

CORSIA a tool to reduce emissions?

Analysing the potential supply of credits

GHG mitigation strategies in international aviation and maritime transport

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SB50, Bonn, Germany, 22 June 2019

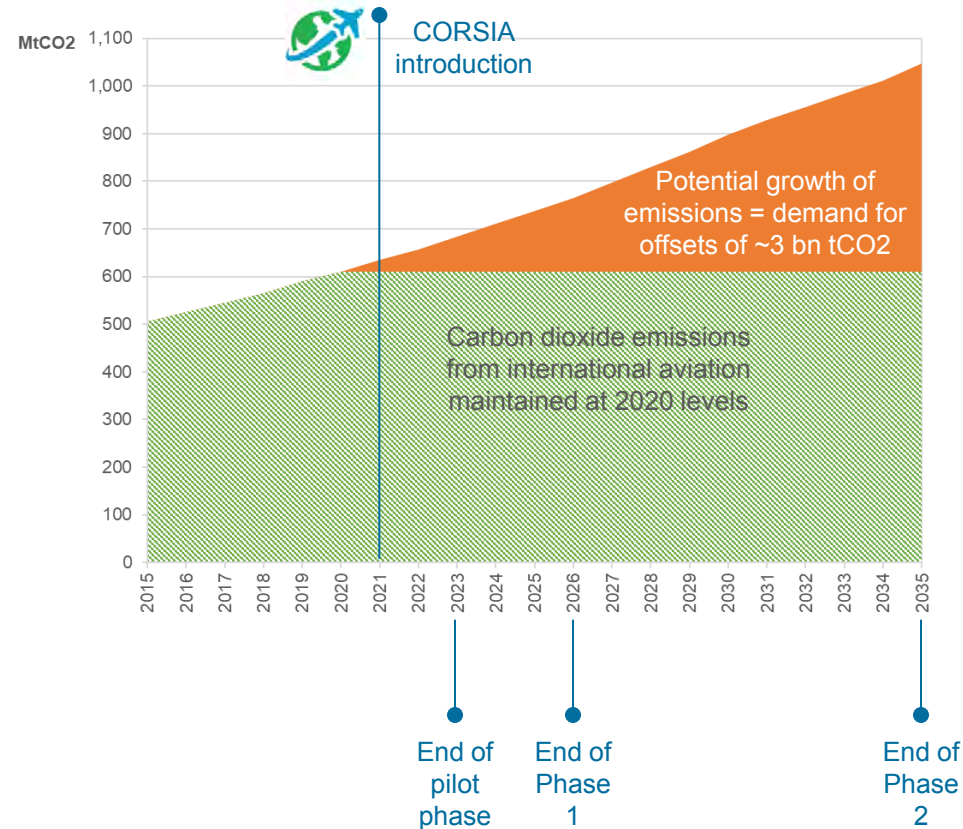
Carbon Offsetting and Reduction Scheme for International Aviation

» Overview

- Overseen by International Civil Aviation Organisation (UN body)
- Aims to ensure carbon neutral growth for international aviation from 2020 through a combination of **abatement** measures as well as **offsetting**

» Scope

- International aviation
- Exclusively focused on **carbon dioxide** emissions
- **Voluntary** participation in pilot and first phase; compulsory in second phase
- Excluding small emitting states, LDCs, SIDS, LLDCs



- » CORSIA established in 2016
- » Programs providing offset credits must be approved by ICAO Council against Emissions Unit Eligibility Criteria (EUCs) adopted in 2019
- » "eligible vintage and timeframe" (ICAO assembly resolution, 2016, para. 21) still undefined
- » Scale of own GHG reductions is set by costs for alternative route (offsetting)
 - What are market prices airlines will face?
 - What supply is available to serve the demand?
 - Will investments in offset units result in global GHG reductions?

