



Aviation & Climate Change



Presentation to GIACC
ICAO, Montreal
February 26, 2008

Aviation & Climate Change

- Why are we here today?
- What are the challenges?
- What is the industry doing?
- The way forward
- Expectations of ICAO & GIACC





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Strong Industry track record

- Over the last 40 years
 - Soot has been eliminated
 - Noise reduced 75%
 - Fuel efficiency improved 70%

- Further 25% by 2020
 - ATA 30% by 2025

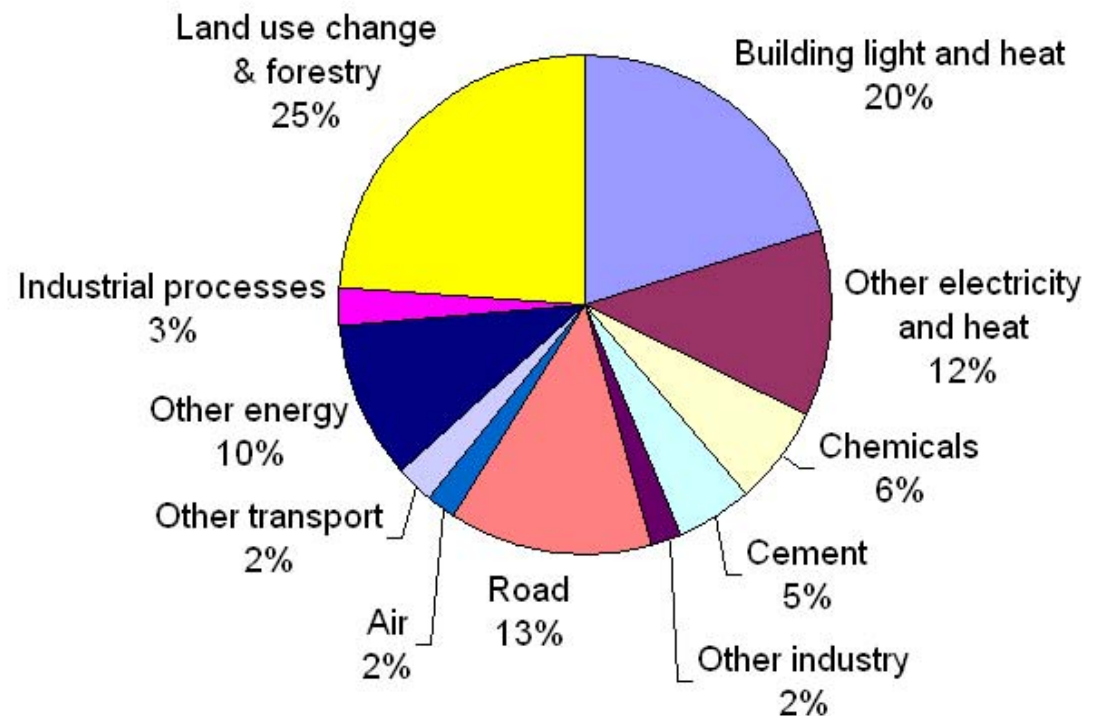


Aviation's Contribution to CO₂ Emissions

➤ Our carbon footprint is small but growing

➤ From 2% today to 3% in 2050 (IPCC)

Global CO₂ Emissions





GIACC's Mandate: Vital & Urgent

ICAO Assembly in September:

- Unanimous support (179 States) for a comprehensive approach
 - IATA 4-pillar strategy

- 179 States mandated ICAO to:
 - Take strong leadership
 - Develop an aggressive plan of action

- Policy issues need resolution





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Growing carbon footprint

- Future traffic growth: 5.2% per annum
- Emissions growth: ~3% per annum
- Imperative to decouple
- Constraints:
 - Safety first
 - Long implementation timelines
 - Single fuel technology
 - Dependence on governments



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Our Vision

- Is for carbon neutral growth
- Leading to a zero carbon emissions future
- Requires a comprehensive Industry approach
 - Airlines, manufacturers, airports, ATM
- Requires government support
 - Infrastructure
 - Economic Incentives





