

2024 ICAO APAC Regional Seminar on Environment

Session 4 - Financing

08 August 2024

MUFG Bank, Ltd.
Members of MUFG, a global financial group



MUFG ESG Team & Credentials



MUFG ESG Finance Team APAC

MUFG combines a truly global presence with ESG Finance team members across the entire MUFG network, with a strong local team of 20+ professionals supporting issuances in Asia Pacific.



Colin Chen
Managing Director

Head of ESG Finance
Department APAC



Amanpreet Singh
Managing Director

Deputy Head of ESG Finance
Department APAC
Head of Deal Origination &
Advisory



Nicholas Gandolfo
Director

*Blended Finance &
Transition Finance Lead*



Archana Khemka
Director

Head of Strategy,
Products & Operations



Angkana Meeploy
Director

Head of Market
Intelligence



Zhenping Lin
Vice President

Deal Origination & Advisory
(Indonesia, India,
Taiwan)



Jonathan Ne Win
Vice President

Deal Origination & Advisory
(Malaysia, Philippines,
Thailand, Singapore)



Darius Cheong
Analyst

Deal Origination & Advisory

MUFG ESG Financing Credentials in APAC

MUFG CREDENTIALS AS ESG ADVISOR / COORDINATOR IN APAC (EX-JAPAN)

 <p>AdaniConnex</p> <p>USD 875 Million SLL</p> <p>MLA, Sustainability Coordinator</p> <p>April 2024 (India)</p>	 <p>Adani Green Energy</p> <p>USD 939 Million Green Loan</p> <p>MLA, Green Loan Coordinator</p> <p>December 2023 (India)</p>	 <p>Apical (RGE Group)</p> <p>USD 1 Billion eq. SLL</p> <p>MLAB, Sustainability Coordinator</p> <p>December 2023 (Indonesia)</p>	 <p>Thai Union Group</p> <p>THB 11.5 Billion SLL</p> <p>MLAB, Sustainability Coordinator</p> <p>November 2023 (Thailand)</p>	 <p>EdgeConnex</p> <p>USD 404 Million SLL</p> <p>MLA</p> <p>November 2023 (Indonesia)</p>	 <p>HaiLong Offshore Wind Power</p> <p>NTD 118 Billion Green Loan</p> <p>MLA, Green Loan Coordinator</p> <p>September 2023 (Taiwan)</p>
 <p>AirTrunk</p> <p>AUD 4.665 Billion SLL</p> <p>MLAB, Underwriter</p> <p>August 2023 (Australia)</p>	 <p>Vector Metering</p> <p>AUD 1,600 Million Green Loan</p> <p>ESG Coordinator, MLA</p> <p>July 2023 (New Zealand)</p>	 <p>PAG HK</p> <p>Undisclosed amount Sustainability-Linked Subscription Line Credit Facility</p> <p>ESG Coordinator, Arranger</p> <p>July 2023 (Hong Kong)</p>	 <p>Kingboard Laminates Limited</p> <p>HKD 7 Billion SLL</p> <p>MLAB, Sustainability Coordinator</p> <p>June 2023 (Hong Kong)</p>	 <p>Republic of Indonesia</p> <p>JPY 20.7 billion Samurai Blue Bonds</p> <p>Joint Bookrunner</p> <p>May 2023 (Indonesia)</p>	 <p>Genius Auto Finance</p> <p>RMB 2,200 Million SLL</p> <p>MLAB, Sustainability Coordinator</p> <p>April 2023 (Hong Kong)</p>
 <p>REC Limited</p> <p>USD 750 Million Green Bond</p> <p>Joint Bookrunner, Joint Green Structuring Advisor</p> <p>April 2023 (India)</p>	 <p>Formosa Ha Tinh Steel</p> <p>USD 500 Million SLL</p> <p>MLAB, Sustainability Coordinator</p> <p>March 2023 (Taiwan)</p>	 <p>State Bank of India</p> <p>USD 1 Billion Social Loan</p> <p>MLAUB, Lead Social Loan Coordinator</p> <p>February 2023 (India)</p>	 <p>Far East Horizon</p> <p>HKD 2 Billion Green Loan</p> <p>MLAB, Green Loan Advisor</p> <p>December 2022 (Hong Kong)</p>	 <p>Housing Development Finance Corporation</p> <p>USD 1.1 Billion Social Loan</p> <p>MLABU, Lead Social Loan Coordinator</p> <p>October 2022 (India)</p>	 <p>Kingdom of Thailand</p> <p>THB 35 Billion Sustainability Bond</p> <p>ESG Structuring Advisor, Active Bookrunner, Joint Lead Manager</p> <p>September 2022 (Thailand)</p>

