

HyCOgen and FT CANS, innovative technologies to enable sustainable fuel production selected for Repsol and Aramco's synthetic fuel plant in Bilbao

23 May 2022

- Repsol and Aramco synthetic fuel plant in Bilbao to become one of the world's first to use green hydrogen and CO2 to generate sustainable synthetic fuels
- Technologies developed by Johnson Matthey and bp enable production of ultra-low emission fuels

Johnson Matthey, a global leader in sustainable technologies, and bp, an international energy company, have announced that their co-developed, ground-breaking Fischer Tropsch (FT) **CANS**[™] technology and Johnson Matthey's innovative reverse water gas shift technology, **HyCOgen**[™], have been selected for use by Aramco and Repsol at a new synthetic fuels plant in Bilbao, Spain.

The plant will be one of the world's first to use renewable (green) hydrogen and CO2 as its only raw materials. It is due to be commissioned in 2024, with a starting capacity of more than 2,100 tonnes per year. It will produce a sustainable synthetic drop-in fuel that can be blended for existing road vehicle engines, planes and ships.

It is the second licence signed for the FT **CANS** technology, which was jointly developed with bp to deliver significant environmental and operational benefits. It converts synthesis gas (syngas), generated from sources such as industrial emissions, direct air capture, municipal solid waste or other renewable biomass, into long-chain hydrocarbons suitable for the production of diesel and jet fuels.

It is the first licence signed for Johnson Matthey's recently launched **HyCOgen** technology, which uses a catalysed process to convert CO2 and green hydrogen into carbon monoxide (CO), which is then combined with additional hydrogen to form syngas. Coupling **HyCOgen** and FT **CANS** technologies provides an end-to-end, scalable process optimized for high conversion efficiency — enabling the production of premium quality synthetic crude oil.

Aramco Chief Technology Officer, Ahmad Al-Khowaiter, said: "This agreement supports our ongoing work to develop lower-emission transport solutions and we are thrilled by the opportunity it represents. Converting CO2 into synthetic, lower-carbon fuels can meaningfully contribute to the reduction of transport emissions and, through this

strategic partnership, we aim to harness innovative technologies that can unlock the full potential of both sustainable fuels and chemicals — and demonstrate their competitiveness.”

Adriana Orejas, Director Industrial Transformation and Deep Tech at Repsol said: “The development of Bilbao synthetic fuel, where sustainable synthetic fuel shall be produced, represents an important step on our commitment of being a Net Zero Emission company by 2050, aligned with the climate objectives set out in Paris by COP21. Coupling Johnson Matthey, a reliable and demonstrated global leader technologist, **HyCOgen** and FT **CANS** Technology allow us to demonstrate the whole value chain of producing sustainable fuel from CO2 and renewable hydrogen as unique raw materials, complementing Repsol’s portfolio of Low carbon fuels alternatives.”

Noemie Turner, VP Technology development & commercialisation at bp, said: “Repsol and Aramco choosing to license our co-developed FT **CANS** technology recognises great science and engineering. This builds on the first license to Fulcrum Bioenergy, further demonstrating the key role of the technology in the production of sustainable fuels.”

Jane Toogood, Sector Chief Executive at Johnson Matthey, said: “In licensing both the **HyCOgen** and FT **CANS** technologies for their Bilbao plant, Repsol and Aramco have recognised the potential of this pioneering solution — and shown that we’re a trusted partner in sustainable fuel production technology.”

The scalability of the combined **HyCOgen** and FT **CANS** solutions enables cost-effective deployment across a wide range of project sizes. Either technology can also be licensed independently.

ENDS

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

Inspiring science, enhancing life

For further information

Johnson Matthey:

Email: [jmpmr@matthey.com](mailto:jmpr@matthey.com)



Telephone: +44 207 269 8001

Harry Cameron, Tulchan Communications:

Email: johnsonmatthey@tulchangroup.com

Telephone: +44 779 915 2148