



SAF MODULE

VOLUME 4

4. Global SAF Overview: Policies, Markets, and Collaborations

- SAF Policies and Targets in Countries
- SAF Blending Targets in Different Countries
- Global SAF Supportive Financing Initiatives
- Airports Distributing SAF
- Global SAF Alliances/Associations



SAF Policies and Targets in Countries

Europe: ReFuelEU Aviation Regulation

- **Obligation for aviation fuel suppliers** to ensure that all fuel made available to aircraft operators at EU airports contains a **minimum share of SAF from 2025**
- Fuel suppliers will have to incorporate **2% SAF in 2025, 6% in 2030 and 70% in 2050**
- From 2030, **1.2%** of fuels must also be **synthetic fuels**, rising to 35% in 2050
- **Penalties imposed** on fuel suppliers **in case of non-compliance** are determined at EU level, reviewed yearly if needed, and enforced at national level



United States SAF Grand Challenge

- A **multi-agency initiative** led by the U.S. Department of Transportation (DOT), Department of Energy (DOE), and Department of Agriculture (USDA) to implement a government wide effort to reduce cost, enhance sustainability, and expand **production and use of SAF**
- It was **announced** at a White House Roundtable on Sustainable aviation on **September 9, 2021**
- Scaling up U.S. SAF production to at least **3 billion gallons of SAF per year by 2030** and, by 2050, sufficient SAF to meet 100% of aviation fuel demand, which is currently projected to be around 35 billion gallons per year



Brazil's National Program for Sustainable Aviation Fuel (ProBioQAV)

- **The Future Fuel Law of Brazil**, enacted in October 2024, aims to promote sustainable low-carbon mobility with aviation as one of the priority area
- Under this law, **National Program for Sustainable Aviation Fuel (ProBioQAV)** incentivizes the use of SAF
- Airlines will be required to **reduce their greenhouse gas (GHG) emissions** in domestic flights by using SAF, starting at **1% in 2027** and gradually increasing to **10% by 2037**
- **The National Civil Aviation Agency (ANAC)** is tasked with monitoring compliance



UK's Sustainable Aviation Fuel Mandate

- The Mandate secures demand for SAF by:
 - **obligating the supply of an increasing amount of SAF** in the overall UK aviation fuel mix
 - incentivizing SAF supply through the **award of tradeable certificates with a cash value**
- SAF Mandate starts in **2025 at 2%** of total UK jet fuel demand, increasing linearly to **10% in 2030** and then to **22% in 2040**
- To ensure that space is left for the more advanced fuels to develop, the SAF Mandate **include a cap on the amount of HEFA** that can be used to meet the main obligation
- HEFA can contribute a maximum amount (100%) of SAF demand in 2025 and 2026, decreasing to **71% in 2030** and **35% in 2040**



Canada's Aviation Climate Action Plan

- Canada's Aviation Climate Action Plan sets out a vision for achieving net-zero emissions by 2050, and an aspirational target of **10% SAF use by 2030**
- The Canadian Council for Sustainable Aviation Fuels (**C-SAF**) is working to develop a **SAF roadmap** for Canada
- C-SAF was created by leaders from over **60 airlines operating in Canada** seeking to bring together key industry stakeholders and government to advance the commercial production and use of Canadian made low-carbon SAF
- C-SAF has catalyzed an ecosystem with more than **45 additional stakeholders** with insights from across the SAF value chain including refiners, airports, feedstock providers, biofuels companies, aerospace manufacturers, academia, and other related companies

