

SUSTAINABILITY REPORT 2023



American Airlines



About American Airlines and This Report

American Airlines Group Inc. is a holding company whose primary business activity is the operation of a major network carrier headquartered in Fort Worth, Texas, providing scheduled air transportation for passengers and cargo through our mainline operating subsidiary, American Airlines, Inc., and our wholly owned regional airline subsidiaries, Envoy Aviation Group Inc., PSA Airlines, Inc. and Piedmont Airlines, Inc., as well as contracted third-party regional carriers. American Airlines Group Inc. and our wholly owned subsidiaries are hereafter referred to collectively as "American." The term "regional carriers" refers only to those owned by American.

American is committed to providing regular and transparent information about our strategies and performance on the sustainability issues that we believe are most important to our company and stakeholders. This sustainability report includes a discussion of American's approach to managing those sustainability issues, along with highlights of our progress and performance in sustainability in 2023. It covers the activities of American Airlines Group Inc. that are consolidated for financial reporting, except where specifically indicated otherwise. Unless noted otherwise, the performance data presented in this report is for the 12 months ending Dec. 31, 2023.

This report also aligns with relevant sections of the [Task Force on Climate-related Financial Disclosures \(TCFD\)](#) and the standard for the airline industry developed by the [Sustainability Accounting Standards Board \(SASB\)](#). We view both of these reporting frameworks as important indicators of the sustainability issues that our stakeholders consider most significant. Regarding forward-looking statements contained in this report, please see [page 92](#).

Our sustainability efforts are integral to running a reliable operation and a resilient, profitable enterprise that will thrive over the long term.



IN CONVERSATION With American's CEO

Chief Executive Officer Robert Isom shares his perspectives on the sustainability highlights and challenges for American in 2023.

Safety is an issue that's been front and center in the airline industry recently. How is American responding?

Safety is always at the forefront of everything we do at American, and it's part of my job every day. When American first developed it, our Safety Management System literally set the standard for our industry, and it continues to guide how we rigorously and consistently integrate safety across our operations. We know safety is about systems and execution, but all of that really starts with a strong safety culture. Our top safety leaders come to the role with deep experience working on the front line, with the professional certifications those roles require. They understand what good safety practices look like on the ground. And we make clear to every team member that safety is everyone's responsibility, that it's their duty to report any safety concerns — and they will never face any repercussions for doing so. Aviation is by far the safest mode of transportation in the world, and we are dedicated to keeping it that way.

How do you think about operational performance in the context of sustainability?

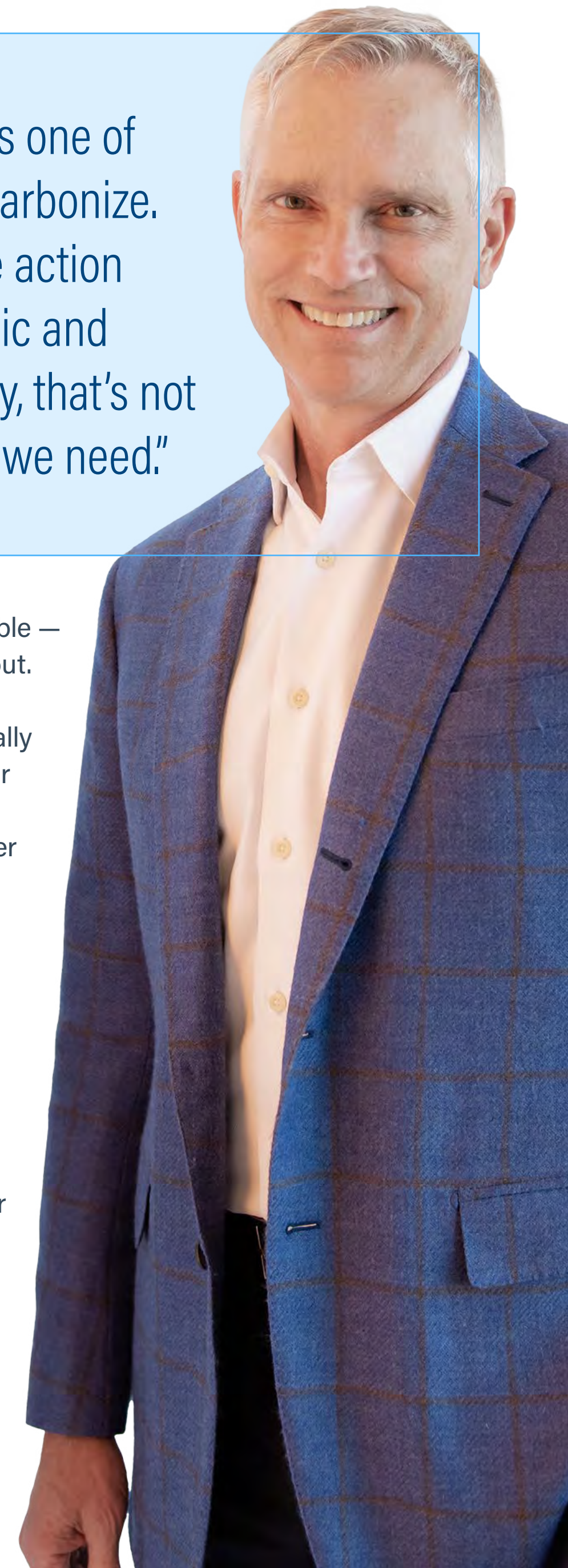
First, it's important to remember that American is just one part of a broader supply chain that delivers travel — the airframe and engine manufacturers, fuel suppliers and government agencies that control the airspace are all critical parts — and making our industry more efficient and sustainable needs to be a joint effort. For example, improving how we use the airspace will help us operate more efficiently, save time for our passengers and reduce our emissions. That's why we advocate on behalf of our industry for more investment in the Federal Aviation Administration.

Within our own operations, American's ability to deliver on our sustainability goals depends on us continuing to run a reliable operation and thriving as a profitable enterprise. We remain

"Aviation is widely recognized as one of the most difficult sectors to decarbonize. Getting there is going to require action and investment across the public and private sectors and, quite frankly, that's not happening at the pace or scale we need."

laser focused on being the most reliable airline possible — one that delivers for our customers day in and day out. In 2023, we recorded our best full-year completion factor, with the lowest number of cancellations annually since 2013. Thanks to that, along with a host of other efforts we have underway to enhance the travel experience, we also posted company-record customer satisfaction scores for the year.

Our job is to get every one of our passengers safely to their destination — on schedule and with their baggage in tow, to the very best of our ability. But, equally, it's to get every one of our team members home safely at the end of their workday. As we've ramped up operations and onboarded new team members — fully a quarter of the team is new to American since the pandemic — we've redoubled our focus on workplace safety, including by launching a new companywide safety awareness training program and strengthening our training for new hires. Protecting the safety of our people is our foremost priority. Among all the competing demands of running an airline, safety always wins for us.



What do you see as American's biggest sustainability challenge?

Our ability to achieve net zero greenhouse gas (GHG) emissions.

There's no question we need to decarbonize aviation, and American's goal to achieve net zero GHG emissions by 2050 is the right one. We are taking concrete steps within our operations and pulling all the levers we can control to drive progress. This includes undertaking the most extensive fleet renewal effort in the history of our industry to give us the youngest mainline fleet among U.S. network carriers. We're also working and investing to help advance the technologies designed to deliver viable and scalable decarbonization solutions over time.

But the reality is the action we can take within our own operations — or the scale of investment we can absorb in our low-margin business — will never be sufficient on its own. Government has a crucial role to play in facilitating the transition through smart policies, incentives and investments in R&D. Industry, in partnership with academia, needs to turn its focus to developing new commercial-scale decarbonization technologies. And innovation and policy need to work hand-in-hand. Aviation is widely recognized as one of the most difficult sectors to decarbonize. Getting there is going to require action and investment across the public and private sectors and, quite frankly, that's not happening at the pace or scale we need.

Can you give an example?

Sustainable aviation fuel (SAF) is a perfect example. American has a goal to use 10% SAF in 2030. In 2023, we used 2.7 million gallons of SAF — the most we've used in a single year — but it was still less than 1%. That wasn't for lack of trying. We've signed commitments with multiple SAF producers, at a premium, to try to secure supply and, in the case of Infinium, to help attract capital to bring a new, lower-carbon SAF technology to market sooner. But the volume of SAF available today and likely to be ready over the next several years is a tiny fraction of what's needed.

Compared to other, not-yet-fully proven technologies to reduce the climate impacts of aviation, SAF is a no-brainer. It's a drop-in fuel, meaning it can be used by the aircraft flying today without modifications, that provides significant life cycle emission reductions. Scaling the SAF market so fuel is available at the volume and price needed to make a real dent in aviation's climate impacts — and to help American reach our climate goals — depends on bolder action by policymakers, increased investment by energy companies and more innovative financing approaches. We've seen progress — the recently enacted SAF blenders tax credit and similar efforts in states like Illinois are key steps forward — but we need more.

The development of new, more fuel-efficient engines and airframes is another example. Game-changing technologies like hydrogen — which American is also helping advance — are expected to be important elements of the long-term solution for decarbonizing aviation. But to get from here to there, we need manufacturers to invest in the incremental but meaningful advances in airframe and engine technologies that can come online with the next generation of aircraft.

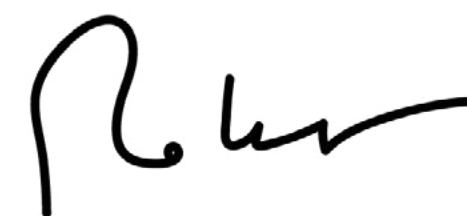
It's a risk for me to come out and say that American's ability to achieve our 2030, 2035 and 2050 climate goals is in jeopardy. But in my mind, the bigger risk is failing to sound the alarm that there's an urgent need for more and faster action across the public and private sectors. American is doing its part, but we can't do it on our own.

Let's end on a positive note. What are you most proud of from the last year?

That's easy. Our more than 140,000 team members. It's their hard work and dedication that will help us reach our goals — be that financial, operational or on climate. Thanks to them, I'm confident that we can.

Across every level of our organization, we seek out the broadest and most diverse pool of talent available because we know that opening the doors to opportunity benefits our business, allowing us to recruit the best and our team members to do their best work. We're investing in developing the talent we need while raising awareness of and expanding access to careers in aviation. This includes expanding our recruitment efforts and broadening our talent pool by creating opportunities for groups that have historically faced barriers to entering our industry to pursue the stable and rewarding careers it provides. Through the American Airlines Cadet Academy, for example, we're reducing financial obstacles for those seeking to become pilots while developing a pipeline for an in-demand role. And we're partnering with the Aviation Institute of Maintenance and other schools to provide direct career paths and mentorship for aspiring maintenance professionals.

We also continue to invest in developing and recruiting great leaders across American. I am deeply proud and honored to have such a diverse and talented group of individuals with unmatched expertise in leadership roles throughout the company. I've said it before and I'll say it again: Our people are, and always will be, our greatest strength.



Robert Isom | Chief Executive Officer

June 2024

SUSTAINABILITY STRATEGY

We have long recognized the importance of sustainability issues within our business and have developed an integrated and transparent approach to managing them.



Sustainability at American includes protecting the safety of our team members and customers, attracting and developing the talent we need, providing our customers with a world-class travel experience and positioning American to compete in a low-carbon economy.

Our efforts across all these areas are integral to running a reliable operation and a resilient, profitable enterprise that will thrive over the long term.

We have long recognized the importance of environmental, social and governance issues and have developed an integrated and transparent approach to related oversight, management, measurement, assurance and reporting. We believe we are making progress, but we continue to look to best practices within and outside our industry as we refine and strengthen our approach.

Our Priority Sustainability Issues

We periodically conduct sustainability-focused materiality assessment processes that serve as the foundation of our analysis of areas of sustainability risk and opportunity. We conducted our most recent process in early 2023, which affirmed our priority issues. As part of the process, we also identified responsible sourcing as a topic of growing importance, so we have added content on our sourcing policies and practices to this year's sustainability report.

Through ongoing engagement across our company and with a broad range of external stakeholders, we annually validate and, as needed, refine our assessment based on the input we receive and on changes in our operating environment. We also continually monitor trends, standards, regulatory developments and practices relevant to our industry to inform our areas of focus.

Member of

Dow Jones Sustainability Indices

Powered by the S&P Global CSA

In 2023, American Airlines was named to the Dow Jones Sustainability World Index (DJSI World) for the first time, and we are one of only two passenger airlines included. DJSI World comprises global sustainability leaders as identified by S&P Global through the Corporate Sustainability Assessment. It represents the top 10% of the largest 2,500 companies in the S&P Global Broad Market Index based on long-term economic, environmental and social criteria. American was also included in the Dow Jones Sustainability North America Index for the third year in a row.

These activities have affirmed our focus on the following priority sustainability issues:

- Safety
- Human capital
- Customer satisfaction and operational performance
- Climate change and fuel efficiency

Driving progress across all these issues is a key objective for American. We also recognize that the business landscape is evolving rapidly and that we must be ready to address new areas of concern if or when they emerge.

Management and Governance of Sustainability Topics

American takes a coordinated approach to governance of sustainability issues, including climate-related risks and opportunities. It begins with Board-level oversight and extends to our day-to-day operations.

Key Roles and Responsibilities

Board Level	Sustainability-Related Focus Area
Full Board	American's Board of Directors is the company's ultimate oversight body. It receives regular reports from each of the standing committees, and it also regularly reviews significant issues, such as operational performance, customer satisfaction and union relations. It also receives periodic briefings from management on our cyber-risk management program. The Board is currently made up of 10 independent directors, including a nonexecutive chairman, and our Chief Executive Officer.
Audit Committee	The Audit Committee has oversight of our approach to business conduct and ethics. In this role, it acts on behalf of the Board to oversee the integrity of the company's financial statements, the independent auditor's qualifications and independence, and the performance of both American's internal audit function and our independent auditor. This committee also oversees risk management policies that relate to cybersecurity.
Compensation Committee	The Compensation Committee has oversight responsibility for our human capital issues, including compensation, benefits and diversity.
Corporate Governance and Public Responsibility (CGPR) Committee	The CGPR Committee has primary oversight of American's sustainability efforts, including our climate strategy. Its purpose also includes oversight of political activities and the procedures for compliance with significant applicable legal, ethical and regulatory requirements that impact corporate governance and public responsibility.
Finance Committee	The Finance Committee has oversight responsibility for the company's capital expenditures and commitments, including investments in new aircraft.
Safety Committee	The Safety Committee has oversight responsibility for American's policies, programs and practices with respect to operational safety and compliance as well as matters affecting the safety of our customers and employees, including security and public health. Its purpose also includes oversight of the procedures for compliance with significant applicable legal, ethical and regulatory requirements related to safety.

American's CEO has ultimate responsibility and authority for the company's operations, results and financial performance. The CEO leads our Senior Leadership Team (SLT), which manages the strategic direction of our business, including the priority sustainability issues described in this report. SLT members are in turn responsible for managing and implementing the company's programs in their respective areas.

Key Roles and Responsibilities

Management Level	Sustainability-Related Focus Area
Safety	American's Chief Operating Officer (COO), who reports to the CEO and serves on the SLT, is responsible for safety across American, including airport operations, flight operations, technical operations, inflight and cargo operations. The COO is supported by a Vice President, Safety, who leads a team that works in concert with leaders across American to strengthen the company's safety management practices and performance.
Human Capital	American's Chief People Officer, who reports to the CEO and serves on the SLT, leads all aspects our people strategy, including talent and recruitment, compensation and benefits, learning and development, and diversity, equity and inclusion.
Customers	Responsibility for different aspects of customer service and the customer experience is distributed across key leadership roles. Operational performance and airport customer service is under our COO, while most customer experience initiatives and offerings are managed within our commercial organization.
Environmental Sustainability	American's Executive Vice President (EVP) and Chief Government Affairs Officer, who reports to the CEO and serves on the SLT, is responsible for the company's environmental sustainability strategy, policies and progress, as well as the company's broader sustainability reporting and disclosure, including related to climate change. The EVP is supported by a Vice President, Sustainability, who leads a team that works in concert with leaders across American to strengthen the company's sustainability performance.

Climate-related governance

At the management level, the Board has formally assigned our CEO the responsibility for management of our climate change strategy. Our Vice President, Sustainability, coordinates and leads the development of American's climate strategy, with input and guidance from the Climate Change Steering Committee, a cross-functional and cross-operational group of senior leaders charged with assessing the effectiveness of our sustainability strategy, its implementation and further integration of sustainability into American's strategy and operations. In early 2024, at the request of the Climate Change Steering Committee, the Sustainability team established a cross-functional working group focused on preparing to implement emerging climate-related regulatory disclosure requirements applicable to American.

Responsibility for specific climate-related issues is embedded in senior roles across our company. For example, the Operations team conducts resiliency planning for more frequent and severe weather events, our Fuel Procurement team works to secure cost-effective supplies of sustainable aviation fuel (SAF), and our Flight Operations and Fleet Engineering teams are focused on improving fuel efficiency in the air and on the ground.

Climate-related risk management

Through our existing enterprise-wide risk management process, American monitors and manages a broad range of strategic, financial and operational risks, including risks associated with climate change. To inform our understanding of the climate risk landscape, we conducted an initial forward-looking climate scenario analysis in 2020 that focused on identifying and assessing the physical and transition climate-related risks and opportunities facing the company over the short, medium and long term. In 2022 and early 2023, we continued to build on this by undertaking a more detailed analysis of these risks and opportunities. This included adding 1.5°C climate scenarios into our assessment, as well as expanding the number of sites included in the physical risk evaluation, exploring geographic regions around the world in which we operate that are projected to experience greater impacts, and examining more closely the effects of potential changes in policy, technologies and markets.

The insights from this process, conducted in alignment with the recommendations of TCFD, continue to inform our climate strategy and are enabling us to more deeply integrate climate risk analysis into our ongoing risk management and business, strategy and financial planning processes. For details, see [page 61](#).

Public Policy and Political Contributions

Political, legislative and regulatory decisions can have a significant impact on American's success, and we have adopted policies that guide our participation in these processes. Reflecting best practices, our [Statement on Public Policy Engagement and Political Participation](#) describes how management and the Board of Directors oversee American's public policy engagement and the policy considerations that influence such engagement.

We do not use corporate funds to contribute to candidates, political party committees or political action committees. On the rare occasion when we use corporate funds to contribute to a state or local ballot initiative or a 501(c)(4) organization, we have committed to disclosing that contribution. In 2023, we made a \$1,500 contribution to Coalition for a Better 2050 in support of a ballot initiative in North Carolina.

The CGPR Committee oversees the company's major advocacy priorities and activities, political contributions and principal trade association memberships. We are committed to aligning our lobbying efforts with the priorities and goals of the Paris Agreement, the international treaty on climate change.

For more information on American's policies and procedures related to corporate governance and risk, as well as our Standards of Business Conduct, please see our [website](#).

IN CONVERSATION: A Director's View on Business and Society

Marty Nesbitt is a founding Partner and Co-Chief Executive Officer of Vistria, LLC, a private investment firm focused on building market-leading companies in the healthcare, knowledge and learning, and financial services industries. He serves on American's Board of Directors and chairs the Board's CGPR Committee. In early 2024, Marty shared his perspective on harnessing the private sector to drive social and environmental progress.

Your firm, Vistria, makes private sector investments aimed at delivering both financial returns and societal impact. How should companies think about delivering on those two objectives?

Capitalism and democracy form the greatest socioeconomic construct in the history of the world. But they're not perfect, and they're not science — humans invented them. The world has never been safer or more prosperous than it is today, but there are still lots of problems that we have to solve.

Since we invented this construct, we can make it better, right? Companies are realizing their profitability and performance are tied to their good behavior in these areas. Institutional investors are recognizing they can't meet their long-term obligations to their constituents if people aren't healthy or don't have the resources to buy products and services, or if the air and water aren't clean. I think of this as using capitalism's own incentives to drive better social and environmental performance — like doing jujitsu on capitalism. For business, it's in our long-term interest to figure out how to strengthen and nurture society.

How does that translate into what American Airlines does day to day?

Every company, given what it does and sells and its inputs, has a unique opportunity in how it can be impactful and also make that a competitive advantage. For American, its product and service itself makes a profound impact in connecting people. That strengthens our souls and makes us better and more productive parts of our communities. It also drives economic growth and expands opportunity.

But we're also in an industry that produces a lot of greenhouse gas emissions. So the work we're doing to minimize our carbon footprint — by helping advance the SAF market or the science on contrail avoidance, for example — is necessary and it makes a difference. The same goes for our investments in developing our employees and

creating a constructive and positive culture. It's vital for our business, and a powerful contributor to the strength and stability of our communities.

What else is needed to solve today's challenges?

Clearly, American is not going to be able to singularly address the climate impact of aviation, close the wealth gap or solve the many other problems we face alone. If every company moves toward the better end, that has a profound impact across the ecosystem. But we need more. We need more collaboration, smart public policies and new technologies.

As chairman of the CGPR Committee, what's your view on the Board's role in overseeing American's sustainability strategy?

We need to demonstrate that we recognize these issues are important to the company and that we think executing on our sustainability strategy is going to make a positive difference for our shareholders over the long term. The management team obviously has a lot of expertise, knowledge and insight into the American Airlines operation and where those sustainability opportunities and risks are. Our job as a Board is to support their efforts and reinforce the imperative for management to find creative and effective approaches, while providing the necessary oversight and resources and allowing the company to invest appropriately.

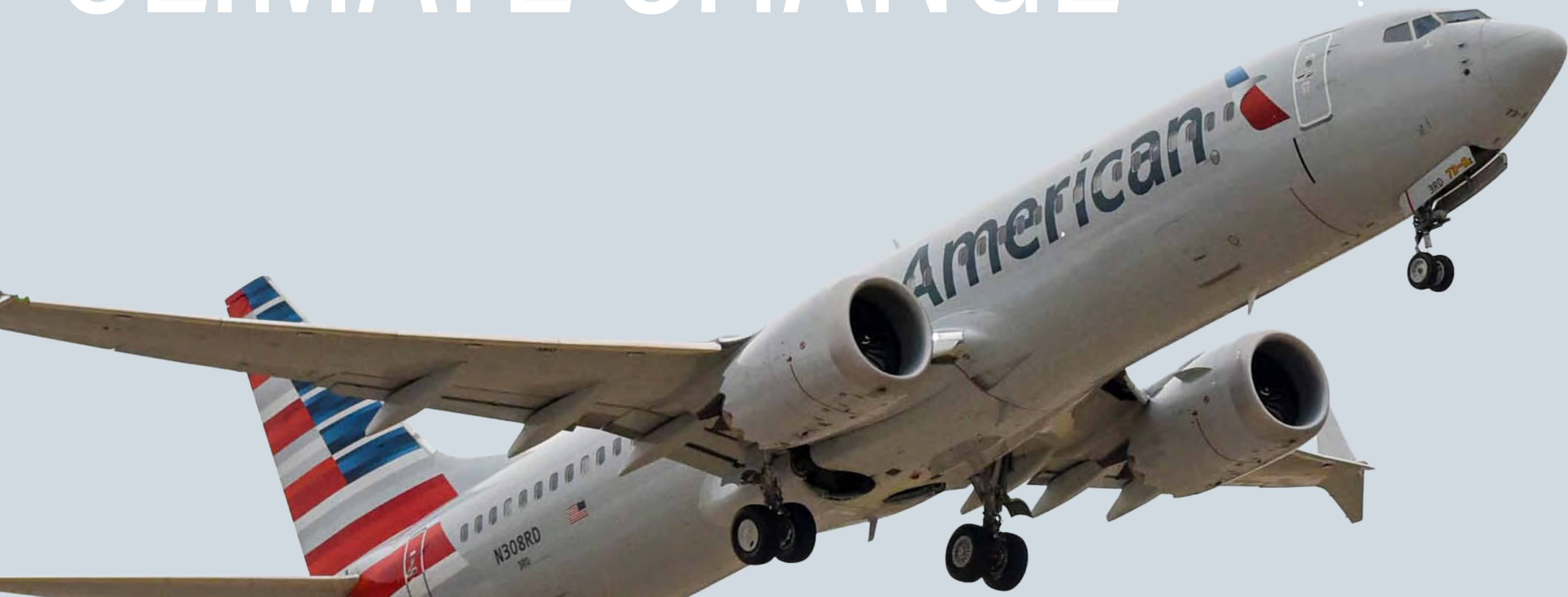
Marty Nesbitt

Chair, Corporate Governance and
Public Responsibility Committee



ADDRESSING CLIMATE CHANGE

We are collaborating with partners to advance the technologies needed to decarbonize aviation.



At American, we believe that being a competitive, resilient airline — and one that will continue to care for people on life's journey for generations to come — requires helping to drive the operational, policy and technological changes needed to advance the transition to a low-carbon aviation future.

American has set what we believe are ambitious climate goals, and in 2022 we became the first airline globally to set externally validated, science-based 2035 greenhouse gas (GHG) reduction targets. Our strategy to reach these targets focuses on running an ever more fuel-efficient operation, primarily by operating more fuel-efficient aircraft that are increasingly powered by low-carbon fuel.

While we are committed to taking steps within our own operations, the reality is that we cannot rely on today's technologies to achieve the progress we need to make in reducing our emissions in the future. Making the transition to low- and no-carbon aviation depends on a range of technologies that are not yet at commercial scale — or haven't yet been invented. That's why a key part of our climate strategy is collaborating with business partners, startups, scientists and innovators who are pioneering these technologies. Those collaborations, in turn, are driving our investments and catalytic commitments to help advance and scale aviation's decarbonization solutions.

Our Climate Strategy

Our aim is to achieve net zero GHG emissions by 2050. To drive progress, we have set an intermediate target to reduce GHG emissions intensity by 45% by 2035, relative to a 2019 baseline. This includes both direct emissions (Scope 1) — primarily from the combustion of jet fuel used in flight — and the indirect emissions (Scope 3) from the production of the jet fuel we use and the consumption of jet fuel used by our contracted regional carriers.

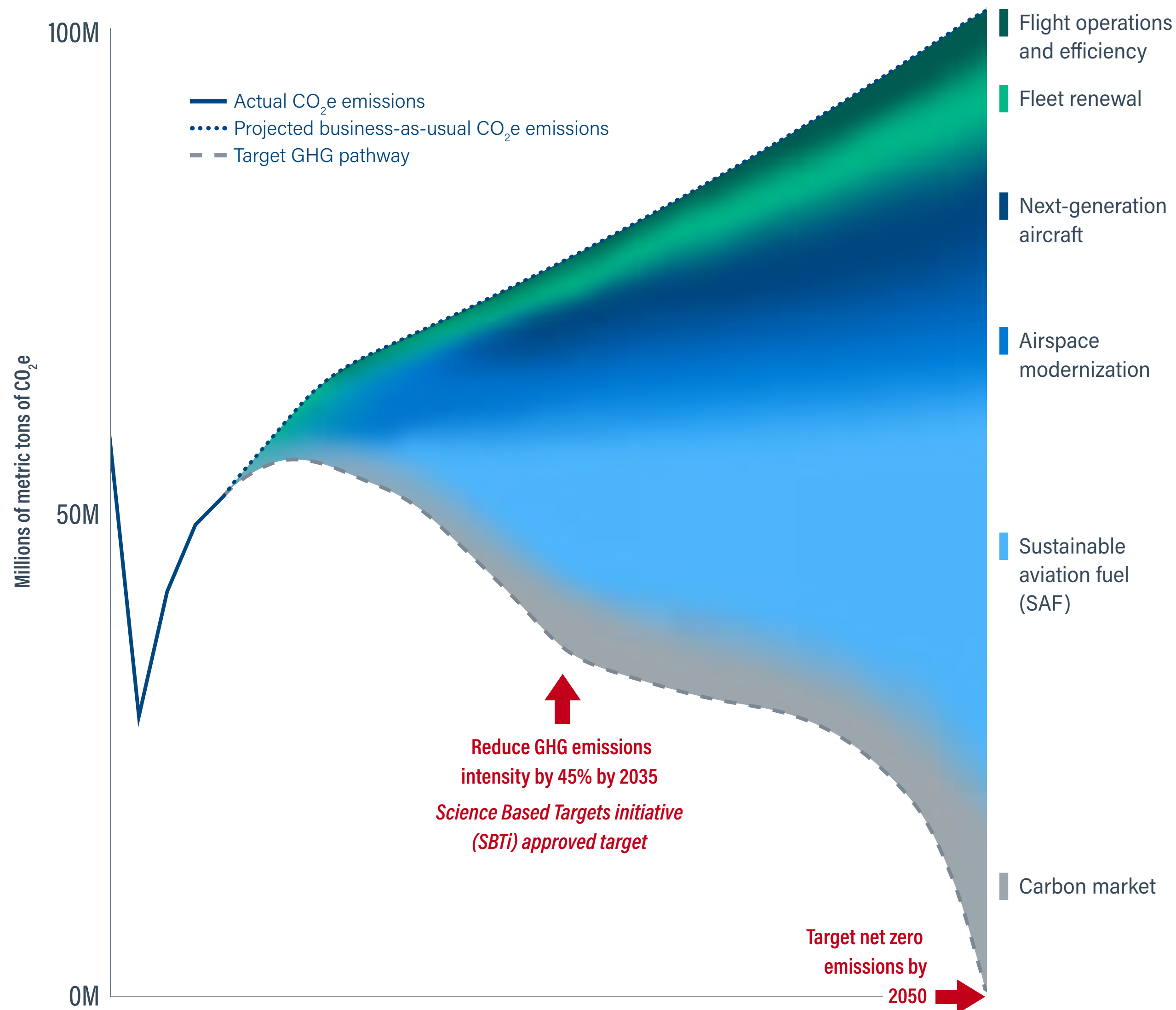
Our strategy is focused on driving progress across several key levers — some of which we have the ability to influence directly, and some of which will require action, collaboration and innovation within our industry, across sectors and by policymakers.

