



# THE EU APPROACH TO THE ENVIRONMENTAL IMPACT OF AVIATION

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# ● Overview of presentation

- Different environment challenges
- Climate change
- The EU comprehensive approach
- The EU ETS
- Impact on (African) air operators

# ● Different environment challenges

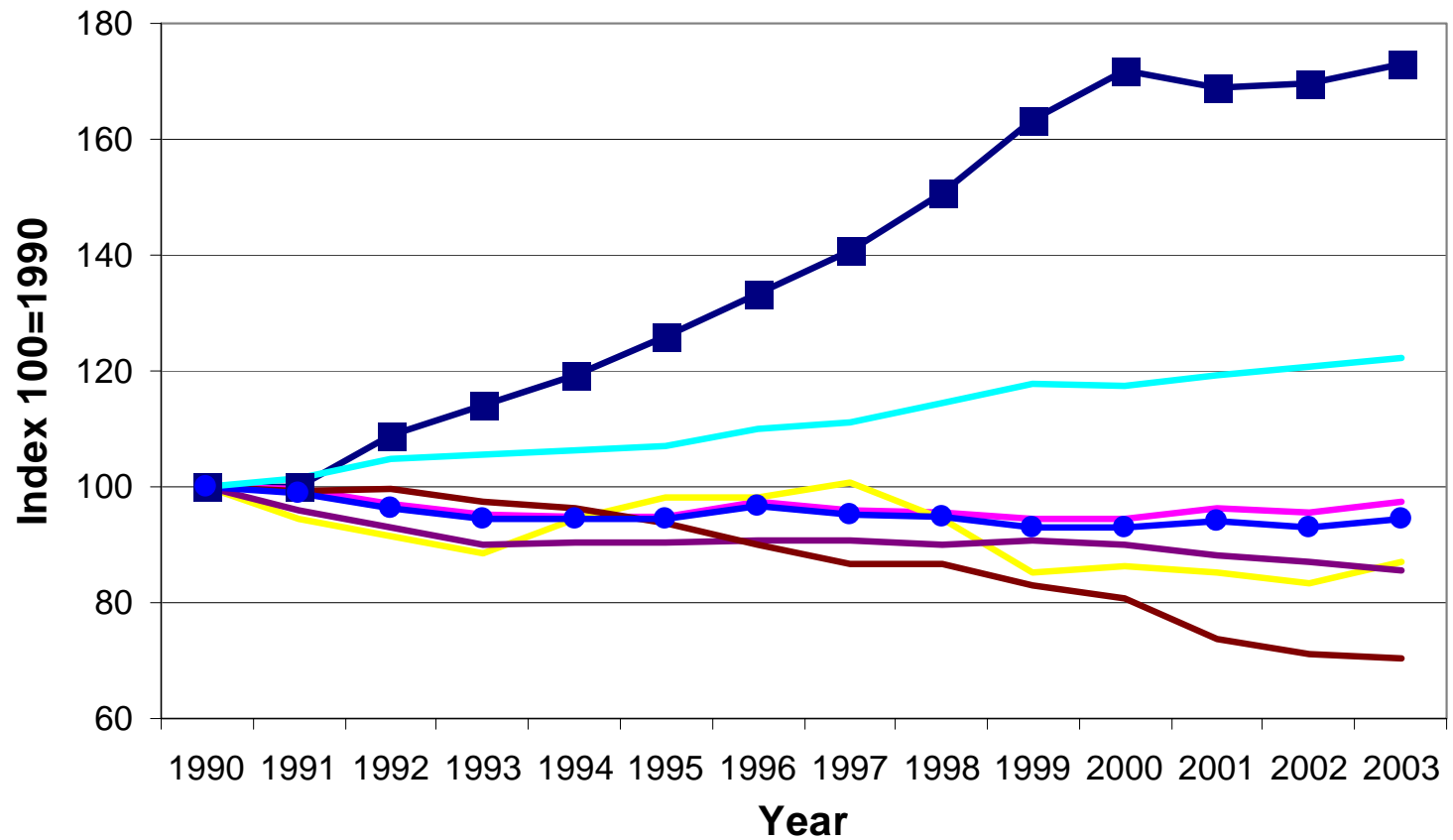
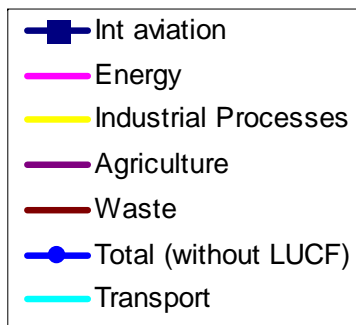
- Land planning
- Aircraft Noise
  - » Implementing ICAO “balanced approach”
- Local air quality
- Climate change
  - » CO<sub>2</sub>
  - » NO<sub>x</sub>

## ● Climate change: context

- EU objective to limit temperature increases to 2°C
- EU has assumed leadership role:
  - » Firm independent commitment to achieve at least 20% GHG emission reductions by 2020, compared to 1990 levels
  - » Commitment to cut emissions to 30% below 1990 levels by 2020 in event that other developed countries make comparable commitments under a future global agreement