IATA Four Pillar Strategy

➤ Technology

- Airframe, engine
- Cleaner bio-fuels, new energy sources

➤ Infrastructure

- Improve air routes, ATM & airport procedures

➤ Aircraft operations

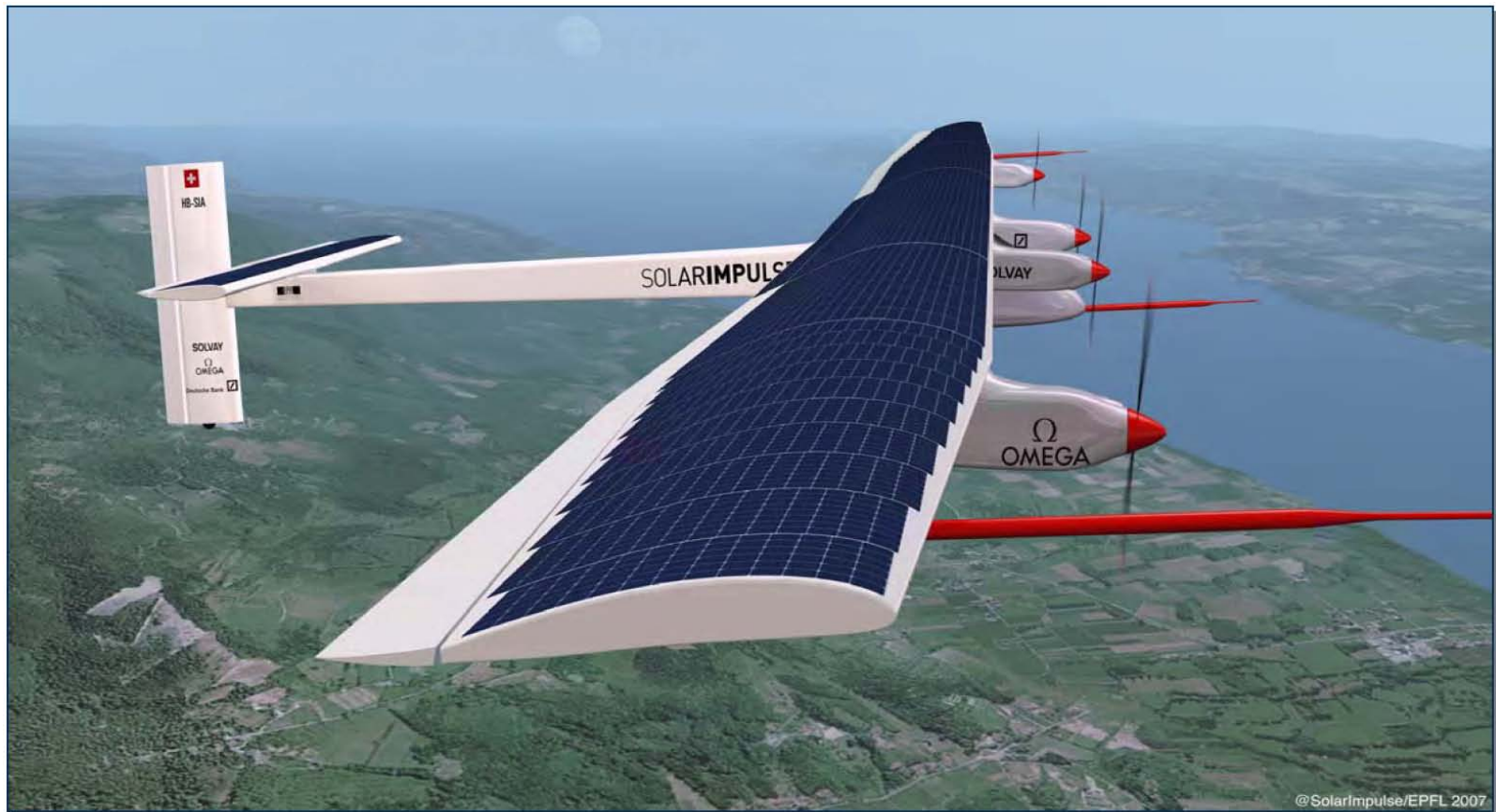
- Drive for maximum efficiency & minimum weight

