



Sustainable
Fitch

a FitchSolutions Company

Sustainable Finance and ESG trends in Aviation and SAF

Growth Frontiers Asia Pacific

Aurelia Britsch, Candice Low

November 6th, 2024

Disclaimer

Credit ratings are assigned by Fitch Ratings and are forward-looking opinions on the relative ability of an entity or obligation to meet financial commitments. In the context of its credit ratings, Fitch Ratings do factor in ESG considerations – only as they impact credit worthiness – and disclose their relevance and materiality in its ESG Relevance Scores.

On the other hand, ESG Ratings are assigned by Sustainable Fitch, a Fitch Solutions company, part of the Fitch Group but separate and independent from Fitch Ratings. Sustainable Fitch assigns ESG Ratings, ESG Scores, Second Party Opinions and other Assessments. These Sustainable Fitch products assess the Environmental, Social and/or Governance qualities of an issuer and/or its securities.

Presenters



AURELIA BRITSCH
Global Head of Climate Research
Sustainable Fitch



CANDICE LOW
Associate Director
ESG Ratings
Sustainable Fitch



Contents

	Slide
ESG Labelled Bond Markets - Trends	4
Aviation Decarbonisation Pathways and SAF Trends	8
Sustainable Fitch - Assessing the Sustainability of Entities and Debt Instruments	10
ESG Ratings for Aviation and SAF	18
Q&A Related Research Contacts	23



