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# Outlook on Climate Change and Aviation



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# Climate Change and Aviation – Why the sector should mobilize now

- **Why Aviation should take care about Climate Change**
- How to deal with the COP15 failure
- How to crack the fundamental issues
- How Germany may take advantage

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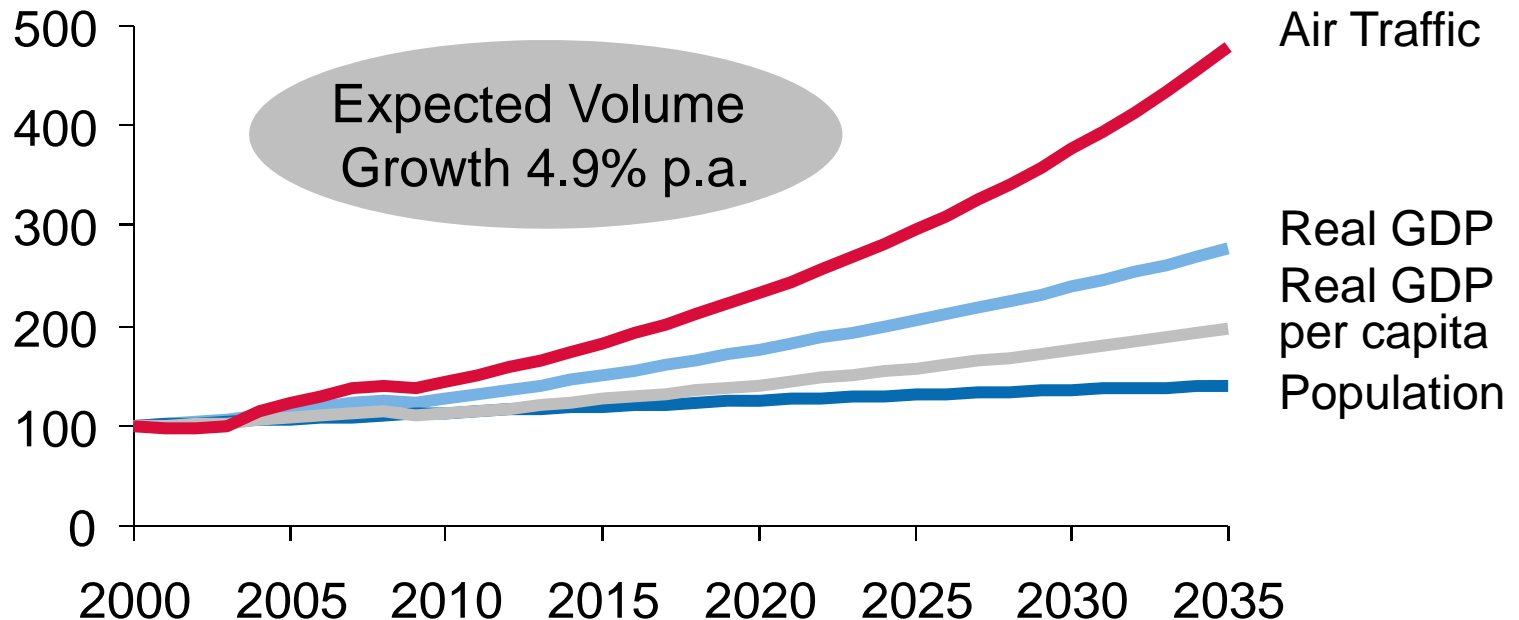
# A strong record of improvement, however growing concerns

- + A remarkable history of AC/engine technology improvement (e.g., A380)
- + Major infrastructure expansion
- + New smart airspace navigation technology (e.g., Nextgen)
- + Fuel efficiency – a clear operational mandate
- Continuing strong long term demand growth
- No major AC/engine technology innovation expected
- Long AC lifecycle
- Growing Airport/Airspace congestion
- Increasing public pressure to address “carbon neutrality” proactively

