

Aviation and Climate Impact: What is the Role of Government?

Meeting: Transportation Research Board
88th Annual Meeting

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**Federal Aviation
Administration**

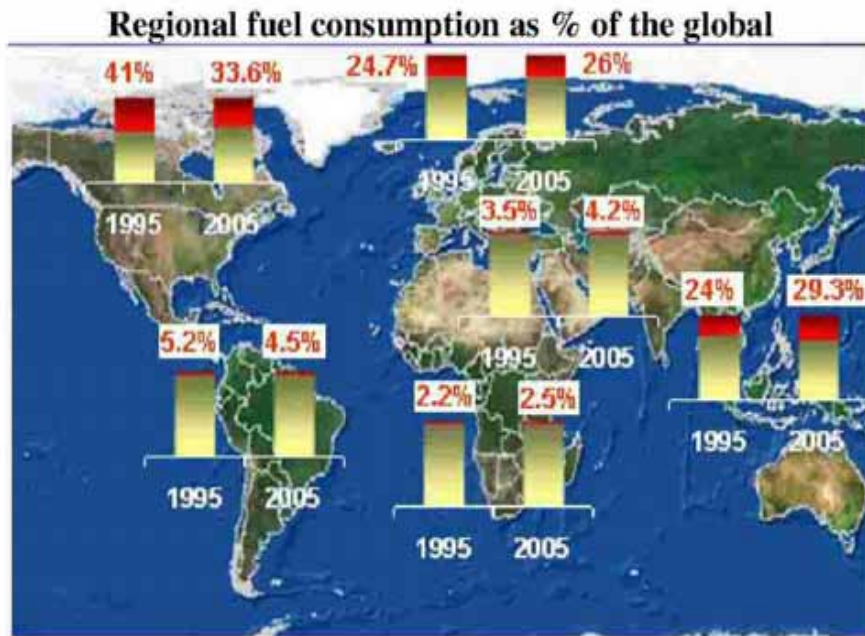


Outline

- Context: Recent U.S. Aviation Emissions
- The Future Challenge
- The Role of Government
- Closing Observations



Recent U.S. Aviation Emissions (1)

