



# OUR ROADMAP TO NET-ZERO CARBON EMISSIONS BY 2050

## Introduction

At easyJet, we have long focused on taking responsibility for the impact our flights have on the environment.

We do this in two ways, by working tirelessly to minimise our carbon emissions today and pursuing innovative zero carbon emission solutions for the future.

In November 2021, we joined Race to Zero, a global UN-backed campaign to achieve net-zero carbon emissions by 2050.

As part of that commitment, we have set a SBTi-validated<sup>1</sup> interim science-based target - a 35% carbon emissions intensity reduction by 2035 - and are now publishing the roadmap for our transition to net-zero carbon emissions by 2050.

## easyJet's carbon emissions to-date

Since 2000, over a 20-year period, we have already reduced our carbon emissions per passenger, per kilometre by one-third through a combination of continuous fleet renewal with modern aircraft and efficient operations.

easyJet's average carbon emissions per passenger kilometre are significantly lower than the global industry average. In 2019, before the impact of the global Covid pandemic, our carbon emissions per revenue passenger kilometre were 70.41g. In comparison, global aviation's emissions were 90g CO<sub>2</sub>/RPK, so our carbon emission intensity was on average 22% lower.<sup>2</sup>

<sup>1</sup> easyJet plc commits to reduce well-to-wake GHG emissions related to jet fuel from owned and leased operations by 35% per revenue tonne kilometre (RTK) by FY2035 from a FY2019 base year. The target boundary includes biogenic emissions and removals from bioenergy feedstocks (i.e. SAF). Non-CO<sub>2</sub>e effects which may also contribute to aviation induced warming are not included in this target.

<sup>2</sup> References:

- Industry reference figures: ICCT report - CO<sub>2</sub> EMISSIONS FROM COMMERCIAL AVIATION 2013, 2018, AND 2019 <https://theicct.org/wp-content/uploads/2021/06/CO2-commercial-aviation-oct2020.pdf>
- easyJet's figures are published in the Sustainability Chapter of our FY21 Annual Report

# easyJet's net-zero roadmap

## 1. Introduction

easyJet's roadmap to net-zero carbon emissions by 2050 is the most ambitious airline roadmap to-date. The roadmap sets out that through the adoption of a suite of measures including zero carbon emission technology, once available, the airline would be able to reduce its carbon emissions per passenger, per kilometre by 78% by 2050 (vs 2019), with residual emissions addressed by carbon removal technology taking the airline to net zero.

Alongside ultimately transitioning to zero carbon emission technology, the roadmap features a combination of fleet renewal, operational efficiencies, airspace modernisation, Sustainable Aviation Fuel and carbon removal technology.

The roadmap has been developed based on today's knowledge and technological outlook, over time individual elements may need to be adjusted and scaled up or down.

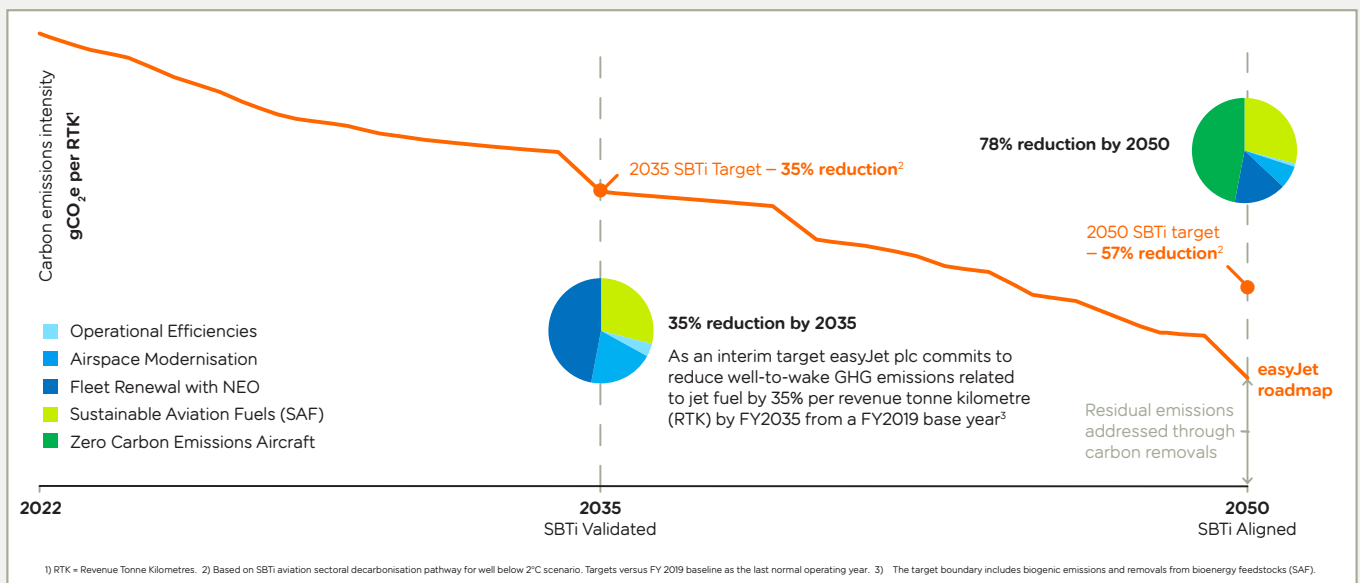
easyJet is committed to working with the industry and governments to support and accelerate the change that's required for the realisation of its roadmap.

