

# Consumer Attitudes Toward Carbon Offsetting

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strategic  
transportation  
& tourism  
solutions

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# The InterVISTAS Group

- **InterVISTAS Consulting**
  - Vancouver, Ottawa, Winnipeg, Montréal
- **InterVISTAS-ga2**
  - Washington DC, Chicago
- **InterVISTAS-EU**
  - London
- **Aviation, Tourism consulting**
  - 70 team members
  - Broad range of marketing, security, facilitation, planning, economics and environmental services

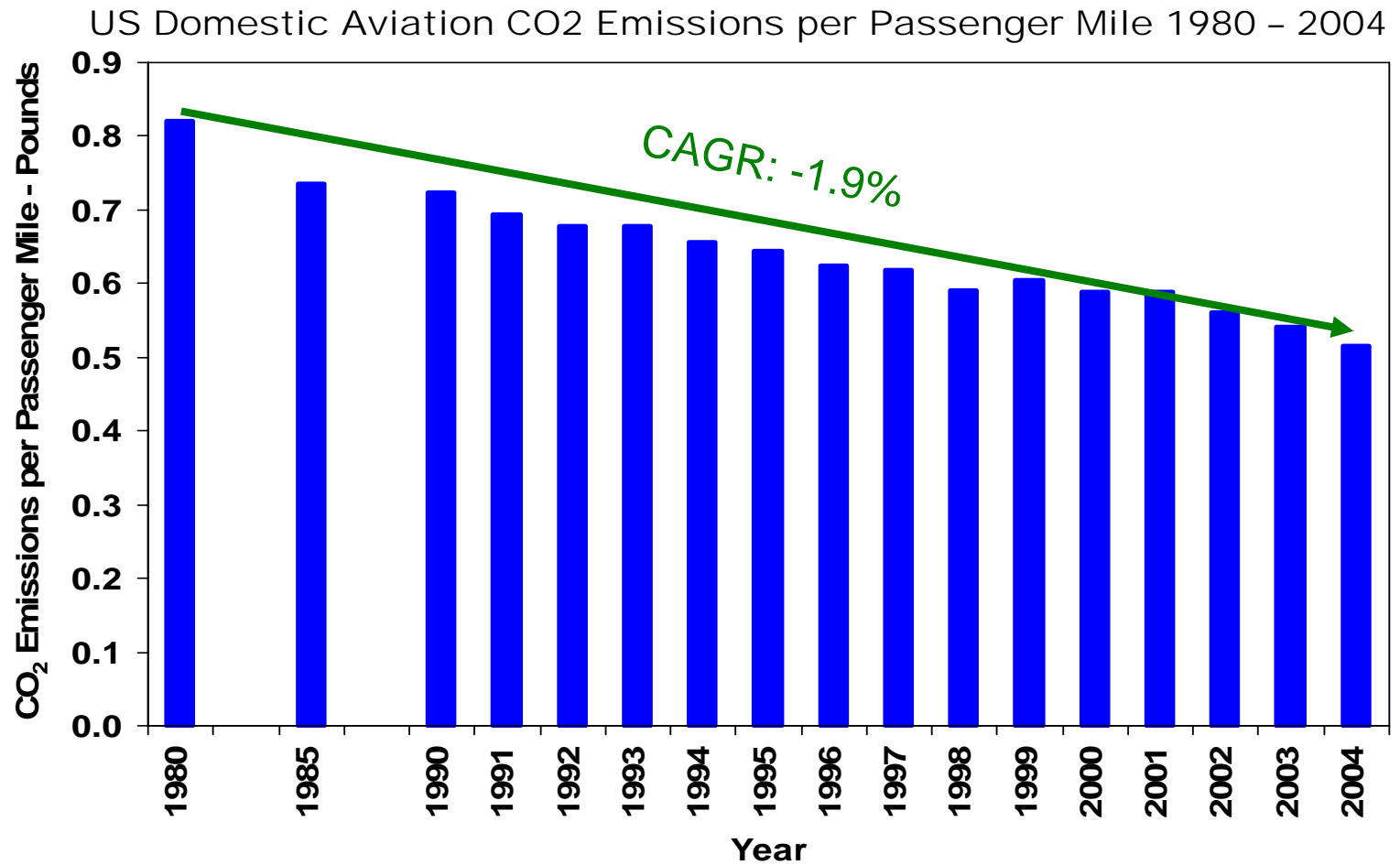


# Introduction

- Scientific evidence overwhelmingly shows that carbon dioxide and other greenhouse gases from human activities are changing the climate
- Climate change poses serious long term environmental, economic and political risk
- Fossil fuel intensive industries are coming under attack, including aviation and tourism
- Carbon offsetting provides a viable “transition strategy” until more permanent solutions are available