Underpinning our strategy is our analysis of the climate-related risks and opportunities facing our company. We initially conducted the analysis in 2020, and, in early 2023, we further expanded and deepened it by incorporating 1.5°C-aligned scenarios, consistent with the ambition of the Paris Agreement, in our assessment of both physical and transition risks. This includes the International Energy Agency Net Zero Emissions by 2050 Scenario, which we selected because it includes aviation-specific narratives and milestones. For a detailed discussion of our process and findings, see [page 61](#).



American's Directional Pathway to Net Zero in 2050*

As of June 2024



* Includes Scopes 1 and 2 as well as Scope 3, Categories 3 and 4.

Acknowledging Uncertainty on the Path to Net Zero

Since 2020, we have included a graphical representation of our directional pathway to net zero in our annual sustainability report. It is based on American's current estimates about the role of key levers in reducing our GHG emissions between now and 2050.

The pathway includes assumptions about a range of important factors, most of which are outside of American's control. While we expect that certain technologies — such as SAF and new aircraft propulsion — may be able to reduce emissions to a greater extent than others, the future development and availability of these technologies is not something we can predict with precision. Their contribution to our decarbonization will depend on the pace at which new technologies are developed and the willingness of stakeholders to invest in them, as well as the implementation of public policies that will help drive the trajectory toward their adoption.

As a result, there is inherent uncertainty about the emissions reduction contribution of each lever. American's end goal remains unchanged — achieving net zero in 2050 — but in the interest of transparency, we are acknowledging that it is not possible to accurately predict the path through 2050 with specificity.

Our Goals and Progress

Our strategy is focused on driving progress across several key levers. Below are the components of our strategy, goals and progress through 2023.

Overarching strategy Working across all levers to transition to operating a resilient, competitive and low-carbon airline	
GOALS	<ul style="list-style-type: none"> ▪ Reduce GHG emissions intensity by 45% by 2035 (SBTi-validated target) ▪ Reduce Scope 2 emissions by 40% by 2035 (SBTi-validated target) ▪ Target net zero emissions by 2050
2023 HIGHLIGHTS	<ul style="list-style-type: none"> ▪ 3% reduction in GHG emissions intensity since 2019* ▪ 54% reduction in Scope 2 emissions since 2019 ▪ 9.8% improvement in fuel efficiency compared with 2013, avoiding nearly 22.9 million metric tons of CO₂e ▪ 25,000 tons of CO₂ avoided through use of renewable fuels

STRATEGY LEVER	Flight operations and efficiency Operating our fleet and associated operations as efficiently as possible to reduce fuel use and emissions
GOALS	<ul style="list-style-type: none"> ▪ Achieve absolute reduction of 50 million gallons of jet fuel from fuel-efficiency initiatives by 2025
2023 HIGHLIGHTS	<ul style="list-style-type: none"> ▪ Used 13.5 million fewer gallons of jet fuel for mainline aircraft in our fleet as of 2019 that continued to be flown through 2023 ▪ Expanded Smart Gating technology, projected to save 1.4 million gallons of fuel and 13,400 metric tons of CO₂e emissions annually, by reducing fuel use and associated GHG emissions through reduced gate conflicts, taxi times and airport congestion ▪ Saved 8 million gallons of fuel by using interactive inflight software

* See SBTi Aviation Tool carbon intensity on [page 74](#).

STRATEGY LEVER	Fleet renewal Operating more fuel-efficient aircraft and engines
GOALS	<ul style="list-style-type: none"> ▪ Fly 30% of our available seat miles (ASMs) with latest-generation, more fuel-efficient aircraft in 2025
2023 HIGHLIGHTS	<ul style="list-style-type: none"> ▪ Flew 25.7% of ASMs with latest-generation aircraft; approximately \$10.6 billion — or just over 20% of our revenue during the year — stemmed from passengers flying these aircraft ▪ Mainline fleet had an average age of 12.9 years — the youngest mainline fleet among U.S. network carriers — as of year-end 2023 ▪ Entered into an agreement to purchase 10 Airbus A321neos from Alaska Airlines, and many are already flying within our fleet, bringing us closer to our goal ▪ Took delivery of 17 Boeing 737 MAX and four Boeing 787 Dreamliner aircraft in 2023
STRATEGY LEVER	Next-generation aircraft Investing to advance the development of low- and no-carbon aircraft that can be integrated into our fleet
GOALS	<ul style="list-style-type: none"> ▪ Induct zero-emissions, hydrogen-powered aircraft into our fleet by 2032 or earlier
2023 HIGHLIGHTS	<ul style="list-style-type: none"> ▪ Entered into a memorandum of understanding with Embraer to help develop the Energia concept aircraft, which aims to use electric, hydrogen and hybrid propulsion technologies to advance next-generation, zero-emissions aircraft ▪ Continued our partnership with ZeroAvia, via strategic investments announced in 2022 and 2024, to help advance hydrogen-powered flight technologies ▪ Placed a conditional order for ZeroAvia hydrogen retrofits of 65-seat regional jets in 2024

STRATEGY LEVER	Sustainable aviation fuel Purchasing and helping scale SAF production
GOALS	<ul style="list-style-type: none"> Replace 10% of our jet fuel with SAF in 2030
2023 HIGHLIGHTS	<ul style="list-style-type: none"> Used nearly 2.7 million gallons of SAF on our flights in 2023, representing less than 0.1% of our fuel use Entered into an innovative, firm offtake agreement for Infinium Power-to-Liquids (PtL) eSAF, helping unlock financing for the PtL facility
STRATEGY LEVER	Airspace efficiency and modernization Supporting airspace system improvements that increase efficiency
GOALS	<ul style="list-style-type: none"> Work with policymakers to secure appropriate support for global aviation infrastructure, technology, staffing and services to improve efficiency
2023 HIGHLIGHTS	<ul style="list-style-type: none"> Continued trial of Automatic Dependent Surveillance–Broadcast In (ADS–B In) capability on aircraft, which enables pilots to optimize flight paths, thereby reducing emissions and enhancing safety

STRATEGY LEVER	Jet fuel production (upstream) Engaging with our jet fuel suppliers to encourage them to reduce emissions within their operations
GOALS	<ul style="list-style-type: none"> Target a 40% reduction in average emissions intensity from the production of the jet fuel we purchase by 2035
2023 HIGHLIGHTS	<ul style="list-style-type: none"> Engaged with key jet fuel providers to understand their climate and sustainability strategies more broadly, and to identify potential opportunities for partnership
STRATEGY LEVER	Carbon market Participating in the voluntary carbon market to neutralize aviation's residual emissions
GOALS	<ul style="list-style-type: none"> Utilize offsets and removals after exploring in-sector decarbonization tools
2023 HIGHLIGHTS	<ul style="list-style-type: none"> Signed a carbon removal purchase agreement with Graphyte, becoming the inaugural customer of the carbon removal startup

Aligning Our Capital Investments With Our Net Zero Pathway

A significant portion of American's capital spending — from the billions of dollars we have invested in our fleet to our ongoing fuel-saving initiatives — brings the added benefit of supporting our GHG reduction targets. See [page 12](#) of our 2022 Sustainability Report to learn more.

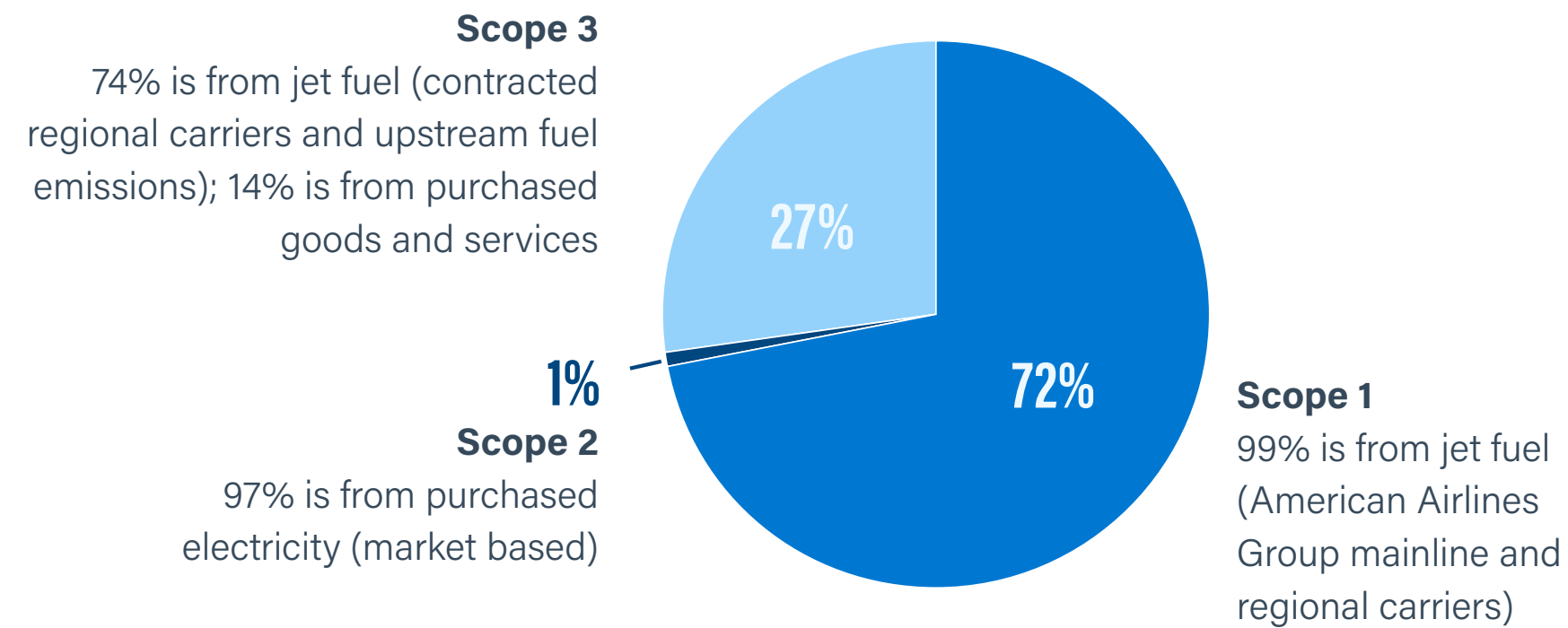
Approximately 70% of our total capital expenditures in 2023 were allocated to efforts that also provided decarbonization benefits.



Our Carbon Footprint

Our GHG Emissions in 2023

Total emissions (Scopes 1, 2 and 3): 52 million metric tons of CO₂e



Allocated Emissions Factors per Revenue Passenger Mile (RPM) in 2023*

AIRCRAFT	kg CO ₂ e/RPM		AVERAGE MILES TRAVELED
	BUSINESS	ECONOMY	
Regional one-class	n/a	0.362	293
Regional two-class	0.423	0.253	511
Narrowbody legacy	0.282	0.146	922
Narrowbody latest generation**	0.195	0.102	1,578
Widebody legacy	0.379	0.107	4,130
Widebody latest generation**	0.334	0.090	4,170

* To estimate the kilograms of CO₂e emissions for a given trip, multiply the applicable factor in the table by the distance of the trip in miles. These factors represent direct (tank-to-wake) emissions, excluding the emissions benefit from voluntary SAF purchases assigned to specific customers.

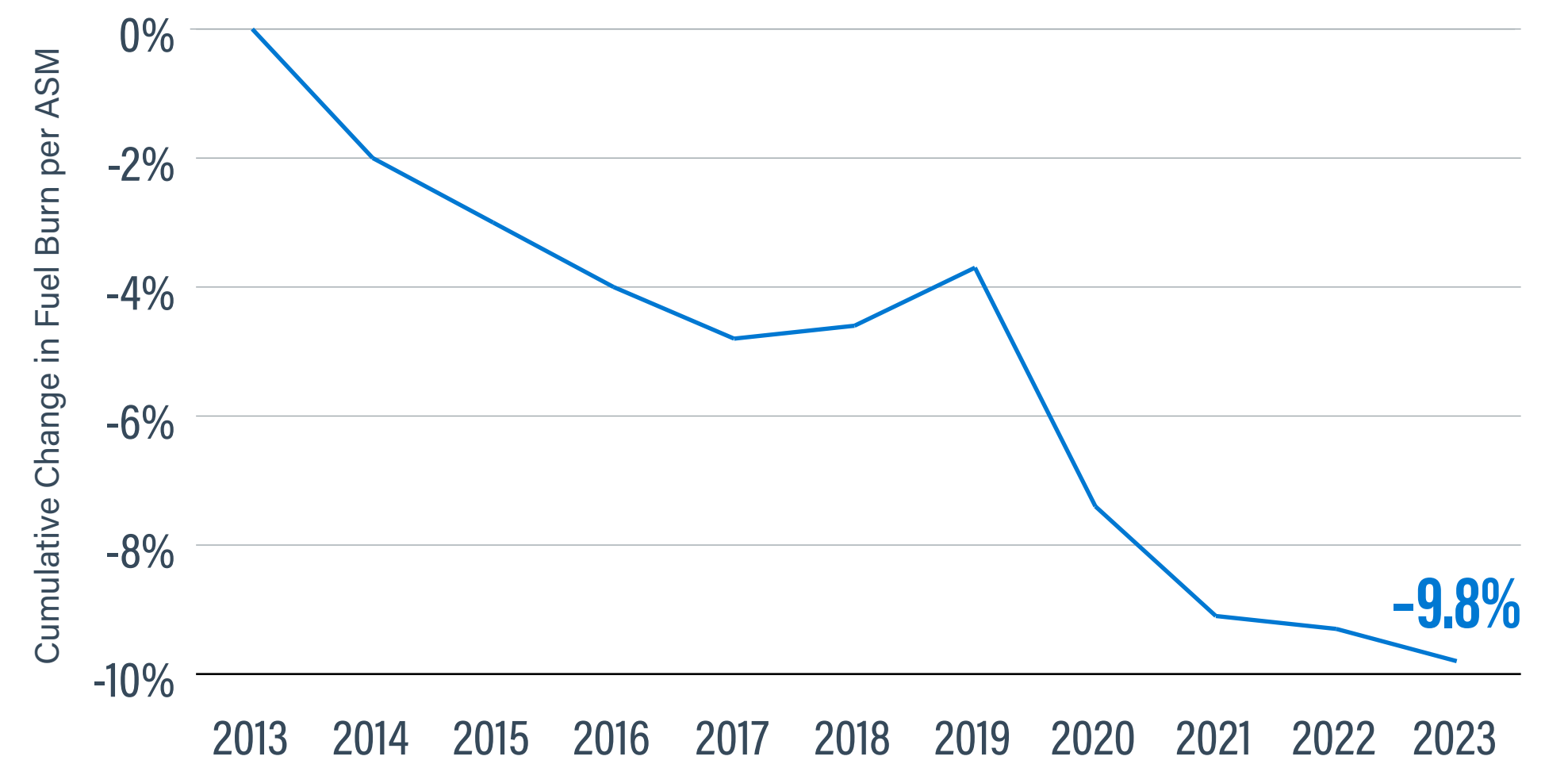
** Latest generation aircraft includes the newest, most fuel-efficient aircraft in our fleet: Boeing 737 MAX, Airbus A321neo, Boeing 787-8 and Boeing 787-9. Legacy aircraft encompasses all other mainline aircraft.

Note: This table was updated for clarity following the report's initial release.

Biogenic Emissions in 2023 (in metric tons)

EMISSIONS CATEGORY	SAF	RENEWABLE DIESEL	ETHANOL	TOTAL
Biogenic emissions (CO ₂)	24,350	832	2,882	28,065
Scope 1 emissions from CH ₄ and N ₂ O	191	2.7	2.6	196
Scope 3, category 3	7,662	389	2,075	10,126
Total Scope emissions from biogenic sources	7,853	392	2,078	10,322
<i>Comparable life cycle fossil emissions</i>	<i>30,310</i>	<i>1,069</i>	<i>3,842</i>	<i>35,221</i>
Avoided emissions from bio-based fuels	(22,457)	(677)	(1,765)	(24,899)

Aircraft Fuel Efficiency: Reducing Fuel Use per Available Seat Mile (ASM)*



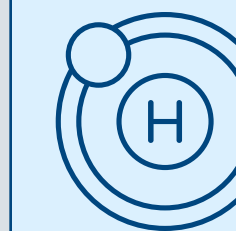
* Baseline year data has been restated, and, as a result, data for subsequent years has also been updated.

Accelerating Decarbonization Solutions

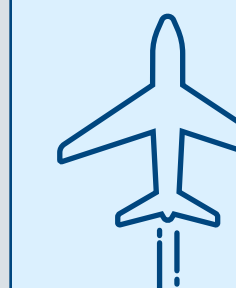
Transitioning to low-carbon aviation depends on innovations in airframe, engine and fuel production technologies, combined with effective policies and sufficient investment capital to drive those innovations and bring them to scale. It requires an all-hands-on-deck, all-of-the-above approach — and American is helping to lead the way by collaborating with others in and outside our industry and harnessing our resources and expertise to help accelerate decarbonization solutions.



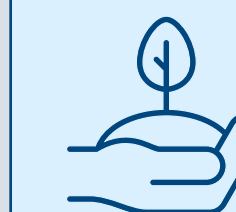
Sustainable Aviation Fuel



Next-Generation Aircraft: Hydrogen



Contrail Avoidance



Voluntary Carbon Markets

ACCELERATING DECARBONIZATION SOLUTIONS

Sustainable Aviation Fuel

The clearest near-term way to decarbonize aviation based on current technological developments is by transitioning to sustainable aviation fuel (SAF). The SAF available on the market today can reduce life cycle GHG emissions by up to 85% compared with conventional, petroleum-based jet fuel, and new technologies and pathways hold the promise of delivering SAF with closer to 100% life cycle emission reductions. The reality, however, is that as critical as SAF is for achieving our own and the industry's climate goals, it is not yet available at the scale or price needed to be a feasible alternative for widespread commercial use — and achieving that will require the combined efforts of the private and public sectors.

How American is helping accelerate solutions

Purchasing and helping scale SAF production is a core part of American's climate strategy this decade. For example, we anticipate SAF will be key to achieving the in-sector reductions required to meet our science-based target for 2035, and we have set a goal to replace 10% of our jet fuel use with SAF in 2030. In 2023, we used nearly 2.7 million gallons of SAF on our flights, about a 4% increase over 2022, but still a small portion of the SAF we need to achieve our goal.

American is entering into offtake commitments with SAF producers to help secure the supply we need to achieve our goal. We're also working to advance the SAF market as an anchor member of Breakthrough Energy Catalyst, which invests in new decarbonization technologies. (See [page 19](#) to read about our innovative agreement with Infinium.) Additionally, we continue to advocate for governments to deploy policy tools — including incentives, credits and investments in research — to help scale the SAF market.

The Potential

- » Significantly reduces life cycle emissions compared to petroleum-based jet fuel
- » Made from a wide range of readily available feedstocks
- » Drop-in fuel that can be used without aircraft or engine modifications
- » Most attainable near-term way to decarbonize aviation

Actions Needed

- 1 Public policies that drive necessary innovation, certainty and investments
- 2 Financing sources and models that mobilize sufficient capital to grow and scale the SAF market
- 3 Collaboration between aircraft manufacturers and producers to innovate so that future aircraft are compatible with 100% SAF
- 4 Research and development to advance new SAF pathways

The Challenges

- » Not available at the scale needed and not currently cost competitive
- » Balancing trade-offs and implications of different feedstocks
- » Advancing and scaling pathways that deliver closer to 100% life cycle emissions reductions
- » Blend cap currently requires 50/50 blend of SAF and conventional jet fuel

The need for concerted action to scale the SAF market

The availability of SAF increased in 2023, but to reach the industry's goal of producing 3 billion gallons of cost-competitive SAF in 2030, the market needs to achieve a nearly 100% compound annual growth rate, based on Environmental Protection Agency (EPA) data.¹ Clearly, there is a need to significantly accelerate the trajectory for the SAF market, which will require concerted effort by a range of stakeholders. Airlines have a key role to play, but it will also require engine and airframe manufacturers to enable higher SAF blends and the research community to advance innovation in the form of new SAF pathways. The energy sector needs to align its capital commitments, while the financial sector must find more effective ways to support the SAF market. Standard setters need to recognize new solutions, and policymakers need to enact smart policies that will drive further investment in the industry.

The past year has seen some progress, including the creation of *U.S. Airline Principles on Use of Book and Claim in Sustainable Aviation Fuel Accounting*, which provides a robust market mechanism for efficiently connecting SAF buyers and producers. The enactment of a SAF purchase tax credit in Illinois and the release of U.S. Treasury Department guidance on implementation of the SAF blenders tax credit (BTC) — enacted in the Inflation Reduction Act of 2022 — are further evidence of U.S. policy moving in the right direction, although the SAF BTC expires at the end of 2024. The advocacy efforts of initiatives such as the *Low Carbon Fuels Coalition*, the *Center for Climate and Energy Solutions (C2ES) SAF working group* and the *SAF Coalition* — all initiatives in which American participates — have and will continue to be key in driving policy progress.

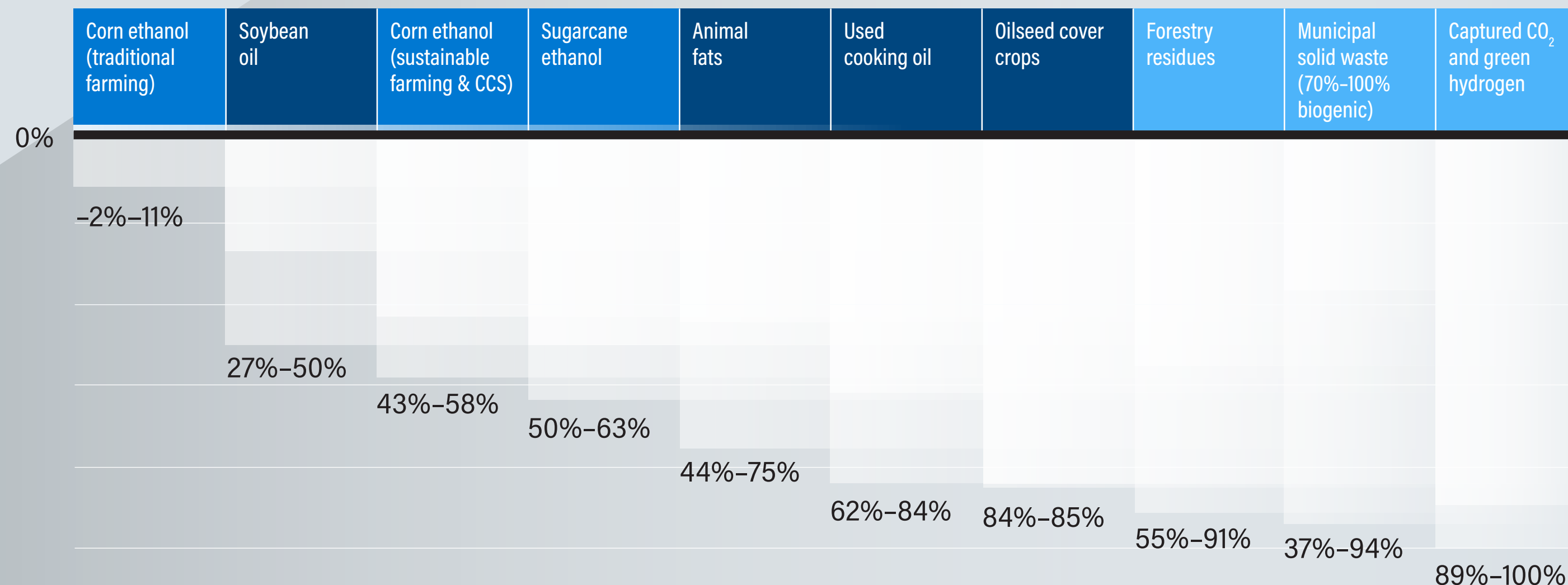
¹ <https://afdc.energy.gov/fuels/sustainable-aviation-fuel>

Advancing Next-Generation SAF Pathways

Achieving the decarbonization potential of SAF will be a journey, with the feedstocks that are available today being replaced over time with more efficient ones that provide greater reductions in life cycle emissions.



CARBON INTENSITY
DECREASE POTENTIAL



Hydroprocessed Esters and Fatty Acids

Hydroprocessed Esters and Fatty Acids (HEFA) is the only SAF process producing jet fuel at scale today, but the supply of HEFA feedstocks — particularly used cooking oil and animal fat — is constrained and there are concerns that demand for these feedstocks could have other indirect environmental impacts.

Alcohol-to-Jet

Alcohol-to-Jet (ATJ) technology relies on ethanol as a feedstock to produce SAF, but it is not yet available at scale for commercial use by airlines. New feedstocks, farming practices and production processes offer the potential to significantly reduce ATJ GHG emissions compared to those that exist today, but they could potentially increase cost.

Fischer-Tropsch

Fischer-Tropsch (FT) gasification has the potential to produce SAF that virtually eliminates GHG emissions while also using waste products, like municipal solid waste, as a feedstock. FT can also use CO₂ captured from industrial emissions — and one day CO₂ removed from the atmosphere — but that process is still very expensive. While FT is a proven technology in other applications, successfully commercializing it for aviation has been difficult.

American's SAF Sourcing Principles

In determining what SAF to source for our operations, we apply the following standards for sustainability:

- > Life cycle GHG emissions reductions of at least 50%, inclusive of estimated indirect land use change, compared with conventional jet fuel
- > Analyze environmental and social impacts of SAF feedstocks, such as potential effects on food supply and land use
- > Achievement of sustainability certification, or completion of our own due diligence when certification is not practical²

Our SAF use and advocacy is also guided by the following principles:

- > Maintain strict adherence to jet fuel safety and performance standards
- > Engage and collaborate with stakeholders across the private and public sectors to break down barriers to SAF production and distribution
- > Undertake robust and transparent emissions accounting and work within our industry to further develop and harmonize SAF emissions accounting

² As part of our due diligence, we refer to the United Nations Food and Agriculture Organization's Guidance for Responsible Agricultural Supply Chains and other leading references to help mitigate and manage the sustainability risk of SAF produced using bio-based feedstocks.