# ● Why address aviation emissions?

## EU GHG emissions by sector as an index of 1990 levels





- The EU's “comprehensive approach”

1. New Standards
2. Support for Research and Development of New Technology
3. ATM Modernisation
4. Market-Based Measures

# ● Research & Development: The Clean Sky JTI

- Partnership EU-Industry
- 7 year lifespan to 2014
- €1.6bn budget - largest project ever financed by EU Framework Programmes
- Benefits
  - » Accelerate delivery of new green technologies
  - » Increase competitiveness of European industry
  - » Encourage international aviation to follow suit

# ● ATM Modernisation: Single European Sky

- Fundamental principle: to build in Europe a single airspace continuum with a single regulatory framework
- Basic facts:
  - » Fragmentation costs annually **€880m-1.4bn**
  - » Domestic flights are on average **15% more efficient** than intra-European traffic (Eurocontrol PRC)
  - » FABs could provide efficiency gains of **€400-700m** and environmental gains of **1-2%**

# ● SESAR: technological component of the SES

- **Technology** will also contribute to more environmentally friendly air transport
- Expected environmental gains per flight: **10%**
- Stricter application of environmental constraints (e.g. noise abatement procedures)
- Capacity x 3
- Safety x 10

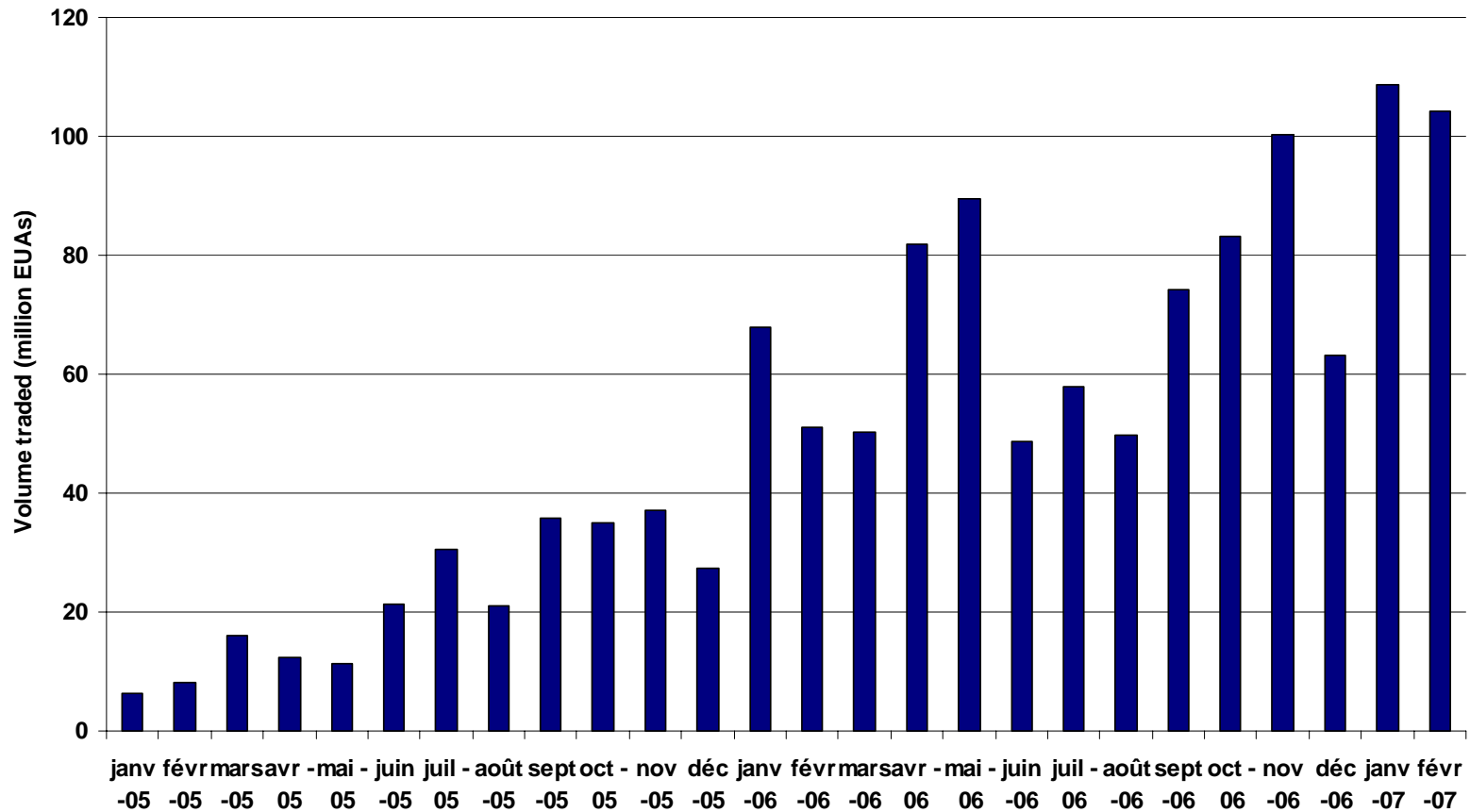
# ● The EU Emissions Trading Scheme (ETS)

