

Aviation Biofuels for a Sustainable Future

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Comparison of GDP & CO₂ Emissions – 2018

10 Largest Economies

2018					
Position	Country	GDP - Million USD	Total CO2 emissions (Mt of CO2)	CO2 emissions per capita	CO2 emissions per USD (tons CO2/M USD)
1º	United States	20.544.343,46	4.896,00	14,90	238,31
2º	China	13.608.151,86	9.302,00	6,70	683,56
3º	Japan	4.971.323,08	1.098,00	8,70	220,87
4º	Germany	3.947.620,16	683,00	8,20	173,02
5º	United Kingdom	2.855.296,73	353,00	5,30	123,63
6º	France	2.777.535,24	293,00	4,40	105,49
7º	India	2.718.732,23	2.162,00	1,60	795,22
8º	Italy	2.083.864,26	314,00	5,20	150,68
9º	Brazil	1.868.626,09	428,00	2,00	229,05
10º	Canada	1.713.341,70	573,00	15,50	334,43

Source: World Bank - 2018

Source: IEA - International Energy Agency 2017- 2018

Source: Elaborated by DATAGRO

CORSIA Agreement

Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is an emission mitigation approach for the global airline industry, developed by the International Civil Aviation Organization (ICAO), which was adopted in October 2016.

Measures include primarily offsets and alternative fuels. CORSIA addresses emissions from international air travel that exceed the baseline 2020 levels.

The scheme does not take effect until 2021 and will be voluntary until 2027, but many countries, including the US and China, have promised to begin at its 2020 inception date.

Under the agreement, the global aviation emissions target is a 50 percent reduction by 2050 relative to 2005

CORSIA Agreement

Aviation accounts for ~2% of global CO₂ emissions (IPCC, 1992).

But climate impacts of aviation emissions are especially concerning due to chemical interactions at high altitudes.

Radiative forcing impacts of aviation emissions are thought to be 2-4 times that of direct CO₂ emissions.

Per capita emissions from air travel is one of the highest in comparison to other modes of transportation.

Through CORSIA, the aviation industry is aiming for Carbon neutral growth starting in 2020.

As of January 2018, over 70 countries representing more than 85% of international aviation activity have agreed to participate.

CORSIA Agreement

Due to low or non-existent taxes on aviation fuel, air travel enjoys a competitive advantage over other transportation modes due to lower fares.

Unless market constraints are put in place, growth in aviation emissions will result in the sector's emissions amounting to all, or nearly all, of the annual global CO₂ emissions budget by mid-century, under the 2DS (2 degree scenario).

GHG Emissions from Aviation

Globally, about 8.3 million people flew daily in 2014 (three billion occupied seats per year), twice the total of 1999.

In 2018, global commercial operations emitted 918 million tonnes (Mt) of CO₂, equivalent to 2.4% of all CO₂ emissions, of which:

- 747 Mt for passenger transport, and
- 171 Mt for freight operations.

Aviation & Advanced Fuels

Biofuels are perceived as a great helper for Neutralization of Aviation GHG emissions.

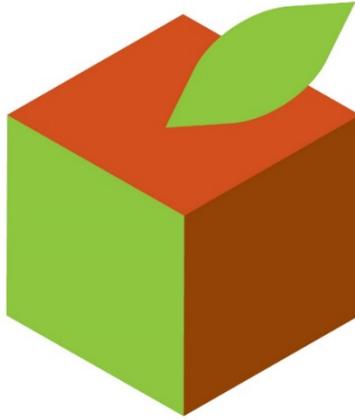
Palm Oil from deforested areas are a matter of concern.

HVO from all sources, and Bio-jet fuel from ethanol synthesis are the most promising solutions.

Certification processes (such as RenovaBio in Brazil, and LCFS in California) are needed to guarantee sustainability of sourcing of biofuels used in transport.

Emissions can also be offset from purchase of Decarbonization credits.





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