



Airports Going Green: International Perspectives - Overview

August 6, 2009

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“Fountain” of Sustainability

- International Interrelations/Principles
 - Brundtland Commission, 1987
 - Rio Earth Summit, 1992
 - Johannesburg World Summit, 2002
 - Air Transport Action Group (ATAG) Resolution
“Aviation is committed to meeting the growing demand of passengers and shippers in a sustainable manner, maintaining an optimal balance between economic progress, social development and environmental responsibility.”
- Corporate Social Responsibility Ethic
- Environmental Requirements





Key Aviation Environmental Issues

- Issues with Dimensions Particularly International in Scope
 - Climate Change
 - Noise (Aircraft)
 - Local Emissions (Aircraft)
- More Localized Issues
 - Local Emissions (Non-Aircraft Sources)
 - Water Quality
 - Recycling
 - Building Standards/Energy Efficiency
 - Fuel Management





Climate Change Challenge

- Perception
 - Aviation is a major climate change contributor
- Reality
 - Aviation is a relatively small contributor
 - Domestic US commercial aviation = 2% GHGs (source: EPA)
 - Worldwide aviation = 2% man-made CO₂ (source: IPCC)
 - The airlines and industry are working on further reductions
- Challenges/Concerns
 - Aviation demand is growing, and therefore so are aviation emissions ...
 - ...but this must be kept in context
 - “Most likely” IPCC scenario estimates global aviation 3% CO₂ and 5% climate change impact in 2050; even so, we know we must work to decrease this



Self Determination Versus Regulation

- Four Means of Reducing Greenhouse Gas Emissions from Aviation
 - Technology
 - Operations
 - Infrastructure Improvements
 - Economic Regulation (“Market-Based Measures”)
 - Taxes/charges
 - Emissions trading
- Commercial Airlines Already Are Motivated to Get as Much Reduction as Possible from the First Three
 - Airlines are Driven to Be Extremely Fuel Efficient
 - Fuel is our #1 cost center





Technology, Operations and Infrastructure

- Technology

- Enhance existing fleet (e.g., winglets)
- Invest in newer aircraft
- Support R&D for breakthroughs in engines & airframes (50% cut in USG funding past 10 years)
- Invest in alternative fuels (Commercial Aviation Alternative Fuels initiative, CAAFI)



- Operations

- Weight reduction
- Maintenance (like engine wash)
- Operational procedures within existing ATC



- Infrastructure

- Invest in equipage for the Next Generation Air Transportation System (NextGen): ATC modernization worldwide





Positive Financial Incentives Can Help

- Stimulate R&D and Technology Deployment
- But Harmful, Punitive Economic Measures Are Proliferating ...
- By Treaty, Countries Have Agreed that
 - GHGs from international aviation should be addressed through the International Civil Aviation Organization (ICAO)
 - GHGs from domestic aviation currently left to individual countries
- Yet, This Agreement Isn't Holding ...





Climate Change Status

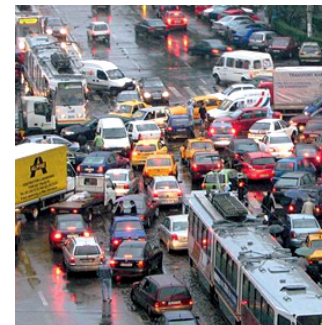
- Countries Are Taking Action Regionally & Domestically on Punitive Economic Measures
 - e.g., EU Emissions Trading Scheme (EU ETS)
 - e.g., UK Air Passenger Duty
 - e.g., Australian and Japan domestic emissions trading
 - e.g., U.S. considering legislation and regulation
 - Waxman-Markey bill would impose a significant surcharge on jet fuel
 - ▶ \$5 billion in added costs to US carriers in 2012; almost \$10 billion in 2020
- Prospects for Multiple Charges for the Same Emissions





Key Concerns with Punitive Measures

- Siphon Away Funds We Would Use to Continue to Improve Within the Industry
- Policies That Discourage Flying Can Shift Customers to Other Modes, With Bad Results
- How Best to Split up Carbon Pie?
 - Aviation is an extremely fuel- and GHG-efficient economic engine





Potential Way Forward . . .

- Industry – Continue to Work Together Constructively
 - Air Transport Action Group
 - Project Specific Coordination (e.g., O’Hare Modernization)
- Public/Private Partnerships
 - e.g., ASPIRE ATC Project
 - e.g., CAAFI
- Legal Framework: New Global, Sectoral Agreement
 - Consideration of New Climate Change Protocol to Replace the Kyoto Protocol
 - Negotiations in Copenhagen in December 2009
 - Unlikely to have full, final agreement, but likely a framework to be further fleshed out in 2010





Potential Way Forward (cont.) . . .

- International Civil Aviation Organization
 - Significant achievements so far . . .
 - e.g., Sector-specific IPCC report, state-of-the-art guidance on minimizing GHGs, guidance on mutually agreed emissions trading, etc.
 - “Group on International Aviation & Climate Change” (GIACC) – 15 ICAO States
 - Agreed framework: near term fuel efficiency goals; carbon neutral growth scenario 2020+; basket of measures
 - ICAO Beginning Work on Aircraft Fuel Efficiency/CO₂ Standard
 - Focus must be on new type designs – not existing fleet
 - More work from ICAO
 - High level meeting October 2009
 - Feed into UNFCCC climate change negotiations
 - Follow up work in 2010 (through ICAO Assembly)





Noise International Framework

- Standards Set at the Aircraft Level
 - All aircraft in developed States must meet or exceed “Chapter 3” Standard
 - All new type design aircraft must meet “Chapter 4” standard
- International Noise Management Framework: Balanced Approach
 - Airport-specific analysis
 - Balance source control, land use management and mitigation, noise abatement procedures and operating restrictions
 - Allows aircraft restrictions if certain criteria are met



Local Emissions International Framework

- **Standards Set at the Aircraft Level**
 - Oxides of nitrogen (NO_x)
 - Carbon monoxide (CO)
 - Hydrocarbons (HC)
 - Smoke
- **ICAO NO_x Standards Continue to Be Ratcheted Down**
 - CAEP/2 – agreed 1993
 - CAEP/4 – agreed 1999
 - CAEP/6 – agreed 2004; implementation date Jan. 1, 2008
 - Currently considering a new NO_x standard
- **Pressure for Local Emissions Restrictions (e.g., taxes, charges)**
 - ICAO Guidance on local air quality charges



Sustainable Aviation Is Aviation

- If You Want to Feel Good About the Future,
Look Up



**We Are America's Airlines
Connecting and Protecting Our PlanetSM**