ESG Labelled Bond Markets - Trends



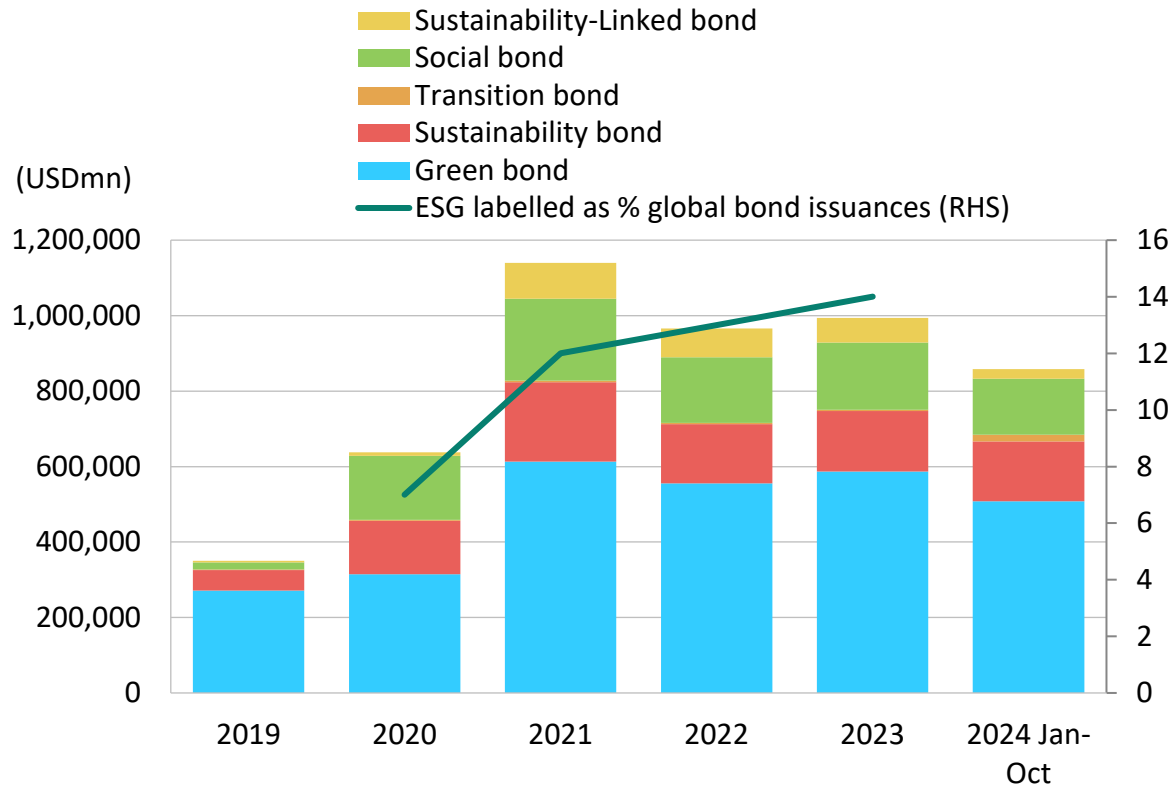
Sustainable
Fitch

a FitchSolutions Company

ESG Labelled Bonds & Loans, A Key Sustainability Financing Tool

ESG Labelled Bond Market Still Focused On Green Bonds

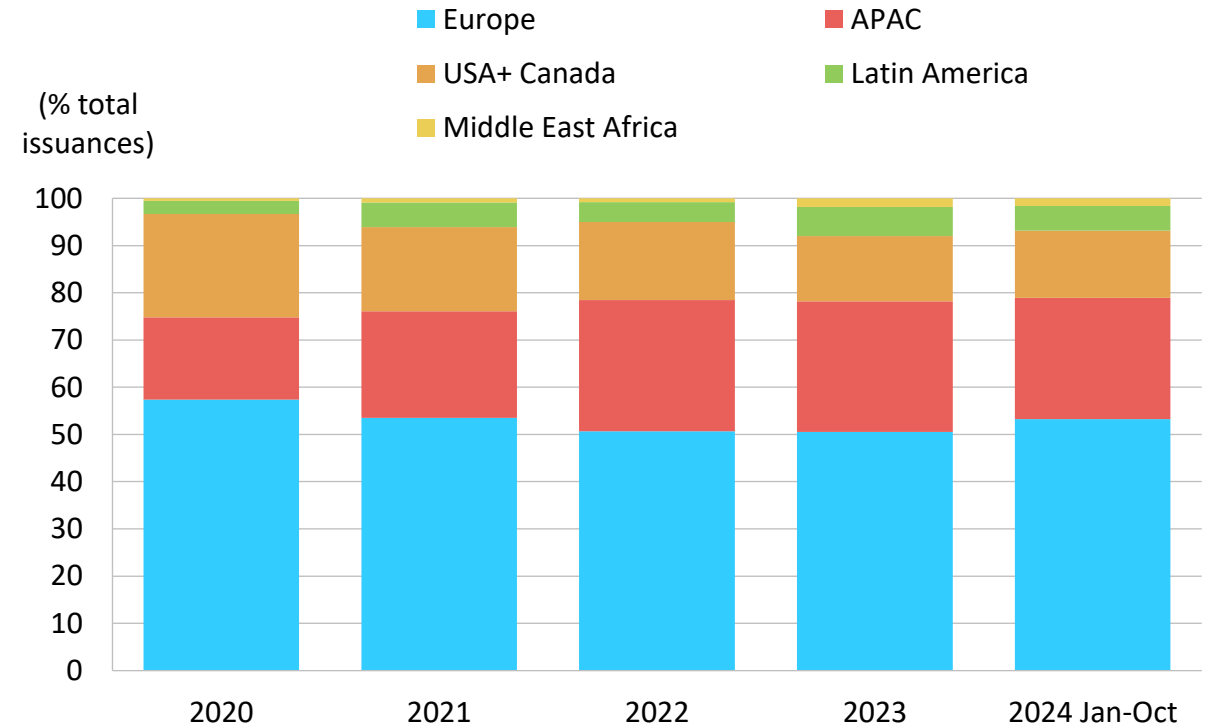
ESG labelled bond issuances, in value term



