Sustainable tourism

Is aviation on collision with the environment ?

Air Berlin Group

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Agenda

- Profile Air Berlin Group
- The dimensions of sustainability
- Four pillars in aviation`s environment strategy
- Today´s economic situation of the airline industry
- Conclusion

Corporate Profile Air Berlin Group

- 134 Aircraft B737-700/800 A319/320/321/330
- 8360 Employees incl. Belair and LTU
- 28,2 Mio Passengers in 2007 (incl Belair and LTU)
- SLF 77,3 % in 2007
- 2004 acquisition of 24 % of NIKI, Austria
- August 2006 Integration of dba, Germany
- March 2007 acquisition of 49 % of Belair , Switzerland
- August 2007 Integration of LTU

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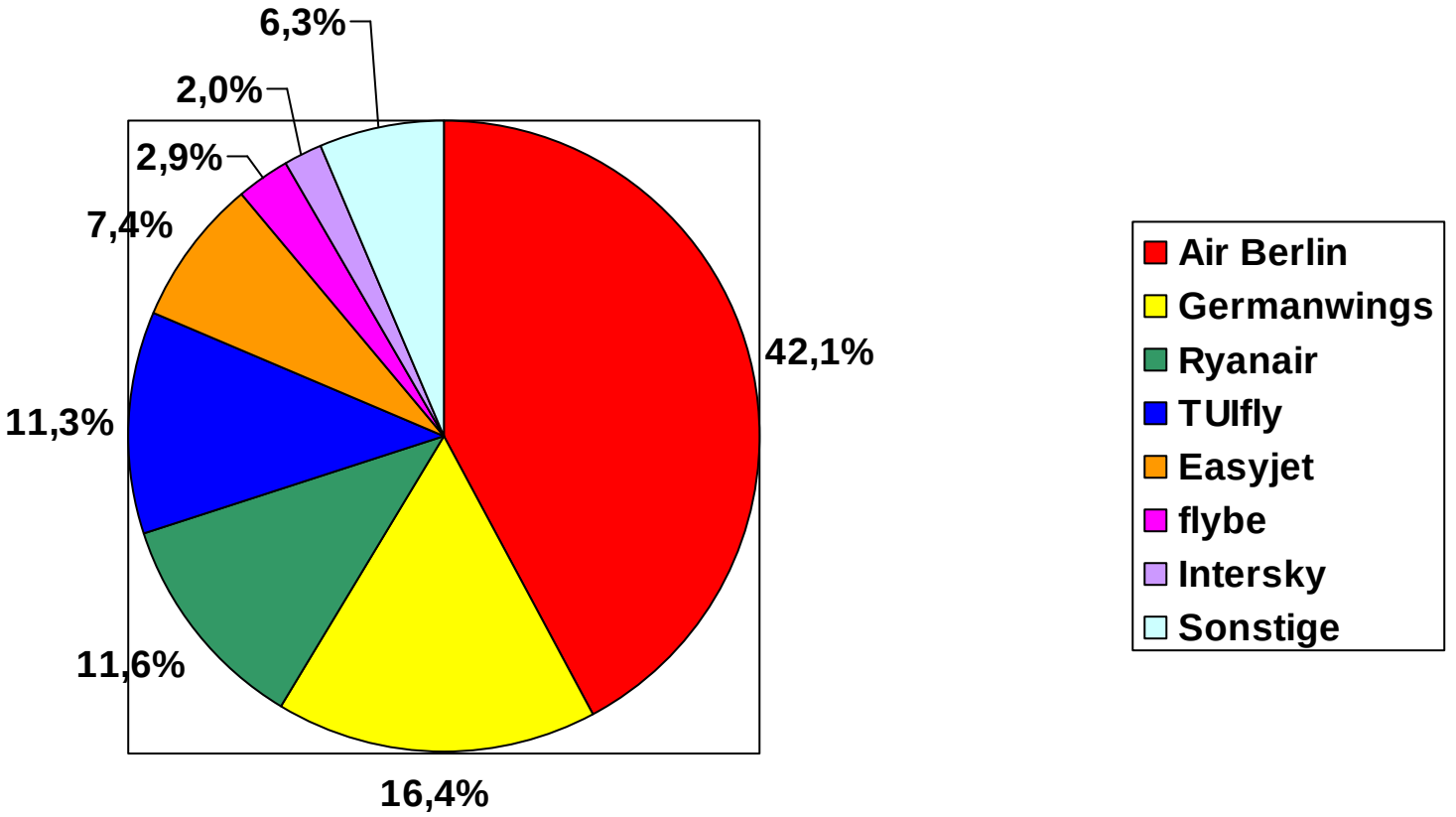
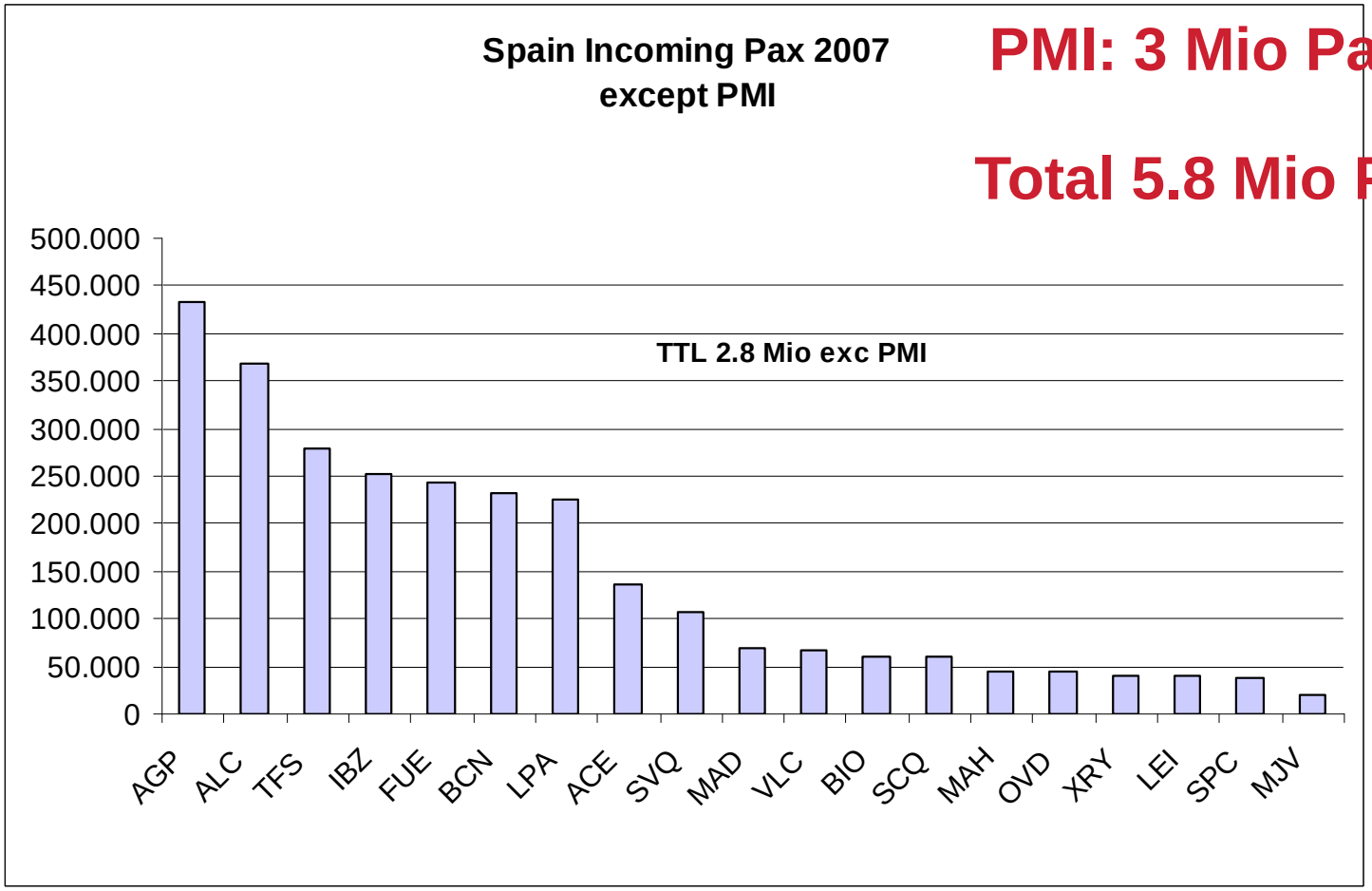
Market Shares LCC in Germany in January 2008



