



Environmental Framework and Manufacturer Commitment

Aircraft Emissions Control Technology Forum and Roundtable Discussion

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Global Reach, Global Consensus

AIA is a Member of, and the Secretariat for the International Coordinating Council of Aerospace Industries Associations

- **Private Sector Civil Aviation Manufacturer Observer Organization to ICAO**
 - **Members: Brazil, Canada, Europe, Japan, U.S.**
 - **Civil aircraft, engines and parts**
 - **Air transportation systems**
- **State-Owed Enterprises Not Represented – China, Israel, Russian Federation**



Themes

- **ICCAIA Environmental Commitments**
- **How New Products Enter the Fleet**
- **Technology Pipeline**
- **The Importance of Air Transportation System Efficiency**
- **The Role of Alternative Fuels**
- **Aviation and the Transportation Sector**
- **What Role You Play**



Environmental Policy Must be Consistent

All Environmental Concerns Need to be Addressed

- **Climate Change and Emissions at Altitude**
- **Local Air Quality**
- **Aircraft Noise**
- **Land-Use**
- **Water Quality**
- **Population Changes**

**The solution for meeting one concern cannot
constrain meeting other concerns**



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All Environmental Concerns Need to be Addressed

- Emissions at Altitude
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 - Aircraft Noise
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 - Population Changes
- } **Manufacturer Responsibility**

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AIA Environmental Principles

AIA is committed to three guiding principles:

- **Technology is key to environmental improvement**
- **Efficiencies in the aviation system must be pursued**
- **Developing lower carbon content fuels are an important part of the solution**



