

Aviation in EU emissions trading

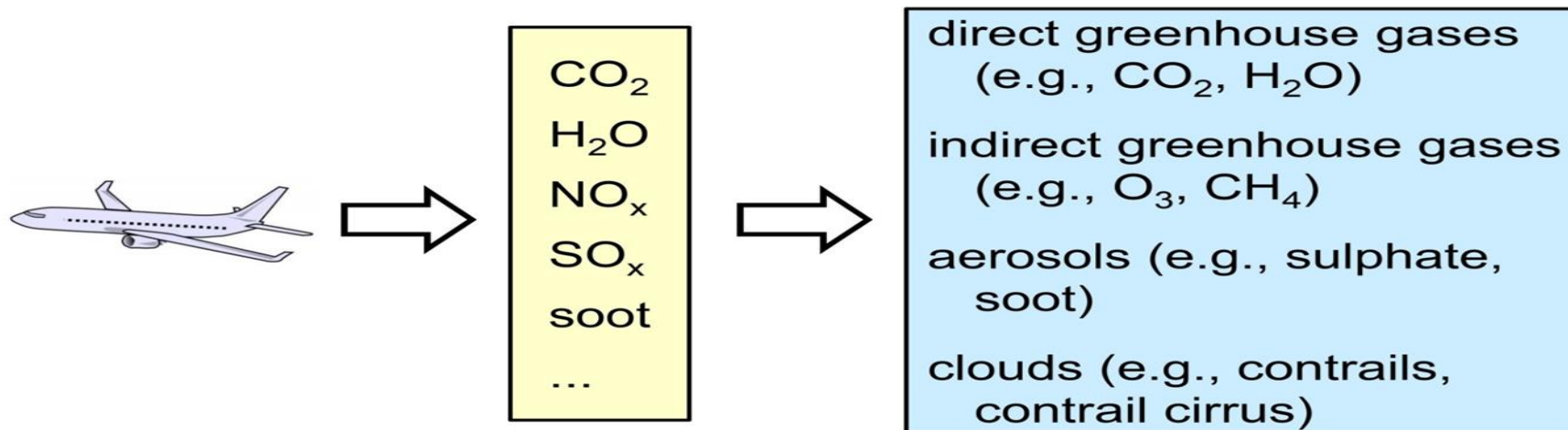
- Advantages and challenges -

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Structure of the Presentation

- 1. Aviation's contribution to climate change**
- 2. Regulatory framework**
- 3. Advantages and key challenges**

