

2023 Environmental Report



Aer Lingus 

Company Overview

Aer Lingus is the Irish flag carrier, founded in 1936. Aer Lingus operates over 100 routes from Dublin, Cork, Shannon, Knock and Manchester to Europe, the UK and North America. Reaffirming its commitment to its North American expansion, the airline will operate 18 transatlantic routes in 2024 from Dublin and Shannon and a further three transatlantic routes from Manchester, UK to North America and the Caribbean.

Aer Lingus is a 4-star airline, awarded by Skytrax, the international air transport rating organisation. Aer Lingus is a member of International Airlines Group (IAG), one of the world's largest airline groups. As part of IAG, Aer Lingus has committed to achieve net zero carbon emissions by 2050 and has ambition to power 10% of its flights using sustainable aviation fuel (SAF) by 2030.

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Introduction

Sustainability has risen to the top of the agenda for governments and corporations across the world. Aer Lingus takes its climate action responsibilities very seriously and, as part of IAG, has set an ambitious target of achieving net zero emissions by 2050 – the first airline Group worldwide to do so.

Aviation is a force for good, connecting people, cultures and business. As Ireland is an island nation, aviation is critical to connectivity and supports thousands of livelihoods directly and indirectly across the country and beyond. It is important to keep in mind the broader positive impacts of aviation while also addressing its environmental impact. **Therefore, it is important to reach net zero goals without diminishing the vitally important social and economic contribution of the aviation industry.**

This report sets out what Aer Lingus and IAG are already doing in pursuit of that goal as well as what we intend to do as new fuel sources and technologies become available.

The Aer Lingus Net Zero roadmap shows that growth can be facilitated, and reductions delivered in net carbon emissions and emissions per passenger. In 2023 Aer Lingus' carbon intensity per passenger was 5% lower than in 2019, and that will continue to reduce. We calculate that our passenger numbers may grow by approximately 20% by 2030, while our overall net carbon emissions will have decreased compared to today.

Aer Lingus' focus is on delivering the maximum reduction in emissions at source, through key pillars which are:

1. **Investment in new technology aircraft**
2. **Investment in Sustainable Aviation Fuels (SAF)**
3. **Increased application of operational efficiencies.**

New Technology Aircraft

Already, great strides have been made in aircraft technology. New generation aircraft available today, reduce emissions by up to 20% compared to predecessor aircraft and can reduce noise footprint by up to 50% (source: Airbus).

In recent years the Aer Lingus long haul fleet has seen the introduction of next generation A321neo Long Range aircraft. There are ambitions to receive further next generation aircraft later in 2024 and in 2025 to support the company's growing North American network. On short haul routes, the re-fleet with next generation aircraft continues and in the past two years four A320neo aircraft have been delivered. Additional replacement A320neos are also planned to be delivered in 2024 and 2025.



Sustainable Aviation Fuel (SAF)

SAF can power planes exactly like traditional jet fuel but emit 70–80% (source: IATA) less carbon dioxide during the lifecycle of the fuel, from production through to its use.

Today, SAF is significantly more expensive than jet fuel. 2023 saw Aer Lingus first operate with SAF, sourced in the UK and used on flights from London Heathrow. We will build on this in 2024 and will fulfil the mandated SAF requirements from 2025 onwards. Aer Lingus has ambitions to reach 10% SAF by 2030 and already a number of contracts for the supply of SAF on the west coast of America have been signed.

There are several proven pathways for SAF and now its production must be ramped up at scale. The USA is leading on this front, driven by government incentives. Increased Government focus is required to support and incentivise the production and supply of SAF in Ireland and in the European Union. Aer Lingus welcomes and is participating in the Government's recently established SAF Taskforce as we recognise that a collective effort – across airlines, manufacturers, fuel suppliers, investors,

and policymakers – is required to build a new sustainable aviation fuel supply chain in Ireland and Europe. This is critical for decarbonising aviation and is also a potential new industry sector bringing its own jobs stream and economic benefits for Ireland.

Operational Efficiencies

The single biggest short-term opportunity to improve operational efficiency in Europe is the implementation of *Single European Skies* which would modernise European air traffic management. IATA estimates that this initiative alone could reduce carbon emissions by up to 10% (source: IATA).

Separate to this, Aer Lingus is progressing a range of operational initiatives to reduce carbon emissions, including the introduction of more efficient flight planning, the use of single-engine taxiing, reducing weight onboard and optimising cabin air conditioning. All of these contribute to reduced fuel usage and therefore lower carbon emissions.

Aer Lingus is also making incremental improvements to our sustainability performance in the air and on the ground. We have found new ways of

reducing waste onboard our aircraft through dynamic load planning technology, onboard recycling on short haul flights into Ireland, replacing single use plastics with biodegradable alternatives, replacing diesel powered ground operations vehicles with electric alternatives and, where that is not practical, replacing diesel with hydrotreated vegetable oil (HVO). This reduces vehicle emissions by up to 90% vs diesel while also improving air quality.

While there is much to be proud of in terms of sustainability achievements over the past year, we cannot afford to be complacent. Although Aer Lingus has a clear path to carbon emission reduction, decarbonising aviation is a significant, multi-stakeholder undertaking. We believe that our achievements over the past year, as detailed in this report, demonstrate our commitment to succeed.

Key Highlights 2023

2023

New Technology Aircraft

Aer Lingus added two new Airbus A320 neo aircraft to our short haul fleet, in addition to two added in 2022

delivering up to 20% fuel savings and CO₂ reduction

compared to previous generation Airbus aircraft (source: Airbus).

CO₂

February

Reduced Ground Fleet Emissions

Aer Lingus became the first airline at Dublin Airport to use hydrotreated vegetable oil (HVO) as an alternative fuel source for our ground vehicles.

HVO fuel reduces emissions from each vehicle by up to 90% vs diesel.

Instant
reduction in vehicle
emissions up to

90%



Environmental Certification

Aer Lingus became

the first Irish airline to be successfully awarded the IEnvA stage 2 certification

from the International Air Transport Association.

The IATA Environmental Assessment (IEnvA) programme is a globally recognised evaluation system



Summer

Sustainable Aviation Fuel

Aer Lingus procured sustainable aviation fuel (SAF) for the first time at London Heathrow, participating in an IAG agreement with Phillips 66 Limited in the UK for

750 tonnes of SAF made from used cooking oil.



Onboard Recycling

Aer Lingus became

the first airline to segregate and recycle on-board waste arriving on short-haul flights into Ireland,

with it now operating on 100% of our short haul routes and several outstations in Europe.

July



November

Irish Aviation Awards

Aer Lingus received external recognition by being awarded the

Sustainability & Environment Award

at the 2023 Irish Aviation Industry Awards.



The Need for Climate Action

Climate change is without a doubt the most pressing issue facing society. The time for debate is long past and we have no choice but to make radical changes in how we live our lives and conduct business.

Supporting UN Sustainability Goals



The aviation industry faces particular challenges in this regard. According to best estimates,

the industry contributes approximately 2% of global carbon emissions.

We are committed to acting responsibly and tackling this challenge head on.

The growth of the global aviation industry has created enormous economic and social good – it connects people and cultures, enables international trade and enterprise, and facilitates tourism which is vital to local economies in Ireland and around the world.

As an island nation, Ireland is particularly dependent on aviation for international connectivity.

According to figures produced by the Department of Transport, prior to Covid-19, the air transport industry in Ireland, including airlines and their supply chains, was estimated to contribute €8.9 billion of GDP.

Spending by foreign tourists added a further €8.7 billion of GDP. In total, approximately

6.8% of GDP was supported by air transport

and foreign tourists arriving by air.

For Aer Lingus

the majority of our CO₂ emissions are emitted from flights of over 1,500 kilometres,

for which there is no practical alternative mode of transport at present.

Notwithstanding those benefits and constraints, it is clear that we need to operate and grow in a different way than we have in the past.



At Aer Lingus, we understand the urgency of reducing our environmental impact. A critical part of that is recognising, managing, and reducing our impact on the planet so that we can play our part in tackling climate change.

Over the past number of years, we have been engaged in initiatives aimed at minimising our carbon emissions.

Aer Lingus is part of IAG, the first airline group worldwide to commit to achieving net zero carbon emissions by 2050.

