

Johnson Matthey launches HyCOgen, an enabling technology to efficiently convert CO₂ and green hydrogen into sustainable aviation fuel

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- Launch of **HyCOgen** will play a key role in enabling captured CO₂ and green hydrogen to be converted into sustainable aviation fuel
- In combination with FT **CANS**[™] technology, Johnson Matthey delivers an integrated, scalable solution

Johnson Matthey, a global leader in sustainable technologies, has launched an innovative technology – **HyCOgen**[™] – designed to play a pivotal role in enabling the conversion of captured carbon dioxide (CO₂) and green hydrogen into sustainable aviation fuel (SAF). By combining **HyCOgen** with the award-winning FT **CANS** Fischer Tropsch technology (developed in collaboration with bp), Johnson Matthey offers an integrated, scalable solution for use in the efficient and cost-effective production of renewable power based SAF.

HyCOgen, Johnson Matthey's Reverse Water Gas Shift technology, is a catalysed process to convert green hydrogen and CO₂ into carbon monoxide (CO), which is combined with additional hydrogen to form synthesis gas (syngas), a crucial building block in the manufacture of fuels and chemicals. The integration with the FT **CANS** technology provides an end to end, optimised and highly scalable process that turns over 95% of the CO₂ into high quality synthetic crude oil. This synthetic crude oil can be further upgraded into sustainable drop-in fuel products including aviation fuels, renewable diesel and naphtha.

The scalability of the integrated **HyCOgen**/FT **CANS** solution enables cost-effective deployment across a wide range of project sizes – from small-scale, fed by hydrogen from a single electrolyser, through to world-scale with multiple large electrolyser modules.

The global aviation industry is responsible for 12%¹ of transport related CO₂ emissions, therefore substantial production of low carbon intensity SAF is essential to mitigate emissions. Both the EU² and US³ are setting bold targets for its scale up and blending, and this is expected to increase SAF demand significantly. Johnson Matthey's **HyCOgen** solution, along with the FT **CANS** technology, can help increase the supply of SAF through its efficient production at scale.

1. ATAG (Air Transport Action Group) Sept 2020
2. The European Commission has proposed regulation mandating minimum SAF blending volumes in aviation fuel, rising from 2% (2025) to 5% (2030) and 63% (2050).
3. In the United States, the [Sustainable Aviation Fuel Grand Challenge](#) aims to scale up SAF production to 11 billion litres annually by 2030 and to eventually meet the country's entire aviation fuel demand by 2050

Jane Toogood, Sector Chief Executive, Johnson Matthey, commented: "Given the challenges associated with new propulsion technologies and airport infrastructure, plus the long asset life of aircraft, there are significant hurdles in moving from hydrocarbon-based aviation fuel to alternatives such as battery electric or hydrogen. This is where Johnson Matthey's longstanding expertise and market-leading position in syngas generation technology can play a crucial role, by providing solutions that enable the production of sustainable drop-in fuels that are deployable today.

"By combining **HyCOgen** with FT **CANS**, we can now deliver customers a cost-efficient, reliable and scalable technology to help increase SAF production, backed by our track record of successful technology development and commercialisation."

The integrated **HyCOgen/FT CANS** solution is available now from Johnson Matthey.

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Johnson Matthey is a global leader in sustainable technologies that enable a cleaner and healthier world. With over 200 years of sustained commitment to innovation and technological breakthroughs, we improve the performance, function and safety of our customers' products. Our science has a global impact in areas such as low emission transport, pharmaceuticals, chemical processing and making the most efficient use of the planet's natural resources. Today about 15,000 Johnson Matthey professionals collaborate with our network of customers and partners to make a real difference to the world around us. For more information, visit www.matthey.com

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