1. Aviation's contribution to climate change

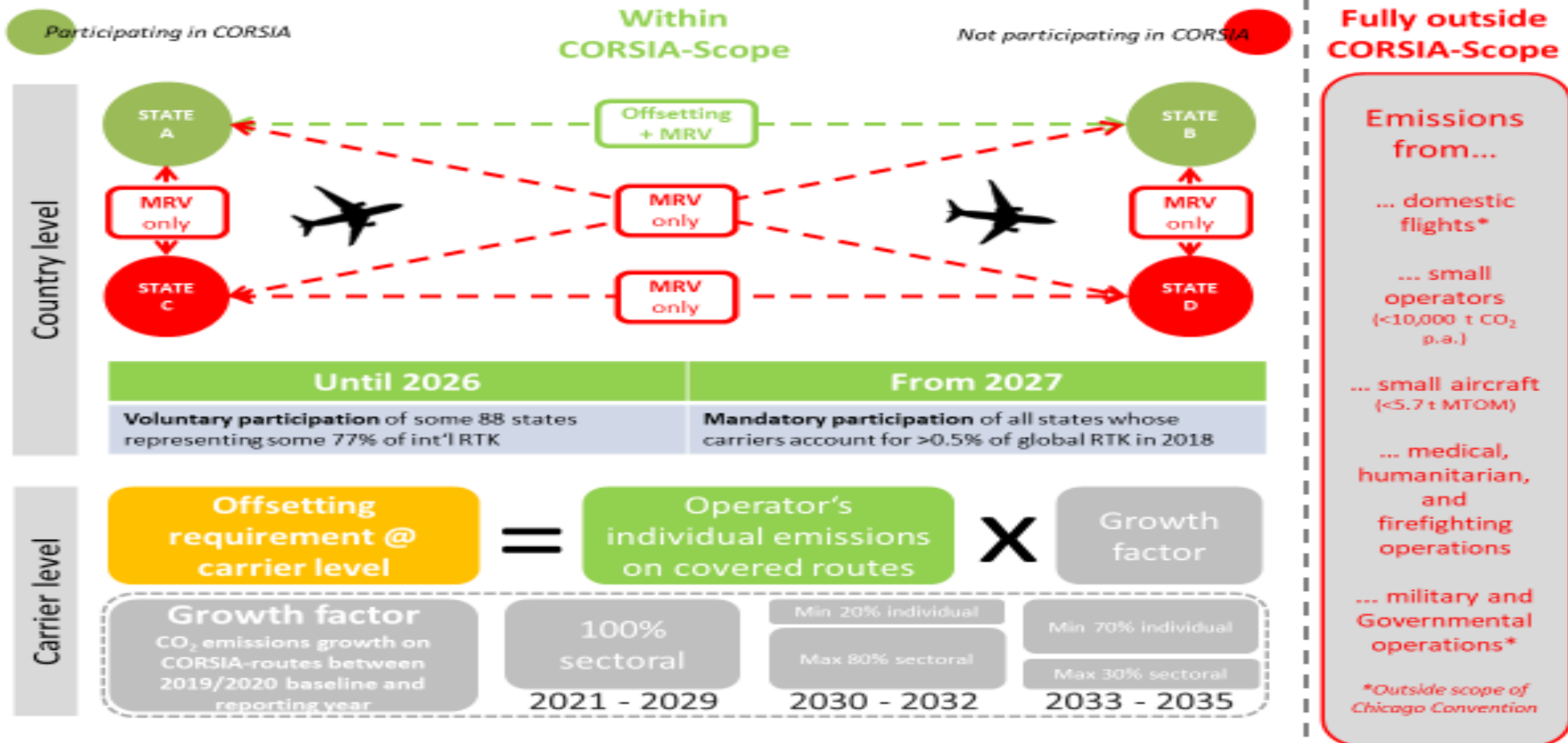


Global aviation contributes **a few percent** to anthropogenic radiative forcing. Non-CO₂ impacts comprise about 2/3 of the net radiative forcing. (Lee et al., 2009 and 2021).

2. Regulatory framework: Current EU-ETS for aviation

- **Legal framework:** EU Directives 2008/101/EC and 2009/29/EC.
- **Affected operations:**
 - **Flights departing and arriving in the EU, Iceland and Norway (EEA)** from 2012 onwards (“original = Full Scope”)
 - **Intra-EEA flights only** (“Stop-the-Clock” regulation for the period 2013 - 2016, extended until 2023; “Reduced Scope”)
 - **General exclusions:** Aircraft below 5.7 t Maximum Take-Off Mass (MTOM), VFR, government & military flights, and certain flights to remote regions, etc.
- **CO₂ emissions cap:**
 - 2012: 97% of so-called historical emissions (2004-2006 average)
 - Since 2013: 95% of so-called historical emissions.

2. Regulatory framework: ICAO's CORSIA



References: Assembly Resolution A39-3, Paragraphs 10/11/13; ICAO CORSIA website ("CORSIA States for Chapter 3 State Pairs")

3. Advantages and key challenges

Chances:

The revision of the EU emissions trading scheme could be an important means to achieve climate-neutral EU by 2050 and intermediate goal of -55% by 2030. Aviation could contribute to these goals.

Key challenges:

- Relationship EU ETS for aviation with CORSIA
- Geographical scope of EU ETS for aviation
- Level of auctioning (currently 15 %)
- Level of emissions cap (currently 95 % of 2004 – 2006 average)
- Inclusion of aviation's non-CO₂ species
- Additional incentives for the use of sustainable aviation fuels (SAF)

Thank you for your attention!