IAG has been the leading airline group building global momentum towards net zero aviation and in 2018 was an early adopter of the Task Force on Climate-related Financial Disclosures (TCFD) guidance.

In November 2019, IAG became the first airline group in the world to publish a roadmap for achieving net zero. In April 2021, it became the

first European airline group to commit to 10% sustainable fuels by 2030

and the first in the world to commit to net zero Scope 3 emissions by 2050.

There will be challenges ahead. While we are already achieving tangible progress on minimising our carbon emissions, there is much work to be done on increasing the production of sustainable aviation fuels and the development of other green technologies.

Aer Lingus is committed to playing an active role in that work and supporting innovations which can accelerate our progress towards net zero.

Our Carbon Reduction Strategy

Aer Lingus is committed to reducing its aircraft emissions and decarbonising aviation.

We strongly support the goal of reducing global emissions to achieve the Paris Agreement target of limiting climate warming to 1.5 degrees above pre-industrial levels. We are taking innovative and effective steps both on the ground and in the air and we are proud to be part of the first airline group in the world (IAG) to commit to net zero carbon emissions by 2050.

Our targets include

Supporting UN Sustainability Goals



10%

improvement fuel efficiency to 80g CO₂/pkm

in 2025 vs 2019
(per passenger kilometre)

20%

reduction in Group net CO₂ emissions

by 2030 vs 2019

20%

reduction in net Scope 3 emissions

by 2030 vs 2019

10%

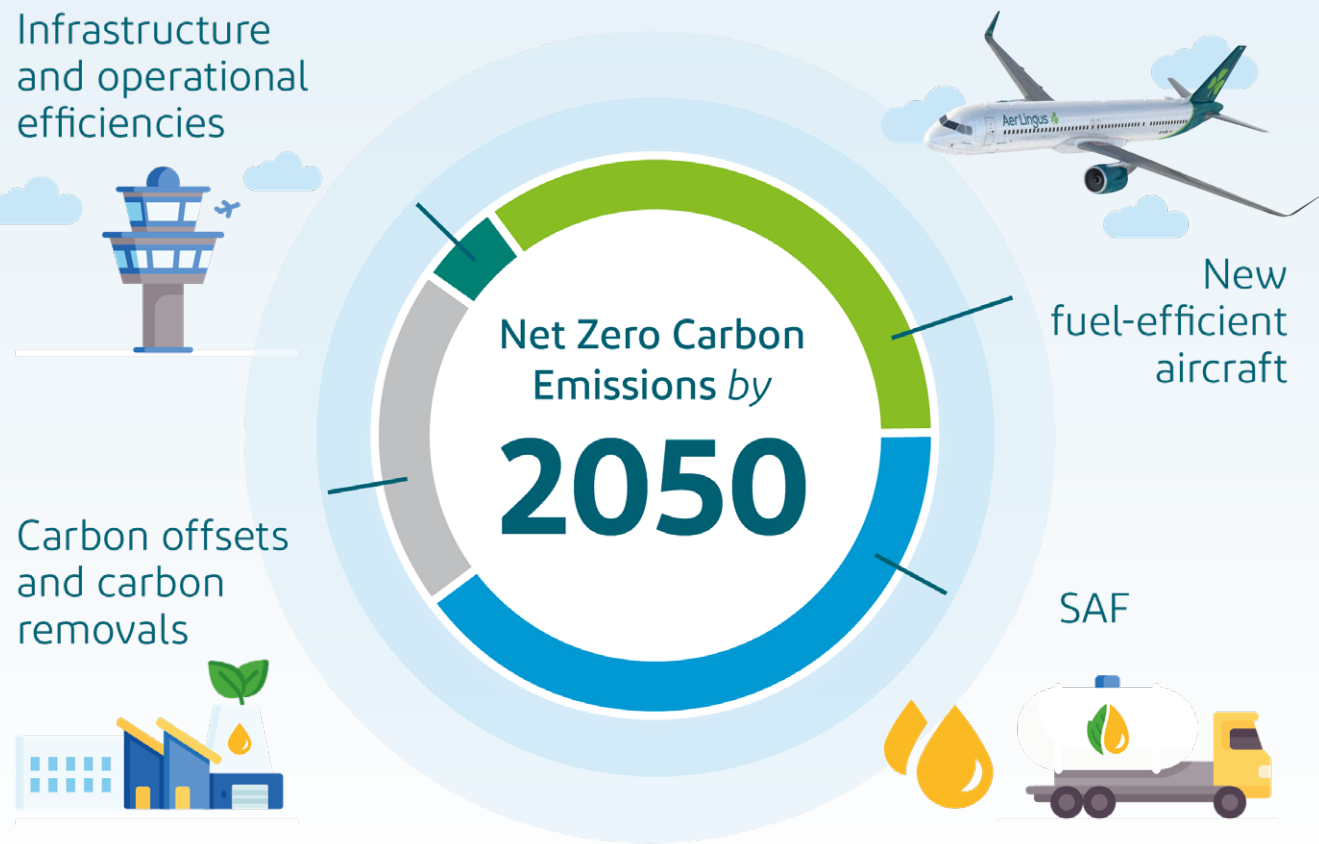
of our annual fuel consumption to be SAF fuel = 1 million tonnes

by 2030

net zero CO₂ emissions

– Scope 1, Scope 2, and Scope 3 by 2050

Our Journey to Net Zero



How to achieve these targets

'Our Journey to Net Zero'-infographic illustrates how we will achieve net zero CO₂ by 2050 through a combination of Sustainable Aviation Fuel (SAF), investment in new technology aircraft and operational efficiencies, and robust carbon reductions and removals.

→ Our Carbon Reduction Strategy

Sustainable Aviation Fuel (SAF)

SAF is a new type of fuel being used in aviation which emits 70 to 80% (source: IATA) less carbon dioxide during the lifecycle of the fuel, from production through to its use. It is a viable alternative to traditional jet kerosene having the same energy density required for propulsion of an aircraft, but it is currently very expensive – costing between three and five times more than kerosene. There is a need to scale up production quickly to meet demand. It is a ‘drop-in’ fuel and does not require significant changes to current aircraft infrastructure. At present, aircraft can fly with a fuel blend containing 50% SAF.

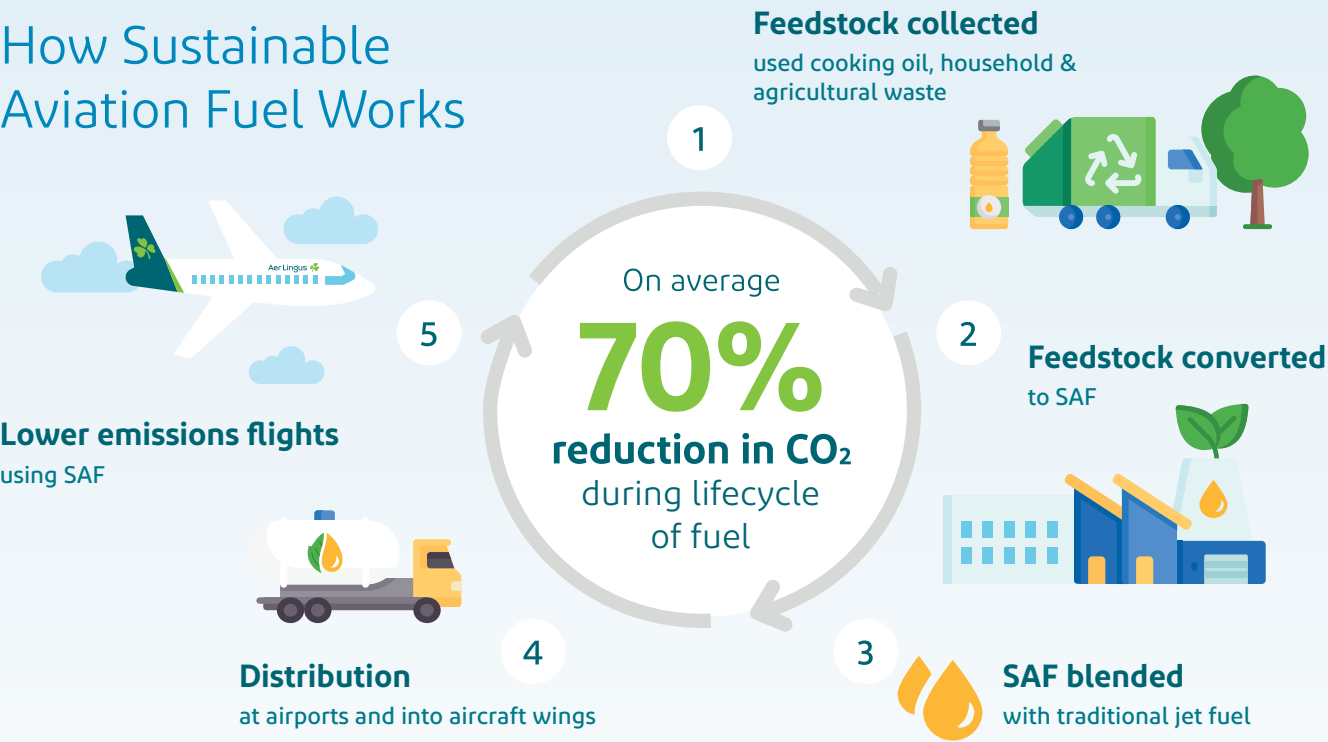
Our parent company IAG, has committed \$865 million to purchasing SAF over the next 20 years and in April 2021, became the first European airline group to commit to powering 10% of all flights with sustainable aviation fuel by 2030.

