

Air France Horizon 2030

SUSTAINABLE DEVELOPMENT COMMITMENTS
#AIRFRANCETAKESCARE

For Air France, travel brings people together and spreads a desire to discover the world. Air France is committed to reducing its environmental impact and offering both its current and future customers a responsible and totally safe travel experience.

Air France is committed to :

Reduce its CO₂ emissions per passenger/km by 50% by 2030

(compared to 2005)

Reduce its CO₂ emissions in absolute terms on the domestic network* by 50% by 2024

(compared to 2019)

*(domestic flights on departure from Orly and inter-regional flights)



-50%

CO₂ emissions per passenger/km compared to 2005.

Continue to reduce our noise footprint.

HORIZON 2030

Carbon neutrality of our ground operations.

Reduce non-recycled waste by

50%
compared to 2011.



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Fleet modernization

In order to reduce its CO₂ emissions, Air France is modernizing its short-, medium- and long-haul fleet:

- **by ordering 60 Airbus A220-300s**, which will gradually replace Air France's A318 and A319 fleets;
- **by taking delivery of 38 Airbus A350-900s**, the first of which joined the fleet on 27 September 2019;
- **10 Boeing 787s in the fleet**;
- **retirement of four-engined aircraft in 2020** (concerns the A340 and A380).

The 38 Airbus A350 and 60 A220 aircraft ordered by Air France consume up to **25%** less fuel and reduce noise emissions by up to **50%** compared to an aircraft of similar size and older design.

- **14 years:** average age of the fleet to date.
- **10 years:** average age of the fleet expected by 2030.

<31

of fuel consumption per passenger per 100 km for the Air France group
(a petrol car consumes around 6 litres per 100 km) by 2030.

REDUCING OUR CO₂ EMISSIONS



A lighter aircraft, less CO₂ emissions

The lighter an aircraft is, the less fuel it consumes. For several years, Air France has been implementing concrete and sustainable actions to make each flight lighter.

 **1 kg less in all the aircraft in the fleet represents a saving of about 69 tons of CO₂ every year.**

 The latest-generation aircraft ordered by Air France are made of lighter materials. The A350 is made of materials up to **67% lighter (53% composites and 13% titanium).**

 Seats, baggage compartments and tableware are lighter. **On board the Airbus A350, for example, the Premium Economy seat is 13 kg lighter**, which helps to reduce CO₂ emissions. **The tableware in the Business cabin is lighter** as some items are made of melamine, representing a reduction of **-15 kg** on board a Boeing 787.

 **6 million fewer magazines and newspapers on board** Air France flights, saving nearly 940 tonnes of paper per year, which corresponds to **3,000 tons less CO₂ per year.**

 All pilot documentation is digitized. That's **23 kg less** on each flight.

The fuel plan and eco-piloting, a more eco-friendly way to fly

Air France's fuel plan covers all sectors of the company. Flight operations have a key role to play in making the company an environmentally responsible player in the air transport industry, with flight safety as its absolute priority.

There are 3 ways of contributing to this

- 1. Fleet renewal with the latest-generation aircraft**
- 2. The actions undertaken over the past 6 years to significantly reduce aircraft fuel consumption:**
 - optimization of the on-board mass (lighter seats, digital press, digital pilot documentation, etc.);
 - optimization of aircraft performance: testing new engine washing procedures, innovation partnership on aircraft paint;
 - improving our efficiency: optimizing fuel efficiency and route choices.
- 3. The practice of eco-piloting, with for example: taxiing with one or two engines running on the runway.**

The initiatives implemented since 2011 have reduced our CO₂ emissions by the equivalent of nearly 400,000 tonnes per year.

A 3% saving in consumption was achieved. Today's objectives are to reduce our consumption by an additional **1 to 2% by the end of 2021.**

Electric power for ground operations

The replacement of the diesel engines of 12 conveyor belt vehicles with electric motors, with a new type of lithium-ion batteries from recycled car batteries will allow to reduce CO₂ emissions by **3 tons** per year and per conveyor belt.

Air France is also reducing its electricity consumption notably through more modern equipment, **the use of sustainable energy for buildings, offices and warehouses** and the integration of this objective in supplier contracts.

For example, at Valbonne, an energy-efficient system has enabled the database center to **reduce its annual electricity consumption by 2%** and reuse the energy to heat the buildings.

58% of ramp vehicles are electric.

ABSORPTION AND AVOIDANCE OF CO₂ EMISSIONS

Our priority is to reduce the CO₂ emissions generated by our activity. In addition, we contribute to the capture and avoidance of greenhouse gases through actions around the world.

Regulatory measures

EU-ETS, emissions trading scheme — since 2012, Air France has been subject to the application of the European greenhouse gas emissions trading scheme (EU-ETS) whose scope is limited to intra-European flights until end-2023.

CORSIA, a global carbon offsetting scheme — as from 2021, for international flights, airlines have agreed to maintain their greenhouse gas emissions via a global carbon emissions offsetting scheme for international aviation (CORSIA).

