# DevvStream

## THE RACE TO NET ZERO FOR THE GLOBAL AVIATION INDUSTRY

2025 Trends, Technologies & Strategies

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DevvStream (Nasdaq: DEVS) is a leading carbon management firm specializing in the development, investment, and sale of environmental assets, energy transition, and innovative carbon management solutions. (www.devvstream.com)

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# The Global Airline Industry's Race to Net-Zero: 2025 Trends, Technologies and Strategies

Global airlines are accelerating their decarbonization efforts, driven by new regulations, ambitious climate targets, and rapidly evolving carbon markets. From international frameworks like CORSIA and the EU ETS to cutting-edge solutions like sustainable fuels and carbon capture, the industry is navigating a complex flight path toward net-zero emissions.

This article explores the latest updates, technologies, trends, government mandates, and carbon market developments shaping aviation's sustainability journey – and how airlines are partnering with high-integrity carbon credit providers to meet their goals.

# A Changing Regulatory Landscape: CORSIA, EU ETS, and More

Global policymakers are implementing carbon regulations and frameworks that are reshaping airlines' strategies. Two of the most impactful are ICAO's CORSIA and the EU's Emissions Trading System (ETS):

- CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) Launched in 2021 and entering its First Phase in 2024, CORSIA is the first global market-based measure for a single industry. As of January 1, 2024, 126 countries (rising to 129 in 2025) are participating, and airlines must offset any CO<sub>2</sub> emissions above 85% of 2019 levels on international routes. This baseline tightened from original plans to be more ambitious means that as air traffic rebounds, carriers will need to purchase carbon credits for emissions growth beyond 2019 levels. In fact, ICAO estimates airlines may need up to 150 million tonnes of carbon credits during 2024–2026 (CORSIA's first compliance phase). By 2027, CORSIA's Second Phase makes offsetting mandatory for nearly all international flights (exempting only a few small-volume states), essentially covering the globe.
- EU Emissions Trading System (EU ETS) for Aviation In Europe, airlines face an active cap-and-trade system for flights within the European Economic Area. The EU is tightening the screws: free emission allowances for airlines are being phased out completely by 2026, shifting to full auctioning. This means carriers must buy permits for all their CO<sub>2</sub> emissions on intra-Europe flights, putting a real price on carbon. At the same time, the EU is aligning with CORSIA for international routes monitoring how CORSIA delivers on Paris Agreement goals and planning to apply it to flights to/from Europe starting 2027. Europe has also introduced the ReFuelEU Aviation mandate, requiring fuel suppliers (and indirectly airlines) to begin blending Sustainable Aviation Fuel (SAF) into jet fuel: 2% SAF by 2025, rising steeply to 6% by 2030 and continuing upward thereafter. These mandates

aim to spur SAF production by guaranteeing demand, although airlines have warned that achieving 6% SAF by 2030 will be challenging without urgent action to boost supply.

Global coordination is increasing. In 2022, ICAO's Assembly adopted a long-term aspirational goal for international aviation to reach net-zero by 2050, signaling governments' commitment to industry decarbonization. Major markets like the U.S. are incentivizing progress (for example, tax credits for SAF production in the Inflation Reduction Act) even if they haven't imposed a specific aviation carbon cap yet. The upshot is that airline executives worldwide must navigate an evolving patchwork of regulations: offsetting schemes, cap-and-trade costs, and fuel blending requirements are quickly becoming the new normal. Compliance alone will require significant investment in carbon reductions or credits – and smart airlines are treating these policies not just as costs, but as catalysts to innovate and lead in sustainability.

# From 2030 Targets to 2050 Vision: Airline Emissions and Net-Zero Commitments

Aviation today produces roughly 2–3% of global  $CO_2$  emissions, and that share could grow as demand for travel rises. After a pandemic-induced dip, emissions are climbing again – nearly 800 million tonnes of  $CO_2$  in 2022, about 80% of 2019's record 915 million tonnes. The International Energy Agency estimates 2023 aviation emissions reached 950 million tonnes (over 90% of pre-COVID levels) as international travel roared back. Without major interventions, ICAO warns aviation's emissions could triple by 2050 compared to 2015, a trajectory utterly incompatible with global climate goals.

