EDF ENVIRONMENTAL DEFENSE FUND
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CLIMATE

Coronavirus and CORSIA

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Summary

Coronavirus/COVID-19 is a global crisis. The world's airlines are facing real economic and structural threats. But UN climate action is not one of them. The Carbon Offsetting and Reductions Scheme for International Aviation (CORSIA), adopted by the UN's International Civil Aviation Organization (ICAO) offers airlines the necessary flexibility to meet their climate protection goal of carbon-neutral growth even in light of this global pandemic. Although COVID-19 is driving air traffic downward (and thereby, potentially making it more challenging for airlines to achieve their commitment of carbon neutral growth from 2020), there will be plenty of high quality credits available to help airlines meet their carbon limits in CORSIA's initial years – and because CORSIA includes provisions, thanks to ICAO foresight, that give airlines flexibility to deal with the COVID-19 crisis without sacrificing climate protection.

EDF finds the amount of credits that would be available to airlines to use in CORSIA would still be two and half to three and half times the amount the airlines need for the first three years of the program. These credits would be in addition to any reductions that may be available as airlines begin to shift to sustainable aviation fuels. Our analysis builds on the recent analysis by Ecosystem Marketplace, which examines the available supply of credits if ICAO's governing Council filters old, questionable carbon credits out of CORSIA, as reportedly recommended by the Council's Technical Advisory Body, and considers the COVID-19 scenarios published on March 5, 2020, by the International Air Transport Association (IATA), and the travel restrictions announced on 11 March 2020.

For the sake of the world, communities, companies, and countries, we hope the COVID-19 crisis passes swiftly. If it does, and if air travel rebounds sharply in the ensuing years, confronting airlines with higher-than-expected offset obligations, CORSIA includes a provision that would allow airlines to calculate their offset obligations for the years 2021, 2022, and 2023 based on their 2020 emissions, rather than their emissions in those high-rebound years. As they move forward to implement CORSIA, ICAO governments may wish to consider invoking this flexibility provision, and may wish to convene an expert panel to examine the longer-term impacts of the COVID-19 crisis on CORSIA's base years.

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Background

In 2016, under pressure to address aviation's burgeoning impact on the global climate crisis, the UN's International Civil Aviation Organization (ICAO) adopted the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). CORSIA implements the airlines' commitment to "carbon neutral growth from 2020," capping the net carbon dioxide emissions of flights between participating countries from 2021-2035. Airlines can meet their caps by reducing emissions, by switching to sustainable alternative fuels that on a life cycle basis emit less than conventional jet fuel, and by purchasing carbon credits to offset their emissions. The integrity of the carbon credits – the assurance that each represents a real reduction in emissions elsewhere, and is not being counted by any other entity toward its climate protection effort – is core to the integrity and effectiveness of the scheme.

ICAO's 36-member governing Council is slated to decide which carbon offset credit programs should be eligible to supply credits for the first three years of CORSIA, 2021, 2022 and 2013, and which among their credits should be accepted into CORSIA. To date, 14 offset credit programs have applied for CORSIA eligibility. Civil society has pressed the Council to consider the programs and credits carefully to make sure they meet globally-agreed eligibility criteria, and has urged Council not to open the floodgates to old questionable carbon credits issued prior to 2016. These old, dubious credits would swamp the CORSIA market and undermine incentives to drive investment into real emission reductions.

The unfolding near-term crisis of the coronavirus – a disease thought to have jumped from bats to illegally trafficked pangolins to humans – is impinging on the Council's impending CORSIA decision.

First is the human health tragedy, with COVID-19 deaths and illnesses spreading around the globe. That aspect is hitting close to home for the industry - the director of the authority that oversees America's John F. Kennedy Airport has been diagnosed with the disease.

Second, the virus has triggered an unprecedented slump in in many transportation subsectors, from aviation to the cruise ship industry to rail, threatening jobs and economic stability for many companies.

Third, airlines are concerned that *if air travel slumps in 2020 and rebounds sharply in 2021 they could have to offset more emissions than anticipated* with the increased obligation hitting them just as they're recovering from an economically disastrous year. In response, some might urge the Council to open the floodgates to old carbon credits – which would also gut its climate effectiveness and could prompt some governments to jettison CORSIA for much more stringent national and regional measures. Further, some might urge the Council to change the baseline obligation (currently calculated using average 2019-2020 emissions) - but this could entail reconvening the 190+ member countries of ICAO's Assembly to renegotiate the hard-fought the 2016 resolution.

Our preliminary analysis (which we note is not peer-reviewed) shows that neither step is necessary. If the ICAO Council acts with integrity and follows the recommendations of its technical advisors, there will be ample supply of credits available to airlines, even taking into account the most pronounced effects of coronavirus. The existing CORSIA rules provide flexibility

to governments to address suppressed activity in 2020, without any need to renegotiate the measure in a drawn out political discussion.

