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ESG AND SUSTAINABLE AVIATION

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Q1 2022 QTD : ESG Report.

ESG and SUSTAINABILITY Q1 2022 QTD

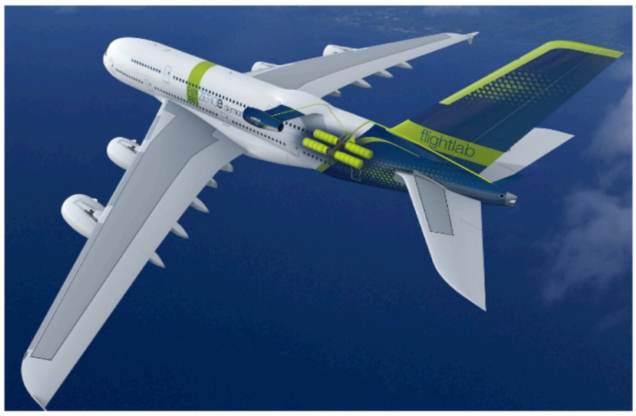
This is the first in a series of special supplements delivering 'The Ishka View' on aviation 'Environmental, Social, Governance' (ESG) and other sustainability developments, including regulatory changes, green finance, sustainable aviation fuel (SAF), hydrogen propulsion, and other decarbonisation efforts.

ESG issues permeate every aspect of aviation finance and the industry's long-term strategies have a duty to improve in all three areas. At the same time, the worsening climate crisis has made environmental sustainability a key priority. The global share of greenhouse gas (GHG) emissions from flying has increased steadily, with global aviation emissions doubling since the mid-1980s. The industry has a responsibility to reduce its environmental impact whether through technological innovation and voluntary decarbonisation commitments, or regulator-led initiatives like green finance taxonomies, SAF mandates, taxes, or emissions criteria.

KEY TAKEAWAY: Hydrogen goes full steam

THE ISHKA VIEW

- Burnt it or electrify it, hydrogen featured prominently in aviation's ESG conversation in the past month, with demonstrators and development progression touted by the industry.
- Questions still abound around green hydrogen's scalability, the infrastructure preparedness of airports, and the suitability of current fixed-wing designs for the long-range volumetric needs of hydrogen powertrains.
- The projects and initiatives announced in February should help answer some of these questions.



Source: Airbus

Teased with some fanfare as "BIG news" for hydrogen, **Airbus** and **CFM International** jointly announced they would transform the – indeed big – Airbus A380 MSN 1 into a ZEROe demonstrator. The A380 flying testbed will be equipped with liquid hydrogen tanks fueling a rear fuselage-mounted modified GE Passport turbofan engine (a smaller scaled CFM LEAP as used by large business jets). The two OEMs plan to test hydrogen combustion technology and make strides towards Airbus' goal to introduce into service zero-emission aircraft by 2035.

Airbus' hydrogen combustion announcement follows a separate study by the International Council on Clean Transportation (ICCT) in late January which concluded that while liquid hydrogen-combustion aircraft do not perform as well as their jet fuel counterparts, they can still play an important role in meeting aviation's 2050 climate goals. According to the study, which benchmarked two LH2-combustion designs against the ATR 72 and the Airbus A320neo, fueling LH2 designs with green hydrogen is expected to cost more than fossil jet fuel but less than using blue hydrogen and e-kerosene.

Separately, earlier in February, Airbus signed an MoU with Korean Air, Air Liquid and Seoul's Incheon International Airport to develop hydrogen fuel infrastructure as well as the creation of a similar partnership with Singapore's Changi Airport to evaluate infrastructure requirements for a hydrogen airport hub, and the electrification of airport operations with hydrogen fuel cells.

Meanwhile, US-based Universal Hydrogen, which is developing a fuel cell electric powertrain conversion kit that replaces the existing turboprop engines, has continued to draw market interest. Paris-based airline Amelia (part of the Regourd Aviation Group) on 1st February signed an LOI for three ATR 72-600 Universal Hydrogen conversion kits and later in the month, Irish lessor Elix Aviation signed an LOI to acquire ten hydrogen conversion kits for its current and future fleet, which could involve any combination of Dash 8-300 or ATR72-500/600. Elix on 24th February also announced it had delivered one Dash 8-300 (MSN 274) to **Universal Hydrogen** to be used as their test aircraft from 2022 in the development of the hydrogen powerplants. Elix's LOI follows two equity investments in Universal Hydrogen and one conversion kit order by other aircraft lessors, asset managers or parent entities last year (see Ishka Insights report last December). Last December, Universal Hydrogen Co. and **Connect Airlines** also signed an LOI to purchase 24 of conversion kits from 2025, consisting of a firm order for 12 Dash 8-300 kits and purchase rights for 12 additional kits for other aircraft types.

