Revised EU ETS in a CORSIA world: impact on EU carriers

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1. Introduction

How would a revised EU ETS interact with CORSIA? How would it impact EEA carriers and extra-EEA routes?

- **EU ETS** and **CORSIA** are so-called **market-based measures** to reduce CO_2 emissions from aviation.
- **A revision** of the **EU ETS** could mean a **stronger cap**, a **higher auctioning share** and/or an **extension to extra-EEA routes**.
- Geography-wise, there are **already overlaps with CORSIA** (ICAO's offsetting scheme) **on international intra-EEA routes**.
- An **ETS extension to extra-EEA** routes could mean **additional overlap**.
- This presentation shall give an **overview** of the **impacts** of the schemes' **geographical scopes** on **EEA carriers**.

2. ETS vs. CORSIA

		EU ETS	CORSIA
Fundamental differences	Methodology	**Cap&Trade:** Allowances for each ton of CO_2; Actual reduction where it is cheapest	**Baseline&Credit:** Offsets for each ton of CO_2 above baseline; Compensation through projects that reduce CO_2 elsewhere
	Environmental integrity	Not critical, fixed overall cap	Dependent on offset quality standards (e.g. additionality)
	Verification needs	Emitter level	Emitter & project levels
Differences in current implementation and application	Cap/Baseline	95% of avg. 2004/2006 emissions; linear reduction	2019 emissions; no further reduction
	Geographical scope	Intra-EEA segments including domestic	International segments between ~90 participating states
	Affected carriers	All airlines operating on covered routes, unless exceptions apply	
	Affected aircraft Types	Fixed wing (>5.7t MTOM) and helicopters	Fixed wing (>5.7t MTOM)

*) Higher, mandatory coverage from 2027

Main drivers of emission reduction and economic impact:

- Geographical scope (flight segments covered)
- Stringency (e.g. cap/baseline/share of auctioned allowances)

3. Where EU ETS and CORSIA overlap

Flight segments (not) covered

	Intra-EEA domestic	Intra-EEA int‘l	EEA – non-EEA	Overlap with CORSIA
CORSIA (as is)	Not covered	Covered	Covered (if participating)	---
EU ETS reduced scope (as is)	Covered	Covered	Not covered	Intra-EEA int‘l
EU ETS full scope	Covered	Covered	Covered	Intra-EEA int‘l & EEA-non-EEA

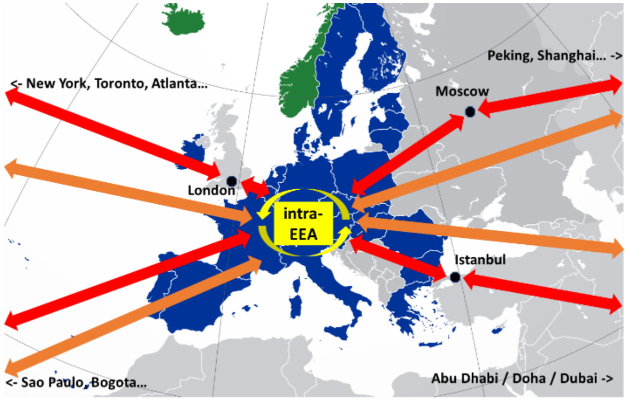
- **The current ETS (limited until 2023) covers all intra-EEA flights and CORSIA all international flights from and to participating states.**

- **A revised, full scope ETS would overlap with CORSIA also on international extra-EEA flights.**

4. Impacts on EEA and non-EEA carriers

Exact routing and intermediate hub(s) determine how carriers are affected

		EU carriers	Non-EEA carriers
Intra-EEA e.g. Rome-Riga or Nice-Bordeaux or Malta-Frankfurt-Helsinki	ETS reduced	Fully	n/a (few exceptions)
	ETS full scope	Fully	
	CORSIA	Partly (Int'l only)	
EEA-World nonstop e.g. Madrid-Bogotá	ETS reduced	Not covered	Not covered
	ETS full scope	Fully	Fully
	CORSIA	Mostly	Mostly
EEA-World via EEA hub e.g. Prague-Dublin-Boston	ETS reduced	Partly (EEA portion only)	n/a (few exceptions)
	ETS full scope	Fully	
	CORSIA	Mostly	
EEA-World via non-EEA hub e.g. Vienna-Dubai-Bangkok	ETS reduced	n/a (few exceptions)	Not covered
	ETS full scope		Partly (EEA-World portion only)
	CORSIA		Mostly