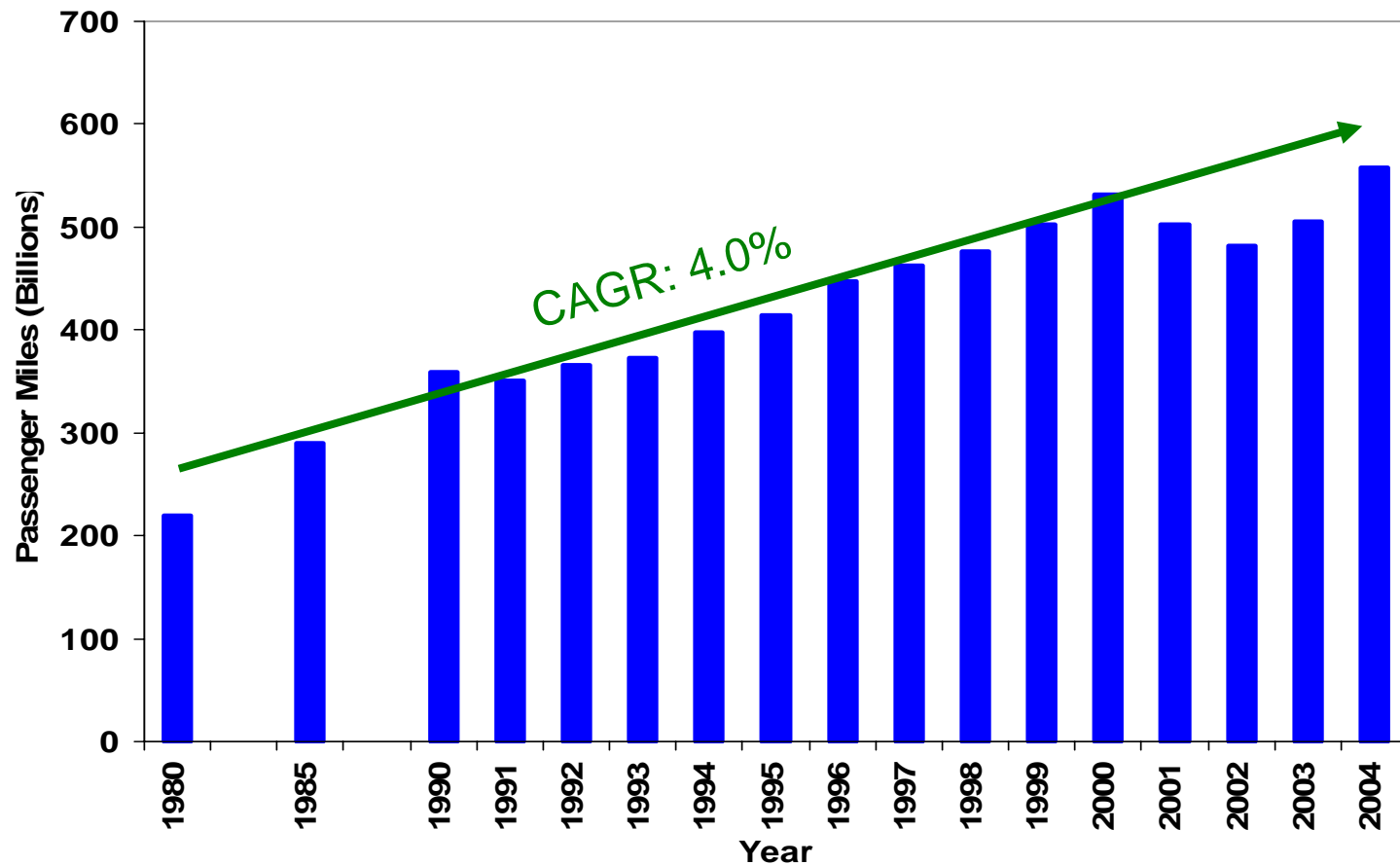
# Some Good News – Efficiency Gains



**Source:** US Bureau of Transportation Statistics *National Transportation Statistics 2007*.

# However, Rapid Growth in Air Travel

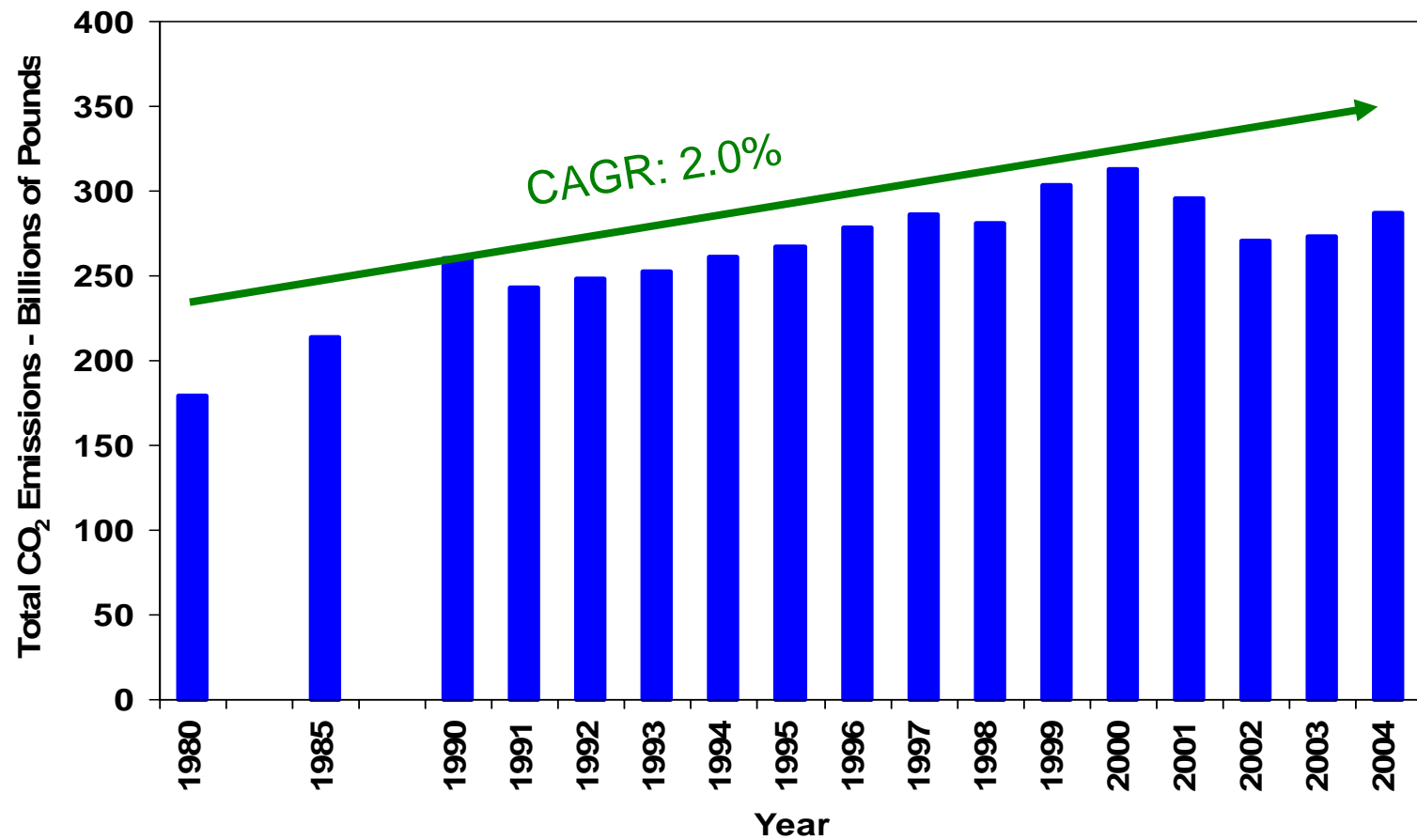
US Domestic Air Travel 1980 - 2004



**Source:** US Bureau of Transportation Statistics *National Transportation Statistics 2007*.

# Total Emissions Continue to Climb...

US Domestic Aviation CO<sub>2</sub> Emissions 1980 - 2004



**Source:** US Bureau of Transportation Statistics *National Transportation Statistics 2007*.

# How Does this Compare to Auto?

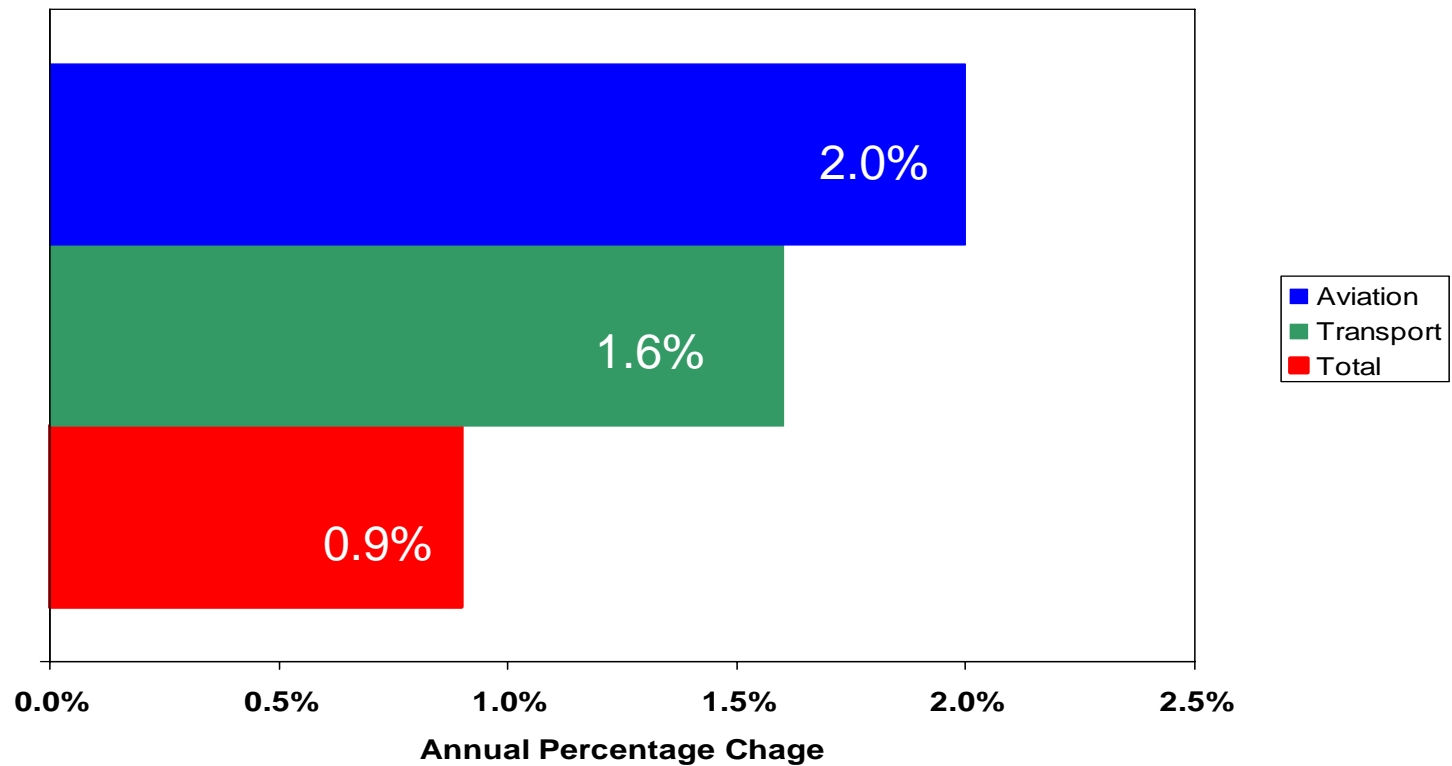
US CO2 Annualized Growth Rates 1980 - 2004

	Air Travel	Automobile /Motorcycle
Emissions per Passenger Mile	-1.9%	-0.9%
Passenger Miles	4.0%	1.2%
Total Emissions	2.0%	0.3%

**Source:** US Bureau of Transportation Statistics *National Transportation Statistics 2007*

# Aviation Emissions Growing Faster than Total Emissions

US CO2 Emissions Annualized Growth Rate 1980 - 2004



**Sources:** US Bureau of Transportation Statistics *National Transportation Statistics 2007* and OECD

# Projected Growth in Air Travel

- Air transport is one of the fastest-growing sectors of the world economy
- 2006 and 2007 forecasts by Airbus, Boeing and the Airports Council International (ACI) predict that there will be almost unprecedented growth in aviation markets over the next 20 years
- ACI's 2007 forecast stated that the number of air travelers will double by 2025 to more than 9 billion per year, which corresponds to an annualize growth rate of 3.9%.