In 2023, Aer Lingus procured its first supply of SAF. 750 tonnes was delivered at London Heathrow, as part an IAG deal with Phillips 66 in the UK. The SAF was produced from used cooking oil and can reduce lifecycle CO₂ emissions by over 90% compared to traditional jet fuel – the equivalent of over 2 million tonnes of CO₂.



In July 2022, Aer Lingus signed an agreement with Gevo to purchase SAF from 2028. The fuel will be used to power our flights from Los Angeles and San Francisco and, it means 50% of the fuel purchased in California will be sustainable aviation fuel. In August 2022, Aer Lingus signed another agreement with Aemetis to purchase SAF from 2026 for our flights from San Francisco International Airport.

How Sustainable Aviation Fuel Works



Spotlight on SAF

- Sustainable Aviation Fuel (SAF) is key to the decarbonisation of aviation
- SAF is generally considered one of the most realistic and effective means to reduce aviation emissions in the coming decades and as a long-term solution for decarbonising long-haul travel.
- The alternative fuel is a drop-in sustainable replacement for fossil jet fuel with a minimum 70% lower net carbon intensity and it requires no changes to aircraft or delivery infrastructure
- It can be produced through multiple pathways and produced using many feedstocks
- SAF can be produced locally in any country, including Ireland
- It can reduce the impact of shipping fuel and contribute to Ireland’s energy independence
- Currently SAF costs approx. 3–5 times the price of conventional jet fuel
- SAF made up just approx. 0.13% of global jet fuel demand in 2022

Ireland has the capacity to produce SAF through feedstocks such as forestry residues, agricultural waste and from wind power sources. This would offer a valuable home-produced sustainable fuel source for airlines operating out of Ireland.

We continue to engage with the Irish government and the European Union to advocate for greater production of SAF to meet future demand. In December 2023 Aer Lingus joined the newly formed government-industry SAF Taskforce to assist with development of Government policy in this area. We look forward to working with our government and industry colleagues towards developing SAF production in Ireland and meeting our obligations.

A320ceo vs A320neo

Up to

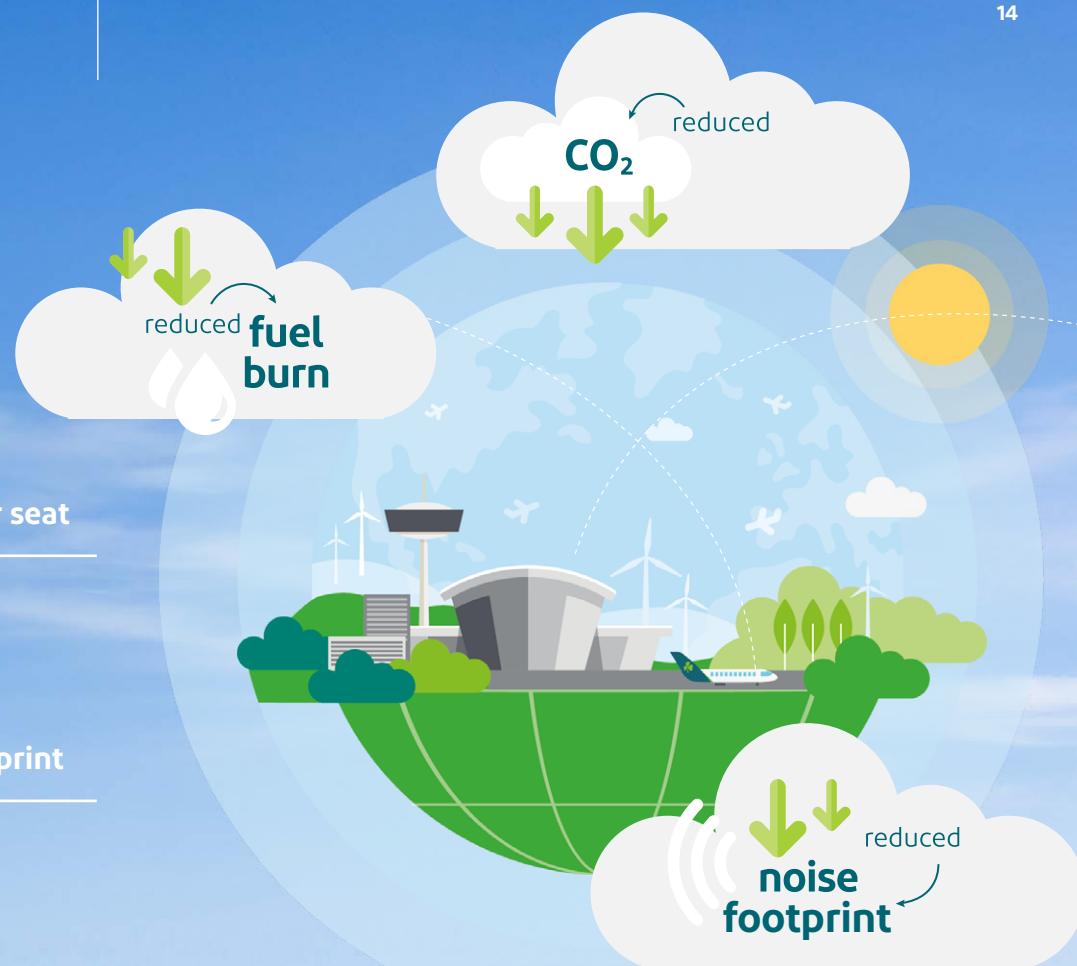
20%

saving on fuel burn per seat

Up to

50%

reduction in noise footprint



New technology aircraft will deliver significant carbon reductions and fuel savings, but we are doing more to improve our operational fuel efficiency. This has seen the implementation of a number of initiatives which have already achieved fuel savings.

The introduction of LED mood lighting to aircraft has had measurable sustainability benefits. The adjustable lighting system delivers a more relaxed travelling experience to passengers along with a fleet weight reduction of 1,561 kg plus annual energy savings of 445,647 kw/h, both of which translate into reduced fuel usage.

The use of a single engine, rather than both, when taxiing to and from runways when possible has also been implemented.

In both take-off and landing, our landing lights are retracted for longer periods than previously, thus reducing drag and fuel consumption. Similarly, for both take-off and landing, lower flap settings may be used which reduces drag and fuel consumption.

Combined, the fuel savings in 2023 from these initiatives was in excess of 1,000 tonnes of fuel or over 3,000 tonnes of CO₂.

Further improvements could be made for all airlines if the Single European Sky proposal becomes a reality. This aims to reform air traffic management in Europe in order to cope with sustained air traffic growth and operations under the safest, most cost- and flight-efficient and environmentally friendly conditions. This implies de-fragmenting the European airspace, reducing delays, increasing safety standards and flight efficiency to reduce the aviation environmental footprint, and reducing costs related to service provision. Aer Lingus is a strong supporter of this initiative as it would offer more efficient flightpaths and fuel savings which could result in a 10 % reduction in emissions.

→ Our Carbon Reduction Strategy

New Technology Aircraft



We are committed to the sustainable growth of our airline and are investing in modernising our fleet to more fuel efficient and quieter aircraft.

