Signs and Miracles

Dear Reader,

The battle against climate change is similar to the fight against the Covid pandemic: Experts recommend long-term, systemic measures, but they are often amateurly implemented by policy makers. Recently, however, there are signs of hope: The EU is demanding the rapid roll-out of synthetic and biological fuels. In Germany, the think tank Agora Energiewende classifies these as important if climate goals are to be reached. Even the former State Secretary at the German Ministry for Environment, Jochen Flasbarth, is expounding this message in front of the press. And in its coalition agreement, the new German Federal Government supports "allowing the registration of vehicles that verifiably run only on e-fuels."

A reduction of global CO₂ emissions in the mobility sector can be achieved. This only has a chance of success together with electricity and the widespread use of liquid or gaseous energy carriers on a sustainable basis. In Germany, there are currently 57 million vehicles in circulation, in the EU the figure is around 250 million vehicles, and globally 1.4 billion. An environmental policy that does not consider this is meaningless. Yes, perhaps sufficient electricity can be generated from wind and solar sources, but unfortunately not stored, since no such facilities are available. And in many places, the grid infrastructure does not even have the capacity to ensure the supply of power for multiple vehicles per road.

The coalition partners also promise that "in accordance with the proposals put forward by the European Commission [...], only CO₂-neutral vehicles may be registered for use in Europe in 2035" and "support the passing of a practical pollutant norm Euro 7". This should be designed to be "technology-neutral."

And this is where e-fuels and bio-fuels take the stage: Thermodynamic energy converters using synthetic fuels are just as defossilizing as pure electric drives in the overall balance equation. The greenhouse gas contribution over the entire lifetime using today's energy carriers is 31 t CO₂ for a passenger car with a combustion engine, 24 t for a BEV, and 32 t for an FCEV. If synthetic fuels are used, the three drive systems are neck and neck.

A systemic and technology-neutral view of energy carriers and converters is required over the entire cause and effect chain. This is how the potential for sustainable global CO₂ reduction can be leveraged. The task for science, policy makers, industry, and media is to shape the discussion in a "room for both" sense in the direction of next-generation engines in a sustainable energy system. The signs emanating from the political world give us new hope.

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