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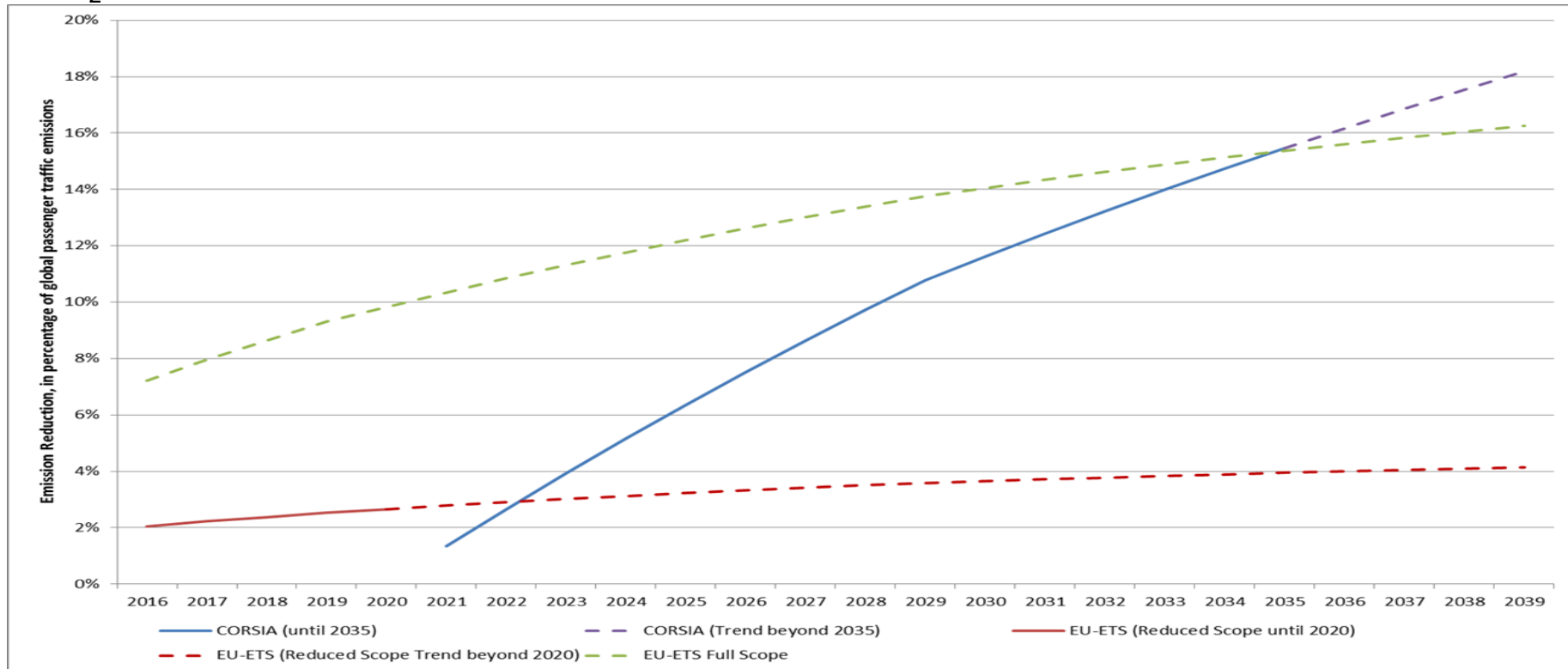
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Backup: EU ETS versus CORSIA

CO₂ emission compensation in per cent of global passenger traffic emissions



Source: DLR modelling results. CORSIA voluntary states as of April 2017.

Backup: Non-CO₂ impacts of aviation to climate change

Requirements for non-CO₂ calculation methods

Should provide incentives for actually reducing non-CO₂ effects

- not a constant factor, but depending on e.g. technology and operations
- not simply adding costs, but providing the possibility to reduce climate impact and cost of operation.

Policy measures and inclusion of non-CO₂ effects by CO₂e calculations

Several calculation methods for non-CO₂ effects are in principle available, which differ in the degree of detail and are subject to uncertainties related to atmospheric science.

Risk assessment is required to better understand the impact of uncertainties on the calculation of non-CO₂ effects and thereby on the potential of setting wrong incentives.

Operational feasibility currently tested in DLR research project on behalf of the German UBA.

Promising measures could be selected now, the economic impact analyzed and pilot projects conducted.

First steps towards implementation of non-CO₂ effects with varying complexity were investigated, showing principally the possibility to address relevant non-CO₂ species by including them into the current EU-ETS.