Analysis of the potential supply from 4 largest offset programmes



- » For the CDM, we have examined the **marginal cost** of supplying offset credits for emission reductions over the period 2013 - 2020
- » For all 4 programmes we have analysed the supply potential for emission reductions over the period **2013 – 2035**
- » Analysis covers **registered** projects as well as the **existing pipeline** of projects that could register in the future



Volume of CERs until 2020



- » Low current issuance – but large potential
 - Many projects “dormant” but retroactive issuance possible
 - CDM supply potential of 4.65 GtCO₂e until 2020

» Source: NewClimate Institute and Lambert Schneider, Graph: OECD/IEA



Estimating credit supply potential

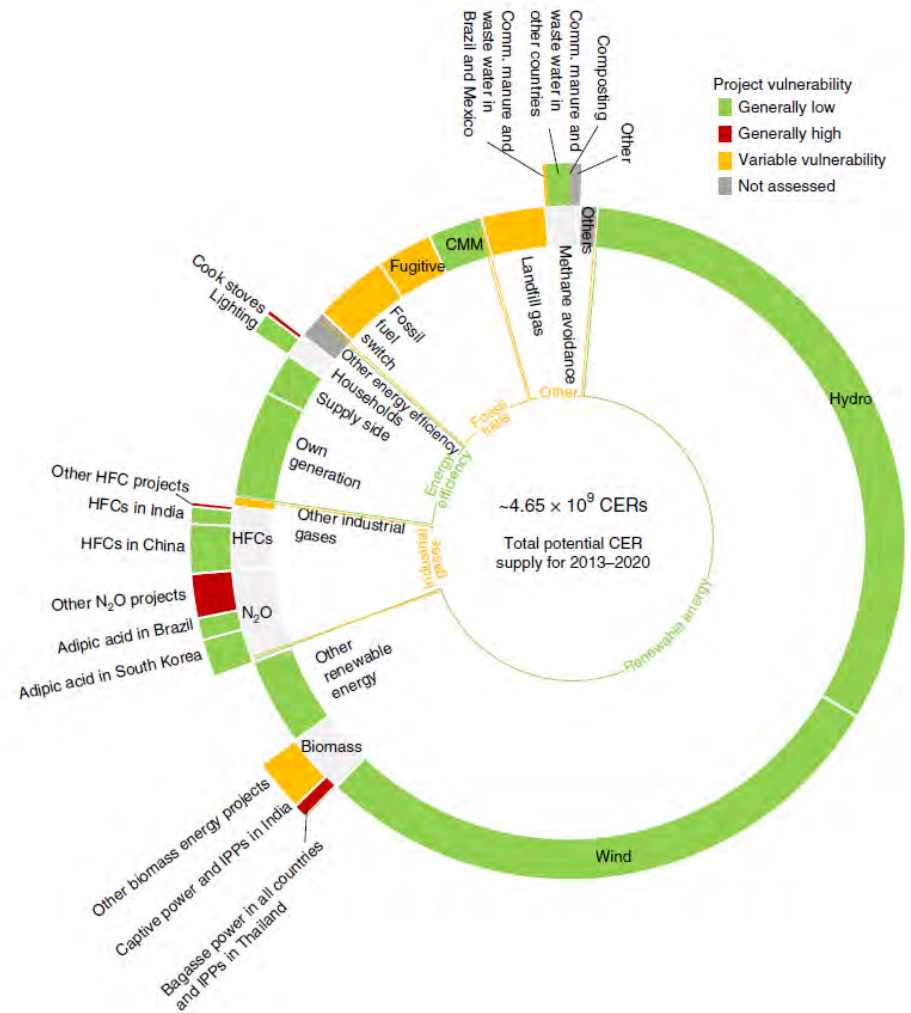
» Bottom-up, project-level analysis

» Supply potential influenced by a number of project factors:

- Issuance success of project type;
- Physical status of project;
- Monitoring status;
- Recent issuance; ...etc.