100% of CO₂ emissions on domestic flights

Since 1 January 2020, Air France has been voluntarily contributing 100% of the emissions from its domestic flights to CO₂ capture and avoidance projects, certified by the most demanding labels and selected with EcoAct.

A dedicated offer for corporate customers

Air France and KLM enable their corporate customers to purchase carbon credits from Gold Standard certified reforestation projects. These projects enable the capture and sequestration of CO₂ from the atmosphere.



Supporting tree planting

Trip and Tree by Air France is a programme that allows customers to do something for the planet and reduce the environmental impact of their trip. When purchasing an air ticket on www.airfrance.com, volunteer customers can make a donation of the amount of their choice to finance one of the tree planting projects around the world.

Make a donation

Tree planting can be used to protect biodiversity, help populations, store carbon, enrich the soil and replenish water. With Trip and Tree, Air France aims to create the first community of eco-travellers.

IN FIGURES

+200,000 trees planted

38 000 donors in 6 months

25 projects on

4 continents



Selective waste sorting

Air France is changing its behaviour. Since October 2019, selective sorting on board its aircraft concerns:

- **Plastic:** bottles
- **Cartons:** Treta Pak packaging
- **Aluminium:** cans
- **Glass:** wine and champagne bottles.

All these materials sorted by cabin crew are then handled by the service provider Servair at Paris-Charles de Gaulle and Paris-Orly and recycled in France or Europe.



Soon to be recycled!

7 million plastic bottles

3 million cartons

6 million cans

loaded on board our aircraft every year.

Wage war on plastic

A reduction of

1,300

tons of single-use plastic used on board each year as from end-2019, i.e. 210 million single-use plastic items replaced by sustainable alternatives.



By the end of 2019, Air France will replace on board all its flights

100 million plastic cups with paper cups.

85 million plastic items of cutlery with items manufactured and packaged from biosourced materials.

25 million plastic sticks with wooden stirrers.

The company has not used plastic straws since 2015, representing

1.3 million fewer plastic items.

Since 2018 Air France has also been offering the "Bon appetit" bag to replace the plate and cutlery kit used for the second long-haul meal.

Stop wastage!

The in-flight offer on Air France flights is adapted to consumer trends. Depending on the duration of the flight and its schedule (night flights, for example), the catering service on board is adapted.

New digitization innovations also make it possible to better forecast customer demand, with pre-selection of the hot dish in the Business cabin deployed in early 2020.

In this way, with simple and common sense measures, as well as technological developments, Air France is able to **reduce food waste without compromising on the customer experience promise.**

RECYCLING, REDUCING AND LIMITING WASTE

INVESTING IN RESEARCH AND INNOVATION FOR CREDIBLE ALTERNATIVES

Pending major technological breakthroughs, and subject to approving their economic viability, sustainable aviation fuels have been identified as a major strategic area of development for supporting the decarbonization of air transport. Their use can reduce CO₂ emissions (up to 80%) and can be incorporated into jet fuel for all aircraft types, without any engine modification or operational impact. Their performance meets the requirements of the aviation sector and they represent a fundamental lever for building the future of sustainable travel.

Involvement in biofuel testing



2013

“Joining our Energies - Biofuel Initiative France” flight at Le Bourget Air Show.

2014-2016

Launch of the “Lab Line for the future” programme, involving the testing of **78** flights powered with **10%** biofuel on Toulouse-Paris and Nice-Paris routes.

2017

Signature of an innovative public-private partnership “Green Growth Commitments” (ECV) with the French Ministry for Solidarity and Ecological Transition, the French Ministry of Transport and the French Ministry of Economy and Finance, and Airbus, Safran, Suez and Total to promote the emergence of sustainable aviation biofuel industries in France.

2019

Delivery of A350s powered with sustainable aviation fuel (during the ferry flights)

2021

Air France committed to supporting several innovative programmes for the production of Alternative Sustainable Fuels In France via “Calls for the Expression of Interest”



Sustainable aviation fuel

Objective

Create the roadmap of a future biofuel industry for a responsible, economically viable and sustainable French aviation industry.

To this end, Air France wishes:

- **Promote the emergence of a French aviation biofuel sector** in a progressive way with support mechanisms:
 - by developing a circular economy dynamic within the territories to promote job creation;
 - for a biofuel that does not compete with the food chain and whose production cycle meets strict sustainability criteria;
 - with incentives at a national, European and international level.
- **Progressively introduce biofuel** for its flights.

With the Solar Impulse Foundation, partners for Clean Aviation

Air France and the Solar Impulse Foundation are joining forces in order to accelerate the adoption of clean and profitable technological solutions in aviation. The Partnership will identify and promote technologies which positively impact the reduction in carbon emissions, waste and noise. All of these clean, efficient and economically feasible solutions will be made available to the aviation industry to build a more sustainable future and Air France will implement those which are relevant to its activities.



The all-electric aircraft

Air France supports the French Aeronautical Federation in purchasing the Pipistrel Alpha Electro, a very light, all-electric single-engine two-seater.

The company is lending the expertise of its mechanics and technicians to this new aircraft.



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