#### In response, the aviation industry has united behind ambitious targets:

- Net-Zero by 2050 In October 2021, airlines at the IATA AGM committed to achieve netzero carbon emissions by 2050 for their operations. This pledge, known as *Fly Net Zero*, aligns aviation with the Paris Agreement's temperature goals. Achieving it will require an all-industry effort – airlines, manufacturers, airports, air traffic management, and governments – plus massive investments in new technology and energy. Notably, the oneworld alliance (including carriers like Qatar Airways, American, British Airways, and others) was the first global airline alliance to commit collectively to net-zero 2050, underscoring how pervasive this goal has become.
- 2030 Interim Goals Many airlines have set strong mid-term targets for 2030 to ensure progress this decade. For example, Lufthansa Group aims to halve its net CO<sub>2</sub> emissions by 2030 (vs 2019) on the way to climate neutrality in 2050. Carriers are adopting fuel-efficiency targets, fleet renewal plans, and SAF usage goals for 2030. Qatar Airways, for one, has pledged 10% SAF use by 2030, complementing operational efficiencies to curb emissions growth. Such interim goals are crucial: they create accountability and drive near-term action (new aircraft, route optimization, etc.) to bend the emissions curve well before 2050.

How realistic is net-zero 2050 for aviation? It's a daunting challenge. Industry roadmaps project a combination of measures: about 65% of the carbon reduction by 2050 coming from Sustainable Aviation Fuel, 13% from new aircraft technologies (including potential electric or hydrogen propulsion), 3% from infrastructure and operational improvements, and 19% from carbon

offsetting and carbon capture for residual emissions. In other words, even after maxing out efficiencies and cleaner fuels, nearly one-fifth of aviation's mitigation may rely on purchasing carbon credits or using carbon removal to balance out emissions. This underscores both the importance of robust carbon markets and the imperative to invest in nascent technologies now – because the sooner solutions like SAF and carbon capture scale up, the less reliance there will be on offsets later.

Airline executives also recognize that efficiency alone won't offset traffic growth. New airplanes are ~20% more efficient than models they replace, but historically traffic has grown ~5% annually, outpacing those gains. Thus, sustainability strategies must go beyond business-as-usual improvements. The net-zero commitment has essentially become industry-standard; now the focus is on execution – turning pledges into concrete action plans for the 2020s, 2030s, and 2040s.

## High-Integrity Carbon Credits: Quality Over Quantity

With carbon offsetting set to play a significant role, there is a surging emphasis on the quality and integrity of carbon credits that airlines (and other buyers) invest in. Gone are the days of simply buying the cheapest offsets to claim "carbon neutral" flights – stakeholders and regulators are scrutinizing credits like never before. Buyers are now demanding high-integrity credits that can genuinely stand up to environmental and public scrutiny.

#### Key trends in the carbon credit market and buyer preferences include:

- CORSIA-Eligible Credits and Compliance-Grade Standards: Airlines under CORSIA can
  only use credits meeting rigorous ICAO criteria. For instance, credits must come from
  approved programs and vintages, and starting with CORSIA's First Phase host
  countries must make corresponding emissions adjustments under the Paris Agreement
  for those credits. This prevents double-counting and raises the bar on integrity. Airlines
  are therefore seeking credits that meet ICAO's eligibility requirements so they count
  toward compliance. In late 2024, ICAO approved four new carbon standards for CORSIA
  Phase 1, expanding supply but also introducing stricter exclusions and attestations to
  ensure quality. In practical terms, this means airlines' offset portfolios are being directed
  toward credits with verified additionality, proper accounting, and third-party oversight.
- Core Carbon Principles and Market Integrity Initiatives: Beyond compliance, the voluntary carbon market is undergoing a credibility overhaul. Initiatives like the Integrity Council for the Voluntary Carbon Market (ICVCM) have introduced Core Carbon Principles a global benchmark for high-quality credits and are beginning to label which credits meet these benchmarks. Buyers, especially corporate sustainability officers, increasingly favor credits that adhere to such principles. Airlines often market offset options to passengers and corporate clients, so they favor credits that are transparent, traceable, and "no regrets." As one example, the IATA Aviation Carbon Exchange reported that in 2021 airlines traded about 5 million tonnes of "high-quality" credits on the platform, most of which were CORSIA-eligible units. Even outside of CORSIA, airlines gravitate toward projects vetted by reputable standards (Verra, Gold Standard, etc.) and are cautious about credits that might later be deemed questionable.