Raising the Bar on SAF



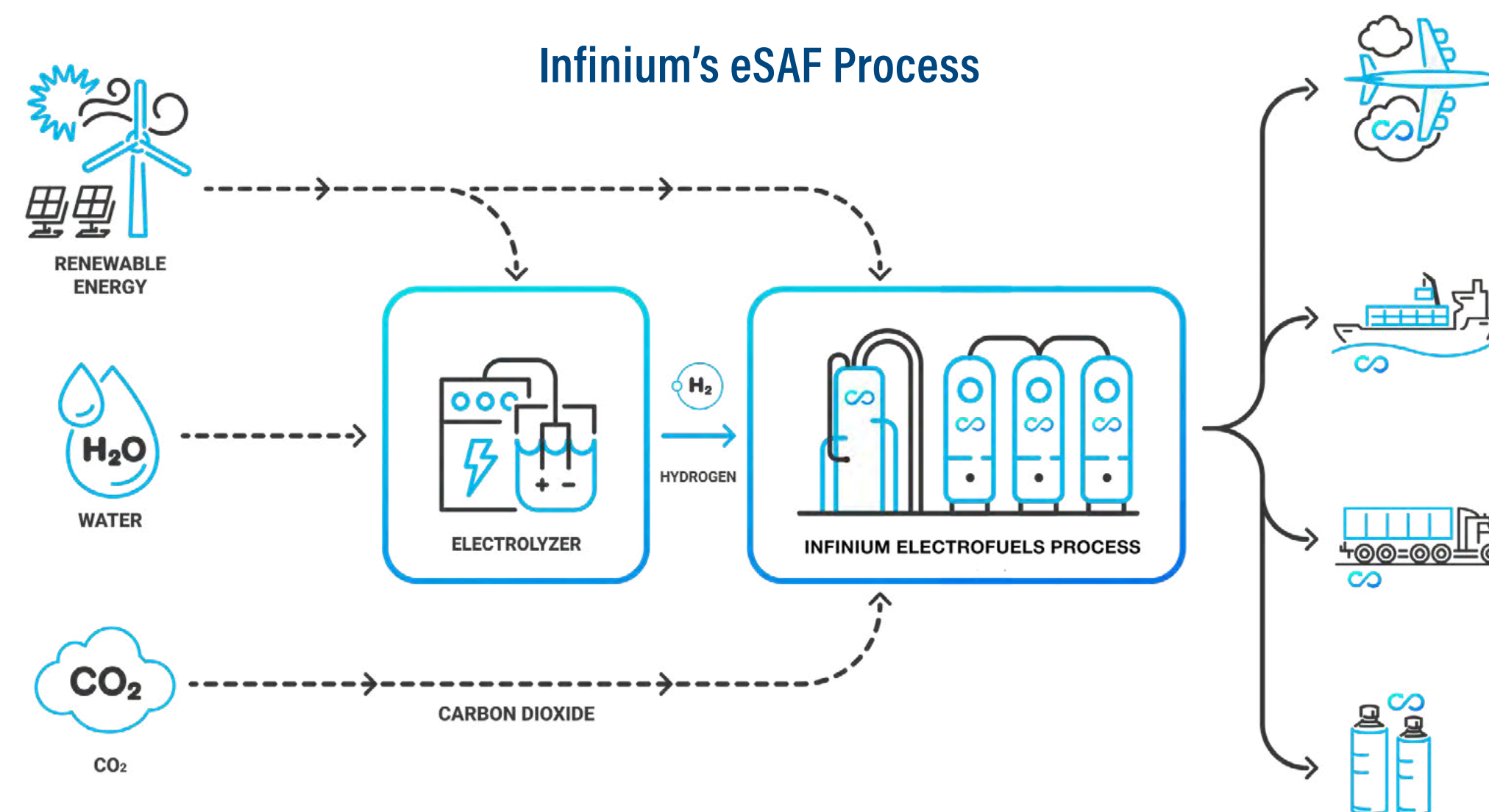
Infinium is a U.S.-based provider of electrofuels — also known as eFuels. It is producing a sustainable aviation fuel, eSAF, by converting waste CO₂, water and renewable power into clean-burning aviation fuel.

Infinium eSAF has the potential to reduce life cycle GHG emissions by approximately 90%, which is greater than the emissions reductions achieved using the SAF currently on the market today.

The company plans to repurpose an existing brownfield gas-to-liquids project in West Texas into a first-of-its-kind, commercial-scale Power-to-Liquids (PtL) eFuels facility to produce eSAF. In 2023, Breakthrough Energy Catalyst announced its commitment to invest \$75 million in Infinium's PtL project. To further support this investment and help accelerate the production of eFuels, American and Infinium have entered into a firm offtake agreement for Infinium to supply eSAF to the airline.

This innovative technology will be further supported by a second agreement between banking leader Citi and American, in which American will transfer the associated emissions reduction from the Infinium eSAF directly to Citi — enabling Citi to reduce a portion of its Scope 3 emissions generated by employee travel. Citi is also a partner of Breakthrough Energy Catalyst.

These novel agreements are critical enablers of further investment in Infinium's facility.



ACCELERATING DECARBONIZATION SOLUTIONS

Next-Generation Aircraft: Hydrogen

Decarbonizing aviation requires near-term action to improve efficiency and significantly expand the use of SAF, but it also depends on technological advancements that enable next-generation aircraft that can be powered by new types of low- and no-carbon fuel sources. These fuel sources must overcome some key challenges. First, they must contain the energy needed to power aircraft engines that carry our passengers and cargo. Second, they need to be easily distributed to, and carried on, the commercial aircraft that will be coming into service in the next decade. Hydrogen can be a low-carbon source of energy when it is produced using renewable electricity. It offers the potential to play a central role in decarbonizing aviation, but major challenges remain.

How American is helping accelerate solutions

American is helping to catalyze the development of hydrogen-electric propulsion technology — through which hydrogen is used in fuel cells — as well as the future of hydrogen distribution logistics for aviation. We have made two strategic investments in ZeroAvia, a pioneer in hydrogen-electric aviation powertrains. In addition, in 2023 American joined Embraer's Energia Advisory Group to help define performance and design requirements for its new family of low- and no-emissions aircraft. The Energia aircraft concepts range from nine- to 50-seat capacity and are powered by a mix of electric, hydrogen and hybrid propulsion systems.

American also continues to engage with our aircraft suppliers and other key players in the aviation sector to support the advancement of other next-generation aircraft technologies for reducing emissions.

The Potential

- » Nearly three times more energy per unit of weight than jet fuel, from the most abundant substance in the universe
- » Produces only water vapor as a byproduct when combusted
- » Green hydrogen — produced using renewable energy — is a low-carbon fuel
- » Safe and successful track record as a transportation fuel

Actions Needed

- 1 Investment by airframe and engine manufacturers to develop next-generation aircraft powered by hydrogen
- 2 Collaboration among airports, airlines and hydrogen producers to develop infrastructure
- 3 Regulatory approval of hydrogen propulsion and distribution technologies, applications and supportive public policies

The Challenges

- » Requires four times more volume on the aircraft than jet fuel, making it difficult to carry sufficient fuel for long-haul flights
- » Technical and logistical difficulties delivering to airport and on board aircraft
- » Green hydrogen is not currently cost competitive relative to other fuels

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Hydrogen electric engines for zero emissions flight

American has teamed up with ZeroAvia to advance development of hydrogen-powered regional jets. ZeroAvia is working to replace traditional engines on

existing fixed-wing aircraft with its novel zero-emissions, hydrogen-electric powertrain. The powertrains use green hydrogen, which is stored in tanks and converted to electricity in flight using a fuel cell that then powers the electric motors. The green hydrogen is produced through electrolysis — powered by locally generated renewable energy — and stored at or near airports. The only emission in flight is water vapor.

ZeroAvia is working to retrofit and linefit its powertrains to existing Federal Aviation Administration (FAA)-certified fixed-wing aircraft, which simplifies regulatory issues and reduces time to market. In early 2023, ZeroAvia flew the maiden flight of its 19-seat Dornier 228 testbed aircraft, retrofitted with a full-size prototype hydrogen-electric powertrain on the left wing of the aircraft. Since then, it has completed 13 test flights and has an active certification application with the FAA for this powertrain in an aircraft with up to 20 seats.

ZeroAvia's second engine class, which will ultimately power regional jets, is in active development, with ground testing of electric propulsion systems and advanced fuel cell technologies underway. Ultimately, the company hopes to scale the technology over the next decade to narrowbody aircraft.

In July 2024, American announced its conditional purchase agreement for 100 hydrogen-electric engines, intended to power regional jet aircraft, from ZeroAvia's powertrain development program.

Advancing Other Critical Next-Gen Aircraft Technologies

While hydrogen offers significant potential for decarbonizing aviation over the long term, achieving net zero by 2050 will depend on the development of other nearer-term and more scalable solutions.

American is collaborating with Boeing and NASA as a member of a coalition that is advising the Sustainable Flight Demonstrator project and the development of the X-66A research aircraft. The X-plane is a full-scale demonstrator aircraft with extra-long, thin wings stabilized by diagonal struts, known as a Transonic Truss-Braced Wing concept. When combined with other advancements in propulsion systems, materials and systems architecture, the new design could result in up to 30% less fuel consumption and reduced emissions when compared with today's best-in-class aircraft.³

In addition, American has invested in Vertical Aerospace Ltd., which is developing an emissions-free electric vertical takeoff and landing (eVTOL) aircraft. In 2023, Vertical made significant progress advancing its work, being one of a few eVTOL developers to have built and flown a full-scale, vectored-thrust electric aircraft. Vertical also opened a state-of-the-art battery facility, which is developing next-generation battery technology for aviation.

Vertical is the only developer to have active certification efforts with five regulators across the world and last year secured the first ever Design Organisation Approval issued to a listed eVTOL manufacturer from the U.K. Civil Aviation Authority. This is a prerequisite for the VX4 aircraft certification, which Vertical is targeting to receive by the end of 2026.

This year Vertical is finalizing the assembly of its more advanced VX4 prototype, which will undergo a robust flight test program.

³ See <https://www.nasa.gov/news-release/next-generation-experimental-aircraft-becomes-nasas-newest-x-plane/> for more information.

ACCELERATING DECARBONIZATION SOLUTIONS

Contrail Avoidance

Reducing aviation's contribution to climate change requires understanding all our industry's impacts and identifying ways to address them. Condensation trails — or contrails — form when airplanes fly through layers of humidity, and they may account for approximately 35% of aviation's global warming impact, according to the Intergovernmental Panel on Climate Change.⁴ Partnerships among the aviation, academic and technology communities have developed strategies aimed at predicting when a flight path is likely to cause a contrail and deploying an alternate path at a slightly lower altitude to avoid doing so. These contrail avoidance strategies, while still in the early stages of exploration, hold the promise of being among the most cost-effective and scalable climate solutions for the aviation industry in the near term.

How American is helping accelerate solutions

American is helping lead the way toward developing and testing contrail avoidance methods. In 2023, we participated in a first-of-its-kind study led by [Google Research](#) and [Breakthrough Energy](#) to help advance the science on contrail avoidance. The study tested whether we could identify atmospheric zones likely to create contrails and give pilots sufficiently accurate information to avoid creating those contrails. Our partners combined large datasets — including satellite imagery, weather and flight path data — with artificial intelligence (AI) to develop contrail forecast maps. A small group of American pilots then flew 70 flights over six months using the AI-based predictions to make small modifications to routes that were projected to create contrails.

⁴ See https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Chapter10.pdf for more information.

The Potential

- » Relatively low-cost and high-impact climate intervention
- » Initial models for predicting highest-severity contrails have shown high accuracy
- » Rerouting a small percentage of flights could avoid the majority of contrail warming

Actions Needed

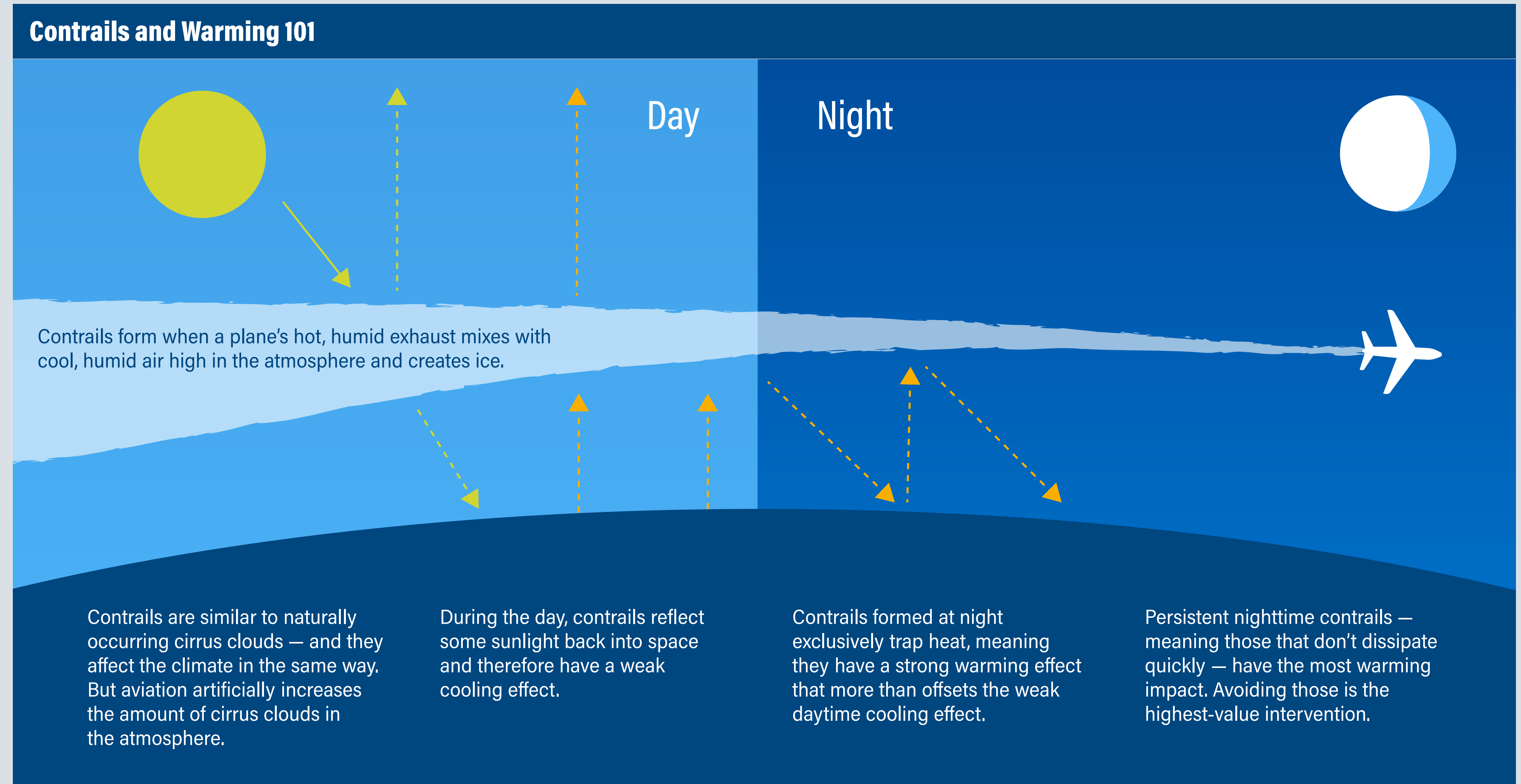
- 1 Buy-in across airlines and the flight planning ecosystem for large-scale implementation
- 2 Cooperation of, and close coordination with, air traffic control authorities
- 3 Continued research to understand the climate impacts of contrails and improve contrail avoidance methodologies and validation

The Challenges

- » Refining the science to reduce uncertainty related to the warming impact of contrails
- » Continuing to improve the models that forecast where highest-severity contrails are likely to be created
- » Expanding satellite coverage to observe and verify contrail formation
- » Quantifying and effectively balancing the benefits of avoiding contrails with the impacts of increased fuel use as a result of avoidance maneuvers

The flights that used the AI predictions reduced contrail formation by 54%, as measured by distance, compared with flights where pilots did not use the predictions. While additional research is needed to determine if this success can be replicated and scaled, the results of this small-scale test provide an encouraging proof point of a promising climate solution.

54% reduction in contrail formation on American's test flights — among the first real-world proof points that commercial flights can verifiably avoid contrails



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IN CONVERSATION: Explaining the Science of Contrail Avoidance

Marc Shapiro is the Director of the Breakthrough Energy Contrails team, one of American's partners on contrail avoidance. Below, he answers our questions on the science behind contrail avoidance strategies, as well as some of the challenges in their implementation.

Prior to joining Breakthrough Energy, Marc worked as an applied scientist and entrepreneur in a diverse set of research and development efforts across fluid mechanics, geospatial analytics and mobile healthcare. In 2020, he started a company to develop geospatial data systems for climate mitigation and adaptation before transitioning to his current work. Marc earned a Master of Science degree in Fluids and Thermal Sciences from Brown University and a Bachelor of Engineering from Dartmouth College.

Marc, how would you compare the warming impact of contrails versus CO₂?

It's hard to compare them precisely, but CO₂ is weakly warming over a long period of time, while contrails are strongly warming over a short period. But not all contrails have the same warming effect. Persistent contrails at night clearly impact the climate the most. By being more precise in our interventions and focusing on those, we have the greatest opportunity to make a difference.

How can we predict where warming contrails will occur?

There are fundamentally two ways to go about this. One involves using physics and meteorology to predict regions or volumes of air that should be avoided. The other uses observational techniques on the ground and from satellites to see where aircraft are actually forming contrails. In our work towards solving this problem, we need both.

What are the scientific challenges?

The type of atmospheric condition that creates persistent contrails is called ice supersaturation, which is a fancy way of saying the temperature is really cold and the humidity is high. Predicting that state is something that models have a hard time doing today. Another challenge is predicting these atmospheric states on as fine a scale as you need. Weather forecasts generally correspond to a grid, say, 25 kilometers by 25 kilometers. In that grid, you might have multiple fluctuations of supersaturation states. So, the model resolves to the average and it's wrong sometimes.

"The airlines are essentially on the front line of solving this problem because you are the ones that would implement the solution."

— **Marc Shapiro**
Director, Breakthrough Energy
Contrails Team



Is there an easy way to describe your model?

Think of it like a weather forecast. We predict the probability that a contrail will form and an estimate of that contrail's severity. The first part indicates how likely it is that an aircraft will form a persistent contrail in a particular area. The second part tells us that if we found a contrail in that area, it would likely have a particular persistence and impact on the climate.

Avoiding a contrail might also result in greater CO₂ emissions. How should we look at the trade-off?

There is a cost in added fuel and CO₂ that potentially gets added to the atmosphere as a result of avoidance maneuvers. Our models are telling us, though, only a few flights will be affected, and avoidance still results in a net climate benefit even over 100 years. We could reduce these added emissions if airlines had access to SAF. But from an operating standpoint, there's a cost to the airline business in terms of greater fuel use, and no mechanism exists to share that cost right now.

How do you see American's role in helping advance the solution?

The airlines are essentially on the front line of solving this problem because you are the ones that would implement the solution. So, what American is doing in helping us run trials is truly critical to advancing the research. The biggest hurdle to get through right now is not model development. It's having the chance to really test and validate the model. Additionally, having a major airline working on this issue is a valuable signal that it's important.

ACCELERATING DECARBONIZATION SOLUTIONS

Voluntary Carbon Markets

Aviation is regarded as one of the sectors that is hardest to abate in terms of climate impact. Many of the decarbonization technologies needed do not yet exist, are not yet economically feasible or are not expected to scale quickly enough to achieve the in-sector reductions needed to reach net zero by 2050. As a result, to meet the goals of the Paris Agreement, the aviation sector will need to rely on carbon offsets and removals to neutralize residual emissions. The availability of high-quality offsets and removals requires a well-functioning voluntary carbon market and investment in innovation to strengthen the reputation of this marketplace.

How American is helping accelerate solutions

Reducing emissions within our operations is and will remain American's priority. To date, we have not purchased any offsets as part of advancing our net zero commitment, but we recognize that carbon offsets and removals will need to play a future role in eliminating aviation's residual emissions.

We are helping to accelerate and scale the CO₂ removal market as the inaugural customer of Graphyte, whose innovative carbon casting process removes and stores CO₂ permanently and cost-effectively. (See [page 26](#) for more information.) American also partners with Cool Effect, a leading nonprofit provider of carbon offsets, to give our customers the opportunity to purchase offsets.

The Potential

- » Necessary for addressing residual emissions for hard-to-abate sectors like aviation
- » Can create cobenefits in areas such as air and water quality, biodiversity, human health and job creation
- » Can bring social and economic benefits such as human health improvements and job creation in rural communities

Actions Needed

- 1 Collaboration among market participants to agree on standards and verification to promote integrity
- 2 Sound public policies and oversight for effective functioning of the market
- 3 New financing models to mobilize more capital and increase participation in the voluntary carbon market

The Challenges

- » Supply of quality, robust and verifiable carbon offsets
- » Cost of carbon removals — and the need for technological innovation to bring down costs
- » Degree of permanence of removals
- » Verifying additionality, meaning the project only exists because of funding from carbon markets

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Accelerating Low-Cost, Permanent Carbon Removal

Graphyte, backed by Breakthrough Energy Ventures, is a carbon removal startup that is pioneering a new pathway for low-cost, permanent carbon removal. Graphyte's Carbon Casting process leverages readily available biomass, such as residues from timber and farming operations, that have already captured significant CO₂ from the atmosphere through photosynthesis. The biomass is then dried to prevent decomposition, converted into dense carbon blocks, wrapped in an environmentally safe polymer barrier and monitored in a state-of-the-art underground storage facility. Relative to existing carbon removal approaches, Carbon Casting permanently removes and stores CO₂ using significantly less energy and at a substantially lower cost. In early 2024, Graphyte began operating the largest carbon removal facility in the world, its Loblolly facility in Arkansas.⁵

In 2023, American signed a deal with Graphyte to purchase 10,000 tons of permanent carbon removal to be delivered in early 2025, making us its inaugural customer.



Graphyte's carbon blocks being produced at their Loblolly project site in Pine Bluff, Arkansas. Each block contains 1.8 kg of CO₂e that are permanently removed from the carbon cycle.

⁵ See <https://www.graphyte.com/post/bill-gates-s-carbon-removal-company-is-opening-for-business> for more information.

Mitigating the Climate Impacts of International Aviation Through CORSIA

The Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) regulates emissions from international aviation, and American has endorsed its goal of achieving carbon-neutral growth in emissions after 2019. Airlines and other aircraft operators will offset any growth in CO₂ emissions above a revised 2019 baseline established in the wake of the COVID-19 pandemic. In 2023, American and other airlines did not face offsetting obligations under CORSIA, as international flight volumes were still below prepandemic levels, but we expect that we will need to purchase carbon offsets to comply with our obligation for CORSIA's first phase, which covers 2024–26 emissions. While we would prefer to meet our CORSIA obligations by increasing our use of SAF, we recognize offsets will also play a role. American will continue to monitor the offsets market in preparation for implementing our purchase strategy.

Through American's partnership with Cool Effect, our customers can purchase carbon offsets. Cool Effect uses more than 90% of each offset dollar to fund a portfolio of carbon projects that aim to protect and conserve our planet's resources. Learn more at cooleffect.org/american-airlines.



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Sustainable Operations

While we are keenly focused on reducing the carbon footprint of our flights, our other environmental sustainability efforts extend to the ways in which we design and build facilities, our approach to recycling, use of renewable energy, adoption of environmentally friendly materials and much more.

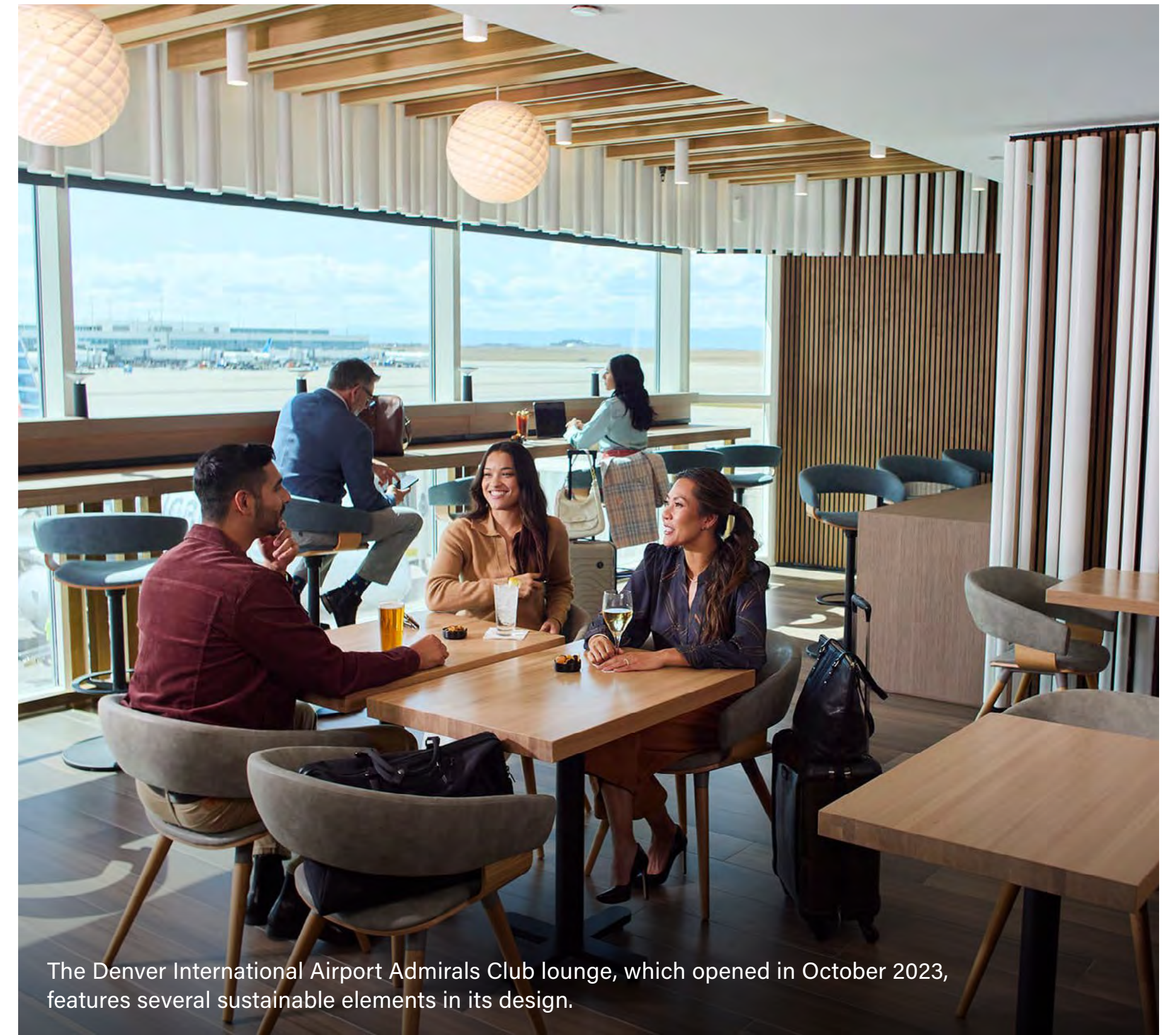
Our [Environmental Policy Statement](#), which was updated in May 2023, articulates American's commitment to developing and implementing sustainable business practices designed to address climate change, efficiently use natural resources, reduce waste, prevent pollution, reduce noise, conserve biodiversity and help stop deforestation.

In 2023, we reached the goal we set in 2019 of sourcing 2.5 million gigajoules (GJs) of cost-competitive renewable energy to power our operations. Originally targeted for 2025, we accomplished this feat two years ahead of schedule. American purchased 673,176 GJs of electricity from renewable sources for our operations in north Texas and at Dallas Fort Worth International Airport (DFW) during the year. Both were 100% powered by renewable energy. As of April 2024, American was the highest-ranked U.S. airline — and 44th company overall — on the [EPA's Green Power Partnership Fortune 500® Partners List](#).

Incorporating sustainability into our building designs and airport lounges

Many of our facilities across the United States have received Leadership in Energy and Environmental Design (LEED) certification, a globally recognized symbol of sustainability achievement. Three buildings at our corporate headquarters campus are LEED Gold certified, including the Skyview 6 hospitality complex that opened in January 2023, Skyview 7 and Skyview 8. Our campus incorporates several other environmentally friendly features, including 90 acres of preserved woodlands and 9.3 miles of walking trails.