APAC SUSTAINABLE FINANCE LOAN MANDATED ARRANGER LEAGUE TABLES 2Q24

Rank	Bookrunner & MLA	# Deals	Volume (USDm)
1	Mizuho Financial Group Inc	45	6360
2	Mitsubishi UFJ Financial Group Inc	40	3679
3	Oversea-Chinese Banking Corp Ltd [OCBC]	30	3390
4	Sumitomo Mitsui Financial Group Inc	33	2779
5	Development Bank of Singapore Ltd [DBS]	28	2616
6	State Bank of India	5	2505
7	Bank of China Ltd	32	2120
8	Hua Nan Financial Holdings Co Ltd	24	1833
9	Standard Chartered Bank Plc [SCB]	14	1758
10	United Overseas Bank Ltd	17	1755

MUFG NAMED BEST SOCIAL IMPACT ADVISOR & SUSTAINABLE BANK

	<p>Best Social Impact Advisor</p> <p>The Asset Triple A Sustainable Capital Markets Award 2023</p>
	<p>Best Sustainable Finance Advisor</p> <p>The Asset Triple A Sustainable Capital Markets Award 2022</p>
	<p>Best Sustainable Bank</p> <p>Indonesia, Singapore, Malaysia, Thailand</p>
	<p>Best Sustainable Bank</p> <p>Hong Kong, India, Indonesia, Singapore, Taiwan, Thailand</p>

Our ESG-Themed Product Offerings



"Response to climate change & environmental protection" is one of the most important issues for MUFG's Sustainability Management. Via tackling this issue, MUFG will contribute to creating a sustainable society by fostering a virtuous cycle between the environment and economy"

- MUFG's journey to the Carbon Neutrality Declaration

1

- Green, Social, Sustainability Loan
- Sustainability-Linked Loan
- Transition Loan

Loan

4

- Providing thematic and tailored advice, such as ESG ratings, KPI benchmarking
- Establishment of ESG financing framework

ESG Advisory

2

- Green, Social, Sustainability Bond
- Sustainability-Linked Bond
- Transition Bond

Bond

5

- ESG Interest Rate Swap, Cross Currency Swap, Coupon Swap
- ESG Structured Deposit
- Available in Hong Kong and Singapore

Derivatives

3

- Green & Sustainable Deposit: a Time Deposit which is notionally matched against ESG Loan
- Available in multiple APAC locations

Deposit

6

- Sustainable Trade Asset Financing
- Sustainability-Linked Trade Financing
- Available in Singapore, Hong Kong, India, Malaysia and Vietnam

