



ICAO EUR/NAT and ACI EUROPE

REGIONAL GREEN AIRPORTS SEMINAR

**Hosted by the Ministry of Transport
Republic of Kazakhstan**

The Role of Airports in Environmental Protection



ICAO



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UN Secretary-General



“The climate time bomb is ticking”

"My generation has failed in its responsibility to protect our planet. That must change."

Agenda

01

Airport vs Industry's

Environmental footprint of Karaganda Airport and metallurgical plant

02

ICAO and Prominent Airports

ICAO efforts and Prominent Airports

03

Behavioral Management

A platform for the encouragement of environmental protection

04

International Law

Personal responsibility of wealthier passengers for their environmental footprint.

A Story of Impact and Responsibility



*Imagine **Kazakhstan's** airports as more than transit hubs. Positioned at the forefront of environmental stewardship, they have the power to influence traveler behavior—especially the wealthiest 1%, whose travel habits leave the largest footprints. By encouraging responsible choices and supporting carbon offset programs, these airports can reshape norms.*

*Looking ahead, the mission is clear: to establish stringent rules that hold environmental offenders accountable, even restricting travel for repeat violators. **Kazakhstan's** airports stand as leaders, guiding the path to sustainable, responsible travel for all.*

Airport vs Industry's



Environmental Footprint: Comparing Airports and Heavy
Industries

Airport vs Industries

Contrasting Environmental Footprints: Airports as Potential Environmental Stewards Compared to Industrial Giants

Karaganda Airport



Karaganda Metallurgical Plant



Airport vs Industries (satellite images)

A Comparative Look: Minimal Emissions at Karaganda Airport vs. Heavy Industrial Impact of the Metallurgical Plant

Karaganda airport



Karaganda Metallurgical plant.

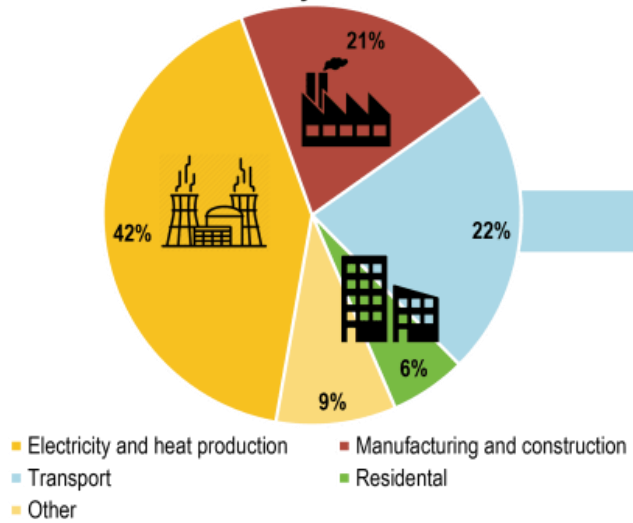
Emissions visible from the space



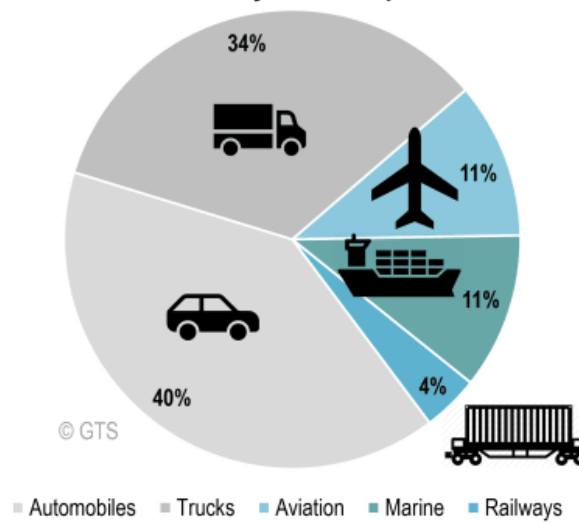
Global Greenhouse Gas Emissions by the Transportation Sector

