

The Navigator Company and P2X-Europe announce a unique Joint Venture in Portugal to produce green, non-fossil synthetic eFuels and scale-up Power-to-Liquid business



- **Joint Venture (JV) opens perspective for 80.000 tons per year of renewable power-to-liquid products**
- **Project aims to start commercial production in 2026**
- **The strategic partnership enables Navigator adding value to biogenic CO₂ from its sustainable forest and pulp & paper production as well as P2X-Europe's parent companies H&R Group and Mabanft to ramp up market supplies to the chemical sector and non-fossil, green jet fuel for the aviation industry**

22 July 2022. The Navigator Company and Hamburg-based developer P2X-Europe have decided, subject to the approval of the relevant anti-trust authorities, to create a unique and powerful joint venture, P2X-Portugal, to develop a world-class production facility for industrial-scale production of non-fossil jet fuels or e-SAFs (e-Sustainable Aviation Fuels) – carbon-neutral synthetic kerosene, based on green hydrogen and biogenic CO₂.

This project leverages on Portugal's highly competitive renewable energy sources and on biogenic CO₂ generated by Navigator's biorefineries using sustainable forests, which together constitute the two critical elements for the successful production of net-zero synthetic feedstocks for the chemical industry and jet fuels on an industrial scale, fostering the decarbonization of the aviation industry.

The JV is tapping into the extensive know-how of P2X-Europe, a global pioneer in PtL (Power-to-Liquids) project development and technology configuration and its parent companies' H&R Group and Mabanft market expertise in waxes for the chemical-pharmaceutical industry and in liquid fuels. Furthermore, the quality of the JV builds on Navigator's vast industrial operational experience in biorefinery plants and forestry capabilities.

P2X-Portugal is a determined agile frontrunner well on course to become an international reference for the market introduction and commercialization of innovative synthetic aviation fuel products at scale.

Portugal is in a unique position to become a hub to produce green hydrogen derivatives such as synthetic jet fuels, creating jobs and securing a leading role in establishing an entirely new industry based on renewable energy and sustainable forests as the underlying source of biogenic carbon, which will be key in driving decarbonization towards net-zero.

The establishment in Navigator's Figueira da Foz site marks a key milestone for Portugal and Europe on the road towards building up a fully integrated eSAF ecosystem, as well as demonstrating a sustainable approach to the decarbonization of the aviation sector.

Project profile in a nutshell

The joint venture by the name of P2X-Portugal will bring together leading technology and engineering companies and integrates the whole process value chain from feedstock sourcing to market introduction and product distribution.

Comprising carbon capture of up to 280,000 tons of biogenic CO₂ and several hundred megawatts of new renewable energy capacity, the project aims at reaching a total net-zero synthetic PtL production capacity of 80,000 tons per year when fully developed, allowing to reduce annual carbon emissions of up to 280,000 tons.

The facility will be integrating several innovative technology components and will use a proven conversion process, leveraging recent process improvements and technologies to maximize its sustainability and system efficiency.

For the integrated PtL facility alone the project capex can total €550-600 million during the first two development phases, comprising a green H₂ production plant, biogenic CO₂ capturing equipment, and a production capacity of 40,000 tons per year of synthetic products.

The Portuguese Government has granted P2X-Portugal's ambitious PtL project the status of National Interest (PIN), which is a relevant testimony to the strength and maturity of P2X-Portugal's overall project quality.

Subject to the fulfilment of identified conditions precedents and to positive final investment decision by mid-2023, the Project is scheduled to start commercial operations as early as the first semester of 2026.

Conditions precedents required for a positive Final Investment Decision include, inter alia, (i) availability of competitive renewable energy as required by the project, (ii) appropriate setting of the EU Delegated Act defining Green H₂ (currently being discussed in Brussels), (iii) satisfactory long-term offtake commitments, and (iv) obtaining adequate EU and Portuguese government sponsored investment incentives. The JV is in the process of obtaining clearance from EU anti-trust authorities.

Portugal location advantage and Navigator's forest-based biogenic CO₂

Portugal offers enabling conditions and supporting policy measures that should allow production capacity to grow quickly and consistently with EU climate regulation, which establishes various mandate targets for the use of eFuel in gradual substitution of fossil fuels.

Major location advantages include access to 100% green (solar and wind) electricity as the primary feedstock for green hydrogen production from the electrolysis of water together with one of the richest biogenic carbon dioxide point sources available in Europe: Navigator's biorefinery located at Figueira da Foz, 140 km north of Lisbon, which generates process biogenic CO₂ derived from sustainable and certified forests.

No compromise on sustainability

Cognizant of its credibility and market leading role, P2X-Portugal does not compromise on sustainability. The facility opts exclusively for streams of sustainable biogenic carbon from sustainable forests.

Biogenic CO₂ is originally sequestered from the atmosphere by photosynthesis and stored in trees. Using sustainable forest material in biorefinery industrial processes leads to biogenic CO₂ emissions, ensuring a net zero emissions carbon cycle.

P2X-Portugal's synthetic end-products are a result of a fully sustainable transformation process, initiated with renewable electricity from solar and wind and solar-driven photosynthesis. Through this process, P2X-Portugal will be storing solar and wind energy in a synthetic liquid fuel.

Qualification and Outlook

With technology readiness, bankability, time to market and execution speed in mind, P2X-Portugal is not only a determined frontrunner but well on course to become an international reference for the market introduction and commercialization of innovative synthetic fuel products at scale.

