

A4E

AIRLINES FOR EUROPE



SUSTAINABILITY COMMITMENTS

JOURNEY TOWARDS A GREENER
AIR TRANSPORT OF THE FUTURE

Introduction

A4E airlines are committed to the drive towards zero or low-carbon air transport in Europe, part of a broader aim to minimise airlines' environmental footprint and move to a more sustainable European economy. European airlines stand behind the EU's ambition to achieve the goals of the Paris Agreement.¹ This includes aims to limit the impact of climate change to a less than 2 degree temperature increase.

In the meantime, average fuel consumption in the aviation industry fell by 24% per passenger kilometre between 2005 and 2017.² In 2009, EU airlines became the first in the world among any single industry to introduce short, medium and long-term climate goals. The medium-term goal, to achieve carbon-neutral growth from 2020 – and the long-term goal, to halve net CO₂ emissions by 2050 relative to 2005 levels – are particularly ambitious goals for a growing sector.

Goals & Investments

European airlines are investing more than € 169 billion over the next decade in greener aircraft technologies to ensure that air transport can support Europe's common environmental objectives. Projects include:

airBaltic's investing in fleet modernisation, introducing a single-type A220 fleet. Further implementation of its E-GEN high-precision approaches will continue to cut CO₂ emissions across Europe.

Air France-KLM Group investing in extensive fleet renewal (through the introduction of new A350, B787 and A220 aircraft) and committing to the development/purchase of at least 75,000 t of sustainable aviation fuel per year for the next 10 years.

easyJet working with both Airbus and Wright Electric to help with the development of next generation sustainable aircraft. In the meantime easyJet is the first major airline to offset the carbon emissions from the fuel used on every plane it flies.

Finnair investing € 3.5–€ 4 m in the renewal of its fleet, with the aim of reducing CO₂ emissions from its European traffic by 10–15%.

IAG committing to net zero carbon emissions by 2050.

Lufthansa Group investing € 3 bn per year in fleet modernisation, receiving a new aircraft on average every two weeks over the next 10 years. The CO₂ reduction compared to previous models is up to 25 percent.

Ryanair Holdings purchasing 200 × B737 in the next five years (with a value of more than € 20 bn), reducing emissions by 16% per seat.



easyJet is working with Airbus and Wright Electric to develop next generation sustainable aircraft. Its work with Airbus will help the industry's understanding of the operational and infrastructure opportunities and challenges of plug-in hybrid and full electric aircraft. easyJet's partnership with Wright Electric is aiming to produce an all-electric 'easyJet sized' plane which could be used for short haul flight.

¹ Although the Paris Agreement does not establish sector-specific goals for addressing potential temperature rise, the aviation sector's 2050 goal to halve net CO₂ emissions on a 2005 baseline is in line with the Paris Agreement goal to limit global temperature rise to below 2° C above pre-industrial levels.

² European Aviation Environmental Report, EASA, January 2019. <https://www.easa.europa.eu/eaer/>



BA is building a waste to fuel plant with renewable fuels company, Velocys and Shell. The first fuel will be produced by 2024 – taking hundreds of thousands of tonnes of waste and transforming it into clean-burning, sustainable fuels.

European airlines are also exploring other pathways towards a zero or low-carbon European air transport. Smart EU policies will play a key supporting role in this, including:

✈️ **Completing Europe's Single Aviation market** by reforming its airspace architecture and broader Air Traffic Management system, including full implementation of the Single European Sky. This would enable an airspace design according to traffic flows and lead to a minimum up to 10% decline in CO2 emissions. This initiative would reduce CO2 emissions in Europe by 18 million tonnes per year.

✈️ Investments and incentives to **scale-up Sustainable Aviation Fuels (SAFs)**.

✈️ **Full implementation of the global aviation emissions off-setting system, CORSIA**, whilst supporting more ambitious long-term ICAO targets.

✈️ Investment in **research and development initiatives**, such as electric and hybrid engine technologies, to reduce airlines' dependency on fossil fuels.

Further efforts to reduce fuel and energy consumption will increase in the coming years – thereby limiting greenhouse gas emissions and other air pollutants.