Aviation share of CO2 Emissions in global economics

CO2 Emissions by Economic Sector

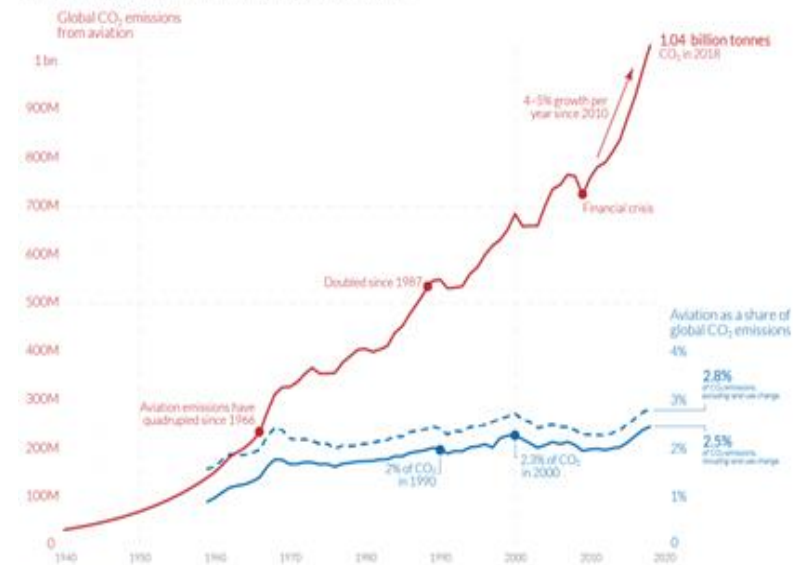


CO2 Emissions by the Transport Sector



Global carbon dioxide emissions from aviation

Aviation emissions includes passenger air travel, freight and military operations. It does not include non-CO₂ climate forcings, or a multiplier for warming effects at altitude.



OurWorldInData.org - Research and data to make progress against the world's largest problems. Source: Leont et al. (2020). The world's carbon footprint in anthropogenic climate forcing for 2000 to 2018, based on Saunier and Schumann (2003) & ICAO. Share of global emissions calculated based on total CO₂ data from the Global Carbon Project. Licensed under CC-BY by the author Hannah Ritchie.

The Geography of Transport Systems
SIXTH EDITION
Jean-Paul Rodrigue (2024), New York: Routledge, 402 pages. ISBN 9781032380407