We have taken a sustainable approach to our new and redesigned Admirals Club lounges as well, using locally sourced wood whenever possible and focusing on their use of natural light and energy-efficient LED lighting. As a result, our Admirals Club at Denver International Airport, which opened in October 2023, is pursuing LEED Gold certification. Our recently expanded Admirals Club at LaGuardia Airport is LEED Silver certified, and the Admirals Club that opened in September 2023 at Newark Liberty International Airport also incorporates many sustainable elements into its design.



The Denver International Airport Admirals Club lounge, which opened in October 2023, features several sustainable elements in its design.

American has undertaken many initiatives across our Admirals Club lounges in recent years, including switching from plastic to compostable flatware and transitioning to a compostable straw that is available upon request only. We have begun testing reusable flatware in selected lounges, and our bottled water brand, JUST Water, comes in a carton made from 88% plant-based materials. We have also discontinued the mailing of plastic Admirals Club membership cards and physical welcome kits in favor of a digital-only approach.

Reducing aircraft noise

American is committed to addressing the concerns that local communities raise around aircraft noise. For example, we participate in several airport community roundtables on this topic, and we received a 2022 gold award from the Los Angeles International Airport Fly Quieter Program. We have also voluntarily retrofitted all pre-2014 Airbus A320 jets in our fleet with fuel vent vortex generators, which help reduce aircraft noise.

American continues to meet or exceed International Civil Aviation Organization (ICAO) noise certification standards as well. ICAO standards currently specify that operators can fly Stage 3, Stage 4 or Stage 5 aircraft. All our mainline and regional fleet meet Stage 4 noise certification levels, and 20% meet Stage 5 noise certification levels.

Identifying opportunities for composting and reducing food waste

Our new catering facility at DFW, which opened in 2023, was also built with sustainability in mind. The largest airline catering kitchen in the country, it participates in a program that turns food waste into compost. As trays and dishes are cleaned, this waste is collected by a vendor and distributed to farms and compost facilities. Preconsumer composting from this facility and our Admirals Club locations at DFW yielded more than 419,000 pounds in 2023.

In late 2023, we began a trial with one of our caterers to measure food waste from meals served on flights from London Heathrow Airport to DFW. This project takes pictures of trays after flights and uses AI to analyze the food that is left behind. This helps us determine passenger preferences for certain dishes, adjust our offerings accordingly and reduce waste. Rightsizing the food we have on board will help us lower costs, while the weight savings can help us cut down on fuel use and the associated emissions.

Leveraging recycled plastic and other alternatives in our cabin offerings and cargo operations

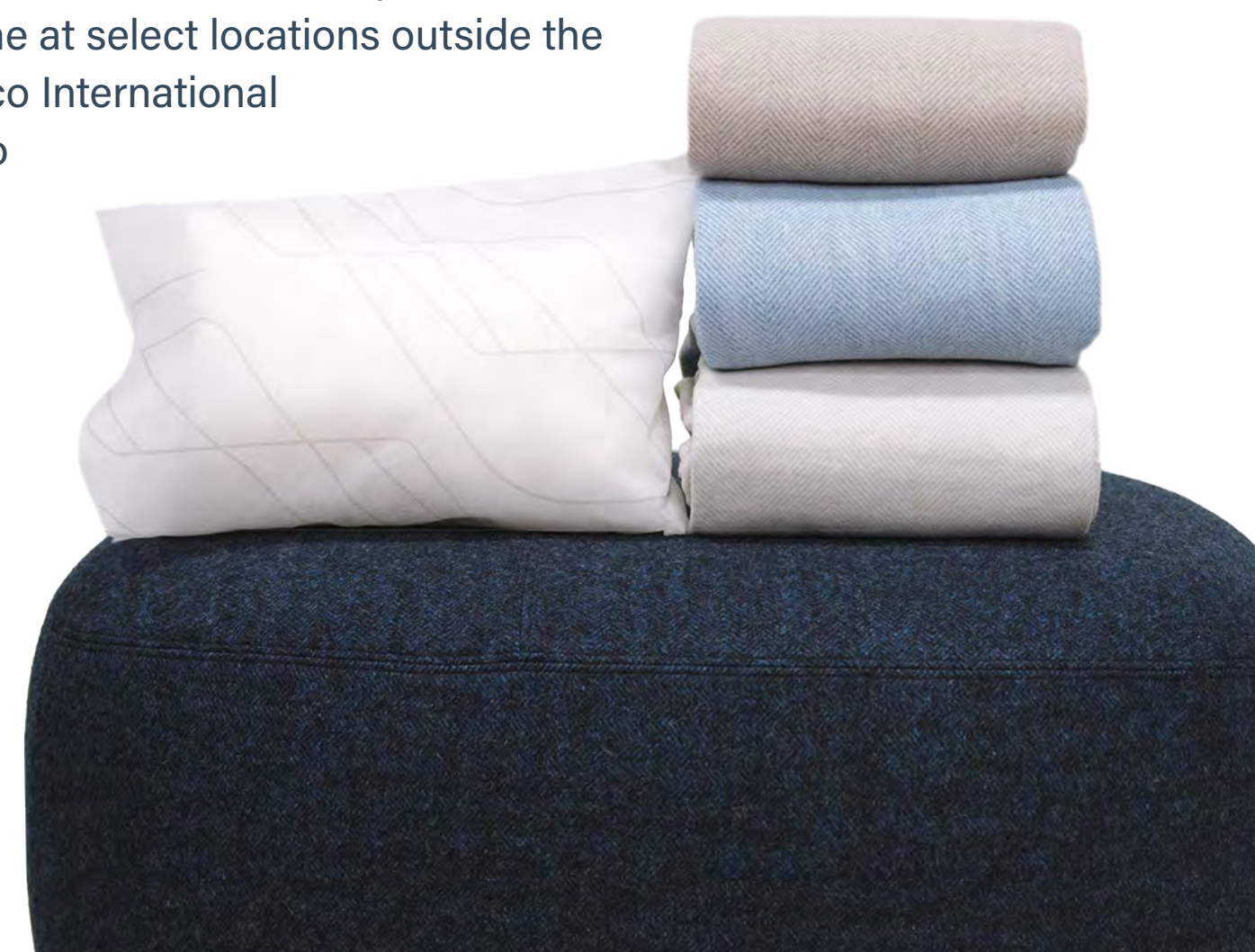
American has long recycled cans, paper, bottles and other trash removed from our aircraft. We have also been exploring ways to reduce or eliminate single-use plastics on board our aircraft, including the possibility of using recycled plastic alternatives.

For the relaunch of our soft goods program in April 2024, American collaborated with the inflight textile company John Horsfall to develop bedding made with recycled materials from its Re-Thread® collection. Nearly all the pillows, duvets and blankets created for American flights are made with recycled fibers that maintain a premium feel, while filled bedding includes 100% recycled fill.

To reduce single-use plastic waste connected to the distribution of pillows and blankets, customers traveling in Flagship® First, Flagship® Business and Premium Economy will now receive their bedding in a reusable zipper bag also made with recycled fibers. Using the bag is expected to eliminate 25 tons of plastic waste per year.

In our Cargo operations, we expanded our transition to the BioNatur Plastics™ that we began using in 2022 to replace traditional plastic stretch wrap and pallet covers. This product line fully biodegrades in eight to 12 years under landfill conditions — compared with the more than 500 years it can take for normal plastics — and it is designed to be fully recyclable in normal waste collection streams.

In 2023, we extended the use of BioNatur Plastics beyond our U.S. hubs to include regional domestic stations, such as Detroit Metropolitan Airport, Honolulu International Airport and Minneapolis-Saint Paul International Airport. We also began using the product line at select locations outside the United States, including Carrasco International Airport in Uruguay and Santiago International Airport in Chile. As a result, this helped American reduce long-term plastic waste in landfills by over 150,000 pounds for the year (equivalent to approximately 8.6 million plastic bottles). That represents a more than 15% improvement compared with 2022.



Expanding Our Commitment to Prevent Illegal Trafficking of Wildlife

In 2022, American became the first U.S. airline to join the Transport Taskforce of [United for Wildlife](#), and, in 2023, we continued to implement our commitments outlined in the Buckingham Palace Declaration.

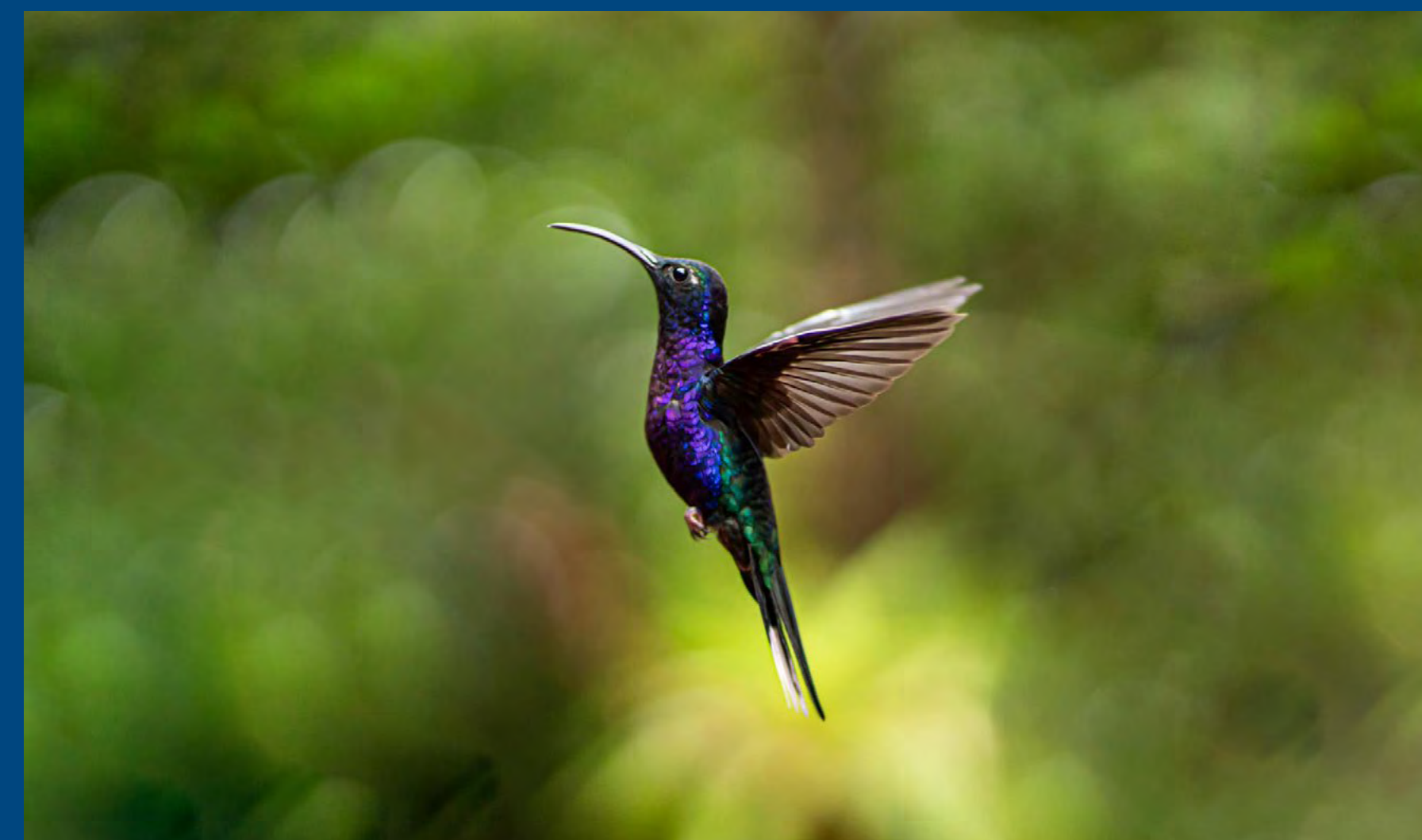
This organization, established by the Royal Foundation of the Prince and Princess of Wales, is working to protect elephants, rhinos, monkeys, birds, insects, reptiles and other endangered species, including plants, from the illegal wildlife trade that is pushing them toward extinction. This global criminal enterprise is worth an estimated \$20 billion annually, with poachers and traffickers trading in a wide variety of endangered wildlife and wildlife body parts, generally for sale as trophies or for purported medicinal uses. Their activities are also linked to money laundering as well as the trafficking of drugs and weapons.

American has pledged to increase awareness among team members regarding the nature, scale and consequences of these activities. In 2023, we began our journey by working to understand our exposure to wildlife trafficking. Through an intensive analysis of our global network and the smuggling routes of animal products, we developed a risk assessment and used it to craft our strategy. It highlights specific regions, routes and hotspots within our network that pose high risks of smuggling.

The global nature of our Cargo operation and its significant presence in areas at risk of wildlife trafficking made it a logical choice for launching this strategy. Cargo served more than 21,000 unique origin and destination pairs in 2023. Highest-volume stations are spread throughout the world, including London, São Paulo, Buenos Aires, Dallas-Fort Worth, Miami and Los Angeles.

We have made wildlife awareness training a requirement for frontline Cargo team members, and over 95% of them completed it in 2023. We began the process of expanding training to other teams as well. We also worked to increase awareness among Cargo team members by distributing informational posters outlining common red flags and trafficking methods for display in more than 40 Cargo stations worldwide.

We also worked closely with our Corporate Security department to develop new channels for reporting suspected trafficking incidents. And to raise awareness, our Living Green Employee Business Resource Group sponsored events on this topic.



Hummingbirds are commonly trafficked from Latin America into the Southwestern United States.



For detailed performance data related to energy use, GHG and other air emissions, waste, water, noise and other environmental topics, see [page 72](#).

OPERATING SAFELY



The safety of our team members and customers is the foundation of everything we do.

In 2023, American Airlines proudly transported approximately 211 million passengers to more than 350 destinations around the world. On each journey and throughout our operations, we make safety the foundation of everything we do for our customers and team members.

Operating every flight safely and protecting our people is everyone's responsibility at American, and we aim to foster a culture where all team members feel empowered to make a difference. We encourage every team member to raise safety concerns so that we can take immediate action — up to and including removing an aircraft from service. Our safety reporting programs encourage all team members and contractors to speak up and report safety hazards, concerns and incidents without fear of retaliation. To support our safety efforts, American's team members participated in more than 510,000 hours of safety training in 2023.

Safety Governance and Management

An uncompromising commitment to safety, security and continuous improvement is a shared responsibility — from our Board of Directors to frontline team members. Our Chief Executive Officer retains ultimate responsibility and authority for safety culture and performance, while the Board's Safety Committee has formal oversight responsibilities for safety. The Board receives quarterly updates on key safety performance metrics and multiple detailed reviews throughout the year.

As the airline industry is heavily regulated, we interact on a continual basis with numerous regulators both domestically and internationally. Our primary engagements are with the Federal Aviation Administration (FAA), which regulates civil aviation, and the Occupational Safety and Health Administration (OSHA), which regulates workplace safety and health. The partnerships we have developed with these authorities allow us to collaborate on key safety- and compliance-related matters.



We have continued to reinforce our transparent rapport with our regulators, which promotes the sharing of information that is critical to safety and compliance. We work closely with our FAA Certificate Management Office and openly share the challenges and successes we experience, resulting in better alignment on safety issues.

Our Safety Management System

Our approach to safety is guided by our Safety Management System (SMS), an organization-wide program for identifying and managing risk.¹ In 2009, American was the first U.S. airline to implement an SMS. It has since been incorporated into FAA regulations for all carriers.

¹ American's mainline carrier and regional carriers each have their own SMS. The discussion in this report refers specifically to our mainline SMS.

Our SMS emphasizes safety management as a fundamental business process across the enterprise. It involves a full commitment from the most senior leaders through to each frontline team member to integrate safety into how we do our jobs. The SMS promotes a culture in which our team members can identify, report and manage risks. It encourages robust and repeatable processes with local ownership, driven by data to reduce risks and continuously strengthen safety. We collaborate closely with the FAA to maintain operational safety at the highest level possible and actively share best practices with our industry peers, regulators and aerospace manufacturers. The four components of our SMS are noted in the box below.

Our Safety Management System

- 1 Safety Policy**
Establishes senior management's commitment to continually improve safety; defines the methods, processes and organizational structure needed to meet goals
- 2 Safety Assurance**
Evaluates the continued effectiveness of implemented risk control strategies; supports the identification of new hazards
- 3 Safety Risk Management**
Determines the need for, and adequacy of, new or revised risk controls, based on the assessment of acceptable risk
- 4 Safety Promotion**
Includes training, communication and other actions to create a positive safety culture within all levels of the workforce

Safety Policy

Our corporate [Safety Policy](#) applies to all team members, business partners, contractors and consultants. It sets American's safety objectives and standards and assigns responsibilities for safety across our organization. The policy also conveys management's commitment to safety performance and to improving the level of safety through measurable goals and key performance indicators. Based on an International Air Transport Association Operational Safety Audit, we updated the policy in July 2023 to reflect our longstanding commitment to security as well.

The Safety Policy helps to create a culture that encourages effective management of risk along with continuous improvement. It complies with all applicable regulatory requirements and laws in the countries where we operate and establishes standards for operational behavior. In addition, our Safety Policy is routinely communicated to all team members and regularly reviewed to promote a culture of health and safety excellence.

Our Emergency Response Manual, which establishes effective and efficient response practices for various types of emergencies, including natural disasters, is an integral part of our SMS. The manual serves as the governing document for the American Airlines Corporate Emergency Response Plan, which also supports our regional carriers. It includes guidelines to prepare for and respond to emergencies, responsibilities for team members and protocols for communicating with internal and external stakeholders.

Safety Assurance

The Safety Assurance component of our SMS stipulates how we use data and conduct quality assurance and internal oversight to validate the effectiveness of risk controls and the performance of the SMS. Composed of several individual programs and initiatives, Safety Assurance verifies that risk controls in our operational processes continue to conform to requirements and remain effective in maintaining risks at acceptable levels.

American's Senior Leadership Team, which is led by our CEO and includes our Chief Operating Officer (COO), receives regular updates on team member safety and risks across our system. Our CEO receives these updates at least quarterly, while our COO is briefed monthly at a minimum. We focus on injury reduction, evaluation of trends and development of safety enhancement programs. We also closely track aircraft ground damage and on-the-job injuries, both as a part of our safety culture and in an effort to continuously improve in these areas.

Safety results

In 2023, we hired and trained a significant number of new team members — and handled a significant increase in checked-baggage volume — as our operations expanded. We also saw injury rates rise year over year, mainly related to improper lifting. To mitigate these injuries, we continued expanding a training program that focuses on proper manual handling techniques. More than 10,000 team members — roughly half of our mainline fleet service personnel — have completed it, and we plan to expand the program over the next year. A team member returning from an injury will also receive refresher training on safe lifting practices, and we conduct campaigns to remind colleagues of proper techniques on an ongoing basis. In the second half of 2023, we saw lifting injuries begin to decline.

We were heartbroken to have experienced two team member fatalities in 2023. The first occurred in April, when a team member driving a ground service vehicle struck a jet bridge at Austin-Bergstrom International Airport in Texas. American coordinated closely with OSHA as it completed its investigation, and though we were not cited in this accident or found to have violated any OSHA standards, we constantly seek ways that we can strengthen and enhance our safety practices. The second fatality occurred in September, when a team member was injured in a ground accident at Wilmington International Airport in North Carolina. We will cooperate closely with OSHA as it investigates. We want every one of our team members to go home safely at the end of each day and will continue to work to provide the safest environment for our team members and customers.

Safety reporting

The overall goal of team member reporting is to improve safety awareness and identify operational deficiencies by facilitating an open line of communication between team

Recognizing Team Member Contributions to Safety

To showcase the great work our team members do to enhance safety, we launched a Safety Champion program in 2023 that honored 24 individuals. Nominees were selected by other team members based on their efforts to enhance our safety culture, advocate when they have concerns and proactively seek solutions to safety issues. A diverse panel representing workgroups across the company selected the winners, each of whom received a prize equivalent to \$1,000 and was recognized at an event with senior leaders. For 2024, up to 40 team members will be selected.



members and management without fear of reprisal. Potential safety concerns and suggestions identified through our many safety reporting programs are critical to early identification and mitigation of hazards. These reports also allow the company to proactively address potential risks and implement corrective actions to resolve safety and security issues.

When team members identify any safety-related concern, they are encouraged to report the issue. Once the concern is received, skilled safety investigators collaborate with operational partners to review the information provided, assess the hazard and develop corrective actions to address the issue. Operational and safety leaders review these reports as part of the broader SMS to determine if there are system-related risks developing. We follow up with the reporter to communicate what we learned and what steps we are taking to prevent similar concerns from arising again. This follow-through and prompt action helps encourage additional reporting, thus creating a robust safety reporting life cycle.

Our most prominent safety reporting initiatives include the following: Aviation Safety Action Programs, Ground Safety Action Programs, Flight Operations Quality Assurance, the International Air Transport Association Operational Safety Audit, Line Operations Safety Audits and the Learning and Improvement Team.

Safety Action Programs

Everyone at American has a role to play in ensuring that our people, customers and assets remain safe. Through Aviation Safety Action Programs (ASAPs), we encourage team members to confidentially report potential hazards and errors without concern of fault or fear of punitive action, thus reinforcing a learning culture and improving our operations along the way.

American was the first airline to create an ASAP, and now such programs are commonplace among airlines worldwide. Currently, we have ASAPs for our Flight, Flight Service, Dispatch,

Technical Operations, Central Load Planning and Ground (Fleet Service and Cargo) teams, which we believe gives us significantly greater coverage than the industry average.

In 2023, we recorded 15,374 ASAP reports, a 25% increase over 2022. This increase is a welcome trend, providing evidence that our team members are comfortable raising concerns. This provides us with more opportunities to review and resolve them. In addition, these reports are used to analyze trends and proactively identify potential safety hazards.

Flight Operations Quality Assurance

Flight Operations Quality Assurance (FOQA) is a voluntary safety program administered jointly by American and the Allied Pilots Association (APA) that uses routinely recorded flight data to proactively identify and correct deficiencies in flight operations. We routinely monitor all our flights and use algorithms to look for potential safety risks and trends. The results allow us to monitor aircraft systems, performance and operational efficiency and help us to better understand pilot performance in the operating environment.

To enhance FOQA's effectiveness, American has partnered with Collins Aerospace to retrofit our narrowbody aircraft with a wireless data transfer system that improves the speed with which we can retrieve FOQA data. This initiative helps us increase accuracy in monthly reporting, improve aircraft reliability and prepare for future products and capabilities. At the end of 2023, 81% of our fleet was equipped with this tool, and we expect that American's entire fleet will be outfitted by the end of 2026.

In 2022, American became the first carrier in the United States to adopt CEFA Aviation Mobile Services, a cloud-based application that allows pilots to recreate their flights on their company tablet. This tool improves on the concept of crew postflight debriefing by providing real-time feedback to our pilots, turning each flight into a learning opportunity and ultimately contributing to the Safety Assurance of our SMS. In March 2024, we expanded the use of this application to make it available to all pilots across our mainline fleet.

International Air Transport Association Operational Safety Audit

As part of our commitment to transparency and monitoring, we are a registered participant in the International Air Transport Association (IATA) Operational Safety Audit (IOSA) program, an internationally recognized evaluation system designed to assess an airline's operational management and control systems. An IOSA, which takes place every two years, creates a structured methodology with standardized checklists that are comparable on a worldwide basis, enabling and maximizing the joint use of audit reports.



In April 2023, we successfully completed our IOSA in conformance with all standards and recommended practices. IATA modified its audit methodology in 2023 to be risk based. As part of our efforts to be an industry leader, American volunteered to be the first U.S. carrier to participate under this new approach.

Line Operations Safety Audits

Since launching our continuous Line Operations Safety Audits (LOSA) program for pilots in 2017, we have been sending highly trained pilot observers onto the flight deck to better understand work-as-done versus work-as-imagined. Observing our frontline team members in action and gathering safety-related data on environmental conditions, operational complexities and crew performance in real time provides us with valuable insights for enhancing safety and resilience. In 2023, our pilot LOSA observers conducted 568 flight deck observations that resulted in improvements in our flight manuals and training.

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American has expanded LOSA to other workgroups as well. Using the continuous Dispatch LOSA launched in late 2021, we were able to conduct 180 observations in 2023. American is also the only U.S. carrier to operate a continuous Cabin LOSA program, which we launched in October 2023. This program is helping us better understand the challenges facing our flight attendants and the measures we can take to keep the cabin safe for everyone. We will continue to evaluate the feasibility of bringing LOSA to other operational groups.

Learning and Improvement Team

We created the Learning and Improvement Team (LIT) in 2022 to collect and analyze data on what makes our pilots successful in their everyday work. The goal of LIT is to identify specific behaviors that go above and beyond standard operating procedures and to share these and other positive observations in recurrent training and new-captain classes.

While similar in some ways to LOSA, LIT is unique. It is a Safety-II initiative that has emerged across multiple industries and focuses on what goes well and why. Doing so provides a new safety lens through which to view the operation. Combining LIT data with other SMS data provides American with a broader picture of the system, rather than looking solely at unwanted outcomes.

Protecting team members from extreme heat

Several of our hubs, such as Phoenix and Dallas, are in locations where temperatures can exceed 100°F during the summer months. That can put team members working on the ramp or in other roles with prolonged exposure at risk of dehydration or heatstroke. Among our current safeguards, we reinforce the message that team members should notify their manager if they need a break. American also maintains hydration carts that circle the ramp during daylight hours as well as fixed hydration stations to support team members working outside. We operate multiple temporary cool zones as well — consisting of a shaded area and water station — on the ramp when temperatures are high. We also encourage team members to take breaks indoors. Seasonal safety communication initiatives aim to make team members more aware of seasonal risks and provide tips on how they can best protect themselves.

Exploring new technologies to enhance safety

American continues to leverage technology to improve our safety processes. For example, our narrowbody fleet has completed the transition from paper aircraft maintenance logbooks to an Electronic Aircraft Maintenance Log (eAML) system. Among its benefits,

Providing Peer Support for Pilots

Pilots face great responsibilities every time they enter the flight deck, and we continually look for ways to provide them with whatever support they require. Among our longstanding initiatives, Project Wingman offers pilots a safe and confidential place to talk about whatever they may be facing without the pressure to mask or hide sensitive details. American created this program in 2011 through a joint effort with the APA Aeromedical Committee.

Project Wingman's success is predicated on pilots providing support on a volunteer basis to their fellow aviators in the American pilot community. Nearly 50 American pilots currently participate. In addition to bringing a unique understanding of the challenges their colleagues can face in their professional and personal lives, these volunteers undergo specialized, intensive training. As a result, they are well-positioned to know when to listen and provide encouragement or recommend other resources if a situation warrants greater intervention.

Awareness of and access to Project Wingman are embedded throughout pilots' journeys at American. We discuss it on their very first day and review its benefits as a part of their annual training.

eAML allows the Technical Operations team members the ground to use their tablets to access an aircraft's maintenance log before it even reaches the gate. That helps us get aircraft back into the air as quickly as possible.

American is also exploring the use of computer vision, a field of artificial intelligence, to improve safety and efficiency during gate turn operations. The arrival and departure of every flight is a process that involves the convergence of aircraft, pilots, fleet service team members, aviation maintenance technicians and multiple vendors. Computer vision involves the installation of video cameras at key locations at the gate and jet bridge to capture the movements of everyone involved in deplaning and getting an aircraft ready to take off again. Using machine learning, the system can gather valuable data and insights from the captured footage to improve workflow and develop strategies for preventing injuries. We recently completed a pilot project that focused on four gates at Dallas Fort Worth International Airport, and the early results have shown promise.

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Safety Risk Management

The Safety Risk Management (SRM) element of our SMS provides a decision-making process for identifying hazards and mitigating risk, based on a thorough understanding of our systems and their operating environment. SRM enables us to consider the risks in our operations and reduce them to an acceptable level. We use the SRM process whenever there is a significant change to our operations, such as delivery of a new type of aircraft or the addition of a new airport to our network. We also apply SRM when our Safety Assurance process identifies a new hazard or ineffective control of an existing hazard.

