

EUROPE'S CLEANEST & GREENEST AIRLINES GROUP

ENVIRONMENTAL POLICY

VOL. 2 - 2020



RYANAIR

MORE CHOICE. LOW FARES. GREAT CARE.

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1. OUR ENVIRONMENTAL POLICY

Europe's Favourite Airline

This year Ryanair will carry over 150m passengers throughout Europe at lower fares than any other airline. Ryanair has made the free movement of people throughout Europe a reality, creating affordable travel for tourism, business, commuting, study and for visiting friends and relatives. We have done more to integrate European society than any other business.

Ryanair provides high-quality jobs, competitive remuneration, world class training, job security, promotion opportunities, industry-leading rosters, mobility, and many other benefits to over 16,000 aviation professionals. We operate in 37 countries, from 86 bases and serve over 200 airports. Our team includes citizens from every EU Member State. Ryanair supports over 220,000 airport jobs and generates enormous economic activity and jobs in the EU, especially its regions, many of which suffer low levels of economic development and high youth unemployment.

Europe's Cleanest Greenest Airline

Over the last five years, Ryanair has changed more than any other airline, as we rolled out a series of digital and customer experience improvements.

“Aviation must play its role in addressing climate change.

As well as being Europe's favourite airline, with the best customer service, Ryanair is Europe's cleanest, greenest airline. We are committed to minimising the impact our business places on the environment, and this document highlights our outstanding environmental achievements to date and our ambitious targets for the future. Aviation is the most efficient form of mass point-to-point transport, accounting for just 2% of EU man-made CO₂ emissions. (Road transport creates 26%). The fuel burn per passenger km for a Ryanair aircraft is just 0.019 litres, which is 44% less than the fuel burn per passenger km of a typical family car¹ of 0.034l. Nevertheless, as a very small part of a big problem, aviation



must play its role in addressing climate change; and Ryanair, as Europe's largest and lowest cost airline, is committed to leading the way. We support the Paris Agreement to limit global temperature rise to less than 2°C and we welcome the current global ambition of limiting warming to 1.5°C and the European focus on setting 'Net Zero' targets. We support IATA's 2050 target of an aviation sector that emits a net 50% less CO2 against 2005 levels.

As an airline, we will play our part in optimising the fuel efficient operations of aircraft during use. But these stretching climate goals underscore the urgent need to accelerate the research and development of innovative highly-efficient aircraft designs.

Priorities

Ryanair is committed to minimising our environmental impact. Through a process of continuous improvement, we will:

- Continue to comply fully with the environmental rules, regulations, standards, and codes of practice that apply to our sites, our people and operations.
- Limit the impact of aircraft noise on local environments; Our new Boeing 737 fleet, in which we will invest more than \$20 billion, will further reduce noise by up to 40% per seat and reduce emissions by 16% per seat.
- Minimise fuel and energy consumption to limit our emissions of greenhouse gases and pollutants impacting air quality.
- We hereby commit to reducing our emissions rate to below 60 grams of CO2 per passenger km by 2030, which is 10% lower than our current rate and 30% lower than the average of the four other biggest European airlines.
- Continue to offer our customers an easy-to-use voluntary mechanism to offset the carbon cost of their journeys.
- Work to remove all non-recyclable plastics from our operations over the next 5 years.

A Ryanair 737 burns 0.019 litres per passenger km (RPK). An average family car burns 0.054l per km, divided by a typical occupancy of 1.6 gives 0.034 per passenger per km (Source = Ryanair calculation based on UK Department for Transport data).

“We commit to lowering our emissions to below 60 grams of CO2 per passenger km by 2030.”

Governance and Reporting

Ryanair management team is responsible for implementing our priorities, including those that ensure compliance, achieve our targets, and manage environmental risk. The Board of Ryanair has oversight to ensure management fulfils our environmental policy.

Our environmental performance will be published monthly on our website and in our annual report.

Others' Responsibilities

Environmental regulation has to be well designed and fair in order to support a competitive market place. Regulation of other aspects of industry can produce significant environmental benefits. For instance real action by Member States and the European Commission to tackle, at European level, the fragmentation and inefficiency of Air Traffic Management could deliver enormous environmental benefits through enabling efficient routing and reduced fuel burn and emissions. Ryanair will continue to push for these reforms.



\$20 BILLION

As part of Ryanair's environmental commitment, we are investing over US\$20 billion in a fleet of 210 new Boeing 737 aircraft, which will carry 4% more passengers but reduce fuel consumption by 16% and cut noise emissions by 40%.