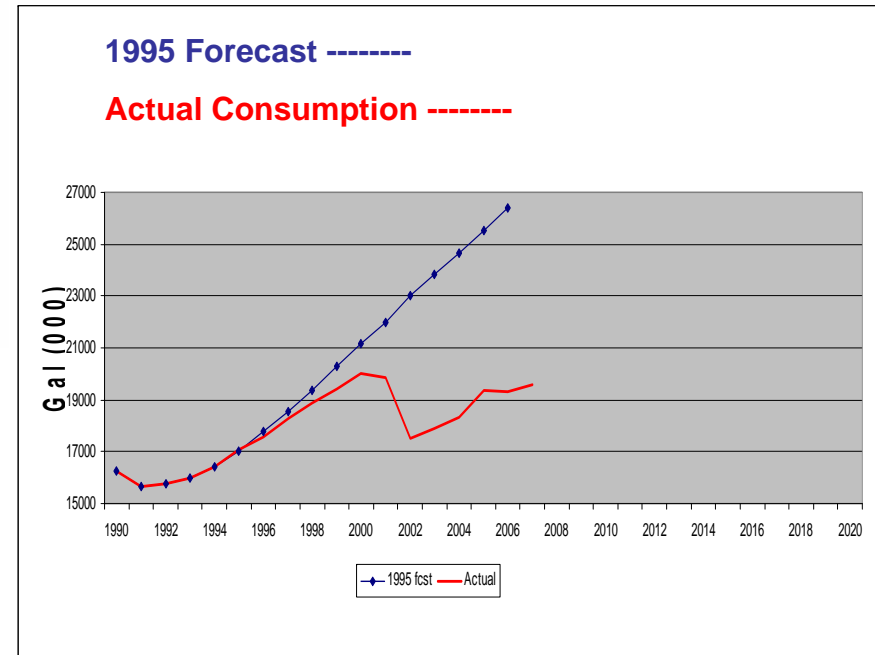


Source: ICAO based on OAG timetable

*By region of registration

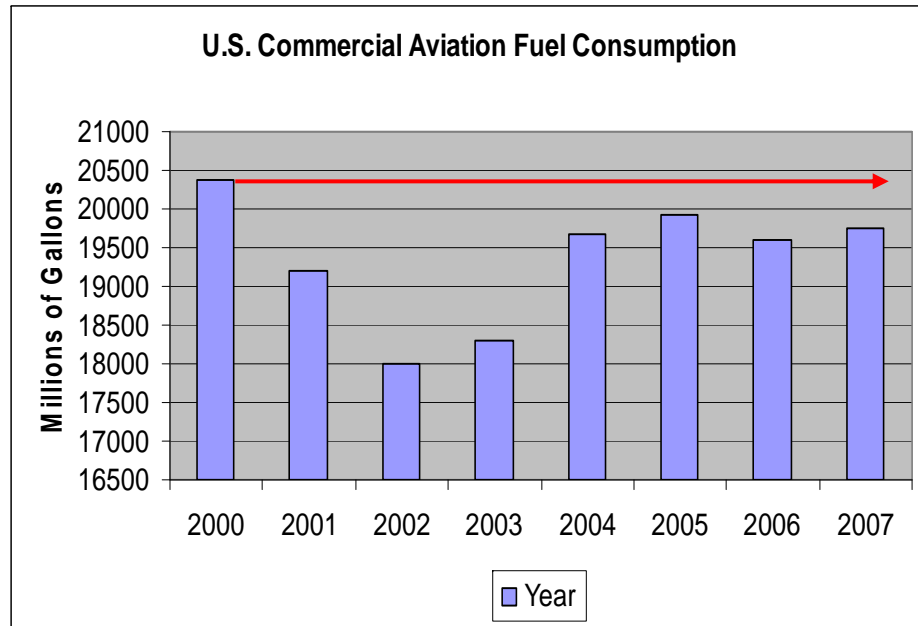
U.S. aviation shrinks in its contribution to global emissions...

...not surprising given its much slower growth rate than originally forecast.



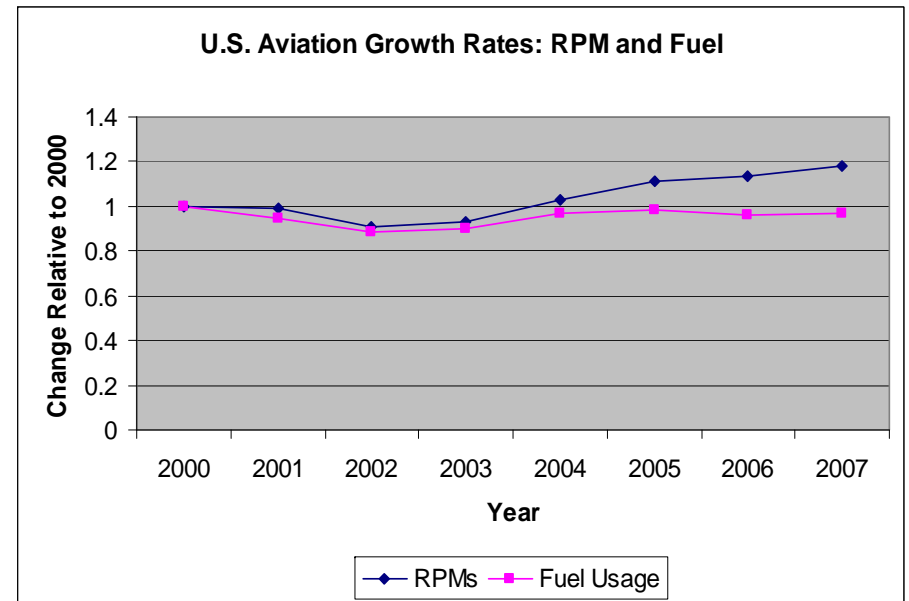
Source: BTS, EEA

Recent U.S. Aviation Emissions (2)



Source: BTS

U.S. commercial aviation fuel consumption remains below 2000 levels...

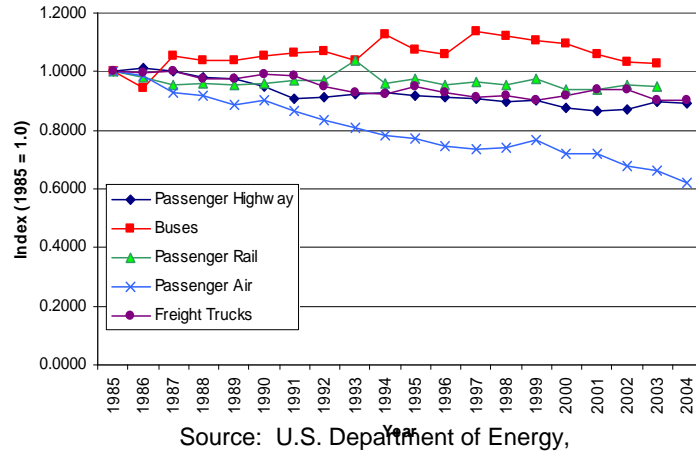


Source: FAA

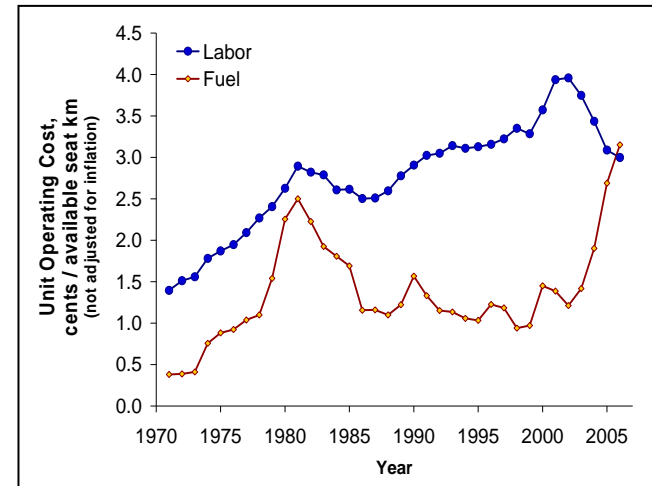
...as revenue passenger miles growth and fuel consumption disconnect.

