



# Offsets 101

A basic guide to offsetting for aircraft operators and application to CORSIA obligations

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- Offsets are a market-based mechanism used to mitigate the environmental impact of an individual, business, or operation through the reduced output of CO<sub>2</sub> elsewhere.
- Offsets support projects and stimulate a low-carbon economy.
- Projects from which offsets are purchased will have a lower CO<sub>2</sub> output than that of the purchaser – the difference is the overall reduction in CO<sub>2</sub>.

- Examples of projects from which offsets are derived: tree planting, low energy solutions, updating old technologies, providing services in emerging countries
- Offset projects can contribute to improvements in education, communities, and human wellbeing as well as greater access to fresh water.
- Offsetting is intended for use either once all other environmental improvements have been made or as an interim measure until other CO<sub>2</sub>-reducing measures take hold.
- Offsetting should not be considered a licence to pollute.

# How Many Offsets Do I Need?

- Once all other environmental improvements have been exhausted -- for example, reducing unnecessary aircraft weight, the use of sustainable aviation fuel (SAF), tankering fuel, single engine taxi, electrical ground power use where available, etc. -- the remaining impacts can be offset.
- The total amount of offsets to be purchased depends on an organization's goal. Examples of a goal for an individual operator include but are not limited to:
  - Carbon-neutral growth from 2020
  - Halving carbon emissions by X date relative to 2005 levels

# How Many Offsets Do I Need?

- Fundamental fuel monitoring, a best practice in any case, will allow you to calculate how many offsets might be required to achieve the goal.
- For each unit of aviation fuel used, 3.16 units of CO<sub>2</sub> are created. Therefore, if 10 metric tons of fuel are used, 31.6 metric tons of offsets will be required.
- Depending on the goal, it is entirely up to the purchaser how much of their CO<sub>2</sub> output they would like to voluntarily offset.

# Where Can I Buy Offsets?

- Offsets are available from a variety of providers across the world.
- It is always advisable to purchase offsets through reputable sources in order to ensure that projects are genuine, delivering meaningful contributions to greenhouse gas reduction, and supporting prosperity within participating communities.
- It is critical to do due-diligence on the offsets you wish to buy and ensure that any project reflects what you want to achieve.

# Where Can I Buy Offsets?

- Check whether the offsets offered conform to international standards – the Gold Standard, Verified Carbon Standard (VCS), etc. For example, the ICAO Council has announced [eligible emissions units for the global Carbon Offsetting and Reduction Scheme for International Aviation \(CORSI A\)](#).
- While the offsetting quality of units purchased is central, you may also wish to select emissions units from projects aligned with the UN Sustainable Development Goals (SDGs), benefiting the communities they are based in. This could include education, environmental training, access to fresh water, land area protection, etc.
- In other words, offsets could also reflect the values of your organization and projects it would normally support.

# Where Can I Buy Offsets?

- Variance of price among offsets is due to differing levels in the overall quality of projects, the overall reduction in CO<sub>2</sub> that the project delivers, and the availability of offsets for each project.
- Offsets can be purchased from existing stocks of offsets, as investments directly into projects that have new offsets, or as equity in or loans to projects.



- Sustainable aviation fuel will deliver significant reductions in overall CO<sub>2</sub> output. However, this will depend on the blend of the fuel used and, as its availability grows, could remove the need for offsets.
- At present, it is only possible to have a maximum of a 50/50 blend of kerosene and SAF under current fuel certification rules. So a combination of SAF use and offsets could be utilized, depending on an organization's objective.
- The blends available at present tend to be lower than the certified maximum. A simple calculation will be needed to determine what level of SAF has been included in the fuel mix. This can be provided by your fuel supplier, leaving an opportunity to offset the remaining kerosene using the 3.16 factor.



# CORSIA Emission Units & Obligations

- The ICAO Council approved in March 2020 the criteria for eligible emissions units for the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).
- Eligible emissions units are central to the success of the CORSIA offsetting component and are made available through approved registries.
- The ICAO Technical Advisory Body (TAB) has evaluated these programs to establish that they fulfil ICAO CORSIA requirements and has recommended them for immediate availability to airlines and operators.

The approved registries from which eligible offsets may be purchased are:

- American Carbon Registry
- China GHG Voluntary Emission Reduction Program
- Clean Development Mechanism
- Climate Action Reserve
- The Gold Standard
- Verified Carbon Standard Program

The approved emissions units on these registries are only available for the period that covers the CORSIA Pilot Phase compliance cycle, which runs from 1 January 2021 until 31 December 2023. Further guidance will be issued by ICAO and the TAB for the subsequent phases.

- The CORSIA program is currently going through its baseline reporting phase. The baseline will be the average annual international flight emissions reported to ICAO for 2019 and 2020 and will help ICAO establish the growth factor of CO<sub>2</sub> emissions from the civil aviation industry that would need to be offset through purchase of eligible emissions units.
- This is what enables the industry to achieve its goal of carbon-neutral growth (CNG) from 2020.
- Once the baseline period is completed, CORSIA will enter its first compliance or offsetting phase, known as the Pilot Phase.

- This phase will run from 01/01/21 to 31/12/2023. During this three-year period, annual international emissions will be measured against the baseline to determine the sectoral growth factor (SGF).
- The SGF will then be applied to operators' growth relative to the baseline to determine the amount of emissions units to be purchased for that period.
- Operators will be advised individually by their respective Administering Authorities on their obligations for offsetting.

- Offsetting can help you and your organisation reduce your overall carbon footprint.
- Ensure that you have exhausted all other environmental improvements before offsetting.
- Make sure you have an appropriate fuel monitoring tool.
- Decide how many offsets you want to purchase.
- If your operation is subject to CORSIA participation, understand your obligations under the scheme.
- Do your due-diligence on potential emissions units before purchasing.
- If you use SAF, you will need to factor it into your calculations.