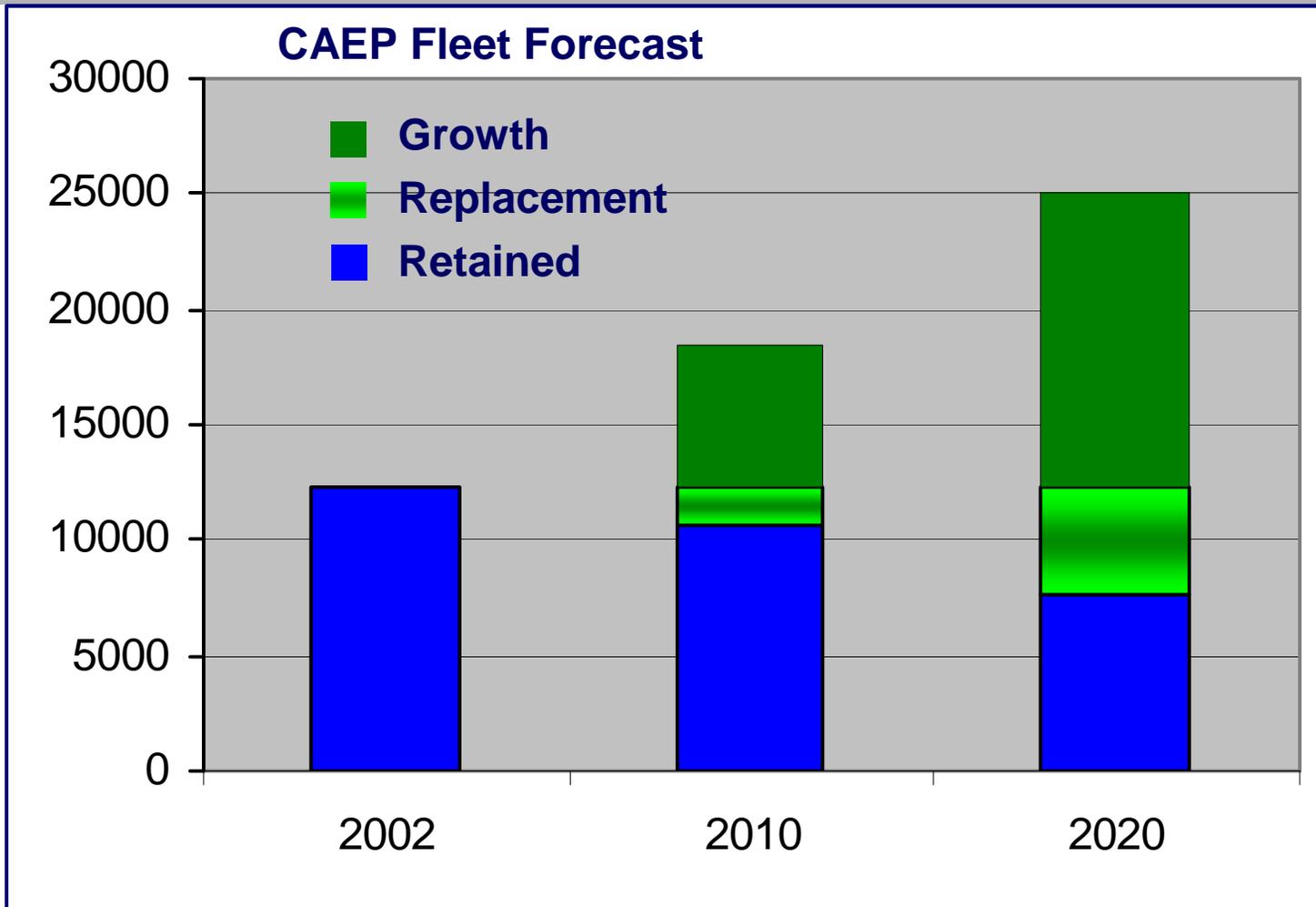
Manufacturers Commitment

Manufacturers commitments:

- **At least 15% CO₂ improvement in new generation aircraft while continuing to significantly reduce NO_x and noise**
- **Partner with**
 - **Airlines to achieve their environmental goals.**
 - **Industry and government to transform the air transportation system**
 - **Industry and government to qualify alternative fuels for aviation**