Source: DLR/ADV Low Cost Monitor 1/2008

AB Passengers in Spanish market 2007



PMI: 3 Mio Pax

Total 5.8 Mio Pax

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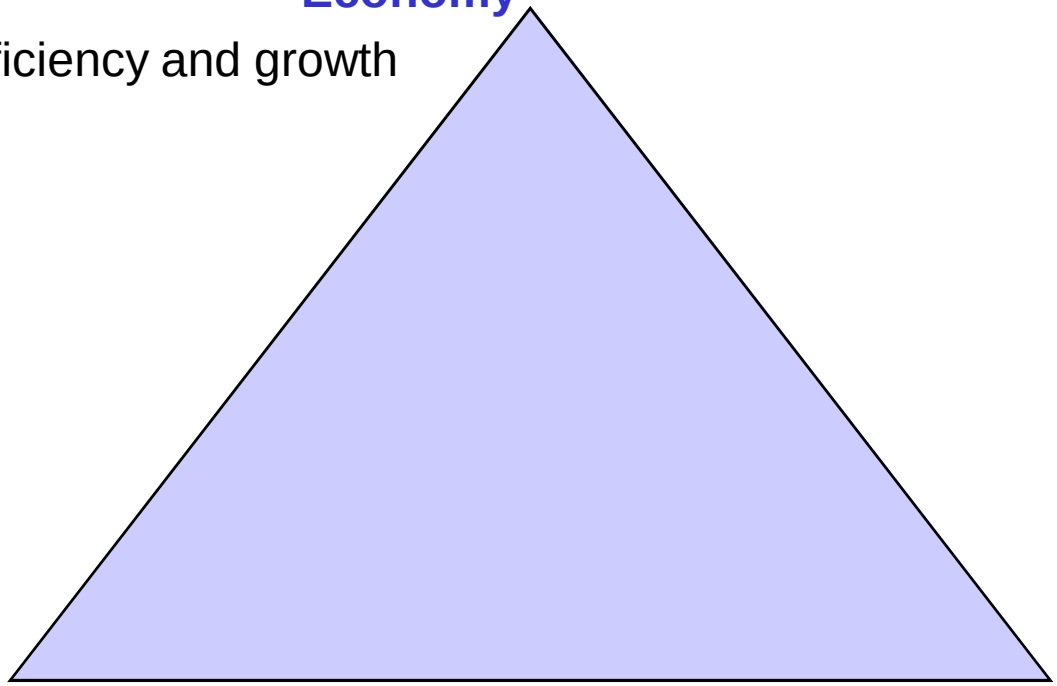
The 3 dimensions of sustainability

3 Dimensions of Sustainability

Economy

Economic efficiency and growth



Society

Solidarity and equity

Environment

Reduce environmental impact at a global, regional and local scale

The economic dimension of the aviation industry

(direct, indirect, and induced impacts)

- 32 mio jobs worldwide
- Global economic impact est. ú 2400 billion GDP
- 4000 jobs per 1 mio passengers at Europe´s airports

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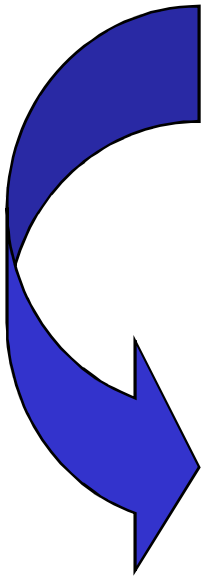
The aviation industry in Europe



- 4% of the Community GDP
- 4% of the total labour force
- 8 million jobs
- ú 220 contribution to GDP

But with the related sectors: (catalytic effects)

- 11% of the Community GDP
- 12% of the total labour force
- 24 million jobs
- ú 820 billion GDP

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The economic dimension of tourism

- Contribution of ú 1.200 billion to GDP in 2007
- 79 million direct jobs worldwide
- Over 40 % of international tourists are travelling by air
- daily ú 700 mio turnover in tourism industry in Europe
- Connecting regional airports to metropolitan areas creates economical security for many people

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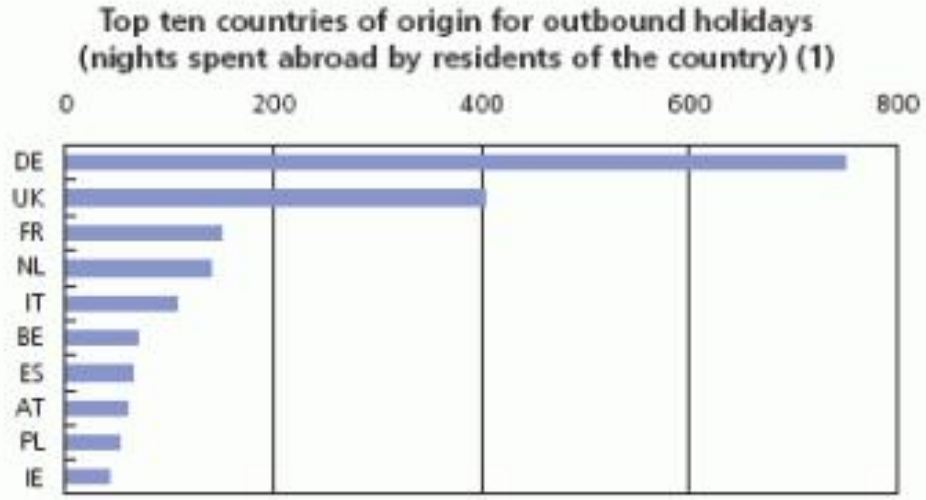
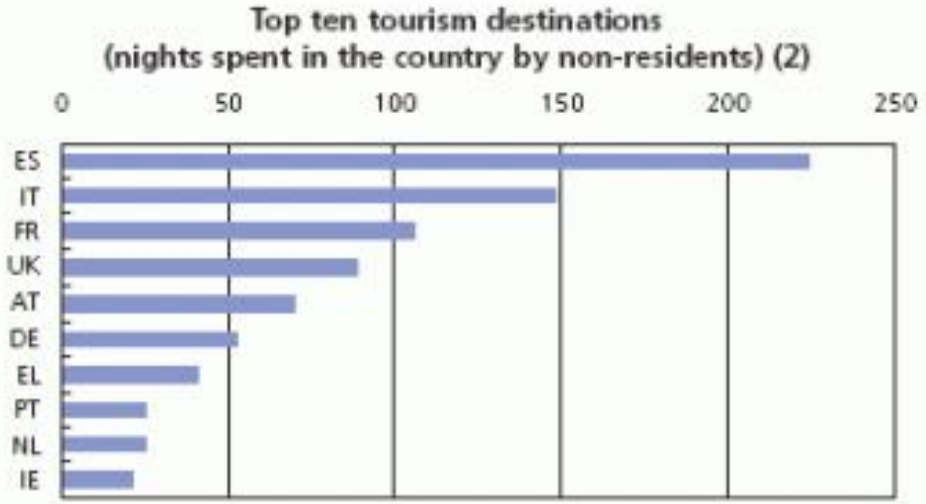
Nights spent abroad





