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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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

Potential growth of emissions = demand for offsets of ~3 bn tCO2
Offset or Reduce?

» 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.
Low current issuance – but large potential

- Many projects “dormant” but retroactive issuance possible
- CDM supply potential of 4.65 GtCO$_2$e until 2020

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

Mostly projects at risk of stopping GHG abatement

Mostly projects continuing GHG abatement
Potential supply maximum from registered and pipeline projects already 6 times higher than all known demand

Other sources can still add to this oversupply
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

- Unused CRTs: 18 million
- Verified, unissued VCU: 100 million
- Unused VCU: 89 million
- CERs in national registries: 136 million
- CERs in UNFCCC registry: 265 million

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
Recommendations

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)

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

**Note: Restrictions based on emission reduction vintage and registration vintage NOT effective**
CORSIA’s climate impact

» 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

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