basic fact is nonsensical,” says Elmar Kühn of UNITI.

Wishful thinking and fine arithmetic

Apart from that, the T&E paper contains further wishful thinking and fine maths for battery-powered electromobility:-

For example, in a best-case scenario, a value of 30 g CO₂/kWh is calculated in the overall balance of battery electric vehicles. This value is forecast for Sweden in 2030. The Scandinavians are already a European model country in terms of renewable energies; transferability to countries in Eastern Europe, for example, seems questionable.

It is unlikely that batteries for e-mobility will be manufactured in Europe in the future, as T&E suggests in its calculations. At present, the batteries for e-cars come mainly from China, where the CO₂ intensity for one kWh of electricity in the mix is currently around 550 g - which is likely to seriously spoil the CO₂ balance of e-mobility in a life cycle analysis.

Short-cuts in favour of e-mobility can be found, among other things, in the upstream chain emissions. In the case of e-fuels, for example, the construction of facilities for their production as well as wind turbines and solar panels for the generation of green electricity are included in the overall CO₂ balance, whereas in the case of battery-electric mobility, T&E only includes battery production in the calculation.

Transport & Environment uses a study by CONCAWE for its forecasts on future availability and the associated possible blending proportions of CO₂-neutral e-fuels in fossil fuels. However, their scenario only considers European production sites. E-fuels imports from non-European potential regions, which would represent the rule, were expressly not included by CONCAWE.



Sleight of hand and smokescreens that politicians should not fall for

Elmar Kühn of UNITI sums up: “In the discussion about the future of the internal combustion engine, T&E continues to diligently throw smoke candles, which the political decision-makers should please not fall for. And ultimately, even with all its sleight of hand, T&E will not succeed in explaining away the fact that synthetic e-fuels offer the only way to power the world’s stock of 1.4 billion internal combustion engine vehicles in a CO₂-neutral way and to include these vehicles in climate protection efforts.”

UNITI has already presented a scientifically based study on the overall CO₂ balance for propulsion technologies in private transport today and in the future.’

Second, in a UNITI press release dated 29th June (translated into English), they say:

‘UNITI draws mixed conclusions on the compromise reached in the EU Council of Environment Ministers regarding e-fuels...

Berlin, June 29, 2022 – UNITI Bundesverband mittelständischer Mineralölunternehmen e.V. welcomes the fact that the EU Environment Ministers underlined the central importance of renewable fuels for climate protection and the preservation of affordable mobility in their decision today. However, concrete proposals for a crediting system that would promote their ramp-up were not taken up.

“The EU Council of Environment Ministers has declared its support for e-fuels and thus positioned itself against a blanket ban on internal combustion engines. This is the positive message of the day,” said UNITI CEO Elmar Kühn in an initial assessment. The Council has tasked the EU Commission with drawing up a proposal on how new passenger cars and light commercial vehicles with internal combustion engines powered by CO₂-neutral fuels can be registered even after 2035. “Going through the EU Commission could delay the urgently needed production ramp-up of e-fuels. At the same time, there is a risk that the Commission, which is showing little openness to technology on this issue, will present a solution that is



not relevant,” Kühn warns. In its decision, the Council emphasised the role of a fair and economically viable transformation to a climate-neutral future, and the connection would also apply to participation in individual mobility for all EU citizens. “A possible proposal must be measured against this. Possible sham solutions by the EU Commission should not be accepted by either the Parliament or the Commission,” emphasises Elmar Kühn of UNITI.

“In essence, a concrete, good proposal is already on the table, which can and should be used,” demands Elmar Kühn. He points out that the Transport Committee in the European Parliament has proposed the integration of a CO2 crediting system into CO2 fleet regulation. This envisages issuing corresponding CO2 reduction certificates for the use of renewable fuels in the market, which can be offset against the fleet emission values of the vehicle manufacturers. If pure renewable fuels were used exclusively, for example, the CO2 fleet emission value would then be zero, both in balance sheet terms and in real terms.” ‘

Wheels-Alive adds: “Undoubtedly, electric vehicles have an important role to play in future transportation. However, the further development/adoption of carbon-neutral synthetic ‘e-fuels’ as part of the equation alongside electromobility, using existing liquid fuel infrastructure and delivery systems, could help achieve ‘net zero’ more quickly while enabling vehicles of all types using internal combustion engines to be used. A point that is sometimes overlooked is that it is not the type of engine that is responsible for emissions, but the type of fuel... The possibilities of synthetic ‘e-fuels’ are now being looked at more closely and urgently, partly as a result of Russia’s invasion of Ukraine and its consequences”.