

# HOW MIGHT DOOR-TO-DOOR CARBON REPORTING HELP AIRLINES DECARBONISE?

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Early research indicates that emission communication at the air-travel booking phase can help airlines reduce emissions while increasing revenue, creating a shared success. However, current calculations are limited to in-flight only. We argue that airlines, supply-chain partners and customers can further this success by expanding the carbon calculation from 'gate-to-gate' to 'door-to-door'.

## 01 A GROWING PROBLEM

Responsible for a growing proportion of human-induced carbon emissions, airlines around the world have committed to ambitious decarbonisation targets. However, unlike many other sectors with a clear path forward, many of these airlines' solutions come from future technologies that can't deliver a material or scalable result today. Early research has indicated that airlines can influence consumer behaviour by communicating emission data during the booking phase, resulting in material decarbonisation whilst increasing revenue. However, the design of the research calculated in-flight emissions only, limiting its potential impact.

## 02 OBJECTIVE

Building on early research and industry trials, we are designing a new experimental study to include emission calculation of ground activities that are part of air-travel, such as airport-city ground transportation and airport lounge experience. Adding this to the customer communication, we hypothesise and measure its potential impact in influencing customer behaviours and delivering material decarbonisation.

## 03 METHODOLOGY

Qualitative data collection took place in 2022. Based on this, we are designing a choice experiment to test the inherent utility value people place on emissions, relative to other activities and amenities. We will take a large volume of real-life customers through an airline-like reservation process. The experiment design will be ethically reviewed.

- Qualitative data including interviews (completed)
- Literature and scenario impact review (underway)
- Choice experiment design (underway)
- Data analysis (2022-2023)

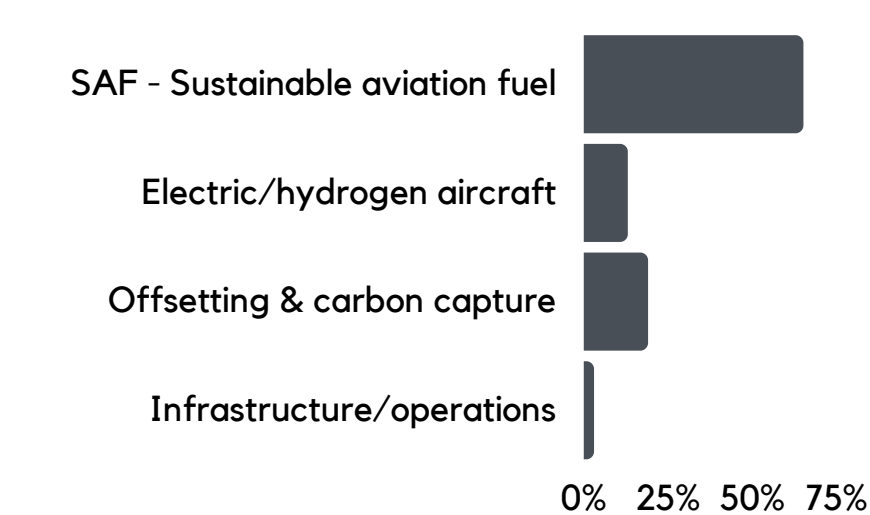
## 04 WHY DOOR-TO-DOOR MATTERS?

Airlines' solution to deliver 100% net-zero relies on future technologies such as longer-distance electric aircraft, hydrogen aircraft and scalable and affordable sustainable aviation fuel, all of which come with risks and cannot deliver material decarbonisation needed today.

More than utility, air travel is arguably an essential part of our social fabric. Its negative climate impact could be reduced through its social and supply chain connection with other sectors where faster material decarbonisation can be achieved.

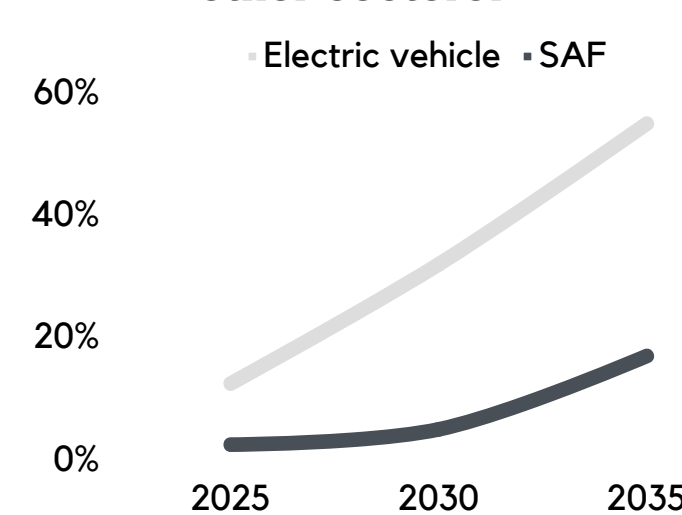
In most cases, airlines' emission calculation is stand-alone and limited to in-flight only. The other activities on the ground that are part of and adjacent to the in-flight journey are not included in carbon communication. This is a missed opportunity as this is where material decarbonisation can be achieved today.

**Show me how the airline sector plans to deliver 100% net-zero by 2050?**



Above: IATA-projected 2050 global contribution to achieving aviation Net Zero Carbon (Mikosz, 2021)

**So, SAF is the biggest part of the solution. How fast does the adoption compare to other sectors?**



Above: Projected global market penetration: EV & SAF (Deloitte, 2020; IATA, 2021)

## 05 RESULTS/FINDINGS

Early research has indicated that when emission reporting is accessible at the booking phase, customers are more likely to choose a route that induces less carbon emissions, even at a cost of a higher fare.

### KNOWN IMPACT - 4%

The adoption of emission reporting in airline booking site can lead to 4% emission reductions (Sanguinetti & Amenta, 2022).

## 06 PROJECTED IMPACT

Airlines are moving mountains to materially take carbon out of the existing operations. Our early review suggests a 'door-to-door' emission communication strategy has a significant potential while only relying on technologies and resources available today.

In addition, the expansion to include ground activities in emission calculation could complement existing carbon reporting requirements / frameworks such as ESG.