# Projected Efficiency Gains

- Efficiency gains likely to continue:
  - Newest generation engine/airframe technology: 20-25%
  - Add-on technology: 5-8%?
    - e.g., winglets
- Although these improvements will improve efficiency they will not stop the increase in aviation related total emissions



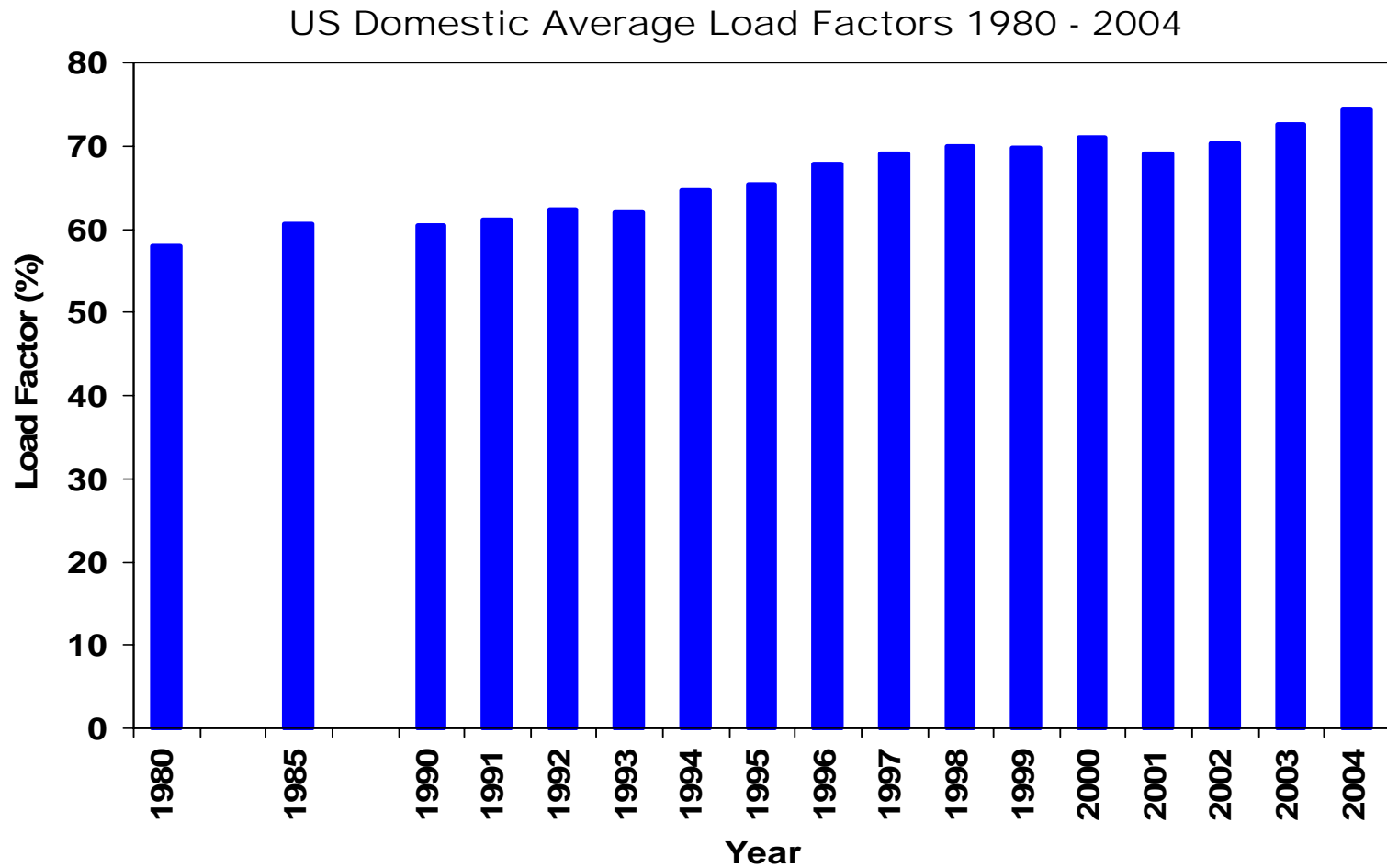
# Technology is Not Enough

- A study by the Intergovernmental Panel on Climate Change (IPCC) concluded that “the increase in aviation emissions attributable to a growing demand for air travel would not be fully offset by reductions in emissions achieved through technological improvements alone”

**Source:** US General Accounting Office, “Aviation and the Environment: Aviation’s Effects on the Global Atmosphere Are Potentially Significant and Expected to Grow”