Our transatlantic fleet of 23 aircraft now includes eight Airbus A321neo LR aircraft which offer up to 20% fuel saving and CO₂ reduction versus its predecessor (source: Airbus).

In addition, Aer Lingus has ambition to receive further next generation long haul aircraft in 2024 and in 2025. These aircraft also offer up to 20% lower fuel burn per seat than previous generation aircraft (source: Airbus) and the longer range would give Aer Lingus the opportunity to further expand the route network to new destinations in future.

In 2023 we added two new Airbus A320 neo aircraft to our short haul fleet, in addition to two added in 2022 delivering up to 20% fuel savings and CO₂ reduction compared to previous generation Airbus aircraft (source: Airbus). These new aircraft service high demand routes on the Aer Lingus short haul network and frequently operate on flights between Dublin and London.

Improving operational fuel efficiency

Ground Operations Efficiencies

We take a holistic and detailed approach to reducing our carbon footprint. That means looking at everything we do on the ground as well as in the air. To that end, we are exploring more energy efficient solutions for our office buildings such as reduced use of natural gas and electricity, increased renewable energy use and smart technology solutions for lighting, air conditioning and heating. For example, our new LED-lit staff car parks have reduced energy consumption from lighting by 33% compared to 2019.

Using HVO in our Ground Vehicle Fleet



HVO (Hydrotreated Vegetable Oil) is a low emissions biofuel made from renewable materials and a direct replacement for conventional diesel.

As part of our plan to reduce emissions of our ground operations, Aer Lingus is in the process of upgrading our light-weight ground fleet to electric vehicles. Currently, 65% of our light-weight ground fleet is electric. In February 2023 Aer Lingus became the first airline at Dublin Airport to use hydrotreated vegetable oil (HVO) as an alternative fuel source for our ground vehicles. HVO fuel reduces emissions from each vehicle by up to 90% vs diesel. HVO fuel can also contribute to improved air quality by reducing NOx emissions and particulate matter emissions. Aer Lingus is no longer using diesel at any of our hub airports at Dublin, Cork or Shannon. 100% of our airside ground vehicles are either electric or use HVO fuel.

Instant
reduction in vehicle
emissions up to
90%

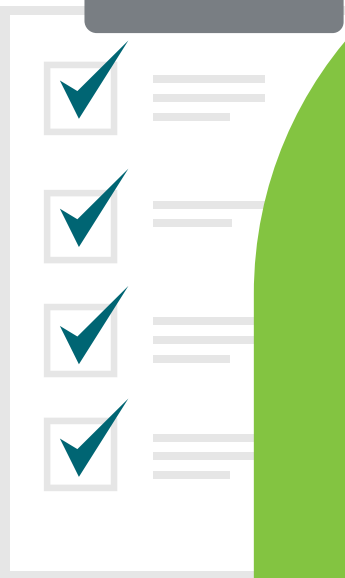
No modifications are required to our current ground vehicle fleet to use this fuel.



Validating Our Success

The IATA Environmental Assessment (IEnvA) programme is a globally recognised evaluation system designed to independently assess and help to improve the environmental performance of an airline and it is closely aligned to the international standard for the environmental management system ISO 14001.

In May 2023, Aer Lingus became the first Irish airline to successfully be awarded the IEnvA stage 2 certification from the International Air Transport Association. This certification acknowledges Aer Lingus’ work in reducing carbon emissions across flight operations and corporate facilities. This is the highest level of certification available from IATA.



IEnvA certification ensures that an airline identifies and has environmental management plans to mitigate its significant environmental impacts, and has set performance targets. Stage 2 also certifies that an airline has developed processes for monitoring and reviewing its performance against its environmental targets and objectives. It validates our strong commitment to sustainability across the operation and gives our stakeholders, including customers, governments, financiers and partners comfort that Aer Lingus is not just meeting global sustainability standards and best practise, but also committed to continuous improvements to stay at the forefront of sustainability within our industry.

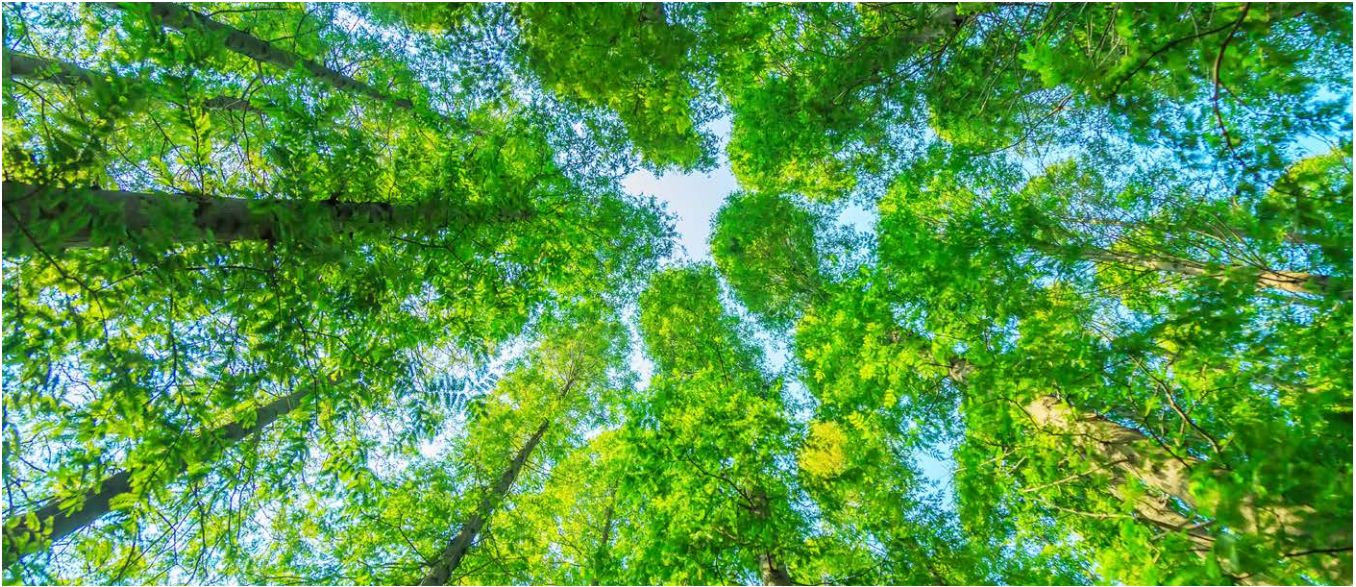
(Link IATA IEnvA Registry)

Protecting the Environment

Aer Lingus is committed to reducing the impact of aircraft noise and air pollution and continue to work to minimise noise impacts. We regularly monitor noise and air quality performance using national databases and global aircraft noise standards.

Improvements are driven through fleet modernisation and new operational practices like continuous descents. We engage with stakeholders such as regulators and industry partners and participate in research and operational trials to identify and refine solutions.

Supporting
UN Sustainability
Goals



Noise

Replacing older aircraft with new models has significant noise reduction benefits. The Airbus A321neo LR has a noise footprint up to 50% smaller when compared to its predecessor (source: Airbus).

The introduction of two further A320neos to our fleet in 2023 has contributed to an improved noise performance for Aer Lingus in line with the ICAO Chapter 14 Noise Standard which is aimed at reducing the number of people affected by significant aircraft noise.

Up to
50%
reduced noise
footprint

(A321neo LR vs. predecessor)

Air Quality

The use of hydrotreated vegetable oil (HVO) as an alternative fuel source for our ground operations vehicles is also making a contribution to improved air quality.

HVO reduces vehicle emissions by up to 90%, and reduces NOx and particulate matter (PM) emissions.

Up to
90%
reduced vehicle
emissions

(HVO vs diesel)

→ Protecting the Environment

Waste Reduction

When it comes to reducing waste, we operate on the principle that great customer experience and sustainability are not mutually exclusive. Our customers expect Aer Lingus to continue to deliver exceptional levels of service while at the same time, leading the way in Sustainability.

To address the challenge of reducing our waste, we have taken a highly strategic approach to the issue in order to deliver long term solutions. Single use plastics and other materials cannot simply be replaced by heavier multiple use alternatives as this would add weight to aircraft and increase fuel burn and CO₂ emissions.