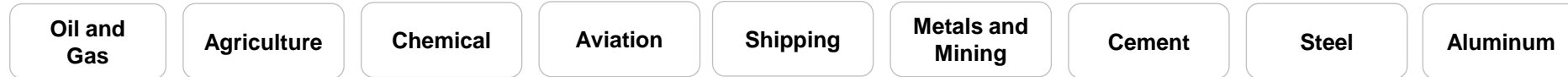
Trade Finance

Transition Finance - Aviation

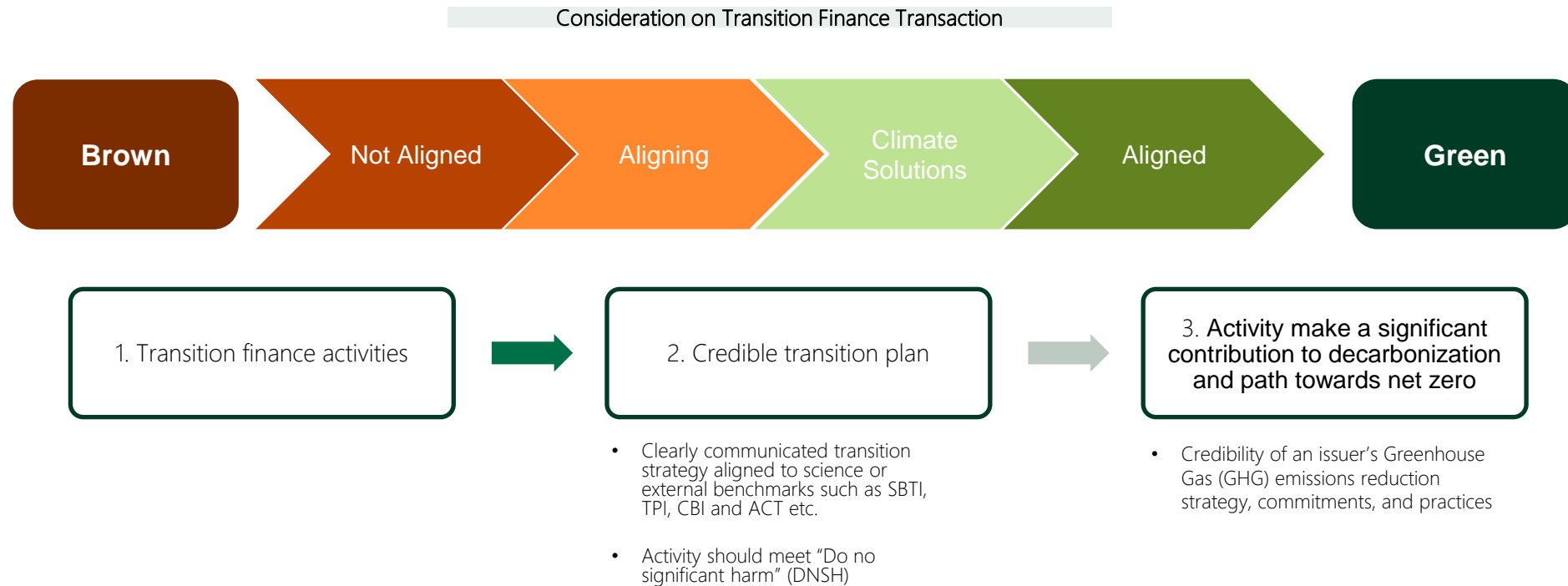


What is Transition Finance?

Transition finance focus on decarbonization of a company and their activities while supporting a company's transition to net zero along a pathway from brown to green. Transition finance is generally provided to high carbon-emitting and “hard-to-abate” industries and sectors such as the following:



Larger amount of financing is required in carbon-intensive sectors that need to decarbonize, and eventually achieve net zero emissions.

