

Nova Pangaea hits key milestone with 72-hour waste-to-SAF technology trials

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The UK-based company achieved stable continuous operations and above-target yields at its Teesside demonstration plant as it prepares to raise funds for its first commercial facility



UK-based Nova Pangaea Technologies has completed a new round of endurance trials for its sustainable aviation fuel technology, demonstrating continuous and stable operation for up to 72 hours and achieving yields above its target levels as the company moves closer to commercial deployment.

The trials were carried out at Nova Pangaea's demonstration plant in Teesside and mark another milestone for the company as it prepares to raise capital for its first commercial-scale facility. The results come at a time when the aviation industry is under growing pressure to expand sustainable aviation fuel production and diversify beyond its current dependence on waste oils and fats.

Nova Pangaea's technology is built around its proprietary REFNOVA process, which converts waste biomass and agricultural residues into bioethanol. That ethanol can subsequently be upgraded into sustainable aviation fuel or renewable diesel, creating a pathway for materials such as wood chips, sawdust and wheat straw to enter the low-carbon fuel supply chain.

The latest trials focused on softwood residues generated by the timber-processing industry. Multiple production runs were conducted at the Teesside facility, processing up to three tonnes of feedstock per day. According to the company, the demonstration runs delivered stable continuous operation and yields that exceeded expectations.

The results build on smaller-scale trials conducted in early 2025, when Nova Pangaea demonstrated that its process could operate beyond laboratory conditions. The latest campaign takes that validation further, testing the technology over extended production periods of up to three days.

A further round of trials is planned for next year as the company works to refine the design of its first commercial-scale plant. For Nova Pangaea, the technology has an additional advantage beyond producing renewable fuel. The REFNOVA process

also generates biochar, a carbon-rich co-product capable of permanently storing carbon. The company says this combination allows its overall production pathway to become carbon-negative, removing more carbon dioxide from the atmosphere than is released through the process.

The technology is also central to Project Speedbird, an initiative involving Nova Pangaea, British Airways and LanzaJet and supported by the UK government. Under the project, Nova Pangaea plans to develop four facilities in the UK that will convert locally sourced waste biomass into bioethanol, which can then be upgraded into sustainable aviation fuel.

The project is part of a broader effort to create a more diversified supply base for SAF. While demand for sustainable aviation fuel is increasing, the industry continues to face constraints around the availability of suitable feedstocks. "The latest trials have validated our technology and should further underpin the confidence of investors on our journey towards building our first commercial plant," said Stewart Stewart, CEO of Nova Pangaea. He said the SAF sector had reached a critical stage, with rising demand creating an urgent need to expand the range of sustainable feedstocks available to fuel producers.

"The SAF industry is currently at a critical point," Stewart said. "Demand is increasing and supply chain shocks such as in the Middle East show the need to find an alternative to fossil fuels, yet aviation is currently reliant on SAF from a single feedstock, which will not be enough to meet growing SAF demand." The successful endurance trials could strengthen Nova Pangaea's case as it seeks funding for commercial expansion. More importantly, they offer another indication that agricultural and forestry residues could play a larger role in supplying the next generation of sustainable aviation fuel.

With its technology now demonstrated through extended continuous operation, Nova Pangaea is positioning REFNOVA as a potential route to unlock waste biomass that has so far remained largely outside the mainstream SAF supply chain. The next challenge will be translating that technical progress into commercial-scale production and proving that a broader range of locally available waste materials can help meet aviation's rapidly growing demand for low-carbon fuel.