Demand Shifting to Removals and Nature-Based Solutions with Co-benefits: There's a subtle trend of buyers preferring carbon removal credits (like reforestation or direct air capture) to simple avoidance credits, especially for long-term net-zero claims. Removal projects physically pull carbon out of the atmosphere, which resonates as more permanent. At the same time, nature-based solutions such as forestry, mangrove restoration, or regenerative agriculture remain popular, but only if they are done right. Buyers want to see robust monitoring to ensure that forests stay preserved (addressing the permanence concern). The co-benefits of these projects – e.g. biodiversity, community development – are a selling point as long as the carbon accounting is solid. High-integrity also means no double counting of emission reductions: under Article 6 of Paris, if an airline buys credits from, say, a forest conservation project in a developing country, there is growing expectation that the host country will not also count those emission cuts toward its own nationally determined contribution.

In summary, airlines are pivoting from a volume-based approach to a quality-based approach in carbon credits. This is driven by both external pressure (media and NGOs have exposed low-quality offset projects in the past) and internal resolve to ensure offsets genuinely mitigate climate impact. As one airline sustainability director put it, "Our passengers and investors expect that a carbon credit we purchase is real, verified, and making a difference – not just a tick-box." The focus on integrity is also evident in price differentials: *compliance-grade credits or high-quality removals command higher prices*, but airlines are willing to pay a premium for credibility. This dynamic is reshaping the carbon market, with demand concentrated on premium credits that meet stringent criteria, and it's pushing developers to elevate project standards accordingly.

#### Innovations in Offsetting and Emissions Reduction Technologies

The good news is that a wave of innovative technologies and offset solutions is emerging to help aviation decarbonize. These range from cleaner fuels that cut emissions at the source to sophisticated methods of capturing or sequestering carbon elsewhere. Here are some of the leading solutions and trends:

Sustainable Aviation Fuel (SAF): By far the industry's most critical lever, SAF is a drop-in replacement for conventional jet fuel made from renewable or waste resources (e.g. cooking oil, agricultural residues, municipal waste, or even synthesized from CO<sub>2</sub>). SAF can reduce lifecycle carbon emissions by 70-80% compared to fossil jet fuel, making it a cornerstone of decarbonization. Airlines worldwide have signed offtake agreements and invested in SAF producers to secure supply. For example, Lufthansa Group – one of the largest SAF customers – expects to invest up to \$250 million in SAF procurement in coming years and has inked deals for new SAF production (like a 60,000-ton per year facility in Germany using biogenic residues). United Airlines led the launch of a \$100+ million Sustainable Flight Fund in 2023 to support SAF startups, attracting partners like JPMorgan, Boeing, and Air Canada. Policy is also boosting SAF: besides the EU mandate (2% by 2025, 6% by 2030), governments are offering incentives (the U.S. now provides a \$1.25-1.75 per gallon SAF blenders tax credit). The challenge is scale - current SAF production is well under 1% of jet fuel demand, and even planned capacity in 2030 would only cover a small fraction of needs. Still, momentum is building rapidly. Airlines see SAF as the main way to cut in-sector emissions; it accounted for 65% of IATA's 2050 strategy. By investing early, carriers hope to drive down SAF costs (today SAF is 3-5 times more expensive than jet fuel) and ensure supply for the future.