What is Behind This Performance?

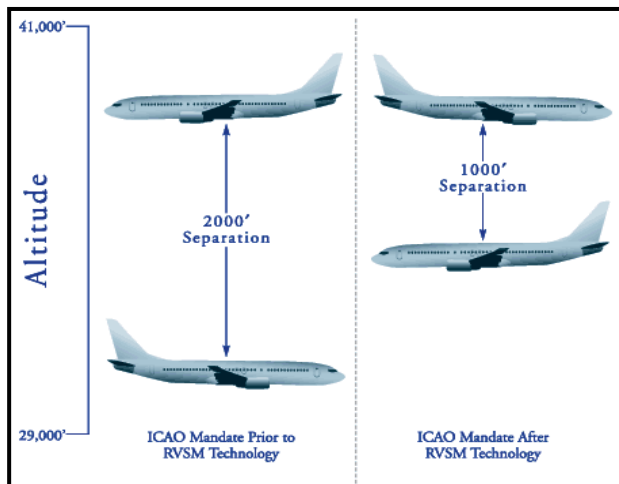
Continuous Gains in Energy Efficiency...



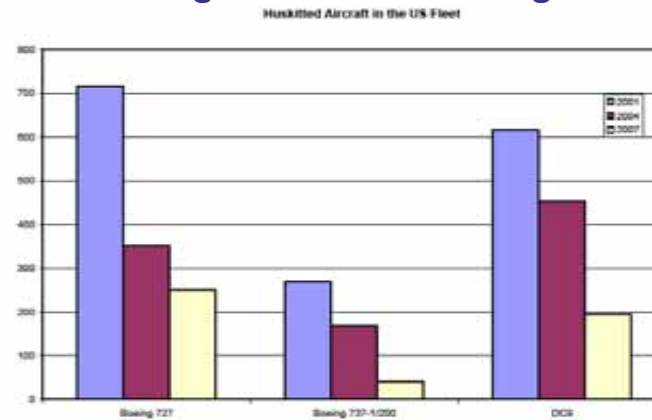
Plus Fundamental Shift in Energy Costs...



Innovation in air traffic management...

