Press Release

COP24/Transport Day
Graforce's Plasmalysis is key to low-carbon transport and aviation

Berlin, December 6, 2018 – With the UN Climate Change Conference in Katovice (COP24) now underway, the international community is discussing how to drastically reduce CO_2 emissions. Transport is a key factor, responsible for about a fifth of global CO_2 emissions – and the trend is rising.

German technology company Graforce has developed a unique technology for producing climate-neutral, synthetic fuels from industrial wastewater and renewable energies. With low hydrogen production costs, a wide variety of wastewaters and significantly reduced emissions, its new plasmalysis technology makes a significant contribution to replacing fossil fuels.

"We are well below the climate targets agreed in Paris. It's high time to seize every opportunity," explains Dr. Jens Hanke, founder of Graforce. "E-fuels could be critical to climate protection, especially in the transport sector."

Gasoline, diesel, natural gas, kerosene: climate-neutral fuel production is possible
Graforce has been working on the future of energy supply since 2010. At its Power2X plant in Berlin, Graforce is already producing hydrogen using the plasmalysis process developed in-house. Unlike electrolysis, which uses distilled water, plasmalysis produces hydrogen from high-energy chemical compounds in wastewater. The process halves fuel production costs and results in significantly higher yields.

A high-frequency field of tension – called plasma – is generated from solar or wind energy above wastewater, which is produced, for example, in production processes in biogas, sewage or industrial plants. This plasma breaks down the carbon and nitrogen compounds (urea, amino acids, nitrates and ammonium) contained in the water into individual atoms, which then rebond. This produces hydrogen and – depending on the requirements – CO, CO_2 or methane (CH_4).

Synthetic liquid fuels can then be produced from the resulting CO_2 or CO and hydrogen using the proven Fischer-Tropsch process. These fuels make, above all, long-haul transport, aviation and shipping more climate-friendly without any adjustments or restrictions.

Using methane or mixing hydrogen with biogas produces HCNG, which can be used as fuel in natural gas vehicles and in combined heat and power plants to reduce emissions (CO_2, CO, HC, NOx) by 20 to 60 percent. The only waste products that remain are purified water and oxygen. Graforce cooperates with the carmaker Audi, the utility company Berliner Wasserbetriebe and other firms.

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