



Effective policies to decarbonize aviation

VCÖ event decarbonizing aviation



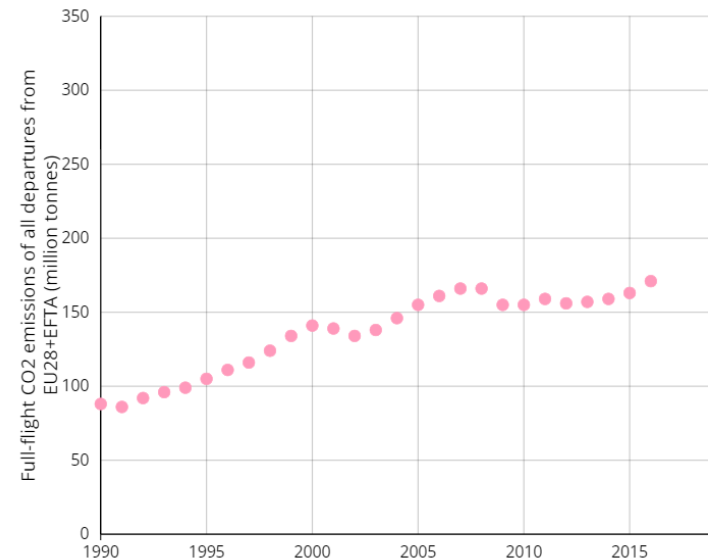
CE Delft

- Independent research and consultancy since 1978, focussing on environmental policies
- Transport, energy and resources
- More than 20 years of experience in the aviation sector
- 80 employees, based in Delft, the Netherlands
- Clients: European Commission, Austrian, German, UK and Dutch government, airlines, airports, and environmental NGOs.



Market-Based Measures (MBMs) in aviation

- In Europe, we have experience with MBMs in aviation for about a decade
 - Aviation included in EU emissions trading scheme (ETS)
 - Aviation taxes in many countries
 - GBR, GER, FRA, SWE, AUT, NED, ITA
- Despite MBMs, aviation emissions have continued to increase

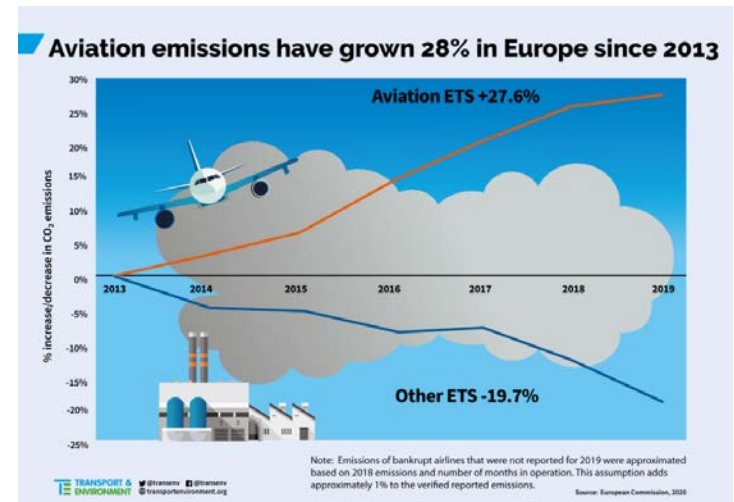


[EASA 2019](#)



EU Emissions Trading Scheme

- The inclusion of aviation in the ETS has reduced emissions within the entire system, but not in aviation.
- Rather, aviation has paid for emission reductions in other sectors.