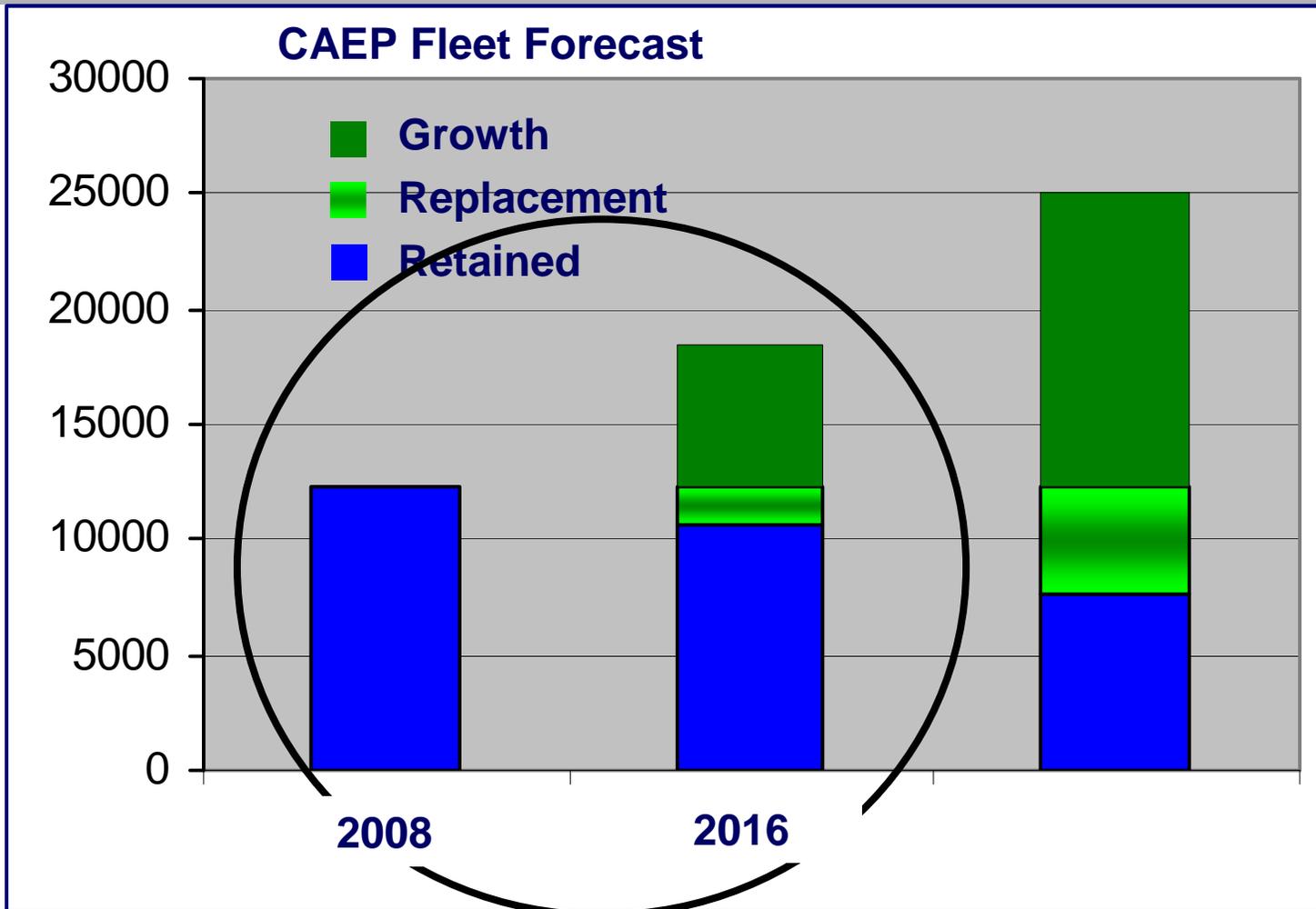


Evolution of the Global Fleet



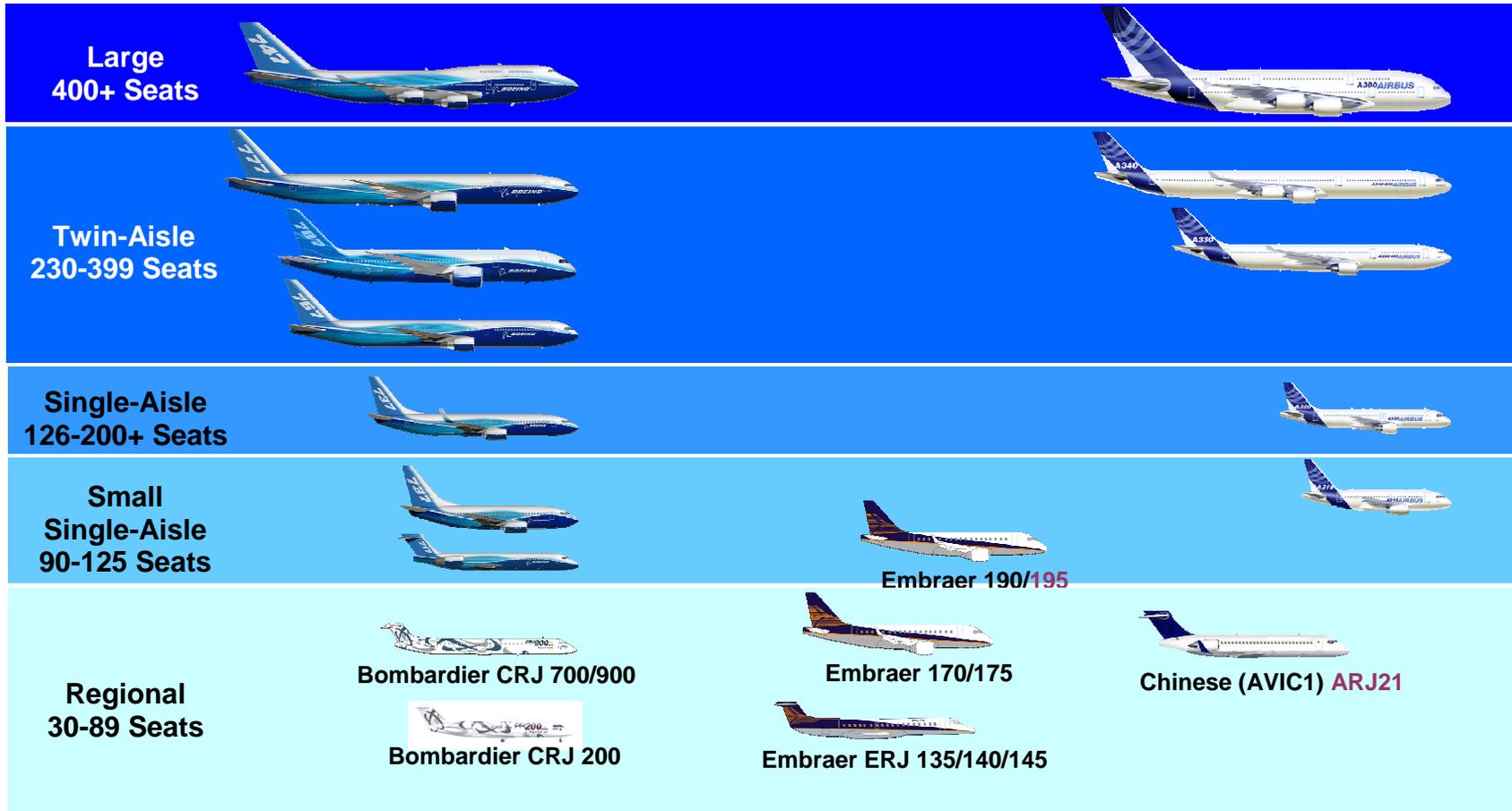


Near Term Evolution Today





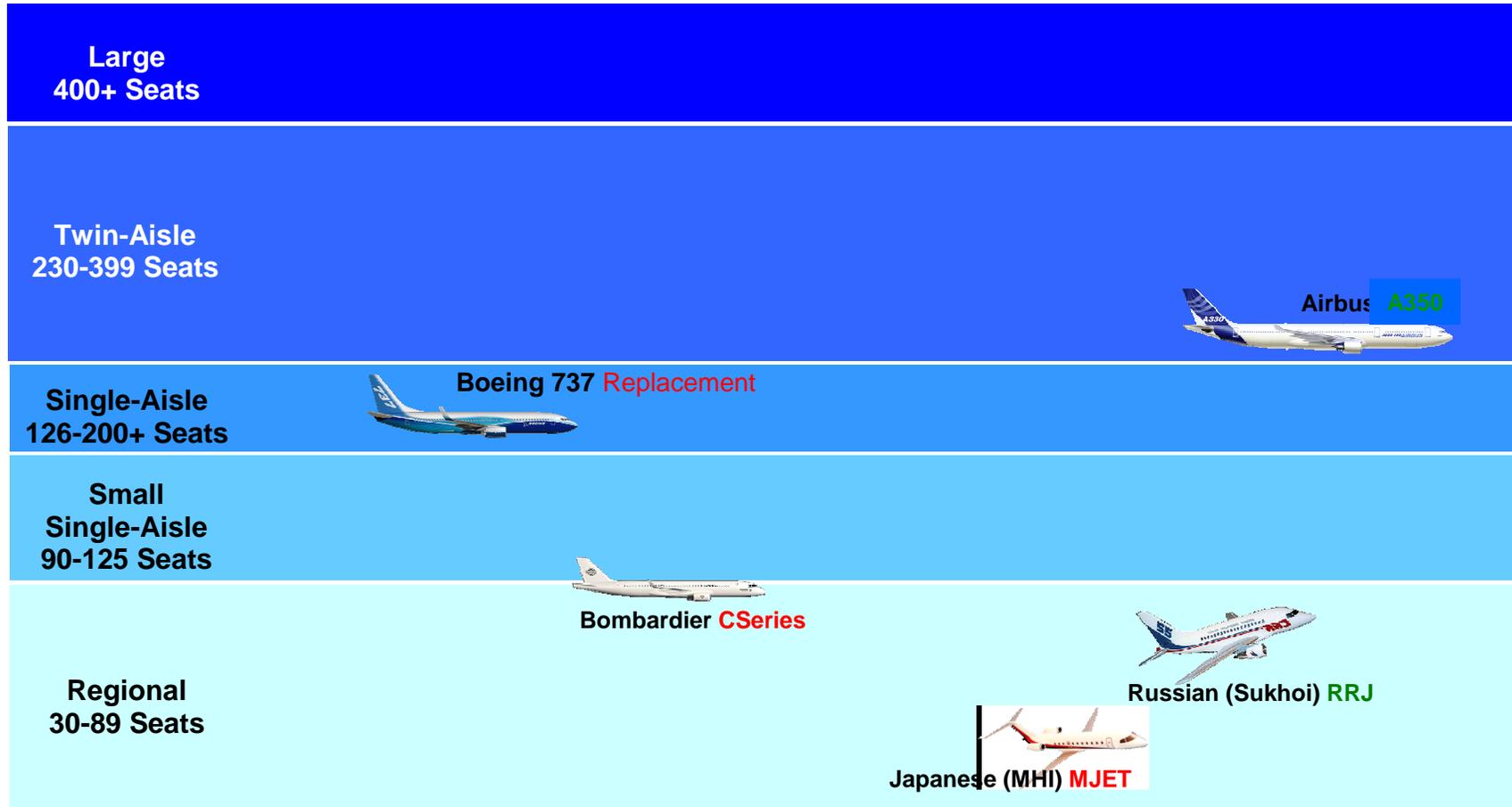
Current In-Production Aircraft



■ In Service ■ Launched



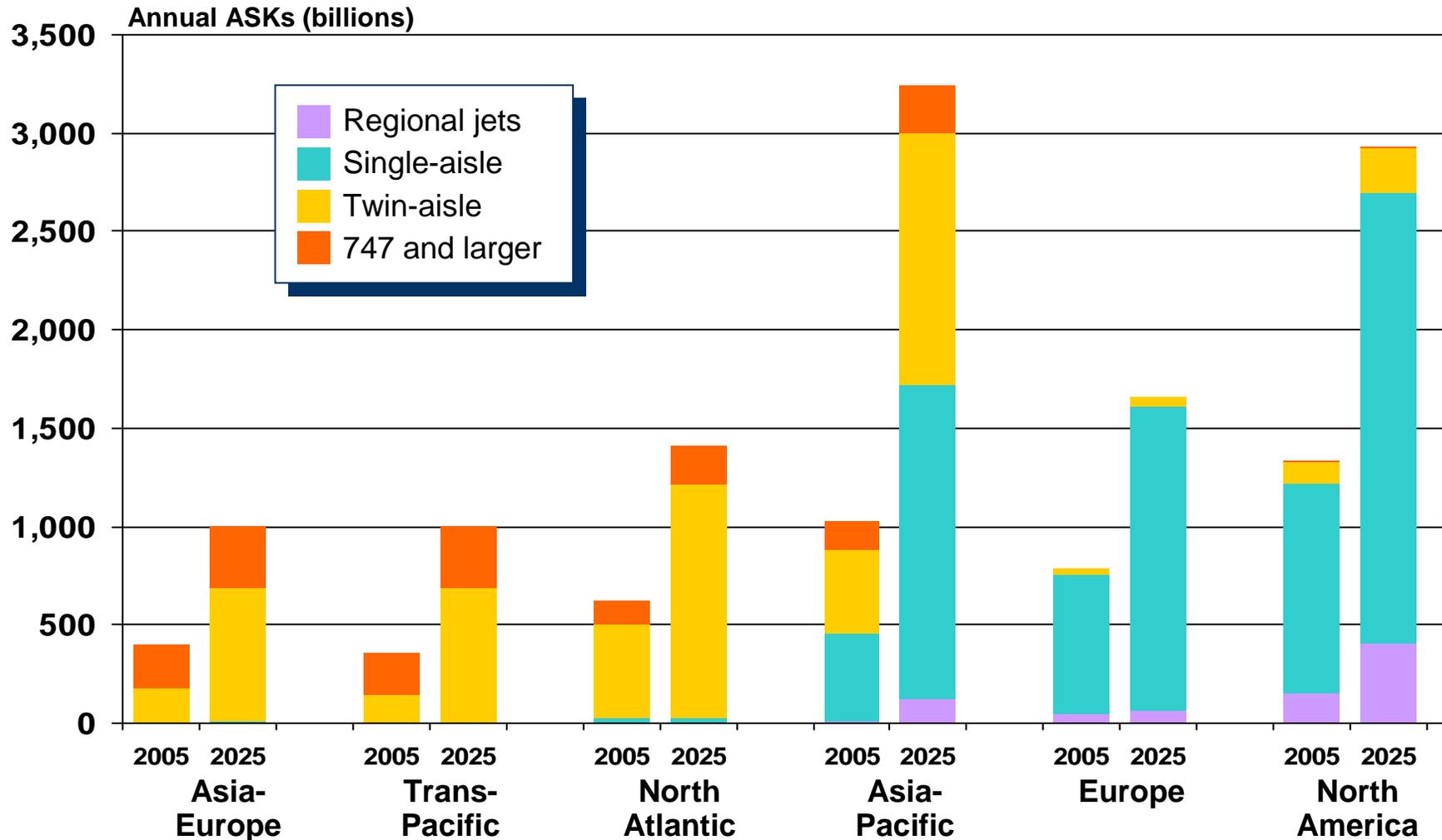
Next Generation Aircraft



■ In Development ■ Study

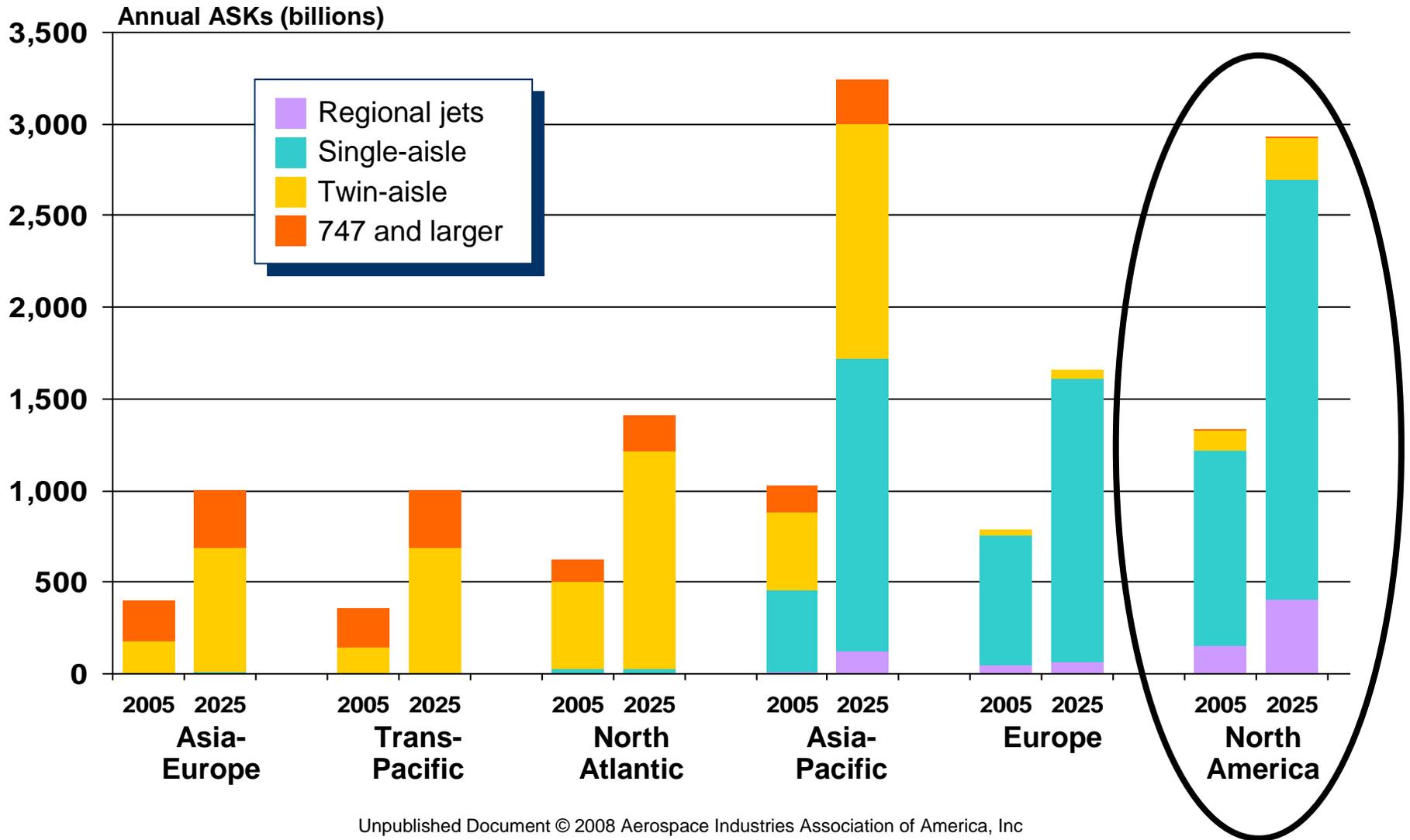


Fleet Evolution by Region