- First, under the 2016 ICAO Resolution establishing CORSIA, the "baseline" for "carbon neutral growth from 2020" calculation is actually the average of 2019-2020 emissions. (Best practice in policy design is to designate historical base years, but airlines back in 2009 chose a commitment of "carbon neutral growth from 2020," meaning they would offset emissions above 2020, a future year.) To address the risk that 2020 would be an anomalous year (as occurred in the past when a volcano in Iceland erupted and airlines had to fly around it), governments established CORSIA with a two-year average baseline, which dampens the effect of the 2020 decline.

- Second, while the Resolution calculates airlines' offset obligations in any "given year" (e.g., 2021, 2022, 2023) by multiplying their emissions in that "given year" by the sector's average growth above baseline, a flexibility provision in paragraph 11(e) of the Resolution allows governments to substitute year-2020 emissions for "given year" emissions when calculating obligations for the period 2021-2023.[i] We estimate that the use of this flexibility provision would dampen the COVID-19-related increase in offset obligations by 40%.

Analysis

Below we analyze the aviation sector's demand for offsets in CORSIA, using the 2019-2020 average baseline. According to the most recent ICAO Council "Global Environmental Trends" document, emissions in 2019 were approximately 555 MMT (million metric tonnes) of CO2. Based on the aviation growth scenario in that document, we calculate a base case of 78 MMT of emission reductions needed during for the years 2021-2023 in order for the sector to meet the target of carbon neutral growth from the 2019-2020 average emissions. To model the impact of COVID-19, we use the "limited spread" and "extensive spread" scenarios published by the International Air Transport Association (IATA) on 5 March 2020. We assume that the dips in Revenue Passenger Kilometers (RPKs) of the IATA scenarios extends CORSIA-wide (including cargo flights), and we calculate the corresponding Revenue Tonne Kilometers (RTKs) and resultant changes in emissions, taking into account fuel efficiency. Following the IATA scenarios, we assume that aviation activity rebounds in 2021 to the pre-COVID-19 aviation growth scenario in the Council's "Global Environmental Trends" document. We note that a slower rebound would reduce the need for emission reductions (see sensitivity analysis below). The effect of utilizing the 2020/given year flexibility provision is shown with an asterisk (*).

Sensitivities:

COVID-19:

"Limited Spread" Scenario:	2020 RTKs dip 11%.
"Extensive Spread" Scenario:	2020 RTKs dip 19%.

Rebound:

"Fast Rebound" Scenario:	Emissions rebound in 2021 to the pre-COVID aviation growth scenario in the ICAO Council "Global Environmental Trends" document.

"Attenuated Rebound" Scenario: Rebound in 2021 to 2019 levels, with subsequent year-on-year growth as per the "Global Environmental Trends" document.

Impact of 2020 coronavirus on aviation sector future demand for emission reductions in CORSIA				
	Cumulative demand, MMT CO_2			
	Years 2021-2023 (pilot phase)		Years 2021-2035 (full program)	
	Tonnes	% change from base case	Tonnes	% change from base case
Base case	78	--	2,360	--
2020 RPK dips 11% (Limited Spread, Fast Rebound)	116 (101*)	49% (29%*)	2,616	11%
2020 RPK dips 19% (Extensive Spread, Fast Rebound)	158 (125*)	103% (60%*)	2,893	23%
2020 RPK dips 19% (Extensive Spread, Attenuated Rebound)	95 (79*)	22% (1%*)	2,280	-3%
Estimated supply (Ecosystem Marketplace)	386-569			

[i] Paragraph 11 of ICAO Resolution 39-3, re-affirmed by ICAO in 2019, provides (emphases added):

"11. Decides that the amount of CO2 emissions required to be offset by an aircraft operator in a given year from 2021 is calculated every year as follows:

a) an aircraft operator's offset requirement = [% Sectoral × (an aircraft operator's emissions covered by CORSIA in a given year × the sector's growth factor in the given year)] + [% Individual × (an aircraft operator's emissions covered by CORSIA in a given year × that aircraft operator's growth factor in the given year);

b) where the sector's growth factor = (total emissions covered by CORSIA in the given year – average of total emissions covered by CORSIA between 2019 and 2020) / total emissions covered by CORSIA in the given year;

c) where the aircraft operator's growth factor = (the aircraft operator's total emissions covered by CORSIA in the given year – average of the aircraft operator's emissions covered by CORSIA between 2019 and 2020) / the aircraft operator's total emissions covered by CORSIA in the given year;

d) where the % Sectoral = (100% – % Individual) and;

e) where the % Sectoral and % Individual will be applied as follows:

i) from 2021 through 2023, 100% sectoral and 0% individual, ***though each participating State may choose during this pilot phase whether to apply this to:***

a) an aircraft operator's emissions covered by CORSIA in a given year, as stated above, or

b) an aircraft operator's emissions covered by CORSIA in 2020;

ii) from 2024 through 2026, 100 % sectoral and 0% individual;
iii) from 2027 through 2029, 100 % sectoral and 0% individual;
iv) from 2030 through 2032, at least 20% individual, with the Council recommending to the Assembly in 2028 whether and to what extent to adjust the individual percentage;
v) from 2033 through 2035, at least 70% individual, with the Council recommending to the Assembly in 2028 whether and to what extent to adjust the individual percentage;"