## 2. Roadmap

# ROADMAP TO NET-ZERO BY 2050

## Aligned with Science-Based Targets initiative (SBTi)

- > Ambition to deliver 78% carbon emission intensity reduction by 2050 with residual emissions addressed through carbon removals
- > Pioneering developments to deliver industry leading emission reductions





**Fleet renewal:** Fleet renewal is crucial for decarbonisation as it replaces older aircraft with younger, more fuel-efficient models. easyJet will be making a list price investment of \$21bn over the coming years to continue to renew its fleet. All 168 new aircraft deliveries will be Airbus NEO aircraft, joining the 59 NEO aircraft already in the fleet. This will make easyJet one of the largest single brand operators of A320neo family aircraft in Europe. These aircraft are at least 15% more fuel efficient than the aircraft they replace and as well as providing a 50% noise footprint reduction. Switching to more fuel-efficient current generation aircraft as well as up-gauging to larger aircraft has a significant impact to reduce carbon emissions in the short term due to higher absolute fuel efficiency and lower emissions per seat.



**Operational improvements and efficiencies:** easyJet continues to operate its aircraft as efficiently as possible and is always looking for efficiency improvements. easyJet has today announced a multi-million-pound fleet-wide investment into the latest aircraft software which will help the airline to achieve substantial and permanent carbon emission reductions in the short-term by enabling the optimisation of aircraft descents. Once completed easyJet will operate the largest fleet using Descent Profile Optimisation (DPO) and Continuous Descent Approach (CDA). This comes in addition to the use of AI and adjusting standard operating procedures, which helps to reduce fuel usage and therefore carbon emissions, for example operating single-engine taxiing on arrival and departure, using advanced weather information to improve navigation performance and engine washing to remove debris, which improves the air turbine performance. This is complemented by flight efficiency partnerships with key stakeholders such as Airbus, Collins Aerospace, NATS and Eurocontrol. easyJet has this year received the first A320neo from Airbus that is equipped with the latest Satellite Landing System (SLS) technology which helps to further improve the efficiency of its operations, reducing fuel usage.



**Airspace modernisation:** This is crucial for the entire industry as it has the biggest potential to achieve carbon reductions right now, as more direct flight paths lead to shorter flying times, which reduce fuel burn and resulting emissions. easyJet is working with stakeholders and public authorities across Europe to advocate for the modernisation of airspace, including projects such as the Single European Sky and the UK's airspace modernisation programme being coordinated by the Airspace Change Organising Group (ACOG). These important initiatives are necessary for a more environmentally-optimised and efficient air traffic management system. For example, the Single European Sky has stated an ambition to deliver 10% carbon emissions savings from European aviation. easyJet is one of founding members of the Single European Sky ATM Research (SESAR) 3 Joint Undertaking, an institutionalised European public-private partnership, to accelerate the delivery of the Digital European Sky. The airline has also recently been announced as the first airline evaluation partner for Iris, a ground-breaking air traffic management programme, led by Inmarsat, the global leader in satellite communications, together with the European Space Agency and Airbus, paving the way for more efficient air traffic management.



**Sustainable Aviation Fuel (SAF):** easyJet will use SAF as required until its fleet has transitioned to zero carbon emission aircraft to achieve material lifecycle carbon emissions reductions in comparison to kerosene. Today easyJet has confirmed it has contracted all SAF volumes reflected in its roadmap for the next five years. Last year, easyJet was the first airline to operate flights out of Gatwick airport that were powered by a 30% SAF blend.