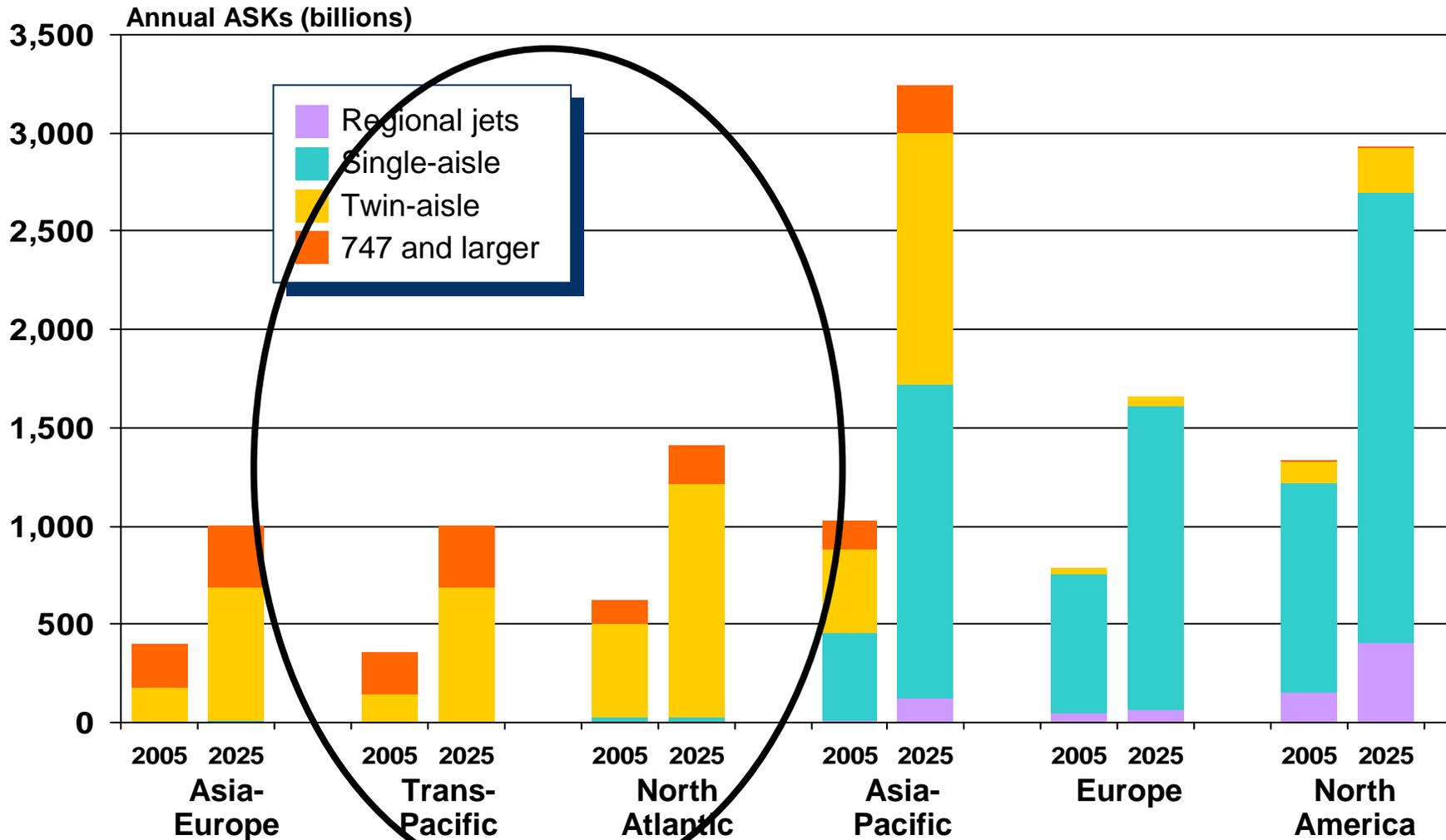


Fleet Evolution by Region





Fleet Evolution by Region





Technology is a Pipeline Not a Product

- Technologies for new aircraft are known
 - 15% CO₂ improvement in each new generation
 - Along with further NOx & Noise reductions
- **Technological breakthroughs are at risk**
 - **Industry invests heavily in technology**