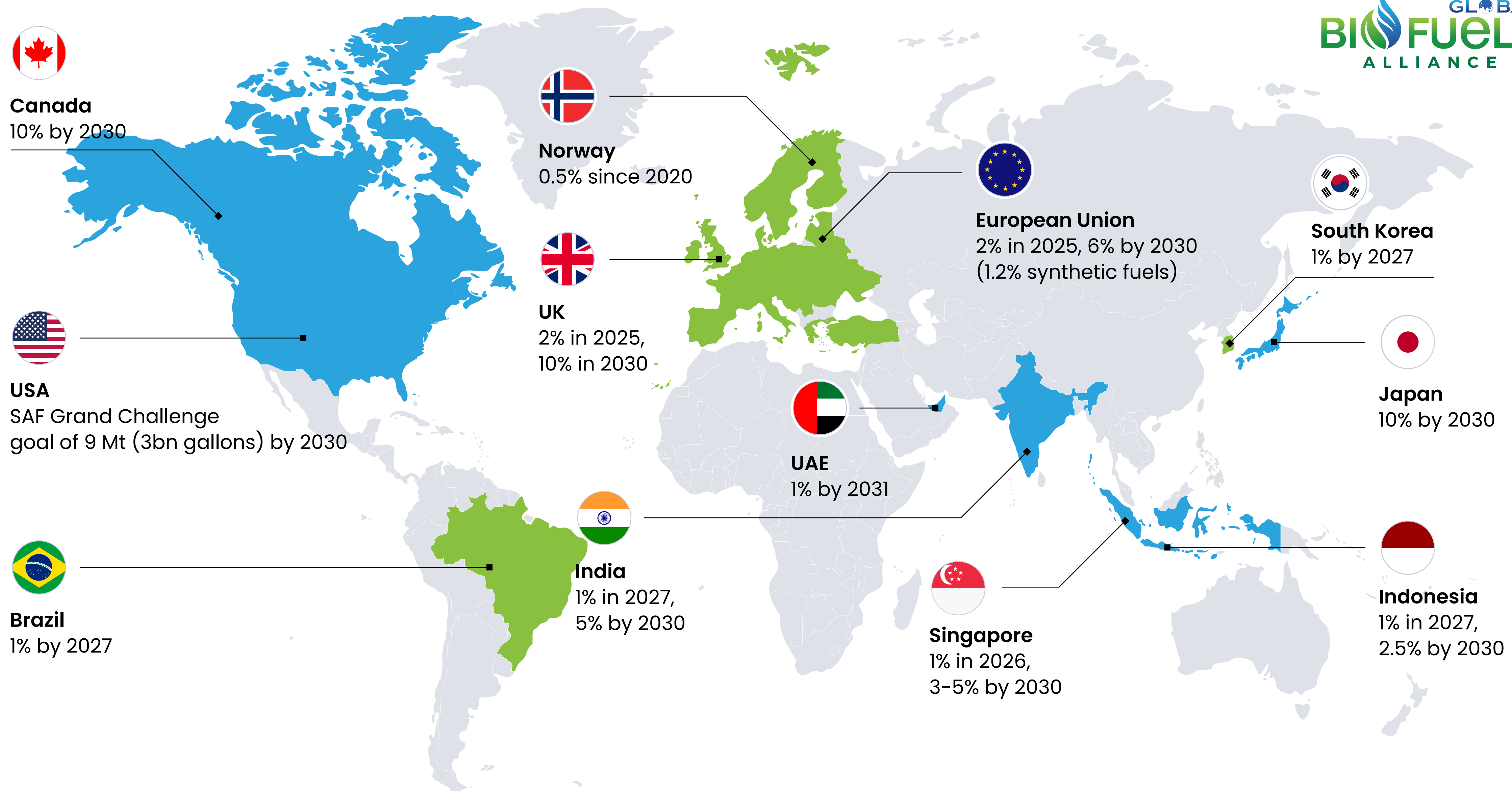


India

- The government has set **indicative blending targets** for SAF starting with **1% by 2027** and increasing to **5% by 2030**, initially for international flights.
- Government of India through Ministry of Petroleum & Natural Gas (MoP&NG), has notified **Pradhan Mantri JI-VAN** (Jaiv Indhan – Vatavaran Anukool Fasal Awashesh Nivaran Yojana) **Scheme**
- The scheme provides **viability gap funding** for advanced biofuel projects (**max INR 150 crore/project**) including SAF plants using non-food biomass feedstocks and other renewable feedstocks



SAF Blending Targets and Mandates Across Different Countries



Note: Data accurate as of October 2024.

Sources: Various. ⁴

Global SAF Supportive Financing Initiatives

ICAO Finvest Hub: Unlocking Capital for Green Aviation

- **Launch:** Introduced at the ICAO Global Implementation Support Symposium in Abu Dhabi on 12 Feb 2025.
- **Purpose:** A global financial platform to accelerate aviation decarbonization.
- **Function:** Directly connects sustainability projects with worldwide investors.
- **Scope:** Supports funding for SAF production facilities, clean energy infrastructure, and other green aviation initiatives



Advanced Fuels Fund (AFF)

- **Launch:** £165m AFF introduced by UK Government in Dec 2022 to accelerate SAF commercialization
- **Eligibility:** Open to projects from pilot stage (TRL 5) through to demonstration/commercial scale (TRL 6–8)
- **Scope:** Supports all development stages up to construction start
- **Impact:** £135m allocated across 13 projects (4 AtJ, 4 G-FT, 6 PtL)



EBRD Boosts Kazakhstan's SAF Ambitions

- **Partnership:** EBRD supported KazMunaiGas and Air Astana on SAF feasibility in Kazakhstan
- **Context:** Builds on EBRD's prior support for KazMunaiGas's decarbonization and its investment in Air Astana
- **Focus:** Funded an initial feasibility study & market analysis for SAF
- **Outcome:** Alcohol-to-Jet (AtJ) identified as the most promising pathway for scale-up