We have a target to reduce on-board waste by 20% and recycle 40% of on-board waste by 2025, in line with our parent company IAG’s commitments.

Previously, all our waste from the aircraft was required by law to go to landfill or incineration, primarily to avoid animal disease outbreaks, such as the Foot & Mouth Disease. We worked with the Irish Government to obtain the legislative clarification needed to enable recycling onboard and to determine which items could be recycled.

Once we had the necessary clarification, we conducted onboard trials using different cart and bag types to ensure we could successfully segregate the recyclable waste from other waste.

We also worked with our waste management provider, Panda, who adapted its procedures to ensure that the recycled waste coming off the aircraft was processed separately.

We carried out successful recycling on-board trials into Cork in Q4 2022 and Dublin in Q1 2023 and we rolled out recycling on short-haul flights into Cork and Dublin in the summer of 2023.

In pursuit of this objective, Aer Lingus became the first Irish airline to introduce recycling onboard our short haul flights into Ireland in 2023.

How Recycling on the Aircraft Works



We have reduced consumption of single-use plastics by almost 23 tonnes a year since 2019 by introducing birchwood cutlery packs. Our objective is to have zero single-use plastics used on board our aircraft by 2025, with the exception of those items for which there is no viable alternative material.

We have reduced the need for newspapers and magazines onboard by introducing digital alternatives – a saving of 14 tonnes of paper per year.

Finally, we are taking steps to minimise food waste onboard in line with our 2025 waste-reduction targets. In 2023, we introduced the use of dynamic load planner technology for short haul flights from Cork to reduce fresh food wastage. The load planner technology considers flight variables such as day of flight, time of flight, seasonality, flight loads and historical data on a route by route basis to better predict fresh food requirements onboard.

Our Supply Chain Programme

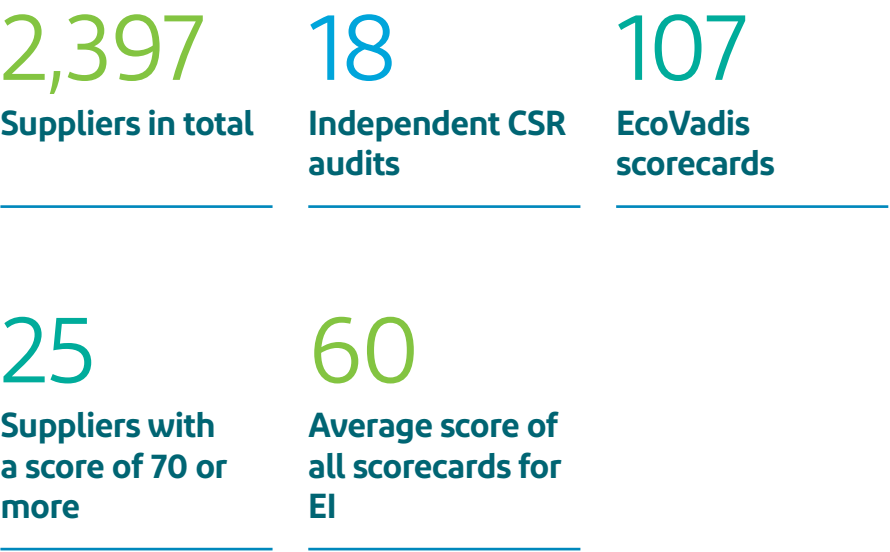
As part of IAG, Aer Lingus are the first airline group worldwide to extend our net zero commitment to our supply chain.

This will see the group support and monitor suppliers to ensure the goal of net zero emissions for products and services provided to IAG is achieved by 2050.

The IAG Group Procurement team leads the Supply Chain Sustainability Programme on behalf of Aer Lingus and the IAG Group, with a focus on five key aspects:

- The Supplier Code of Conduct (SCoC)
- The Sustainability Clause
- Independent financial risk analysis and sustainability assessments (EcoVadis)
- Corporate Social Responsibility (CSR) audits
- Integration of sustainability as a standard in the procurement process

Aer Lingus supply chain in numbers



Supporting UN Sustainability Goals



The Supplier Code of Conduct clarifies the standards of behaviour expected from all suppliers working with any part of our business, emphasising the importance of sustainability. It has already been issued to the existing supply chain and integrated into the supplier onboarding process. New suppliers are requested to acknowledge their commitment to achieving net zero emissions by 2050, and the need for a roadmap, supported by deliverable plans, to achieve this target.

At a minimum, IAG requires its suppliers to provide a safe and healthy environment for their employees. Supplier selection considers potential sectoral and geographic risks and, where needed, site audits are conducted. These audits are carried out by independent inspectors with CSR expertise who apply the SMETA (SEDEX Members Ethical Trade Audit) methodology.

All suppliers undergo an annual compliance screening. The Group's Procurement and Compliance Teams assess all suppliers where potentially high levels of risk have been identified and, where necessary, implement risk mitigation plans. Any issues identified are communicated to Group risk managers for appropriate joint action.

We are constantly revisiting our methodology to hold ourselves to the highest level of accountability and accuracy in our emissions data. As part of this process, we have partnered with Watershed, a leading platform that assists companies in measuring, reporting, and reducing their carbon footprints, to advance our methodology for Scope 3 measurement, initially focused on Scope 3.1, Purchased Goods and Services.

Working with EcoVadis



IAG GBS works with EcoVadis, the market leader in corporate sustainability ratings, to assess suppliers against a set of environmental, social and corporate governance (ESG) metrics. In this way, IAG and its suppliers have a benchmark for ESG improvement, and suppliers can share this with their customers and other stakeholders, strengthening the sustainability of the entire industry. In 2023, 90% of IAG's supply chain in terms of spending, was assessed through EcoVadis scorecards. 107 of Aer Lingus's suppliers had EcoVadis scorecards and the average score is 60. Where improvement opportunities are identified, a corrective action plan is initiated. Through this process, 53 suppliers have improved their scores in 2023.

The IAG GBS continuous transformation plan includes measures to embed sustainability KPIs into procurement processes and the criteria for awarding new business to suppliers.

This comprehensive supply chain sustainability programme supports Aer Lingus' policy of working with businesses that share our standards and ways of working.

Environmental Metrics

Carbon Footprint

Supporting
UN Sustainability
Goals



2023 and 2022 saw strong progress for Aer Lingus across all sustainability metrics when measured against 2019, the last full year before the onset of the Covid-19 pandemic. Pandemic related travel restrictions distorted the figures for 2020 and 2021 to such an extent that they do not provide a reliable baseline.

Aer Lingus’s transition plan focuses on reducing CO₂ from jet fuel use, as this represents over 99 per cent of our Scope 1 emissions. Emissions are calculated by multiplying fuel and energy use by appropriate conversion factors that are aligned with the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report.

2023 saw strong progress against the key metric of carbon efficiency. With a gCO₂/pkm carbon efficiency improvement of 4% versus 2022 and 5% compared to 2019.

During 2023, our scope 1 CO₂ emissions from our direct operations, flights, and ground operations decreased by 3% versus 2019. The introduction of our new, more fuel-efficient Airbus neo aircraft, operating efficiencies, reduced consumption of jet fuel and the use of SAF in 2023 is resulting in more efficient flying and a reduction in total emissions.

Our indirect emissions associated with the purchase of electricity and other energy (Scope 2) also showed an improvement, reducing by 20% on 2019 when calculated on the location basis. This measures the emissions generated by our activities according to the emissions intensity of the grid. However, between the two periods there was a 10-percentage point reduction in renewable electricity in our overall electricity mix.

In 2023, Aer Lingus engaged 3rd parties to optimise our energy efficiency in our offices and buildings.

In addition, our Scope 3 emissions which include all other indirect emissions that occur in our value chain such as carried cargo, franchises, business travel etc., reduced by 2% compared to 2019.