The Role of Modern Aircraft

New, more efficient planes reduce fuel consumption and thereby CO2 emissions, whilst at the same time reducing the impact of noise on local communities. On average, a new generation of aircraft is 25% cleaner and less noisy than its predecessors. The cost of a new generation aircraft that can carry 350 people is about **€ 300 million**.

AIRLINE CARBON EFFICIENCY

TUI's ambition is to operate Europe's most carbon-efficient airlines and cut carbon emissions per passenger kilometre by 10% by the end of 2020.

INVESTING IN CUTTING-EDGE AVIATION TECHNOLOGY

With the Boeing 787 Dreamliner (up to 20% more fuel efficient) and 737 MAX aircraft (up to 15% more fuel efficient) than the aircraft they are replacing

Dedicated environmental and fuel teams drive best practice

All five tour operator airlines **ISO 14001 CERTIFIED**

MODERN FLEET with an average age of 9.6 years

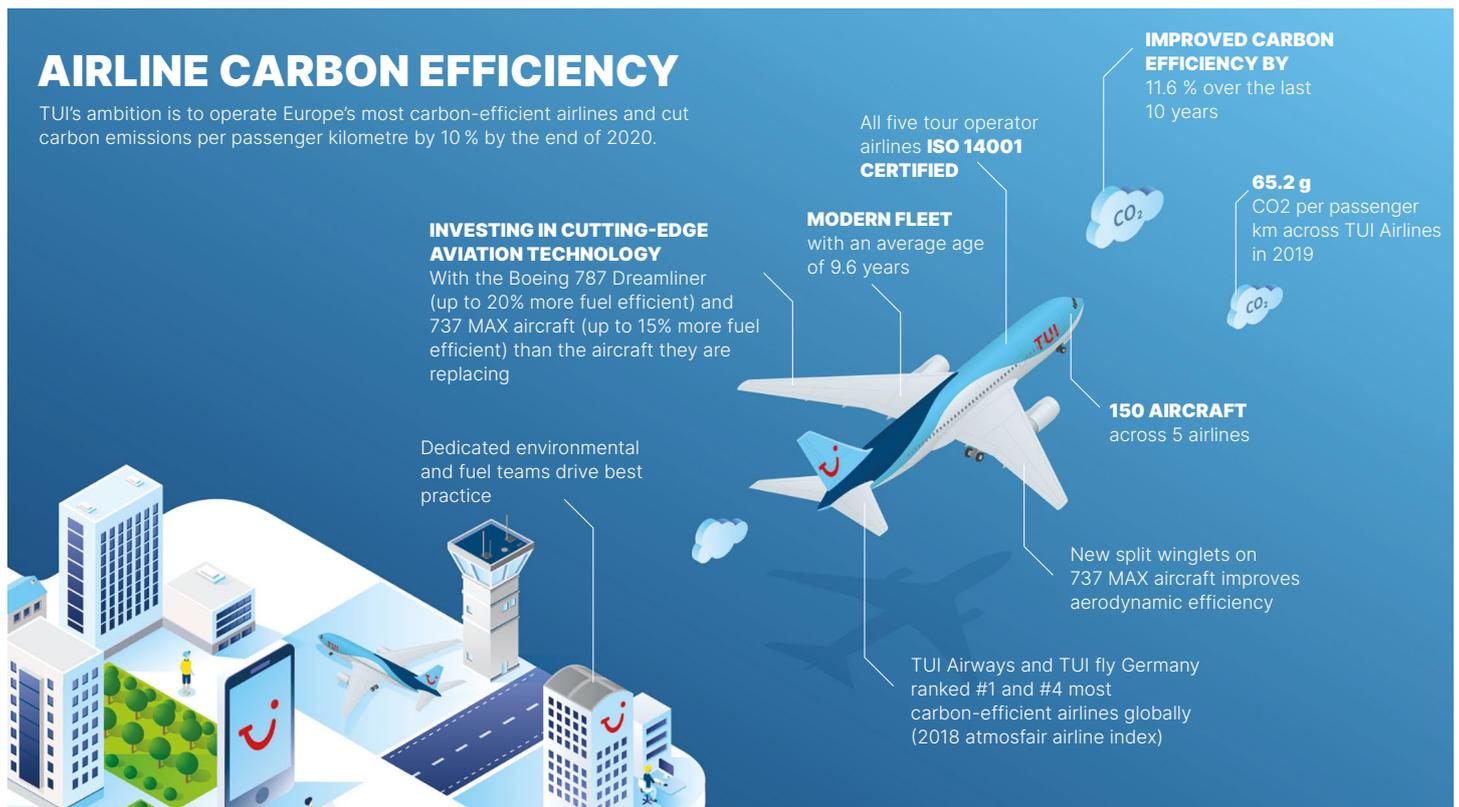
IMPROVED CARBON EFFICIENCY BY 11.6% over the last 10 years

