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Emerging trends and future directions in Green Aviation - Vietjet's Perspective

Andrew Cowen

Chairman, Qazaq Air

Advisor to Vietjet Airlines and Sovico Group

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Balancing economic growth, operational efficiency and social responsibility with the need to minimise environmental impact, through innovative technologies, sustainable fuels, and efficient resource management

Environmental Impact of Aviation: Ranked by Percentage

Where should we focus our attention?

The data:

- **Fuel Consumption % CO2 Emissions (75-80%)**
  Focus: fuel-efficient aircraft, SAFs, flight operations optimised, airport ground transport
- **Non-CO2 Emissions (15-20%)**
  Focus: R & D to reduce Nox/other emissions.
- **Aircraft Noise (3-5%)**
  Focus: noise abatement procedures, quieter engines, better urban planning at airports.
- **Operational Waste & Pollution (3-5%)**
  Focus: waste/water management, recycling, reducing single-use plastics, sustainable procurement.
- **Airport Infrastructure Impact (0.5-1%)**
  Focus: Sustainable design, construction, land use optimisation, enhancing green spaces.

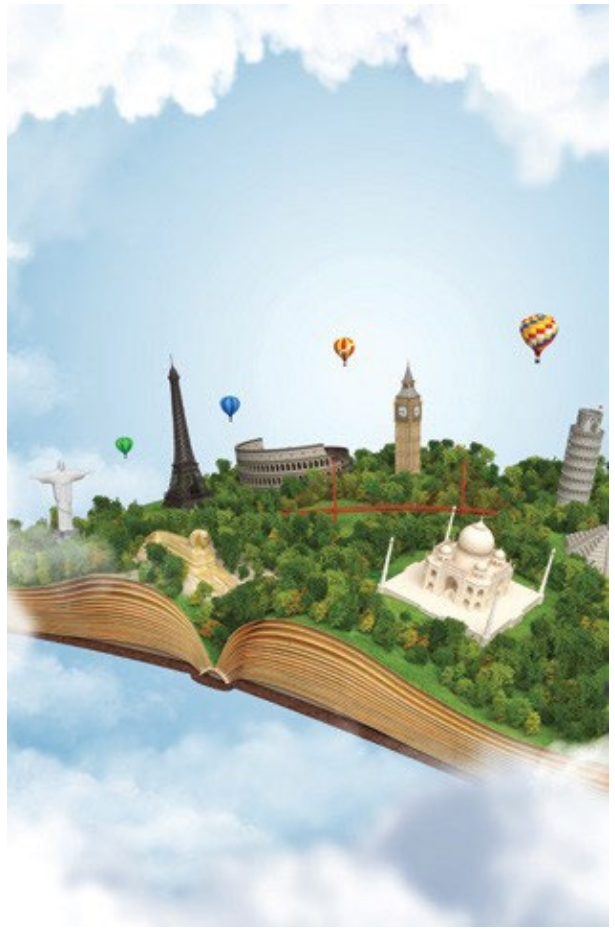
Are we making progress?

- **Aircraft Efficiency Gains:** From 1960 to 2020, overall aircraft efficiency improved by approximately 400%, with 50% due to improved engine. The rest from aircraft aerodynamic efficiencies, and operational improvements.
- **Production Capacity:** As of 2024, global production capacity for SAF is estimated at approximately 1.5 million metric tons = 0.5% of total jet fuel needs.
- **Carbon Offset:** CORSIA currently covers only about 35% of global aviation emissions.
- **Traveller Take-up:** 35-45% of passengers claim interest in offsetting the carbon impact of their flight but only 1% to 3% of airline passengers actually purchase offsets.

