

INERATEC secures €70 million financing commitment for Europe's largest e-Fuel-production plant in Frankfurt

- INERATEC agrees up to EUR 40 million venture debt loan with the European Investment Bank and up to EUR 30 million grant from Breakthrough Energy Catalyst to scale-up its e-Fuel production capabilities
- Landmark investment follows EU-Catalyst Partnership initiated in 2021 and supported by the Innovation Fund through the InvestEU Programme.
- Backing demonstrates European commitment to clean energy innovation and follows earlier Horizon 2020 support

Luxembourg/Karlsruhe, March 5, 2025 – Sustainable e-Fuel production pioneer INERATEC today formally agreed a EUR 40m venture debt loan with the European Investment Bank (EIB) and EUR 30m grant with Breakthrough Energy Catalyst. The combined €70 million backing will finance construction of Europe's largest sustainable e-Fuel production plant in Frankfurt and e-Fuel research and development of future, key steps in decarbonising aviation.

The new e-Fuel financing was announced at the EIB-Group-Forum taking place this week in Luxembourg and underscores the strategic importance of e-Fuels in decarbonizing hard-to-abate sectors such as aviation. The new investment will enable INERATEC to scale up production capacity and commercialize its innovative reactor technology, which converts green hydrogen and CO₂ into synthetic aviation fuel. The committed project funding, confirmed earlier this year, represents a significant step in commercialisation of INERATEC's Power-to-Liquid technology, accelerating the transition towards a net-zero future.

Transforming the Energy Landscape with e-Fuels

INERATEC's production process uses hydrogen, which is then combined with CO₂ from biogenic sources like biogas plants or industrial emissions, using INERATEC's Power-to-Liquid technology. This approach enables the production of synthetic crude oil, which can be processed into a range of synthetic fuels, including Sustainable Aviation Fuel (SAF), marine fuels and e-Diesel. The use of CO₂, which would otherwise be released into the atmosphere, reduces the carbon-footprint of the fuel and will help to cut carbon emissions.

At the production site outside Frankfurt, the main feedstock is supplied from the industrial park: the CO₂ comes from a biogas plant that recycles waste, and the hydrogen is a by-product from an existing chlorine production facility. By utilizing compact and modular production units, INERATEC's approach ensures efficient scalability and adaptability to different production sites.

Beyond sustainable fuels for aviation, the synthetic oil that INERATEC produces can also be used as a base chemical for different sustainable products like plastics. This extends the contribution of INERATEC's technology to sustainable supply for the chemical industry.

Scaling Up to Meet Market Demand

After building and operating plants at demonstration and industrial pilot scale, INERATEC now focuses on scaling up production and optimizing commercial deployment. The funding commitment backed by the EIB and Breakthrough Energy Catalyst will enable the company to deliver commercial-scale production, ensuring a steady supply of e-Fuels to meet increasing market demand and is critical in making synthetic fuels economically viable.

The plant will produce up to 2,500 tons of e-Fuel annually that will be delivered to the aviation sector, among others. One long haul flight between Frankfurt and New York uses 80 tons of kerosene. e-SAF from INERATEC could make flying on this route more sustainable by replacing fossil kerosene fully or partially on a large number of flights. This clearly shows the importance of increasing the e-SAF production capacities beyond a pioneer plant.

The political requirement to shift to more sustainable forms of energy is supported by the European ReFuelEU Aviation-regulation which requires Airlines to use a minimum e-SAF blend of 1.2% by 2030, by this creating market opportunities.

Bridging Innovation and Climate Goals

The collaboration between INERATEC and the EU-Catalyst Partnership demonstrates how public and private sector partnerships can drive the commercialization of innovative and clean climate technologies. By building on past EU grant support and leveraging new investment mechanisms, this partnership provides a blueprint for scaling up other clean energy solutions.

Accordingly, it shows the EU's commitment to support innovative technologies that will help EU industry becoming cleaner and stay competitive. The lending by the EIB is made possible thanks to the support of the InvestEU programme, which is backed by an Innovation Fund top-up guarantee. The Innovation Fund is financed by the EU Emissions Trading System.

The transformation of European industry to clean technologies is being driven by a number of technological innovations, including the efficient production of hydrogen. EIB

supports the latter by also funding an electrolysis-project by the Dresden-based start-up Sunfire. Sunfire and INERATEC were partners in a research project in 2019, when both enterprises for the first time demonstrated the production of sustainable e-Fuels from air-captured CO₂ and solar power in a fully integrated plant.

EIB Vice-President Nicola Beer says: “The EIB is committed to a competitive net-zero economy, especially in hard-to-decarbonize sectors like aviation. Through partnerships such as the EU-Breakthrough Catalyst initiative, we’re enabling a green transition for transport and are ultimately contributing to making prices of e-Fuels more economical.”

Mario Fernandez, Head of Breakthrough Energy Catalyst: “INERATEC is on a promising path towards demonstrating that e-fuels can be economically produced at scale with the support of catalytic funding. Decarbonizing aviation requires real-world projects to drive down costs and crowd in investment. Breakthrough Energy Catalyst is proud to partner with INERATEC to accelerate deployment and unlock the potential to make e-fuels a reality.”

Once completed, this project will help the EU reach its 2030 climate neutrality targets, including helping the industry and transportation sectors to comply with the e-fuel consumption objectives defined in the Renewable Energy Directive or the ReFuelEU Aviation regulation.