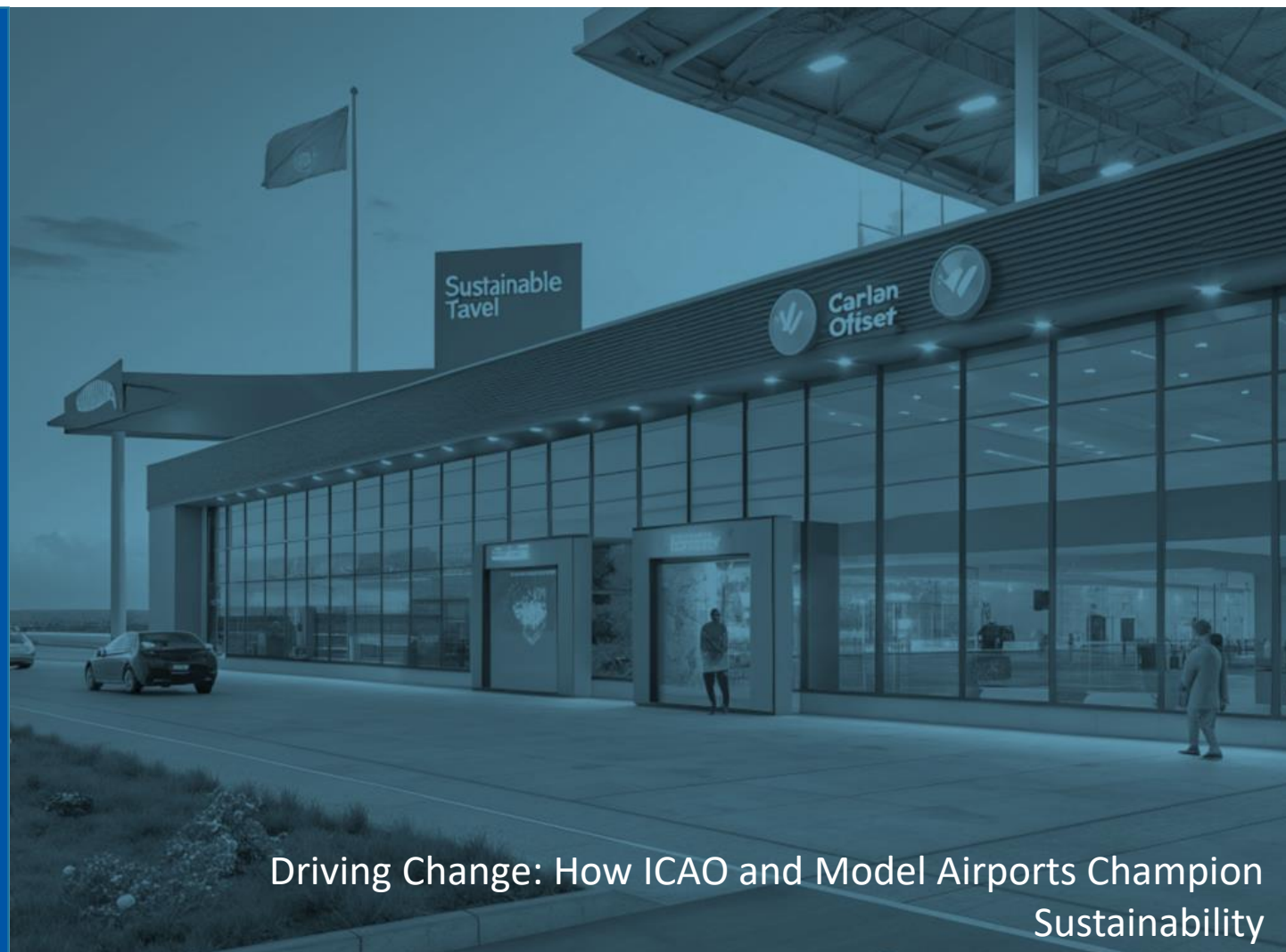
DOI: 10.4324/9781003343196

<https://transportgeography.org/contents/chapter4/transportation-and-environment/>

<https://ourworldindata.org/global-aviation-emissions>



02 ICAO and Prominent Airports



ICAO's Efforts

Driving Global Aviation Sustainability: ICAO's Strategic Initiatives

- **Green Airports Seminars** – focusing on Sustainable Aviation Fuel (SAF) and Low Carbon Aviation Fuel (LCAF).
- **Environmental Task Forces** – regional efforts promoting green initiatives.
- **Net-Zero Strategies** – ICAO's role in net-zero goal implementation.
- **CAEP Working Group 2** – targeting environmental aspects of airport operations.
- **Eco Airport e-Collection** – a resource to harmonize and share global environmental practices.

1www.icao.int; 2theicct.org; 3www.faa.gov; Microsoft Copilot, 2024

Prominent Airports' Initiatives

Leading by Example: U.S. Airports' Sustainable Innovations

Amsterdam Airport Schiphol (Netherlands): Schiphol aims to achieve net-zero emissions by 2030¹. They are working towards emission-free and zero-waste airports by using sustainable solar, wind, and thermal energy¹. The airport also plans to run entirely on electric vehicles by 2050¹.

Denver International Airport (USA): Denver International features the largest solar power farm at a commercial airport in the US². This initiative helps offset carbon emissions².

1. Sustainability News. Top 10 net-zero strategies from the world's busiest airports | Sustainability Magazine By Kate Birch, December 20, 2023

2. Airport Industry Review Issue 91. August 2024
<https://www.airport-technology.com/features/worlds-environmentally-friendly-airports/>



Prominent Airports' Initiatives

Boston Logan International Airport (USA): Boston Logan's Terminal A was the first air terminal to win a Leadership in Energy and Environmental Design (LEED) accreditation². The terminal features roofing and pavement surfaces designed to reflect heat and low-flow bathroom fixtures to save water².

Airports Council International (ACI) Carbon Accreditation Program: This program helps over 200 airports manage their emissions with the goal of achieving carbon neutrality². Airports participating in this program implement various sustainability strategies, such as waste reduction, energy efficiency, and electrifying ground fleets¹.