Michael O'Leary
Michael O'Leary
 Group CEO

2. EUROPE'S GREENEST AIRLINES GROUP

Our business model ensures Ryanair is Europe's greenest, cleanest airline, as we:

Operate only point-to-point routes with industry-leading load factors (96% p.a.).

Continuously invest in fuel-efficient new aircraft and improved engine technology.

Conduct the most efficient operational procedures in the industry.

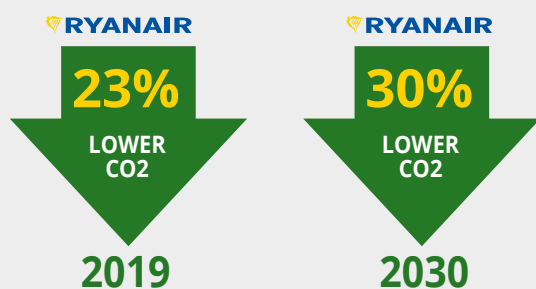
Deliver a CO₂ per passenger km which is 23% lower than the average of Europe's other 4 big airlines.

Cut our noise footprint by 86% with the introduction of our new Boeing 737 fleet.

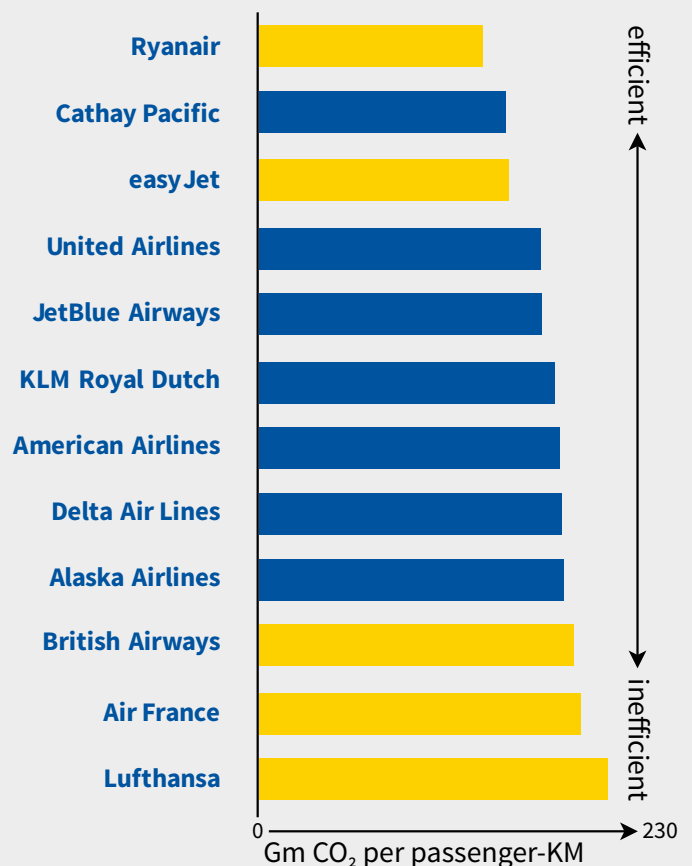
To emphasise our commitment to our industry leading environmental performance and to highlight our ambition to do more, Ryanair is publishing:

- Our updated Environmental policy, incorporating our commitment to address climate change;
- Our objective of reducing our global impact (greenhouse gas emissions) and our local impacts (aircraft noise and emissions affecting air quality);
- Our commitment to reducing emissions to below 60 grams of CO₂ per passenger km by 2030, 10% lower than our current rate and 30% lower than the average of the four other biggest European airlines;
- Our support for the Paris Agreement to limit global temperature rise to less than 2°C, the current global ambition of limiting warming to 1.5°C and the European focus on setting 'Net Zero' targets.