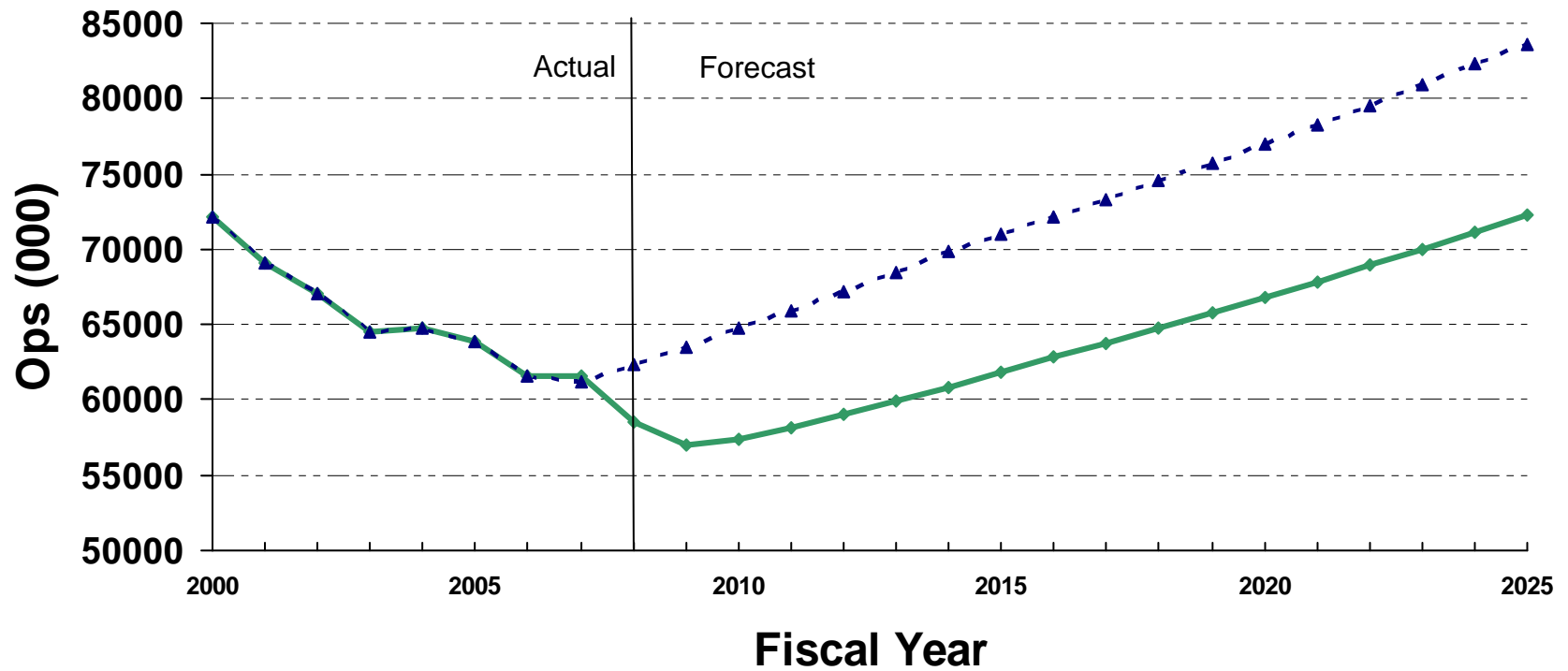


...and significant fleet change.