➤ Economic instruments

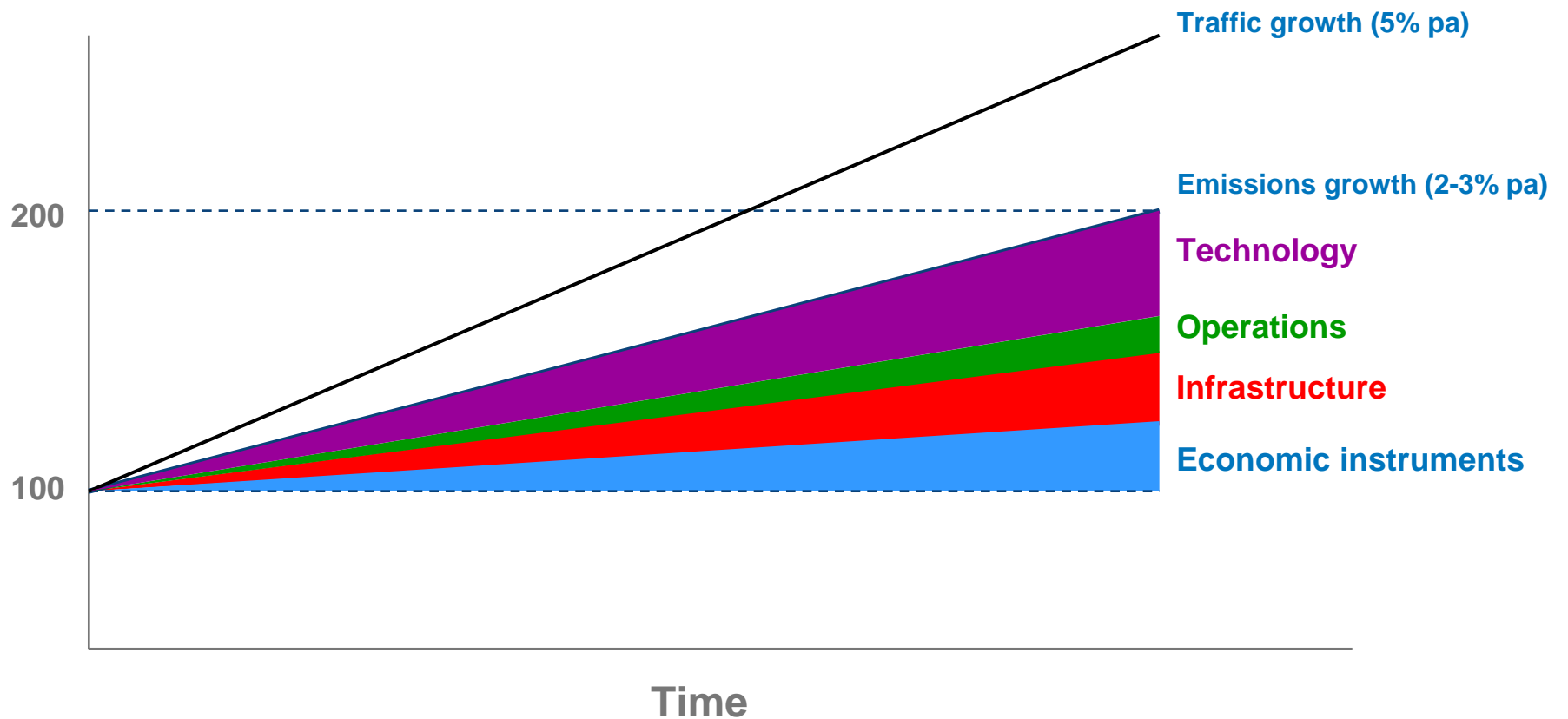
- Incentives to finance technology R & D
- Carbon offsets & trading