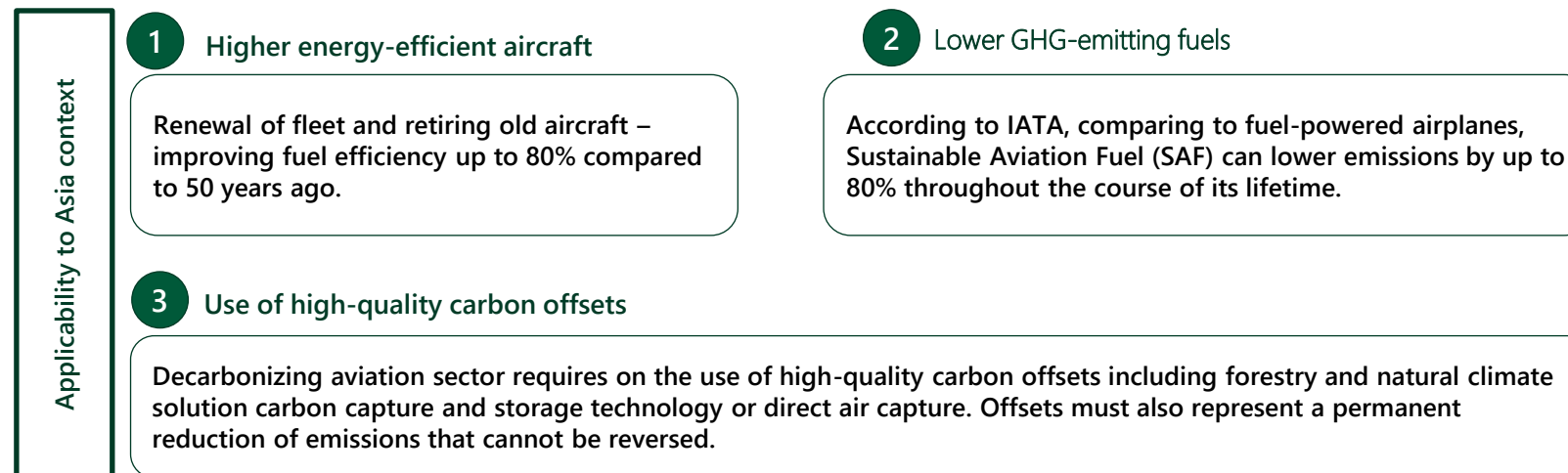


Transition Finance in Aviation (1/2)

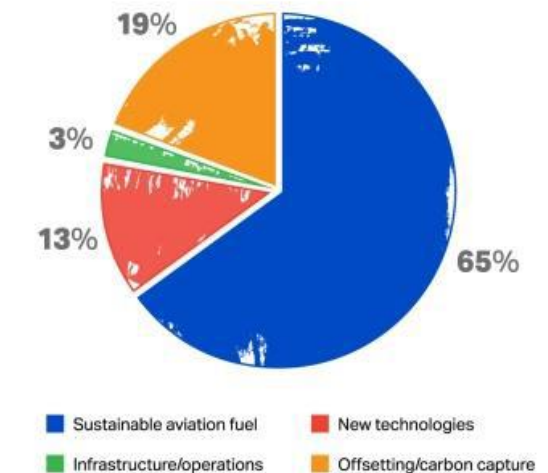
- Over the next few years, it is estimated at over US\$50 billion is needed to fund the green transition in South-east Asia (SEA).
- Countries in SEA have yet to fully adopt clean energy and wean themselves off fossil fuels which make transition finance more relevant in the region.
- Region's economic reliance on carbon-intensive sectors is large. Asian countries are establishing their own guidelines, frameworks and taxonomy on their approaches to transition financing:
 - > ASEAN Taxonomy: Transition Finance
 - > Climate Transition Finance Handbook
 - > Singapore Taxonomy

Net zero in Aviation

- The aviation industry has aligned on most of the crucial actions needed to decarbonize this sector — (1) fleet renewal, (2) disruptive propulsion technologies, (3) operational efficiency, (4) sustainable aviation fuel (SAF) usage, and (5) carbon offsetting.



Contribution to achieving Net Zero Carbon in 2050



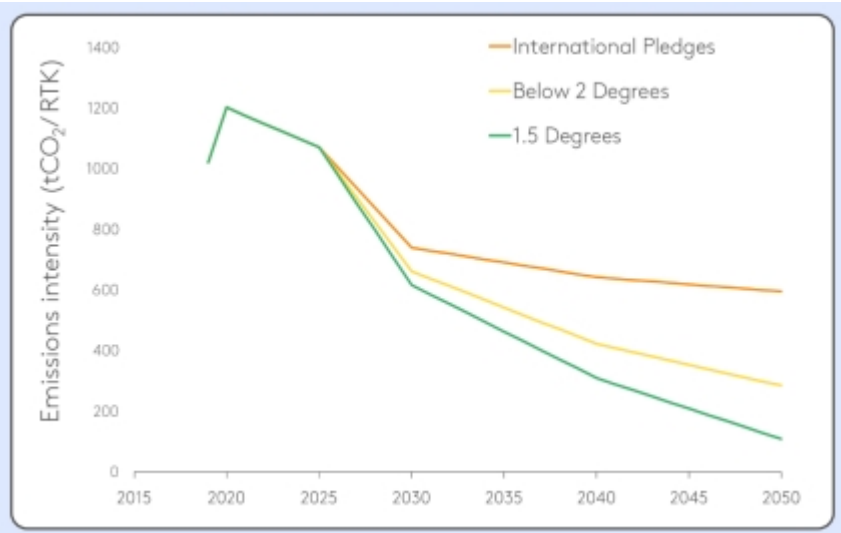
Transition Finance in Aviation (2/2)

IATA estimates that US\$2 trillion in investment will be required to reach net-zero emissions by 2050. To get on track with the Net Zero Emissions by 2050 (NZE) Scenario, numerous technical measures pertaining to low-emission fuels, upgrades to infrastructure, operational optimization, and demand restraint solutions are required to halt the growth in emissions.