Lastly, while perhaps a more distant moonshot, Swiss start-up **Destinus** announced on 9th February the closing of a seed round of 26.8 million Swiss francs ($29 million) to develop near-space vehicles and infrastructure. Destinus' hyperplane, which aims to reach any place on earth in one to two hours, will use liquid hydrogen to fuel its engines.

GREEN FINANCE

THE ISHKA VIEW

- Recent aviation-related green and sustainable finance issuances have included a sustainability-linked secured loan for Air France.
- The deal follows an increase in sustainability-linked deals in aviation in 2021, with four out of six green finance transactions identified by Ishka as being sustainability-linked last year.
- According to Bloomberg Green that increase is also being felt in the European bond market, where sales of bonds with sustainable targets jumped sevenfold in January, competing with green debt.

Aviation green/sustainable debt off to a strong start – The use of green and sustainable financing in aviation continues in 2022, with **Societe Generale** announcing a sustainability-linked senior secured loan for an **Air France** Airbus A350-900 in January tied to fleet renewal and SAF use targets (see Ishka Insights report on this transaction), and **Japan Airlines** (JAL) announcing the issuance (due for 1st March) of a 10 billion yen ($87 million) transition bond for funding among other objectives fleet upgrades to more fuel-efficient aircraft such as the Airbus A350 and Boeing 787. The JAL bond includes a transparency requirement for JAL to report annual C02 emissions avoided by the fleet upgrades and notes the airline intends to report Scope 1, 2 and 3 CO2 emissions.

SUSTAINABLE AVIATION FUEL (SAF)

THE ISHKA VIEW

- If last year the EU's 'Fit for 55' proposal brought a semblance of uniformity to Europe's approach to Sustainable Aviation Fuel (SAF), that uniformity is now slowly diminishing, with some airlines and countries calling for more ambitious SAF targets or e-kerosene sub-mandates – or the opportunity to set goals beyond minimum EU standards.
- The ReFuelEU proposal dealing with SAF mandates, part of the Fit for 55 package introduced last year, is expected to be scrutinised through 2022.

Off-taking the pledge – airlines up SAF support. Major European carriers including Air France-KLM, easyJet, Ryanair and DP/DHL joined forces in February with prominent non-governmental organisations such as Transport & Environment (T&E) in a **Fuelling Flight Initiative** to help advance the ReFuelEU legislative proposal – which is driving Europe's SAF mandates. In a joint consensus statement, the airlines urged EU legislators to strengthen the ReFuel EU proposal with earlier and more ambitious e-kerosene sub-targets (a demand which has trickled into the latest draft – more on this below) as well as other financial and research incentives. Later in the month, a **Global SAF declaration** was signed on 15th February at the Singapore Airshow by Airbus, Rolls-Royce, Safran and Singapore Airlines, calling on industry partners to "jointly work towards the uptake of SAF." The Declaration is open to all airlines, as well as aviation and aerospace organisations, as a complement to their sustainability commitments.

European MEPs tackle SAF – On 3rd March, MEPs of the European Parliament's Transport Committee (TRAN) began debating the ReFuel EU proposal including the deployment of SAF mandates. The session was led by Danish MEP and rapporteur Søren Gade who presented his draft report on proposed amendments. One of Gade's proposed amendments is introducing from 2025 a **synthetic fuel sub-mandate of 0.03%**, earlier than the 0.7% sub-mandate from 2030 in the original proposal. There was general consensus for the ReFuelEU proposal among TRAN members, with various MEPs raising concerns around feedstock and deployment targets. The ReFuelEU proposal, part of the Fit for 55 package introduced by the EU last year, is expected to be scrutinised through 2022.