- Direct Air Capture (DAC) and Carbon Removal: Imagine "scrubbing" CO<sub>2</sub> back out of the atmosphere – that's what DAC technology does. Giant fans or chemical processes capture ambient CO<sub>2</sub>, which can then be stored underground or used in products. It's a nascent but game-changing field for offsets because DAC provides permanent, quantifiable CO<sub>2</sub> removal. Airlines like United are putting skin in the game: United's venture arm invested \$15 million in Svante, a carbon capture tech company, and also in 1PointFive's DAC project (planning to pull 1 million tons of CO<sub>2</sub> per year from the air) - with United committing to purchase tons of that future CO<sub>2</sub> removal. Just this year, United's Sustainable Flight Fund invested in DAC startup Heirloom, securing rights to 500,000 tons of carbon removal in the future. These moves signal that airlines view carbon removal credits as strategic assets for meeting long-term climate commitments (especially post-2035 when they aim to neutralize residual emissions). DAC today is costly (~\$500+ per ton), but as more plants are built (several large facilities are under development in the U.S. and Europe), costs are expected to drop. Government support like the U.S. DAC hubs program and tax credits (\$180 per ton for DAC storage) also accelerate this tech. While DAC won't offset large volumes in the 2020s, by 2030s it could be a significant source of high-quality credits. Early airline investments are helping scale it up.
- Nature-Based Offsets: Forests, Mangroves, and Blue Carbon: Protecting and restoring ecosystems can generate offsets by absorbing  $CO_2$  or preventing its release. Airlines have historically relied on forestry projects (avoided deforestation and tree planting) for offsets, and these continue to evolve. Particularly exciting is "blue carbon," which refers to carbon stored in coastal and ocean ecosystems - for example, mangrove forests, salt marshes, and seagrass beds. Mangroves not only guard coasts from storms, they are carbon superstars: they sequester carbon at up to 3–5 times the rate of tropical forests and lock it away in underwater sediments for centuries. Several airlines are now supporting mandrove restoration projects as part of their offset portfolios, marrying climate benefits with biodiversity and community resilience. For instance, Etihad Airways in the UAE has a program to plant mangroves (leveraging their carbon absorption to eventually offset flights), and other carriers are funding blue carbon projects in Southeast Asia, Africa, and the Americas. These projects, when done properly, yield high-integrity credits – they are usually verified under rigorous standards and increasingly come with satellite monitoring to ensure the trees are thriving. Beyond forests, airlines are looking at regenerative agriculture and soil carbon projects (which pull  $CO_2$  into soils) and conservation of other ecosystems (like preventing peatland drainage which emits  $CO_2$ ). The key is innovation in methodologies and verification, to translate these natural processes into trusted credits. Many nature projects also align with airlines' brand values by supporting communities (e.g. providing jobs in conservation) and protecting iconic wildlife, making them attractive from a storytelling perspective as well.
- Methane Reduction Projects: While aviation emits CO<sub>2</sub> from burning fuel, methane is another potent greenhouse gas that clever offset projects can target. Methane has over 80 times the warming potential of CO<sub>2</sub> over 20 years, so cutting methane provides a big near-term climate benefit. Airlines have supported projects that capture or destroy methane emissions for example, landfill gas capture (collecting methane from decomposing waste and either flaring it or using it for energy) and agricultural methane reduction (such as biodigesters that capture methane from dairy farm manure lagoons). JetBlue Airways, for one, used to offset emissions by supporting projects like methane gas capture at landfills and forestry, before shifting its focus more to SAF in recent years. Under CORSIA's approved credit programs, certain methane avoidance projects (if they meet the criteria) can produce eligible units, giving airlines a compliance-grade option that

isn't  $CO_2$ -centric. With the Global Methane Pledge aiming to cut methane 30% by 2030, we can expect more investment in this area. For airlines, purchasing methane-offset credits can often be cost-effective (these credits tend to be on the lower end of pricing) while delivering verifiable climate impact. It's a way to diversify their offset portfolio beyond  $CO_2$  projects. Innovative examples include plugging abandoned oil wells to stop methane leaks and rice cultivation projects that reduce methane by alternating wet/dry field management. Each of these has methodologies that convert the methane mitigated into  $CO_2$ -equivalent credits.