Inspiring Innovation

Solar Impulse



Carbon Neutral Growth



Pillar 1: Technology - Aircraft

➤ Short term:

- Aerodynamics
- Weight reductions
- Engine upgrades

➤ Medium term - 2020:

- New wing & fuselage profiles
- Next generation engines



➤ Long term:

- Entire new aircraft design

➤ IATA actions:

- Industry united and mobilized
- Technology roadmap
- Regulatory environment



Pillar 1: Technology - Alternative Fuels

➤ **Several Industry initiatives**

- Airbus Gas-to Liquids Test 0208
- Virgin Biofuels Test 0208
- Air New Zealand Biofuels Test Q408

➤ **IATA actions**

- Provide information and knowledge
- Development of fuel specification
- Support Drop-In fuels
- 100% sustainable fuels in long term



Pillar 2: Operations

- **“Green Team” programme**
 - 30 Gap Analyses in 2007– Saving US\$ 1.3bn and 7m tonnes of CO₂
 - Target of further 6 m tonnes in 2008
- **Flight Operations:**
 - APU vs. Ground Power
 - Flight Management
 - Continuous Descent Approach
- **Engineering & Maintenance:**
 - Weight reduction
 - Maintenance actions (e.g. SQ)
- **Dispatch:**
 - Flight Planning accuracy (LH, LIDO)
 - Fuel planning



Pillar 3: Infrastructure

Optimisation of routes & terminal areas

Fuel savings 2007:

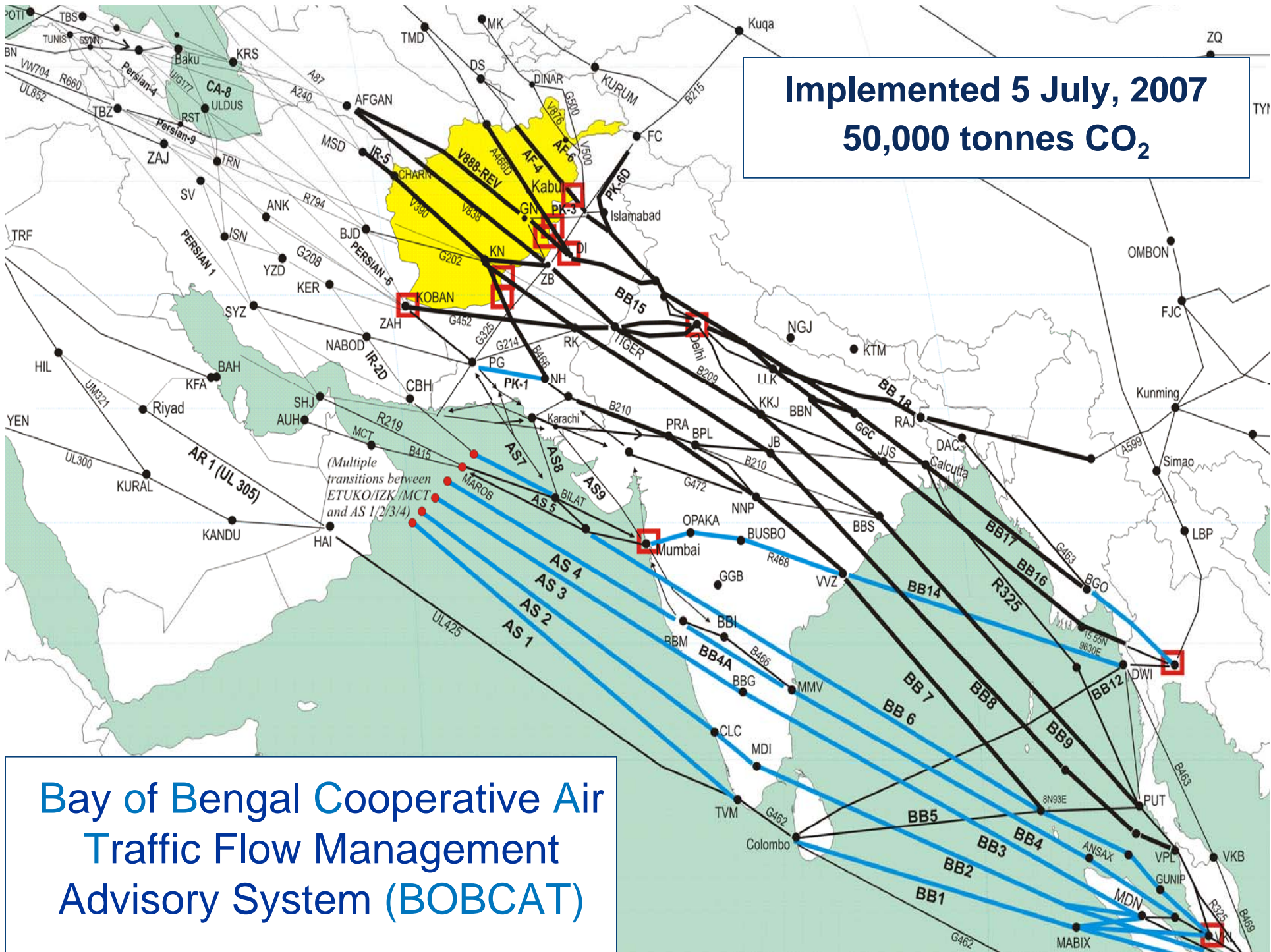
- US\$ 817 million
- 377 routes
- 80 airports
- 3.73 million tonnes CO₂