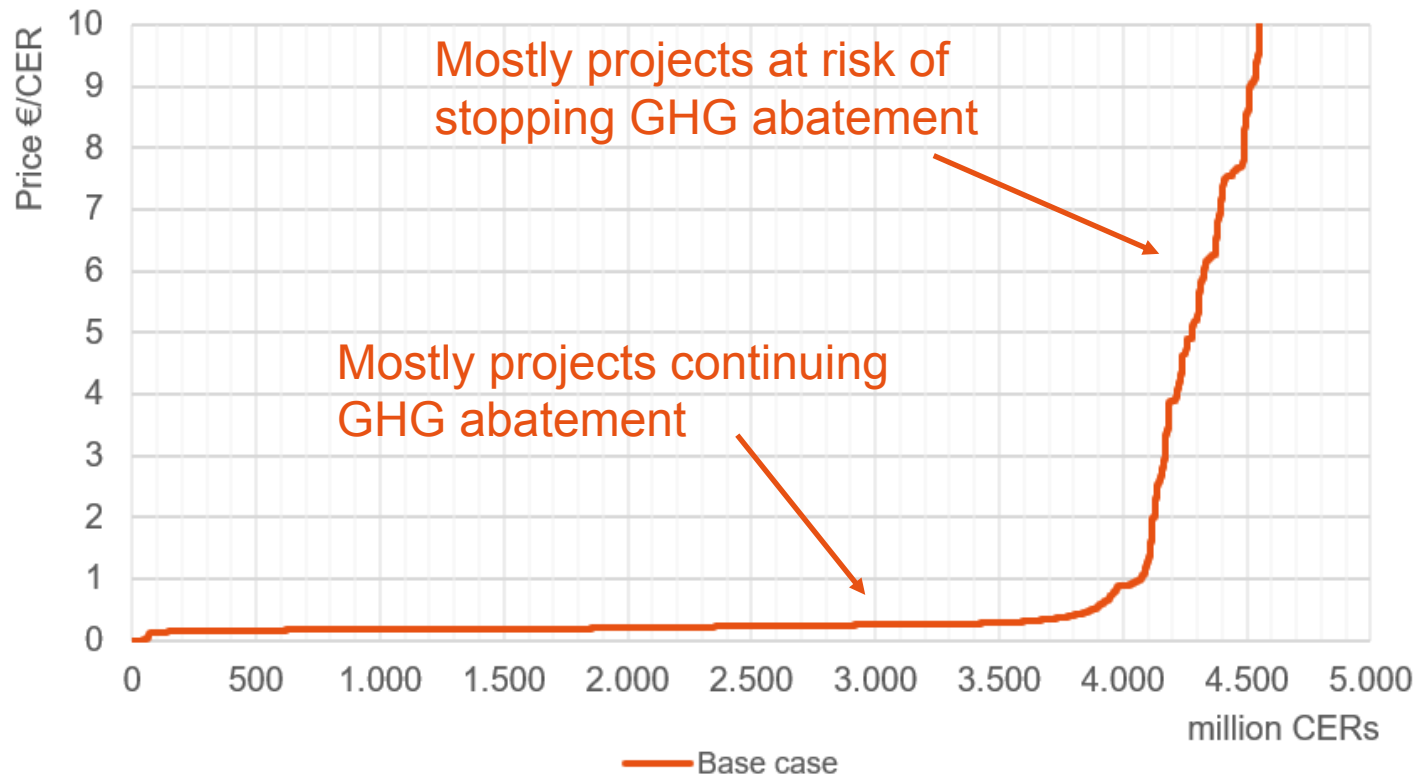
» Categorise projects according to their vulnerability to ceasing abatement activities:

- Low vulnerability (82%)
- Variable vulnerability (13%)
- High vulnerability (4%)