(1) Denmark, Greece, Spain, Italy, Hungary, Portugal and Slovenia: data for 2005; Malta and Sweden: not available.
(2) Denmark, Greece, Italy, Hungary, Netherlands and Portugal: data for 2005.
Source: Eurostat (tour_occ_ninmat)

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The social dimension

- Sustainable development, by facilitating tourism and trade
  - Generates economic growth, provides jobs, improves living standards

- Air transport connects people: Visit family and friends, commuter shuttle between home and work at affordable price

- Air transport broadens people´s leisure and cultural experiences through a wide choice of holiday destinations

The environmental dimension

- Air transport´s contribution to climate change represents 2 % of CO^2 emissions and could be 3 % by 2050
- Aircraft today are 70 % more fuel efficient than 40 years ago
- 25 million tons of CO^2 have been saved in 2006-2007 through shortening of routes, improved ATM procedures and other operational savings
- A further 25 % fuel efficiency gain is targeted for 2020
- Noise: Today aircraft are 20 decibels (dB) quieter than 40 years ago.
  - Noise reduction of 75 %

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How to achieve the Emission Goals ?

Four Pillar Strategy for Reducing Emissions

❶
Operational Measures

Optimization of operational procedures on ground and in the air

- Fuel Conservation Program

❷
Technical progress

Technological Innovation i.e. in Follow. areas

- Aircraft engines
- Aerodynamic
- Materials

❸
More efficient Infrastructure

Elimination of Bottlenecks and Infrastructural Barriers

- Airports
- Air Traffic Management
- Single European Sky

❹
Economical Regulation

Regulatory Measures for Reducing Aircraft Emissions

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1. Operational measures

- ➔ **Extra Fuel**
- ➔ **Econ Profile**
- ➔ **Minimum Distance**
- ➔ **Use of APU on ground**
- ➔ **Engine ground operations**

FUEL CONSERVATION PROGRAM

EXTRA FUEL

Example:	400 kgs Extra Fuel
Number of flights:	50%
Add. consumption:	**2,5 Mio USD/a**

One Mio USD is the equivalent of 760 to Fuel or 2.400 to CO^2 (@ 1300 USD / to)

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FUEL CONSERVATION PROGRAM

ECON PROFILE

Example:	Cruise 2.000ft below Optimum Level
Number of flights:	25%
Add. consumption:	**5,1 Mio USD/a**

Optimum Flight Level

Even if the planned flight level indicated on the OFP is lower, flight crews shall request to climb as close as possible to the optimum flight level (calculated by the flight management system).
The actual wind situation at different cruising levels should be considered. All available wind information should be provided to the applicable flight management system.

FUEL CONSERVATION PROGRAM

USE OF APU ON GROUND

Example:	APU on 20min prior engine starts
Add. consumption:	**7,6 Mio USD/a**

Fuel Economy Policy (on Ground)

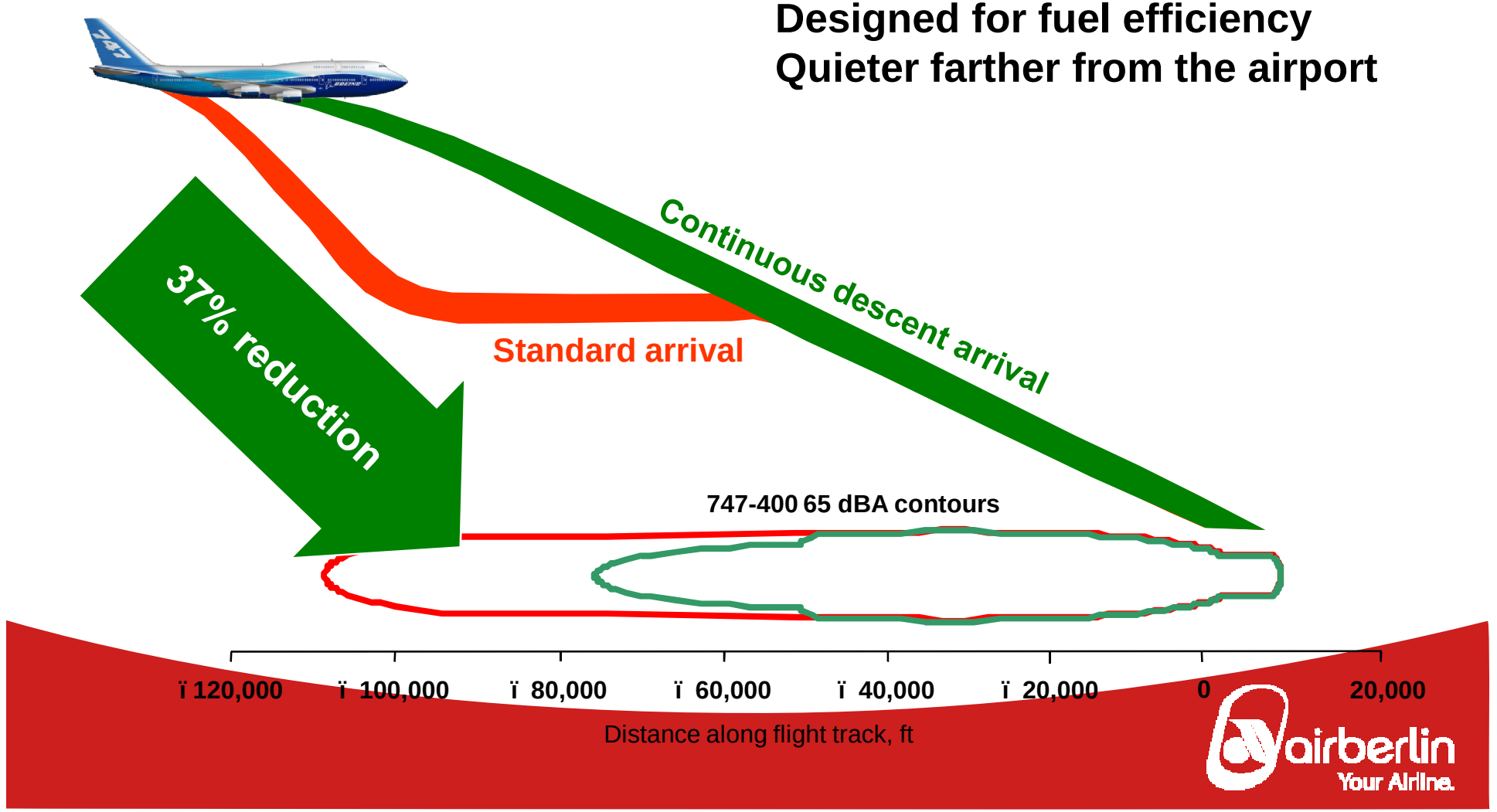
During turnaround the APU shall only be used at temperatures below +10°C and above +25°C.