RYANAIR VS EUROPE'S 4 BIG AIRLINES



AIRLINE EFFICIENCY RANKINGS



Source: Brighter Planet Air Travel Carbon and Energy Efficiency Report

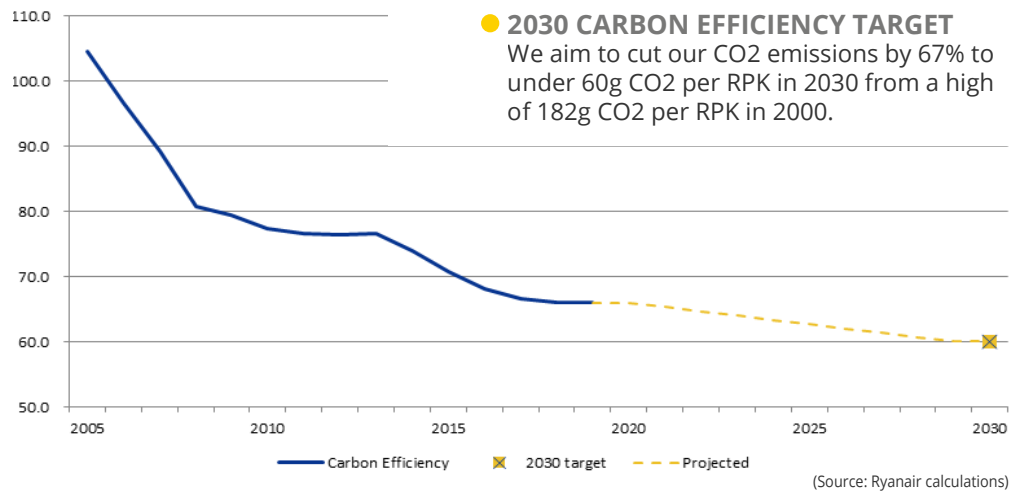
3. OUR CLIMATE TARGETS

To deliver our environmental commitments, Ryanair is announcing a 2030 carbon efficiency target and an absolute climate target for 2050.

Carbon Efficiency
Target for 2030

60g

Per passenger Km

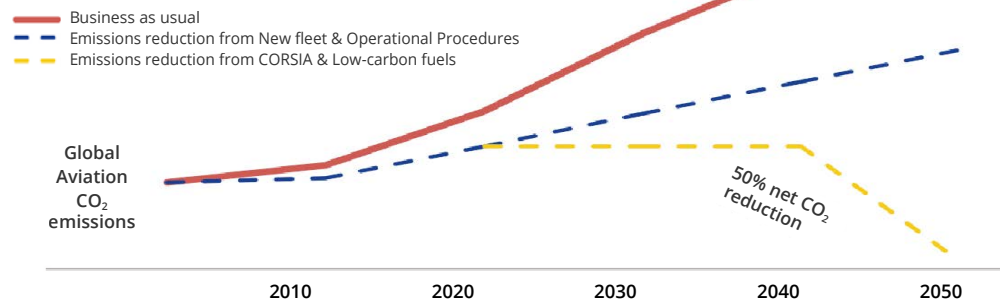


Absolute Climate
Target

**50%
REDUCTION
FOR 2050**

2050 INDUSTRY CLIMATE TARGET

In line with IATA's 2050 Climate Target, we commit to help aviation deliver a 50% cut in CO₂ over 2005 levels, by 2050.

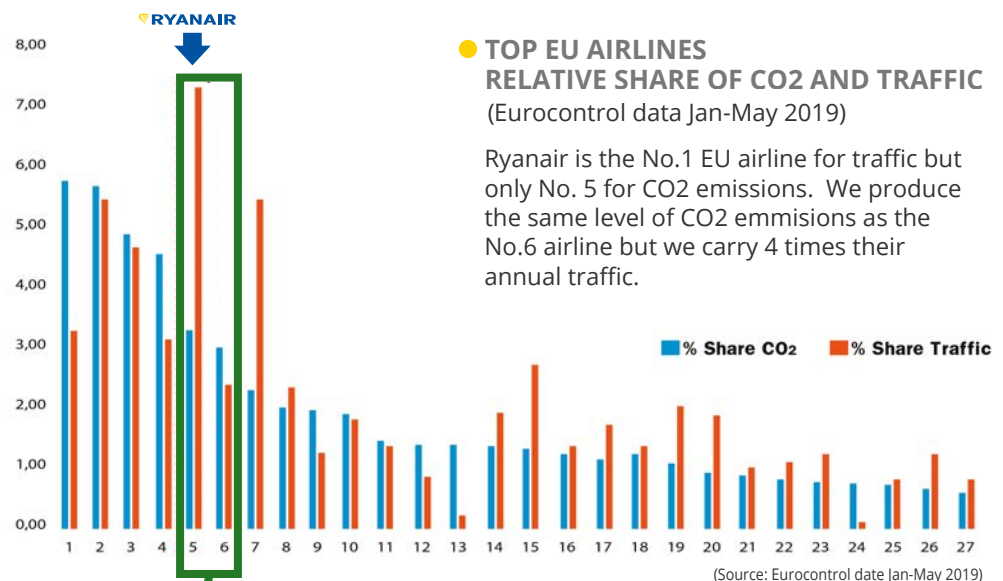


(This representation was produced from IATA's 2013 Technology Roadmap)