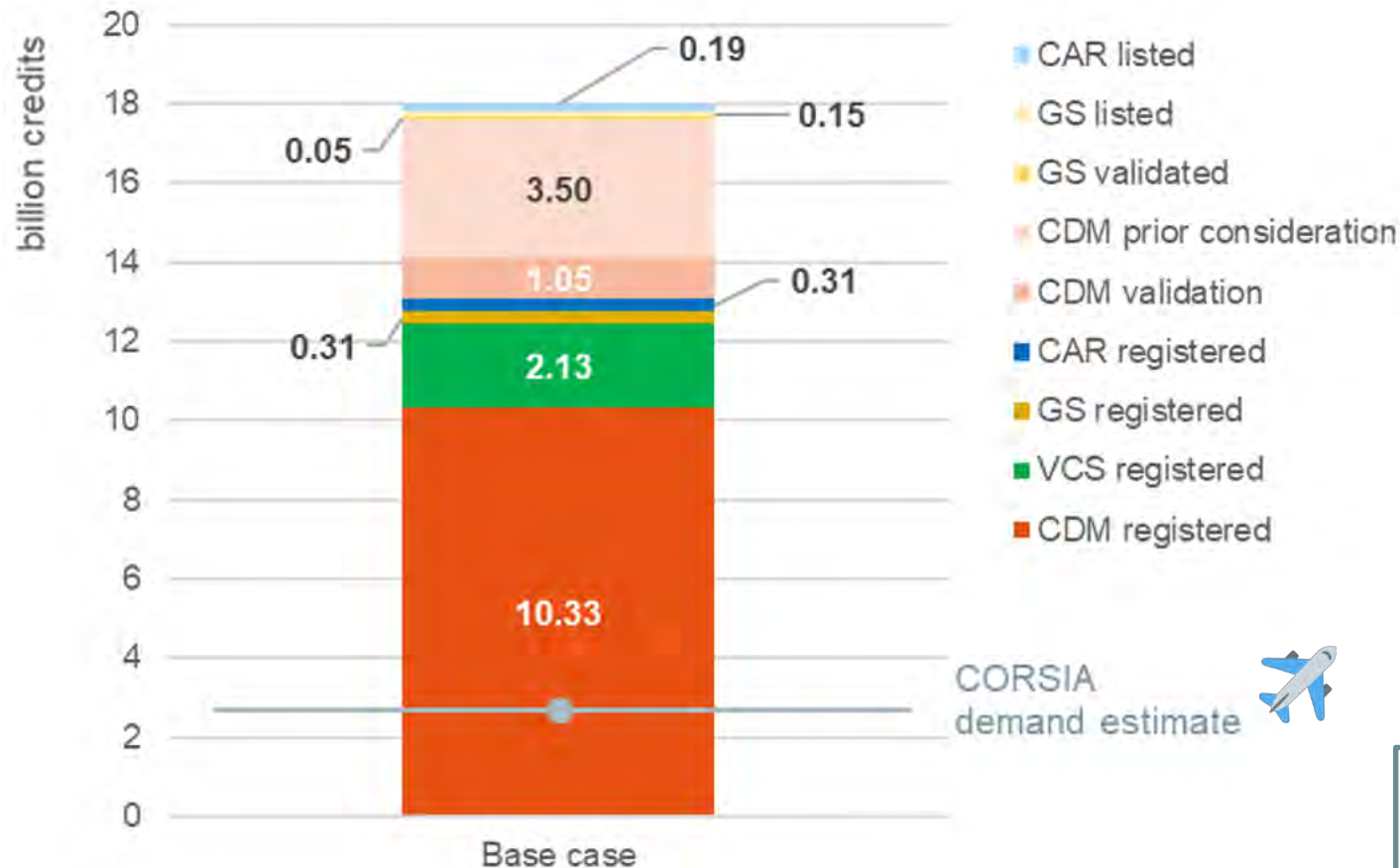
CDM Supply Curve



- Up to **3.8bn new CERs** could supply the market at prices below €1
- A large share of projects **do not depend on CER revenues** to continue emission reductions
- Without restrictions, new project development is **unlikely to benefit** from new demand