2009 U.S. Aviation Forecast – Impact of Global Recession

Operations at FAA & Contract Towers



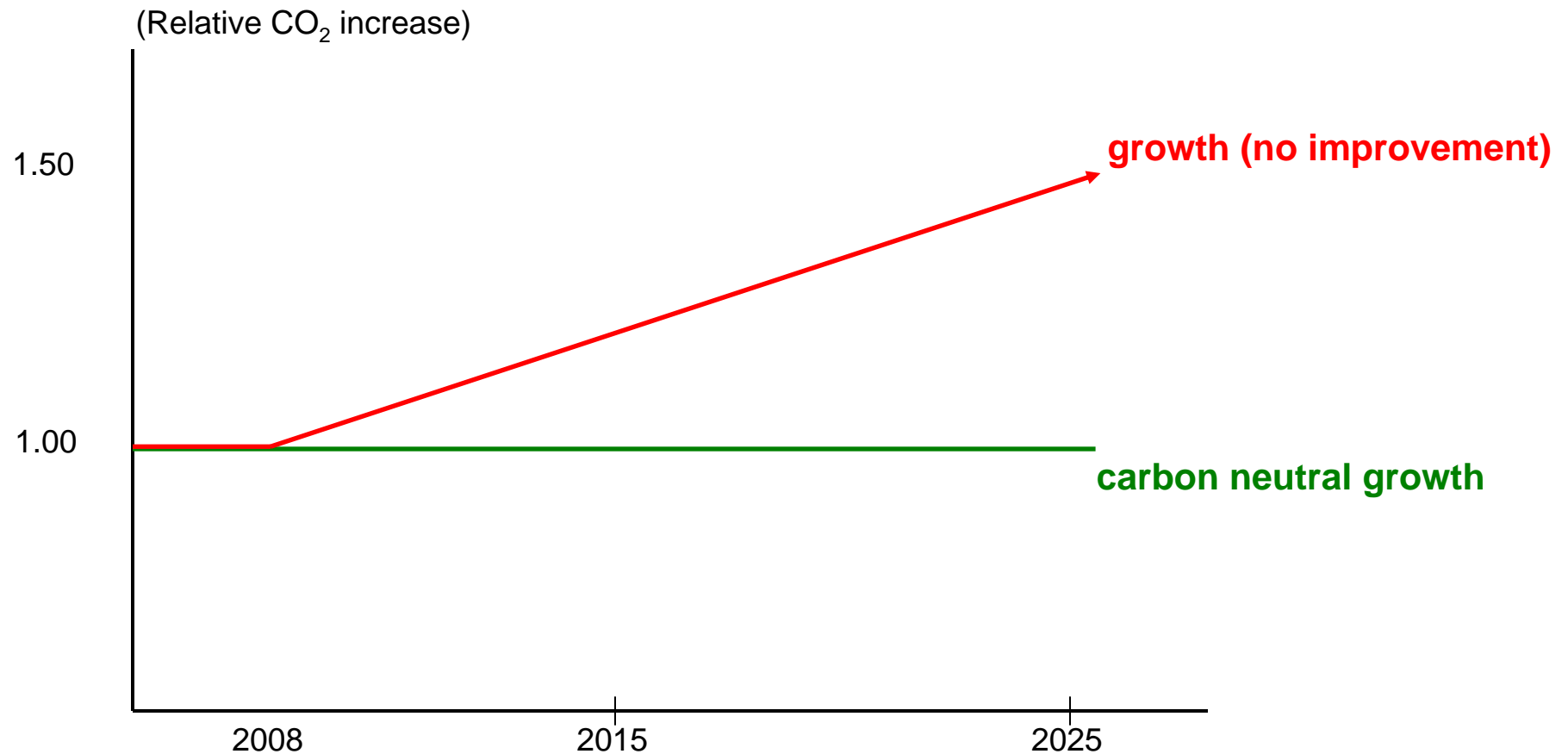
TAF 2008 TAF 2007

2008-2009:	-2.5%	1.9%
2008-2015:	0.8%	1.9%
2008-2025:	1.2%	1.7%

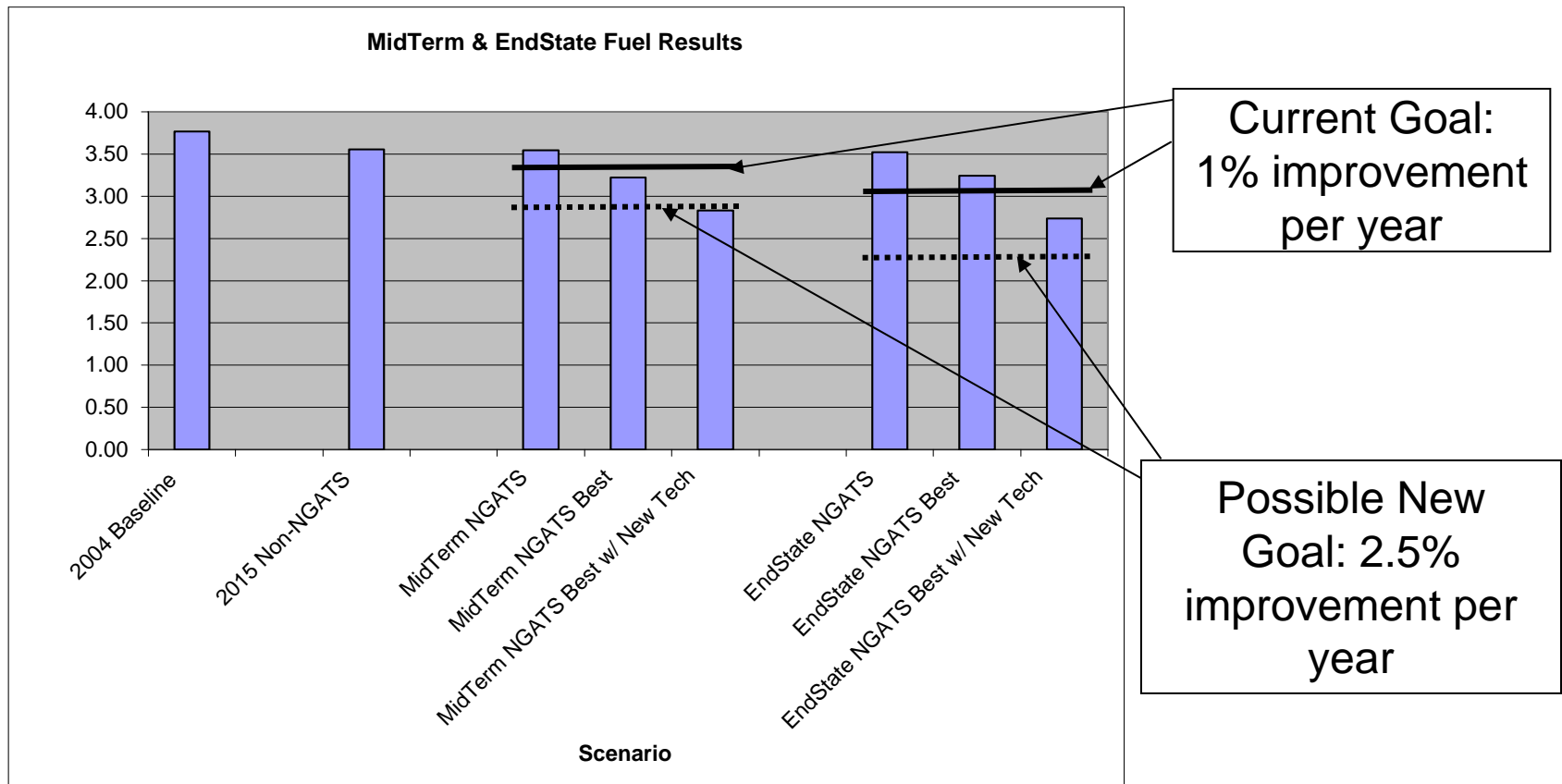
—◆— TAF 2008 - -▲- TAF 2007



Future Challenge: Reducing Aviation's Carbon Footprint



NextGen: Fuel Burn Constraints Illustrative Analyses



Fleets with new aircraft technology are required to meet Current mid term and end-state fuel efficiency goals; aggressive aircraft replacement did not meet more challenging goals

The Role of U.S. Government

- Ensure Best Science Informs Actions
- Ensure Decisions are Well Informed
- Efficiently Operate Air Traffic System
- Develop Solutions (Technology and Alternative Fuels)
- Design Effective Policies and Market Measures
- Foster International Collaboration