No.1
Airline for traffic
but only
No.5
for CO₂ emissions

**No.5 (Ryanair) vs
No.6 (other airline):**

Ryanair carries almost 4 times
the passengers while producing
similar levels of CO₂ emissions



4. OUR PRINCIPLES FOR THE USE OF BIOFUELS



Sustainable aviation fuels (SAF) are an opportunity for the aviation sector due to their potential to reduce lifecycle greenhouse gas emissions.

Governments and fuel suppliers must prioritise the development of SAF that deliver significant lifecycle CO₂ savings.

SAF in aviation should be regulated by one set of global rules that treat all airlines equally.

The methods of quantifying lifecycle CO₂ savings from SAF should apply uniformly to all airlines.

The CO₂ savings from an airline's use of SAF must be traceable and verifiable.

5. CALL FOR ACTION BY THE EU AND MEMBER STATES

We call on the EU and Member States to create policies to support SAF initiatives, such as:

Creating additional SAF production capacity in Europe.

Stimulating the production and availability of raw materials.

Prioritising support mechanisms to cover additional costs for products delivered into market.

Supporting the development of worldwide blending, international standards and sustainability criteria.

6. ENGAGING SUPPLIERS AND BIOFUEL MANUFACTURERS

To deliver on ambitious climate targets, the next-generation of aircraft must deliver a step change in fuel efficiency. To reinforce this requirement, Ryanair will advocate the development of ambitious, low-emissions aircraft designs from major aircraft manufacturers as part of our procurement process.

Similarly, Ryanair calls on fuel manufacturers to provide incentives for airlines to purchase such fuels and to engage with airlines in biofuel development partnerships.



7. OUR FRAMEWORK FOR ADDRESSING GREENHOUSE GAS EMISSIONS

Avoiding GHGs

Our business model delivers direct, point-to-point flights with very high load factors. This reduces total flying relative to traditional hub-and-spoke models, which involve multiple journeys and numerous indirect flights. Increasing our load factors from 83% to 96% has played an important role in reducing per passenger emissions by 14% in the last 6 years.

Reducing GHGs

We are industry leaders in fuel efficiency. We operate the youngest fleet of any major airline with an average age of 6 years. We deliver an industry-leading CO₂ per passenger-km metric, which is 23% lower than the average of the four other big European airlines.

Substituting GHG Sources

Like other airlines, we do not purchase SAF due to their high cost and the lack of consensus on sustainability criteria (see point 4 of our principles). We commit to move to 100% SAF when cost-competitive alternatives meeting globally-agreed sustainability criteria become available. We hereby call for European and national policies that support SAF initiatives, such as: creating additional SAF production capacity in Europe, stimulating the production and availability of raw materials elaborating support mechanisms to cover additional costs for products delivered into market.

Market Based Measures

Ryanair has participated in the EU Emissions Trading System (ETS) since 2012. Ryanair will continue to

comply fully with current and future emissions regulations. We stress that a regional emissions trading system, albeit flawed, is more efficient in emissions reduction than additional passenger taxes under the guise of 'environmental' taxes. The latter do not incentivise investment in fuel efficient technologies, and disproportionately impact peripheral regions and lower income citizens.

As a short haul airline operating almost entirely within the EU, 84% of Ryanair's emissions are subject to EU ETS. This is a much higher proportion than legacy carriers, due to the EU's decision to suspend the operation of the ETS on flights to/from non-EU countries.

We believe that a single global market-based mechanism is the best way to govern emissions across the entire aviation industry. We encourage regulators to:

1. Prioritise the refinement of existing carbon pricing mechanisms before creating new pricing schemes (such as 'environmental' taxes) that overlap with existing regulations
2. Earmark any revenue raised from auctioning emission allowances to finance the technological transition towards lower-emitting aircraft used by airlines which generate higher load factors.

8. VOLUNTARY CARBON OFFSET SCHEME

In 2018, we started to offer a voluntary offset option in our booking process which allows customers to offset their environmental impact. The funds raised from these guest donations will be distributed annually to environmental charities and NGO's as selected by our people.