Germany, Denmark and five other countries aim higher – In a letter to the European Commission in early February seen by Reuters, Danish climate minister Dan Jorgensen and his counterparts from Austria, Finland, Germany, Luxembourg, the Netherlands and Sweden called on the EU to let member states set SAF blending goals beyond minimum EU standards.

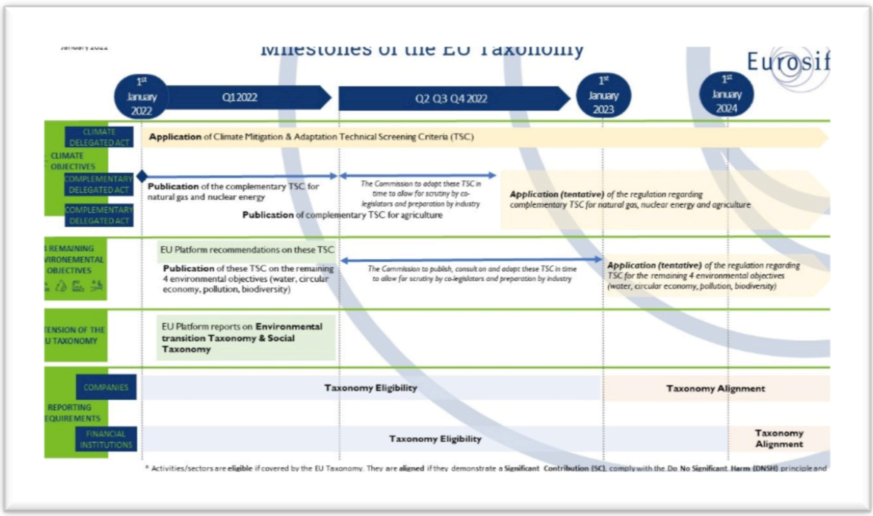
Pratt & Whitney commits to 100% SAF compatibility – Pratt & Whitney Canada, a business unit of **Pratt & Whitney**, announced on 15th February that it is committing to supporting efforts to advance 100% SAF compatibility for its engines. Pratt said ATR is targeting a demonstration flight in early 2022 on a Braathens Regional Airlines' ATR aircraft, where both PW100 engines will run on 100% SAF.

Reborn Norwegian Air examines SAF options – Norwegian Air, which reported a profit for 2021 after emerging from restructuring as a smaller and narrowbody-only airline, said during its Q4 2021 earnings call on 18th February that it is assessing whether to invest or sign off-take agreements with SAF players that are in the "very early stages" of building facilities. Norwegian CEO Geir Karlsen said the carrier is "in a pretty detailed dialogue with a couple of these type of companies." Other airlines making SAF-related announcements in the past month include **Singapore Airlines** and related parties announcing the selection of ExxonMobil as a vendor of Neste-supplied SAF as part of a pilot on the use of SAF in Singapore (although Shell is preparing to do the same), and **Virgin Atlantic** announcing 2,000 metrics tonnes of Neste-supplied SAF at Heathrow in H1 2022.

REGULATION

GREEN FINANCE…

EU Taxonomy upcoming key dates – helpfully visualised! Brussels-based Eurosif, the leading pan-European sustainable and responsible investment (SRI) membership organisation, has put together a helpful visualisation on upcoming milestones in the EU Taxonomy. The relevant technical screening criteria (TSC) for agriculture also covers 12 other sectors including energy and transport. .



Source: Eurosif (click link on the left to see a larger version)

Lawmakers debate EU green bond standard – MEPs began discussing in early February whether an EU Green Bond Standard (**EU GBS**) should become compulsory for all issuers. The International Capital Markets Association (**ICMA**), whose green and sustainability-linked bond (and related loan) standards have been **used by multiple airlines** in the past three years, raised objections last January.

EMISSIONS…

ICAO discusses tougher aircraft emissions standards – UN aviation experts in early February discussed in a virtual gathering toughening emissions standards for commercial aircraft, less than six years before a previously agreed clampdown takes effect, Reuters reported citing sources and working papers. One of the sources said ICAO's Committee on Aviation Environmental Protection (CAEP) agreed to draft new standards for civil aircraft, as part of broader efforts through 2025 to update rules for aircraft noise and emissions.