Even with APU in operation, external power (if provided as ground service) shall be used for electrical supply to lower EGT and fuel consumption.

The APU including air conditioning should be used during boarding (if permitted by aerodrome regulations), except if ground preconditioned air is available.

Quiet Procedure Development

Continuous Descent Arrival



2. Technological Progress

- JTI Clean Sky (JTI = Joint Technology Initiative)
  - 2008 ï 2014
  - Budget ú 1.6 billion (50 % EU, 50 % Industry)
  - Goal: Implementation of ACARE
  - Biggest European research programme

- ACARE (Advisory Council For Aeronautics Research in Europe)
  - Reduction in 2020*
    - CO^2 emissions and fuel burn by 50 %
    - Environmental noise by 50 %
    - NOx (nitrogen oxides) by 80 %

* Based on year 2000

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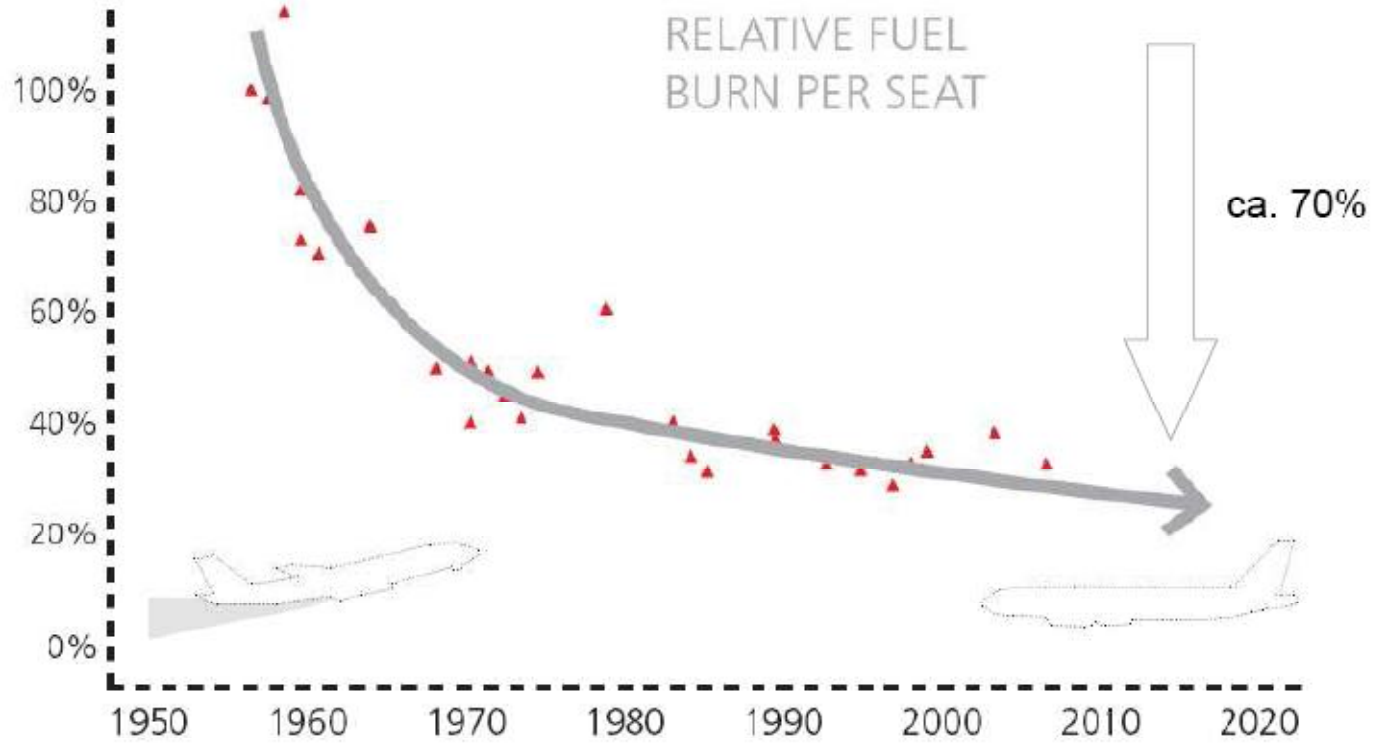
Reduction of fuel burn