We are pleased that over 2% of our passengers made a voluntary carbon contribution so far. We thank our customers for their generous support of environmental causes.

“We thank our customers for ticking this box and making it all happen.



First Climate is Ryanair's first partner for its voluntary carbon offset scheme. The funds are used to support a project in Uganda which distributes energy efficient cookstoves to households in the Kampala region. It does so by offering technical and financial support to manufacturers and by promoting the new stove technology to raise demand and awareness in the local community.

To date, the project has enabled the commercialisation of more than 520,000 improved cookstoves. It has a major positive impact by contributing to climate change mitigation and improving the lives of thousands of local families.



Our partnership with **Renature Monchique** will not only offset tonnes of carbon but will also help revitalise the ecology of the Monchique region. This project will support the restoration of important and unique forest habitats to the fire-devastated areas of Monchique in the Algarve.



native
woodland
trust



IRELAND



The **Native Woodland Trust**. A portion of all Ryanair customers' donations go towards the purchase of land near one of the last ancient woods in Ireland.

NWT will collect tree seed only from within this wood, establish a tree nursery on site and plant a new forest which connects to the original wood – thus extending the existing forest, using only trees which originated in that specific forest.

By not bringing trees from further afield, it avoids risk of introducing outside genes or diseases. Extending the boundaries of the wood will also increase its critical mass and buffer it from outside influences.

Ancient woodlands are the last remnants of the massive forests that once covered all of Ireland. They are home to a unique assemblage of biodiversity and there is no better woodland in Ireland that we could seek to extend nor from which to collect native tree seed.



IWDG
Irish Whale and Dolphin Group



IRELAND



The **Irish Whale and Dolphin Group** is leading a major study of humpback and fin whales in Irish waters – called Whaletrack Ireland.

The project will allow IWDG, with the help of citizen scientists, to carry out photo-identification on individual whales, where they can identify individual whales by their unique markings. The use of drones will help IWDG to measure the size and condition of whales and carry out biopsy sampling to explore genetic origins, diet and pollution burdens. In the long-term, IWDG hope to deploy satellite tags on a small number of humpback whales, to learn more about their migration routes and locate their breeding grounds. WhaleTrack Ireland is a very exciting project, essential to help the recovery and management of this charismatic species, which is an ambassador for marine conservation.

“ So far €2.5M was raised for environmental partners.



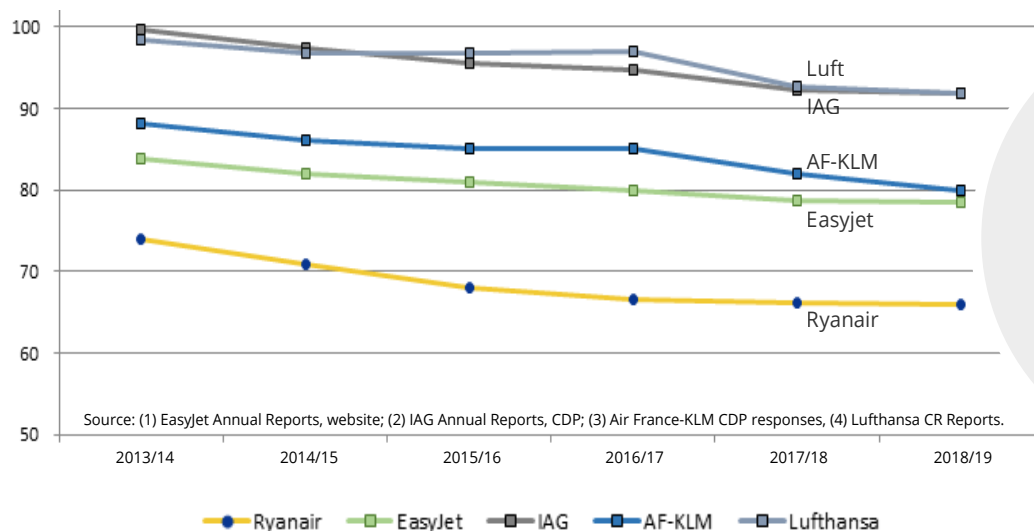
9. PERFORMANCE VERSUS COMPETITORS

Our 2030 efficiency target level is 30% lower than the current average performance of Europe's 4 other large airlines. Ryanair will seek to achieve this target in advance of 2030.