We use several tools to identify hazards and evaluate the need for new or revised risk controls. The process of risk management is the same regardless of the trigger or event, and our SMS looks at multiple factors for risk. While the FAA requirements are geared toward flight safety, our SMS goes further to evaluate a wider range of global risks, including operational disruptions.

Safety Promotion

Safety culture is the foundation of any SMS, with trust at the core. At American, we believe in a Just Culture approach, which encourages each team member to take responsibility and assume accountability for achieving the highest safety standards and results. This approach, which we have championed for more than a decade and which has since become an accepted aviation industry standard, encourages team members to report errors, risky decisions or omissions without fear of punitive actions.

StaySafe and safety engagement

StaySafe is a safety communications campaign implemented across our Airport and Technical Operations teams. It focuses on lessons learned and ways to prevent team member injuries and equipment damage. Bulletins and alerts are available across multiple platforms in order to reach the greatest number of team members affected.

Our safety engagement efforts bring company leadership to the front lines to engage in conversations with team members. Managers can communicate safety expectations, assess risks in the operation and reinforce safe behaviors. Our airport and technical operations teams use a safety engagement application so that any engagements with team members are logged in the system so that we can learn from trends and share best practices.

Identifying New Opportunities to Enhance Corporate Security

As part of American's comprehensive global security program, we work closely with law enforcement agencies, regulatory bodies and embassies to protect our team members and customers from potential security risks when they are traveling with us around the world.

Our security team's efforts are wide-ranging — aimed at enhancing the travel experience for our customers while maintaining a high level of security across the ecosystem. Below are just a few of their activities from 2023:

- Invested significant resources to combat drug smuggling at last-point-of-departure stations and strategic hubs
- Deployed a canine unit to detect narcotics at select hub locations
- Received regulatory approval for our industry's first multimodal (ground to air) transportation network — from Atlantic City, New Jersey, to Philadelphia International Airport (PHL) — meaning American-ticketed passengers boarding a Landline-operated bus in Atlantic City can be screened by TSA and transported directly to a secure gate inside PHL without the need for rescreening
- Conducted annual review of security risks

As part of our commitment to continually improve our approach, American's Corporate Security team has begun to develop a Security Management System. This multiyear effort should lead to a variety of benefits in a rapidly changing geopolitical climate, including helping us identify the unique risks associated with each of the locations where we operate.



For detailed safety performance data, see [page 75](#).

SUPPORTING OUR TEAM MEMBERS

American is focused on attracting the best and brightest talent and investing in their development.



American is a people business, working to deliver, connect and care for people on life's journey. The talent and dedication of our more than 140,000 team members are the most important drivers of our success.

Our culture is American's competitive advantage, and it is centered on attracting the best and brightest talent and investing in their development and well-being. American is also dedicated to fostering an inclusive environment where people from all backgrounds feel welcome and valued. We believe this is critical to our success both today and in the future. We have accomplished much and continue to identify opportunities for further enhancing the team member experience.

Diversity, Equity and Inclusion

Our strength lies in having a team that effectively serves the communities we represent. We are proud to be a place where people of diverse generations, races, ethnicities, genders, sexual orientations, abilities, religions and other backgrounds are genuinely included and valued, strengthening our ability to better serve and connect with our customer base and the communities in which we operate.

Leading the charge on inclusion

American is committed to advancing inclusion at all levels. We're doing this by holding leaders more accountable for creating a workplace that is truly welcoming. Through ongoing training and open dialogue, we're equipping our leaders with the skills they need to champion inclusion. This includes building their cultural competence, which allows them to understand, value and collaborate effectively with people from all backgrounds.

That is why our 2023 incentive compensation plan for company leaders included diversity, equity and inclusion (DEI) engagement and education goals. For 2023, these goals were included in the compensation plan. For engagement, the goal was for 93% of leaders at the manager level or above to participate in at least two DEI-related engagement



activities or events. (For managing directors and above, the goal was to participate in a leadership capacity.) For education, the goal was for 93% of the company to complete DEI training. We surpassed both thresholds, with 99% of leaders participating in or leading two or more events to develop cultural competence and 98% of team members completing "The Power of Inclusion — Winning Together" training.

Education for all team members is an important part of our journey to realizing the full power of inclusion — from implicit bias training to our web-based inclusion education series that equips team members with the skills to speak up on behalf of others. Many of our other development programs, such as the Women's Leadership Program, help recruit and retain leaders throughout our company.

American recognizes that every leader shares a responsibility for hiring and developing the best talent while also championing diversity. To select the top candidates and include all perspectives in the process, we seek to interview a diverse slate of qualified individuals for all management-level positions. We also strive to have diverse interview panels for all leadership positions so that we can select the most qualified candidates.

Connecting team members through our Employee Business Resource Groups

Creating a more inclusive environment by engaging team members is a top priority. One way we do this is through our Employee Business Resource Groups (EBRGs), networks for team members to connect, foster professional and personal development, learn through cultural engagement activities, serve our communities and help support American's business objectives.

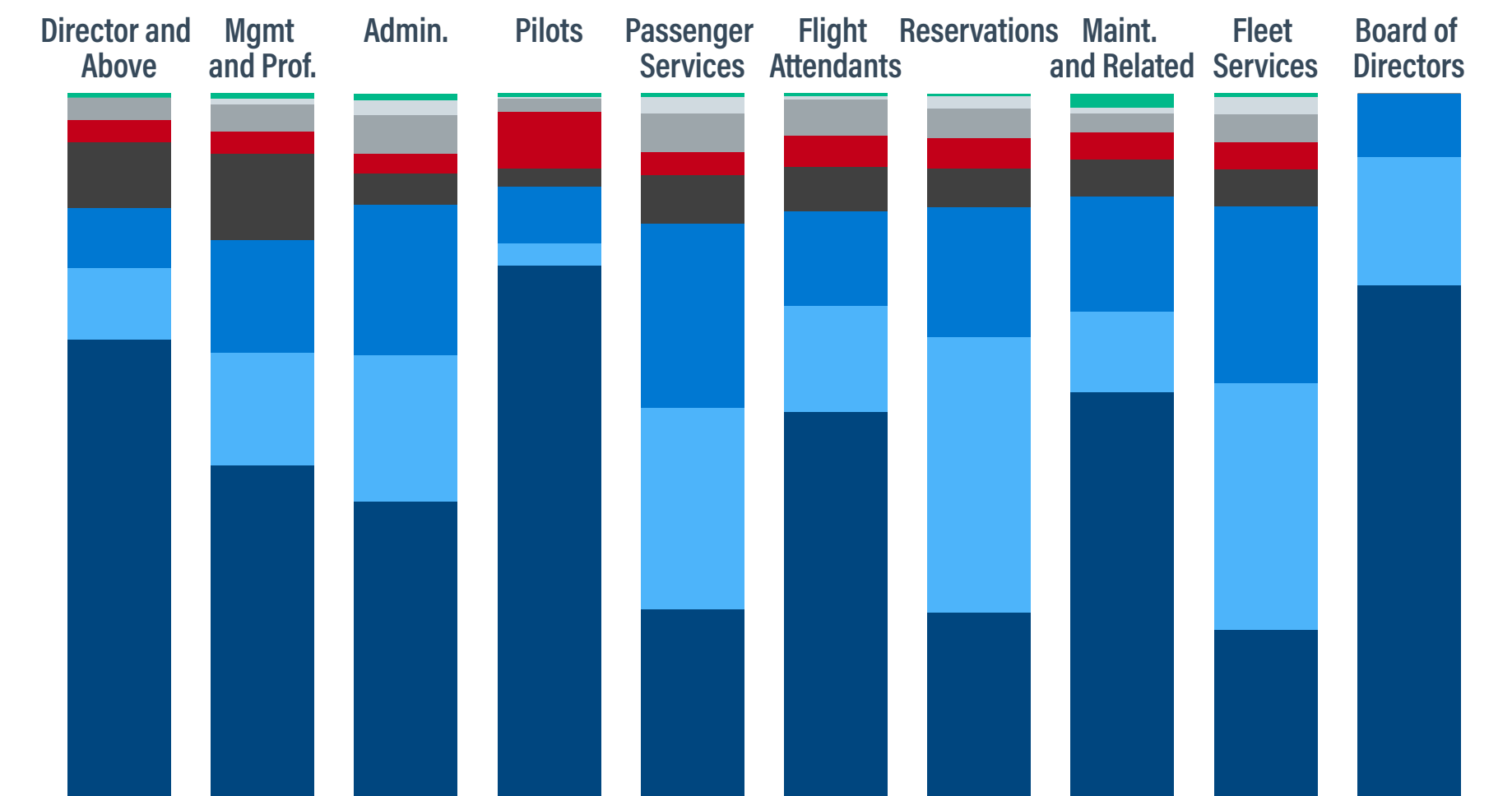
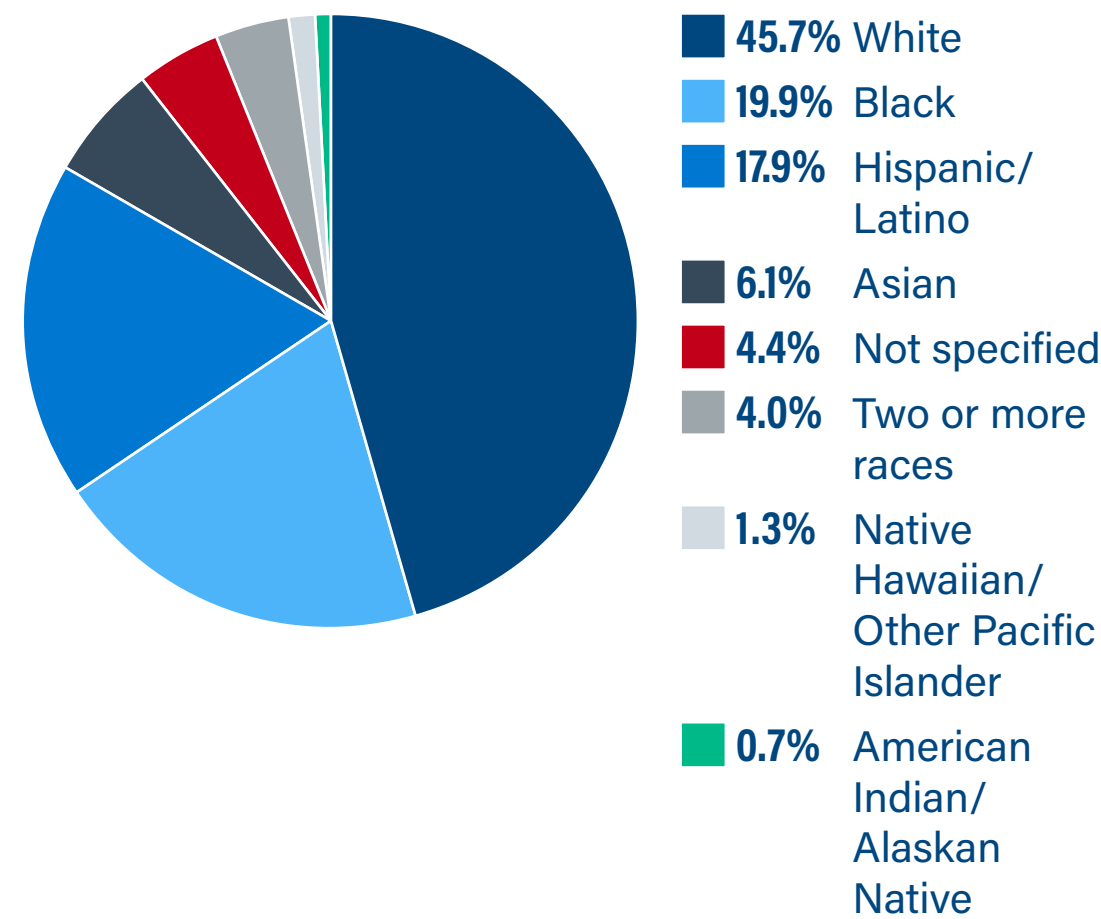
American currently has 20 EBRGs with 165 local chapters, and they represent a range of communities with different beliefs, genders, ethnicities and life experiences. They include the Black Professional Network, Professional Women in Aviation, PRIDE (for LGBTQ team members and allies) and Veteran Military, to name just a few. All team members are welcome to join any EBRG.

Achieving recognition for our DEI accomplishments

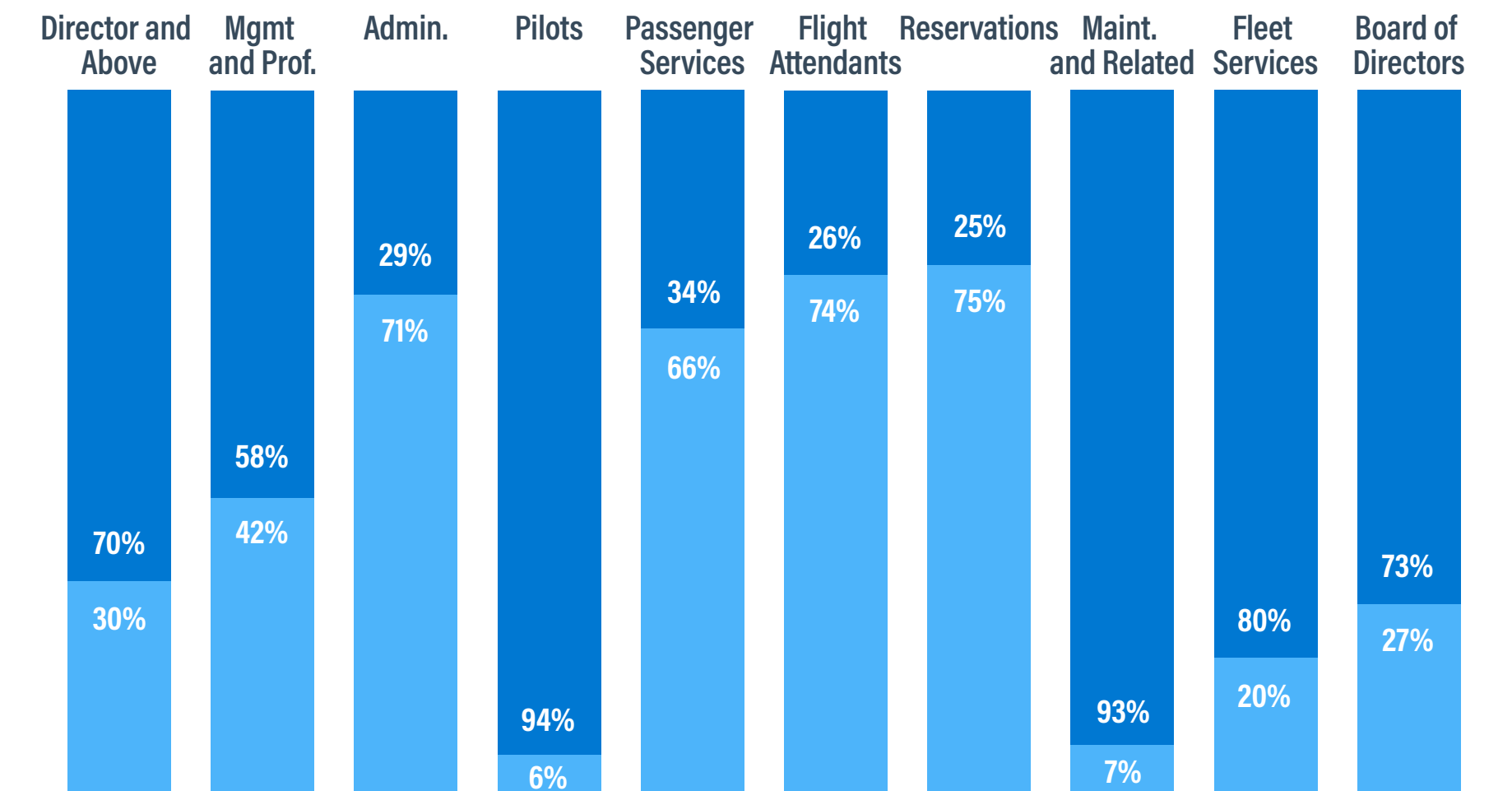
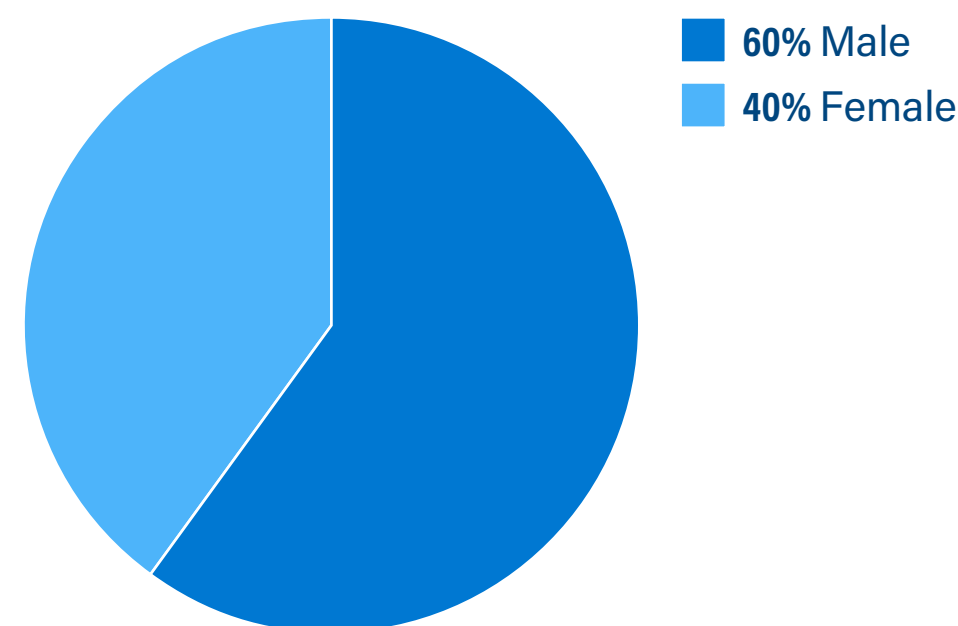
Several leading organizations and publications that monitor DEI performance recognized American for our work in this area over the past year. We received a perfect score on the Human Rights Campaign Foundation's [Corporate Equality Index](#) for the 21st consecutive year since this index's inception. We also received a perfect score on the 2023 [Disability Equality Index](#) for the

2023 Team Member Diversity Data

Ethnic Composition of U.S. Employees



Gender Composition of Employees Globally



Note: Percentages may not add to 100% due to rounding. American's 2023 Equal Employment Opportunity Report (EEO-1) is available on our website.

eighth straight year. Additionally, our DEI efforts have received the highest scores on the Seramount Inclusion Index, and we were honored to have the Dallas Business Journal recognize American's Chief Diversity Officer with a 2023 Leader in Diversity award.

Promoting fairness through a commitment to pay equity

American has long championed pay equity, and we are committed to pay parity for the same job regardless of gender, race or ethnicity. Our team members covered by collective bargaining agreements have built-in pay equity as part of those agreements. Therefore, we have focused our pay equity efforts on the remaining portion of our workforce — made up of management and support staff — who do not belong to unions.

American uses Syndio's workplace equity platform, which helps us analyze and address pay gaps in our workforce. Our approach begins by placing each team member in one of approximately 50 "similarly situated groups" (SSGs) across American based on the type of work they do. We then identify factors that can drive compensation variation within each SSG, such as an individual's specific pay scale, seniority or experience.



CERTIFIED

In 2021, American became the first airline to receive [Fair Pay Workplace's](#) inaugural pay equity certification, which is based on a company's identification and remediation of pay equity issues. This Seattle-based organization is working to dismantle pay disparities based on gender, race and ethnicity to create sustained fair pay. It is backed by an independent alliance of equity experts from academia, business and technology. American was recertified in both 2022 and 2023, and we remain one of only a handful of large U.S. companies in any industry to be certified. The [Rules and Standards for Certification](#) are available to the public.

Among the certification requirements, American regularly undergoes a seven-point review of our remediation plan by Fair Pay Workplace. We have also pledged not to ask job candidates about their prior compensation or expectations for starting pay, which Fair Pay Workplace has identified as among the largest sources of pay gaps.

Recruitment

Recruiting the best talent for all roles across American is critical to our ongoing success. Two areas of particular focus are pilots and aviation maintenance professionals. We have made significant progress, but replenishing their ranks requires a long-term outlook.

Identifying Pay Gaps

The chart below shows American's controlled pay gap for gender and race/ethnicity as of February 2024. By running a pay analysis on a regular basis, we quickly close any gaps.



POC **White**
People of color (POC) earned \$1 for every \$1 earned by white team members in similar jobs.

Female **Male**
Women earned 99¢ for every \$1 earned by men in similar jobs.

Developing a pipeline for pilots and aviation maintenance professionals

American hired more than 2,000 pilots in 2023 and expects to add a substantial number in 2024. To sustain a strong pipeline of qualified candidates, we have been working to create awareness of, access to, and opportunities for careers in aviation for those who otherwise might not know it is possible. The [American Airlines Cadet Academy](#) helps us achieve our recruitment goals. Cadets from multiple ethnic, geographic and economic backgrounds come together at the Cadet Academy, which strives to address financial obstacles by providing flight training students with affordable financing opportunities and a predictable path to completion.

Cadet Academy students are expected to take approximately three years to complete the program and become airline-ready professional pilots. They are then guaranteed placement at one of American's regional carriers: Envoy Air, PSA Airlines or Piedmont Airlines. Accumulation of flight hours leads in due course to a conditional job offer with that regional carrier. Over 950 cadets have entered the Cadet Academy since its launch in 2018, and more than 110 now fly for one of our regional carriers. Since American has contractual flow-through agreements with each of our regional carriers, pilots who are hired by one of them have the opportunity to be hired by American as a mainline pilot.

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New Agreements Underscore Our Commitment to Labor Relations

Approximately 87% of American's workforce is covered by collective bargaining agreements, and our commitment to respecting labor relations was reflected in new agreements signed recently with two of our largest labor unions. In August 2023, American's 15,000 pilots represented by the Allied Pilots Association ratified a four-year agreement that delivers more than \$9 billion in compensation and quality-of-life benefits.

This was followed in January 2024 by a five-year agreement with the Communications Workers of America and the International Brotherhood of Teamsters, which together represent the company's nearly 15,000 customer service team members across airports, premium guest services and reservations. Our new contract includes significant improvements in compensation, benefits and quality-of-life provisions.

American has long respected freedom of association and our team members' right to join, or not join, third-party organizations such as labor unions or other lawful organizations of their own selection, and we do not interfere with these organizations.

In 2023, the Cadet Academy expanded its training footprint by adding [Luke Weathers Jr. Flight Academy](#) in Olive Branch, Mississippi, which is run by the [Organization of Black Aerospace Professionals \(OBAP\)](#), as well as [Infinity Flight Group](#) in Trenton, New Jersey. This brings the total number of program locations to seven, including [CAE](#) in Phoenix, [Coast Flight Training](#) in San Diego, Dallas and San Marcos, Texas, as well as [Spartan College of Aeronautics and Technology](#) in Tulsa, Oklahoma. Every Cadet Academy student is also matched with an American Airlines pilot mentor to provide comprehensive guidance throughout their educational journey.

For team members who aspire to become pilots, the Elise Eberwein American Airlines Pilot Scholarship will award two \$50,000 scholarships annually over the next 10 years to candidates who are currently working at American and have demonstrated financial need. Honoring our former People and Global Engagement leader who retired in 2022 following 35 years



of service, this eponymous \$1 million initiative embodies our commitment to nurturing diversity, opportunity and talent. The first two scholarship recipients were named in 2024.

We are also working to build a pipeline of aviation maintenance professionals, who play a critical role in American's safety efforts and operational reliability. We currently employ more than 12,000 of these team members across our hubs and other locations. Our partnership with the [Aviation Institute of Maintenance \(AIM\)](#) is a key part of our strategy for connecting with qualified candidates.

As part of our relationship, American guarantees interviews for top candidates from AIM's Chicago campus, provides students with opportunities to engage with our aircraft maintenance teams and offers eligible students financial assistance for certification exams. These well-paying jobs offer opportunities for advancement, and they do not require a postsecondary degree.

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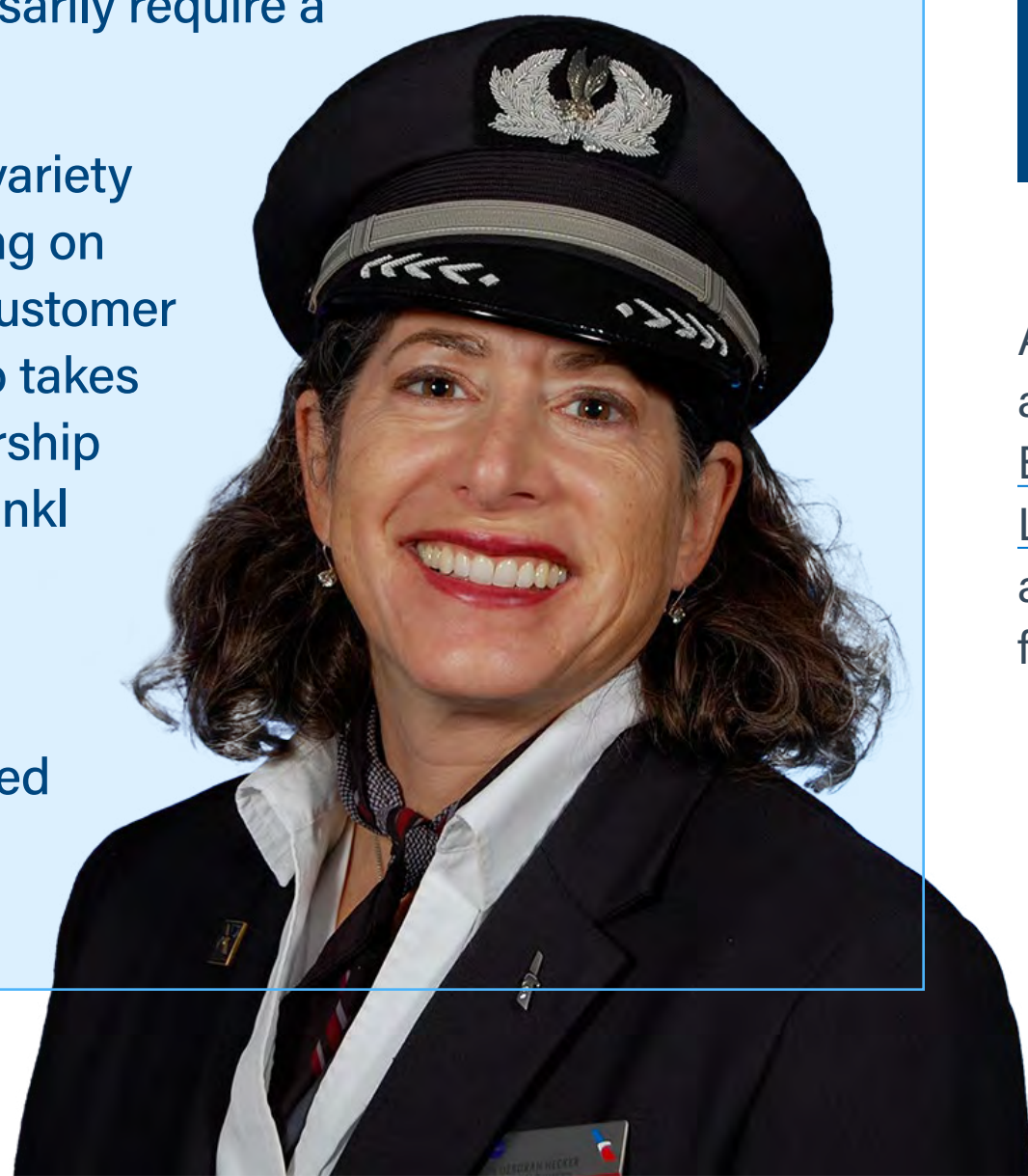
Creating Aviation Opportunities for Women

Captain Deborah Hecker's 30-year career in commercial aviation has taken her from piloting the Douglas DC-3 and Embraer 110 to a three-year stint at Piedmont Airlines before joining American in 1999. Along the way, she has won numerous awards and broken her share of professional barriers for women. Currently, she is responsible for the Flight Operations Manual, better known as the rulebook for pilots, in her role as American's Director of Flight Operations Training Policies and Procedures.