Better understanding/modeling supports better policy

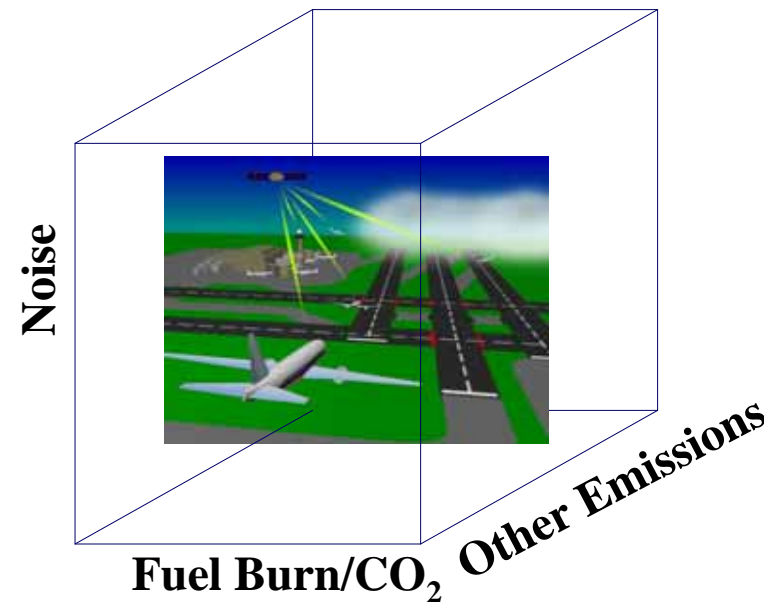


Improved metrics, measurement techniques, and modeling capability to quantify and predict impacts and to understand inter-relationships of aviation environmental factors

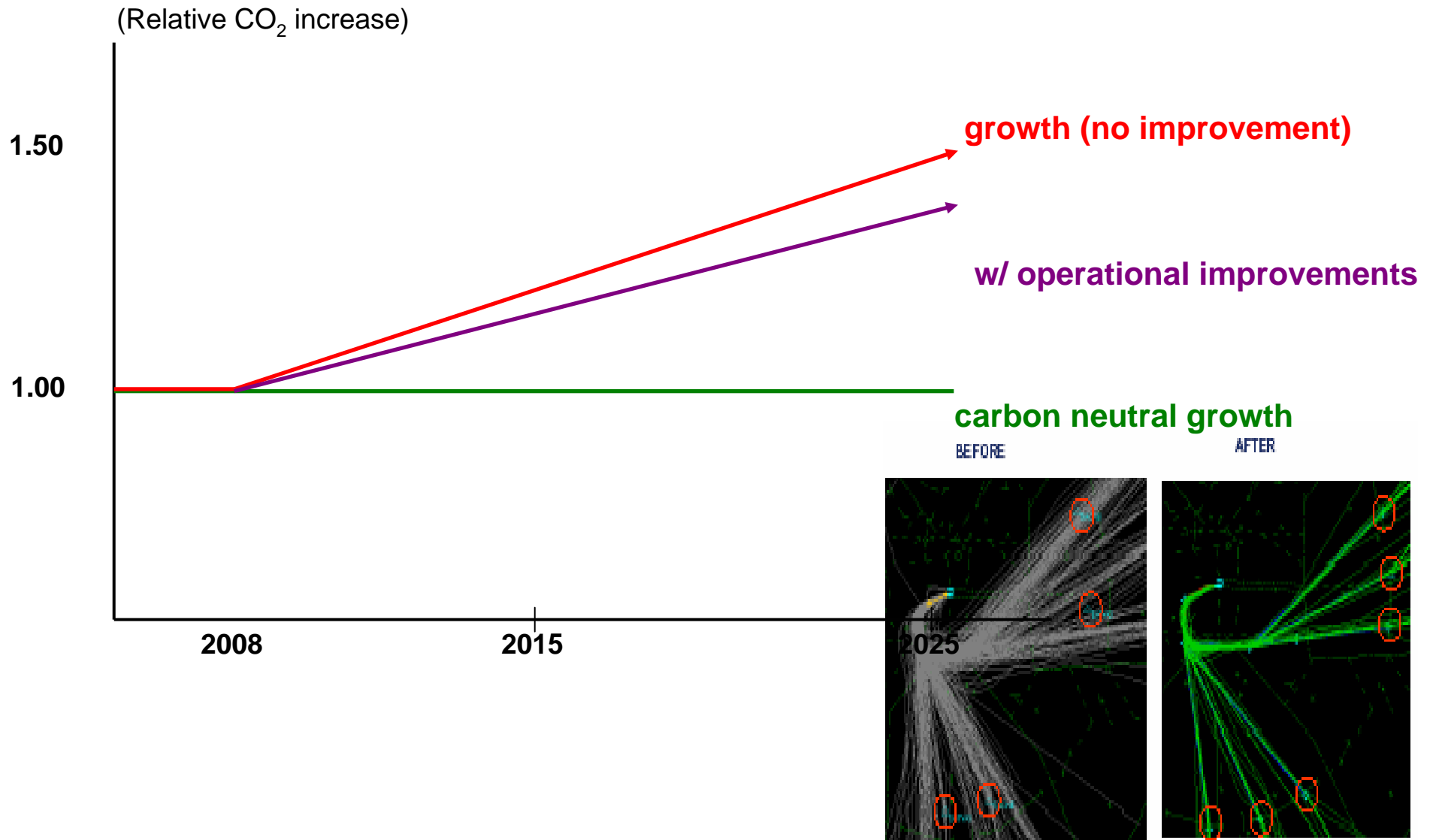
**Aviation Emissions
Characterization (AEC) Plan**