Emerging Tech and Novel Ideas: The horizon is filled with other innovations. Some airlines are eyeing synthetic e-fuels (fuel made by combining green hydrogen with captured CO<sub>2</sub>) which could eventually provide near-zero-carbon jet fuel – Airbus and some European airlines are partnering on pilot e-fuel plants. Others are investing in zero-emission aircraft technologies (like electric or hydrogen-powered aircraft for short haul, which, while not offsets, reduce future need for offsets). On the offset side, concepts like "book-and-claim" systems for SAF (where an airline can claim credit for SAF used by another if they paid for it) might create tradable SAF-based credits, blending the line between in-sector reduction and offset. Even marine-based carbon removal (such as kelp farming that sequesters carbon in the deep ocean) is being explored and could become a source of credits that airlines purchase. The bottom line: innovation is everywhere, and airlines are both driving and leveraging it. Early adopters like United, Lufthansa, and others have essentially become venture capitalists in climate tech – investing in everything from algae biofuel startups to solar-to-jet-fuel technology, in hopes that one of these bets will pay off in a big way for future operations and credits.

# Airlines Leading by Example: Recent Sustainability Investments

It's illuminating to see what industry leaders are actually doing – the investments and initiatives that show decarbonization in action. Here we highlight three major airlines (among many) and their recent moves on sustainability:

United Airlines – Arguably the most aggressive airline in climate innovation, United has put its money where its mouth is. In 2020 it became one of the first airlines to commit to net-zero 2050 without relying on traditional carbon offsets, instead prioritizing direct measures like SAF and carbon removal. To that end, United launched its Sustainable Flight Fund in early 2023 with over \$100 million (now nearly \$200 million after more partners joined) dedicated to investing in start-ups focused on SAF and related tech. Through this fund and its venture arm, United has invested in multiple SAF producers (from waste-based biofuels to synthetic fuel projects) and even formed a \$50 million joint venture to develop SAF from ethanol. On the carbon removal front, United made a landmark deal with Occidental's 1PointFive to purchase 1.5 million tons of CO<sub>2</sub> removal via direct air capture – one of the largest DAC commitments by any company. It has also invested in carbon capture companies like Svante (CO<sub>2</sub> filter technology) and Heirloom (which uses minerals to absorb  $CO_2$ ) to accelerate those solutions. In addition, United has partnerships for electric aircraft (Evtol air taxis and electric regional aircraft) for shortrange, aiming to reduce future emissions. United's CEO has been vocal that climate action is a business imperative. These investments not only help United meet its own goals, but

also shape the market – sending a strong signal to technology developers that there is demand for breakthroughs in aviation decarbonization.