Source: Sustainable Fitch, EF data

APAC Plays A Growing Role In The Market

ESG labelled bond issuances by region, in value term

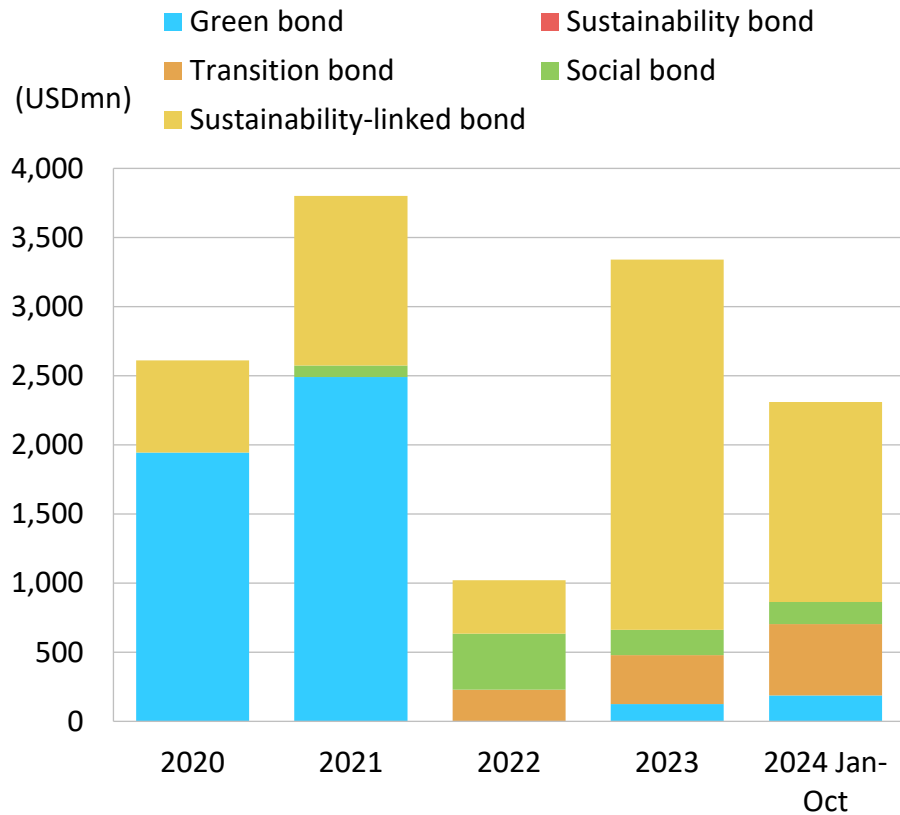


Source: Sustainable Fitch, EF data

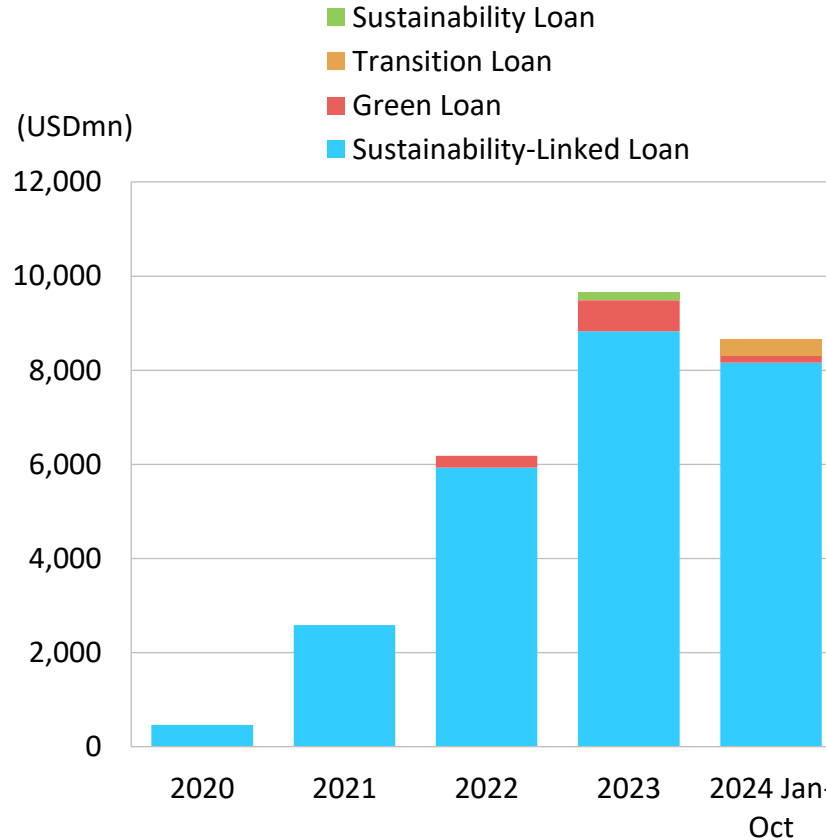
ESG Labelled Bonds And Loans for the Aviation Sector

Sustainability-Linked Instruments Are A Preferred Source of Funding

Aviation Sector - ESG Labelled **Bond** Issuances :

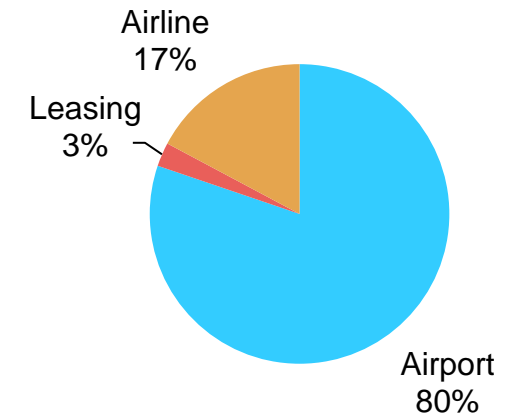


And **Loan** Issuances:



Airports Are A Key Issuer In The Aviation Sector

ESG Labelled Bond Issuances - By Type of Company (% issued value)



Source: Sustainable Fitch, EF data

Examples of Issuances From The Aviation Sector

Examples of Recent Sustainability-Linked Bond Issuances (USDmn)

Issuances	Value	KPIs
Air France-KLM	2023 1064	Reduce scope 1 and 3 jet fuel GHG emissions by 10% per revenue-ton-kilometre by 2025 and 30% by 2030 versus 2019. To reach this target, the company expects to use 10% of certified SAF by 2030.
Heathrow	2023, 2024 1152	2 KPIs: a reduction in the absolute level of 'in the air' carbon emissions (Scope 3) of 15% by the end of 2030, compared to a 2019 baseline. A reduction in the airport's 'on the ground' emissions of 46.2% by the end of 2030, compared to a 2019 baseline.
Gatwick Funding Limited	2024 823	KPI1: A 88% reduction in by 2030 is Scope 1 and 2 emissions compared to 2019 baseline. KPI2: A 25% reduction in LTO GHG emissions (kgCO2e) per passenger by 2032 compared to 2019 performance.