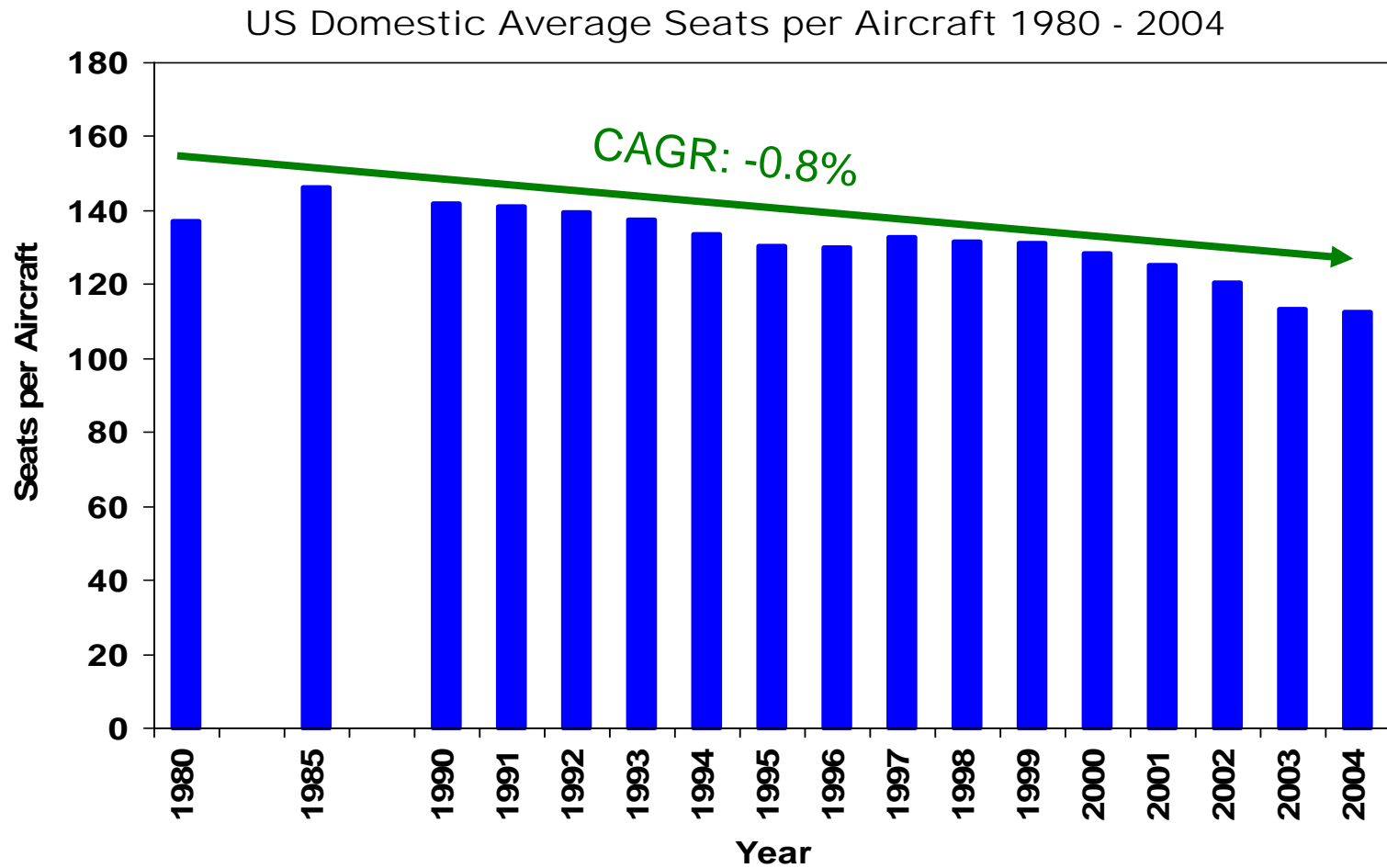


# What About Increasing Load Factors?



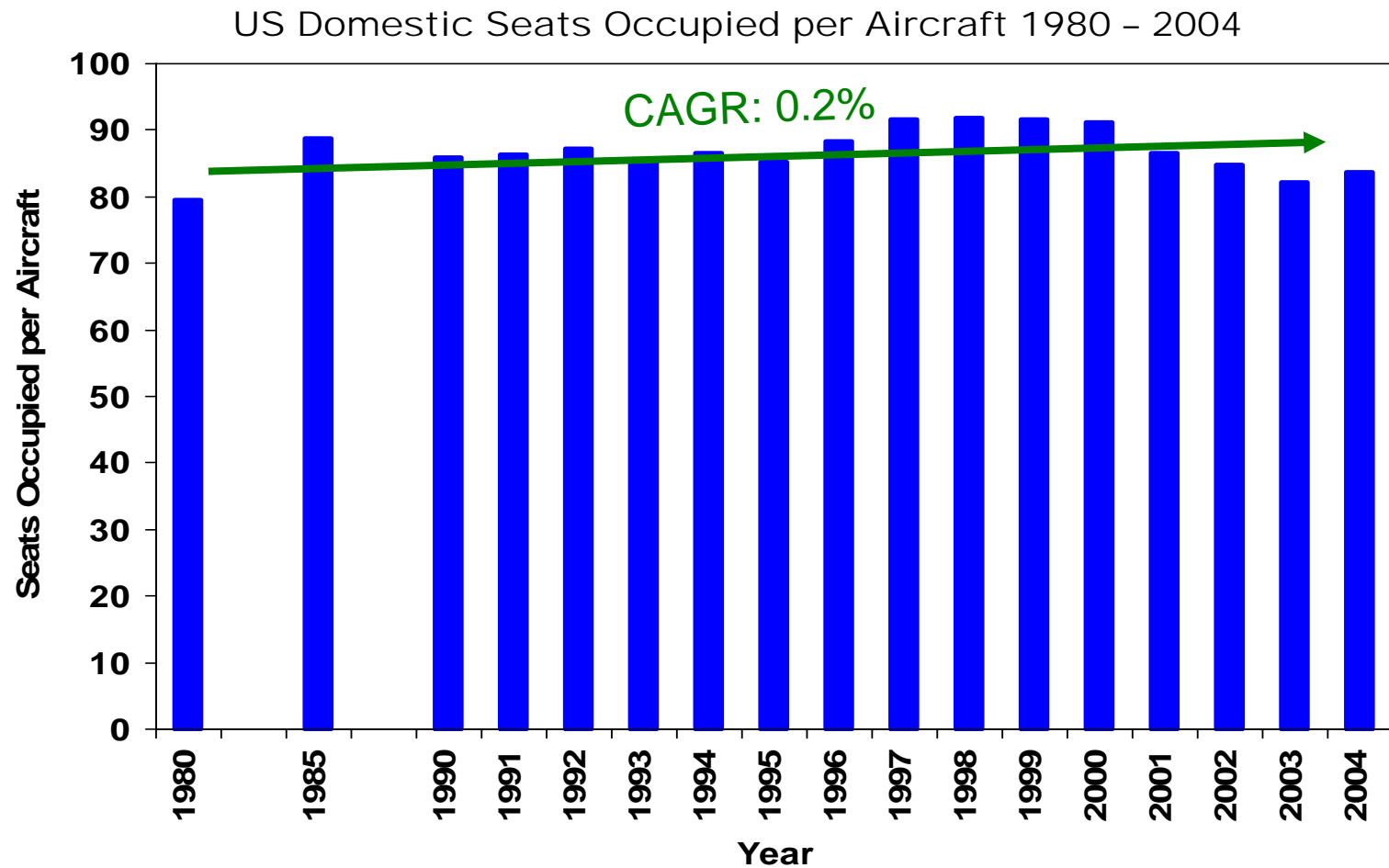
**Source:** US Bureau of Transportation Statistics *National Transportation Statistics 2007*.

