

e-Fuel pioneer plant Frankfurt

A fossil-free future - this is the vision INERATEC is pursuing with its pioneering project in Frankfurt, where it is building Europe's largest power-to-liquid plant for the production of synthetic, climate-friendly e-Fuels. The plant will serve as a benchmark for global projects and accelerate the transition away from fossil fuels.

It consists of three production units. The first was installed in the first half of 2024, the second unit followed in the second half of 2024. The final module is in the delivery and installation process while the first two units are undergoing testing to get ready for commissioning. Starting in Q2 2025, the pioneering plant at industrial park Frankfurt Höchst will recycle up to 8,000 tonnes of CO₂ per year by combining the greenhouse gas with hydrogen to produce up to 2,500 tonnes of sustainable e-fuels and chemicals. At this commercial scale, it will be the world's largest e-fuel plant using the power-to-liquid process. This represents an important step towards the defossilization of our future mobility.

The transition from fossil fuels to sustainable and environmentally friendly alternatives is particularly difficult for some sectors. That is why INERATEC focuses on the defossilizing sectors of shipping, aviation and heavy-duty transport, where electrification is not a practical solution. For these sectors we supply sustainable aviation fuel (e-SAF) and synthetic diesel, reducing their CO₂ emissions and negative environmental impact.

This transformation is not limited to Germany. INERATEC is already pursuing international projects in Chile, Brazil, Japan, Malaysia and the Netherlands to achieve global availability of sustainable e-fuels. INERATEC's modular approach makes the systems scalable and modularly expandable. This will enable e-fuel plants to be located in global 'sweet spots' rich in renewable energy, from where the sustainable fuels can be transported worldwide.