A Historic Milestone in Aviation Environmental Progress

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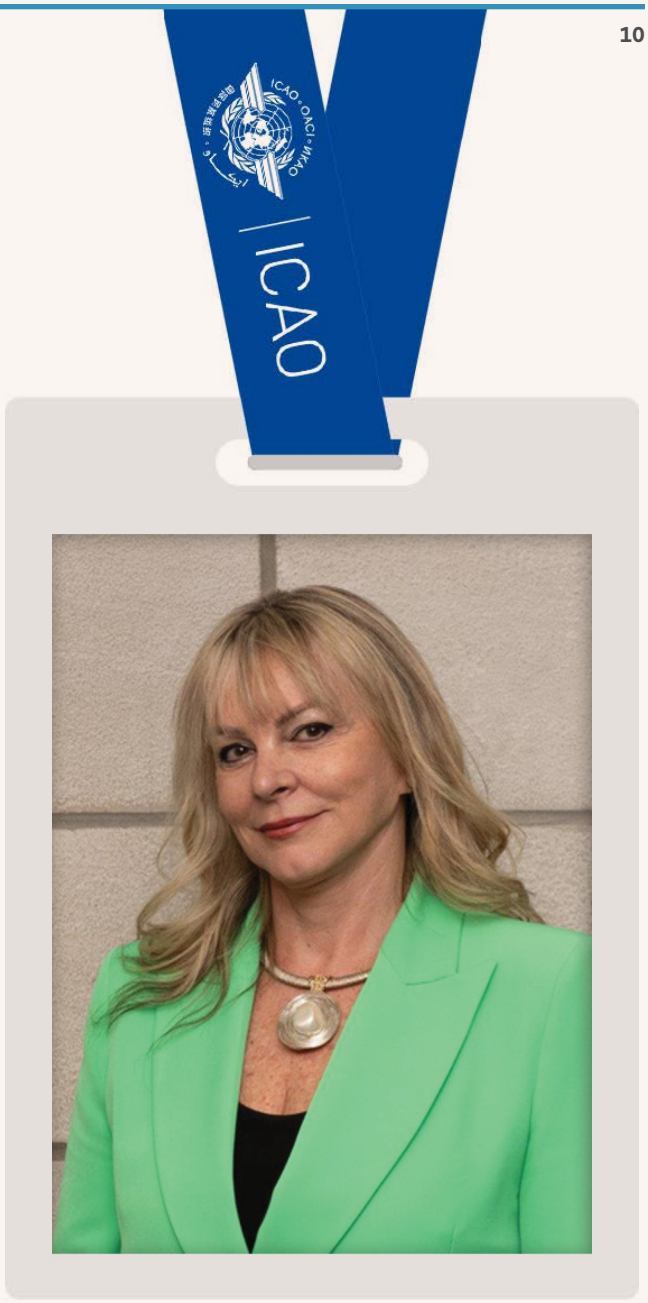

In my decades of service within ICAO's environmental programme, I have never witnessed such a remarkable convergence of commitment, innovation, and progress across the aviation sector as in this triennium. It is a moment of deep professional pride—and a profound sense of responsibility. Compiling the 2025 ICAO Environmental Report has been an immensely rewarding experience. When viewed in its entirety, the report makes clear that momentum is accelerating: international aviation is not just recovering, but advancing—smarter, greener, and more united than ever.

ICAO's environmental journey began in the 1960s, initially addressing noise and local air quality. Since then, the scope and ambition of our work have expanded significantly, particularly in recent years, with global agreements supporting meaningful climate action. From the six chapters of the inaugural 2007 ICAO Environmental Report, we now present a comprehensive 16-chapter edition in 2025—reflecting the depth and breadth of global progress. New areas such as the Long-Term Aspirational Goal (LTAG), aviation cleaner energies, and climate financing are now central to our efforts.

This report serves not only as a snapshot of where we stand today, but as a chronicle of our journey and a guidepost for the path ahead. It captures a pivotal moment—one that future generations may look to as the point when aviation met the climate challenge with resolve and unity. The path to net-zero aviation by 2050 is ambitious—but absolutely achievable if we act boldly, together, and without delay.

CHAPTER BY CHAPTER: CHARTING THE SKYWARD ASCENT IN CLIMATE ACTION

Each chapter explores key dimensions of aviation's environmental strategy—highlighting priorities, accomplishments, and ongoing challenges:

- **Chapter 1** provides an overarching Aviation & Environment Outlook, outlining global trends, scientific

updates, and developments in policy and technology. It also addresses emerging topics, such as non-CO_2 and NO_X emissions, and emphasizes the importance of nurturing the next generation of aviation professionals.