- Lufthansa Group As Europe's biggest airline group, Lufthansa is under intense regulatory and customer pressure to green its operations. The group has committed to net-zero by 2050 and 50% reduction in net emissions by 2030 (vs 2019). To achieve this, Lufthansa is heavily investing in SAF and innovative projects. It has signed multi-year agreements to purchase SAF, including a recent deal for 60,000 tonnes per year of SAF starting in 2026 from a new biogenic fuel plant in Germany. Lufthansa says it is ready to invest \$250 million in SAF, reflecting its strategy to be a leader in alternative fuels. The airline is also involved in pioneering power-to-liquid fuel; it backed a project with BASF and startup Synhelion to produce "sun-to-liquid" e-kerosene using solar energy and  $CO_2$ , a technology that saw the world's first carbon-neutral kerosene plant open in 2022 with Lufthansa's support. On the customer side, Lufthansa introduced "green fares" that include a mix of SAF and certified offsets in the ticket price, to mainstream the idea of paying a bit more for sustainable flying. Interestingly, Lufthansa just announced an environmental surcharge on tickets from 2025 to cover the rising cost of EU ETS and other climate policies – a move to transparently pass on the price of carbon to consumers and incentivize lower-emission choices. Furthermore, Lufthansa leverages offset programs: through its Compensaid platform, it offers passengers options to offset flight emissions by supporting projects or buying SAF. It partners with reputable offset providers to ensure projects (like forest conservation or wind farms) are high-quality. Lastly, Lufthansa is updating its fleet (new fuel-efficient Boeing 787s, Airbus A350s, etc.) and even exploring hydrogen fuel infrastructure for future aircraft. All these efforts show how Lufthansa is balancing required compliance (paying for carbon in EU markets) with voluntary leadership (investing in SAF and new tech ahead of mandates).
- Qatar Airways Representing the Middle East's aviation power, Qatar Airways is part of the oneworld alliance commitment to net-zero 2050 and has been ramping up its sustainability initiatives. Qatar affirmed a target of net-zero by 2050 and has set a notable interim goal of 10% SAF in its fuel mix by 2030, which is significant for an airline in a region where oil is abundant. To achieve this, Qatar is working on securing SAF supply and collaborating on regional SAF production (for instance, Qatar Energy and other Gulf entities are eyeing synthetic fuels and biofuel production, often in partnership with airlines). Qatar Airways has also embraced market-based measures and offsetting proactively. In 2022, it launched a voluntary carbon offset program for both passengers and corporate clients in partnership with IATA. Through an easy-to-use web portal, customers can offset their flight emissions by contributing to independently verified projects that deliver carbon reductions plus community benefits. This program underscores Qatar's message that it is taking responsibility for emissions even before offsets are mandated. Qatar was also the first airline to trade on IATA's Aviation Carbon Exchange using the new IATA Clearing House integration, simplifying the purchase of CORSIA-eligible credits. This indicates a sophisticated approach to carbon markets. On the technology front, Qatar Airways operates one of the youngest, most fuel-efficient fleets (primarily Boeing 787s and Airbus A350s on long haul, which significantly cut emissions per seat). The airline has over 80 fuel optimization projects in place (optimized flight routes, single-engine taxi, weight reduction, etc.) as part of a comprehensive efficiency drive. Additionally, Qatar is exploring advanced carbon capture and utilization through partnerships in its home country (Qatar has initiatives to capture CO<sub>2</sub> from industrial processes which could one day offset aviation emissions or be used to produce synthetic jet fuel). By working closely with its government

and industry (remember Qatar is an energy innovator as a top LNG producer), Qatar Airways aims to leverage regional strengths to decarbonize – for instance, abundant solar energy could be used to produce green hydrogen for future fuels. In summary, Qatar Airways is combining fleet technology, operational excellence, offsetting, and SAF commitments to maintain its leadership position. It often emphasizes that *sustainability and service excellence go hand-in-hand*, reinforcing brand loyalty while meeting environmental goals.

These examples only scratch the surface. Other airlines like Delta (investing \$1 billion over 10 years in climate initiatives), JetBlue (the first U.S. airline to voluntarily offset all domestic flight emissions until shifting to SAF), British Airways (partnering in a waste-to-fuel plant and a leading user of UK's offset scheme), Qantas (investing in Australian reforestation and targeting 10% SAF by 2030), and Singapore Airlines (launching a SAF credits program and cutting weight with innovative cabin products) are all pushing the envelope in unique ways. The common thread is clear: sustainability has moved from a niche concern to a core strategy for airlines. Carriers are competing for leadership in decarbonization as much as on route networks or in-flight service. This race is spurred by purpose, yes, but also by business logic – airlines that innovate early can gain preferential access to new energy sources, avoid regulatory shocks, and appeal to environmentally conscious travelers and corporate clients.

