

ANA Announces Agreement With ITOCHU and Raven SR for SAF Procurement

- MOU calls for production of SAF by Raven SR utilizing local waste in US and Europe markets.
- Following the procurement agreement with Neste signed in 2020, ANA and ITOCHU will cooperate in establishing a supply chain for utilizing SAF produced by Raven SR.



Image of Raven SR's Facility

TOKYO, Jan. 17, 2023 - All Nippon Airways (ANA), Japan's largest and 5-Star airline for ten consecutive years, has signed a Memorandum of Understanding (MOU) with ITOCHU Corporation and Raven SR Inc. for the production and procurement of sustainable aviation fuel (SAF).

Raven SR, which owns patented Steam/CO₂ Reforming technology for converting various types of local waste, such as green waste, municipal solid waste, organic waste, and methane from municipal solid waste, into renewable hydrogen and clean fuels, is set to begin commercial hydrogen production in 2024 1Q. Raven SR plans to begin production of SAF in California by 2025, with annual incremental increases to 200,000 tons by 2034. The supply will be produced by Raven SR at facilities planned for major global markets in the US and Europe.

"As part of our [climate transition strategies](#), ANA is dedicated to being an industry leader with our environmental commitments. This announcement with ITOCHU and Raven SR will be of great importance and support our mid- and long-term carbon reduction goals," said Hideo Miyake, Executive Vice President at ANA overseeing Procurement. "We look forward to collaboratively working together on this important business imperative of being environmentally conscious and developing local solutions that are beneficial to reducing our carbon footprint."

"ITOCHU is proud to work together with ANA and Raven SR under a strong commitment toward carbon neutrality," said Masaya Tanaka, President of the Energy & Chemicals Company and Executive Officer. "We will continue to work closely on the production and procurement of SAF, and look forward to the commencement of production in the coming years which will help increase utilization of SAF in the airline industry."

"We are grateful our strategic partner ITOCHU introduced us to ANA to initiate this landmark agreement for long-term SAF supplies that will foster growth for Raven SR on a global basis and help ANA with its carbon reduction commitments," said Matt Murdock, CEO of Raven SR. "We expect that our agreement with ANA to supply SAF in strategic markets globally will enable buying local fuel produced from local waste. We see growing interest in such efficiency and circularity in renewable fuel distribution for aviation and other transportation sectors."

Global SAF supply currently comprises 0.03% of total jet fuel consumption due to a limited supply of feedstock like used cooking oils and tallow. The General Assembly of the International Civil Aviation Organization (ICAO) has set a goal of achieving net zero CO₂ emissions from aircraft by 2050. To meet this target, the airline industry will be required to reduce or offset 15% of its emissions from 2019 levels, starting in 2024. As the trend towards decarbonization in the airline industry continues to gain momentum, it is expected that the demand for sustainable aviation fuels (SAF) will also increase in Japan.

Raven SR's non-combustion technology offers a sustainable solution for the reliable and long-term production of renewable fuels. By utilizing local and regional waste, Raven SR's distributive model produces fuels closer to market demand, leading to greater decarbonization and addressing environmental issues caused by waste in specific regions. This approach further enhances the sustainability and impact of the company's clean fuel production. Raven SR's use of waste as feedstock for its SAF production is expected to provide both stabilize the supply and pricing of SAF.

The ANA Group has set a goal of replacing at least 10% of its jet fuel with SAF by FY2030 and of becoming carbon neutral by FY2050. Through our ANA Future Promise initiative and other efforts, we will continue to proactively work to incorporate initiatives to reduce CO₂ emissions and pursue sustainability in the aviation industry to contribute to the realization of a carbon-neutral society.



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About ANA

Founded in 1952 with just two helicopters, All Nippon Airways (ANA) has grown to become the largest airline in Japan. ANA HOLDINGS Inc. (ANA HD) was established in 2013 as the largest airline group holding company in Japan, comprising 69 companies including ANA and Peach Aviation, the leading LCC in Japan.

ANA is a launch customer and the largest operator of the Boeing 787 Dreamliner, making ANA HD the biggest Dreamliner owner in the world. A member of Star Alliance since 1999, ANA has joint venture agreements with United Airlines, Lufthansa German Airlines, Swiss International Airlines and Austrian Airlines - giving it a truly global presence.

The airline's legacy of superior service has helped it earn SKYTRAX's respected 5-Star rating every year since 2013, with ANA being the only Japanese airline to win this prestigious designation for 10 consecutive years. ANA also has been recognized by Air Transport World as "Airline of the Year" three times (2007, 2013 and 2018); it is one of only a select few airlines to win this prominent award multiple times.

In 2021, ANA was awarded the 5-star COVID-19 safety rating by SKYTRAX, recognizing the airline's initiatives to provide a safe, clean and hygienic environment at airports and aboard aircraft, embodied in the ANA Care Promise.

ANA is the only company in the aviation industry to receive the Gold Class distinction from the 2022 S&P Global Sustainability Awards and ANA HD has been selected as a member of the Dow Jones Sustainability World Index list for the sixth consecutive year and the Dow Jones Sustainability Asia Pacific Index list for the seventh consecutive year.

For more information, please refer to the following link:

<https://www.ana.co.jp/group/en/>

About ITOCHU Corporation

The history of ITOCHU Corporation dates back to 1858 when the Company's founder Chubei Itoh commenced linen trading operations. Since then, ITOCHU has evolved and grown over 160 years. With approximately 100 bases in 62 countries, ITOCHU, one of the leading sogo shosha, is engaging in domestic trading, import/export, and overseas trading of various products such as textile, machinery, metals, minerals, energy, chemicals, food, general products, realty, information and communications technology, and finance, as well as business investment in Japan and overseas. Visit <https://www.itochu.co.jp/en/>.

About Raven SR

Raven SR, headquartered in Wyoming, transforms biomass, mixed municipal solid waste, bio-solids, sewage, medical waste, and natural or biogas into renewable fuels. Using its proprietary, non-combustion, non-catalytic "Steam/CO₂ Reformation" technology, Raven SR dependably produces a hydrogen-rich syngas regardless of feedstock utilized. Raven SR, led by co-founders Matt Murdock and Matt Scanlon, is committed to adding value to local resources and communities while responsibly reducing greenhouse gases and achieving a low carbon economy. By using modular systems and producing low air emissions, their systems can be located closer to customers and feedstock, creating local fuel from local waste for local mobility. Visit <https://ravensr.com/>.