# The global air passenger volume will continue to grow

## Long-Term Development of Global Mobility

Forecast 2000-2035, Index 2000 = 100%

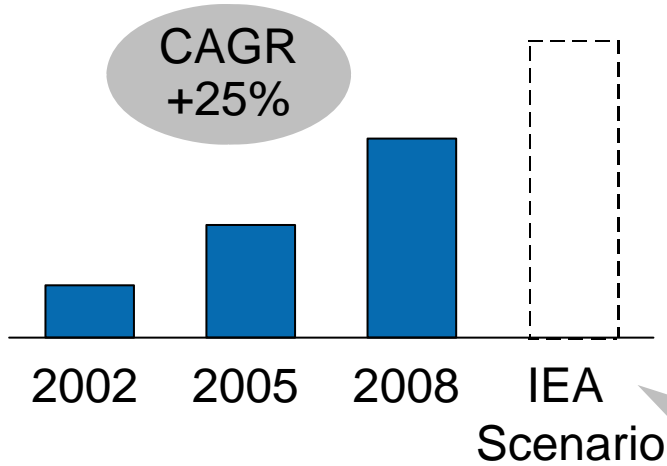


Note: Real GDP based on GDP in 2000 prices; aviation transport volume based on passenger kilometers  
Source: IMF, UN, IATA/ICAO/Boeing, Global Insight, Booz & Company analysis

# Fuel has become a major strategic risk factor

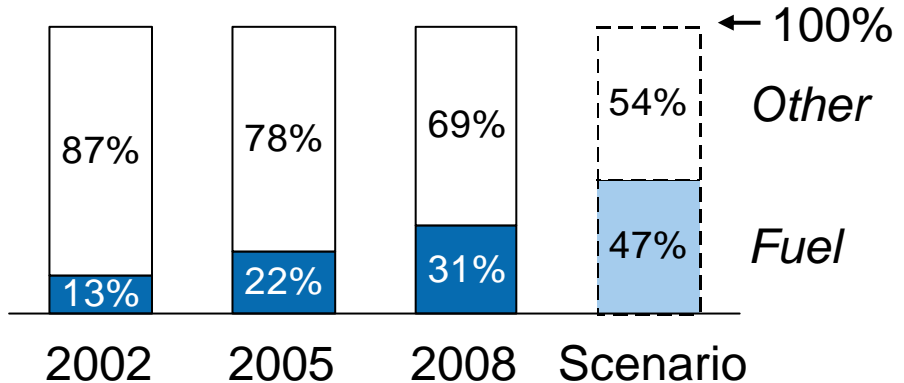
## Oil Price Development

WTI, Annual Average Spot Price  
in USD per Barrel



## Fuel Expenses Relative to Total Airline Operating Expenses

(%)