## Partnering with Trusted Carbon Solution Providers

Amid this flurry of activity, airlines are not doing it all alone. The complexity of carbon markets, offset projects, and sustainability technologies has given rise to a crucial ecosystem of third-party providers and carbon credit developers that help airlines meet their targets. These partners include project developers, carbon aggregators, consultancies, and exchange platforms – and their role is growing as the need for high-quality credits and projects explodes.

#### Third-party carbon solution providers offer several benefits to airlines:

- Sourcing and Vetting High-Quality Credits: Providers tap into global portfolios of projects

   from rainforest conservation in the Amazon to methane-capture sites in Asia conducting due diligence to ensure the credits meet required standards (CORSIA eligibility, Core Carbon Principles, etc.). They often have on-ground expertise to evaluate project viability and monitor performance over time. For an airline sustainability officer, working with a reputable credit provider means they can trust that the offsets they buy are legit. For example, Qatar Airways partnered with IATA's chosen provider to supply offsets for its passenger program. Many airlines similarly work with firms like ClimateCare (now part of Natural Capital Partners), South Pole, or Shell's Nature Based Solutions unit to procure offsets that pass muster. The provider handles the verification paperwork, registry retirement, and even alignment with things like corresponding adjustments if needed.
- Project Development and Co-Investment: Some airlines choose to directly invest in carbon
  projects or develop their own dedicated offset projects (often for exclusivity or cost
  advantage). Here, specialized developers are key. They design the project, navigate
  certification, and manage it, often with airline funding. An emerging model is codevelopment of projects: a third-party developer and an airline (or group of airlines) jointly
  finance, say, a reforestation initiative, and in return the airline gets a stream of carbon
  credits from that project for years. This can secure future supply of offsets at a known cost.

It's akin to an airline investing in a fuel refinery to guarantee fuel supply. We see this with some alliances – oneworld, for instance, facilitated an effort where member airlines agreed to purchase a large batch of SAF and may collaborate on offset projects too. Third-party experts make sure these custom projects actually deliver the intended climate outcomes and handle technical facets like carbon accounting, something most airlines don't have expertise in-house to do at scale.

 Ensuring Compliance and Audit-Readiness: As climate disclosures become more rigorous, airlines need to report their emissions reductions with confidence. A credible carbon credit provider will ensure the airline has all necessary documentation (e.g. verification reports, serial numbers of credits retired) to satisfy auditors and regulators. For compliance markets like CORSIA, this is crucial – using a non-eligible credit by mistake could leave an airline non-compliant. Providers also keep on top of rule changes: for example, if ICAO updates its eligible credit list or the EU ETS starts accepting certain international credits, a good partner will inform and adjust strategies accordingly. In essence, they act as navigators of the carbon market, which is especially valuable as that market is in flux.

One standout in this space is DevvStream (Nasdaq: DEVS), a leading carbon management firm specializing in the development, investment, and sale of environmental assets, energy transition, and innovative carbon management solutions. Founded in 2021, DevvStream has rapidly become a leader in the space, with a focus on technology-based solutions. Notably, DevvStream works worldwide with governments and firms to implement green projects (renewable energy, energy efficiency, carbon capture, etc.) that generate environmental assets as they reduce or remove emissions. This approach means DevvStream isn't just a broker; it's actively creating new projects on the ground and bringing additional supply of credits to the market – exactly what airlines will need as demand for offsets soars under schemes like CORSIA.