 - **Public sector R&D investment is inadequate**



Air Transportation System

- **Congestion & Delay = Unnecessary fuel burn (CO₂)
= Unnecessary CO, HC & NO_x**

- **Costs are not fully allocated to the responsible party**
 - **Airlines pay the full cost of excess fuel burn**
 - **Air Traffic Service Providers and Airports are “free riders”**



Alternative Fuels

- **Aviation has no viable non-carbon fuel substitute in the foreseeable future**
 - **Goal is introduction of lower carbon content fuel in ten (10) years**
 - **Emphasis is on synthetic biofuels**
 - **Manufacturers are investing in their development**



Aviation is part of the Transportation Sector

- **Land-based & marine transport have power options**

- **Transportation policy should:**
 - **Maximize technology development by each mode**
 - **Exploit opportunities for technology deployment**
 - **Minimize costs of technology development**
 - **Accelerate efforts to eliminate congestion & delay**



What We Need from You

- ***Transportation must be treated as a whole.***
- ***Aggressive environmental improvement is fundamental***
- ***Elimination of congestion & delay is indispensable***
- ***Technological capability is the basis of sound transportation policy.***



Thank You



The Transportation Sector

Environmental Policy Must Address Transportation as a whole:

- **Transportation Is a Necessity of Life**
 - **Aviation, Ground, Marine, and Rail have their specific niches**
 - **Competition for where substitution exists**
- **Each Mode has specific**
 - **technology constraints**
 - **fuel constraints and substitution possibilities**
 - **CO₂, NO_x, Noise**