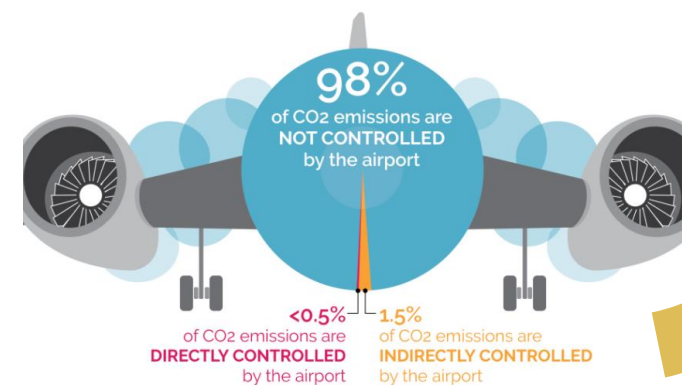
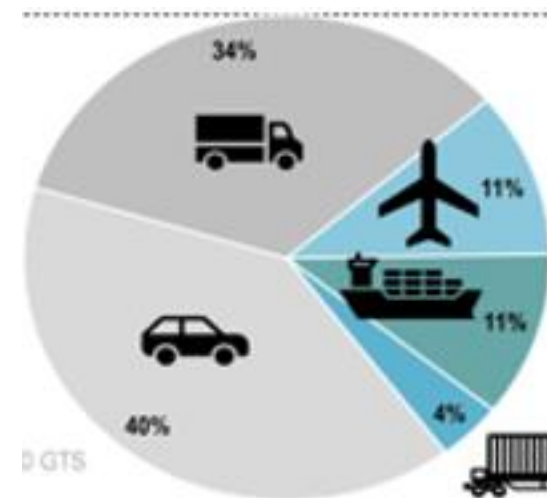
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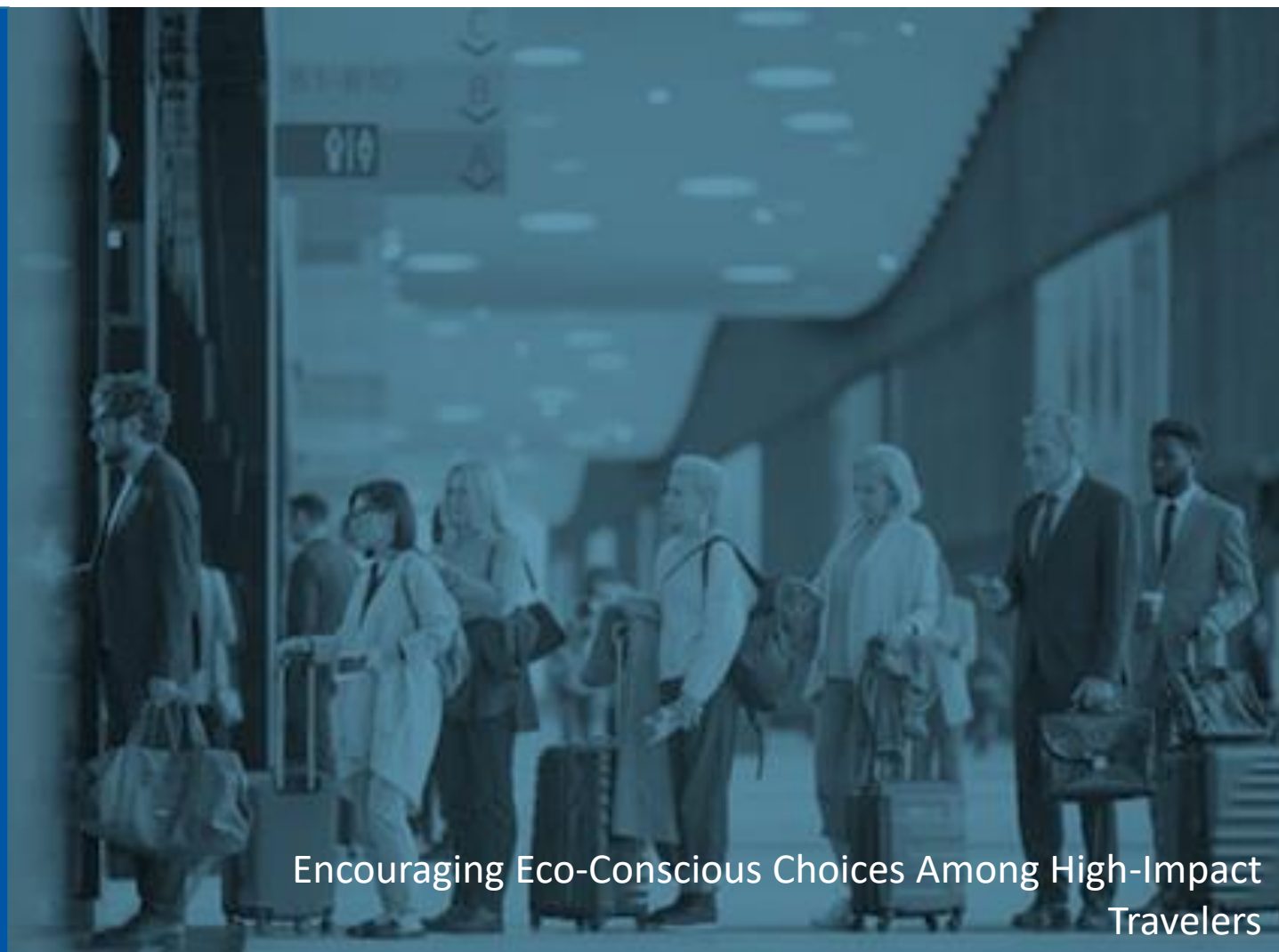
Do airports control the emissions?