Source: Sustainable Fitch, EF data

ESG Labelled Debt – Jan-Oct 2024 (USDmn)

	Issuer	Label	Value
Bonds	Chubu Centrair International Airport	Social bond	67
	AVIC International Leasing	Green bond	160
	Grupo Aeroportuario del Pacífico	Sustainability-Linked bond	82
	Grupo Aeroportuario del Pacífico	Sustainability-Linked bond	96
	Heathrow	Sustainability-Linked bond	444
	Japan Airlines	Transition bond	420
	Japan Airlines	Transition bond	97
	Henan Civil Aviation Development and Investment	Green bond	28
	New Kansai International Airport	Social bond	62
	New Kansai International Airport	Social bond	31
Loans	Gatwick Funding Limited	Sustainability-Linked Green Loan; Sustainability-Linked	823
	Newcastle International Airport Loan		158
	CDB Aviation	Sustainability-Linked Loan	700
	Air France-KLM	Sustainability-Linked Loan	1535
	Air France-KLM	Sustainability-Linked Loan	2549
	CDB Aviation	Sustainability-Linked Loan	506
	Japan Airlines	Sustainability-Linked Loan	177
	Lufthansa	Sustainability-Linked Loan	2696



Decarbonisation Pathways and SAF Trends



**Sustainable
Fitch**

a FitchSolutions Company

SAF, A Key Lever For Aviation Decarbonisation That Will Need to be Complemented

There are a few existing technologies being considered as levers in the decarbonisation pathway of aviation. Emission intensity reductions need to be deep enough to offset the strong growth expected in the sector in the coming decades.

- The ongoing **efficiency drive** (operational efficiency, new higher-efficient aircraft) can reduce fuel usage, but it will not be enough.
- **Change in fuel.**
 - Potential pathway: From fossil fuel to drop-in biomass-to-liquid fuel (SAF), to drop-in Power-to-liquid fuel, to hydrogen to battery.
 - **Biomass –based SAF** is emerging as a key lever in the short term to reduce emissions. Airports, airlines are announcing plans to increase SAF use.
 - Challenges: SAF is not a zero-carbon fuel. A massive increase in SAF use would pose food security, land use changes, as it would change supply/demand dynamics for the agrifood system. There is not enough land mass to grow all the biomass/biofuel that aviation would need (MIT Department of Aeronautics).
 - Decarbonisation beyond biomass-derived SAF? There are not many options. Use green electricity to make zero carbon fuel
 - **Fossil fuel + Direct air capture** route. Big technological bet unproven at scale for now. Enormous energy consumption, and an expensive technology for now.
 - **Carbon free fuels and aircrafts** (low carbon hydrogen-based for example) are still in development.
 - For hydrogen, refueling infrastructure would need to be redone completely around a hydrogen economy.

A mix of these new technologies will be critical to achieving net zero.



Sustainable Fitch - Assessing the Sustainability of Entities and Debt Instruments



Sustainable
Fitch
a FitchSolutions Company

ESG: Difference Between Financial Materiality And Impact

Financial Materiality of ESG

Assess financial risk and exposure to ESG factors

Influence the strategy to report on and minimize ESG risk factors

Benefits: Investors can limit future cash-flow risk triggered by ESG. Issuers can demonstrate their oversight on ESG risks

Fitch Ratings product: ESG relevance score, Climate Vulnerability Signals

ESG Impact

Assess companies' contribution to ESG factors

Measure ESG performance and assess the sustainability profile to assist impact investors and issuers in their transition

Benefits: Investors can invest in line with an impact investing mandate. Issuers can demonstrate how they align with and contribute to sustainability