Vietjet: Environmental Programme

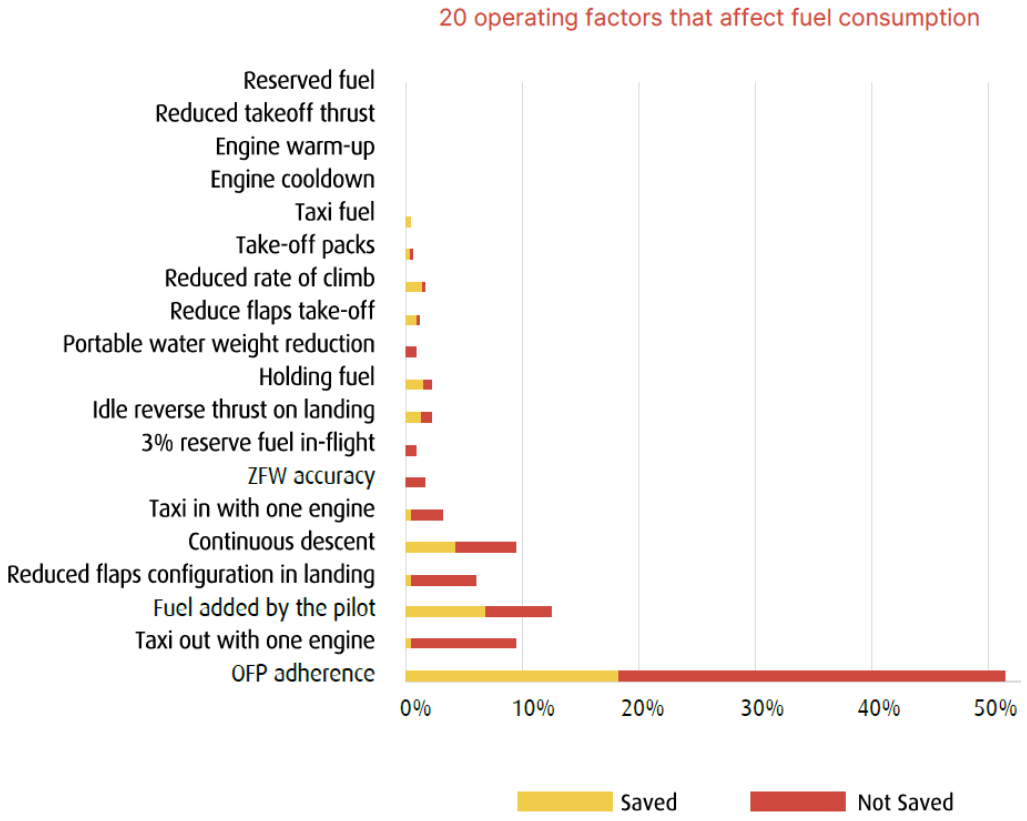
Maximising environmental protection whilst serving our valued customers

- **Fuel consumption:** management/reduction for both aircraft and ground service equipment.
- **Spare parts and tools:** maximising re-usage and restoration.
- **Onboard:** Limiting single-use plastic utensils and other onboard service items.
- **Waste:** minimising solid waste and wastewater from aircraft, and hazardous waste from maintenance activities.
- **Education:** Promotion and communication campaigns.



Environmental basics: reducing fuel consumption

Fuel accounts for 38% to 45% of total operating costs, so this is where we must start



- **New and young fleet:** new aircraft from Airbus and Boeing enabling fuel consumption reduction of 20-30%.
- **Additional in-flight seats:** High seat densities maximise the number of seats per kilogram of fuel.
- **Selection of lightweight materials:** space-saving, weight reduction designs prioritised.
- **High operational efficiency:** optimised landing methods, fuel carried, speed and altitude settings.

Looking forward: Sustainable Aviation Fuel (SAF)

Airport infrastructure enabling adequate and cost-effective supply of SAF is fundamental

Actions:

- **SAF Deployment:** first flights powered by SAF in October 2024.
- **Network of Partners:** Petrolimex Aviation (VN), PTT Oil & Retail Business Public Co (TH), Air BP (UK), SAF One (UAE) to establish significant and secure sources of supply.
- **Awards and Honors:** In 2024, Top 50 Corporate Sustainability Award, specifically for "Outstanding Sustainable Transport" and "Human Resource Strategy for Sustainable Development."

Issues:

- **High Production Costs:** estimates suggest that using 100% SAF could increase airfares by nearly 50% compared to traditional fuels.
- **Supply Chain Development:** reliable sources of sustainable feedstocks, eg cooking oil and agricultural waste are needed, capable of fast scale up.
- **Regulatory and Policy Framework:** without supportive government policies and incentives eg subsidies or tax breaks for SAF producers and users, the transition to greener fuels will be slow.

Education and communication: owning the issue

Without the active participation of passengers and employees, little progress can be made

- **Vietjet Fly Green Fund:** deduction of VND5,000/US$0.20c from each flight ticket sold to support environmental protection programs.
- **Vietjet Fly Green Charity Concert:** events such as a charity music night to protect forests and wild animals in danger of extinction.
- **Fly Green Metro Forest:** planting of trees in by passengers, airline employees and students.

Airports contribution: airline perspective

Airports and airlines need to work in close partnership

- **Investment in Renewable Sources:** such as solar, wind, and geothermal power.
- **Recycling and Composting:** minimising landfill waste, as well as reducing single-use plastics.
- **Sustainable Building Practices:** utilising eco-friendly materials, seeking LEED certification, and incorporating energy-efficient technologies such as green roofs and passive heating systems.
- **Water Harvesting and Reuse:** including rainwater harvesting and wastewater treatment facilities, with recycled water used for irrigation and toilet flushing.
- **Transition to Electric Equipment:** supported by a growing network of charging facilities
- **Collaboration with Local Communities:** include tree planting, educational programs, and partnerships.
- **Facilitating SAF Adoption:** partnering with airlines and fuel providers to facilitate and provide the infrastructure for the use of SAF.
- **Supportive Policy Framework:** regulations that encourage investment in sustainable infrastructure and technologies

Thank You

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