TPI's benchmark global carbon intensity paths for the aviation sector

Benchmarks in aviation (derived from IEA scenarios):

- 1.5 Degrees scenario
- Below 2 Degrees scenario
- National Pledges scenario



Identified use of proceeds opportunities for aviation sector

Transition	Fuel Efficient Aircraft
	SAF
	Energy + Fuel Efficiency
	Batteries/Alt Propulsion
	Airport Infra for SAF
	Operations Equip to drive Efficiency (Airport)
	R&D Transition
	Retrofit to Threshold
Green	Green Assets not connected to Aircraft
	Electrified Ground Fleet
	Electronic Aircraft
	Green Buildings

Case Study: Japan Airlines Transition Bond & Transition-linked Loan

The Aviation Industry's Transition Bond & Transition-linked Loan

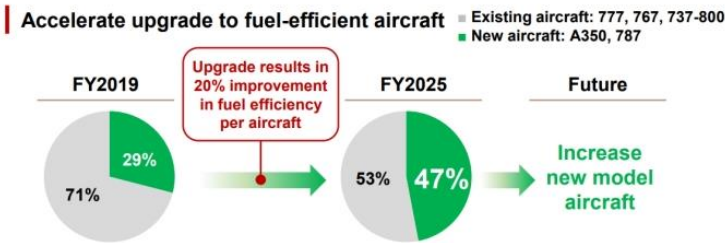
Japan Airline Group, along with several other airlines and industry associations, pledged to achieve net-zero emissions by 2050. In order to achieve this target, JAL would need to upgrade its aircraft to more fuel-efficient models that emit less carbon dioxide, while increasing its use of sustainable aviation fuel (SAF).

JAL's first Transition-linked Loan

Issuer	Japan Airlines
Loan Execution	1 March 2023
Product	Transition-linked loan
Size	26.5 billion yen
Use of Proceeds	Purchase of 2 fuel-efficient A350-900 aircraft
SPTs	SPT 1: Maintain total GHG emissions (direct emissions, Scope1) in FY2025 compared to FY2019 (Less than 9.09 million tons) SPT 2: Reduce total GHG emissions (direct emissions, Scope1) by 90% in FY2030 to FY2019 (Less than 8.18 million tons)
MUFG Role	Structuring Advisor & Lender

Key highlights

- Use of Proceeds: Through upgrading to fuel-efficient aircraft (Airbus A350, Boeing-787, etc.)
- By upgrading to fuel-efficiency aircraft, JAL will accelerate efforts to achieve its CO2 reduction targets for fiscal years 2025 and 2030, the interim stages toward its overall target of net-zero emissions by 2050.



Key highlights

Timing of issue	23 May 2024
Product	Transition Bond
Size	15.0 billion yen
Maturity	15 years
Use of Proceeds	Upgrading to fuel-efficient aircraft (Airbus A350, Boeing-787, etc.)

Project Category	Eligibility Criteria
Upgrading to Fuel-efficient aircraft Green Bond Principles: Clean transportation (Environmental objectives: Climate change mitigation)	"Targets and Initiatives towards CO2 emission reduction by 2030": Upgrading to fuel-efficient aircraft (Airbus A350, Boeing-787, etc.)