DoE Loan Programs Office: \$3B Boost for SAF Projects

- **Federal Initiative:** DoE's LPO supports commercialization of innovative clean energy technologies
- **Role:** Provides loans, guarantees, and financial assistance to bridge innovation–market gap
- **Scope:** Focus on renewable energy, advanced transportation, and energy efficiency projects
- **SAF Support:** In Oct 2024, announced ~\$3B in loan guarantees for two SAF projects



LanzaJet: Scaling SAF with Global Strategic Investors

- **Diverse Investor Base:** Backed by financiers, airlines, airports, OEMs, and energy companies.
- **Key Investors:** Breakthrough Energy, Microsoft's Climate Innovation Fund, Mitsui, MUFG, ANA, British Airways, Southwest, Groupe ADP, Airbus, Shell, Suncor.
- **Strategic Equity:** Investor contributions provide crucial funding for SAF projects.
- **Project Spotlight:** Freedom Pines plant supported by \$50m Breakthrough Energy Catalyst grant, \$50m Microsoft loan, and \$14m US DoE grant.



ADB, IFC to provide \$120m for SAF Plant

- **Pakistan's 1st SAF Plant:** Greenfield facility in Sheikhpura with 200,000 tonnes/year output.
- **Strong Backing:** Over USD 120m financing from ADB (USD 86.2m) and IFC (USD 35m loan + equity).
- **SAFCO Venture Holdings Ltd**, already operating a 50,000-tonne biodiesel plant.
- **Sustainable Feedstock:** Production based on waste oils, including used cooking oil.



Microsoft-OMV Partnership

- **Scope 3 Emissions Reduction** – Microsoft partners with OMV to address aviation and logistics emissions
- **Innovative Production Model** – Co-processing bio-feedstock (e.g., used cooking oil) with crude oil at Schwechat refinery; up to 5% SAF blended into Vienna Airport's fuel supply
- **SAF Credits (SAFc)** – Emission reductions registered & transferred via ISCC Credit Transfer System for full traceability
- **Market Signal** – Strong voluntary demand boosts SAF production in Europe and accelerates industry standards



IAG Leads with Long-Term SAF Commitment

- **Major SAF Deal:** In Feb 2024, IAG signed its largest SAF purchase agreement with Twelve, a leading Power-to-Liquid (PtL) SAF producer
- **Long-Term Commitment:** 14-year offtake contract for 785,000 tonnes of e-SAF
- **Bankability Boost:** Deal structure enhanced Twelve's ability to secure financing.
- **Funding Secured:** Unlocked up to \$645m, including \$400m project equity (TPG Rise Climate), \$200m Series C, plus loans from Fundamental Renewables (\$25m) and SMBC (\$20m)
- **Industry Milestone:** Marks one of the largest financing rounds in the PtL fuel sector