Quelle: Airbus

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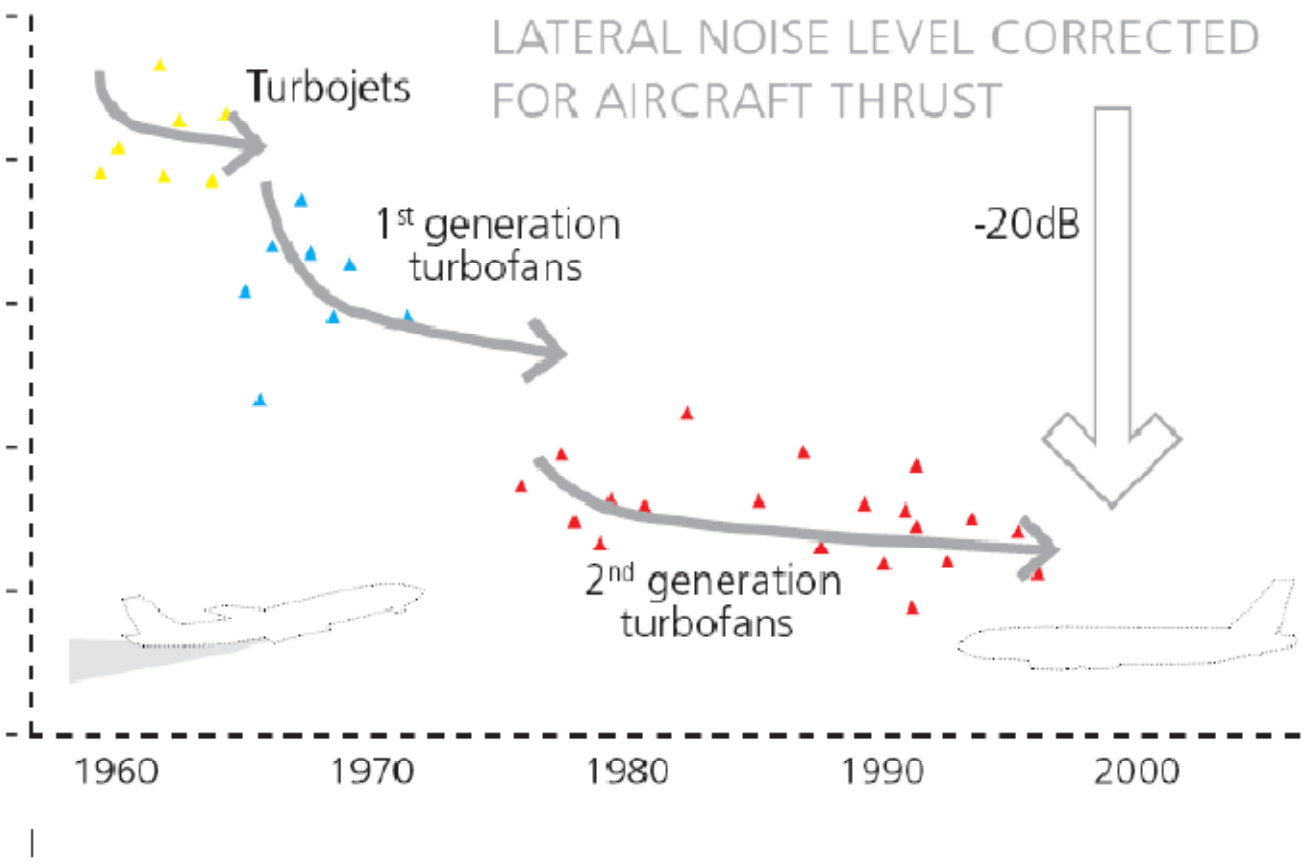
Noise reduction



Quelle: Airbus

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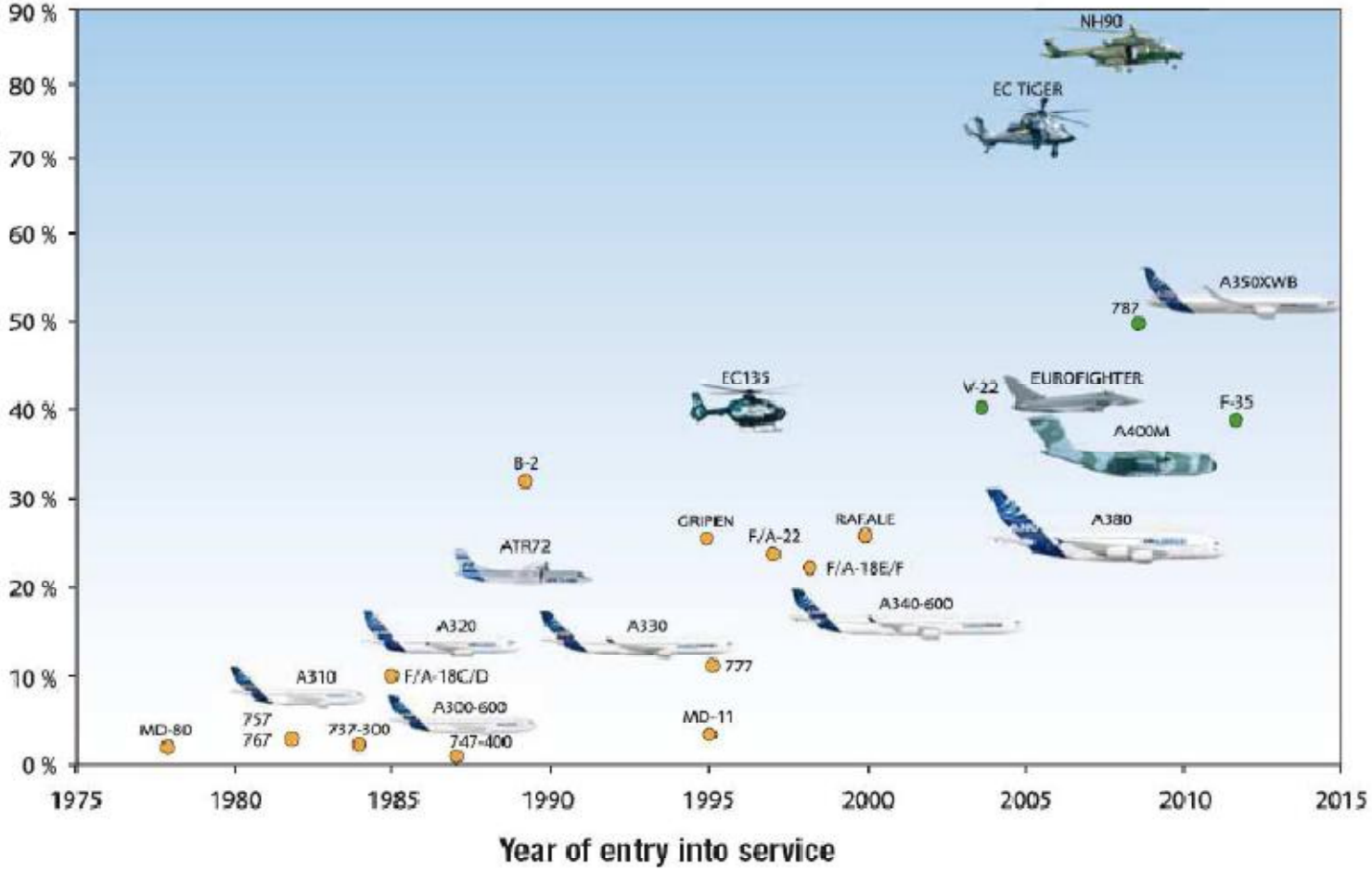
Weight reduction