Pillar 3: Infrastructure: Government Action Needed

- Implement the global plan
- Performance-based navigation
 - Single European Sky
 - U.S. NextGen
 - Continued expansion of RVSM
 - Russia, Central Asia and Africa
- Airports
 - Arrival / departures procedures
 - Continuous Descent Approaches (CDA)
 - Focus on problem areas, e.g. JFK, LHR, Pearl River Delta
- Reduced separation in oceanic airspace



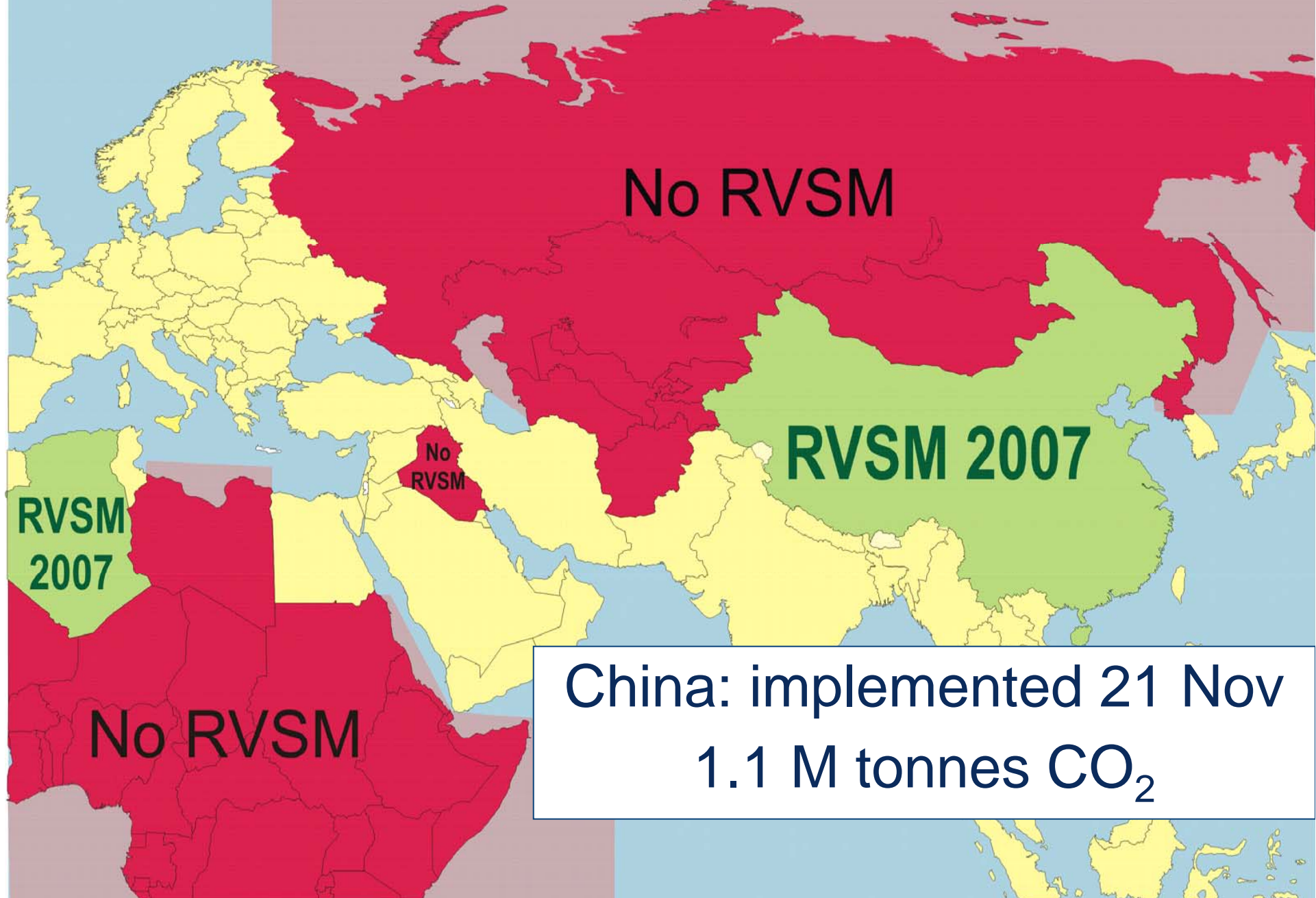


**Implemented 5 July, 2007
50,000 tonnes CO₂**

**Bay of Bengal Cooperative Air
Traffic Flow Management
Advisory System (BOBCAT)**

(Multiple transitions between ETUKO/IZK/MCT and AS 1/2/3/4)

