E-Fuels

E-fuels are synthetic fuels that are produced exclusively using renewable energy. E-fuels allow CO2-neutral operation of internal combustion engines.

Production

E-fuels are produced exclusively using renewable energy. First of all, hydrogen (H?) is produced from water. An organic material is now required for a liquid fuel. The required CO? can be obtained as a raw material from industrial processes or from the ambient air using filters. The synthetic fuel is then obtained from the CO? and H?: petrol, diesel, gas or kerosene. During combustion, only as much CO? is produced as was taken out of the environment during production. E-fuels allow CO?-neutral operation of conventional internal combustion engines.

A further argument in favour of e-fuels is that the technology does not require any new filling infrastructure - the existing filling station network can be used.
From a technical perspective, it is already possible to produce e-fuels today. However, most countries lack sufficient renewable sources of energy and the capacities to produce e-fuels for a mass market. In addition, they are still very expensive. As larger production capacities are built up and the costs of generating renewable energy fall, e-fuels will definitely become more economical.

Protection of the environment

E-fuels are produced exclusively using renewable energy source such as solar or wind energy. The CO? used in production of e-fuels is also ideally taken from the ambient air. This results in a cycle: The CO? resulting from combustion of e-fuels can be recycled and used for production of new e-fuels. This allows the internal combustion engine to be made CO?-neutral. As a result e-fuels can contribute to reducing CO? emissions from the current vehicle fleet, i.e. those vehicles that are already on the roads and are not climate-neutral.

Images

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