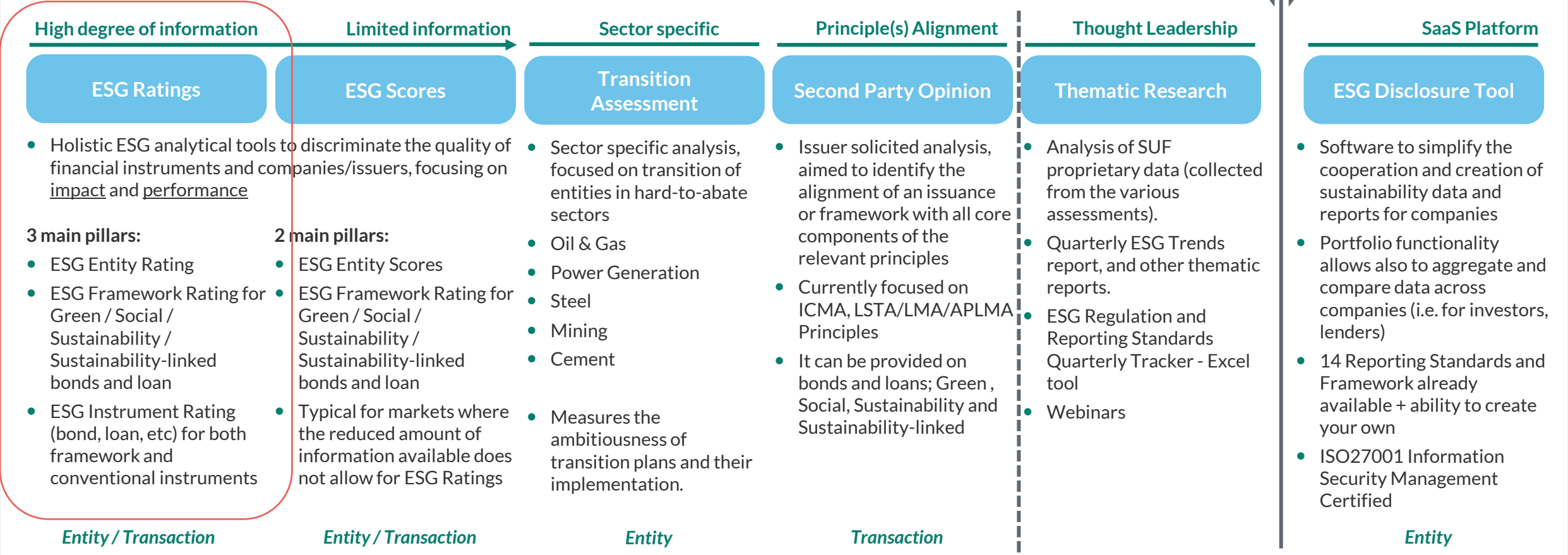
Sustainable Fitch product: ESG ratings, and other assessments