CARBON EFFICIENCY PERFORMANCE

Data sourced from (1) EasyJet Annual Reports, website; (2) IAG Annual Reports, CDP; (3) Air France-KLM CDP responses, (4) Lufthansa CR Reports. Please note that these figures may split the allocation of flight emissions between passenger and freight activity or incorporate freight activity into the passenger-kilometre metric.

Conversely, the graphic on p.16 is based on a study which allocates the total flight emissions to passenger operations only.



Ryanair
current efficiency

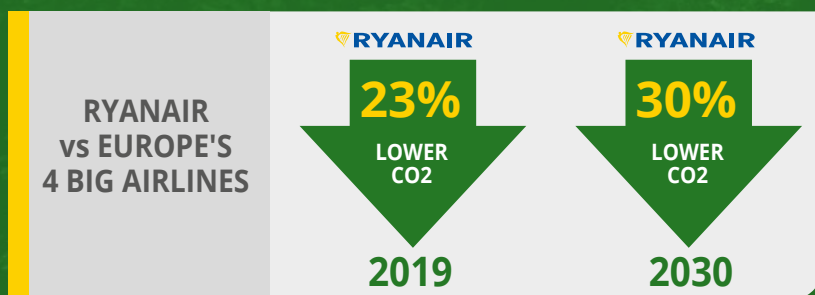
66g

Per passenger Km

INDEX: EU Airlines' fuel burn per RPK relative to Ryanair

	FY13	FY14	FY15	FY16	FY17	FY18
Ryanair	1.00	0.96	0.92	0.90	0.89	0.89
EasyJet	1.13	1.11	1.09	1.08	1.06	1.06
IAG	1.35	1.32	1.29	1.28	1.25	1.24
AF-KLM	1.19	1.16	1.15	1.15	1.11	1.08
Lufthansa	1.33	1.31	1.31	1.31	1.25	1.24

This table benchmarks all carriers against Ryanair's FY13 performance using the carbon efficiency figures from the graph above. As it uses the same data sources, the same allocation caveats apply.





10. FUEL EFFICIENCY ACROSS DEPARTMENTS

Route Network

Point to point flying avoids the excess emissions and noise produced by indirect transfer flights.

Environmentally friendly aircraft

New fuel efficient, quieter aircraft and engine designs. Winglets that save fuel by reducing drag.

Aircraft Operations

Single engine-taxiing between runway and terminal. Continuous descent and low-drag landing approaches minimise excess noise and fuel consumption.

Cabin Design

The high-density seating design of an all economy class & high load factors maximise total passengers per flights. Strong, light-weight comfortable seats save fuel by reducing weight.

11. FUEL & ENERGY EFFICIENCY – FAST FACTS

Our new Boeing 737 fleet will cut fuel consumption by 16% per seat, cutting CO2 and NOx.

We have invested over €500,000 in all LED lighting projects across all our office and hangar sites.

We are committed to maximising solar power at all our facilities.

Secondary and regional airports reduce holding and taxiing, cutting emissions.

Single-engine taxi policy cuts noise and emissions - 82% of arrivals is on single-engine taxiing.

Ground-Power use during turnarounds – saves 9kg of fuel per flight and improves air quality.

Paperless cockpit, electronic flight bags, cuts 15 kg of paper manuals per cockpit, which creates annual fuel burn savings of approx. 600,000kg.

Our Green Dublin office promotes paperless practice, consumables recycling, cycling to work and a healthy lifestyle with an on site fitness centre.

12. REDUCING OUR LOCAL IMPACT - NOISE AND AIR QUALITY

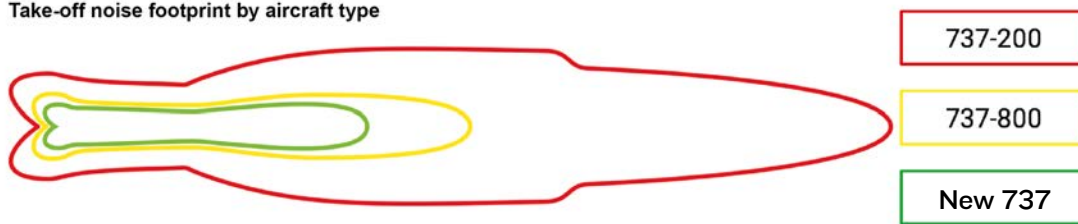
Ryanair is committed to reducing emissions and noise through (i) “next generation” aircraft and engine technologies and (ii) implementing of operating processes which minimise the environmental impact.