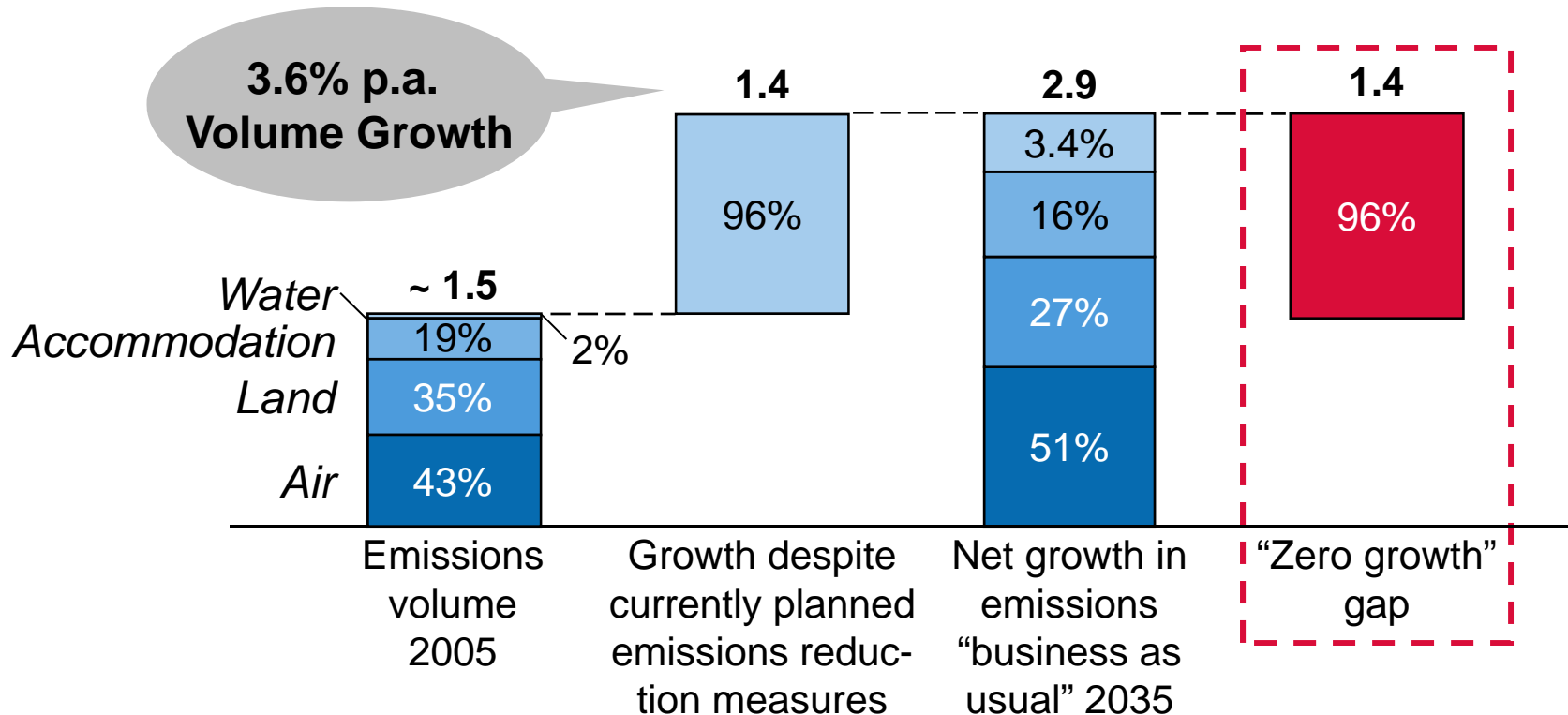


*“If we see a tightness of the markets, people in the street will see it in terms of higher prices, much higher than we see now.”*  
Dr. Fatih Birol, Chief economist IEA, August 2009

Note: Oil price refers to WTI Cushing spot price in nominal USD  
Source: Bloomberg, IATA

# The travel & aviation sector must learn to think “outside the box”

## WEF and Booz & Company Travel Emissions Forecast Gigatonnes CO<sub>2</sub> 2005-2035



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# IATA got the message and set ambitious targets

- +1.5% p.a. average efficiency improvement to 2020
- Carbon Neutral Growth from 2020
- Absolute reduction of 50% of emissions by 2050 compared to 2005 levels



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# COP 15 – dreams and delusions

## Achievements

- + Accord that commits nations to take certain steps, e.g.,
  - + Mitigation fund for development countries (\$100 Bn p.a. till 2020) managed to some extent by a Copenhagen Green Fund
  - + International Monitoring and Accountability system

## Shortcomings

- No binding agreement
- No deadline for legally binding commitments
- No decision on global sector approach for aviation

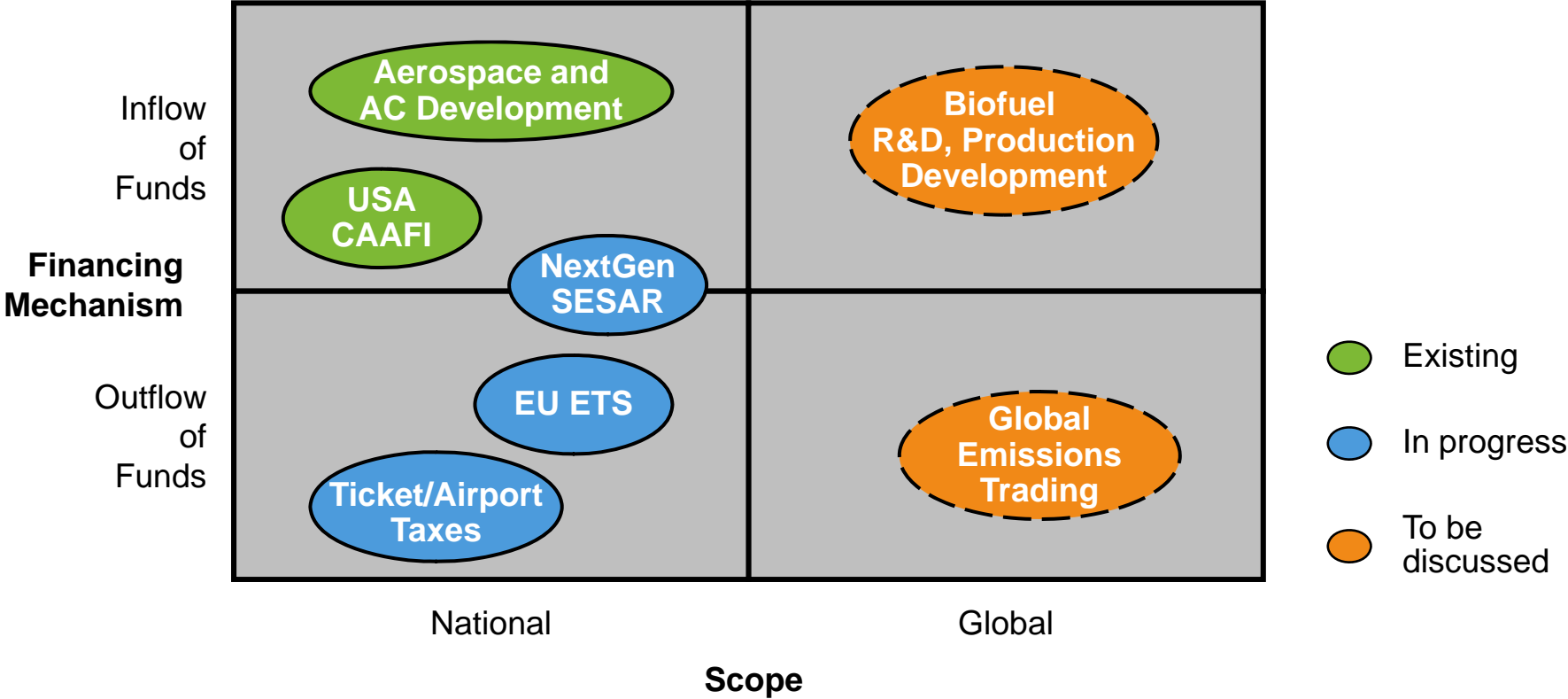
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# Obvious Implications