## What makes DevvStream particularly attractive to aviation stakeholders is its credibility and future-ready strategy:

- It is a publicly traded company in fact, *DevvStream is the first and only firm of its kind to be listed on the Nasdaq* providing enhanced transparency through regulatory oversight. The company underwent PCAOB-compliant audits and a rigorous SEC review in the process of listing, meaning its financials and project claims have been vetted. For an airline, partnering with an audited, exchange-listed firm like this reduces counterparty risk significantly. You know the provider isn't a fly-by-night outfit; it's built for the long haul.
- One of DevvStream's areas of expertise is CORSIA-eligible carbon credits and innovative project types. Being technology-focused, it co-develops projects like methane capture facilities, renewable power installations, and direct carbon removal initiatives many of which can generate the kind of high-integrity credits that airlines need for compliance and voluntary goals. Because DevvStream aims for credits that meet or exceed international criteria, airlines can be confident that credits procured through them will count under frameworks like CORSIA and also satisfy internal ESG mandates. The company's participation in both compliance and voluntary markets means it can service airlines whether they are offsetting mandated emissions growth or going beyond compliance to offset their entire carbon footprint.
- The firm offers a portfolio approach: DevvStream aims to retain a portion of carbon credits from projects it co-develops (often multi-year streams). This results in a diversified portfolio

of available and upcoming credits – ranging across geographies and project types – that can be offered to buyers. For airlines, such a portfolio is valuable: it can provide a onestop solution to source different kinds of credits (technology-based, nature-based, removals, etc.) as needed. DevvStream's model of carbon streaming (where it secures future credit offtake rights by funding projects now) means its goal is to bank a pipeline of credits that are expected to come online over the next decade. As airlines ramp up offsetting toward 2035 and 2050 goals, having access to a "future-ready" supply of credits is a strategic advantage. It insulates them from market volatility and scarcity – a critical point since *ICAO projects offset demand could reach up to 1.5 billion tonnes by 2035 in high-traffic scenarios*. Providers like DevvStream help ensure there will be enough high-quality credits available to meet that surge in demand.

Finally, DevvStream's public and global stature means trust and accountability. Airlines can point to the partnership in their sustainability reporting as a validation of their offset strategy. DevvStream's Nasdaq listing and audits, as mentioned, underscore its legitimacy. It's akin to working with a financial institution for investments – you'd prefer one that's regulated and transparent. In the world of carbon credits, which has seen its share of skepticism, this credibility is gold. In the words of DevvStream's CEO, listing on Nasdaq "strengthens our leadership position and market presence, and enhances our ability to help corporations and governments reach net zero quickly and cost-effectively". For airlines seeking to navigate the turbulence of decarbonization, a partner that brings both market savvy and integrity can make the journey far smoother.

## Conclusion: Ready for Takeoff – Towards Sustainable Skies

The push for decarbonization in the airline industry is reaching cruising altitude. Global frameworks like CORSIA and regional mandates are now in effect, ensuring that carbon accountability is no longer optional for airlines. At the same time, airlines have embraced ambitious net-zero targets and are backing them up with real investments – from millions poured into SAF and carbon capture to fleet upgrades and operational efficiencies. The carbon market is evolving in tandem, prioritizing quality and integrity so that every credit used to offset emissions truly counts. And innovation continues to unlock new possibilities, whether it's powering jets with cooking oil or pulling carbon from the sky.

For airline executives, sustainability officers, and carbon procurement leaders, the task ahead is to integrate all these pieces into a coherent strategy: compliance obligations, voluntary commitments, fuel transitions, and partnership choices. The full whitepaper upon which this article is based delves even deeper – offering the latest data, case studies (including how airlines like those discussed are structuring their decarbonization programs), and insights into emerging best practices. It examines how carriers can balance in-sector reductions vs. out-of-sector offsets, how to leverage market-based measures for competitive advantage, and how providers like DevvStream are crafting solutions tailored to aviation's needs.

The journey to net-zero aviation is complex, but the destination – sustainable skies – is within reach. Airlines that stay informed and proactive today will lead the industry into a new era of cleaner flight tomorrow.

## Disclaimer

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Carbon credit availability and eligibility for compliance programs (such as CORSIA) are subject to regulatory review, independent validation, and ongoing market changes. DevvStream makes no guarantee of future credit eligibility or acceptance by specific frameworks. DevvStream actively seeks to align its credits with CORSIA and other compliance criteria; however, regulatory eligibility is determined by third-party verifiers and subject to change.

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