

FAQ:

Argus HVO fob Singapore and SAF fob Singapore price assessments



Argus launched renewable diesel (HVO) and sustainable aviation fuel (SAF) assessments on a fob Singapore basis on December 4, 2020. China, Japan and South Korea have set ambitious decarbonisation targets, and a number of private-sector companies have announced that they will achieve net zero carbon emissions by 2050. As these countries and companies move away from fossil fuels, hydrotreated vegetable oil (HVO), or renewable diesel, is becoming increasingly popular as an alternative to traditional petroleum diesel.

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What is HVO?

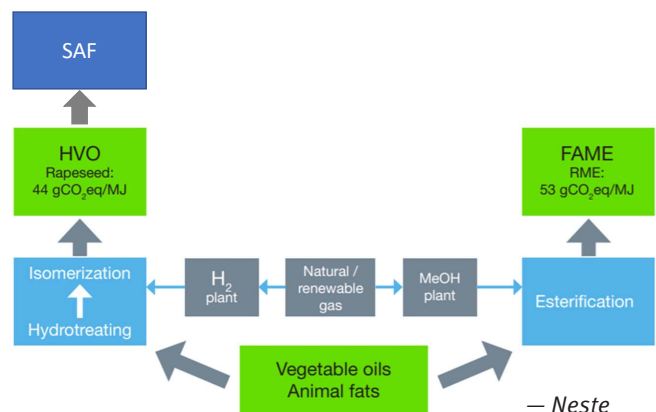
Renewable diesel, or HVO (hydrotreated vegetable oil) is a non-petroleum hydrocarbon fuel made up of 100pc renewable raw materials. These include food and feed crops such as palm oil, rapeseed oil or soybean oil, waste products such as used cooking oil (UCO) and palm oil mill effluent (POME) as well as tallow. Renewable diesel is chemically identical to conventional road diesel.

What is SAF?

Sustainable aviation fuel is fuel for aviation that is not derived from crude oil but from sustainable fuels, including used cooking oil, ag residues and wood waste. This can be mixed with conventional jet fuel and supplied to an airline in the same way that the petroleum-based jet fuel is. There are seven different approved ways for producing SAF, and the most commonly used is HEFA SAF, which is hydro-processed esters and fatty acids. The HEFA process is also used to make a type of renewable diesel, hydrotreated vegetable oil (HVO),

and little refinery change needs to be made to produce SAF from HVO. Therefore, HEFA SAF shares the same type of waste feedstocks used to make certain HVOs. HEFA SAF can be blended up to 50pc into fossil fuel jet.

How does the HVO and SAF biorefinery process work?



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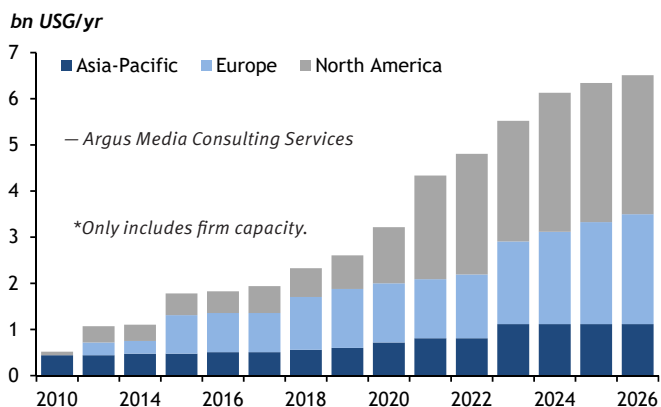
How is HVO different from biodiesel?

HVO and biodiesel both use the same feedstocks. But they differ in production methods and usage. HVO is typically produced by hydrotreating oils, fats and esters, while biodiesel is produced through esterification of oils and fats. There is a limit on how much biodiesel can be added to conventional diesel, but HVO has no “blend wall”. So HVO can be used in significantly higher blends in conventional diesel or even as a total substitute for conventional diesel.

Why is HVO significant?

HVO contains no fossil carbon, which makes it a low greenhouse gas (GHG) alternative to conventional diesel. The use of HVO is an easy switch from conventional diesel and is a “drop-in” diesel substitute. This means it can be produced, stored and distributed in existing diesel facilities and networks, and used by vehicles without any modification.

Projected renewable diesel and SAF capacity to 2026



What is the importance of SAF to the aviation industry?

Airlines around the world will look to SAF to meet their needs as more global carbon reduction mandates take effect and as airlines look to fulfil their environmental, social and corporate governance (ESG) requirements.

Who should look at Asian HVO and SAF prices?

- Refiners, traders and buyers of conventional and renewable diesel, and conventional jet and SAF
- Feedstock producers, traders and buyers
- Banks and investment agencies
- Technology, EPC providers
- Quality inspectors
- Port and storage operators
- Government agencies planning biofuels policies
- Energy analysts

HVO and SAF will bring new business opportunities and it will be important to monitor the differential between conventional diesel and HVO, and conventional jet fuel and SAF prices. HVO and SAF currently cost more to produce than conventional diesel and jet, as is typical for most renewable fuels. But companies and countries are aggressively seeking large and rapid GHG reductions, and the pace at which the renewable energy industry is developing is taking many by surprise.

Who provides HVO and SAF price assessments?

Argus publishes prices for conventional diesel and jet, HVO and SAF which can be used for a convenient, market-reflective comparison.

How does Argus assess Asian HVO and SAF prices?

Argus publishes fob Singapore HVO and fob Singapore SAF assessments, which are netbacks from the established fob ARA biofuels market. Argus has been accessing the European renewable diesel and SAF market since September 2020, HVO fob ARA (Class I, II, and III) and SAF fob ARA. These assessments are published in the *Argus Biofuels* report. You can access the full *Argus Biofuels* methodology at www.argusmedia.com/methodology.

Argus also publishes conventional diesel and jet fuel prices on a fob Singapore basis in the *Asia-Pacific Products Report*, which provide a useful comparison. Both reports provide news and analysis on developments in these markets from our team of biofuels and oil products experts.

Argus provides in-depth pricing and market analysis across the entire global renewable fuel supply chain, from original feedstock to final product prices. Argus’ extensive coverage includes the industry-leading UCOME, RME, and FAME assessments; along with 75+ renewable feedstock and renewable fuel assessments across the globe. It provides detailed insight of profit margins with superior market analysis on supply chain economics and fundamentals. Argus’ more responsive market assessments provide true executable value in sourcing and supply procurement, providing the information and instruments that you need to make profitable decisions.

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