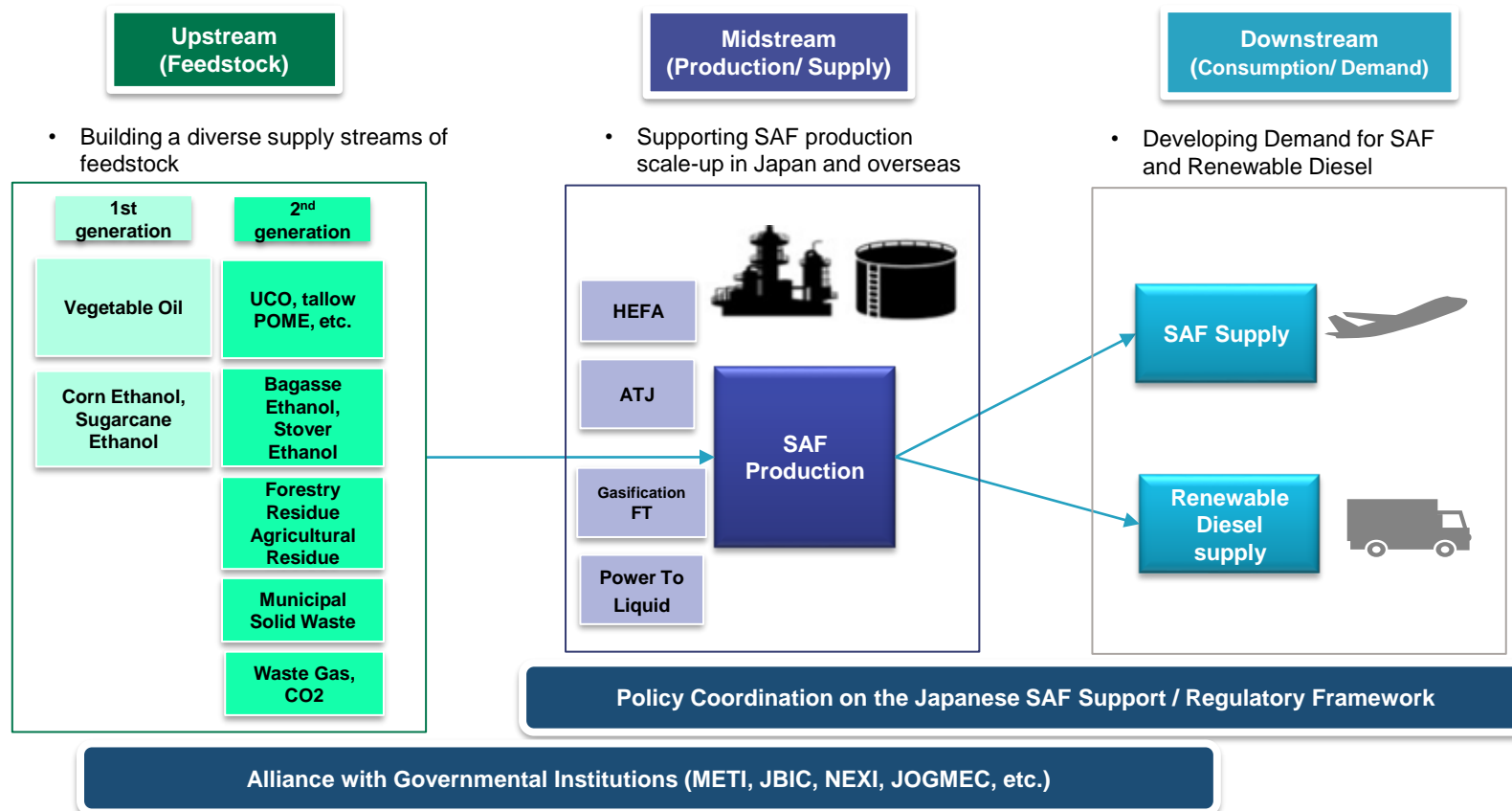
MUFG's Involvement in the Development of SAF Value Chain



MUFG's Initiative to Develop the SAF Value Chain

MUFG's involvement in SAF Value Chain

- It is essential to create entire value chain from upstream feedstock market to downstream SAF demand creation with a view to securing the stable supply of SAF in the aviation industry.
- MUFG will not only provide the industry with financial support to the scale-up of SAF production but also will coordinate with policy makers to develop policy support/ regulatory framework for the spread of cost-competitive SAF in the market.



Equity Investment in LanzaJet, a leading SAF technology provider

MUFG's Investment Highlights

- In June 2024, MUFG completed equity investment towards LanzaJet, a pioneering U.S. company with Alcohol to Jet (ATJ) technology(*) who produces SAF from bioethanol. LanzaJet is working on the last mile for the operation of the world's first SAF manufacturing plant using ATJ technology in Georgia, U.S.A.
- The rationale behind investing in LanzaJet is underscored by recognizing the critical environmental significance of SAF. SAF is an essential measure for decarbonization of the aviation industry. In Japan for example, the government has set a goal to replace 10% of its aviation fuel supply with SAF by 2030. Stable supply of SAF is essential for maintaining international competitiveness of Japanese domestic airports and reducing Scope 3 in the domestic industry. In Japan and across the globe, adoption using LanzaJet's ATJ technology is gradually becoming visible. MUFG's ambition is to co-create SAF value chain together with LanzaJet and its stakeholders.