Strategic Improvements – The Next Generation of Aircraft

As new fuel-efficient, quieter aircraft join our fleet, our impact on local noise and air quality will continue to shrink.

- Our new Boeing 737 aircraft will reduce noise by up to 40% per seat.
- The transition from 737-200s to 737-800s reduced our take-off noise footprint per passenger by 86%.
- The new Boeing 737 fleet extends these reductions to 93%.

Take-off noise footprint by aircraft type



NOISE AND EMISSIONS COMPLIANCE

100% of Ryanair aircraft meet ICAO Environmental Protection NO_x Standard (Chapter 6).

100% of Ryanair aircraft meet ICAO Environmental Protection Noise Standard (Chapter 4).

NOISE RECOGNITION AWARDS

Ranked #1 of 30 airlines for Noise Abatement Compliance at London Stansted (99.6%).

Ranked #1 for Continual Descent Arrival at 7 UK airports.

Aircraft Type(Passengers)	Reduction Per Passenger
737 - 200 (126)	BASELINE
737 - 800 (189)	-86%
New 737 (197)	-93%

“Ryanair continues its drive for perfection in Environmental Noise Abatement Compliance. The airline sets the highest standards for others to aspire to, including its stated aim of 100% compliance for continuous descent approaches (CDA). In April 2019 this came to fruition as this target of perfection was achieved, with CDA compliance of 100% from over 1,500 arrivals to runway 22.

London Stansted's Flight Performance Manager, August 2019

13. TAXES ARE NOT THE ANSWER

Aviation pays taxes

- It is misleading to claim that aviation does not pay environmental taxes.
- In FY19, Ryanair paid over €540m in environmental taxes and EU ETS. Aviation is the only transport mode covered by the ETS.
- In FY20, Ryanair will pay over €630m in these aviation taxes.

Regressive impact of 'environmental' taxes:

- Deliver no environmental benefits and favour high-fare inefficient airlines over low-fare efficient ones.
- Are regressive and disproportionately affect regional/peripheral economies that rely heavily on air connectivity to maintain tourism jobs and growth.
- Disproportionately impact lower income citizens, affecting the affordability of travel.

Ryanair Environmental Taxes (€m)

	FY19	FY20
UK APD	330	383
GERMAN APD	88	85
SCANDINAVIA APD	5	5
AUSTRIAN APD	5	6
BCN TAX	1	1
EU-ETS PAYMENTS	115	150

TOTAL

544

630

COST PER GUEST (% of ave ticket)

€3.82
10%

€4.12
11%

**11% OF THE COST OF THE AVERAGE TICKET
IS ENVIRONMENTAL TAXES**

Dutch and French tax proposals are flawed, as they:

- Reward environmentally damaging connecting flights (transfer passengers are exempt and protect polluting legacy carriers).
- Reward environmental inefficiency, yet penalise the passengers of more efficient carriers, incl. Ryanair.
- Are a missed opportunity to dedicate these funds to help industry decarbonise.

Customers benefit from abolition of Irish travel tax

- The 2008 Irish travel tax greatly damaged the economy. Traffic at Ireland's three principal airports fell by nearly 25%, from 31 million passengers to 23 million in two years. In the six months after the Irish tax was reduced to zero, overseas visits to Ireland increased by 12%.

Call on the EU and member states to implement the EU's delayed seamless European airspace

Instead of additional taxes on aviation, which are not helpful to the environment, Member States are urged to take on ATC monopolies which would:

- Reduce CO2 emissions by 10%
- Provide efficient routings
- Provide quicker, more environmentally friendly journeys

“ Political focus should remain on finding ways to reduce CO2 emissions rather than short-sighted and ineffective measures such as additional taxes.

14. RYANAIR'S FIVE-YEAR PLAN TO MINIMISE PLASTIC USE



Plastic pollution unfavourably affects land, waterways, oceans, animals and humans; and is one of the most significant threats to the environment.

Ryanair is committed to eliminate all non-recyclable plastics from our operations within 5 years.

Already 82% of all consumables onboard our flights have cut out plastic.

We work with our suppliers to replace our nonrecyclable plastics with environmentally friendly alternatives such as bio-degradable cups, wooden cutlery & paper packaging.

We will roll out this policy across our entire operation – ground operations, engineering, inflight, at our bases and at our Head Office over the next 5 years.