Share of new carbon fibre materials



Quelle: PlanetAeroSpace 3/ 2007

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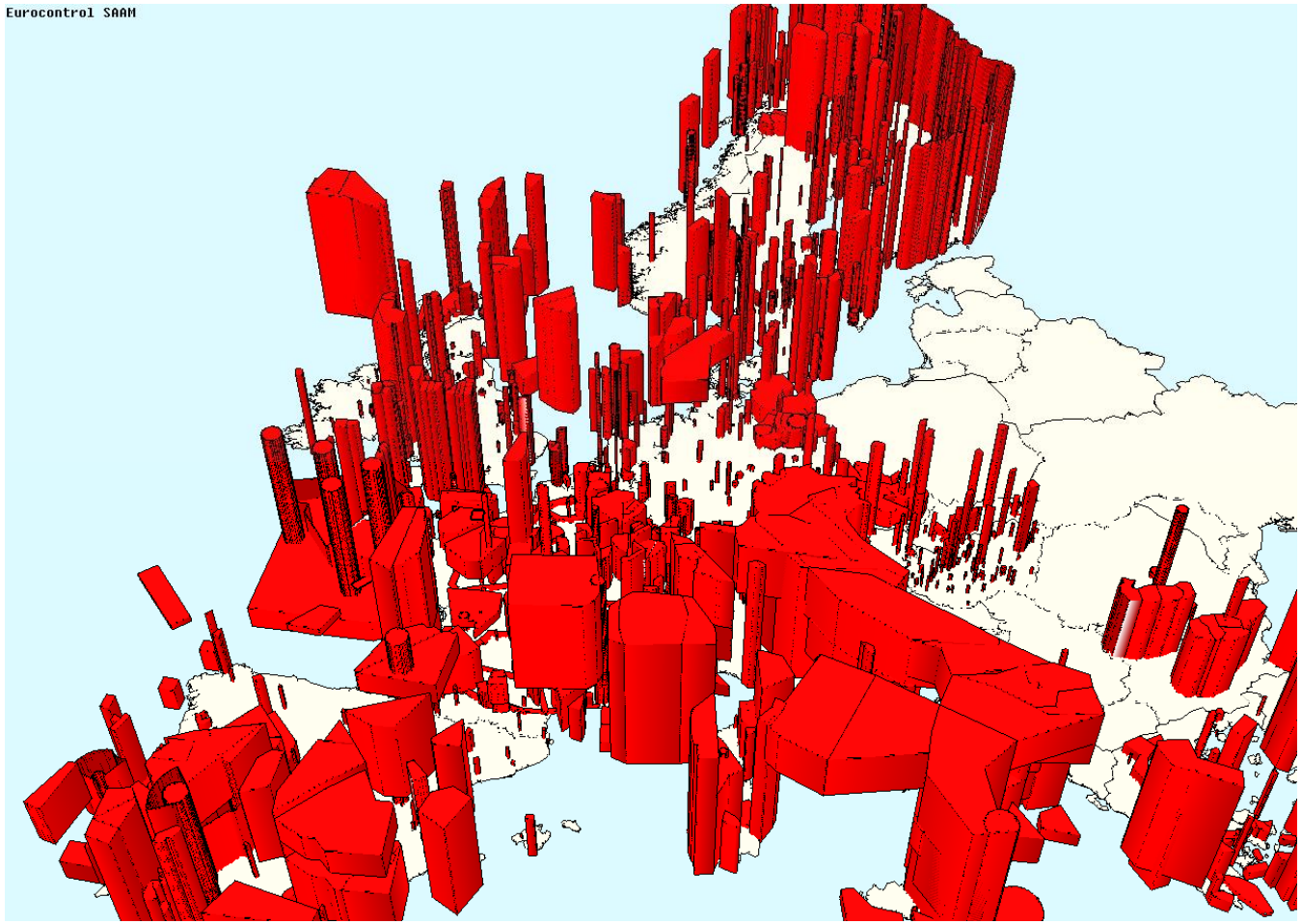
3. More efficient infrastructure

- The implementation of the "Single European Sky" (SES) is estimated to reduce emissions by 12 %

- Most important fuel saving opportunities come from ATM efficiencies :
  - more direct routings
  - use of more efficient conditions such as optimum altitude and speed
  - e.g. CDAs, RVSM

- Reduce congestion at airports by improved infrastructure and operational procedures e.g. CDM, Gate to gate operations

Single European Sky ?



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4. Economical regulation ETS

What is Emissions Trading

- the total amount of emissions would be capped
- allowances in the form of permits could be bought and sold to meet emission reduction objectives
- open trading allows trading across sectors

Position of airline industry

- The Aviation Industry accepts that it is desirable to reduce the environmental impacts of aviation
- The Industry does not object, in principle, to bringing aviation into an open emissions trading scheme
- An emissions trading system for aviation should not introduce competitive distortions between air carriers or reduce access to air services

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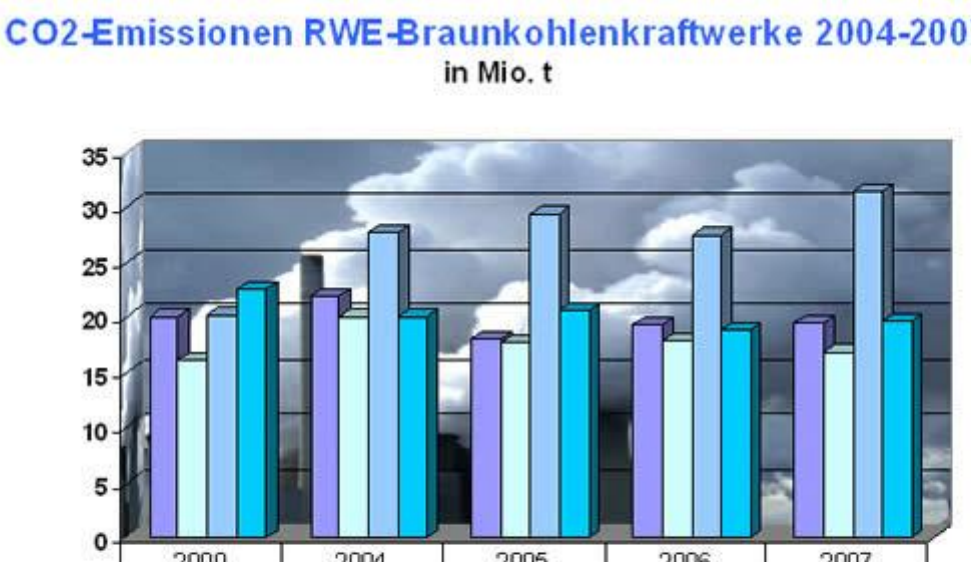
CO^2 Emissions of Brown Coal Power plants



	2000	2004	2005	2006	2007
Frimmersdorf	20,1	21,9	18	19,3	19,6
Neurath	16,2	20,1	17,6	17,9	16,8
Niederaußem	20,2	27,6	29,4	27,4	31,3
Weisweiler	22,6	20	20,6	18,8	19,7

BUND

*Quelle:
Emissionskataster
NRW, DEHSt

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Why energy politics influences airline industry

- German Government Coalition Decided Nuclear Phase out and Construction of New Coal Power plants
- CO^2 Emission of one typical Coal Power plant is 20.0 Mio t CO^2 p.a.
- A single aisle aircraft produces ca 21.000 to CO^2 p.a.