Reduced Vertical Separation Minimums

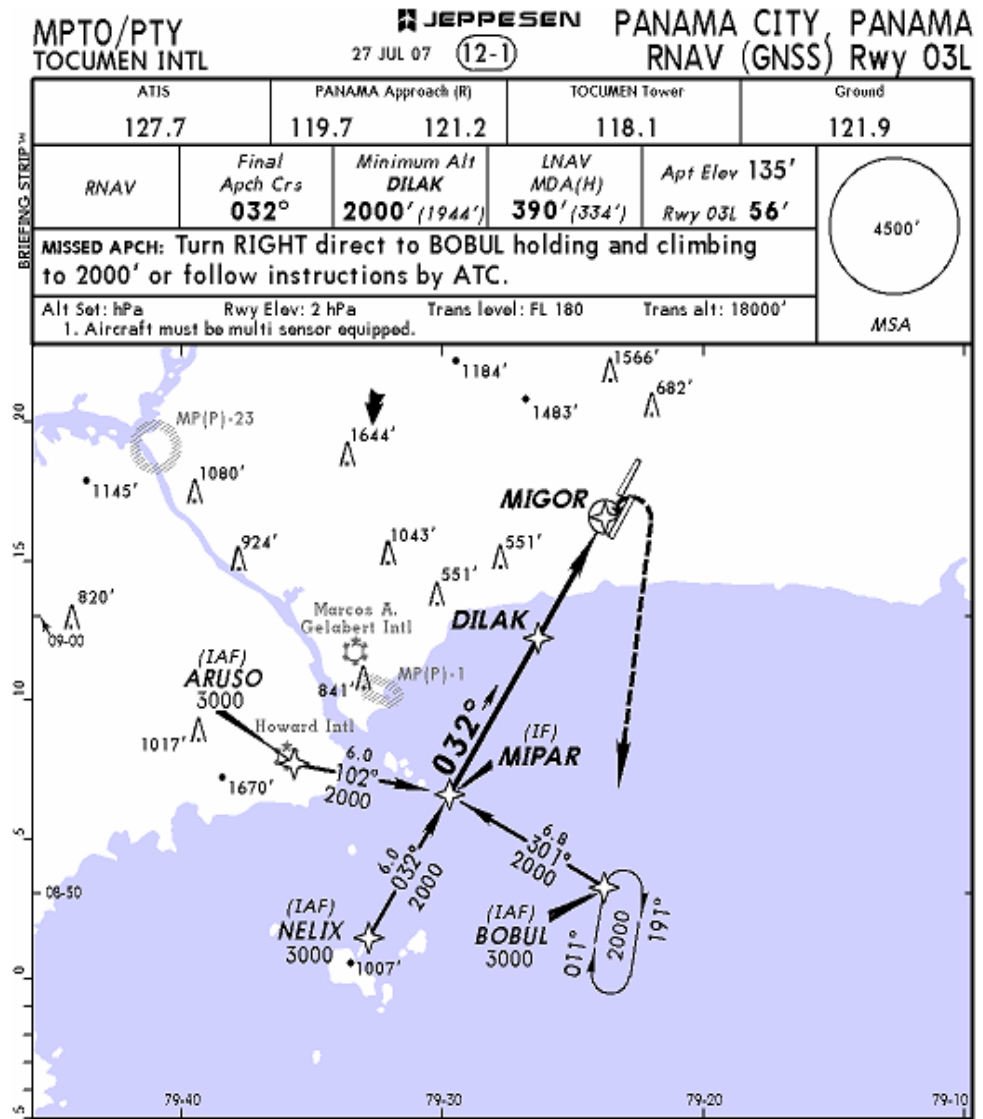


Panama approach procedures

Fuel savings 2007:

➤ US\$ 7 million

➤ 31,000 tonnes CO₂



Economic Measures

➤ **Taxes and charges do nothing for environment**

➤ **Emissions trading**

- Could play a role, if properly designed
- Must be fair, global and voluntary

➤ **Carbon offsetting programmes**

- Influence consumers' behaviour
- Numerous airline offset programmes
- Need harmonisation, certification & recognition



Carbon Offsetting

- 26+ airlines offer carbon offset programmes
- IATA developing industry level programme



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➤ Holistic approach imperative

- Encompassing all 4 pillars

➤ Clear role for governments

- Infrastructure upgrades essential

- Incentives for R&D

- Incentives for all industry players

➤ Penalties do nothing for innovation & growth

- Taxation / charges take money away from solutions

- Landing / take-off slot limits ineffective





Positive economic incentives rather than penalties

- Emissions Trading could be a useful tool BUT!
 - Domestic or regional solutions are sub-optimal
 - Auctioning is a concealed tax that robs airlines ability to invest
 - All funds collected must be re-invested in the aviation industry

- Carbon Offsets as a transition tool
 - Bridge the time gap before new technologies kick in
 - No double counting

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- An aggressive and comprehensive plan of action
- Build on the work of CAEP and other bodies
 - No need to re-invent the wheel
- Clear metrics and timelines
- Streamlined & focussed process
- Secure States' commitments to R&D and infrastructure
- Positive economic incentives over penalties
- Need for impetus to change the policy framework



URGENCY! - We have 2 to 3 years!

- Post Kyoto Framework will be set
- ICAO's last opportunity to:
 - Demonstrate leadership
 - Propose a concrete action plan to the Kyoto II / Copenhagen process

Anything is possible



Air transport was built
by turning dreams into
reality





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