The project contributes to the early development of a new strategic value chain in Portugal, as well as to key EU initiatives such as the Green Deal, the EU Hydrogen Strategy and the REPowerEU.

The European Parliament has recently backed a landmark ruling on aviation fuel that set binding targets for the replacement of conventional kerosene with sustainable aviation fuel (SAF) in general and green hydrogen-based synthetic fuels produced from renewable energy sources (eSAF) in particular.

Sustainable Aviation Fuel (SAF/eSAF)

Sustainable Aviation Fuel (SAF) based on Power-to-Liquids (PtL), also referred to as eSAF, is the most important lever to decarbonise aviation. For large aircraft and long-haul flights synthetic eSAF will be the only viable option to decrease emissions to close to zero.

PtL-derived eSAF (eKerosene), generated from renewable electricity and captured biogenic sources of CO₂, as the one P2X-Portugal will produce, is especially promising given that it reduces life-cycle greenhouse gas emissions by 90 to 100% compared with conventional jet fuel.

Contact:

P2X-Europe GmbH & Co. KG
Koreastraße 7
20457 Hamburg – Germany
Kirsten Grastorff, International Relations Manager
E-Mail: Kirsten.Grastorff@p2x-europe.com
M: +49 151 729 805 38
www.p2x-europe.com

About P2X-Europe

P2X-Europe GmbH & Co. KG is an independent Power-to-Liquid (PtL) project development joint-venture, backed by two Hamburg-based German companies; the Mabanft Group, a leading independent and integrated energy company, and the H&R Group, which develops and manufactures specialty chemical and pharmaceutical products. P2X-Europe develops, builds and invests in vertically integrated end-to-end Power-to-Liquid technology solutions to enable the market introduction of synthetic net-zero chemicals and fuels.

Based in Hamburg, P2X-Europe has set the ambition to become a global leader in renewable hydrogen and green synthetic hydrocarbons with a focus on sustainable aviation fuels, and the company is building a strong and diverse portfolio of large-scale Power-to-X projects across industries and geographies.

www.p2x-europe.com

Mabanft GmbH & Co. KG is a leading independent and integrated energy company, providing its customers with innovative energy solutions for their transportation, heating and industrial needs. In addition, the company is active in trading petroleum products, natural gas liquids, chemicals and biofuels.

www.mabanft.com/de

H&R GmbH & Co. KGaA, listed in the Prime Standard of the Frankfurt Stock Exchange, is a specialty chemicals company active in the development and manufacture of crude oil-based specialty chemical and pharmaceutical products and in the production of precision plastic parts. The product portfolio comprises white oils, petroleum jellies, paraffin waxes, lubricants, base oils, process oils, cable filling compounds, ozone protection waxes, plasticizers, cosmetic and pharmaceutical raw materials.

www.hur.com

About Navigator

The Navigator Company is an integrated producer of forest, pulp, paper, tissue, sustainable packaging solutions, and bioenergy, whose business is founded on state-of-the-art biorefineries on a worldwide scale, with cutting-edge technology. It is recognized as a quality benchmark in the industry worldwide.

People, their quality of life and the future of the planet inspire and drive The Navigator Company. The company is committed to creating sustainable value for its shareholders and the society as a whole, leaving a better planet to future generations through sustainable, natural, recyclable and biodegradable products and solutions that contribute towards carbon sequestration, oxygen production, biodiversity protection, soil formation and the fight against climate change.

The Navigator Company produces pulp and paper from forests which are planted exclusively for this purpose. Each year, Navigator nurseries give life to more than 12 million trees. The forests under The Navigator Company's management in Portugal represent a carbon stock, excluding carbon in the soil, equivalent to 6.1 million tons of CO₂. This stock has remained stable thanks to the sustainable management model followed by the Company.

The Group has a vertically integrated forestry business, with its own forestry research institute, and is responsible for planting a vast forest area in Portugal (1.2% of the country's area), 100% certified by the FSC® and PEFC™ systems. In 2021, 65% of the energy produced by Navigator at its four industrial complexes was obtained from biomass, making it the leading operator in this sector, producing approximately 33% of all energy derived from this ecological non-fossil fuel in Portugal.

The company is Portugal's third largest exporter, accounting for approximately 1% of GDP, around 2.4% of all the country's exports of goods and more than 30,000 direct and indirect jobs. It is also the Portuguese exporter generating the most National Value Added. In 2021, The Navigator Company's turnover was €1.6 billion. More than 90% of the Group's products are sold outside Portugal and shipped to approximately 130 countries.

The Navigator Company has made a formal commitment to achieving carbon neutrality at its industrial complexes by 2035, 15 years ahead of the targets set by the European Union and Portugal. This makes it the first Portuguese company, and one of the first in the world, to set itself this ambitious goal.

This commitment is the culmination of a sustainability strategy previously distinguished by the CDP (formerly Carbon Disclosure Project, now Disclosure Insight Action) in 2019 and 2020, with the ranking of global leader in fighting climate change. The Navigator Company was recognized for its efforts in reducing emissions, decreasing climate risks, and developing an economy with a low carbon footprint.

Forward-looking statements and forecasts:

This press release contains forward-looking statements. The statements are based on the current estimates and forecasts by the Executive Board and the information available to the Board at this time. These forward-looking statements do not provide any warranty for the future developments and results contained therein. The future developments and results are dependent on a number of factors; they entail various risks and contingencies and are based on assumptions, which could prove to be incorrect. We do not assume any responsibility for updating the forward-looking statements contained in this press release.