65.2 g CO2 per passenger km across TUI Airlines in 2019

150 AIRCRAFT across 5 airlines

New split winglets on 737 MAX aircraft improves aerodynamic efficiency

TUI Airways and TUI fly Germany ranked #1 and #4 most carbon-efficient airlines globally (2018 atmosfair airline index)



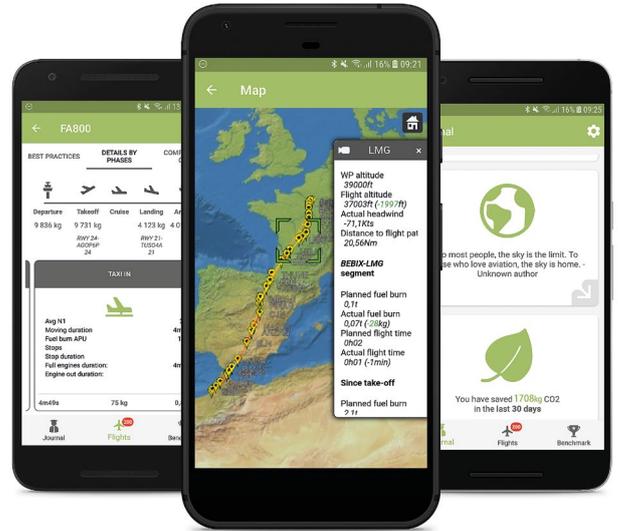
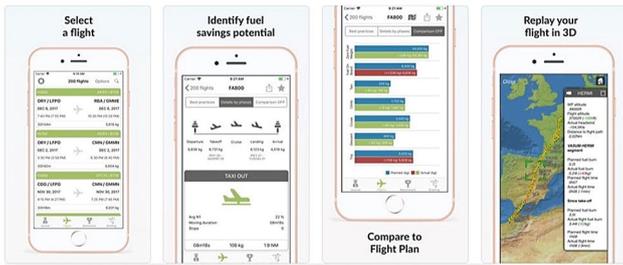
Emissions & Carbon Pricing

Aviation contributes to 2–3% of man-made greenhouse gas emissions globally. However, with the expected growth in air traffic over the coming decades, this share is expected to increase if no action is taken. Carbon pricing puts a cost on emissions to incentivise organisations to reduce their carbon footprint. All airlines should have a cap on their emissions, so that if they produce more emissions than they are allowed to, they will have to buy carbon credits. If less emissions are produced, however, companies get credits to finance additional reduction measures.



SkyBreathe MyFuelCoach™
Save the planet
OpenAirlines
Free

Screenshots iPhone iPad



Norwegian's new SkyBreathe[®] fuel savings app for pilots has the potential to save up to 2% of the fleet's fuel consumption and cut up to 140,000 tonnes of CO₂-emissions per year. The app, created as part of the EU's Clean Skies project by OpenAirlines with the support of Transavia, helps airlines optimize their fuel efficiency levels. It is currently in use by half a dozen A4E airlines.

ETS & CORSIA



Ryanair Holdings has donated over € 1 million to its four environmental partners, including Renature Monchique in Portugal, as part of its Carbon Offset Initiative funded by its customers. This money will pay for the planting of thousands of trees in the Monchique area of the Algarve, which was destroyed by wildfires in 2018.

In 2016, the International Civil Aviation Organization (ICAO) adopted a global carbon pricing instrument for international aviation (the Carbon Offsetting and Reduction Scheme for International Aviation, or CORSIA).

Under CORSIA, airlines are required to compensate the increase in CO₂ emissions above 2020 levels covered by the scheme. It is forecast that CORSIA will mitigate over 2.5 billion tonnes of CO₂ between 2020 and 2035.