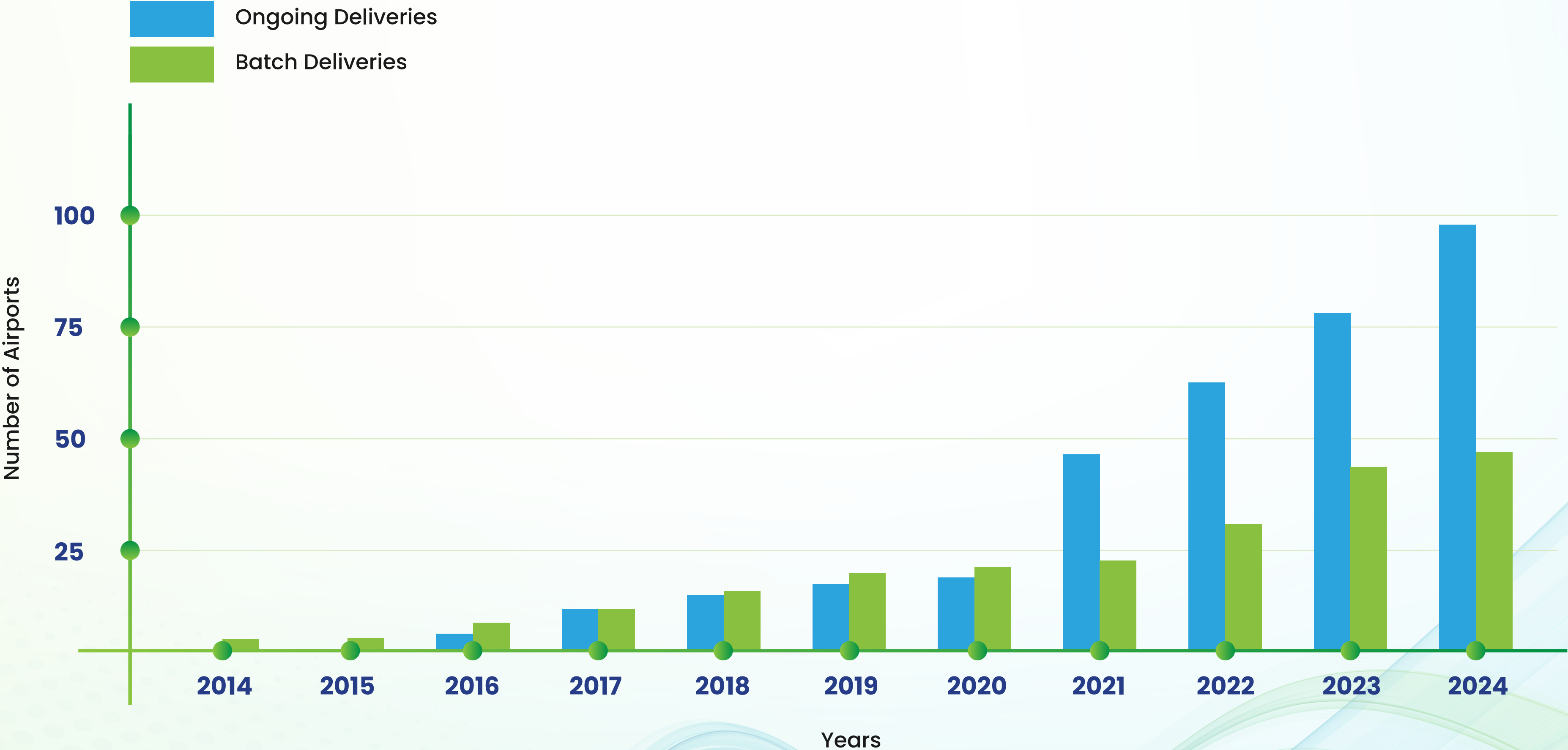


DHL: The Number One SAF Consumer

- **2030 Climate Target:** Cut GHG emissions to below 29 MtCO₂e
- **SAF as a Core Strategy:** Goal to reach 30% SAF blend by 2030
- **Market Leadership:** In 2023, consumed 72,000 tonnes of SAF (~3% of fuel use)
- **Global No.1:** Largest SAF consumer worldwide in absolute terms



Number of Airports Using SAF



- **Batch delivery** refer to airports that received one-off deliveries of SAF, generally associated with a single flight or a series of flights.
- **Ongoing delivery** refer to airports that announced a continuous availability of SAF for its operations.

Global SAF Alliances/Associations



Clean Skies for Tomorrow (CST)

is a World Economic Forum initiative aimed at accelerating the aviation sector's transition to net-zero emissions by promoting the use of SAF



Sustainable Aviation Buyers Alliance (SABA)

a joint initiative of the Rocky Mountain Institute (RMI) and the Environmental Defense Fund (EDF), aims to accelerate the path to net-zero aviation by driving investment in and adoption of high-integrity SAF



Carbon Offsetting and Reduction Scheme for International Aviation (CORRIA)

is ICAO's global market-based measure designed to offset international aviation CO₂ emissions in order to stabilize the levels of such emissions.



Innovation for Sustainable Aviation Fuels (ISAF)

is a community aiming to forge global partnerships for sustainable and cost-effective strategies for SAF under Mission Innovation.

The logo for Sustainable Aviation Futures, featuring the words "SUSTAINABLE AVIATION FUTURES" in white, uppercase, sans-serif font on a black rectangular background. The word "FUTURES" is underlined.

Sustainable Aviation Futures

is a content community with a mission to scale global SAF production and establish pathways to aviation decarbonization via a series of high-level congresses, exclusive content and in-depth training courses



SAF Coalition

is a nonprofit, nonpartisan coalition of over 50 airlines, low-carbon fuel companies, manufacturers, technology developers and airports who share the objective of accelerating the development and deployment of SAF in the U.S



Clean Fuels Alliance America

is the U.S. trade association representing the entire biodiesel, renewable diesel and sustainable aviation fuel supply chain, including producers, feedstock suppliers and fuel distributors

Sustainable Aviation Fuel Users Group (SAFUG)

is an organization formed in 2008 by prominent international airlines to accelerate the development and commercialization of sustainable alternative fuels for aviation, with a focus on promoting environmentally and socially responsible practices



India SAF Alliance

initiated by the Carbon Market Association of India (CMAI), aims to accelerate the adoption of sustainable aviation fuel (SAF) and foster collaboration towards India's climate goals, with ambitious targets of 1% SAF blend by 2027, 2% by 2028, and 5% by 2030