**Carbon removal technology:** easyJet has signed a Letter of Intent with Airbus to support the development of carbon removal technology, which captures carbon dioxide directly from the atmosphere and then stores it securely and permanently underground. easyJet is among the first airlines in the world to support this nascent technology which is recognised by climate scientists, including by the latest Intergovernmental Panel on Climate Change (IPCC) report, as critical to help the world go beyond climate mitigation and to support the achievement of net-zero by removing residual emissions.



**Zero carbon emission aircraft:** While easyJet is looking at all options for zero carbon emission flight, based on today's technological advances hydrogen shows the most potential for a short-haul airline like easyJet to truly decarbonise. Hydrogen has no operational carbon emissions. It also has the potential to significantly reduce non-CO2 emissions from flying.

Over the past couple of years, the development of zero carbon emission technology has accelerated exponentially, and easyJet is working with partners, including Airbus, Rolls-Royce, GKN Aerospace, Cranfield Aerospace Solutions and Wright Electric, to accelerate this. It is a cross-industry effort and as a major European airline easyJet not only provides the airline and customer perspective to its partners but also demonstrates to aircraft manufacturers that there is demand for zero carbon emission aircraft.

easyJet was the first airline to support Airbus' ZEROe programme to develop a zero-carbon emission commercial aircraft and recently launched a partnership with Rolls-Royce to develop hydrogen combustion engine technology capable of powering a range of aircraft, including easyJet-size, narrowbody aircraft.

### 3. The role of governments

easyJet is committed to playing its part however, full decarbonisation cannot and will not happen without government support so easyJet is working with the industry and policymakers to support and accelerate the change that's needed which includes:

- > Supporting the development of zero carbon emission technology, this includes:
  - Developing a regulatory framework – now – which rewards and incentivises aircraft manufacturers to produce aircraft that can operate carbon-free flights, such as those powered by hydrogen, and incentivises airlines to adopt the technology
  - Creating investment and financial incentives for funding the development and scaling up of zero carbon emission technology
  - Recognising the role of green hydrogen in aviation by incorporating the requirements of aviation in UK and EU hydrogen strategies, as well as incorporating hydrogen as a SAF equivalent in the EU's ReFuelEU Aviation proposal and the UK's SAF mandate

- Investing into renewable energy to support the creation of green hydrogen for aviation
- Supporting the development of hydrogen supply and infrastructure at airports
- > Expanding effective carbon pricing, through the EU and UK Emissions Trading Systems, to all EEA and UK departures, and ringfencing a portion of the ETS revenues for decarbonising aviation
- > Linking passenger taxes to emissions to incentivise efficiency and the move towards zero carbon emission aircraft, and ringfencing a portion of tax revenues for decarbonising aviation
- > For the EU27 national governments to finally deliver on the Single European Sky project for airspace modernisation, or failing this, to make other rapid improvements in airspace efficiency. For the UK government to deliver on its stated ambitions for UK Airspace Modernisation
- > Recognising the contribution of carbon removal technology to meet net-zero targets and ensuring it is incentivised. Carbon removal credits should be equivalent to ETS allowances

## Methodology

easyJet's carbon reduction pathway is aligned with the Science-Based Targets initiative (SBTi) sectoral decarbonisation pathway. easyJet is the first low cost airline worldwide to announce that its interim target has been validated by SBTi.

SBTi requires airlines to decarbonise within their own operation, thus it doesn't take into account the use of out-of-sector carbon offsetting, or other market-based mechanisms such as the EU Emissions Trading System or CORSIA.

The roadmap is based on 'well to wake CO<sub>2</sub>e emissions intensity expressed as grams of carbon dioxide equivalent (CO<sub>2</sub>e) per tonne kilometre (RTK)'. easyJet normally reports its intensity as gCO<sub>2</sub>RPK based on aviation fuel consumption.

The SBTi is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF), which guides companies on their decarbonisation journeys, in line with the Paris Agreement. easyJet worked as part of the Technical Working Group (TWG) of dedicated experts from industry and NGOs who provided detailed input during the planning phase and on various drafts of the guidance and tool.

## 4. Panel of reviewers

Decarbonising aviation is a collective effort. Our roadmap has been reviewed by key partners, stakeholders and experts, including the below, and we would like to thank everyone for their valuable input and constructive feedback.



This roadmap ultimately reflects the views of easyJet. It does not necessarily reflect those of the reviewers or their associations.