- COP15 alleviated external pressure on the aviation industry
- Lack of global framework (for at least some time) means that initiative needs to be taken by sector and/or national regulation
- Risk of insufficient and uncoordinated action with unintended consequences

# A global Aviation sector framework is missing

## Examples for Sustainable Initiatives



Source: Booz & Company Framework

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# Emission Trading Schemes – a valuable approach but risk of some unintended consequences

## Obvious Positive Impact

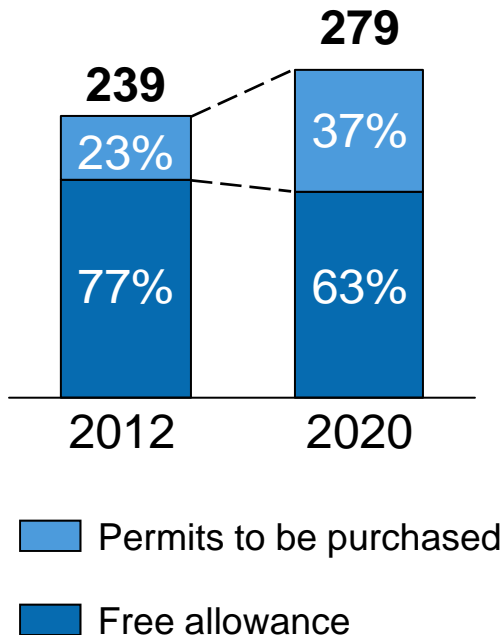
- + Penalizes “below average” players, e.g., holders of old, inefficient AC
- + Accelerates new, modern AC ordering
- + A market mechanism that allows trading of liabilities

## However

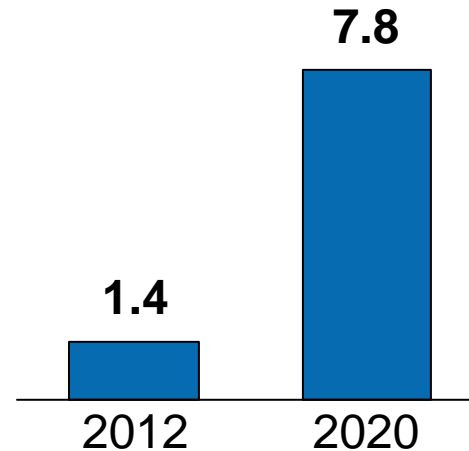
- Unexpected additional cost burden may overcharge the financial capability of the sector
- National/regional ETS will penalize local players