Understanding Airport Influence on Emissions: Direct, Indirect, and Beyond



03

Behavioral Management / Behavioral Influence



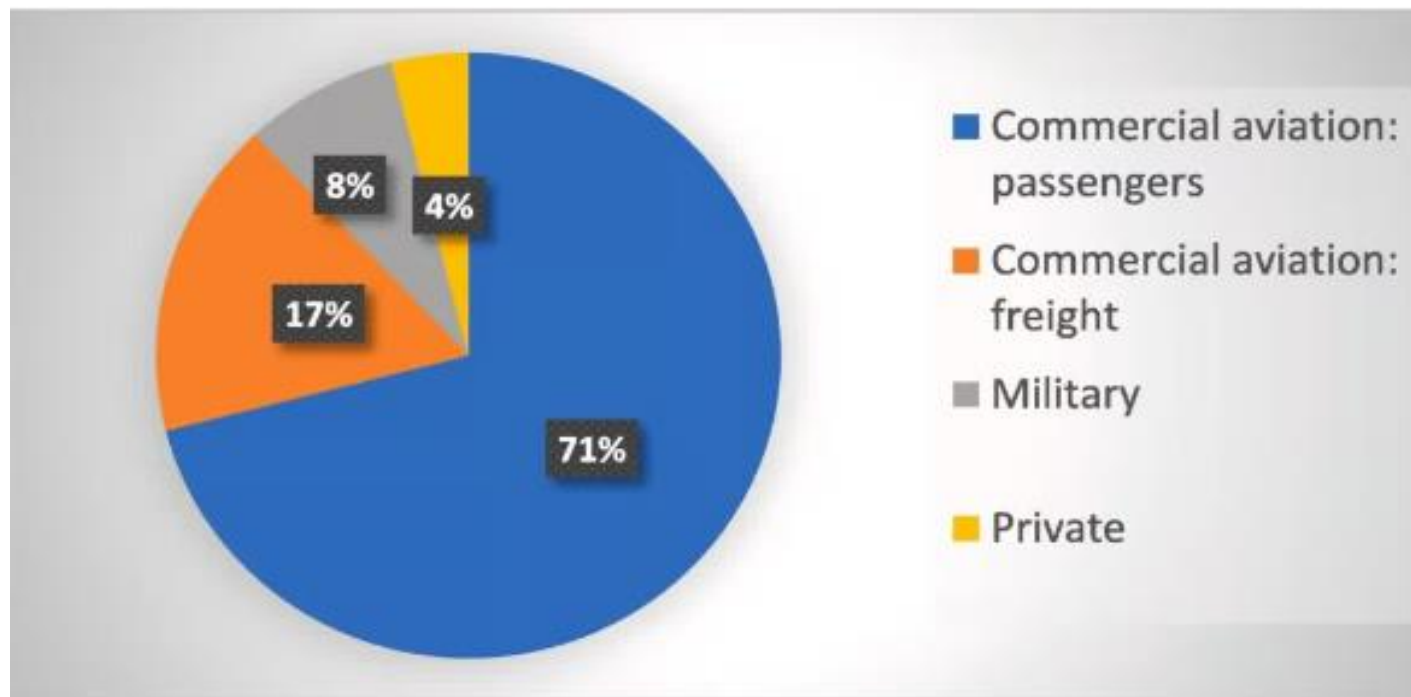
Encouraging Eco-Conscious Choices Among High-Impact
Travelers