As she traversed her path from aspiring lawyer to Airbus A321 captain, Hecker embraced opportunities to mentor other pilots, both at American and in her more than two decades of volunteer work as a member of Women in Aviation International (WAI). In 2024, she is stepping down from WAI's board of directors. She has held this post since 2017, the last two years as its chair.

"WAI is one of the many great organizations that are trying to move the dial to get more women into aviation careers," says Captain Hecker, who was hired by American after receiving a WAI scholarship. "It encourages women to look at a variety of career options, not just flying. That could include maintenance, dispatch, engineering and aircraft design, to name just a few areas. Many are jobs that don't necessarily require a four-year degree."

Captain Hecker herself has played a variety of roles at American, including working on the pilot recruitment team and as a Customer Experience project manager. She also takes great pride in the Keep Flying Scholarship she launched with Captain Evelyne Tinkl — a close friend who flies the Boeing 757/767 for United Airlines — in the wake of the 9/11 attacks. Since its inception, this scholarship has provided approximately \$150,000 to help fund flight training for women.



Inspiring the Next Generation of Aviation Professionals

At American, we believe it's never too early to begin laying the foundation for a career in aviation. That led us to team up with the nonprofit [CR Smith Museum](#) and launch the Aviation Career Pathways program in October 2023. This multiyear initiative is providing seventh to 12th grade students in the Dallas Independent School District with access to aviation science, technology, engineering and mathematics (STEM) education along with a better understanding of aviation industry career opportunities.

Increasing exposure to aviation STEM careers and skills comes with challenges, especially when working with underserved communities. Most of the students participating in Aviation Career Pathways attend Title 1 schools, which include a significant percentage of students from low-income families. The CR Smith Museum, located on American's campus in Fort Worth, has studied these challenges extensively and prioritized solutions in its education program. Among them, students should benefit from the program's combination of touch points. Aviation Career Pathway includes in-classroom programming, participation in the museum's annual Aviation Career Day, behind-the-scenes access to American's operations and the opportunity to interact with team members.

Beginning with the 2024–25 school year, this program will expand to include the Fort Worth Independent School District as well.

Another part of our strategy includes regular participation in recruiting events. They are sponsored by industry organizations such as the [Society of Hispanic Professional Engineers](#), [National Society of Black Engineers](#), [Sisters of the Skies](#), [\(WAI\)](#), [NGPA](#), [Latino Pilots Association](#), [Professional Asian Pilots Association](#) and [OBAP](#). For example, at the latest WAI Conference in March 2024, we extended 16 job offers to talented female pilots along with 10 scholarships to students pursuing careers in aviation.

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Talent Development

Training and development are vital to giving our team members the tools and resources they need to do their best. Our company training programs provide opportunities for career growth as well as professional and personal development. Our annual performance review process for eligible team members reinforces our focus on equipping them with the skills they need to succeed while also aligning their goals with the company's objectives.

American spent \$1.1 billion on functional and professional development training in 2023, almost \$8,000 per person. Below are a few of our most important programs:

New Hire Orientation. We believe that all new team members should receive a welcoming experience that empowers them with the knowledge, skills and resources they need to succeed in their roles. That's why new team members across all divisions of the company complete this orientation within 30 days of being hired. It is grounded in American's purpose to care for people on life's journey, introduces our culture and articulates our support of our workforce and customers. In 2023, nearly 14,000 team members spent 38,000 hours in this orientation. Participants completed self-paced modules and attended a live welcome session with leaders.

Women's Leadership Program. This program fosters a community that connects, develops and supports female leaders and pilots. Men are welcome as allies. Learning sessions last for about an hour, and they are followed by networking receptions that enable women leaders and pilots to engage with each other. The Women's Leadership Program includes valuable mentoring opportunities as well. We had more than 300 participants at 10 different women's leadership and development events in 2023.

Learning Hub. This is our primary learning management system and home base for all mandatory, safety and regulatory compliance training. In 2023, Learning Hub processed more than 9 million course registrations, with an average of 119,372 unique users accessing the system every month.

2023 Training and Development Hours

Mainline Operations	Airports and Cargo Airports and Cargo receives role-specific technical and safety training.	1.95 million
	Flight Operations Flight Operations — which consists of all pilots — undergoes a significant amount of training, including time spent in the simulator, annual and recurrent evaluations, onboarding for new hires and instructor-to-instructor training.	1.07 million
	Inflight Inflight encompasses our flight attendants, who undergo a significant amount of safety and technical training in addition to data security and specialized courses such as human trafficking awareness.	1.37 million
	Reservations Reservations training includes customer service, technical and compliance training.	1.05 million
	Technical Operations Technical Operations — or maintenance — professionals undergo a significant amount of safety training in addition to technical courses.	910,400
Regional Carriers Training for our regional carriers — Envoy, PSA and Piedmont — includes a mixture of web-based and in-person courses related to safety, compliance and many role-specific offerings. Workgroups covered include pilots, flight attendants, maintenance staff and, in some cases, dispatchers and customer service representatives. The aggregation includes new-hire and recurrent training.	Envoy: 1.68 million Piedmont: 898,400 PSA: 681,400	
Management and Support Staff Management and support staff largely fulfill corporate functions, and training varies greatly by position. The hours reflected include mandated and role-specific courses, as well as professional development opportunities.	374,400	
Team member training totaled more than 9.9 million hours in 2023, averaging approximately 70 hours per person.		

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Our Skyview 6 hospitality complex for team members opened in January 2023.

Bringing employees together for training and development

Each year, thousands of team members from around the globe visit American's 300-acre Skyview campus in Fort Worth for training. Some are new hires, while others come to complete their annual recertification or prepare for new roles. Our Skyview 6 hospitality complex, which opened in January 2023, has simplified this experience by hosting visiting team members on-site. It has also provided greater opportunities for collaboration.

In its first year of operation, more than 40,000 team members took advantage of its convenient location and many amenities. In addition to its 600 guest rooms, Skyview 6 includes study lounges on each guest floor, multiple dining options, a fitness center, outdoor exercise pool and courts for basketball, tennis, pickleball and volleyball.

Comprehensive Benefits

American seeks to offer competitive pay, comprehensive benefits and a wide variety of resources designed to help attract and retain the best talent, and to support the physical, behavioral and financial well-being of our team members and their families. In 2023 and early 2024, we continued to broaden our offerings with the goal of meeting their evolving needs. To further engage team members, we also reintroduced benefits open houses for open enrollment at several locations, where they could learn more and have their questions answered.

Here are some of the core benefits our team members and their families enjoy:

- **Medical, dental, vision and prescription coverage.** We are committed to providing coverage that is both comprehensive and flexible to meet the needs of a diverse workforce and their families. Approximately 85% of our team members are enrolled in medical plan options. Combined with retirees, our plans offer coverage to more than 200,000 people, including spouses, partners and dependents. All our medical options include prescription drug coverage, and team members can utilize one or more pretax health spending account options.

Team members or any covered dependents needing surgery have access to a complimentary concierge service that connects them with top-ranked, board-certified and fellowship-trained surgeons for one-on-one guidance and support throughout the surgical process. This service also works with providers to lower surgery costs, offers team members a consolidated billing statement and provides a lump-sum financial incentive for those who use the service.

Free generic or discounted brand-name medications and supplies are available to treat team members for high blood pressure, diabetes or asthma. Additionally, we have reduced or eliminated the copay for certain high-cost specialty medications.

Our team members who live in Dallas-Fort Worth also have access to an additional medical option, DFW ConnectedCare. This option offers lower monthly team member contributions and reduced copays.

- **Health care navigation and support.** To help team members manage and understand their health benefits, we partner with an independent health benefits navigator. Personal health assistants help U.S.-based mainline team members navigate the health care system and take full advantage of their medical and prescription insurance coverage. A similar service is available for team members enrolled in DFW ConnectedCare.

- **Telemedicine and on-site clinics.** Thousands of team members have relied on a program that offers physician consultations via telemedicine 24 hours a day, seven days a week. American also partners with a direct health care provider to staff on-site clinics at most of our hub airports. These clinics offer occupational and immediate care, along with basic lab services, vaccines and COVID-19 testing. For our round-the-clock workforce, these options provide convenient care when and where team members need it most.
- **Well-being programs.** Pop-up events across our operations make it easier for team members to keep an eye on their health. Through these events, 4,260 team members received flu vaccines in 2023. Additionally, 80 team members took advantage of mobile mammography events.
- **Employee Assistance Program (EAP).** Our EAP is a 24/7/365 confidential support system for our team members and all members of their households. Whether they need a listening ear, caregiving referrals, legal or financial consultations, veterans' assistance or help preparing for college, our EAP provides practical, real-life assistance for life's changes and challenges. Our team members and their families can receive four free counseling sessions per issue per year, and they may choose video, phone or in-person appointments. With dedicated on-site counselors at eight of our U.S. airports, most of

Funding Scholarships for Team Member Dependents

For the 2023–24 academic year, the American Airlines Education Foundation provided nearly \$1 million in college scholarship funds to 340 dependents of team members. Each recipient received \$2,500, with 100 first-generation college students receiving an additional one-time award of \$1,000.

These scholarships, which we have offered for more than a decade, fund full-time undergraduate studies at any accredited college, university or vocational program worldwide. Applicants are evaluated through a competitive application process based on academic achievement, community service, extracurricular activities and financial need.

The latest recipients are from 70 cities across the following eight countries: United States, Canada, Mexico, Dominican Republic, United Kingdom, Jamaica, Peru and Spain.

our team members are never far from help and support. Team members can also order specialized CareKits that contain useful items for pregnancy, a new baby, child safety, active adults or elder care. In a satisfaction survey, 98% of respondents rated their experiences with our EAP as "very good," the highest category available.

- **Life insurance.** Caring for our team members on their life's journey means caring for their families, so American provides basic life insurance coverage for all team members at no cost, effective on the first day of employment.
- **Financial well-being resources.** American wants to help our team members become knowledgeable and enthusiastic participants in their financial future, so our 401(k) plan allows them to begin contributing right away. After one year of service, they are eligible for a company match or contribution, depending on their workgroup. Our 401(k) administrator, Fidelity Investments, offers robust, education-centered seminars and personal finance tools as well as one-on-one complimentary consultations. As of January 2024, team members can view all health spending, dependent care, commuter and retirement accounts with Fidelity in one place, through a single login. This creates a more consolidated and simplified experience for our team members to manage their healthcare and retirement assets.
- **Family support resources.** We provide up to 10 weeks of paid leave through our Post-Pregnancy Maternity Short-Term Disability Plan. As of January 2024, we introduced a combined reimbursement for adoption and surrogacy expenses up to a lifetime maximum of \$30,000 — a \$22,000 increase from American's previous adoption benefit.

The American Airlines Family Fund, a nonprofit organization funded by team members for team members, provides up to \$2,500 in tax-free grants to those affected by natural disasters, health crises and other unforeseen circumstances. For example, the Family Fund fund helped assist team members stationed on Maui who were impacted by the wildfires in 2023. For the year, the Family Fund distributed nearly \$1.2 million to team members in need.



For detailed team member diversity data, see [page 76](#). For Board diversity data, see [page 29](#) of our 2024 Proxy Statement.

SERVING OUR CUSTOMERS

We are committed to providing our customers with exceptional service and to continually identifying opportunities to enhance their experience.



No matter the destination, American's customers look to us to provide them with a world-class travel experience. We fly to more than 350 cities and continually look for new opportunities to enhance customer satisfaction.

Customer satisfaction begins with reliability. That includes getting customers to their destinations safely, on schedule and with their baggage. In 2023, we made real strides in reliability, devoting significant resources across all these areas and developing proprietary tools and technologies to support our efforts. Our customers have further benefited from improved functionality on our digital platforms, expanded entertainment options and faster connectivity. And across everything we do, we have strived to treat our customers fairly and communicate with them honestly. We have also gone to great lengths to implement cybersecurity measures and protect their privacy.

Delivering record operational performance

American's operation is more reliable, resilient and adaptable to outside forces than ever before. Our goal is operational excellence no matter the circumstances so that we can provide the best possible experience for our customers. In 2023, we recorded the best completion factor — meaning the fewest canceled flights — in American's history and our strongest on-time departure and arrivals performance since 2017. And we accomplished these results even as passenger totals rose by 5.7% compared with 2022.

We delivered for American's customers during every single one of the peak holiday travel periods — from spring break through the winter holidays. That included an outstanding summer travel season despite persistent record-breaking heat across the United States and an August that included Hurricanes Hilary, Franklin and Idalia, as well as the devastating wildfires in Maui. Our exceptional results extended to Labor Day weekend, when we posted a company-best completion factor, on-time departure percentage and on-time arrival percentage for the period. Our strong performance over the winter holidays was reflected in a near-perfect 99.9% completion factor, and that included a six-day streak where we didn't cancel a single mainline flight.



Focusing operations on 3 key pillars

American's operational focus is on planning, executing and recovering.

Planning. This includes the work we do to make our airline resilient to any conditions we expect to face. We want our supply chains to be reliable, our staffing to be appropriate and to have the right facilities and equipment in place. For example, we invested in three additional flight simulators in 2023 and have modernized the way we plan and schedule pilot training. Through our partnership with the Federal Aviation Administration, American also helped expand the use of additional airspace routes to relieve congestion during days with high traffic volume.

We have also invested in the infrastructure of our largest hub, Dallas Fort Worth International Airport (DFW), to support a busier schedule. In 2023, we opened our new DFW catering kitchen, a state-of-the-art facility to help address our growing catering needs. (Read more about this facility on [page 28](#).) We followed that with a new DFW Central Fulfillment Facility for aircraft parts, relocating a significant portion of our inventory from Tulsa.

Executing. This comprises our focus on investing in people, processes and technology to deliver for our customers consistently. In 2023, we focused on improving the tools our team can use to manage issues that might otherwise disrupt our operations.

Our Smart Gating tool, for one, reduces situations where arriving aircraft must wait for an available gate. Developed in-house by American's Information Technology (IT) and Operations teams, Smart Gating uses real-time flight information and other data points to automatically assign arriving aircraft to the nearest available gate with the shortest taxi time. That allows customers to spend less time waiting on the tarmac and have more time to make their connections.

Initially rolled out in 2022 at DFW, Smart Gating has helped shorten aircraft taxi times by an average of 20%. By the end of 2023, we had expanded this tool to our hubs at Charlotte Douglas International Airport (CLT), Miami International Airport (MIA), Ronald Reagan Washington National Airport (DCA) and Chicago O'Hare International Airport.

Across the system, Smart Gating has shortened taxi times by 17 hours per day. Moreover, it is designed to address each airport's unique needs. For example, at DCA, where ramp space is limited, Smart Gating has reduced by 70% instances where an aircraft must wait at the gate due to another aircraft blocking the ramp. At CLT, it has decreased aircraft taxi time by nearly a minute per flight and eliminated 11% of on-the-ground gate changes. Smart Gating yields important environmental benefits as well, and you can read about them on [page 13](#).

American has also made meaningful progress at improving our baggage handling, and in 2023 we reduced our mishandled baggage ratio by nearly 15%. One of the systemwide enhancements we made during the year included an initiative that helps us prioritize the bags of customers with tight connections. We now print a 1, 2 or 3 on bag tags based on connection time. Bags with shorter connection times are loaded last onto aircraft at spoke airports so they can be unloaded first upon arrival at hubs and quickly transferred to connecting flights.

These technological advancements were paired with advances in training, compliance and accountability across all internal and external partners in our operation. In 2023, in partnership with our frontline leaders, we rolled out individualized performance dashboards for some of our airport team members. Focusing on safety, compliance and performance, these dashboards give team members greater visibility into their performance and opportunities to improve. The dashboards have been well received, and we will explore expanding them to other workgroups.



Aviation Week awarded American its prestigious Laureate Award for 2023–24 in recognition of our Hub Efficiency Analytics Tool (HEAT). Laureate winners “exemplify the industry’s relentless push to expand the boundaries of what is possible.”

Recovering. This encompasses our work to recover from irregular operations more swiftly and efficiently than in the past. Although we can't control the weather, we can control our response. That means getting our crews, aircraft and customers back on track as quickly and safely as possible. We have invested more expertise, time and technology in irregular operations management and recovery, including development of a suite of tools to support our efforts.

Our proprietary Hub Efficiency Analytics Tool (HEAT) is just one example. HEAT dynamically adjusts flight schedules to keep customers, crews and aircraft moving and to avoid cancellations when severe weather and other extraordinary situations threaten to disrupt our schedule. Using an advanced algorithm, HEAT weighs a variety of factors such as fullness

of flights, customer connections and gate availability — as well as air traffic control and crew constraints — to adjust departure and arrival times on multiple flights in a coordinated manner. We deployed HEAT 28 times in 2023 — at CLT, DCA, DFW and MIA. Since its initial deployment in 2022, we have used it to prevent nearly 1,000 flight cancellations.

We never want to cancel flights, but sometimes operating conditions make this inevitable. When this happens, we strive to accommodate customers in advance or as quickly as possible. In 2023, we rolled out a more effective reaccommodation tool that resulted in a 19% improvement in the volume of customers who fly the rebooked solution and a 21% reduction in delay-to-destination hours.

Modernizing the digital experience for customers

We continued our efforts to modernize the travel experience in 2023. Our research has shown that customers prefer to handle the easiest aspects of travel on their own, so we put more power in their hands by enhancing the user experience and travel management options on both aa.com and the American Airlines mobile app.

At the start of 2023, our website and mobile app allowed customers to address some of their ticket-related needs, such as rescheduling a trip, viewing and applying a travel credit to a trip, or adding special service requests during travel. Over the course of the year, we modernized our technology and expanded functionality, allowing for the majority of customer travel needs to be completed on a digital channel. Among our enhancements, customers who book travel with American through a travel partner or another third party can now, in most cases, use the app or aa.com to make changes. Customers also have more digital control over their reaccommodation options if irregular operations impact their scheduled flight. We have made it easier for customers to notify us if they have special service needs as well, such as traveling with wheelchairs or pets or if they are booking a flight that involves an unaccompanied minor. These and other improvements helped make ours the most downloaded airline app of 2023 and among the year's top 10 most downloaded travel apps. And we are working to further improve our website and mobile app in 2024.

Greater online and app functionality also frees up team members in our customer call centers to work with customers who have complex travel issues that require personal assistance. We continually work to improve these personal interactions, and we follow up with Voice of the Customer surveys by phone or written channels to elicit feedback on our success. For example, approximately 94% of survey responses related to domestic and international reservations for 2023 indicated that our customers were completely satisfied with the service they received. Our satisfaction scores from AAdvantage® members are even higher.

Providing speedier airport kiosks and streamlining credit redemptions

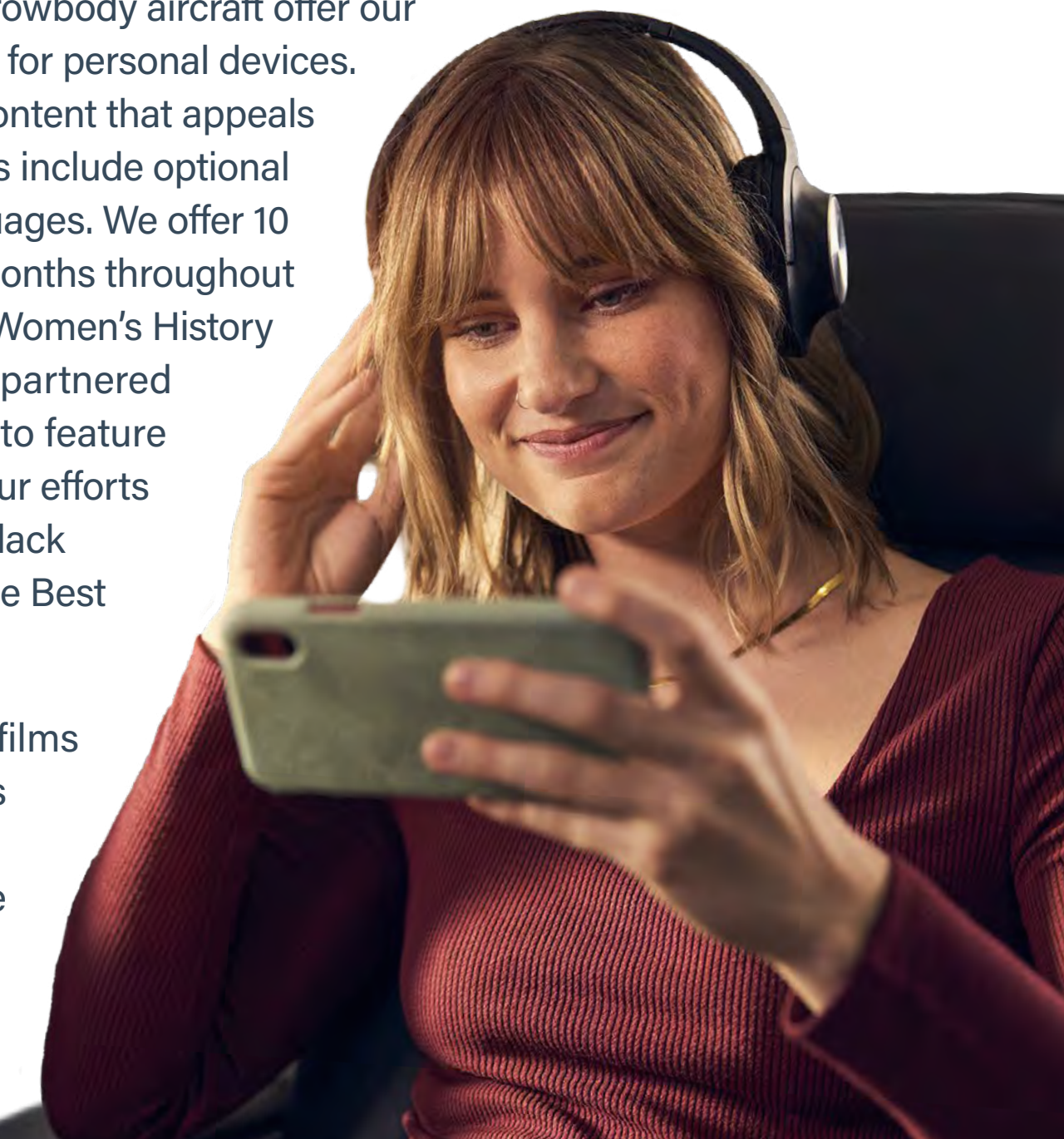
American implemented other improvements during the year beyond our digital channels. For example, we rolled out new software across all our airport kiosks to make them faster and easier to use and installed entirely new ones in our largest hubs. These updates help streamline travel for our customers by leading to shorter lines before security.

In 2023, we also simplified the management and redemption of [travel credits](#). That included streamlining the types of credits available into trip credits, flight credits and travel vouchers, with the goal of consolidating to one in the long term. We also made it possible for customers on domestic flights to store trip credits and flight credits in their mobile wallets rather than in emails or in the form of a paper voucher.

Delivering our inflight entertainment faster and with more diverse offerings

We make many television series and movie offerings available at no cost on most of our flights, and our narrowbody aircraft offer our wireless [inflight entertainment platform](#) for personal devices. Our offerings include a wide range of content that appeals to diverse preferences. Most of our films include optional subtitles and are dubbed in many languages. We offer 10 to 20 selections to celebrate heritage months throughout the year, such as Black History Month, Women's History Month and Pride Month. We have also partnered with the American Black Film Festival to feature the work of Black filmmakers. In fact, our efforts at improving the travel experience for Black customers yielded American an Essence Best In Black Travel Award in 2023.

We also add approximately 10 foreign films each month in their original languages to our widebody, seatback-equipped fleets, with an average of 50 to choose from at any given time.



To support our inflight entertainment strategy and improve the overall travel experience, American offers high-speed Wi-Fi on more mainline aircraft than any other carrier. We want our regional customers to enjoy a similar experience. Over the next two years, we will begin providing high-speed Wi-Fi on the more than 500 dual-class regional aircraft operated on our behalf. These planes will be equipped with Intelsat's unique electronically steered array multi-orbit antennae, which are designed to deliver fast, reliable connectivity for texting, browsing and streaming.

For our improvements in customer service, American was recognized for the sixth consecutive year in 2023 by the APEX Official Airline Ratings — Global Airline category. American received a prestigious Five Star rating based on verified customer feedback on the overall travel experience.

Identifying opportunities for greater inclusion

American's approach to customer engagement continues to reflect our commitment to diversity, equity and inclusion. In 2023, we looked to the guidance of the Community Council we formed in 2020 to provide objective and candid insights on company initiatives, particularly those focused on improving the customer travel experience and meeting the needs of underrepresented customer groups, and we continued to help team members build cultural competency to further support this work.

One example is our work partnering with local organizations and airport colleagues to make the travel process less of a mystery for children on the autism spectrum. Through It's Cool to Fly American (ICTFA), we offer these children and their families a mock travel experience that replicates the hustle and bustle of air travel. In an experience that lasts about three and a half hours, they park, check in, wait at the gate, board, taxi, return to the gate and retrieve their luggage without actually taking off. Since its inception in 2014, ICTFA has served more than 8,000 participants and 4,500 families.

Posting record passenger satisfaction scores

American rigorously gathers customer satisfaction data through passenger surveys, using the results to enhance our operations. Based on a sampling of approximately 3 million customer surveys, our Likelihood to Recommend (LTR) score rose to a company-best 76.6 for 2023. Our fourth-quarter score of 79.7 was the highest of any quarter in our history. These results reflect the significant investments that we've made to improve both check-

in and boarding as well as baggage handling, trip credit redemptions and the ability to manage an upcoming travel reservation at aa.com or through our mobile app. In fact, customers who used our app at least once before or during their trip consistently rated their experience higher than did nonusers.

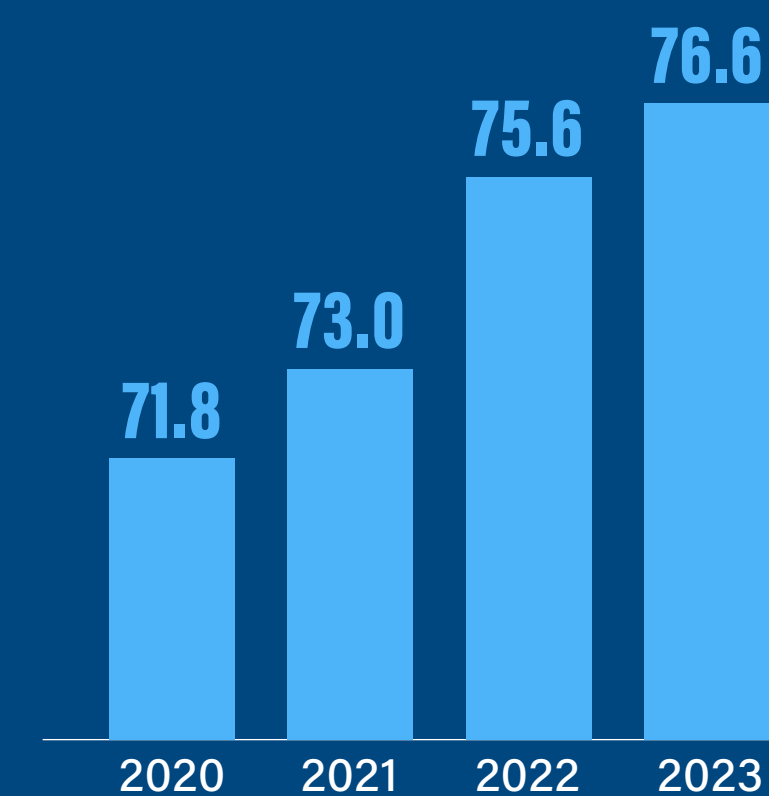
LTR measures customer levels based on recent trips on a scale of 1 to 100 points, and our methodology incorporates balanced feedback from both AAdvantage® loyalty program members and nonmembers. It has been a valuable tool in helping us set priorities. That said, we are always looking for ways to better identify areas where we excel or need improvement. That includes tracking our Net Promoter Score (NPS), which helps measure customer brand loyalty and satisfaction using a scale of -100 to +100. In contrast to LTR, which is based on an average of customer responses, NPS is calculated by subtracting the percentage of detractors from the percentage of promoters. Our NPS has risen by 11 points since 2019. Going forward, we expect to make NPS our core customer satisfaction metric. Among its benefits, NPS is a more commonly used industry standard that will allow us to benchmark American's performance against other carriers and companies.