CORSIA is the first global carbon pricing instrument covering an entire sector. The significance of this agreement on a global level cannot be understated. From 2021, already 81 countries accounting for about 76% of global traffic will implement this scheme, with further extensions expected over time.

Europe's airlines have already been paying for their emissions in Europe since 2012 via the EU Emissions Trading System (ETS). Aviation is currently the only transport sector that is part of the ETS scheme. The cost of emissions is at its highest ever, around four times as high as it was in 2017 – reaching € 26 per ton of CO₂.³

During this period, Europe's airlines have mitigated 100 Mt of CO₂ emissions. In total, the net reduction in aviation related emissions between 2013-2020 is estimated to be 193.4 Mt of CO₂ emissions.⁴

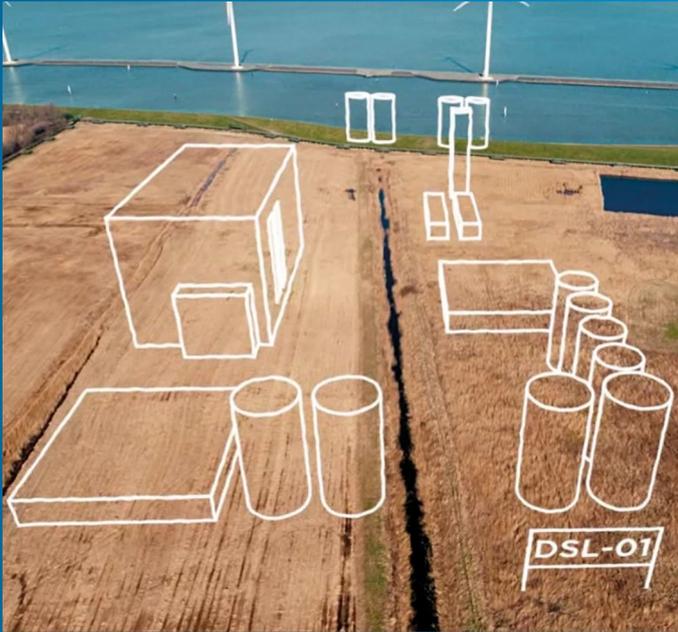
A4E airlines will work to fully implement CORSIA whilst in parallel warn against regulatory overlaps with EU measures and potential double-burdens on the same emissions from 2021 onwards.

In parallel, carriers will continue to give passengers information on their travel-related CO₂ emissions and how to offset these. Concretely, we will increasingly develop voluntary mechanisms to mitigate the carbon impact of journeys, as well as improve existing mechanisms.

³ Harttree European Market Update 24. August 2018

⁴ EASA, 2019. European Aviation Environmental Report.

Fuels



KLM Royal Dutch Airlines has committed to developing and purchasing 75,000 tonnes of sustainable aviation fuel per year for the next 10 years from Europe's first dedicated SAF plant, which is scheduled to open in 2022.

Given the costly, energy-intensive nature of their operations, airlines naturally have a strong aspiration to make their operations more energy efficient – particularly by striving to reduce jet fuel consumption. A4E airlines strive to operate modern fleets to reduce the required fuel and emissions. Airlines' measures to improve their fuel efficiency focus primarily on flights operated by the carriers themselves. Allowing airlines to fly their preferred trajectories, coupled with necessary improvements to Europe's ATM system, would also have significant, positive implications on fuel burn.

Meanwhile, research and innovation on alternatives to fossil fuels are ongoing and should be supported. In the absence of an alternative source of energy in the next years, European aviation commitments to reduce its CO2 footprint will have to be achieved by continuing to use kerosene – however **switching to a kerosene that is increasingly CO2 neutral, whilst remaining cost-competitive.**

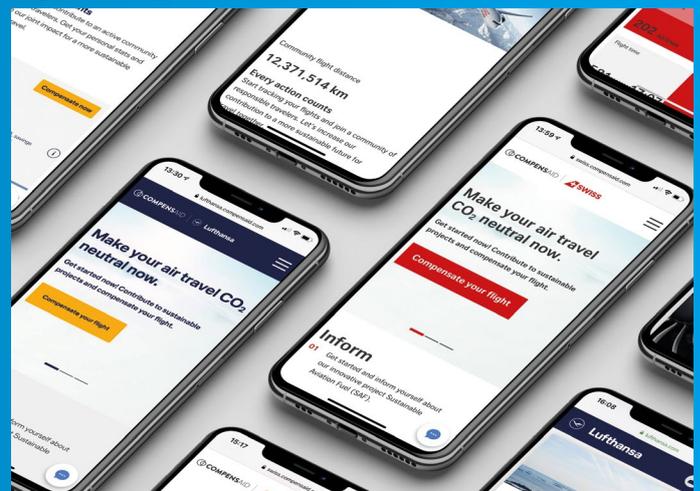
New sources of energy through sustainable aviation fuels (SAFs) produced from a variety of feedstocks – including waste by-products, non-food crops and potentially synthetic fuels, present promising results.

One of the major obstacles for the deployment of sustainable fuels for aviation is the significant cost difference between fossil JetA-1, and Sustainable Advanced JetA-1.

Sustainable Advanced JetA-1 is currently three to five times more expensive than standard kerosene. This can be largely explained by the lack of supply in Europe. In fact, at the moment there is no factory in Europe dedicated to the productions of SAFs for aviation. This lack of supply is driving up the price. For sustainable aviation fuel to become more cost-competitive and to support further uptake, fuel suppliers require a **stronger market signal, harmonized at a global level**, to develop production for the aviation sector. At the same time, this new generation of fuels needs to meet strict sustainability criteria, for example taking into consideration the origin and quality of the resources and the land use change impact.

To mobilise the huge amount of investment needed,⁵ **financing for research, development and deployment must be improved.**

⁵ According to the European Commission's long-term climate strategy, investment needs for low-emission transport alone under the current energy and climate policy will amount to EUR 685 bn/year between 2021–2030, and EUR 904 bn/year between 2031–2050. European Commission, 2018. 2050 long-term strategy.

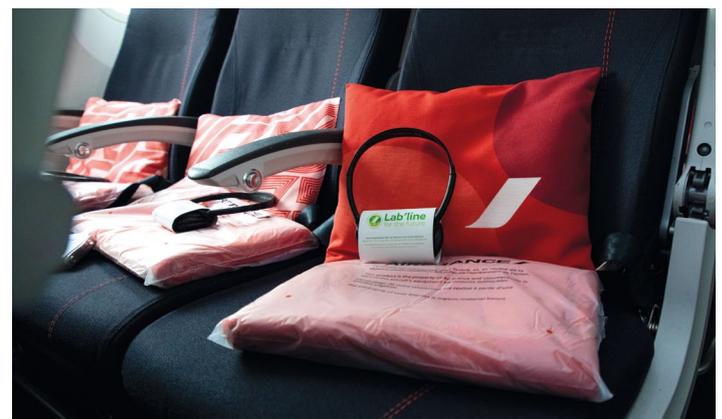


Lufthansa is collaborating with Hamburg airport and the Heide refinery for the production and use of synthetic kerosene, which is almost zero-carbon. Since August 2019, travellers can also offset their individual carbon footprint by investing in sustainable alternative fuel use through the airline's new "Compensaid" sustainability platform.

Circular Economy

A4E airlines are committed to delivering ecological and cost-efficient operations, manufacturing, and maintenance, including reuse and recycling technologies and end-of-life procedures in line with the circular economy.

Each year, 13 million headsets are repackaged, reused and recycled by workers with disabilities supported by Air France.



Plastics

Tackling plastic pollution and its negative impact on the environment has emerged as a major challenge for today's economy; unfavourably affecting lands, waterways, oceans, animals and humans. A4E is fully committed to eliminating all avoidable single-use plastics. Numerous green initiatives are underway, including recycling as well as fuel and waste reduction among plastics, glass, metal cans, paper and waste.

Going beyond this, A4E carriers will also explore initiatives to replace plastics with more environmentally-friendly alternatives wherever possible, such as paper packaging, wooden cutlery, bio-based plastic cups and biodegradable materials, whilst never compromising on (food) safety, security and life-cycle considerations. Such effort will include careful assessments of the advantages and drawbacks of the phase-out from a CO2 emissions perspective.