Base case supply potential

...for emission reductions between **2013-2035** from all four programmes

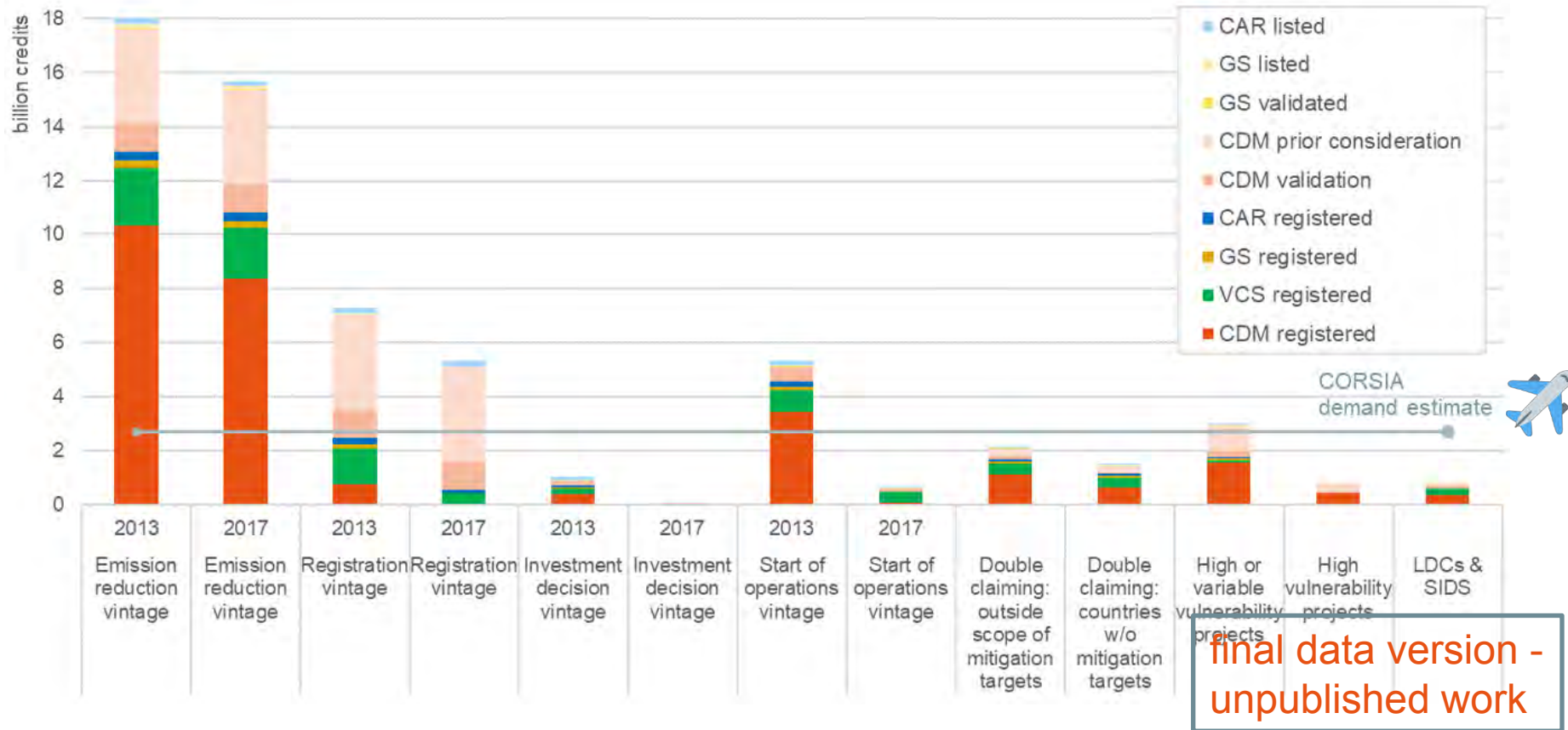


- Potential supply maximum from registered and pipeline projects already **6 times higher** than all known demand
- Other sources can still add to this oversupply