# Example: European ETS

**CO<sup>2</sup> Emissions from All Flights to/from EU25**  
(MtCO<sup>2</sup>)



**Additional Cost Burden to Aviation Sector**  
(€ Bn)



**Prices of CO<sup>2</sup> certificate rise from €25 (2012) to €75 (2020) per ton**

**Up to 3-4% margin impact 2020**

# Aviation Biofuel – the new hot technology to reach carbon neutral growth



**2008/2009  
Discovery Phase**

- First test flights (ANZ; CON; JAL)
- Better agro space yield
- IATA commitment
- Local consortia (e.g., CAAFI)

**2010  
First Major  
Commitments**

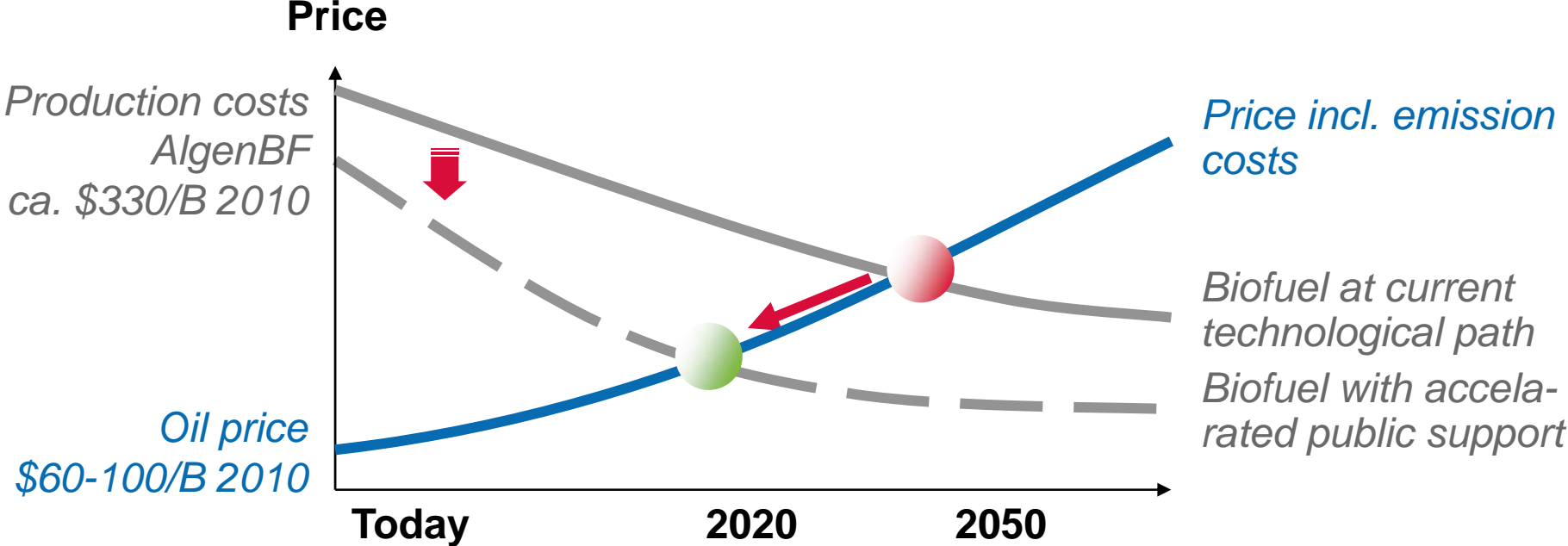
- ExxonMobile/SGL
- Qatar/Airbus
- Abu Dhabi/Masdar/Boeing
- BA/Solena
- AltAir Fuels/12 Airlines JV

**2012  
ICAO  
Certification**

**2020  
IATA  
10% Biofuel  
Injection Target**

**2050  
IATA  
Emissions 50%  
below 2005 Levels**

# Key issue: how to accelerate penetration of biofuel by public support





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# An emerging global agenda – for discussion

- “Aviation Low Carbon Fund” – keep control on “green fees”
  - Incentivize over-performance
  - Accelerate industry innovation
  - Prevent additional financial burden
  - Take leadership for supply issues in development countries
  - Prevent abuse of national policy undermining open skies
- A common voice for a global aviation masterplan
- ACT NOW – prevent current regional initiatives

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# Germany - AFB as a big opportunity

- Most important air traffic market in Europe
- Tradition as a global leader in Green Policy
- Bio fuel on top of the new coalition agenda
- Need to ensure Germany as sustainable competitive air traffic location

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Thank you for your  
attention