(*) Certified in the Annex 5 of the ASTM D7566 (Standard Specification for Aviation Turbine Fuel Containing Synthesized Hydrocarbons)

Strategic Rationale of the Investment

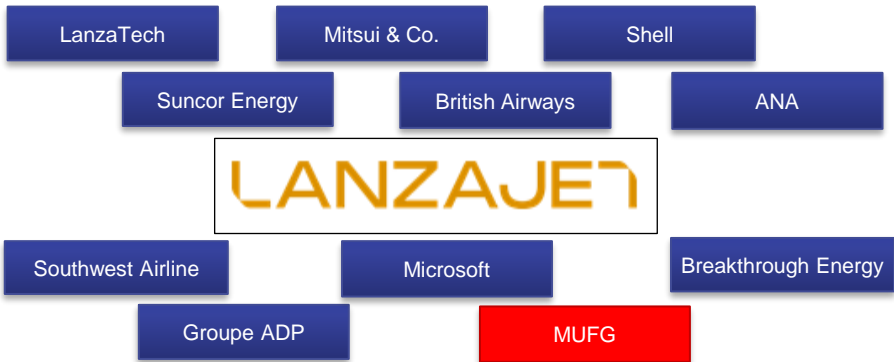
- Among the SAF production pathways, ATJ enjoys advantages of stable feedstock and is suited for scaling up, and is forecasted to be one of the main production technologies supplying in the future SAF market. LanzaJet is one of the pioneering company in ATJ technology who is currently about to initiate the world's first SAF plant using the ATJ process in the US.
- The technology is set to be implemented in upcoming SAF production facilities in Japan, spearheaded by leading Japanese oil and gas entities and refiners, including Mitsui & Co., Cosmo Oil, and Taiyo Oil. This deployment underscores the technology's pivotal role in fulfilling Japan's SAF needs by 2030.
- MUFG is ambitious to utilize its extensive client/external stakeholders network to facilitate the expansion of LanzaJet's technology within SAF production plants. By deploying technology licenses and collaborating with diverse stakeholders, MUFG seeks to co-develop and establish robust SAF value chains.

Overview of LanzaJet

Foundation	Established in 2020 through a spin-off from LanzaTech, a next-generation bioethanol producer in the United States listed on Nasdaq, and receiving investments from Mitsui & Co., Suncor Energy, and British Airways
Business Model	<ul style="list-style-type: none">✓ Development and licensing of ATJ technology and production of SAF using its pioneering technology✓ The first flagship production plant in the U.S. is about to be tested of its performance. The plant design will be replicated and deployed to third parties SAF production developers. Currently, the company plans to build plants under its license in the U.S., U.K., India, Australia, New Zealand, Japan and other countries.

< Diversed and highly expertized shareholders >

Major international airlines, energy companies, and ESG investors have contributed funds to LanzaJet. MUFG has taken on a specialized role in debt financing, being the sole financial institution within the shareholder composition.



< Flagship plant in Georgia, USA >



Selected as one of the 100 most influential companies 2024



Green loans for biofuel and SAF production plants

Outline of transaction

- In May 2023, MUFG made a financing arrangement with REVO International Inc. ("REVO") for the construction of a plant to produce biodiesel fuel (BDF) and biojet fuel (SAF) from waste cooking oil in Tahara City, Aichi Prefecture. As an arranger, MUFG led the origination of syndicated loans totaling 2.2 billion yen.
- Rating and Investment Information, Inc. (R&I) has certified the Loan as a green project that falls under the category of "eco-efficient and/or circular economy adapted products, production technologies and processes" in the Green Loan Principles. **This is the first green loan project for biofuels and SAF in Japan.**