In 2023, we also began receiving survey data from customers whose journeys include one of our 12 oneworld® partners along with American. We will use this data to identify ways to further enhance the customer experience.

Likelihood to Recommend Scores

(based on a scale of 1 to 100)

American's LTR scores have been rising annually, and we achieved a company best in 2023.



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Treating our customers fairly and communicating honestly

We are in business to provide safe, dependable and comfortable air transportation to our customers, and we work hard to make their experience a positive one. At the same time, managing an average of more than 6,000 departures per day is a complex undertaking. Inevitably, some of our flights are affected by adverse circumstances — some within our control and others not. When that happens, our [customer service plan](#) outlines the policies and processes we have put in place to treat our customers fairly and provide them with the assistance they need.

Our customer service plan also outlines our approach to family seating. Letting families sit together at no additional cost has long been American's policy. We seat children 14 and under adjacent to an accompanying adult, assuming they are booked in the same reservation and meet other conditions. In the event that we cannot seat an adult family member and child together, we will rebook their flight at no extra cost or provide a refund if they choose not to travel.

American is also committed to accuracy in our communications and marketing. To help customers make informed decisions, we provide information about the benefits of flying with American and strive to represent truthfully the social or environmental benefits of our activities. We endeavor not to mislead vulnerable market segments, such as children, about our services.

Addressing customer concerns

Every day, American's dedicated team members strive to go above and beyond to handle customer concerns promptly and efficiently. In addition to traditional customer service channels, we also offer convenient options that keep customers informed throughout their travel journey, such as in-app chat functions, automated callback features and immediate automated digital notifications.

When it comes to navigating the most complex of customer concerns, American has a highly trained, specialized team that works to handle these escalations promptly and appropriately. These team members work with stakeholders throughout the company to handle all escalations and follow-up from across American's global operation.

Prioritizing cybersecurity and data privacy

Cybersecurity and data privacy are key priorities at American. In February 2024, we published our new [SEC Form 10-K Item 1C](#) disclosure related to cybersecurity risk management, strategy and governance. In addition, in 2023, we updated our [Cybersecurity Policy Statement](#) and [Privacy Policy](#).

American has developed and implemented a cybersecurity risk management program intended to protect the confidentiality, integrity and availability of our systems and information. Our program is aligned with various National Institute of Standards and Technology (NIST) cybersecurity standards, guidelines and best practices.¹ It includes policies, standards and a variety of technical security solutions to prevent and respond to cybersecurity issues, and it is evaluated annually by a global cybersecurity firm.

Our Chief Information Security Officer (CISO) is responsible for implementing our cybersecurity risk management program and reports to our Chief Digital and Information Officer (CDIO). The CDIO, in turn, is a member of our Senior Leadership Team and reports to the CEO.

Our cybersecurity risk management program is overseen by our Executive Cybersecurity Risk Group (ECRG), which comprises our CDIO, Chief Financial Officer and Chief Legal Officer. Working with our CISO, the ECRG assists the Board of Directors and our Senior Leadership Team in fulfilling their responsibilities for cybersecurity governance. Our Board oversees our work on cybersecurity, with the Audit Committee regularly reviewing cyber- and data privacy-risks and receiving briefings from senior leaders on these matters at least quarterly. The full Board also receives periodic briefings from management on our cyber-risk management program.

American also has a formal cybersecurity training and awareness program focused on educating our team members about cybersecurity risk and our internal policies and procedures related to cybersecurity, privacy and compliance. Certain trainings, such as basic data security awareness, are conducted annually, and all team members and contractors are expected to complete them.

¹ This does not imply that we meet any particular technical standards, specifications or requirements, only that we use various NIST security standards, guidelines and best practices to identify, assess and manage cybersecurity risks relevant to our business.

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A number of team members undergo additional cybersecurity and data privacy training depending on their roles and responsibilities. We also review the cybersecurity profile of critical IT service providers, suppliers and vendors as part of our risk management strategy and engage certain third parties on their practices.

American's privacy program, which is audited from time to time by our internal audit function, is led by our Chief Privacy and Data Protection Officer and staffed with certified privacy professionals. We also have a Privacy Council composed of more than 30 senior leaders who meet quarterly to discuss privacy issues, challenges and proposed solutions. The council is supported by more than 100 privacy liaisons across our business and IT.

The privacy program is guided by key privacy principles that inform how American handles and protects the personal information in our care, such as responsibility, transparency, security and choice. Our Privacy Office regularly conducts privacy impact assessments of business processes and supporting IT systems that process personal data. The primary role of these assessments is to identify and remediate associated privacy risks.

Information obtained from privacy impact assessments is used to populate our personal data inventory, which details what personal data our company stores, how it is used, where it is stored, with whom it is shared and for how long it is retained. We supplement these efforts by coordinating with our IT department to incorporate privacy design requirements into the architecture and operation of our systems that store and process personal data. We also use these processes to fulfill our legal requirements for handling data rights requests and data disclosures via our internal and external privacy policies and statements.

Our team members are required to take privacy training courses annually, and the Privacy Office conducts individual training sessions with different business units each year that address a variety of privacy issues. We also coordinate closely with our Procurement and Corporate Legal functions, which provide input on privacy terms and provisions in agreements with our business partners and vendors so that privacy issues are appropriately addressed. Contractors are required to take a course on global data privacy and protection annually or as they sign on.



For detailed operational performance data, see [page 71](#).



SOURCING RESPONSIBLY

Our commitment to sustainability extends to our supply chain.



American is committed to conducting business in an ethical manner consistent with our values. We partner with our suppliers to achieve these standards, including working with them to keep customers and their employees safe, minimize their impact on the environment, create an inclusive workplace and respect human rights.

Setting expectations and evaluating risks

American sources products and services from thousands of suppliers, and we have robust supply chain oversight across our different business units. We do so directly and through third-party screening services, and we focus engagement efforts on suppliers deemed critical to our business. Since our suppliers, in turn, often rely on other companies, we work to understand the nature and risks related to the businesses they source from as well.

More recently, we have worked to consolidate these practices across our enterprise. Our approach is outlined in American's [Sustainable Supply Chain Policy](#), which we updated in July 2024. Our activities cover a broad range of suppliers, and examples include food safety inspections of caterers and audits of software-as-a-service providers to confirm security protocols.

American is developing a unified way to examine all third-party spending, which will improve visibility into our full supply chain and allow us to evaluate and improve upon our goals and policies as needed. Not surprisingly, in 2023, jet fuel was our largest operating expense after salaries, wages and benefits, and we engage our fuel suppliers on a wide range of environmental and social risks.



We outline our expectations for suppliers in American's [Standards of Business Conduct for Suppliers](#) and train team members on its contents. We updated these standards in July 2023. Team members with sourcing and procurement responsibilities receive additional job-specific training relevant to their roles. We also provide training for suppliers, particularly those in airport, ground handling and deicing services, to help develop their capabilities in mitigating risks.

Although we strive to partner with suppliers who share our standards, issues inevitably arise that require remediation. Some minor issues can be corrected by alerting the supplier to the problem. For more serious issues, such as those potentially impacting safety or security, we require suppliers to submit a corrective action plan that we can monitor for implementation. If the supplier cannot identify a suitable solution, we work directly with the supplier to improve its performance. We will terminate a business relationship if our efforts prove unsuccessful.

Looking ahead, we intend to expand our responsible sourcing efforts and disclosures on our progress. In response to shareholder feedback, our initial focus will be on providing enhanced reporting on workplace health and safety.

Strengthening our supplier diversity efforts

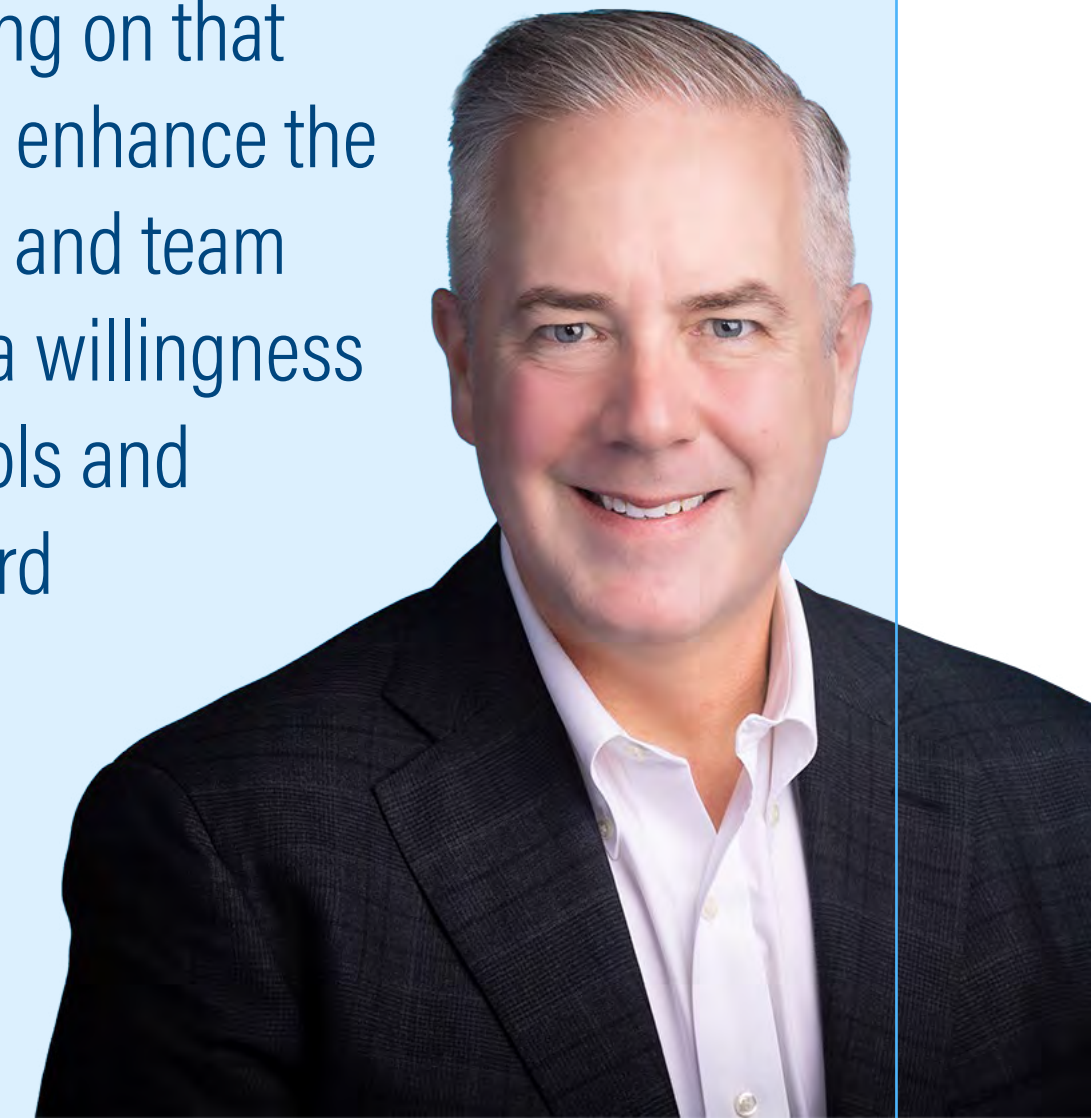
As part of ensuring a strong and resilient supplier base, American works to source from the broadest available marketplace to purchase the goods and services we need to run our business. This includes seeking to do business with small and diverse suppliers, which are important to our supply chain and can drive innovation, quality improvement and cost reductions. In 2023, our spending with more than 200 certified diverse suppliers (Tiers 1 and 2) increased by 7.4%, while our spending with over 1,000 small-business suppliers rose by more than 10% over 2022.

Our Supplier Diversity team is engaged with various organizations working to facilitate sourcing from qualified, diverse-owned businesses. For example, leaders from American serve on the boards of directors, as well as on the certification committees, of the regional councils of the National Minority Supplier Development Council and the Women's Business Enterprise National Council.



"In 2023, we released our Sustainable Supply Chain Policy, and we're building on that foundation to reduce risk and enhance the experience for our customers and team members. Doing so requires a willingness to examine our processes, tools and capabilities with an eye toward continuous improvement."

— **Dan Bartel**
Chief Procurement Officer



Respecting human rights

Although we believe that governments are primarily responsible for safeguarding human rights, we endeavor to conduct our business in a socially responsible and ethical manner consistent with human rights principles. Our approach to human rights is guided by international standards, and we respect and support the following:

- United Nations (U.N.) Guiding Principles on Business and Human Rights
- Organisation for Economic Co-operation and Development's Guidelines for Multinational Enterprises
- Core Conventions of the International Labour Organization (ILO)
- ILO's Declaration on Fundamental Principles and Rights at Work
- U.N. Universal Declaration of Human Rights

The updated [American Airlines Human Rights Statement](#), which our Board of Directors approved in May 2023, applies to all team members and contractors as well as our suppliers and other business relationships. We continually evaluate our operations and value chain to identify, assess and address human rights risks and to engage key stakeholders. This evaluation is carried out as part of American's overall assessment process of critical and significant suppliers for sustainability risks, as outlined in our Sustainable Supply Chain Policy.

Our Human Rights Statement complements our annually required team member training on the Standards of Business Conduct. We also provide a dedicated 24/7/365 EthicsPoint hotline for team members, suppliers and partners to report human rights concerns anonymously. American does not tolerate any retribution or retaliation against any individual who has, in good faith, sought advice or reported questionable behavior or a possible violation.

Combating human trafficking

American has long been committed to combating human trafficking, modern slavery and child exploitation. We conduct mandatory human trafficking awareness training for our frontline, customer-facing team members — including flight attendants, pilots and airport customer service representatives. This training is required for new hires and as part of our recurrent training programs. We also provide modern slavery training developed by TRACE International for team members with international purchasing responsibilities. Vigilance is key in fighting human trafficking and modern slavery, and we stand ready to help. Our team regularly updates our reporting and security processes with the latest information and best practices.

American has received recognition for our efforts, including a Pro Bono Service Award from the U.S. Government's Legal Services Corporation in January 2024. Nominated by Legal Aid of NorthWest Texas, we were praised for our role in "establishing and scaling a collaboration to help survivors of human trafficking obtain expungements and resolve other life-altering civil legal problems."

Our collaboration with government agencies, industry partners and nongovernmental organizations is an essential component of our human trafficking prevention program. For example, our Vice President at Phoenix Sky Harbor International Airport sits on the Governor's Council to Combat Human Trafficking in Arizona. The Council addresses human trafficking in the state through strategic and targeted human trafficking prevention and awareness efforts.



In January 2024, American team members participated in a training session along with others based at Ronald Reagan Washington National Airport. More than 100 aviation professionals attended.

Our partners in American's effort to combat human trafficking include the following:

PACT

This nonprofit works to protect every child's right to grow up free from child sexual exploitation and trafficking, through education, legislative advocacy and partnerships. American is a signatory to the PACT Tourism Child-Protection Code of Conduct. We have also donated AAdvantage® miles that will enable members of PACT's Survivors' Council to participate in meetings with members of Congress and other elected officials to share their expertise and recommendations to improve trafficking prevention legislation and policies. These individuals can also travel to legislative advocacy and community education events to tell their stories. [Learn more about PACT.](#)

It's a Penalty

This organization combats human trafficking, exploitation and abuse through educational campaigns during major sporting events around the globe. Through its work, It's a Penalty has helped protect more than 17,000 survivors of abuse, exploitation and trafficking, and prevented the victimization of many more.

Our team members have volunteered their time by joining It's a Penalty's latest Las Vegas Super Bowl campaign launch and supporting its advocacy efforts. American also promoted the organization's mission on our seatback and wireless entertainment platforms during the first two months of 2024. As with PACT, we have donated AAdvantage® miles to help facilitate trainings, awareness sessions and other initiatives that can benefit from air travel. [Learn more about It's a Penalty.](#)

The U.S. Department of Homeland Security (DHS) Blue Campaign

This national public awareness effort educates the public, law enforcement and industry partners about human trafficking. In early 2024, American's Professional Women in Aviation Employee Business Resource Group hosted human trafficking awareness sessions with either DHS or other partners at the following six locations: Dallas Fort Worth International Airport (DFW), Ronald Reagan Washington National Airport, Boston Logan International Airport, Phoenix Sky Harbor International Airport and London Heathrow Airport. [Learn more about the DHS Blue Campaign.](#)

New Friends New Life (NFNL)

This Dallas-based organization works to restore and empower formerly trafficked teenage girls and sexually exploited women and their children. According to NFNL research, Texas ranks second in the country for trafficking prevalence, with more than 300,000 victims annually statewide. By providing access to education, job training, financial assistance and mental health support, NFNL helps women and their children overcome backgrounds of abuse, addiction, poverty and limited opportunities. NFNL also joined American at DFW to train team members on signs of human trafficking and how to prevent it. [Learn more about NFNL.](#)

Texas Businesses Against Trafficking

This public-private awareness and prevention initiative is led by the Texas Secretary of State. [Learn more about Texas Businesses Against Trafficking.](#)

Our Legal team oversees the company's compliance with applicable domestic and international modern slavery and human trafficking laws. In June 2023, we published the annual update of American's [Modern Slavery and Human Trafficking Statement](#) to comply with the United Kingdom's Modern Slavery Act 2015 and Australia's Modern Slavery Act 2018.

"As the airline representative on the Governor's Council to Combat Human Trafficking in Arizona, I know American can lend a unique perspective to the fight against trafficking. The council is a prime example of how collaboration between the public and private sectors can help us reach our collective goals."

— **Sophia Philis-Ortiz**
American Airlines Vice
President, Phoenix Sky
Harbor International Airport



APPENDIX



Sustainability Accounting Standards Board (SASB) Index – Airline Industry Standard

SASB Code	SASB Metric	Disclosure Location or Response
GREENHOUSE GAS EMISSIONS		
TR-AL-110a.1	Gross global Scope 1 emissions	<ul style="list-style-type: none"> Addressing Climate Change — Our Carbon Footprint (page 15) Data Tables (page 72)
TR-AL-110a.2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	<ul style="list-style-type: none"> Addressing Climate Change (page 11) Addressing Climate Change — Our Climate Goals and Progress (page 13) Addressing Climate Change — American's Directional Pathway to Net Zero in 2050 (page 12) Data Tables (page 72)
TR-AL-110a.3	(1) Total fuel consumed, (2) percentage alternative, and (3) percentage sustainable	<ul style="list-style-type: none"> Data Tables (page 73)
LABOR PRACTICES		
TR-AL-310a.1	Percentage of active workforce covered under collective bargaining agreements	<ul style="list-style-type: none"> Supporting Our Team Members (page 41)
TR-AL-310a.2	(1) Number of work stoppages and (2) total days idle	American Airlines did not have any union work stoppages or idle days in 2023.
COMPETITIVE BEHAVIOR		
TR-AL-520a.1	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	In 2023, we had no monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations. We also had no confirmed cases of corruption or bribery during the year.
ACCIDENT AND SAFETY MANAGEMENT		
TR-AL-540a.1	Description of implementation and outcomes of a Safety Management System	<ul style="list-style-type: none"> Operating Safely (page 31) Operating Safely — Our Safety Management System (page 31) Data Tables (page 75)
TR-AL-540a.2	Number of aviation accidents	<ul style="list-style-type: none"> Data Tables (page 75)
TR-AL-540a.3	Number of governmental enforcement actions of aviation safety regulations	<ul style="list-style-type: none"> Data Tables (page 75)

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Task Force on Climate-Related Financial Disclosures (TCFD) Index

	TCFD Recommended Disclosure	Disclosure Location
GOVERNANCE		
Disclose the organization's governance around climate-related risks and opportunities.	<ul style="list-style-type: none"> Describe the Board's oversight of climate-related risks and opportunities. Describe management's role in assessing and managing climate-related risks and opportunities. 	<ul style="list-style-type: none"> Sustainability Strategy — Climate-Related Governance (page 8)
STRATEGY		
Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy and financial planning where such information is material.	<ul style="list-style-type: none"> Describe the climate-related risks and opportunities the organization has identified over the short, medium and long term. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario. 	<ul style="list-style-type: none"> Addressing Climate Change (page 11) Appendix — Analysis of Climate-Related Risks and Opportunities (page 61)
RISK MANAGEMENT		
Disclose how the organization identifies, assesses and manages climate-related risks.	<ul style="list-style-type: none"> Describe the organization's processes for identifying and assessing climate-related risks. Describe the organization's processes for managing climate-related risks. Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management. 	<ul style="list-style-type: none"> Appendix — Climate-Related Risk Assessment (page 61)
METRICS AND TARGETS		
Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	<ul style="list-style-type: none"> Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process. Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas emissions, and the related risks. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets. 	<ul style="list-style-type: none"> Addressing Climate Change — Our Climate Goals and Progress (page 13) Addressing Climate Change — American's Directional Pathway to Net Zero in 2050 (page 12) Addressing Climate Change — Our Carbon Footprint (page 15) Data Tables (page 72)

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Climate-Related Risks and Opportunities Analysis

Through our existing enterprise-wide risk management process, American monitors and manages a broad range of strategic, financial and operational risks, including risks associated with climate change. To inform our understanding of the climate risk landscape, we conducted an initial forward-looking climate scenario analysis in 2020 that focused on identifying and assessing the physical and transition climate-related risks and opportunities facing the company over the short, medium and long term. In 2022 and early 2023, we continued to build on this by undertaking a more detailed analysis of these risks and opportunities. This included adding 1.5°C scenarios into our assessment, as well as expanding the number of sites included in the physical risk evaluation, exploring geographic regions around the world in which we operate that are projected to experience greater impacts, and examining more closely the effects of potential changes in policy, technologies and markets.

The insights from this process, conducted in alignment with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), continue to inform our climate strategy and are enabling us to more deeply integrate climate risk analysis into our ongoing risk management and business, strategy and financial planning processes.

Physical Risk Assessment

We conducted a climate risk screening in 2022 of approximately 400 American Airlines facilities and suppliers, including airports, cargo facilities, data centers, maintenance facilities, jet fuel supplier plants, offices and training centers around the world. For each of these sites, we assessed the risk associated with temperature, coastal flooding, fluvial (river) flooding, tropical cyclones (Eastern Atlantic basin only), water stress, drought and wildfire.¹ Our analysis was supported by The Climate Service, a leading provider of climate science and analytics for business. In early 2023, we supplemented that analysis by adding an assessment of physical risks under a 1.5°C scenario. (See box at right for information on the scenarios.)

The results of our analysis refined our focus on 12 strategically important sites for our company, which include hub airports that form the foundation of our network; our largest maintenance facility; our corporate headquarters, which is also home to our integrated operations center and primary training facility; and a key fuel supplier. For each site, we modeled various scenarios to assess the exposure and implications of the projected key physical hazards in the 2020s, 2030s and 2050s. Results from this analysis were included in our [2022 Sustainability Report](#).

We have also gathered information on adaptive capacity — meaning the potential for resilience measures to manage climate-related impacts — for each of the locations, and we are engaging key stakeholders across the company to discuss the identified risks and how we can better prepare our assets.

Transition Risks and Opportunities Assessment

We continue to deepen and improve our analysis of American's exposure to transition risks related to climate change, including the policy and legal, technology, market, reputation and operational risks — as well as opportunities — that could arise from the transition to a low-carbon or carbon-constrained economy.

In early 2023, we updated our transition risk and opportunity assessment using the latest available scenarios developed by the International Energy Agency (IEA): the Stated Policies Scenario (STEPS) and Net Zero Emissions by 2050 Scenario (NZE). Consistent with the ambition of the Paris Agreement, NZE sets out a narrow but achievable pathway for the global energy sector to reach net zero emissions by 2050. We chose to use NZE for our analysis because it is a 1.5°C pathway, and also because it includes aviation-specific narratives and milestones. (See box below for more information on the climate scenarios we use for both our transition and physical risk assessments.)

Climate Scenarios*

Scenario analysis is not a prediction or forecast of future events, but rather a tool to explore and highlight central elements of possible futures. American uses multiple scenarios for our analysis. In 2023, we updated our analysis to include 1.5°C scenarios for assessment of both physical and transition risks.

Due to the distinct nature of physical and transition risks, standard practice is to use different scenarios for analyzing the two different types of risks. For analysis of physical risk, we use Representative Concentration Pathway (RCP) scenarios, as recommended by TCFD, which were developed for use in Intergovernmental Panel on Climate Change assessments. For analysis of transition risk, we use the IEA's World Energy Outlook (WEO) STEPS and NZE scenarios. For our most recent analysis, we used 2030 and 2050 time frames, consistent with our initial 2020 analysis.

	PHYSICAL RISKS	TRANSITION RISKS
1.5°C scenarios	RCP 2.6	IEA 2022 WEO Net Zero by 2050 (NZE)
Warming projections	1.5°C by 2100	1.5°C by 2100
Medium-emissions scenario	RCP 4.5	N/A
Warming projections	1.7°–3.2°C by 2100	N/A
High-emissions scenarios	RCP 8.5	IEA 2022 WEO Stated Policies Scenario (STEPS)
Warming projections	3.2°–5.4°C by 2100	Approximately 2.6°C by 2100

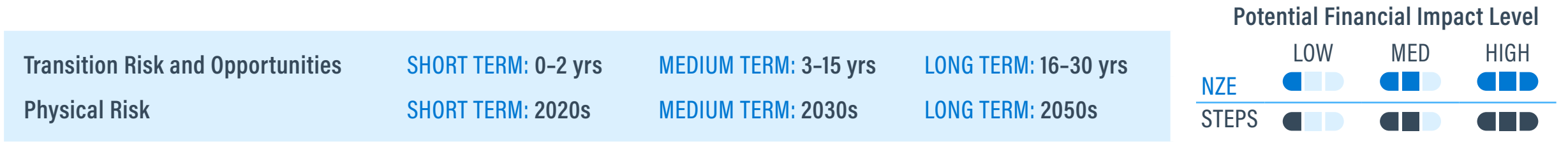
* Climate scenario analysis is an emerging discipline and relies on various inputs and data from third-party sources and complex assumptions. We anticipate expanding and updating our analysis as our company and operating conditions change and as the science of climate change and our understanding of its potential impacts evolve. Modeling that includes estimates of future data and predictions of complex outcomes can be imprecise and subject to change. As such, the results presented are representative of our current understanding and are subject to change.

¹ American is reviewing the methodology for wildfire projections, which currently do not account for land use or land cover. References to wildfire risk are, therefore, omitted from this report.

The transition scenarios compare different possible versions of the future and the levers and actions that produce them, with the aim of stimulating insights about the future of global energy. We used these scenarios to explore elements of the organizational resilience of American's own business operations as well as the resilience of our value chain, such as upstream supplier reliability during extreme weather events and sustainable aviation fuel (SAF) production capacity. As part of the scenario analysis, we also looked at downstream customer behavior changes and how American's climate ambitions might capture these changes and manifest them as opportunities.

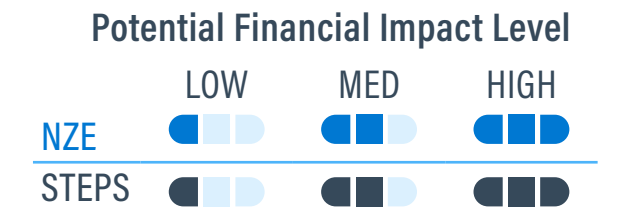
The table that starts below summarizes the key transition risks and opportunities identified, our assessment of the potential impact level under the NZE and STEPS scenarios, along with American's mitigation strategies. It also summarizes key physical risks and mitigation strategies we have identified.

