

## Module SAF Basics

# Topic Accounting for and Reporting SAFc in the context of Business Travel and Cargo Emissions

## Introduction

Standardized accounting and reporting guidance is key to scale demand within the SAF market. [A book and claim system](#) that separates an environmental attribute from physical SAF needs well defined, standardized accounting to build trust and avoid erroneous double counting. With the growing interest in SAF Certificates (SAFc), leading standard setters such as the Greenhouse Gas Protocol (GHGp) and the Science Based Targets initiative (SBTi) are actively exploring SAFc and other market-based accounting methods and considering their integration. But in the meantime, how should companies account for and report SAFc purchases?

SABA, in partnership with the World Economic Forum Clean Skies for Tomorrow coalition and a large group of practitioners, developed a set of [Accounting and Reporting Guidelines](#) to fill in guidance for reporting voluntary SAFc, while maintaining alignment with existing standards.

This brief provides an introduction for SAFc customers (passengers and cargo shippers<sup>1</sup>) on:

- how to calculate the impact of SAFc relative to a greenhouse gas emissions inventory, and
- publicly reporting greenhouse gas emissions and reductions associated with SAF and SAFc.

A SAFc represents the environmental attributes of SAF, decoupled from the physical fuel volume. Each SAFc unit corresponds to a CO<sub>2</sub>e reduction from displacing conventional jet fuel with SAF, typically denoted in metric tonnes. This CO<sub>2</sub>e reduction is determined by conducting a well-to-wake life cycle assessment (LCA) to determine the carbon intensity of the SAF, in comparison to a reference conventional jet fuel LCA.<sup>2</sup>

To properly apply the Accounting and Reporting Guidelines, corporate customers should first **calculate their aviation emissions assuming conventional jet fuel use**, and then **account for emissions reductions represented by purchasing and retiring SAFc**.

---

1 If you are a SAF supplier, airline, or private aircraft owner and operator and want additional information on how to account for SAF and SAFc, please refer to the guidelines here: [https://www3.weforum.org/docs/WEF\\_SAFc\\_Accounting\\_Guidelines\\_2022.pdf](https://www3.weforum.org/docs/WEF_SAFc_Accounting_Guidelines_2022.pdf)

2 SAF's LCA emission factor = Core LCA value (gCO<sub>2</sub>e/MJ) + ILUC emission values (gCO<sub>2</sub>e/MJ). Core LCA values are calculated by summing feedstock cultivation + feedstock harvesting and collection + feedstock processing + feedstock transportation + feedstock to fuel conversion + fuel transport and distribution + fuel combustion. For more information on LCAs, see the [Technical and Sustainability Certification](#) brief

## Aviation Emissions Accounting:

Building on GHGp best practices, both corporate travelers and cargo shippers should calculate their GHG emissions based on the consumption and life cycle emissions of conventional jet fuel in five steps:

### 1) Identify the GHG emission source within the corporate inventory:

- For corporate travelers, GHG emissions are reported as Scope 3 category 6: Upstream emissions associated with business air travel.
- For cargo shippers, upstream emissions from fuel are categorized as Scope 3 category 3: Fuel- and energy-related activities. Upstream transport and distribution-related activities (outsourced fuel consumption) such as associated carriers' fuel consumption are identified as Scope 3 category 4: Upstream transportation and distribution.

### 2) Select a GHG emissions calculation approach:

There are three approaches to calculate air transport GHG emissions:

1. Distance-based method: determine the distance flown and type of aircraft used for all trips, and then apply an appropriate emissions factor.<sup>3</sup>
2. Fuel-based method: determine the amount of fuel used for all trips, and then apply the appropriate emissions factor.
3. Spend-based method: determine the expenditure incurred for each mode (seat class or cargo) and apply the appropriate emission factor.

#### Corporate Travelers:

The fuel-based method is considered most accurate given that it identifies how much fuel was consumed; but for most companies, the distance-based method is more practical given that fuel consumption data is not often available.

Many newcomers typically rely on the spend-based method, but it's often quite unreliable. As companies increasingly embrace and back SAF through SAFc, SABA strongly suggests transitioning to the distance- or fuel-based method.

#### Cargo Shippers:

SABA recommends using a distance-based approach here also, which is the industry's common practice.

This brief will only detail the distance-based method for both corporate travelers and cargo shippers; for more details on the fuel-based method, please refer to the complete [Guidelines](#).

---

<sup>3</sup> See Section 4 below for more detail on emission factors

### 3) Collect activity data:

#### Corporate Travelers:

Activity data includes the total distance (passenger-kilometers/p-km) travelled by mode of air transport (type of aircraft, travel class, etc.) for employees in the reporting period.

#### Cargo Shippers:

Activity data includes the total distance travelled, based on onboard systems or Great Circle Mapper, and mass of shipment.

### 4) Choose emissions factor and apply calculation approach:

#### Corporate Travelers:

Organizations like the [US Environmental Protection Agency \(EPA\)](#) publish secondary emission factors detailing the kgCO<sub>2</sub>e/p-km for each mode of air transport. Companies can then calculate their business air travel emissions by multiplying the passenger kilometers for each mode of air transport by the secondary emissions factor for those modes, and then summing these values together.

$\Sigma$  (Distance per air travel (km)) × conventional jet fuel WTW emission factor (kgCO<sub>2</sub> e/p-km)

#### Cargo Shippers:

Organizations like [CORSIA](#) publish default LCA emission factors for conventional jet fuel.

Step 1: Tonne-km (tkm) = Total freight in mass (tonne) x average shipment distance (km)

Step 2: Total GHG emissions (kgCO<sub>2</sub>e) (With a fuel efficiency factor) =  $\Sigma$  (total tkm × jet fuel WTW efficiency factor (kg/tkm)) x fuel emission factor (kgCO<sub>2</sub>e/kg)

### 5) Aggregate emissions data to the corporate level

To aggregate total air transport emissions, both corporate travelers and cargo shippers should gather and sum up the emissions data for all air transport emissions across all business segments for the reporting period.

## SAFc Reporting:

The guidelines recommend that companies publicly report the impact of SAFc purchases by:

1. Calculating and disclosing total air travel emissions as described above, using conventional jet fuel, on a well-to-wake basis – this means the conventional jet fuel emissions should include both combustion emissions as well as upstream emissions arising from the fuel's production.

2. Calculating and disclosing the emissions reductions represented by SAFc retired in a registry like the [SAFc Registry](#) (including disclosing sustainability certification information about the fuels).<sup>4</sup>
3. Calculating and disclosing a net air travel emissions impact number, by subtracting the SAFc emissions reductions number from the total air travel emissions (e.g. 2 = 3 – 1).

At present, GHGp and SBTi have not specified a method for incorporating and disclosing SAFc within a company's inventory - scope 3 in this case. Until such guidance is provided, the World Economic Forum Guidelines recommend that corporate travelers report retired SAFc using the dual reporting model that GHGp requires for scope 2 emissions. In dual reporting, a company reports both their original emissions total, as well as the reduced emissions reflecting market-based measures. This approach transparently indicates the relative contributions of air travel activity and market-based measures in the total.

Corporate travelers can consult the [Global Impact Report](#) from Deloitte for a best-practice example of this approach. Corporate travelers should also share this document with their auditors for reference.

---

4 Corporates should only report the use of SAFc after a unit has been retired in their name within a registry, like the SAFc registry. (For more information on how to streamline SAFc issuance, transfer and retirement process, refer to the [SAFc rulebook](#)).