  2.5 to Fuel/h

  2685 h Utilization p.a. (223 hrs per month)

  3.128 Conversion factor from Fuel to CO^2

  2.5 to * 2685 * 3.128 = 21.000 to CO^2 per annum

  20.0 Mio to / 21.000 to = 950 Aircraft

One single Brown Coal Power plant is emitting the CO^2-equivalent of 950 medium range aircraft (A320 / B737-800)

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The Emission Trading Scheme ETS

- Germany´s decision in favour of the new built Coal Power plants will create high demand for Carbon Emission Certificates and raise it´s price

- Financially weakened airlines will have to buy high-priced emission certificates, which will affect the whole European Aviation Industry

- The message is **not** Ăwe are the good guysñ, the others are worse

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The economic situation of the airline industry

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Recent economic development in the aviation industry

- Fuel price at all-time high of 139 $ per Barrel
- Doubling of fuel price within 1 year
- One Dollar hike in fuel price, increases Air Berlin´s Fuel Bill by 1.3 Mio USD per year
- Worldwide, airlines are grounding aircraft
- Since January 2008 , 24 airlines went out of business
- Easy Jet will close Dortmund Base
- US Airlines are cutting up to 22.000 jobs
- High energy prices are slowing down whole economy, especially energy intense industry
- Additional national taxes I.E. APD UK, France, Netherlands, NOx Taxes in Germany

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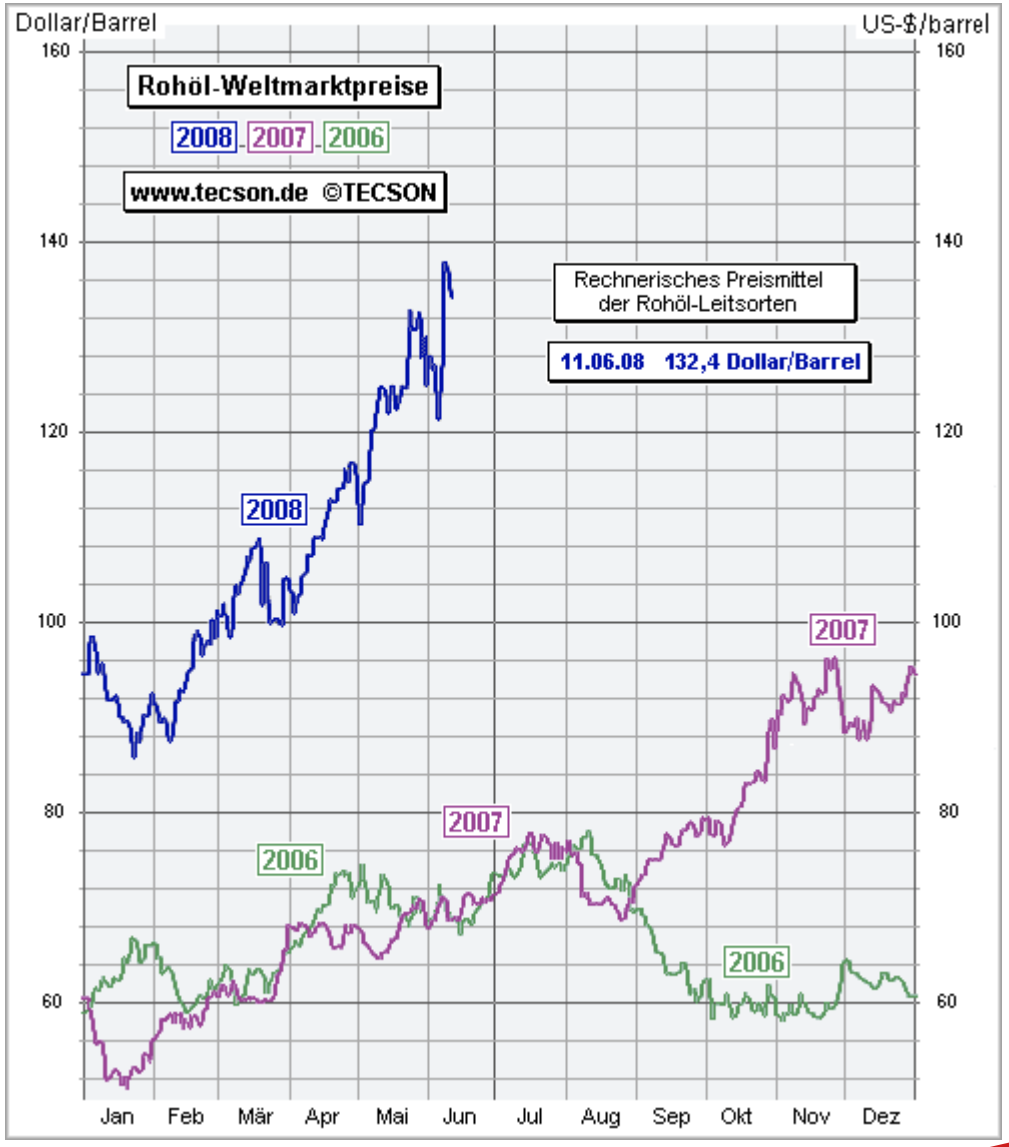
Fuel price Development

Jun 2007 : 70 $

Jun 2008 : 132 $



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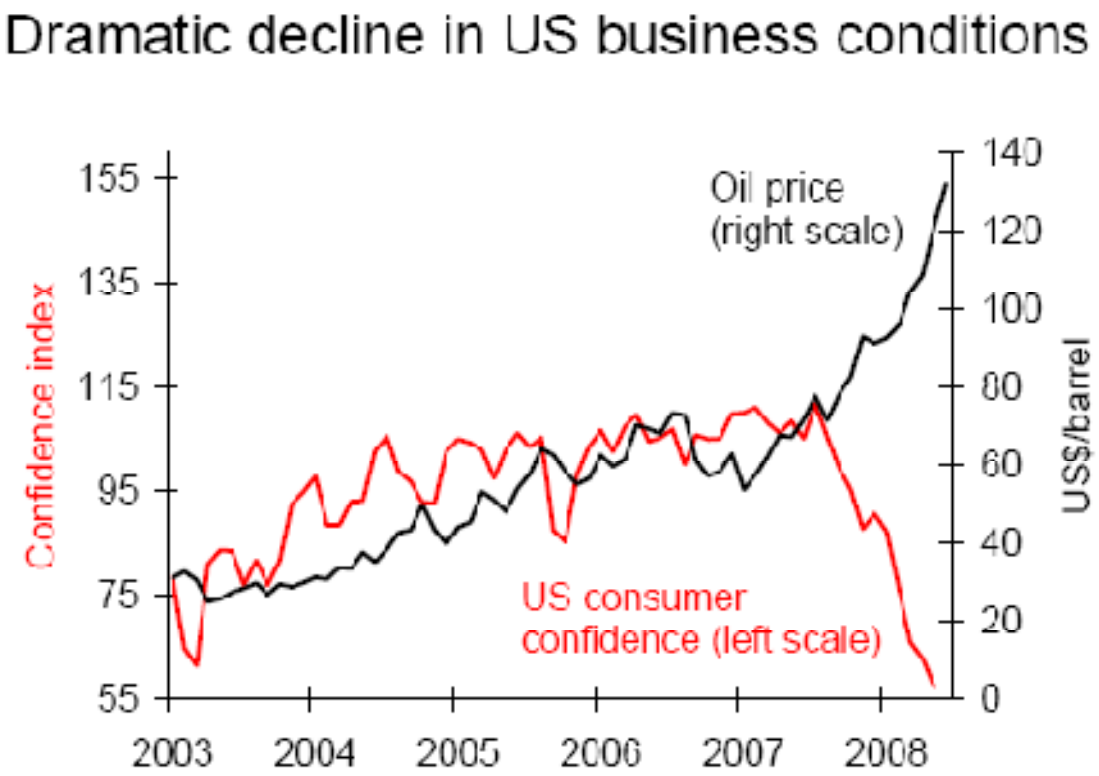
Oil price and consumer confidence