FY						
	Unit	2023	2022	2021	2020	2019
Carbon Footprint Metric						
TOTAL Scope 1 CO ₂ e	tonnes CO ₂ e	2,252,397	1,862,883	524,294	723,931	2,324,157
TOTAL Scope 2 location-based	tonnes CO ₂ e	3,542	3,422	1,913	2,711	4,406
TOTAL Scope 2 market-based	tonnes CO ₂ e	420	486	456	108	4,406
Scope 3	tonnes CO ₂ e	585,369	444,532	159,197	251,433	594,701
Other Metric						
Jet Fuel	tonnes Fuel	708,024	584,704	164,108	226,838	729,135
SAF Fuel	tonnes Fuel	750	–	–	–	–
Electricity use	kw/h	10,682,504	9,865,089	6,397,335	8,308,670	13,588,683
Renewable Electricity	%	88	86	78	97	98



Air Quality & Noise

The introduction of the Airbus A321neo LR over the recent years and four new A320neos to our fleet has contributed to a significantly improved noise footprint (ICAO Chapter 14). In 2023 saw an 11 percentage point improvement versus 2019 and a 3 percentage point improvement versus 2022. Additionally, through our investment in new aircraft we have seen an improvement in noise per LTO (landing and take-off).

During 2023, Aer Lingus achieved a 12 percentage point improvement in nitrous oxide emissions versus 2019 (CAEP Chapter 8) and 2 percentage points versus 2022.

		FY				
	Unit	2023	2022	2021	2020	2019
Noise per cycle	QC per LTO	1.10	1.11	1.20	1.21	1.12
Noise ICAO Chapter 14	% at standard	21%	18%	15%	7%	10%
Nox per cycle	kg per LOT	8.30	8.28	8.61	8.47	8.03
Nox CAEP Chapter 8	% at standard	41%	39%	37%	30%	29%



Waste Reduction

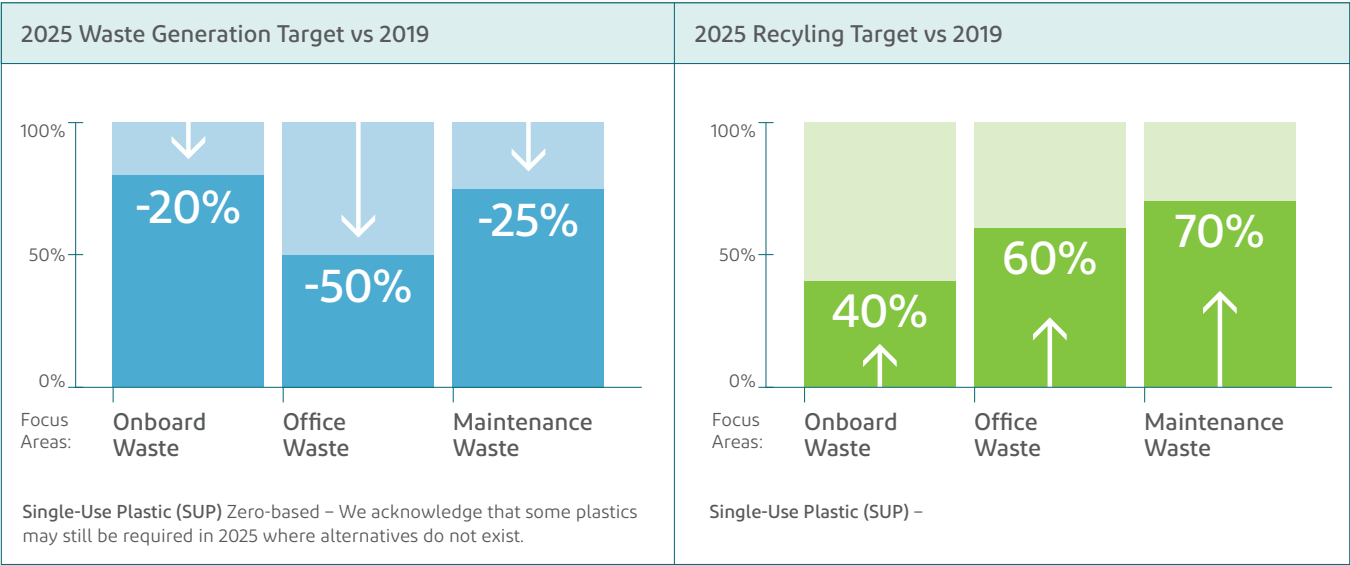
Aer Lingus has committed to ambitious targets to reduce waste generation, increase recycling and remove single-use plastic* by 2025 across our business.

Compared to 2019 there has been a reduction in the waste generated in our offices and in Maintenance & Engineering. Our colleagues in Cargo have also achieved a 12 percentage point improvement in waste recycled to 86% of all waste.

With Aer Lingus being the first airline to segregate and recycle on-board waste arriving on short-haul flights into Ireland, we expect to see higher levels of recycling per passenger as we expand this onto long haul routes in 2024.

		FY				
	Unit	2023	2022	2021	2020	2019
On-Board waste per passenger	kg/pax	0.33	0.31	0.33	1.00	n/a
Office waste per full time employee	kg/FTE	129.32	121.64	93.91	180.26	177.53
Maintenance waste per unit of activity	kg/person-hr	0.08	0.06	0.04	0.11	0.13
Cargo waste per unit of cargo carrid	kg/tonne cargo	1.84	2.00	0.79	1.10	1.14
On-Board waste at hubs recycled/recovered	%	9%	9%	9%	0%	0%
Office waste recycled/recovered	%	7%	9%	2%	–	–
Maintenance waste recycled/recovered	%	3%	20%	4%	74%	12%
Cargo waste recycled/recovered	%	86%	69%	78%	73%	74%

Our Waste Reduction Targets aligned with IAG "5 through 2025"



→ Environmental Metrics

External Ratings

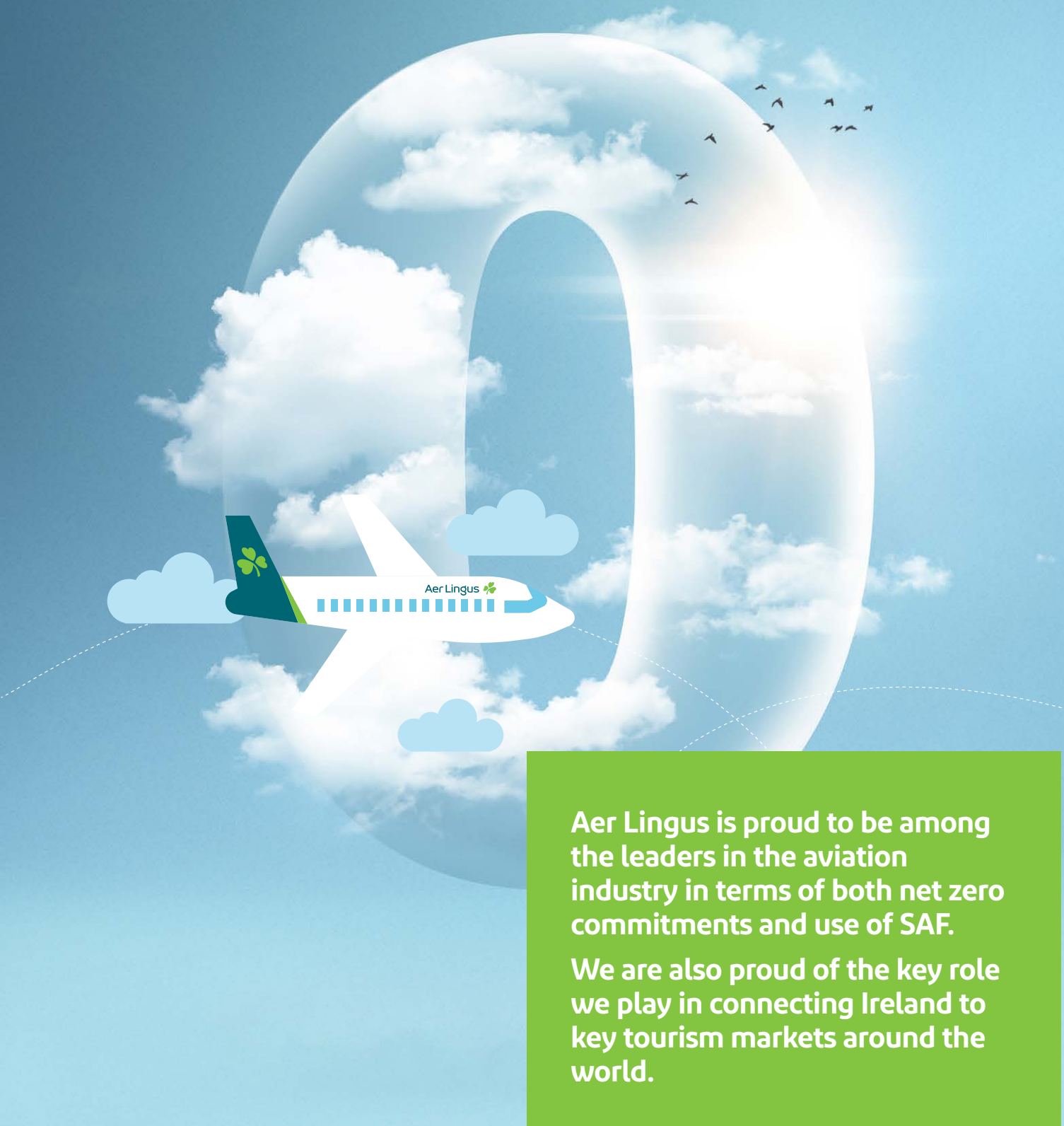
IAG leads the aviation industry for independent recognition and accreditation of its climate action efforts.