Overview and significance of this project

- Established in 1999, REVO has been engaging with the recovery of waste cooking oil and the production of BDF in Kyoto City. REVO's biodiesel "C-Fuel", can run on 100% BDF, and is the only biofuel manufacturer in Japan to obtain ISCC (*) certification.
- In addition, REVO, together with JGC and Cosmo Oil, plans to commercialize SAF using waste cooking oil as a raw material. REVO is also a core member of Act For Sky, an industry group working to promote and expand SAF.
- In order to demonstrate its ESG initiatives to external parties, REVO has procured the first green loan in the biofuel sector in Japan for the construction of the second BDF production plant and a pilot SAF production plant in Tahara City, Aichi Prefecture.
- As the Government of Japan announced that it would increase the introduction rate of SAF in aviation fuel to 10% in 2030, the construction of a domestic SAF supply chain centering on waste cooking oil is an urgent matter, and this Financing is intended to support efforts to commercialize domestic SAF.

(*) International Sustainability & Carbon Certification

< REVO's Sustainability Initiatives >



Japan's largest production plant with the capacity of 30,000 liters per day

The largest biodiesel fuel conversion plant in Japan.



Recycling rate of 98.5% of waste cooking oil

Converting up to 98.5% of biodiesel fuel. Efficient recycling by minimizing wastes



Reuse ratio of by-product glycerin 100%

Reusing by-product glycerin as boiler fuel

Outline of the Loan	
Contract date	May 26, 2023
Arranger/Agent	MUFG Bank
Co-arranger	THE KYOTO SHINKIN BANK
Amount	2.223 billion yen
Use of funds	Construction plants producing biodiesel and biojet fuel

< Overview of the Kyoto Plant >



Source: Kyoto City website

Appendix: Transition Plans



Transition Finance (Guidance on Assessing Transition Plans)

As noted above there are multiple aspects to a Transition Plan. These generally resolve around the following:

Commitment – ST/MT/LT Targets	Alignment to Science/Taxonomy	Role/Use of Offsets	Just Transition
Governance	Capex Alignment	Reporting/Disclosure	Biodiversity/Nature
Comprehensive Strategy	Policy and Initiative	Regional Country Context	Vs Peers

Market references have been listed in the following page and we recommend assessment based on the ICMA Climate Transition Finance Handbook and the latest most relevant sector Guidelines from the Transition Plan Taskforce (“TPT”) (many sector specific guidance is now available from TPT).



Disclaimer - Bank

These materials have been prepared by MUFG Bank, Ltd. ("the Bank") for information only. The Bank does not make any representation or warranty as to the accuracy, completeness or correctness of the information contained in this material.

Neither the information nor any opinion expressed herein constitutes or is to be construed as an offer, solicitation, advice or a recommendation to buy or sell deposits, securities, futures, options or any other financial or investment products.

All views herein (including any statements and forecasts) are subject to change without notice, and their accuracy is not guaranteed; they may be incomplete or condensed and it may not contain all material information concerning the entities referred to in this material.

None of the Bank and its head office, branches, representative office, related corporations and affiliates is under any obligation to update these materials.

The information contained herein has been obtained from sources the Bank believed to be reliable but is not guaranteed as to, and the Bank does not make any representation or warranty nor accept any responsibility or liability as to, its accuracy, timeliness, suitability, completeness or correctness. Therefore, the inclusion of the valuations, opinions, estimates, forecasts, ratings or risk assessments described in this material is not to be relied upon as a representation and / or warranty by the Bank. Such information should not be regarded as a substitute for the exercise of the recipient's own judgment, and the recipient should obtain separate independent professional, legal, financial, tax, investment and/or other advice, as appropriate. The Bank, its head office, branches, subsidiaries and affiliates and the information providers accept no liability whatsoever for any direct, indirect and/or consequential loss or damage of any kind arising out of the use of all or any part of these materials.

Historical performance does not guarantee future performance. Any forecast of performance is not necessarily indicative of future or likely performance of any product mentioned in this material.

The Bank retains copyright to this material and no part of this material may be reproduced or redistributed without the written permission of the Bank. None of the Bank, and its head office, branches, representative offices, related corporations and affiliates accepts any liability whatsoever to any party resulting from such distribution or re-distribution.



MUFG

MUFG Bank, Ltd. and MUFG Securities Asia Limited