SUSTAINABLE FITCH ESG SOLUTIONS

Analytical Solutions

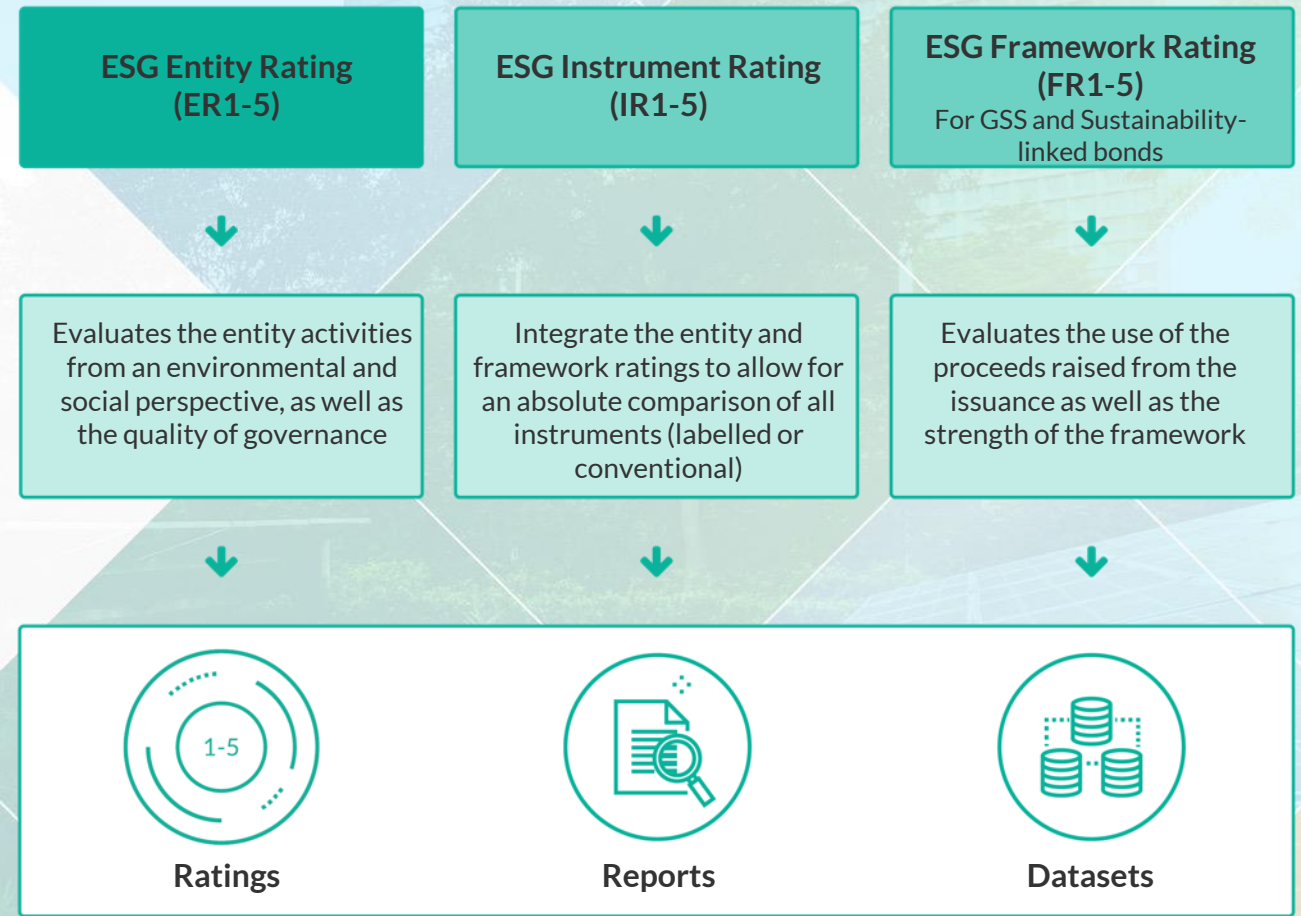
Tech Solutions



ESG RATINGS

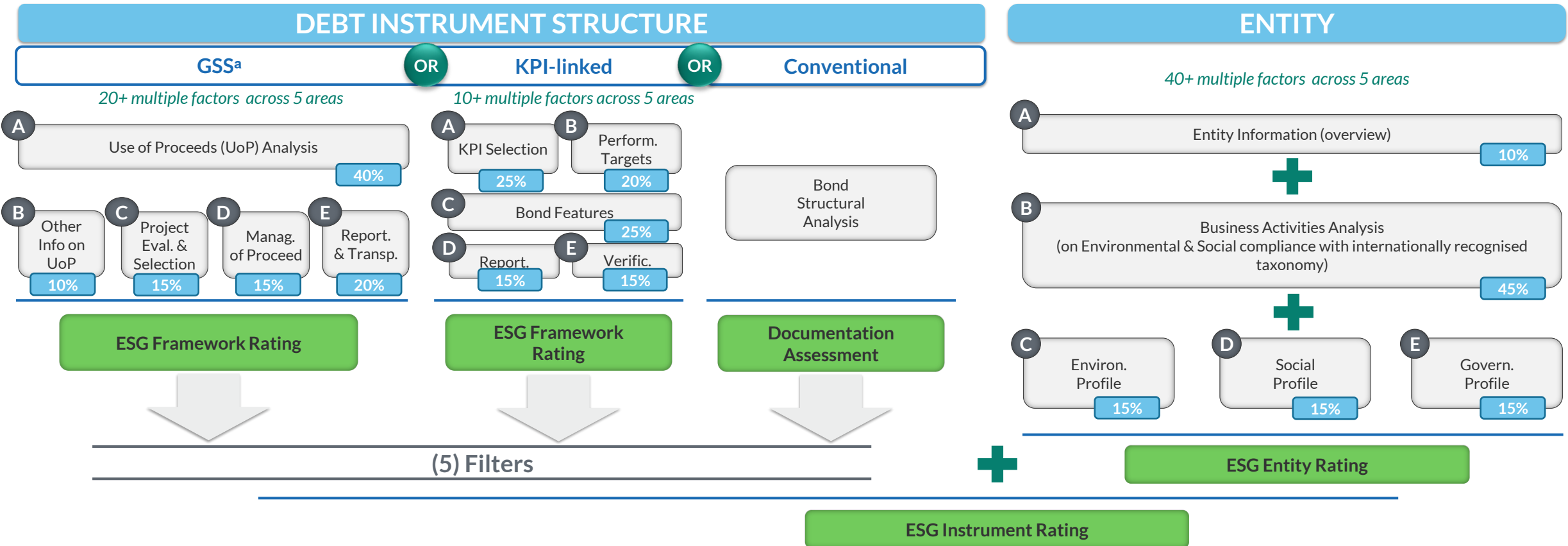
Sustainable Fitch ESG Ratings are designed to help market players to discriminate the ESG quality of financial instruments and entities. They provide consistency, granularity and transparency via:

- Full coverage of labelled bonds (green, social, sustainable, KPI linked, transition)
- Instrument and Entity level reports and ratings (including framework analysis)
- Ability to cover any debt instrument (bonds and loans, labelled and conventional)
- Fully modular grading system (access to sub-grades for all main indicators)
- Consistent disclosure of alignment indicators (ICMA, UN SDG, EU Green Bond Standard, etc)



Overview of Sustainable Fitch ESG ratings products

2 MAIN SECTIONS, EACH WITH MULTIPLE AREAS OF ANALYSIS



^a GSS: Green, Social, Sustainability

ESG RATING PRODUCTS: ESG RATING SCALE

ESG Entity Rating

ESG Framework Rating

ESG Instrument Rating



Rating	Band Range	Mid-point
1	100-87.5	93.75
2	87.5-62.5	75
3	62.5-37.5	50
4	37.5-12.5	25
5	12.5-0.0	6.25

How we determine environmental and social alignment of business activities

Score		Environmental	Social
1	Best	Activity fully aligned to major science-based taxonomies.	Activity directly contributing to social SDGs (assessed in terms of both activity and target population, e.g. vulnerable communities).
2		Activity subject to technical science-based thresholds which are marginally not met, or may cause minimal damage.	Activity contributing to social SDGs (focusing on activity but not on a target population).
3		Neutral (with no direct positive or negative impact).	Neutral (with no direct positive or negative impact).
4	Worst	Activity subject to technical science-based thresholds which are significantly not met, or may cause high damage.	Activity with marginal or limited negative impact on social SDGs; or high negative impact but partially mitigated.
		Activity not aligned with technical science-based thresholds.	Activity with negative impact on social SDGs; or significant or high negative impact and not mitigated.