# Declining Trend in Average Seat Capacity



**Source:** US Bureau of Transportation Statistics *National Transportation Statistics 2007*.

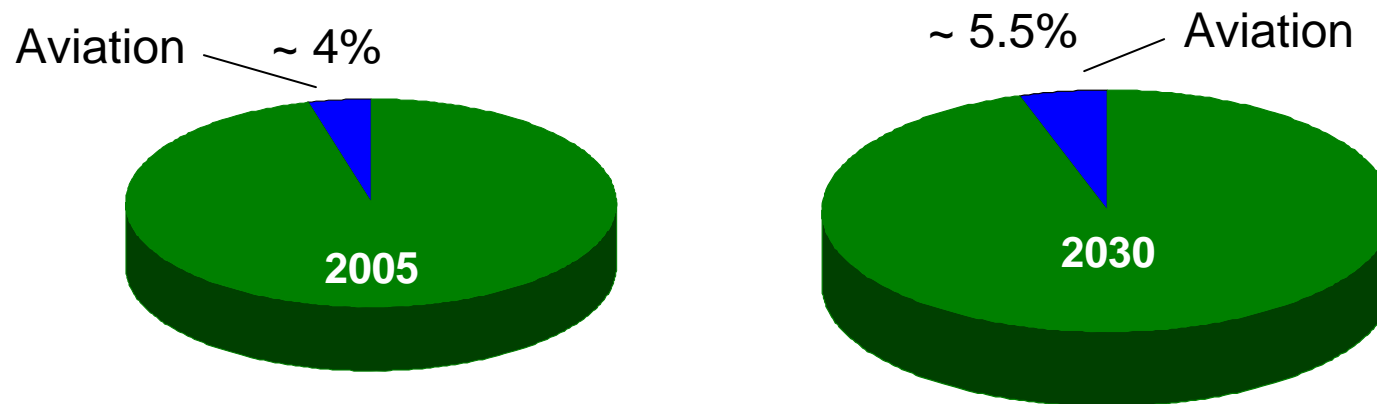
# Minimal Effect on Average Number of Passengers per Aircraft



Source: US Bureau of Transportation Statistics *National Transportation Statistics 2007*.

# The Future – A Larger Share of a Larger Pie

US CO2 Emissions 2005 vs. 2030



- Aviation emissions will increase 65% by 2030
- Total emissions will increase by 25% by 2030

# Growing Public Concern

- The public is already demanding action from the aviation industry



# Traveling with a Guilty Conscience?

"Making selfish choices such as flying on holiday or buying a large car are a symptom of sin."

– "Sin is not just a restricted list of moral mistakes. It is living a life turned in on itself where people ignore the consequences of their actions."

- Richard Chartre  
*Bishop of London*



# Government Regulation

- If the aviation industry does not self regulate, it will not take long for the government to step in and impose changes
- This will most likely come in the form of increased taxes and/or carbon trading schemes
- Even in the United States the debate is rapidly shifting from whether climate change legislation should be enacted to when and in what form



# Viabile Solution – Carbon Offsets

- CO<sub>2</sub> emissions countered by financial contributions to:
  - Energy efficiency projects
  - Renewable energy projects
  - Tree planting (suspect)
  
- Voluntary offsets will mitigate negative economic impacts
  - Most price sensitive will not volunteer
  
- Carbon offsetting provides a viable “transition strategy” until more permanent solutions are available



# Current Aviation Offset Programs

## Mandatory (100% participation)

- SilverJet (business travel b/w New York, London, and Dubai)
- Harbour Air (North America's first carbon neutral airline)
- NetJets (private jet company)

## "Opt-in"

- Qantas Group (~10% participation; includes ground-related emissions)
- BA
- Lufthansa/SAS
- Delta
- Continental
- Air Canada
- Many others



# Behavioural Assessment of Carbon Offsets

- Assessed willingness of tourism travellers to participate in tourist funded carbon offsetting program

**Site: Whistler,  
British Columbia  
co-host of 2010  
Winter Olympics**



# Methodology

- **Contingent Valuation Method**
  - Commonly used to assess value of non-market goods
  
- **1,825 surveys delivered**
  - 876 responses (48% response rate)
  
- **Logistics regression to determine factors contributing to decision to participate**