- **Chapter 2** focuses on Climate Change Mitigation, detailing progress in implementing the LTAG since its 2022 adoption. It provides updates on the development of the methodology for LTAG monitoring and reporting, and showcases collaborative contributions from States, industry, academia, and civil society toward achieving the LTAG.
- **Chapter 3** showcases the potential of Aircraft Technologies to support the achievement of LTAG. Ongoing studies and deliberations related to the Integrated Dual Stringency analyses for CO_2 and noise, along with breakthroughs in hydrogen and hybrid-electric powered propulsion, offer promising pathways toward a more sustainable aviation future. Many of these innovations, developed or assessed through CAEP's Working Groups, would bring us closer to realizing the LTAG.
- **Chapter 4** brings attention to Operational Improvements, an important component of the basket of measures to address aviation emissions. Air operations rely on a complex, collaborative network system—involving regulators, air navigation service providers, airlines, aircraft manufacturers, and airports. This chapter highlights innovative approaches in air traffic management to mitigate emissions and addresses topics such as contrail formation avoidance, drawing on perspectives from key operational stakeholders.
- **Chapter 5** is dedicated to Aviation Cleaner Energies, identified as the most promising avenue for reducing CO_2 emissions. It details progress under ICAO's Global Framework on SAF, Lower Carbon Aviation Fuels (LCAF), and other Aviation Cleaner Energies, adopted in 2023, across its four Building Blocks: Policy and Planning, Regulatory Framework, Implementation Support, and Financing—towards the achievement of the collective global aspirational Vision to reduce CO_2 emissions in international aviation by 5 percent by 2030 through the use of these aviation cleaner energies.
- **Chapter 6** updates on the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), the world's first global market-based measure for a sector. It presents updates on the CORSIA implementation elements, including State pairs, the CO_2 Estimation and Reporting Tool (CERT), CORSIA Eligible Fuels, CORSIA Eligible Emissions Units, and the CORSIA Central Registry (CCR). It also features contributions from stakeholders—such as States, industry, and other UN bodies—highlighting their roles in supporting CORSIA implementation.
- **Chapter 7** covers the State Action Plans to Reduce Aviation Emissions (SAPs) initiative, which covers over 99% of international traffic. It reflects the widespread efforts of States and stakeholders in developing long-term decarbonization strategies and measures to implement them, highlighting their commitment to aviation sustainability.
- **Chapter 8** focuses on Capacity Building and Implementation Support, highlighting ICAO's commitment to "No Country Left Behind." It showcases achievements under the ACT-CORSIA and ACT-SAF programmes, and shares lessons from States advancing their climate action with ICAO support.
- **Chapter 9** explores Climate Financing as a critical enabler of LTAG implementation. It introduces the newly launched ICAO Finvest Hub, currently under operationalization, and outlines ICAO's engagement with the broader financing ecosystem to unlock sustainable aviation investment.
- **Chapters 10 and 11** delve into Noise and Local Air Quality, addressing current standards and anticipating future challenges, especially with the rise of new propulsion technologies and SAF. These chapters bring together the latest science, regulatory efforts, and stakeholder perspectives.
- **Chapter 12** spotlights Green Airports, showcasing their role in decarbonization—from energy supply to ground operations. It includes best practices and guidance to support sustainability across airport functions.
- **Chapter 13** introduces Climate Adaptation and Resilience, a growing priority. It reviews how aviation stakeholders—particularly airports—are addressing climate risks and enhancing resilience, including cooperation with other international bodies on extreme weather adaptation.
- **Chapter 14** examines Circular Economy principles within aviation. From design to waste management, the sector is increasingly embracing circularity to help tackle climate change, pollution, and biodiversity loss.

- **Chapter 15** is dedicated to Biodiversity. It highlights ICAO's contributions to avoid biodiversity loss through its regulatory framework related to CORSIA Eligible Fuels and CORSIA Eligible Emissions Units, and aviation contributions to forest firefighting efforts. It also emphasizes airport action to contribute to biodiversity preservation and the commitment of the aviation sector towards the Kunming-Montreal Global Biodiversity Framework.
- **Chapter 16** underscores Multistakeholder Cooperation as essential to achieving aviation's environmental goals. It highlights joint initiatives with UN agencies, international organizations, and the private sector to foster a more integrated and effective response to climate change.

THE ROAD AHEAD: FROM COMMITMENTS TO ACTION

This report is not just a catalogue of achievements—it is a call to action. The progress made over the past three years is significant, but it is only the beginning. Translating commitments into lasting change will require even greater coordination, innovation, and resolve.

As we look ahead to the 42nd ICAO Assembly, we must accelerate our collective efforts. The environmental transformation of international aviation is no longer an aspiration—it is underway. It is real. It is measurable. And it must endure.

May this report stand as a legacy of progress —a testament to a sector that chose to lead, to act, and to rise to the climate challenge.