Source: IATA

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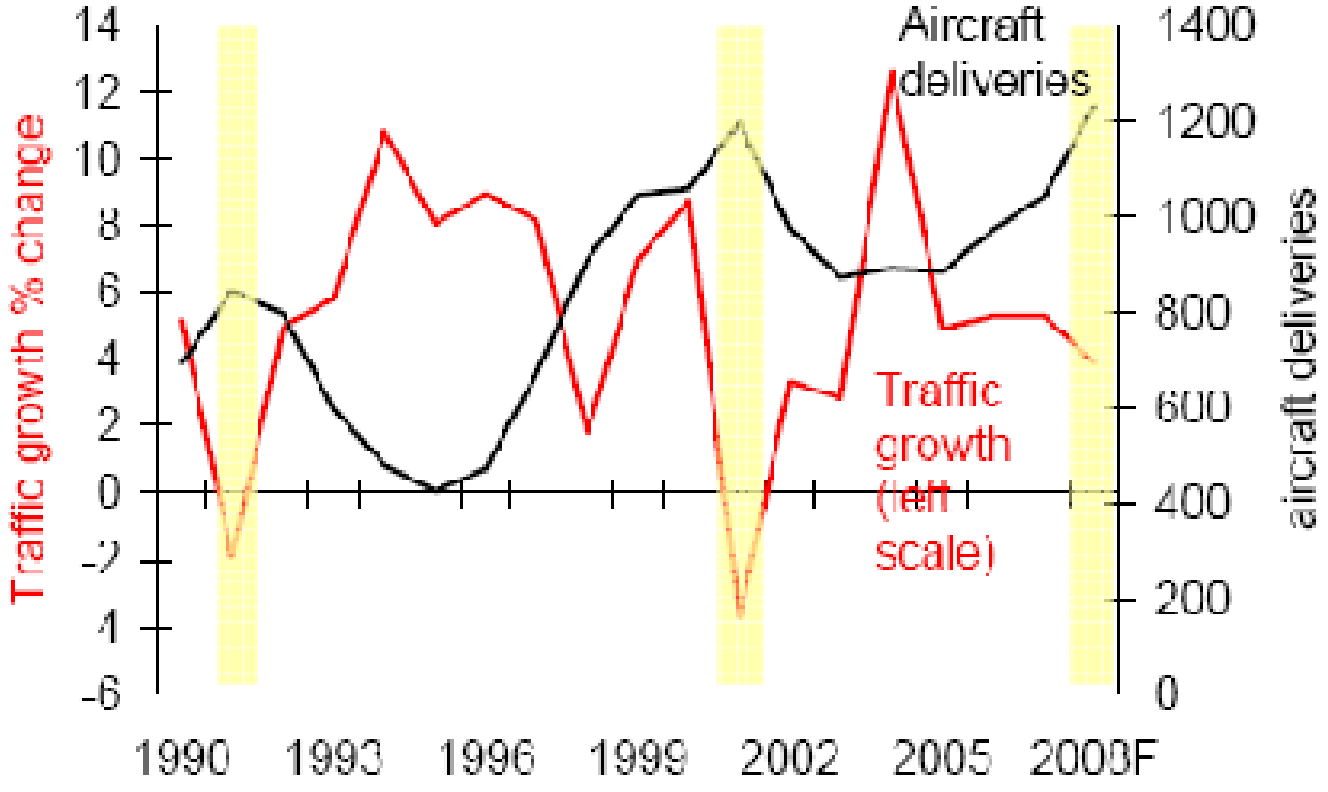
Excess capacity becoming a problem again



Source: IATA

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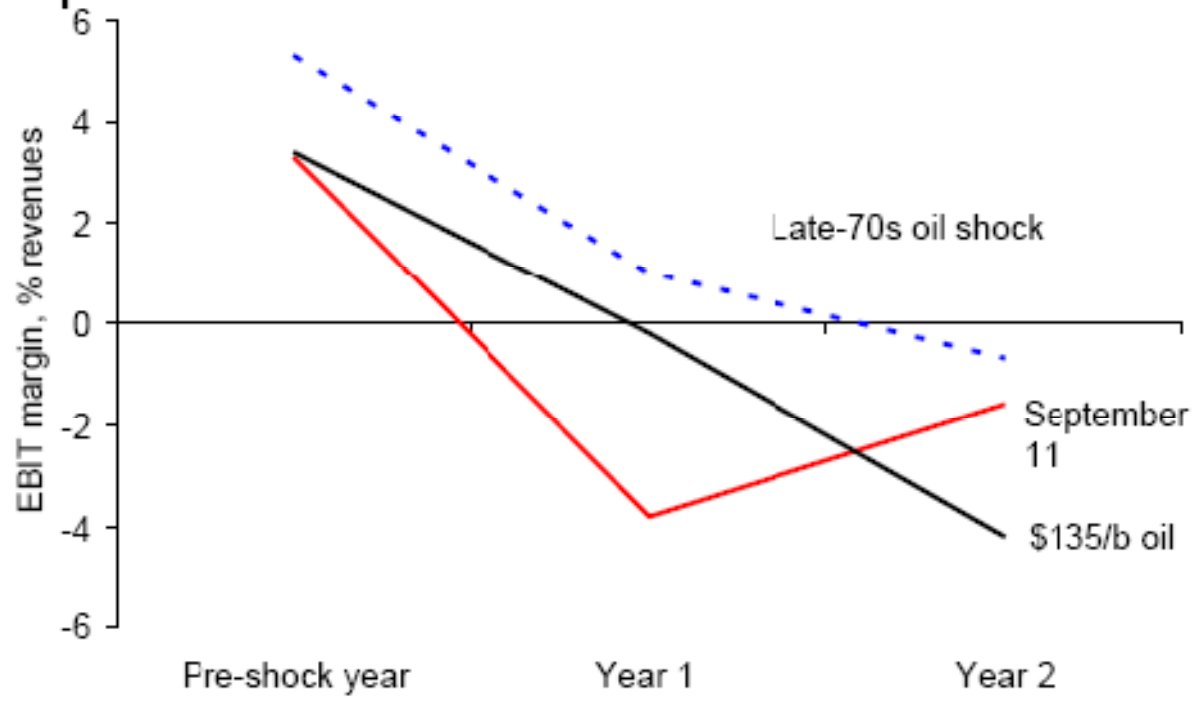
If sustained $135/b oil similar in margin impact to late-1970s oil shock



Source: IATA

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Conclusion

- It needs common international effort of all industry sectors to fight against global warming
- Politicians must use good judgement, to keep the economical ï environmental balance
- The airline- and tourism industry must adapt it´s business models to the hiking fuel price and environmental challenges

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Thank you very much for your kind attention.

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