Above: Icelandair has introduced reusable bags for its handling of pillows, blankets and other merchandise on board, avoiding the use of around 100,000 single use plastic bags each year.

Left: Finnair was able to reduce 5,000 kg of plastic waste per year by replacing the plastic wrappings of its amenity kit and slippers with a cardboard band, and by reducing the amount of plastic in its contents.

Bottom: In 2019, Air France replaced 210 million single use plastic items onboard, representing a reduction of 1,300 tons of plastic per year.

Waste

At the moment, all catering waste from outside the EU is classified as Category 1 (CAT1) Waste. CAT1 Waste is a type of waste that has been classified as potentially dangerous to animal and/or plant health, CAT1 being the highest degree of hazard on a three-level scale. This type of waste is subject to strict EU legislation, prohibiting recycling. All CAT1 Waste must be disposed of by incineration or buried in an authorised landfill. Due to regulatory responsibilities, only a fraction of all catering waste handled in 2018 has been recycled or separated due to the obligations regarding international waste, despite the aviation sector's efforts to recycle a higher percentage of total waste.

While supporting its aims to avoid transmitting diseases, A4E believes there is room for improvement and a more sensible risk-based approach for handling international catering waste from aviation. The legislation is nearly 10 years old and does not reflect the reality of increased health and food safety standards globally. It is simple: without a revision, the EU will be unable to meet its own set targets for moving towards a fully circular economy.⁶

⁶ Laid down in the EU Circular Economy Package (2018).

Noise



Noise measurements are regularly taken on Lufthansa short-haul flights. In 2014, Lufthansa became the first airline worldwide to start operations with an Airbus A320 equipped with noise-reducing vortex generators. In the meantime, all of the airline's A320 aircraft have received vortex generators.

European airlines are committed to limiting the impact of aircraft noise on local communities through investments in "next generation" aircraft, new engine technologies and enhanced operational processes. Along the lines of the Balanced Approach,⁷ A4E remains committed to work on solutions to demonstrated noise issues on an individual airport basis and

subject to specified processes including stakeholder consultation and the involvement of airports and air navigation service providers.

⁷ ICAO Doc 9829, *Guidance on the Balanced Approach to Aircraft Noise Management*.



IAG Cargo donates airline blankets to keep baby elephants in Kenya warm and protected from common diseases. A4E has signed the Buckingham Palace Declaration, furthering its commitment to protecting precious wildlife from illegal trade.

Biodiversity

Together with a number of airlines globally, A4E airlines committed to adopt a zero-tolerance policy to combat illegal wildlife trade.⁸ This includes: a commitment to increase awareness on the nature, scale, and consequences of illegal wildlife trade across the entire transport sector; the development of a secure and harmonised system for passing on information about suspected illegal wildlife trade to the relevant authorities, and – where permitted by law – the notification of relevant law enforcement authorities of cargoes suspected of containing illegal wildlife and their products and, wherever possible, refusal to accept or ship such cargoes.

⁸ In particular, the United for Wildlife (UFW) Buckingham Place Declaration on the illegal trade in wildlife. See further details here: <https://www.unitedforwildlife.org/the-buckingham-palace-declaration/>

A4E MEMBERS:





Launched in 2016, Airlines for Europe (A4E) is Europe's largest airline association, based in Brussels. The organisation advocates on behalf of its members to help shape EU aviation policy to the benefit of consumers, ensuring a continued safe and competitive air transport market. With more than 720 million passengers carried each year, A4E members account for more than 70 per cent of the continent's journeys, operating more than 3,000 aircraft and generating more than EUR 130 billion in annual turnover.

Members with air cargo and mail activities transport more than 5 million tons of goods each year to more than 360 destinations either by freighters or passenger aircraft. Current members include Aegean, airBaltic, Air France-KLM, Cargolux, easyJet, Finnair, Icelandair, International Airlines Group (IAG), Jet2.com, Lufthansa Group, Norwegian, Ryanair Holdings, Smartwings, TAP Air Portugal, TUI and Volotea. In 2019, A4E was named "Airline & Aviation Business Development Organisation of the Year" by International Transport News. Read our A4E Manifesto and follow us on Twitter @A4Europe.



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