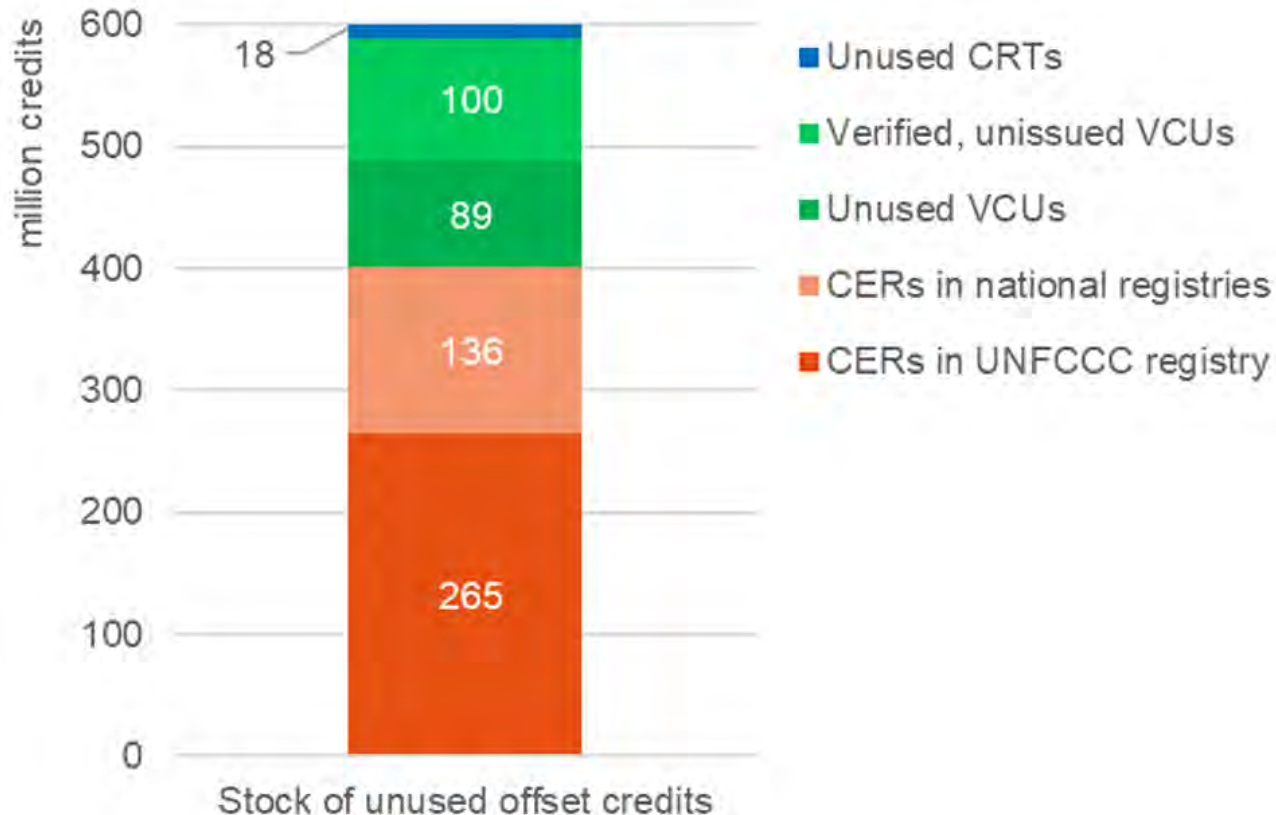
final data version - unpublished work

Supply potential for credits under different scenarios

...for emission reductions between **2013-2035** from all four programmes



Stock of unused offset credits is approximately 600m



- » Most of these credits are likely to be readily available to serve new demand, such as from CORSIA
- » Existing stock could supply all of **pilot and phase 1 demand** under CORSIA (approx. 390mio)

final data version - unpublished work

Simple approach

- » Limit eligibility to **new projects**
 - Projects with an investment decision date later than X (e.g. 2017, 2020), or
 - Projects that started operation later than X (e.g. 2020)

» **Note: Restrictions based on emission reduction vintage and registration vintage NOT effective**

Differentiated approach

- » Limit eligibility to **new or vulnerable projects**
 - Projects with an investment decision date later than X (e.g. 2017, 2020), or
 - Projects that started operation later than X (e.g. 2020)

AND

- Project types that are potentially vulnerable to discontinuing GHG abatement

- » ICAO almost has a demand monopoly and sets the rules for supply
- » Without robust eligibility restrictions CORSIA's climate impact will be negligible
 - Compliance costs remain below 1 EUR/t CO₂ for the full duration of CORSIA
 - Price signal too low for required reductions/transformation and R&D in the sector
 - Prices too low to trigger new offset projects or support projects in need of support
 - Investments for CORSIA compliance almost fully spend on transaction costs = no deviation from global BAU emission levels

**Thank you for
your attention!**

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Interested to know more about the
topic? See our blog post:

http://bit.ly/NewClimate_CORSA_Blog



Robust eligibility criteria essential for
new global scheme to offset aviation
emissions, *Nature Climate
Change* **9**, 218–221 (2019)

<https://doi.org/10.1038/s41558-019-0415-y>

<https://rdcu.be/borVM>