Europe endorses Net Zero by 2050 demands for September ICAO meeting – The EU 27 member states, 10 other European countries including the UK, and 146 industry stakeholders including major airline associations and airports, endorsed the Toulouse Declaration on 4th February committing them to working with ICAO towards the adoption of an ambitious "long-term aspirational goal" (LTAG) for aviation consistent with efforts to reach net zero CO2 emissions in 2050. The adoption of such a goal would take place during ICAO's 41st Assembly in September 2022. ICAO Council President Salvatore Sciacchitano welcomed the event and its objectives.

COMPETITION…

Air France, Lufthansa complain of unfair treatment, reject EU fuel taxes – While many European airlines continue to support the European Commission's Fit for 55 package (see the Ishka Insights explainer), many have also been concerned about EU sustainability-minded regulations creating an unlevel playing field versus non-EU carriers. In late January, an Aviation Alliance Fit for 55 was formed in Europe, comprising 19 airlines and major airports and largely underpinned by **Air France-KLM** and **Lufthansa Group**. While the alliance was launched with "the aim to support Fit for 55," in its declaration the members express being "deeply concerned" that Fit for 55's proposals would reinforce carbon leakage through long-haul flights via non-European hubs. The alliance also rejects fuel taxes on intra-EU flights, a key proposal of Fit for 55. Brussels-based NGO **Transport & Environment (T&E)** in January contested concerns of potential carbon leakage for European aviation in a 26-page analysis, concluding that "there is no economic advantage for any direct flights" from Europe to East and Southeast Asia to stop-over in Dubai or Istanbul "given the additional fuel, staff, and aircraft costs."

CARBON CORNER

Ryanair hedges EU allowances (EUA) 50% below market – Ryanair revealed last year it had begun hedging EU Emissions Trading Scheme (EU ETS) allowance purchases for the coming years, and in the airline's 1st February earnings call it provided a glimpse into what it is currently paying. The airline it said it had locked-in 80% of its carbon exposure (EUA purchases) at €45 per tonne of CO2 until the end of FY2023, compared to around €90 per tonne as of mid-February. The group does not provide a breakdown between jet fuel and carbon derivative forward contracts, but for FY2020 Ryanair had approximately €150 million ($165 million) in EU-ETS Carbon Credits total expenses, compared to €2.76 billion ($3 billion) in fuel and oil expenses.

AIRCRAFT LESSORS AND ASSET MANAGERS

eVTOLs lure lessor commitments – Electric vertical take-off and landing (eVTOL) vehicles focused on urban air mobility (UAM) operations continue to draw the attention of aircraft leasing companies. In the past month, **Aviation Capital Group** joined the list of lessors and asset managers with eVTOL orders with an agreement with **Volocopter** "to develop financing solutions" to assist the sale of eVTOLs worth up to $1 billion after their certification. The transaction builds on an existing partnership between Volocopter and ACG's parent company **Tokyo Century**, an early equity investor in Volocopter. Meanwhile, the standard-bearer of eVTOL leasing **Avolon –** through affiliate Avolon-e – signed a non-binding MoU with AirAsia to lease a minimum of 100 VX4 aircraft and partner the airline to develop a UAM platform in Southeast Asia. Avolon has now placed 90% of its initial VX4 orderbook of 500 aircraft.

OTHER INITIATIVES

New demonstrator milestone – In late January, **Clean Sky 2**'s Flight Test Bed 2 demonstrator, an Airbus C295 modified to test future technologies for multi-mission aircraft, made its maiden flight in Seville, Spain. Clean Sky is a public-private partnership between the European Commission and the European aeronautics industry. The demonstrator is equipped with technologies targeting up to 43% CO_2 and 70% NO_x reductions, and 45% less noise during take-off.

DON'T FORGET THE S AND THE G

Wizz Air ditched by Danish fund. Danish pension fund **AkademikerPension** announced on 7th February that it would sell its DKK 22 million ($3.2 million) stake in LCC **Wizz Air** over "conflicts with human and labour rights." The fund said studies have shown the management of Wizz Air has "repeatedly refused to recognize the freedom of association of employees and the right to enter into collective bargaining in Romania, Ukraine, Norway and Italy, among others." The statement also pointed out that several courts have also ruled that the company has exhibited discriminatory behavior and fired employees because of their union affiliation.

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