“Negative”
activity
flag



How we determine alignment for environmental and social UoPs

Score		Environmental	Social
1	Best	UoP is aligned with net zero and ambitious environmental goals. It meets the reference taxonomies under any circumstance, i.e. no additional thresholds, meets screening criteria.	UoP directly contributing to the social SDGs (for both activity and target population, e.g. vulnerable communities).
2		UoP subject to threshold, screening criteria marginally not met or potential minimum damage, albeit mitigated.	UoP contributing to the social SDGs (focusing on an activity but not on a target population).
3		UoP neutral to the environment (with no direct positive or negative impact).	UoP neutral to the social SDGs (with no direct positive or negative impact).
4		UoP subject to threshold, screening criteria significantly not met or potential for high damage.	UoP with marginal or limited negative impact on the social SDGs; or activity with high negative impact on social SDGs that is partially mitigated.
5	Worst	UoP always with negative impact with potential for high damage.	UoP with significant or high negative impact on social SDGs that is unmitigated.





ESG Ratings for Aviation and SAF



Sustainable
Fitch
a FitchSolutions Company

We view aviation as environmentally negative and socially neutral

Activities	E/S aspect	Baseline view	Adjustments
<ul style="list-style-type: none"> Passenger air transport 	Environmental	Negative environmental impact due to significant emissions from combustion of jet fuel (mostly fossil fuel)	<ul style="list-style-type: none"> Use of SAF (higher portion = higher benefit) Fleet modernization Operational efficiencies
<ul style="list-style-type: none"> Freight air transport 	Social	Neutral social impact - air transport enables trade and economic development but it is also associated with noise and air pollution which can affect human health	<ul style="list-style-type: none"> Benefit for providing services to vulnerable populations (e.g. transport of humanitarian aid)

Examples: Global air transport companies

Company A

Entity Rating: 3 (out of 5)

Entity Rating score: 50 (out of 100)

Key rating drivers:

- Air transport activities are significant contributors to climate change, despite some mitigating measures e.g. fleet renewal and small proportion of SAF usage.
- Emission intensity reduction target is credible (approved by SBTi) and linked to executive compensation.
- Imbalanced gender ratio on executive committee and no public reporting on pay disparities.

Company B

Entity Rating: 3 (out of 5)

Entity Rating score: 38 (out of 100)

Key rating drivers:

- Air transport activities are significant contributors to climate change, despite some mitigating measures e.g. fleet renewal and small proportion of SAF usage.
- Decarbonisation roadmap has short- and long-term targets towards net zero by 2050 but not externally validated.
- Inadequate disclosures on social and governance metrics.

Assessment of SAF depends on feedstock

E view	Type of biofuel feedstock	Description
Positive	2 nd generation* feedstock excluding food and feed crop (*includes animal waste and used cooking oil)	<ul style="list-style-type: none">Complies with EU Taxonomy substantial contribution criteria for transport biofuels i.e.Fulfil criteria on avoiding land-use change and GHG savings (65% of fossil fuel comparator)
Neutral	1 st generation feedstock (food and feed crops) with safeguards against land-use change/deforestation impacts	<ul style="list-style-type: none">Less emissions compared to fossil fuelsBut competes with food supply
Negative	1 st generation or virgin forest feedstock	<ul style="list-style-type: none">Linked to causing land-use change, deforestation

Example: Green bond with UoP allocated to SAF production

Green Bond A

Framework Rating: 2 (out of 5)

Entity Rating score: 73 (out of 100)

Highlights:

- Green bond Use of Proceeds (UoP) allocated to the production of SAF using 100% waste, residues, and renewable raw materials such as used cooking oil and animal fat waste.
- Its SAF has life-cycle GHG emissions up to 80% lower than fossil-based jet fuel calculated using the CORSIA standard.
- Aligned with ICMA Green Bond Principles categories of 'clean transportation' and 'circular economy'.