Environmental principles of the UN Global Compact

- Businesses should support a precautionary approach to environmental challenges;
- Businesses should undertake initiatives to promote greater environmental responsibility;
- Businesses should encourage the development and diffusion of environmentally friendly technologies.





“ Ryanair is proud to continuously improve and expand our environmental policy – this highlights our commitment to maintaining and strengthening Ryanair’s position as the greenest and cleanest airline in Europe.

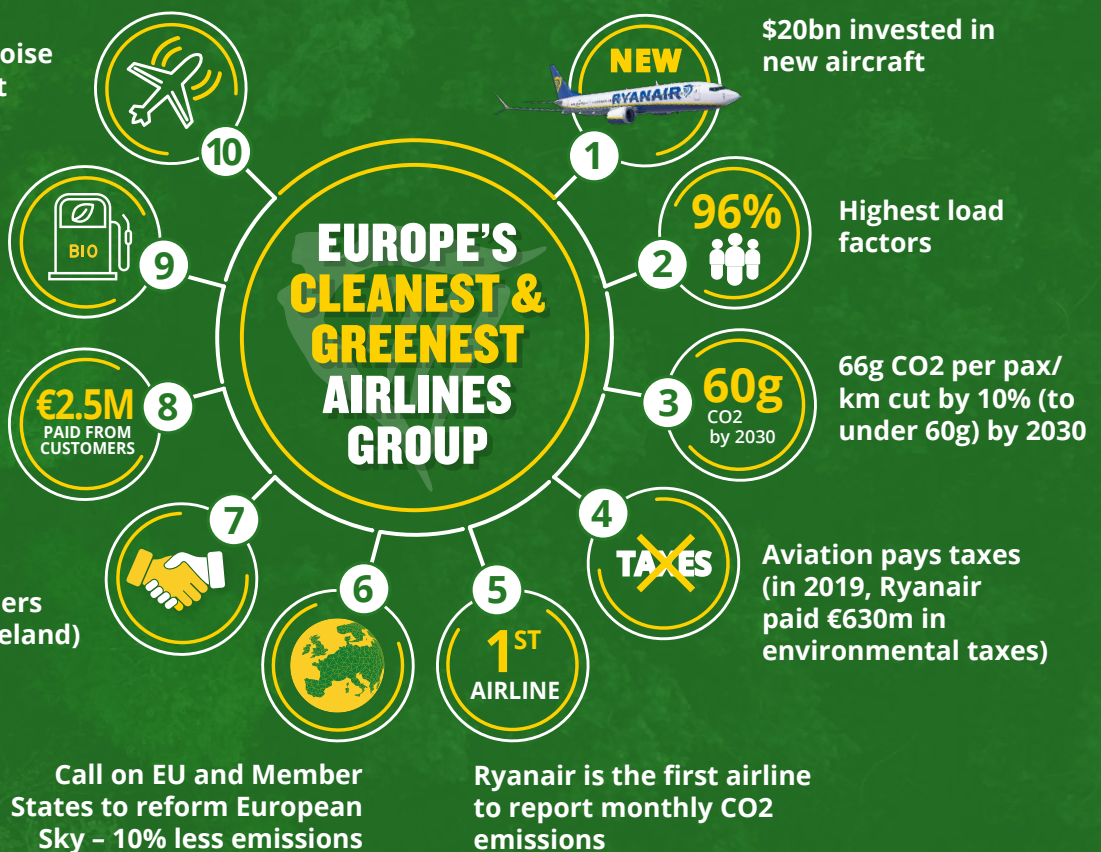
15. SUMMARY

Our new Boeing 737 aircraft will reduce noise by up to 40% per seat

Call on the EU and fuel manufacturers to provide incentives for biofuels use

€2.5M from our customers paid for carbon offsetting

Partnership with 4 environmental partners (Uganda, Portugal, Ireland)





EUROPE'S CLEANEST & GREENEST AIRLINE

- ✓ Paid €630m in environment taxes in 2019
- ✓ First EU Airline to publish its monthly CO2 Emissions
- ✓ 66g CO2 per pax/km - cut by 10% (under 60g) by 2030
- ✓ New aircraft: 16% less fuel, 40% lower noise
- ✓ No non-recyclable plastic within 5 years
- ✓ Voluntary carbon offset
- ✓ Environmental partners in Ireland, Europe & Africa



RYANAIR SUPPORTS



RYANAIR

MORE CHOICE. LOW FARES. GREAT CARE.