- ETS reduced scope (as today): The higher the route share within EEA, the higher the impact.
- ETS full scope: The closer the non-EEA hub, the lower the impact.

5. Affectedness by airline

2018 revenue share of routes (to be) covered by the EU ETS and/or CORSIA

- Simple **Proxy** for commercial impacts of geographical scope on carriers
- Actual cost impacts not modelled!
- **Current ETS without CORSIA:** Burden only on EEA/UK carriers
- **Full ETS + CORSIA:** Competitive advantage mainly for carriers with large domestic networks (China, US) and with routes from non-EEA hubs (like Dubai) to non-CORSIA states (like Pakistan)

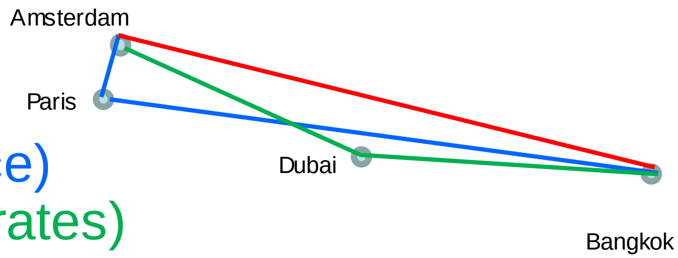
		Revenue shares of routes subject to…					
Airline	Category	EU ETS red.	EU ETS full	CORSIA vol.	CORSIA mand.	CORSIA or ETS reduced	CORSIA or ETS full
Emirates	BoGu	0%	32%	69%	86%	86%	86%
Turkish Airlines Inc.	BoGu	0%	21%	49%	59%	59%	59%
Qatar Airways	BoGU	0%	27%	71%	84%	84%	84%
PJSC Aeroflot	BRIC	0%	25%	0%	56%	56%	56%
Air China Limited	BRIC	0%	11%	0%	35%	35%	35%
China Southern Airlines	BRIC	0%	2%	0%	20%	20%	20%
China Eastern Airlines	BRIC	0%	3%	0%	23%	23%	23%
Ryanair	EU LCC	96%	100%	86%	86%	97%	100%
Easyjet	EU/UK LCC	95%	100%	80%	80%	98%	100%
Deutsche Lufthansa	EU Network	34%	99%	69%	86%	95%	100%
Air France	EU Network	25%	97%	54%	70%	82%	98%
KLM Royal Dutch Airlines	EU Network	32%	98%	70%	84%	85%	98%
British Airways	UK Network	20%	97%	71%	87%	90%	98%
Southwest Airlines	US LCC	0%	0%	3%	3%	3%	3%
United Airlines	US Network	0%	18%	33%	40%	40%	40%
American Airlines	US Network	0%	10%	20%	24%	24%	25%
Delta Air Lines	US Network	0%	18%	29%	34%	34%	34%

Source: Sabre MI leg statistics

6. Backup: Market definitions

OD

- Origin-destination combinations for which tickets are sold
- E.g. OD from Amsterdam to Bangkok
- Different, competing routings
  - Direct (on KLM or Thai Airways)
  - Indirect via a EEA hub (e.g. on Air France)
  - Indirect via a non-EEA hub (e.g. on Emirates)



Segment

- Actual flight, may (not) be identical to a passenger's OD
- E.g. the OD Amsterdam-Bangkok may consist of one (nonstop) or two or more (indirect) segments.

ETS and CORSIA are applied at the segment level.
Actual passenger ODs are not of direct relevance.