- Central pillar of EU Climate Policy
- Applicable since 1 January 2005
- Covers more than 10,000 energy intensive installations
- Covers around 2 billion tonnes of CO2 emissions - 50% of EU's total emissions
- Implementation is taking place in phases with initial focus on CO2 from big industrial emitters

# ● Market-based measures: The EU Emissions Trading Scheme (ETS)

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# ● Evolution of the EU emission allowances market



# ● Why include aviation in the EU ETS ?

Emissions trading:

- enables reductions in greenhouse gas to be achieved at lowest cost
- guarantees a pre-defined environmental outcome
- has been endorsed by ICAO and is compatible with the Chicago Convention and existing bilateral air services agreements
- is the preferred option for the air transport industry
- allows the aviation sector to grow

# ● How will the scheme apply to aviation? (1)

- Covers flights to and from EU airports from 2012
- Small aircraft and certain flights excluded. In particular de minimis provision for operators:
  - » operating on average less than 2 flights per day within the scope of the scheme
  - » with total annual emissions of less than 10,000 tonnes p.a.

## ● How will the scheme apply to aviation? (2)

- An emissions cap is set for totality of these flights, based on historical emissions
  - » baseline = average annual emissions of all flights to and from EU airports in 2004-2006
  - » cap in 2012 = **97%** of baseline
  - » cap for 2013-2020 period = **95%** of baseline

## ● How will the scheme apply to aviation? (3)

- The cap is divided into allowances
  - » 85% allocated to individual operators based on benchmarking
  - » 15% allocated through auction
- Operators required to surrender allowances to cover annual emissions each year from 2012
  - » Operators emitting more than their original allocation can buy allowances on open market
  - » Those emitting less can sell excess allowances

## ● How will the scheme apply to aviation? (4)

- Each aircraft operator will be administered by one Member State
  - » For EU operator = licensing Member State
  - » For non-EU operator = Member State with greatest estimated emissions in base year
- Commission published on 11 February 2009 a preliminary list of aircraft operators specifying the administering Member State for each operator

- What is the estimated impact of aviation's inclusion in the EU ETS?

- Environmental Impact :

Compared to business as usual, the legislation will by 2020 result in a reduction of over 190 Million tonnes of CO<sub>2</sub> annually.



# ● What is the estimated impact of aviation's inclusion in the EU ETS?

## ● Economic Impact :

- » Little or no competition distortion
- » A limited increase in air ticket price - by €4.60 to €39.60 in 2020 depending on the journey length and allowance price
- » A limited impact on demand growth (forecast growth may reduce from business-as-usual levels of 142% to a minimum of 135%).



- What do aircraft operators need to do?
  - Monitoring, reporting & verification

	What?	Why?	When?
Tonne-km data	Distance (km) x Payload (tonnes)	Application for free allowances	Once before each trading period (+ application for special reserve)
Annual emissions	Fuel consumption (TJ) x Emission factor (tCO <sub>2</sub> /TJ)	Compliance	Annually

# ● Timeline for implementation

- 2 February 2009: Legislation entered into force
- Mid 2009: Commission publishes guidelines on monitoring, reporting & verification
- 2<sup>nd</sup> half 2009: Aircraft operators submit monitoring plans to competent authority
- 31 March 2011: Aircraft operators apply to competent authority for free allocation of allowances by submitting verified tonne-km data for 2010
- 30 Sept 2011: Commission calculates allocation benchmark
- 31 Dec 2011: Commission publishes allocation of free allowances
- 2012: First trading period

- What complementary actions are being pursued at global level?
  - Within ICAO (GIACC) to identify concrete actions applicable worldwide
  - Within UNFCCC to set clear targets and guidance
  - On a bilateral basis to ensure that national/regional initiatives are properly coordinated

# ● Third country provisions in draft aviation ETS Directive

- Where 3<sup>rd</sup> country adopts measures to reduce climate change impact of flights to the EU:

EU will consider options to provide for optimal interaction, e.g:

- (1) exempt arriving flights
- (2) amend the EU Directive
- (3) negotiate agreement with 3<sup>rd</sup> country

- In case of agreement on global measures, EU will consider amending Directive as necessary

## ● CONCLUSIONS

- Aviation is compelled to contribute to the fight against climate change
- Only a comprehensive policy based on operational measures (Single Sky), research (Clean Sky) and technological development (SESAR), accompanied by market-based measures (ETS) can deliver the environmental improvements required
- The major challenge now is to agree on a common approach with international partners



For more information :

[http://ec.europa.eu/environment/climat/aviation\\_en.htm](http://ec.europa.eu/environment/climat/aviation_en.htm)

and

[http://ec.europa.eu/transport/air\\_portal/environment/index\\_en.htm](http://ec.europa.eu/transport/air_portal/environment/index_en.htm)