Key points of EU Taxonomy substantial contribution criteria to climate change mitigation for transport biofuels:

- Agri biomass cannot be from land with high biodiversity value, high carbon stock land, peatland.
- Forest biomass – must ensure legality and protective measures
- Exclude food and feed crops
- GHG emission savings are at least 65% in relation to fossil fuel comparator

Q&A



Recent Research and Assessments



**Sustainable
Fitch**
a FitchSolutions Company

Related Research

All Sustainable Fitch's thematic research is available on www.sustainablefitch.com/insights/

Thematic Research relevant to Corporates:

- [Sustainable Finance Outlook 2024](#), December 2024
- [Sustainable Finance Trends: 2Q24](#), July 2024
- [ESG Regulations and Reporting Standards Tracker – October 2024](#) Highlights, and [Excel Tracker](#)
> updated quarterly. Next tracker to be published in January.
- [ESG Ratings at a Glance: Sustainability-Linked Bonds](#), October 2024



Contacts

Aurelia Britsch
Senior Director,
Global Head of Climate Research
Aurelia.britsch@sustainablefitch.com

Candice Low
Associate Director,
ESG Ratings
Candice.low@sustainablefitch.com

Aaron Wei
Director
Business Relationship
Aaron.wei@sustainablefitch.com



sustainablefitch.com

New York
300 West 57th Street
38th floor
New York NY, 10019

London
30 North Colonnade
Canary Wharf
London, E14 5GN

Singapore
1 Wallich Street
#19-01 Guoco Tower
Singapore
078881

Hong Kong
19/F
Man Yee Building
68 Des Voeux Rd Central
Hong Kong

A Sustainable Fitch ESG Analytical Product (ESG Product) provides an assessment of the Environmental, Social and/or Governance (“E”, “S” and “G”) qualities of an issuer and/or its securities. ESG Products provided by Sustainable Fitch include an ESG entity rating, an ESG framework rating, an ESG instrument rating, ESG scores and ESG second party opinions, among other ESG analytical products. An ESG Product is not a credit rating. ESG Products are provided by Sustainable Fitch, a Fitch Solutions company, and an affiliate of Fitch Ratings. Sustainable Fitch has established certain policies and procedures intended to avoid creating conflicts of interest and compromising the independence or integrity of Fitch Ratings’ credit rating activities and Sustainable Fitch’s ESG Product generation activities. For a description of the methodology, limitations and disclaimers relating to Sustainable Fitch’s ESG Products, please use this link: www.sustainablefitch.com.

Please note that individuals identified in an ESG Product report are not responsible for the opinions stated therein and are named for contact purposes only. A report regarding an ESG Product is neither a prospectus nor a substitute for the information assembled, verified and presented to investors by the issuer and its agents in connection with the sale of financial instruments and securities. ESG Products are not considered investment advice and they are not and should not be considered as a replacement of any person’s own assessment of the ESG factors related to a financial instrument or an entity. Sustainable Fitch does not represent, warrant or guarantee that an ESG Product will fulfil any of your or any other person’s particular purposes or needs. Sustainable Fitch does not recommend the purchase or sale of financial instruments or securities or give investment advice or provide any legal, auditing, accounting, appraisal or actuarial services. ESG Products are not an opinion as to the value of financial instruments or securities. Sustainable Fitch does not audit or verify the accuracy of the information provided to it by any third party for the purpose of issuing an ESG Product, including without limitation issuers, their representatives, accountants and legal advisors and others. Sustainable Fitch does not represent, warrant or guarantee the accuracy, correctness, integrity, completeness or timeliness of any part of the ESG Product. The information in an ESG Product report is provided "as is" without any representation or warranty of any kind, and Sustainable Fitch does not represent or warrant that the report or any of its contents will meet any of the requirements of a recipient of the report.

Sustainable Fitch receives fees from entities and other market participants who request ESG Products in relation to the analysis conducted to assign an ESG Product to a given financial instrument and/or entity. The assignment, publication, or dissemination of an ESG Product by Sustainable Fitch shall not constitute a consent by Sustainable Fitch to use its name as an expert in connection with any registration statement filed under the United States securities laws, the Financial Services and Markets Act of 2000 of the United Kingdom, or the securities laws of any particular jurisdiction.

ESG Products offered to clients in Australia. ESG Products in Australia are available to only to wholesale clients (as defined in section 761G of the Corporations Act (Cth) (the “Act”)) in Australia. Information related to ESG Products published by Sustainable Fitch is not intended to be used by persons who are retail clients within the meaning of the Act (“Retail Clients”) in Australia. No one shall distribute, disclose or make references to any information related to ESG Products in a manner which is intended to (or could reasonably be regarded as being intended to) influence a Retail Client in making a decision in relation to a particular financial product (as defined in the Act) or class of financial products, unless required to do so by law to meet continuous disclosure obligations. No one shall make reference to any ESG Product information in any publication, promotional material, disclosure document, correspondence, website, or any other venue that may be accessed by clients and investors who are Retail Clients in Australia (except in the circumstances as permitted by law).

Copyright © 2023 by Sustainable Fitch, Inc., Sustainable Fitch Limited and their subsidiaries, 300 West 57th Street, New York, NY 10019. Telephone: 1-800-753-4824, (212) 908-0500. Fax: (212) 480-4435. Reproduction or retransmission in whole or in part is prohibited except by permission. All rights reserved.

DC-XXXX / PW no.



**Sustainable
Fitch**
a FitchSolutions Company