In 2023 IAG was awarded an A- grade by the Carbon Disclosure Project (CDP) for its climate change disclosure, which assessed more than 21,000 companies globally on climate action.

Aer Lingus’ activity is consolidated into the IAG rating. This is the fourth year IAG has achieved a ‘leadership’ rating of A- or higher, the longest consecutive leadership rating of any airline, and places the Group in the top 25% of respondents worldwide.



- Scope 1 emissions** — Direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by an organisation directly from flights and ground vehicles (jet kerosene, natural gas, ground vehicle emissions etc.)
- Scope 2 emissions** — Indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling.
- Scope 3 emissions** — Include all other indirect emissions that occur in the value chain such as carried cargo, employees commuting to work and business travel.
- Scope 2 Market vs Location** — The location-based method calculates what the company is physically putting into the air from the emissions intensity of the grid. The market-based approach shows emissions the company is responsible for through its purchasing decisions, i.e. such as purchasing or not purchasing renewable energy.
- ICAO Chapter 14** — Noise from aircraft. Compare aircraft noise against standardised limits that are a combination of lateral, approach, and flyover noise levels.
- ICAO CAEP 8** — NOx emissions from aircraft engines. The standards have become increasingly stringent: the CAEP 8-certified engines must emit less than half the NOx emitted by engines certified to the original CAEP standard.
- Noise per LTO** — Average noise per flight considering arrival and departure noise for each aircraft type. Based on the number of flights of all aircraft which operated during the year, including leased aircraft.
- NOx per LTO** — Average emissions of the air pollutant nitrogen oxide as aircraft take off and land. The calculation considers the engine certifications and aircraft types of all aircraft which operated during the year, including leased aircraft, referencing information from the ICAO emissions database.



Aer Lingus is proud to be among the leaders in the aviation industry in terms of both net zero commitments and use of SAF.

We are also proud of the key role we play in connecting Ireland to key tourism markets around the world.

Strategy & Governance of Sustainability

Our sustainability strategy, initiatives, and reporting are based on a rigorous assessment of which business activities have a material impact on the environment and what is most important to key stakeholders.

Supporting
UN Sustainability
Goal



Governance

Aer Lingus has its own distinct sustainability programme which is regularly reviewed to ensure alignment with the Group strategy.

Key Governance Structures

- Accelerate Sustainability is a key pillar of our Transformation Programme. Head of Sustainability sits on a monthly Transformation Working Group and the Chief Corporate Affairs Officer attends a monthly Executive Steering Group that tracks progress and KPIs under the Transformation Programme.
- Quarterly meetings of the Board Safety, Environment and Corporate Responsibility (SECR) Committee to provide dedicated oversight of the Group's sustainability programme and a link between the IAG and operating company management committees and the IAG Board.
- The quarterly Sustainability Steering Group (SSG) comprising of senior representatives from each operating company and key IAG teams provides oversight of environmental and social initiatives and reporting.
- The IAG Sustainability Network convenes monthly, comprising of sustainability representatives from all operating companies, to share ideas and updates.
- A weekly Communications Group discusses internal & external sustainability communication opportunities.



• Sustainability is embedded into core business processes:

- Sustainability impacts are a key criterion during the business case and financial approval processes. Business cases over a certain threshold are subject to approval by CEO & CFO.
- Sustainability is a risk on the Corporate Risk Register, which is reviewed bi-monthly at Management Committee, bi-annually at Aer Lingus and IAG Board level.
- Sustainability opportunities and costs are included in the three-year business plan one-year financial plan,
- Adhering to the requirements of IEnvA environmental assessment program ensures that as an airline we identify significant environmental impacts and continually maintain environmental management plans to mitigate against these impacts.
- Regular meetings of the SAF Steering Group and People Working Group reporting into the SSG; and
- Internal Group-wide policies related to sustainability help to ensure that wider decision-making aligns with the sustainability strategy. These include the Code of Conduct, Supplier Code of Conduct and specific policies on Environmental Sustainability, Modern Slavery, Anti-Bribery and Corruption, Equal Opportunities and Selection and Diversity.

These are approved by the Board of Directors.

Carbon Reduction

- Public commitments for carbon reduction & Sustainable Aviation Fuel (SAF)
- Fleet renewal strategy
- The Carbon metric (gCO₂ppkm) is included as a management incentive: tracked & reviewed monthly by Aer Lingus CEO, CFO and the wider Executive Team.
- Sustainable Aviation Fuel (SAF) Steering Committee reviews all SAF opportunities and progress towards 2025 ReFuelEU mandate & 2030 10% SAF target. The Committee includes leadership representation from across the business.
- As Aer Lingus collaborate on opportunities across IAG, Aer Lingus participates on the IAG SAF Management Group and the Aer Lingus CEO sits on the IAG SAF Steering Group.

Waste Reduction & Recycling

- Public commitments for waste reduction & recycling
- Weekly meetings are held with representatives across the business to plan and monitor the implementation of recycling onboard, which is also monitored as part of the Transformation governance.
- Working group meeting to review single use plastic reduction & waste reduction initiatives

Compliance

Aer Lingus provides sustainability data on a quarterly and annual basis for inclusion in the IAG Annual Report. The data is included in the IAG non-financial information statements (NFIS), which are independently verified in line with ISAE3000 (Revised) standards. At Aer Lingus, we participate in the annual external audit, where all of our data is verified by a third party.

For the IAG Annual Report, our sustainability team collects information from across the business to measure, report and verify our carbon emissions impact (which includes Scope 1, Scope 2, Scope 3), Waste, Noise, NOx, Water and Community giving.

Emissions data from intra-European & UK flights is independently verified at the year end, for compliance with the UK, EU and Swiss emissions trading schemes. Each airline must verify their tonnes of CO₂ emissions annually.

We participate in four emissions trading schemes: The EU Emissions Trading Scheme (ETS) and its equivalents in the UK and Switzerland, and the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) for all non-European flights.

There is a mandatory carbon offsetting dimension to all of these schemes. Airlines are required to purchase credits to offset increases in emissions above certain limits. In addition, the EU ETS has been amended and historic emissions allowances will be phased out by the end of 2026 meaning that a much greater proportion of airline emissions will be covered from that date.

However, the industry plan for net-zero foresees a rapid decline in the use of offsets as other solutions developed by the sector and its partners take over. Should it prove impossible to completely eliminate emissions at source, the industry is committed to mitigating the remaining emissions using offsetting mechanisms, including carbon capture technologies.

Aer Lingus also enables customer carbon offsetting through our partnership with Pure Leapfrog which allows carbon credits to be purchased by supporting a carbon offsetting scheme.

Policy

Sustainable Aviation Fuel (SAF)

Aviation is one of the hardest sectors to decarbonise. It is also one of the most important: underpinning €144 billion of the EU economy, supporting tourism, trade, emergency aid and business. There are many small ways to cut emissions, but the only way to achieve net zero by 2050 is to use sustainable liquid fuels. Sustainable Aviation Fuel (SAF) is the solution to decarbonise both short and long-haul flight.

Sustainable Aviation Fuel (SAF) is generally considered to be one of the most realistic and effective means to reduce aviation emissions in the next decades and as a long-term solution for decarbonising long-haul flights.

SAF is a sustainable drop-in replacement for fossil jet fuel with a minimum 70% lower net lifecycle carbon intensity and it requires no changes to aircraft or delivery infrastructure. It is, however, significantly more expensive than standard jet fuel and is currently produced in minuscule quantities in comparison to the overall needs of the global aviation industry.