Environmental behavior influence:

Influence millions of passengers globally and promote a green culture.

- 1.Educational Campaigns:** Display engaging infographics, videos, and interactive exhibits about sustainability, carbon footprints, and green travel tips throughout terminals.
- 1.Eco-Friendly Amenities:** Ensure availability of water refill stations, recycling bins, and green-certified restaurants or shops.
- 2.Green Messaging:** Use public announcements, social media, and the airport website to highlight green initiatives and encourage sustainable practices.
- 3.Carbon Offsetting Options:** Provide easy access to carbon offset programs where passengers can contribute to projects that reduce greenhouse gas emissions.
- 4.Sustainable Transport:** Promote and provide convenient public transportation options, bike rentals, and shuttle services to reduce car traffic.

Global aviation impact on climate change



Credit: Gössling & al.2020

The global scale, distribution and growth of aviation: Implications for climate change

Air travel carbon footprint of the wealthiest 1% of EU households



“A return flight from Paris to New York is equivalent to around 2 tonnes CO₂eq,
Extravagant carbon footprint: 22 tonnes for the wealthiest 1% of EU households (air transport only!)

Air travel accounts for a carbon footprint of 22.6 t CO₂eq among the wealthiest 1% of EU households, representing around 41% of their total carbon footprint.”

<https://bonpote.com/en/10-facts-and-figures-about-airplanes-and-the-climate/>

“Reminding wealthier passengers about their environmental footprint.”

That’s a pretty bold idea!

Airports could definitely play a role in reminding wealthier passengers about their environmental footprint. They could use:

Personalized In-Flight Messages: Special announcements for first-class and private jet passengers about the importance of sustainability.

Eco-Tips on Entertainment Screens: In-flight entertainment systems could include tips and documentaries on how to reduce their carbon footprint.

Luxury with Responsibility: Premium lounges could feature interactive exhibits showing the impact of high emissions and how these passengers can offset their travel.

It could turn a quick reminder into a powerful call to action.



Educational programs for other class passengers without being rejected

Interactive Displays: Set up eco-information kiosks in common areas like boarding gates and waiting lounges. They could be fun and interactive, with games and quizzes.

Inflight Magazines: Include articles on sustainability and green initiatives in airline magazines. Everyone flips through those, right?

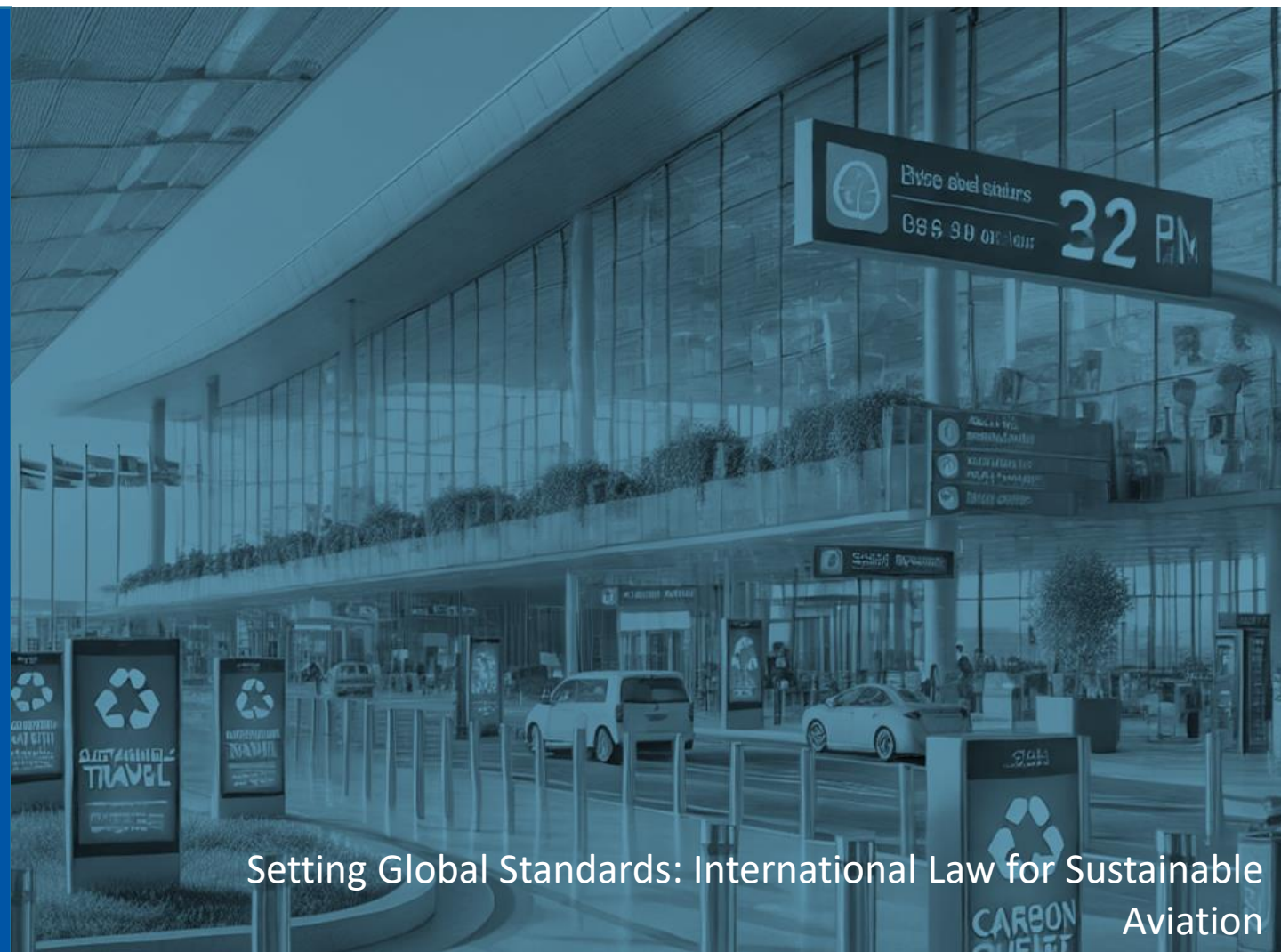
Onboard Announcements: Brief, well-crafted messages about small ways to reduce carbon footprint can be made during flight.

Green Partnerships: Collaborate with eco-friendly brands for in-flight products and emphasize the importance of sustainability through branding.

Eco-Friendly Challenges: Create airport-wide challenges with rewards for eco-friendly behaviors, like using recycling bins or opting for digital boarding passes.



04 International Law



Setting Global Standards: International Law for Sustainable
Aviation

Airport's role in the safe and legal transport of endangered species.

IATA document is the Live Animals Regulations (LAR)



Inspection and Documentation: Airport authorities inspect luggage and cargo for proper documentation, such as CITES permits and health certificates, to ensure that the transport of endangered species is legal and compliant with regulations.

Training and Awareness: Airport staff are trained to recognize signs of illegal wildlife trafficking and to handle live animals properly during transport.

Collaboration with Authorities: Airports work closely with customs and wildlife protection agencies to monitor and prevent illegal wildlife trade. They may conduct random checks and use advanced technology to detect smuggled animals.

Reporting and Seizure: If illegal wildlife is detected, airport authorities report it to the relevant authorities and seize the animals to prevent their illegal trade.

International Aviation and Environmental Law

Holding High-Impact Travelers Accountable for Environmental Footprint

ICAO and UN organizations are urged to develop enforceable legislation to ban major environmental offenders from air travel.

The goal is to create new legal frameworks that restrict flight access for those responsible for significant environmental pollution.

This must be implemented as a “Hard Law” to ensure accountability and real impact.



Thank You