**Aviation Climate Change
Research Initiative (ACCRI)**

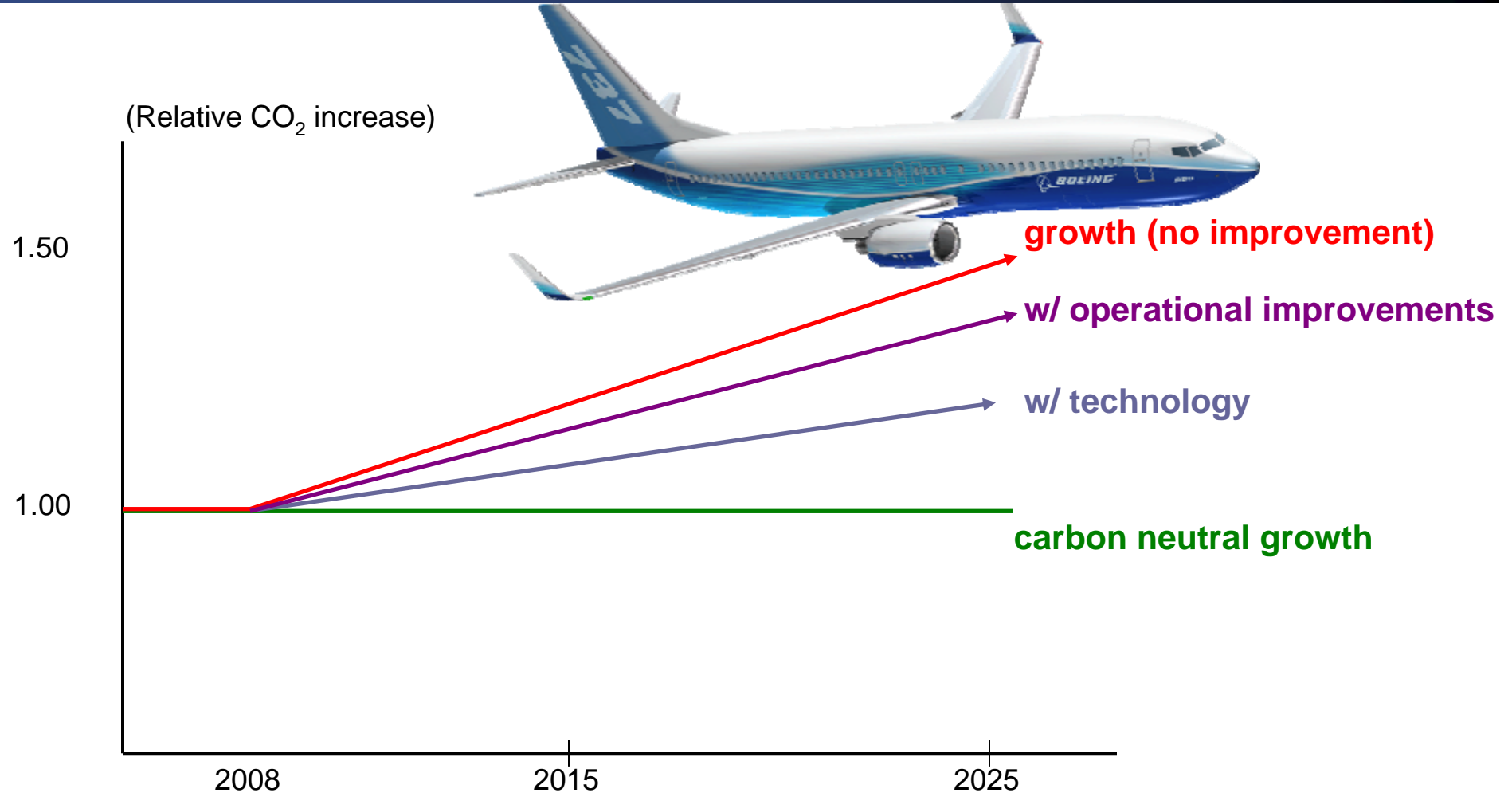
Aviation Noise Research Plan



Improve Air Traffic Management

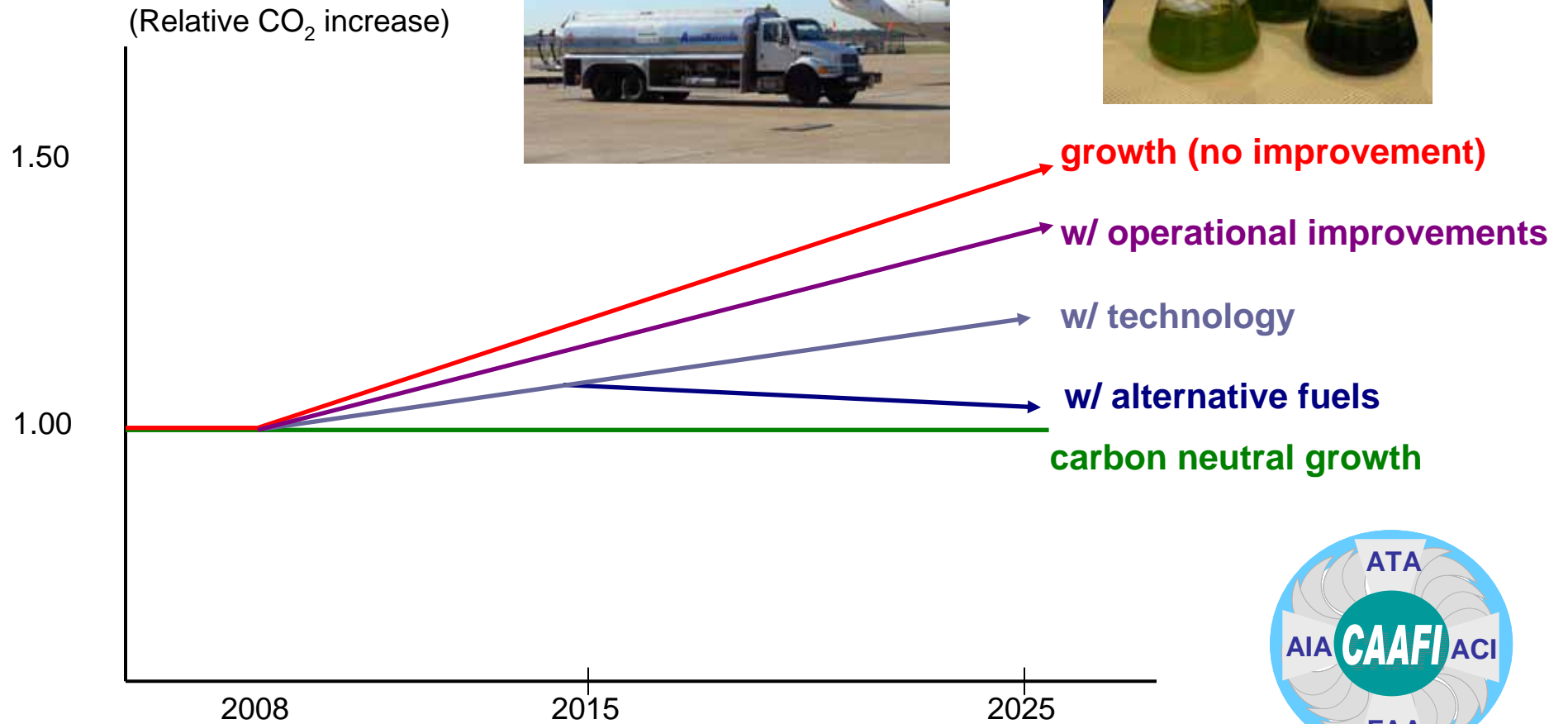


New aircraft technology is key



Continuous Low Energy, Emissions and Noise (CLEEN) Program kicked off in 2009

Alternative fuels are key



Ongoing Policy Work

- December 2006, Executive Order 13419: “National Aeronautics Research and Development”
 - **“The environment must be protected while sustaining growth in air transportation**
 - **December 2007, National Aeronautics Policy – R&D Plan**
www.ostp.gov/nstc/aeroplans/pdf/National
- Fall 2007, FAA reauthorization proposals
 - **Environmental provisions to accelerate NextGen initiatives**
- Aviation Environmental Policy Document
 - **High-level direction for addressing impacts of primary concern for NextGen**
 - **Long-term targets; significance; interrelationships**
- Environmental Management Systems (EMS)
 - **Develop/establish national strategy and framework**
- Policy implications of interdependent aviation noise and emissions models/tools
 - **Assess; provide guidance**



International Collaboration



Center of Excellence cooperative efforts ongoing with numerous countries, research organizations, and industry around the globe



The Atlantic Interoperability Initiative to Reduce Emissions (AIRE) and the Asia and South Pacific Initiative to Reduce Emissions (ASPIRE) seek to accelerate development of operational procedures that will reduce aviation's environmental footprint



ICAO's Group on International Aviation and Climate Change senior level policy group developing a consensus-based action program for the aviation community to address aviation greenhouse gas emissions

Some Closing Observations

- U.S. aviation has achieved impressive performance
- Despite past progress, environmental constraints to aviation growth real and complex
- The aviation sector needs goals that balance growth and environmental protection
- U.S. aviation can achieve carbon neutral growth via a variety of measures
- Sound Government, Public/Private Partnerships and International collaborations - crucial to our future success