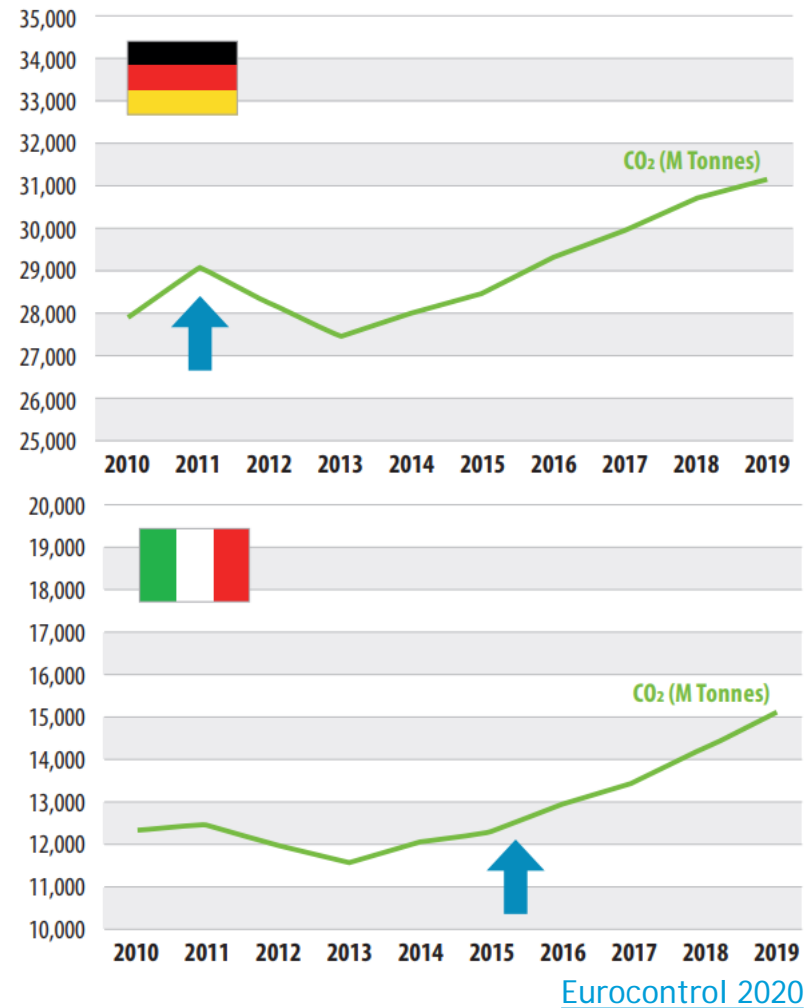
[Transport and Environment 2020](#)



Ticket taxes

- The introduction of a German aviation tax (~€17) coincided with a decline in emissions.
- However, that was during a global recession.
- Emissions rebounded after 2013.

- The introduction of the Italian aviation tax (~€22) hardly made an impact on emissions.



Effectiveness of market-based measures

- The current MBMs at their current price levels reduce demand somewhat and give small incentives for improving the carbon intensity of aviation.
- However, we should not rely on MBMs for decarbonisation of the sector.
 - Price signal of MBMs will not be high enough to incentivise the use of Power-to-Liquid Sustainable Aviation Fuel (PtL SAFs), for political reasons.
 - Need to start increasing the use of PtL SAFs now, in order to set up supply chain and ramp up production for decarbonisation by 2050.



Effective policies for decarbonisation

- Innovative policies are needed to decarbonize aviation
- In view of the short timescale, command-and-control policies should be considered
- Options for effective policies include:
 - Fuel mandates, which address the problem directly by limiting the share of fossil fuels used. ReFuelEU Aviation and the Renewable Energy Directive (RED) are examples
 - A CO₂ emissions ceiling as proposed by The Netherlands, limiting the CO₂ emissions of all departing flights, either by limiting airport capacity, limiting airline activity or limiting fossil fuel sales.
- The indirect effect of these measures is to increase the cost of aviation, which acts as a tax and may dampen demand somewhat and spur efficiency improvements.



What is the role for MBMs?

- There are several other reasons why we need MBMs in addition to innovative policies:
 - To improve the allocative efficiency of the economy by closing tax loopholes.
 - To internalise internal effects other than CO₂.
 - To raise revenues for RD&D of sustainable aviation fuels.
 - To raise revenues for infrastructure for the manufacture and production of these fuels.
 - To raise revenues for helping developing countries transition to SAFs.



Conclusions

- A rapid decarbonization of aviation requires command and control policies like
 - Fuel mandates, or
 - CO₂ emission ceilings.
 - Because the price levels of the current MBMs are not sufficiently high.
- MBMs like taxes and ETS have a supporting role by, amongst others,
 - closing tax loopholes,
 - internalising external costs,
 - incentivising efficiency improvements, and
 - dampening demand.



Thank you for your attention

Jasper Faber

faber@ce.nl