Aer Lingus has, as part of IAG, an ambition to fuel 10% of flights with sustainable aviation fuel by 2030. As part of that journey Aer Lingus used SAF for the first time at LHR this year. In addition, we have signed two SAF supply agreements with Gevo and Aemetis that will see SAF accounting for 54% of fuel procured by Aer Lingus in the US West Coast from 2028.

The EU Green Deal and the Fit for 55 Package are powerful tools for change with which Aer Lingus and IAG’s objectives are aligned.

As part of these packages, the EU has committed 20 million free allowances (known as ‘SAF allowances’) worth billions of euros, to encourage SAF uptake between 2024 and 2030, and has increased the ETS innovation fund budget to help deploy net zero and innovative technologies.

By doing so, the EU can ensure that it produces more SAF while simultaneously reducing its price and making decarbonisation for EU airlines affordable.

Aer Lingus believe further policy opportunities exist including:

- Further fostering investments in SAF by increasing the 20 million ‘SAF allowances’ and extending the scheme beyond 2030. Airlines will pay more into the EU ETS when current free allowances are progressively removed between 2024 and 2026. Aviation revenues need to be effectively redirected to accelerate the EU SAF market.
- Guaranteeing that the upcoming ETS Innovation Fund prioritises SAF projects together with a swift adoption of Price Stabilisation Mechanisms, like the Contracts for Difference, as critical enabler for its scale up.
- Prioritising SAF within the Net Zero Industry Act so that procedures are simplified and so that current EU support for SAF can rapidly reach producers – thereby hastening the scale-up of production and concurrent price reduction.
- Ensuring certainty via the strategic allocation of feedstock to the aviation sector: neither hydrogen nor electrification can sufficiently replace fossil fuel-based aviation technology, unlike in other sectors.
- Ensuring that import barriers are not placed on SAF, at least on a temporary basis, until the EU can produce SAF at scale.
- Ensuring that Book and Claim flexibility mechanisms are available across the EU to guarantee the rapid scale-up of SAF, as production is placed where it is more cost-efficient.

- Unlocking further EU Government initiatives to ensure that SAF production is developed across the length and breadth of the EU. Further initiatives should be developed by Member States, such as the recent French Government commitment to invest €200m into a SAF plant.

Aer Lingus has joined the newly formed government-industry SAF Taskforce to inform policy in this area. We look forward to working with our government and industry colleagues towards developing and accelerating opportunities for SAF production in Ireland.

Recycling

Waste reduction, reuse and recycling form a key pillar of the Aer Lingus sustainability strategy. Significant progress is being made on all fronts. One noteworthy recent breakthrough has been agreement with the Irish government on the interpretation of legislation to enable the reclassification of certain onboard waste streams to facilitate its recycling. We will continue to work with government departments and agencies and other partners to maximise the amount of waste which can be recycled and will make every effort to reduce and eliminate waste which cannot.

Single European Sky (SES)

Traditionally, air traffic management has been developed and provided at a national level by air navigation service providers (ANSP). This has led to the fragmentation of European airspace into a multitude of control areas broadly corresponding to national borders.

It is currently estimated that this fragmented approach causes an average flight within Europe to be 42 km longer than necessary with a consequent additional environmental impact. Inefficiencies caused by Europe’s fragmented airspace bring extra costs of around €4 billion a year (source: European Commission).

Aer Lingus is a strong supporter of the Single European Sky (SES) proposal which would restructure European airspace as a function of air traffic flow, rather than according to national borders. This would improve and reinforce safety, create additional capacity, increase the overall efficiency and performance of the air traffic management system, and offer the potential of a 10% reduction in European aviation emissions (source: IATA).

Supporting UN Sustainability Goals

The UN has identified 17 Sustainable Development Goals (SDGs) to support as part of the global 2030 Agenda for Sustainable Development. The SDGs provide a blueprint for a more sustainable future for all.

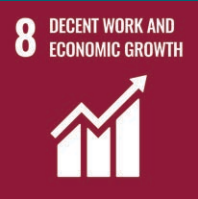
Throughout this report we have indicated where Aer Lingus activities support the following SDGs:



Ensure healthy lives and promote well-being for all at all ages.
(page 8, 18)



Ensure access to affordable, reliable, sustainable and modern energy for all.
(page 10, 24)



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
(page 10)



Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
(page 10, 23)



Make cities and human settlements inclusive, safe, resilient, and sustainable.
(page 8, 18, 23)



Ensure sustainable consumption and production patterns.
(page 10, 23, 24, 30)



Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy.
(page 10, 24)

Appendix

CORSIA Carbon Offsetting and Reduction Scheme for International Aviation

EU ETS European Emissions Trading Scheme

Hydrotreated Vegetable Oil (HVO) A low emissions biofuel made from renewable materials and a direct replacement for conventional diesel.

IATA International Air Transport Association

ICAO International Civil Aviation Organisation

ICAO CAEP 8 Governs NOx emissions from aircraft engines. The standards have become increasingly stringent: CAEP 8-certified engines must emit less than half the NOx emitted by engines certified to the original CAEP standard.

ICAO Chapter 14 Governs noise from aircraft. Compares aircraft noise against standardised limits that are a combination of lateral, approach, and flyover noise levels.

IEnvA IATA Environmental Assessment Programme

Nitrous Oxides NOx is the collective term for the Nitrogen Oxides NO and NO₂, which are significant components of harmful air pollution.

NOx per LTO Average emissions of the air pollutant nitrogen oxide as aircraft take off and land. The calculation considers the engine certifications and aircraft types of all aircraft which operated during the year, including leased aircraft, referencing information from the ICAO emissions database.

Noise per LTO Average noise per flight considering arrival and departure noise for each aircraft type. Based on the number of flights of all aircraft which operated during the year, including leased aircraft.

Paris Agreement The legally binding international treaty on climate change adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris in 2015. Its overarching goal is to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels” and pursue efforts “to limit the temperature increase to 1.5°C above pre-industrial levels.”

Particulate matter (PM) is made up of particles of solids or liquids that are carried in the air. These particles may include dust, dirt, and soot.

Scope 1, 2 & 3 Emissions According to the leading GHG Protocol corporate standard, a company's greenhouse gas emissions are classified into three scopes.

- **Scope 1 emissions** are direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by an organization directly from our flights and ground vehicles. (jet kerosene, natural gas, ground vehicle emissions etc.)
- **Scope 2 emissions** are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling. There are two means of calculating Scope 2 emissions – market and location. The location-based method reveals what the company is physically putting into the air from the emissions intensity of the grid. The market-based approach shows emissions the company is responsible for through its purchasing decisions, i.e. such as purchasing or not purchasing renewable energy.
- **Scope 3 emissions** includes all other indirect emissions that occur in our value chain such as carried cargo, employees commuting to work and business travel.

SEAI Sustainable Energy Authority of Ireland

Single European Sky (SES) A proposal to harmonise and defragment air traffic management across Europe.

Skytrax International air transport rating organisation

Sustainable Aviation Fuel (SAF) There are many different types of SAF which are broadly categorised into three generations:

- **First generation SAF** is made from HEFA (Hydrogenated Esters and Fatty Acids) – the current commercial scale process for producing the fuel. In the UK and EU, HEFA is made from waste oils and fats which are in short supply and also in demand for the production of non-crop-based biodiesel and renewable diesel for road transport. There is therefore a need to develop SAF with a greater diversity of feedstock types.
- **Second generation SAF** is made from other carbon-containing sustainable feedstocks and includes the conversion of waste into syngas and the conversion of flue gases and waste/residues from biomass feedstocks into ethanol and then to SAF. These technologies are either ready, but not yet deployed at commercial scale, or are very close to maturity.
- **Third generation SAF** is known as an “e-fuel” or PtL (Power to Liquid), a fuel made from chemically combining green hydrogen with CO₂ taken directly from the atmosphere or captured from industrial emissions using Direct Air Capture (DAC) technology. Although the production process is well understood the first commercial plants are critically dependent on the emergence and deployment of the efficient large-scale electrolysis and DAC capacity required for its production.

Task Force on Climate-related Financial Disclosures (TCFD) Body created by the Financial Stability Board to improve and increase reporting of climate-related financial information.