INERATEC CEO Dr. Tim Boeltken commented: “This funding marks a new era for INERATEC. With the funding commitment from the EIB and Breakthrough Energy Catalyst, we are accelerating the industrialization of e-Fuel production. This will make a tangible impact in reducing CO₂ emissions in sectors where direct electrification is not feasible. The focus now is on scaling up and deploying our technology where it is needed most.”



Commercial scale e-Fuel production plant by INERATEC, located in Frankfurt (Main), Germany. © INERATEC



Sustainable e-Fuel made from CO₂ and hydrogen. © INERATEC

The **EU-Catalyst partnership** was launched in 2021 at COP26 in Glasgow by EU-President Ursula von der Leyen, EIB-President Werner Hoyer and Bill Gates, with the aim to develop large-scale green tech projects based in Europe and boost investments in critical climate technologies. The Partnership creates a blueprint for public-private support for clean tech innovative technologies.

The European Investment Bank, as implementing partner of the Commission under InvestEU, has been tasked to deploy for the benefit of this partnership up to €420 million, made available from both Horizon Europe (EUR 200 million), and the Innovation Fund, which has committed EUR220 million. Breakthrough Energy Catalyst mobilizes equivalent private capital and philanthropic grants to fund the selected projects. The EU-Catalyst Partnership does not exclude potential additional contributions from EU Member States or other private partners that decide to further support the projects. Interested projects can apply for support through the Breakthrough Energy Catalyst website.

The European Investment Bank (EIB) is the long-term lending institution of the European Union, owned by its Member States. It finances investments that contribute to EU policy objectives. EIB projects bolster competitiveness, drive innovation, promote sustainable development, enhance social and territorial cohesion, and support a just and swift transition to climate neutrality. The EIB Group, which also includes the European Investment Fund (EIF), signed a total of €88 billion in new financing for over 900 projects in 2023.

All projects financed by the EIB Group are in line with the Paris Climate Accord. The EIB Group does not fund investments in fossil fuels. We are on track to deliver on our commitment to support €1 trillion in climate and environmental sustainability investment in the decade to 2030 as pledged in our Climate Bank Roadmap. Over half of the EIB Group's annual financing supports projects directly contributing to climate change mitigation, adaptation, and a healthier environment.

High-quality, up-to-date photos of our headquarters for media use are available [here](#).

Breakthrough Energy is committed to accelerating the world's journey to a clean energy future. The organization funds breakthrough technologies, advocates for climate-smart policies, and mobilizes partners around the world to take effective action, accelerating progress at every stage.

Breakthrough Energy Catalyst is a novel platform that funds and invests in first-of-a-kind commercial projects for emerging climate technologies. By investing in these opportunities, Catalyst seeks to accelerate the adoption of these technologies worldwide and reduce their costs.

Catalyst currently focuses on five technology areas: clean hydrogen, sustainable aviation fuel, direct air capture, long-duration energy storage, and manufacturing decarbonization. In addition to capital, Catalyst leverages the team's energy-infrastructure-investing and

project-development expertise to work with innovators on advancing their projects from the development stage to funding and ultimately, to construction. Learn more about Breakthrough Energy and Catalyst at breakthroughenergy.org.

The InvestEU programme provides the European Union with crucial long-term funding by leveraging substantial private and public funds to mobilise private investments for the European Union's policy priorities, such as the European Green Deal. The programme consists of three components: the InvestEU Fund, the InvestEU Advisory Hub and the InvestEU Portal. The InvestEU Fund is implemented through financial partners that will invest in projects leveraging the EU budget guarantee of €26.2 billion. To this amount, further guarantees have been added from the EU's Horizon programme and the Innovation Fund to support initiatives such as the EU-Catalyst partnership.

The entire budget guarantee will back the investment projects of the implementing partners, increase their risk-bearing capacity and thus mobilise at least €372 billion in additional investment.

EIB venture debt is a quasi-equity investment product suitable for early and growth stage ventures, combining a long-term loan with an instrument linking the return to the performance of the company. Since 2015, the EIB has invested €6 billion in Venture Debt, backing over 200 companies and realising over 50 exits. With the backing of InvestEU, the EIB aims to support European ventures and scale-ups in the cleantech, deep-tech and life sciences sectors.

The Innovation Fund: With an estimated revenue of €40 billion from the EU Emissions Trading System between 2020 and 2030, the Innovation Fund aims to support innovative net-zero technologies and support Europe's transition to climate neutrality. The Innovation Fund contributes a €220 million top-up guarantee to the InvestEU Programme for the EU Catalyst Partnership, having enabled until now more than €100 million in lending from EIB.

INERATEC is committed to defossilizing and decarbonizing the world. The company produces e-Fuels and e-chemicals: carbon-neutral fossil fuel substitutes for use in the aviation, shipping and chemical industries. Its modular, scalable plants use renewable hydrogen and biogenic CO₂ to produce synthetic kerosene, gasoline, diesel, waxes, methanol or natural gas. It is building what will be the world's largest e-fuels plant to date, in Frankfurt, which will produce up to 2,500 tonnes of ultra-low-carbon aviation fuel per year. The company is based in Karlsruhe, Germany and backed by diverse international investors.

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