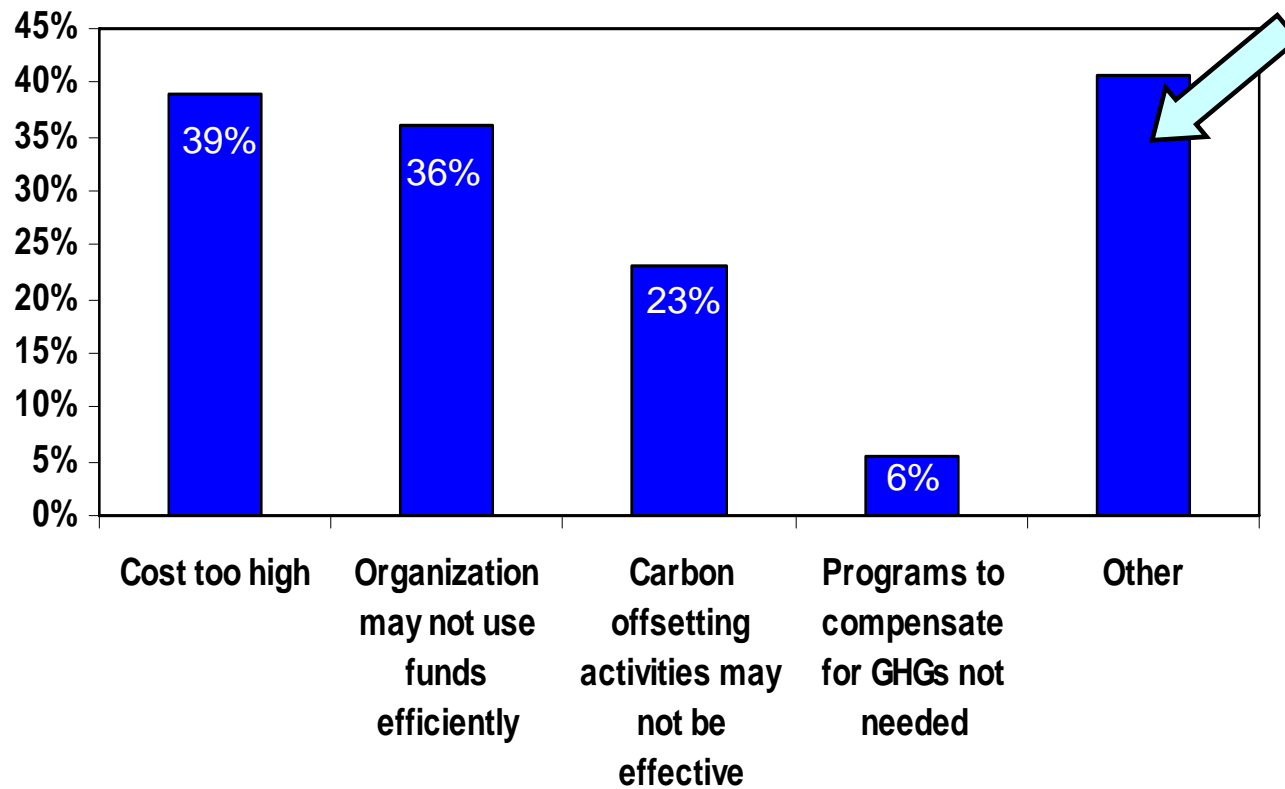
# Key Results

- 45% would participate
- Willingness to pay: \$10
- Participation more likely for:
  - Larger party sizes
  - Overnight visitors (vs. day trip)
  - Higher education
  - Those motivated to travel for social, cultural or environment reasons
- Less likely for luxury seeking tourists



# Key Results

## Reasons for non-participation:



### Top Five "Other" Reasons

- The payment vehicle should be a mandatory tax or fee, not a voluntary donation
- Existing government funds should be used for this purpose
- Already donate enough to other organizations and charities
- Not enough information is provided about the proposed organization and its activities
- Industry should be responsible for paying, not the individual consumer

# Challenges for the Aviation and Tourism Industries

- High willingness to participate in offset schemes, but very limited awareness of opportunities to purchase offsets
- Must address skepticism on:
  - Use of the funds
  - Effectiveness of projects



# Keys to Success

- Choose high quality offsets that:
  - Are additional
  - Meet or exceed environmental standards
  - Are verified by a third party
  - Provide lasting environmental benefit
  - Are socially beneficial
  
- Fully integrate offset scheme in marketing, communications and booking systems
  
- Use transparent communications that demonstrate:
  - Efficient use of funds
  - Credibility of offset projects

# Thank You

- For clarification or more information, please contact:

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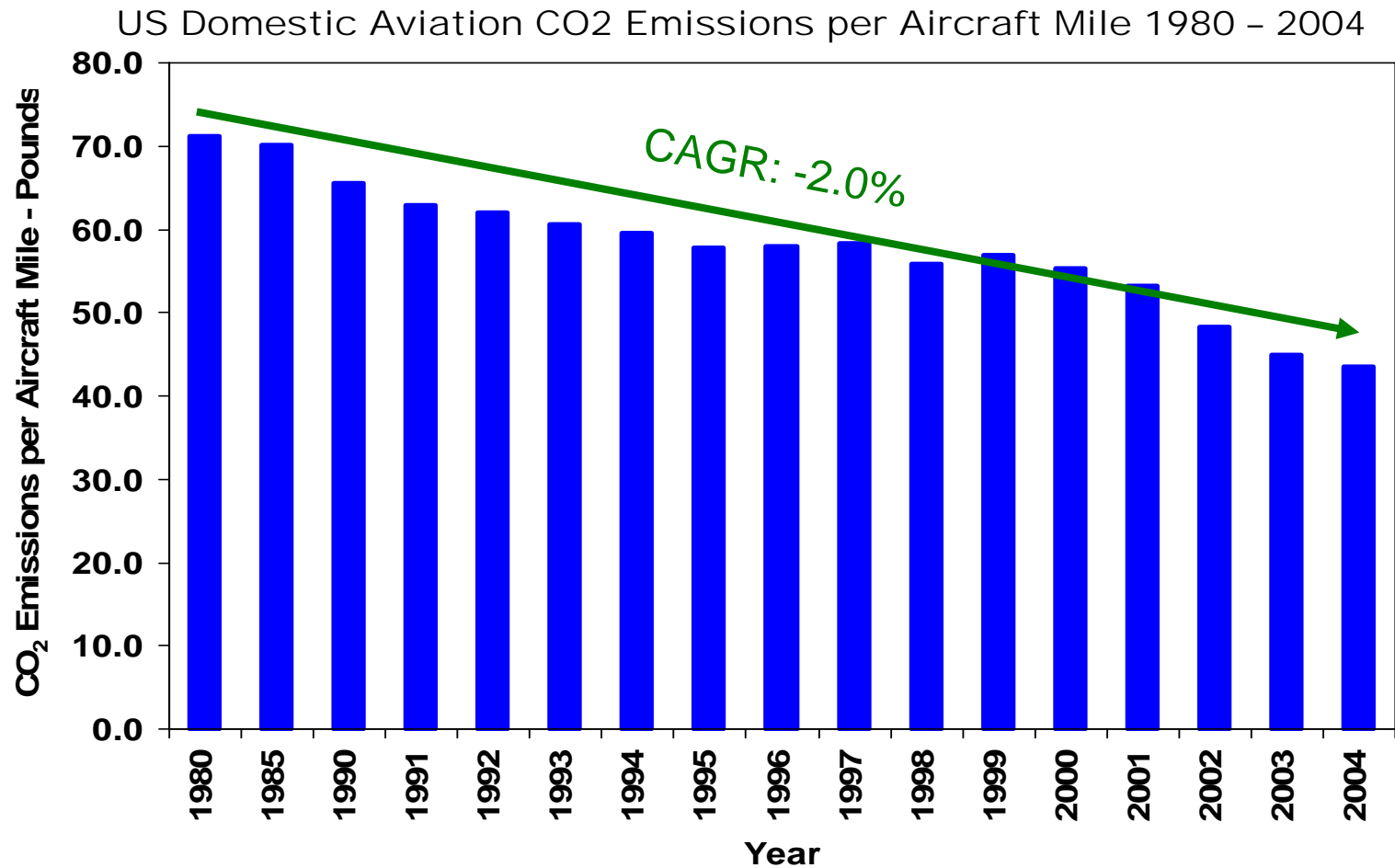
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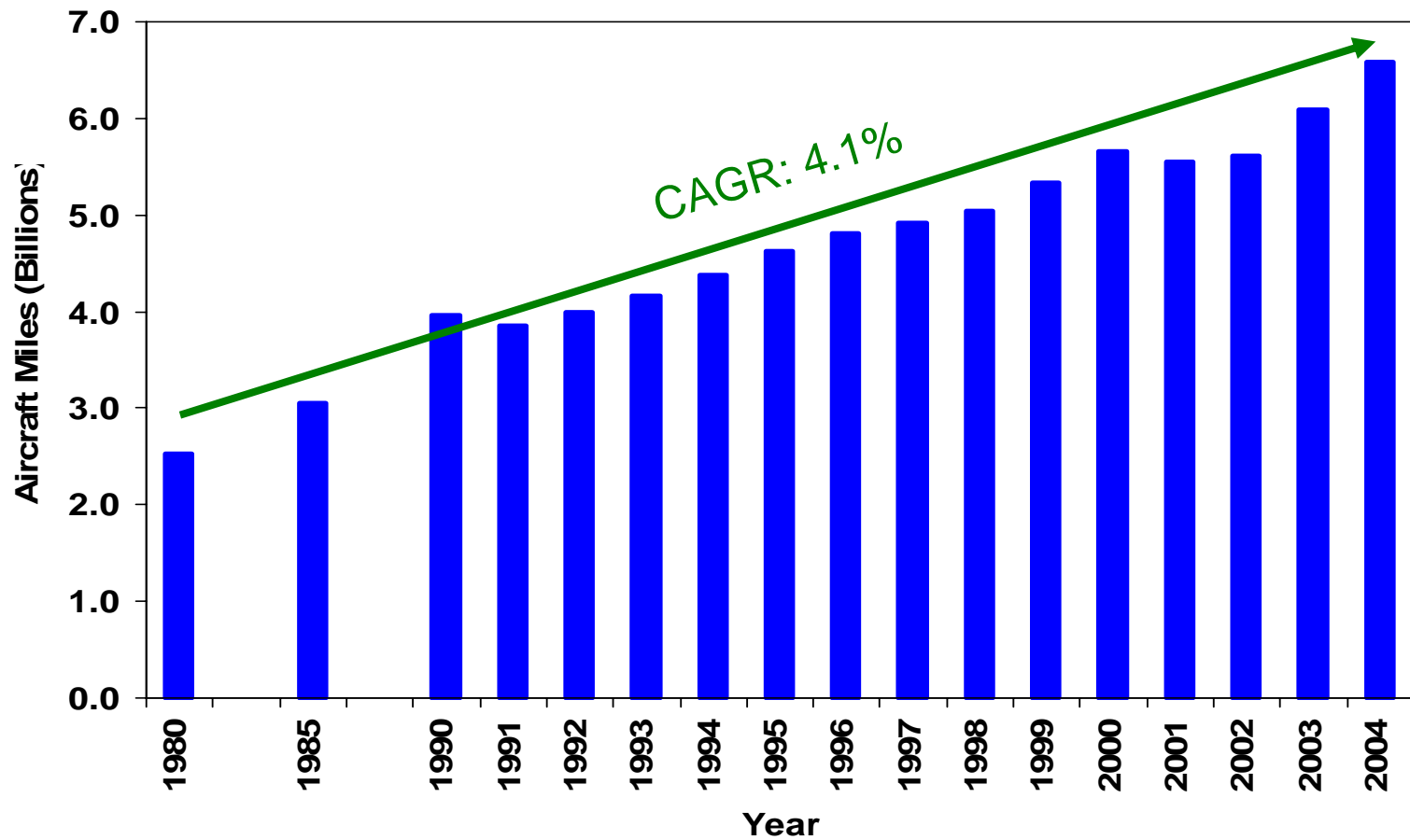
# Decrease in Emissions per Aircraft Mile



**Source:** US Bureau of Transportation Statistics *National Transportation Statistics 2007*.

# Rapid Growth in Aircraft Miles

US Domestic Aircraft Miles 1980 - 2004



**Source:** US Bureau of Transportation Statistics *National Transportation Statistics 2007*.

# CO<sub>2</sub> Is Not the Only Problem

- N<sub>2</sub>O is a particular problem for aviation
  - higher engine temperature improves efficiency
  - but at a penalty in terms of higher N<sub>2</sub>O
  - N<sub>2</sub>O counts at 310 times CO<sub>2</sub>
- Aviation has a higher 'radiative forcing' than CO<sub>2</sub> alone would suggest
  - other GHGs (including N<sub>2</sub>O and water vapour)
  - high altitude
- CO<sub>2</sub> emissions should be multiplied by a factor of 2 – 3.5 to estimate aviation's total GHG emissions

# Carbon Trading

- The government gives each firm an emissions limit (often called a cap)
- Firms who wish to increase their emissions must buy credits from those who pollute less
- Heavy polluters will be buyers of emissions and light polluters will be sellers thus creating a market
- Environmental groups can also purchase credits and retire them
- Low emission firms can also retire credits by donating them to non profit organizations in return for tax credits



# Examples from the EU

- The EU plans to add aviation to its Emissions Trading Scheme (ETS) starting in 2011 for intra-EU flights and 2012 for all flights departing from or arriving in the EU
- Starting in 2009, the UK intends to replace air passenger duty with a “per flight” tax based on carbon emissions



# Economic Impact of Regulation

- Mandatory taxes / carbon credits raise price of travel
- Travel has high price elasticity of demand
- Thus, disproportionately large impact
- Tourism and other air travel dependent industries will have large, negative economic impacts