Analysis of Climate-Related Risks and Opportunities*

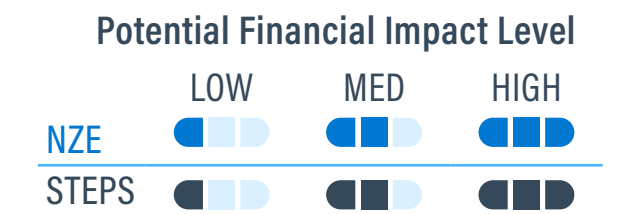








Risk Type	Climate-Related Risk Definition	Potential Financial Impact	Short Term	Medium Term	Long Term	Mitigation Strategy
Transition Risks	Policy and legal	The risk from existing and emerging regulation and legislation aimed at addressing climate change. This might include:				
	Increased pricing of GHG emissions, including policies to require airlines to purchase lower-emission alternatives to conventional jet fuel or to otherwise compensate for GHG emissions	<p>New carbon taxes could increase the price of jet fuel, which would raise our operating costs and potentially reduce demand for air travel.</p> <p>Similarly, policies that mandate the uplift of SAF at airports, such as have been enacted in the U.K. and EU and are under consideration in other jurisdictions, will raise our operating costs and potentially reduce demand for travel. Policymakers in the U.S. could enact similar policies or policies with similar effect.</p> <p>ICAO has adopted CORSIA, which will require us to mitigate the growth of GHG emissions associated with a significant majority of our international flights. While the U.S. government participated in CORSIA's voluntary phase (2021-23), it has not yet enacted policies to govern participation of U.S. carriers. While we expect to incur costs to comply with CORSIA over the period 2024-35, those costs are uncertain, primarily due to significant uncertainty with respect to the future growth of covered GHG emissions, the supply and price of eligible carbon credits and the development of the market for eligible renewable fuels.</p>				<p>We are developing a robust and multifaceted long-term climate change strategy aimed at driving progress toward ambitious goals.</p> <p>We monitor emerging legislation and regulations around the world to understand and prepare for the impact of the risks and opportunities for our business.</p> <p>We continue to seek efficiency gains in our operations, pursue opportunities to employ SAF and seek to employ lower-emission or zero-emission technologies as they become available on a commercially reasonable basis.</p> <p>We continue to advocate for CORSIA as the single global approach to addressing emissions from international aviation.</p>

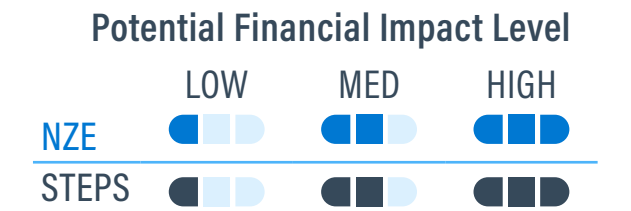
* The potential financial impacts to American described herein could result in decreased revenues or increased cost depending on the specific risk type. We are not able to reasonably predict the extent of such financial impact.



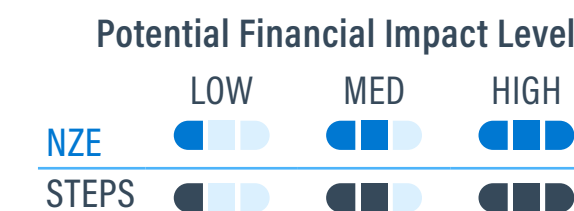
Risk Type	Climate-Related Risk Definition	Potential Financial Impact	Short Term	Medium Term	Long Term	Mitigation Strategy
Policy and legal	Inadequate development of public policies to support aviation's transition	<p>The U.S. aviation industry and the U.S. government have set ambitious goals to expand SAF production and use. The 2022 Inflation Reduction Act (IRA) included the nation's first SAF-specific tax incentives, which took effect in 2023 and expire in 2028.</p> <p>American has SAF offtake agreements related to production from facilities that are planned but not yet operational, and which may use technology that has not been proven at commercial scale. If the IRA credits are not extended or are otherwise not sufficient in attracting significant investment in the SAF industry, we may not be able to source the volume of SAF sufficient to meet our stated goals and on favorable economic terms.</p> <p>Governments also provide grant funding for SAF research and commercialization, and the reduction in cost needed to help the SAF market scale could slow if those policies are not continued over time.</p> <p>Policies at the state level in the U.S. have been important in reducing the cost premium for SAF over the cost of conventional jet fuel and have enabled American to purchase SAF for delivery, particularly in California. More states are considering adoption of similar policies. If more states do not adopt policies to encourage the delivery or production of SAF, the availability of and SAF may be too constrained and the cost of SAF may be too high for us to meet our stated goals.</p>				<p>We work individually and with a broad group of stakeholders to advocate with policymakers at all levels of government to adopt policies that will accelerate our industry's transition to lower-carbon alternative jet fuels. For example, at the federal level in 2023 and 2024, we worked with stakeholders across several industries to create a new coalition that is lobbying to enhance and extend the SAF-specific tax incentives in the IRA. American individually and in concert with Airlines for America (A4A) also advocates for continued funding for federal research programs related to SAF.</p> <p>At the state level, we work with policymakers to identify policy solutions that can help scale decarbonization technologies for us and our industry. In 2023, for example, we were successful in our work with government officials and industry partners in Illinois in securing enactment of the state's first SAF tax incentive — a significant development in a state where American has an important hub. We continue our work with coalitions in other states to enact similar policies.</p> <p>And while policy support is vitally important to our industry's transition, we recognize that private sector action must also play a role. As an anchor partner to Breakthrough Energy Catalyst, American has committed to invest \$100 million to advance a set of clean energy technologies — including SAF — that are critical to a zero-carbon economy. This innovative collaborative effort is focused on helping these technologies access the capital they need to reach commercial scale. In 2023, we entered into a firm, long-term offtake agreement with Infinium for SAF from Project Roadrunner, Infinium's first-of-a-kind commercial-scale PtL eFuels facility. Our agreement is a critical enabler of further investment, from Catalyst and others, in Project Roadrunner.</p>



Risk Type	Climate-Related Risk Definition	Potential Financial Impact	Short Term	Medium Term	Long Term	Mitigation Strategy
Transition Risks	Policy and legal Increased disclosure reporting obligations and related exposure to fines or penalties	We could incur fines or penalties in relation to our compliance with new or potential legislation and regulations globally. For example, the emergence of climate-related disclosure requirements globally, including the U.S. Securities and Exchange Commission climate disclosure rules, climate disclosure laws and forthcoming regulations in California, the E.U.'s Corporate Social Responsibility Directive and new or potential climate-related requirements in other jurisdictions, are likely to increase compliance risk and reporting costs.				We continue to monitor regulatory developments and seek to adhere to best practices for expected climate-related disclosure requirements. We have aligned our reporting with the recommendations of the TCFD — which is the basis for some of the new and emerging disclosure requirements globally — since 2019. In 2023 and 2024, we engaged our independent accountant, KPMG LLP, to provide assurance on certain emissions data. For the results of KPMG's work on certain of American's 2023 results, see the Statements and Notes on Greenhouse Gas Emissions and Select Environmental Indicators, which starts on page 82 .
	Exposure to litigation related to how we describe our climate change goals, strategy and progress	Expectations from our stakeholders regarding sustainability continue to evolve, and our sustainability commitments and risk assessments are long-term in nature. Despite our efforts to communicate in a clear and transparent manner, litigation related to "greenwashing," incomplete, inconsistent or inadequate disclosures provided in response to the climate-related disclosure requirements discussed above or other disclosure requirements that may emerge or similar claims could arise, given the forward-looking and long-term nature of our climate strategy.				American recognizes the importance of communicating our climate change goals, strategy and progress with transparency and accuracy to our stakeholders. Our sustainability communications are reviewed with a goal to provide appropriate context and information regarding our sustainability strategy and initiatives, and we maintain comprehensive information on these matters on the sustainability section of our website. Members of our Climate Change Steering Committee provide oversight of American's climate disclosures.

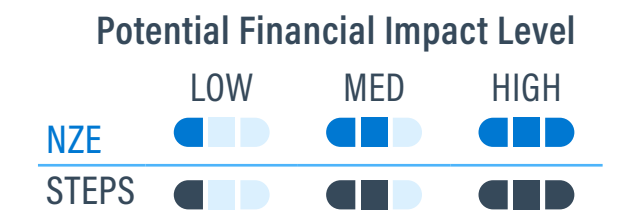


Risk Type	Climate-Related Risk Definition	Potential Financial Impact	Short Term	Medium Term	Long Term	Mitigation Strategy
Technology	The risk from emerging technologies — or technologies that fail to emerge — aimed at supporting the global low-carbon transition. This might include:					
	Unexpected new barriers and complications may be encountered that slow the development of new technologies required to reduce our emissions	<p>New SAF technologies that are expected to produce significant volumes of SAF by 2030 and beyond may be slow to develop, or may fail to commercialize, slowing the growth of SAF volumes available for sale at commercially-reasonable prices.</p> <p>Some new SAF technologies under development use widely available feedstocks. If these new technologies fail to develop or are slow to develop, the SAF market will continue to rely on processes that have limited feedstock supply which will limit the potential growth of the SAF market.</p>				<p>American individually and in concert with A4A advocates for continued funding for federal research programs related to expanding SAF pathways and feedstocks.</p> <p>We are also supporting the development of new SAF pathways through our investment in Breakthrough Energy Catalyst. Our long-term offtake agreement with Infinium, was entered into with the purpose of enabling investment from Catalyst and others in a PtL SAF project, for example.</p>
	Substitution of existing products and services with lower-emission options	<p>Our fleet renewal program has given us the youngest mainline fleet among U.S. network carriers, but there is a risk we lose this advantage over the long term as other carriers update their fleets with the latest generation of aircraft.</p> <p>The emerging focus on hydrogen propulsion system modifications for aircraft may reduce investment in the next generation of conventionally-powered aircraft, which could curtail the 15%–20% efficiency improvements typically seen with each new generation.</p>				<p>In the last decade, American has undertaken the most extensive fleet renewal effort in the history of our industry. As of year-end 2023, our mainline fleet had an average age of 12.9 years — the youngest among U.S. network carriers.</p> <p>In 2023, we took delivery of 17 Boeing 737 MAX and four Boeing 787 Dreamliner aircraft. We also entered into an agreement to purchase 10 Airbus A321neos from Alaska Airlines, and many of those aircraft are already flying within our fleet, bringing us closer to our goal to fly 30% of our available seat miles (ASMs) with latest-generation, more fuel-efficient aircraft in 2025.</p>
	The upfront investment needed to transition to lower-emission technology in the future may be onerous	<p>Particularly with regard to fleet and fuel logistics, there is uncertainty about where, when and to what extent American and our supply chains should invest to deliver lower-carbon solutions — such as SAF and green hydrogen — to airports. Currently, SAF in production today must be blended with conventional jet fuel, which requires blending infrastructure. Aircraft and engine manufacturers are working on the scientific testing necessary to gain regulatory approval to reduce and potentially eliminate the blending requirement, which — if successful — would in turn reduce the investment needed for blending infrastructure.</p>				<p>American works with A4A to understand and develop plans to mitigate the risk in building the logistics needed to deliver SAF to airports. We also work with relevant ASTM committees to understand the progress towards, and technical barriers to, reducing the existing blend requirement for SAF.</p>



Risk Type	Climate-Related Risk Definition	Potential Financial Impact	Short Term	Medium Term	Long Term	Mitigation Strategy
Market	The risk from shifting supply and demand as economies react to climate change. This might include:					
	Changing customer behavior	<p>Business customers may continue to choose to use alternatives to travel, such as virtual meetings and workspaces, as their companies work to reduce their Scope 3 emissions.</p> <p>Incorporation of carbon emissions data into third-party booking tools poses a potential risk if American's flights do not display competitively on that metric for a specific market.</p> <p>As customer demand shifts and economies move to low-carbon alternatives, the collateral we use to secure loans — in the form of aircraft, spare parts and airport slots — could lose value.</p> <p>Greater development of high-speed rail in markets now served by short-haul flights could provide passengers with lower-carbon alternatives to flying.</p>				<p>In the last decade, American has undertaken the most extensive fleet renewal effort in the history of our industry. As of year-end 2023, our mainline fleet had an average age of 12.9 years — the youngest among U.S. network carriers.</p> <p>We have also introduced new tools to help our business customers manage their emissions from air travel, including GHG footprint reports opportunities to purchase SAF emissions reductions. We intend to integrate other sustainability practices into the products, services and experiences we offer.</p> <p>We're also leveraging intermodal solutions to provide more customers with access to hub airports and global network connectivity, while also reducing individual car trips and related GHG emissions. Since 2022, American has operated luxury motorcoach service to three airports in Pennsylvania and New Jersey within 100 miles of our Philadelphia, PA (PHL) hub. All of these markets have in the past have been served with small aircraft. More recently, we announced the expansion of this innovative service to two additional markets in Pennsylvania and Delaware. At these airports, American-ticketed passengers park and clear security at their local community airport, board a luxury motorcoach operated by our partner, Landline, and are transported directly to a gate in PHL where they can seamlessly connect onward without the need for rescreening.</p>
	Increased cost of raw materials	<p>Carbon pricing and other policies designed to reduce the use of fossil fuels, alone or in combination with geopolitical and economic changes, could negatively impact the availability of conventional jet fuel and the reliability of the network that delivers jet fuel to airports. Both could result in higher costs to the airline industry and to American.</p> <p>SAF is also subject to challenges with regard to the inputs for its production processes. Today's HEFA SAF is made using feedstocks that can be used to make other fuels, and competition for these feedstocks could raise prices and slow the development of the SAF market.</p>				<p>We source jet fuel from multiple suppliers and consider various supply routes to build resilience. Local suppliers with shorter supply chains play a key role in diversifying our supply chain risks. We work closely with airports and suppliers to bring in new entrants, enhancing competition and reliability of supply. Additionally, we invest in building storage tanks both on and off airport properties and maintain adequate fuel inventory, enhancing our capacity to manage disruptions. We also seek ways to increase pipeline space utilization, supporting the increased movement of both fossil fuels and sustainable fuels.</p> <p>With regard to SAF, American advocates for the federal research into new feedstocks and SAF pathways that have the potential to reduce the SAF industry's reliance on HEFA feedstocks. American's offtake agreement with PtL producer Infinium is another way we are working to expand and accelerate the kinds of SAF that are available.</p>

Transition Risks



Risk Type	Climate-Related Risk Definition	Potential Financial Impact	Short Term	Medium Term	Long Term	Mitigation Strategy
Reputational	The risks of damage to the brand and loss of customer base from shifting public sentiment about aviation's contribution to climate change. This may include:					
	Shifts in customer preferences	<p>Growing recognition among consumers that climate change is a serious danger may mean some customers choose to fly less frequently or fly on an airline they perceive as more sustainable.</p> <p>Investors, customers and other stakeholders may demand more aggressive sustainability goals and practices from our industry.</p>				<p>We are developing a climate change strategy aimed at driving progress toward our ambitious climate goals, including our 2035 SBTi target and long-term net zero 2050 goal.</p> <p>We intend to continue our efforts to reduce carbon emissions using the various levers available to us at this time — including consideration of how to include modern aircraft, efficient technology, sound operational practices and sustainable fuels — in our climate mitigation strategy. We are looking to embrace new low-carbon levers as they become available and to accelerate the availability of those levers where we can.</p> <p>We continue to have transparent sustainability disclosures that educate customers, team members, suppliers, investors and the general public on the steps American is taking to reduce our impact on the climate and minimize our overall environmental footprint. We also regularly solicit feedback from these stakeholders to inform our processes and operations.</p>
	Slower than expected progress in development of new technologies that will allow us to reduce emissions in our operations and meet our climate goals	We have published a number of sustainability-related targets and goals, including with respect to reducing our climate impact. These goals are often long-term in nature and rely on the future availability and efficacy of technologies that either do not yet exist or are not yet commercially viable. Our ability to meet these targets depends on a number of factors outside our control, including for example the work of engine and airframe manufacturers, SAF producers and other industry participants, to develop and commercialize these technological solutions.				<p>We work with key stakeholders in industry and government to identify barriers to development of the low-carbon technologies we will need to reduce emissions in our operations and opportunities for collaboration that have the potential to speed that development. For example, in 2023, we participated in a first-of-its-kind study led by Google Research and Breakthrough Energy to help advance the science on contrail avoidance. The study, based on a small set of flights where American pilots used AI predictions to avoid creating a contrail, reduced contrail formation by 54%, as measured by distance, compared to flights where pilots did not use the predictions. The study was aimed at helping to inform future tests of contrail avoidance.</p>

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Risk Type	Climate-Related Risk Definition	Potential Financial Impact	Short Term	Medium Term	Long Term	Mitigation Strategy
Physical Risks	Acute	Increasing severity of weather events				
		Severe weather events may result in extremely high temperatures at which our aircraft and infrastructure are not certified to operate, or may operate with less efficiency. For example, extremely high temperatures may: <ul style="list-style-type: none"> Make it difficult to cool aircraft to a comfortable temperature for customers and team members. Exceed the maximum allowable temperature at which our aircraft are certified by the FAA to operate. Interrupt our operations by causing buckling on runways and taxiways and other infrastructure damage. Such damage in turn can increase operational and repair costs for airports — costs that would be passed through to us. 				We continue to monitor temperatures at airports exposed to acute temperature risk and work to mitigate projected impacts from higher temperatures. For example, we are investing in additional ground cooling and upgrades to gate-based cooling systems, and we are engaging our aircraft manufacturers so that our aircraft are able to operate safely under a range of operational conditions. Over the next five years, we intend to incorporate the projected impacts of climate change into design standards for physical assets, capital improvement plans, disaster management, emergency response and scheduling.
		Increased frequency and intensity of hurricanes at Miami International Airport and coastal flooding at JFK International Airport place our team members, customers, operations and infrastructure at risk in these locations. Recovery from these events could result in substantial costs related to, among other things, canceled flights, airport closures and damaged assets.				We are investigating options to mitigate the impacts of hurricanes and coastal flooding. We also review and update our emergency response plans annually, which include contingency plans for extreme weather and other unforeseen [weather-related] situations.
		Flooding from intense precipitation at major hubs in Charlotte, North Carolina, Los Angeles and London can interrupt critical expansion strategies. Increases in precipitation can result in excess loading of stormwater infrastructure designed for lesser flows, increasing the risk of flooding. Increases in the severity of storms can cause flooding, which can lead to infrastructure wear.				To mitigate the impact of flooding on infrastructure, we are developing plans to incorporate the projected impact of increased precipitation into design standards for physical assets, capital improvement plans, disaster management and emergency response, master plan development and early warning systems.
	Cyclonic events in the Gulf of Mexico region — where almost 50% of U.S. crude oil refining capacity is located — can disrupt fuel supplies. A significant portion of our fuel is sourced from Gulf of Mexico refineries and is stored in, or must be transported from, the region, which poses a risk to our operations if those facilities are disabled for any period of time. Pipelines and storage terminals may also be at risk from extreme weather. Terminals may be supplied via ocean-going vessels if refineries are shut down, but there are no viable alternatives to move the amount of fuel stranded if pipelines are shut down due to flooding or other hurricane impacts. Cyclonic events may also adversely impact our employees, as well as pose risks to the electrical grid, both of which would hinder our ability to operate.				Our strategies to mitigate this risk include sourcing our fuel from multiple regions and maintaining a reserve of fuel at our hub airports. The number of days of operations held in these reserves varies by airport, depending on the risk of extreme weather, the number of pipelines that serve the airport and other factors. We monitor closely the changing likelihood of severe weather and adjust these reserves accordingly. We also take steps, such as procuring backup generators to maintain electricity during disruptions, to mitigate weather-related risk. Another strategy to manage this risk is our work to expand the commercial availability of SAF, which has the potential to further diversify fuel sources and supply.	

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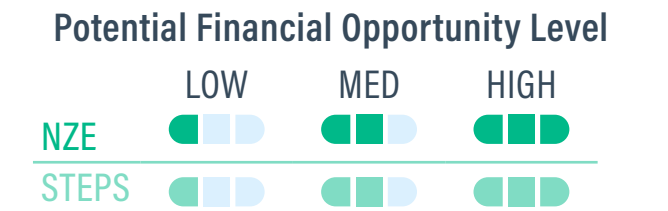
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Risk Type	Climate-Related Risk Definition	Potential Financial Impact	Short Term	Medium Term	Long Term	Mitigation Strategy
Chronic	Longer-term changes in weather patterns	<p>Sea-level rise in Miami, Los Angeles, Philadelphia and New York may require hardening of the airports in these locations, or even relocation.</p> <p>Because high air temperatures reduce air density, chronically high temperatures at some of our hub airports may require restricting the availability of seats for sale in certain markets, the use of aircraft with higher engine thrust and potentially reduced schedules.</p> <p>Extreme heat poses risk to our employees who work outdoors at airports and maintenance facilities.</p>				<p>Given the vulnerability of these key airports to flooding from sea-level rise, and the resulting impact to business continuity, we intend to investigate options to mitigate the impacts of sea-level rise, which may include fortifying the shoreline around those facilities and, as a last resort, considering options for relocation to areas further inland. The cost/benefit of available options may lead to adjustments to our network. We also plan to engage with policymakers and airport authorities to explore paths to greater resiliency.</p> <p>Over the next few years, we plan to incorporate the projected impacts of climate change into aircraft purchasing plans, routing and scheduling. We also plan to work with airframe and engine manufacturers to develop aircraft that meet the technical specifications required for operation at airports with sustained high temperatures.</p> <p>We have a number of context and site-specific mitigation plans in place to mitigate the risks posed by extreme heat on our employees and operations. For instance, we have a comprehensive heat risk mitigation policy designed to protect workers in instances of extreme temperatures, and we regularly train staff on warning signs of heat stroke and similar conditions. In affected locations, such as Phoenix and Dallas-Fort Worth, we provide shade and cooling stations, and we also run hydration programs that deliver water and juice to employees at outdoor work locations throughout the day.</p> <p>We adjust aircraft operations in events of extremely high temperatures that could affect takeoff and landing, especially in airports such as Phoenix.</p> <p>Moreover, we continue to update our processes at our corporate headquarters in Texas to respond to extreme weather, including unusually cold winters or storms that could significantly impact employee safety and our operations.</p>

Physical Risks



Opportunity Type	Potential Financial Impact	Short Term	Medium Term	Long Term	Realization Strategy
Resource efficiency	Reduce fuel costs by continuously modernizing our fleet with more efficient aircraft and operational improvements.				<p>We have the youngest mainline fleet among U.S. network carriers, and in 2023, we took delivery of 17 Boeing 737 MAX and four Boeing 787 Dreamliner aircraft. We also entered into an agreement to purchase 10 Airbus A321neos from Alaska Airlines, and many of those aircraft are already flying within our fleet, bringing us closer to our goal to fly 30% of our ASMs with latest-generation, more fuel-efficient aircraft in 2025.</p> <p>We also pursue measures to improve operational efficiency, including further strengthening our fuel conservation management and oversight. We plan to also continue to advocate with policymakers for reform of the nation's airspace system, which has the potential to reduce GHG emissions and other environmental impacts from aviation.</p>
Energy resources	Shift to increasing supply of SAF, reducing our exposure to the cost of growing carbon regulation and diversifying our fuel supply over the long term.				<p>In 2023, we used more than 2.7 million gallons of SAF on our flights, which is less than 1% of our total fuel use but one we are working to grow over time.</p> <p>We continue to explore offtake agreements with new SAF suppliers, which we expect to help us diversify our fuel supply chain and mitigate our risk from reliance on existing petroleum jet fuel suppliers.</p>
Products and services	Attract travelers with a preference for low-carbon travel, including business travelers interested in reducing their carbon footprint by choosing flights operated with new, more efficient aircraft.				<p>Through our fleet renewal program, we have taken delivery of what are currently the most fuel-efficient aircraft in their respective classes: the Boeing 737 MAX and Airbus A321neo for narrowbodies and the Boeing 787 Dreamliner for widebodies. Our goal is to fly 30% of our ASMs with these aircraft models in 2025. The goal of combining a modern fleet with greater volumes of SAF over time is to give those interested customers lower-carbon options.</p>
Markets	Create new market opportunities that will yield GHG emissions savings and energy-efficiency improvements.				<p>We continue to explore market-based solutions — such as the SAF certificate program we first piloted in 2021 to enable our corporate customers to reduce their Scope 3 GHG emissions from business travel — that provide financial and GHG emissions reduction opportunities. For instance, on the basis of our 2023 offtake agreement with SAF producer Infinium, we are working to transfer the associated Scope 3 emissions reductions from the Infinium SAF to Citi, enabling it to reduce a portion of its Scope 3 GHG emissions associated with employee business travel.</p>

Financial Performance*	2023	2022	2021
REVENUE			
Passenger	\$48,512	\$44,568	\$26,063
Cargo	812	1,233	1,314
Other	3,464	3,170	2,505
Total operating revenue	52,788	48,971	29,882
Total operating expenses	49,754	47,364	30,941
Operating income (loss)	3,034	1,607	(1,059)
Income tax provision (benefit)	299	59	(555)
Net income (loss)	822	127	(1,993)
Basic earnings (loss) per share	1.26	0.20	(3.09)
Cash dividends declared per common share	—	—	—

* In millions of U.S. dollars, except per-share amounts.

Operational Performance	2023	2022	2021
MAINLINE			
Revenue passenger miles (millions)*	209,692	191,519	136,512
Available seat miles (millions)**	249,822	229,922	182,189
Departures (thousands)	1,145	1,052	870
Passenger load factor (percent)***	83.9%	83.3%	74.9%
REGIONAL (INCLUDES CONTRACTED REGIONAL CARRIERS)			
Revenue passenger miles (millions)*	22,234	24,105	25,026
Available seat miles (millions)**	27,901	30,304	32,346
Departures (thousands)	855	903	955
Passenger load factor***	79.7%	79.5%	77.4%

Note: American uses miles, rather than kilometers, for our operational data reporting in the SASB metrics.

* Revenue passenger mile (RPM): A standard measure of passenger volume. One RPM represents one passenger flown one mile.

** Available seat mile (ASM): A standard measure of available seat capacity. One ASM represents one seat flown one mile.

*** Passenger load factor: The percentage of available seats that are filled with revenue passengers and weighted by miles flown.

Operational Performance	2023	2022	2021
On-time performance*	78.9%	77.3%	81.6%
Completion factor**	98.9%	97.3%	98.1%

Mishandled Baggage Rate	2023	2022	2021
By year	7.61	8.78	7.63

* Percentage of reported flight operations arriving less than 15 minutes after the scheduled arrival time.

** Percentage of scheduled flight operations completed.

Environmental Performance		2023	2022	2021
DIRECT AND INDIRECT GHG EMISSIONS				
Scope 1 Emissions (thousands of metric tons of CO₂e)				
SASB Metrics	Scope 1 emissions — all sources	37,533	34,629	28,825
	– Jet fuel emissions*	37,322	34,410	28,427
	– Emissions associated with SAF (CH ₄ and N ₂ O)	0.20	0.16	0.08
	– Diesel emissions	38	39	36
	– Gasoline emissions	43	46	48
	– Liquid propane gas emissions	0.7	0.6	0.3
	– Heating oil emissions	0.07	—	9
	– Natural gas emissions	79	79	68
	– Purchased CO ₂ e	50	54	237
Biogenic Emissions (thousands of metric tons of CO₂)				
Emissions associated with biogenic fuel emissions (CO ₂)	28.1	27.2	13.4	
Scope 2 Emissions (thousands of metric tons of CO₂e)				
Scope 2 location-based emissions	189	206	243	
Scope 2 market-based emissions	126	126	183	
Scope 3 Emissions (thousands of metric tons of CO₂e)				
Scope 3 emissions — all categories	14,289	13,767	12,907	
– Category 1 (purchased goods and services)	2,033	1,856	2,031	
– Category 2 (capital goods)	299	303	296	
– Category 3 (fuel and energy-related activities)	7,775	7,350	6,074	
– Category 4 (upstream transportation and distribution)	2,867	3,478	3,771	
– Category 5 (waste generated in operations)	2	2	2	

Environmental Performance		2023	2022	2021
DIRECT AND INDIRECT GHG EMISSIONS (CONTINUED)				
Scope 3 Emissions (thousands of metric tons of CO₂e) (continued)				
– Category 6 (business travel)		119	94	75
– