

IATA Carbon Offset Program

Frequently Asked Questions

Version 10.2 | 19 April 2022



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1.0 Introduction

Purpose

This document provides airlines, passengers and other interested parties with information on the IATA Carbon Offset Program and wider climate change issues.

The information provided in this document is based on industry best practices and guidance developed by IATA, the requirements of the Quality Assurance Standard (QAS) and a review of leading carbon offset provider information. Although partner airlines are welcome to adapt the information for local purposes, they must not alter the message itself and if an airline partner wants to drop or significantly alter any frequently asked question (FAQ) this should be discussed with IATA first. Partner airlines are welcome to translate the information into appropriate national languages.

2.0 Frequently Asked Questions (FAQ): Climate Change and Carbon Offsetting

2.1 What is the environmental impact of global civil aviation?

The Nobel Prize winning, Intergovernmental Panel on Climate Change (IPCC) indicates that aviation contributes around 2% of man-made carbon dioxide (CO₂) emissions. However, there is evidence to suggest that non-CO₂ aircraft emissions at high altitude may have additional climate impacts. Research is ongoing to investigate the complex physical and chemical reactions that occur in the upper atmosphere.

2.2 What is carbon offsetting?

Climate change is one of the biggest threats we face. Everyday actions like using electrical equipment, heating your home, driving a car, and flying consume energy and produce greenhouse gas emissions, particularly carbon dioxide (CO₂) - which contributes to climate change. Governments, businesses and individuals are all responsible for reducing the carbon emissions they create. You can compensate for your own emissions by paying someone to make an equivalent greenhouse gas saving. This is known as "carbon offsetting" and includes investment in projects, such as renewable energy from windfarms and hydro-plants. More and more individuals and businesses are volunteering to offset their emissions. Offsetting is not a "cure" for climate change as the most effective way to combat climate change is to reduce our emissions. However, if done in the right way, offsetting can reduce the impact of our actions and help raise awareness of the issue.

2.3 What is carbon offsetting for aviation?

Passengers can offset the emissions caused by their flying. The principle is that emissions for each flight are divided amongst the passengers. Each passenger can therefore pay to offset the emissions caused by their share of the flight's emissions. Passengers can voluntarily offset their emissions by investing in carbon reduction projects that generate carbon credits.

2.4 What are carbon credits?

Passengers can purchase carbon credits generated by certified renewable energy and energy efficiency projects, or nature-based solutions in developing countries that are verified to reduce greenhouse gas emissions. A carbon credit is a permit that represents one tonne of carbon dioxide (CO₂) that has either been removed from the atmosphere or saved from being emitted. These carbon credits are then "cancelled" on an official register to ensure that they cannot be sold or used again. Carbon credits create a market for reducing greenhouse emissions by giving a monetary value to the cost of polluting the air.



2.5 What type of carbon credits are allowed under the IATA carbon offset program?

Airlines participating in the IATA carbon offset program typically offer carbon credits stemming from renewable or other high-quality projects that follow the stringent quality requirements of the QAS.

Approved offsets must carry one of the following high-quality certificates:

- Certificates issued under the Clean Development Mechanism (CDM).
- Certificates issued with the Gold Standard or VCS version 2007 onwards.
- Approved offsets based on land use employ sustainable REDD+ project methodologies.

The following projects are not allowed to be offered under the IATA carbon offset program:

- project methodologies using hydro>20MW.
- offsets that will use HFC23 project methodologies.
- forestry offset projects are not recommended unless they are based on sustainable REDD+ project methodologies.

For more information see: <https://qascarbonneutral.com>

2.6 What is the role of carbon offsetting?

Carbon offsetting should be considered as one of the many tools an individual or organisation can use to reduce greenhouse gas emissions. Other methods include selecting renewable energy options, improving energy efficiency at home and work, avoiding unnecessary journeys using motorised transport, cycling to work, recycling and conserving energy by turning off lights, turning down the heating temperature or up for air conditioning.

2.7 Is offsetting the carbon emissions from my flight compulsory?

No, it is entirely voluntary. As a passenger, you are free to offset any or none of your flights.

2.8 Will any of the proceeds go to the CDM Adaptation Fund?

It is accepted that vulnerable communities in poor countries will need to adapt to the risks posed by climate change including flooding, drought and sea level rise, and it is recognised that current funding for adaptation is not adequate. Some airlines participating in the IATA offset program are



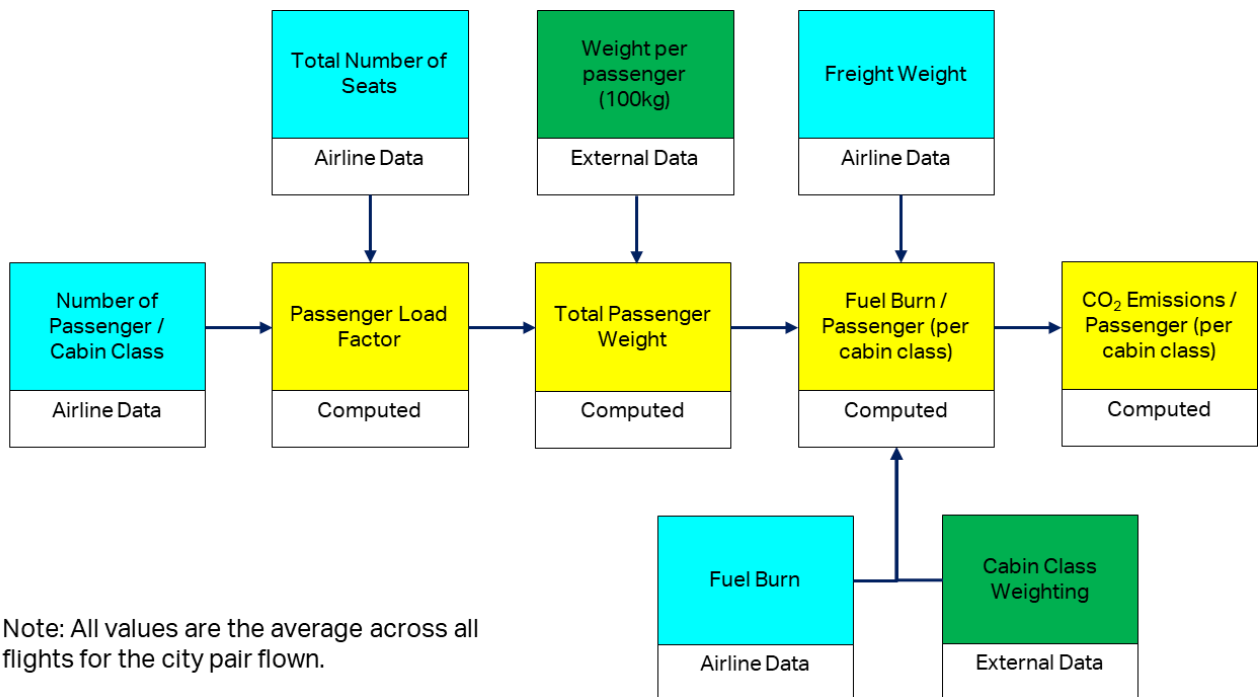
IATA Carbon Offset Program – FAQ Airline Participants

investing in UN-backed credits generated by the Clean Development Mechanism (CDM). As per UNFCCC decision 1/CMP.3, 2% of the proceeds earned from each CDM project are used to fund adaptation projects in states that are vulnerable to climate change. Part of these 2% are used to cover the UN administration costs. Therefore, for those airlines offering CDM credits, passengers are also supporting and investing in climate change adaptation when they offset their flights.

3.0 FAQ: Carbon Calculations

3.1 How do you calculate the volume of emissions from a flight?

The combustion of 1 kilogram (kg) of jet fuel in an aircraft engine produces 3.16 kg of carbon dioxide (CO₂). However, the volume released per flight is based on a number of factors such as aircraft efficiency and maintenance, distance travelled, the load carried (passengers and cargo), and weather conditions. Although there are several ways of calculating the carbon emissions from a flight, airlines participating in the IATA offset program use a methodology based on IATA Recommended Practice developed and approved by airlines in 2022. That methodology allows airlines to use their own verified data on fuel burn, passenger and cargo weights, seat configurations and load factors. This generates the most accurate calculation of CO₂ emissions per passenger yet developed.





3.2 Which data elements are being used for the calculation of CO₂ emissions?

- City Pair – to derive distance and fuel consumption per flight leg
- Number of Seats – to derive load factor (needed for per passenger calculation)
- Number of Passengers Transported – to derive load factor
- Fuel Usage – per city pair
- Passenger weight – using 100kg standard value as per the [IATA Recommended Practice from 2022](#) (RP1726)
- Freight Weight (belly cargo weight) – to allocate fuel usage between passengers and belly cargo
- Travel class – to calculate the CO₂ emissions per travel class between economy, premium economy, business and first class. Different cabin class factors are used to allocate different amounts of emissions to passengers of different travel classes.
- Aircraft-body type - narrow-body and wide-body to derive the travel class factor that should be used to allocate emissions to passengers
- Carbon Emission Factor – **1kg of Jet fuel translates into 3.16 kg of CO₂**

Each airline participating in the IATA carbon offset program uses its own dataset of real fuel consumption data from passenger aircraft journeys to maximise the accuracy of the emissions calculations. Because of this, much of the information normally required to accurately estimate emissions (e.g., when using modelled data averages and emission factors) are not required and do not apply to the IATA carbon calculator methodology. These include distance travelled and uplift factors for non-direct routing and delays.

The travel class factors that are used for allocating CO₂ emissions to passengers are shown in the following table:

	Economy	Premium Economy	Business	First
Narrow-body aircraft	1	1	1.5*	1.5
Wide-body aircraft	1	1.5	4	5

*Narrow body aircraft where seating in its entirety is offered as business class configuration, a cabin class factor of 4 must be applied.

That means that the allocated emissions for passengers flying in the first class of a wide-body aircraft are 5 times higher than emissions for passengers in the economy class of the same aircraft. Similarly, passengers flying first class in a narrow-body aircraft are allocated with 1.5 times higher emissions than passengers flying in the economy class of the same aircraft.



Until the available research on radiative forcing becomes more conclusive, we recommend using a Radiative Forcing Index (RFI) of 1.0.

For more information see: <http://qascarbonneutral.com/carbon-offset-standards/>
And <https://www.iata.org/en/programs/environment/passenger-emissions-methodology/#tab-1>

3.3 Has the IATA carbon calculator been independently endorsed?

Yes, the Quality Assurance Standard (QAS) has reviewed and approved the methodology used to calculate emissions using the airline's data input. Each airline participating in the IATA carbon offset program is subject to independent auditing by the QAS to ensure valid data entry and compliance with the approved methodology.

- For more information see: <https://qascarbonneutral.com>

3.4 How often is the carbon calculator data updated?

It is updated annually but if a new aircraft enters the fleet or a new route is flown, it will be updated more frequently. In case of a new route, the airline can extrapolate carbon emissions from similar routes (aircraft types and distance) or await the collection of route-specific information over a period of one year.

3.5 What if most flights of an airline are somewhat similar in distance and fuel burn?

Some airlines operate route networks with somewhat similar distances and therefore also similar fuel burn. In these cases, an airline may decide to apply a flat price for offsets provided that this is communicated clearly and visibly to passengers.

3.6 Let's consider an example. I have a ticket from airport A to airport B. And a ticket back from B to A. Both flights are with the same aircraft type. Why are the CO₂ emissions not the same for both flights?

There can be many reasons why the average CO₂ output can vary depending on the direction of travel even with the same aircraft type. These include:

- Operational factors such as weather, headwind, tailwind, taxiing time (to/from runway)
- Differences in passenger occupancy and the cargo carried affect the CO₂ allocation
- Factors affecting weight and payload such as luggage



3.7 How is cargo carried in the hold of an aircraft accounted for when calculating the passengers' share of the emissions on a route?

As part of the calculation method, the IATA tool subtracts the emissions associated with cargo which may be carried on a passenger flight, so only the emissions attributable to the passengers are provided.

3.8 Why are the emissions larger if I travel in a premium class (business or first)?

Premium class seating configurations take up more space and weight on an aircraft than economy class seating. Based on the IATA recommended practice, the emissions associated with business and first-class travel are estimated as 1.5 times those in the economy class for a narrow-body aircraft. For a wide-body aircraft emissions associated with the premium economy class are 1.5 times those of the economy class, emissions associated to the business class are 4 times, and emissions associated to the first class are 5 times that of the economy class. (See also Question 3.2)

3.9 How is the type of aircraft taken into account in the carbon calculator methodology?

Different aircraft have different characteristics (fuel efficiency, seat configurations, etc.) and, for those routes in which two or more aircraft types are used, the weighted averages are considered.

3.10 How are the emissions calculated for travel on multiple flights?

The emissions for each leg of the journey are calculated and added together to give total carbon dioxide (CO₂) emissions for the entire trip.

3.11 Does the IATA carbon calculator take into account the impact of non-CO₂ gases at altitude?

Research by the Nobel Prize winning, Intergovernmental Panel on Climate Change (IPCC) indicates that non-carbon dioxide (CO₂) gases such as water vapour (condensation trails) and nitrogen oxides (NO_x), released at altitude by aircraft have additional global warming impacts beyond those of the CO₂ emissions alone, but the relative scale of their impact is highly uncertain. Therefore, these gases are for now not considered in the IATA carbon calculator. When the international scientific community agrees on the emission factors for non-CO₂ gases released by aircraft and the UN endorses this, the IATA carbon calculator will be updated.



4.0 FAQ: Financial Information

4.1 Does the airline charge an administration fee or mark-up on the offset price?

Unlike many other offset programs, airlines participating in the IATA offset program do not charge an administration fee or mark-up on the offset price paid by the passenger. The airlines recognise that passengers are making a voluntary donation in order to improve the environment and, hence, the airline should not profit from such contributions. In fact, all administration costs involved in the program including website re-development, carbon emission data collection and carbon purchasing are borne by the airline.

4.2 Why do different offset providers give different prices to offset the same emissions?

The price of carbon offsets is related to two main factors: market conditions and quality. Carbon is a commodity so when demand is high, during periods of strong economic growth, offset prices rise and vice-versa. In order to ensure strong passenger participation, the IATA offset program airlines only invest in offsets of the highest quality, that have been delivered and independently verified by the UN or other standard setting organisations such as the VCS or Gold Standard. Other offset schemes invest in projects that have not successfully delivered certified emission reductions and/or have not been subject to the same levels of authentication and verification.

4.3 Why may the price for offsetting the same journey change over time?

Carbon credits are a tradable commodity and, hence, the price per tonne reflects the cost on the date the credits are purchased. Carbon credit prices change due to market conditions and are also subject to fluctuating currency exchange rates. Furthermore, carbon prices react to supply and demand and with increasing demand for high quality voluntary carbon offsets, often linked to concrete offset commitments expressed by companies or larger corporations, this may result in an increase in price per offset that can be purchased from an airline website.

Airlines participating in the IATA program will attempt to ensure that these price changes are kept to a minimum.

4.4 Can I get a refund if I purchase an offset but subsequently do not take a flight?

No, it is recognised that the purchasing of an offset by a passenger is a charitable donation and, hence, if a passenger pays for an offset but does not travel, this offset should be "carried over" for a subsequent flight.



5.0 FAQ: Offset Program Approval

5.1 Has the offset program been independently approved?

Each airline participating in the IATA carbon offset program has been approved by the Quality Assurance Standard (QAS). The Program has been shown to meet the requirements of the scheme including environmental integrity, emission calculation methodology, clear and transparent pricing, accurate marketing material and consumer information. In addition, each airline participant is permitted to use the approved offset Quality Mark.

For more information see: <https://qascarbonneutral.com>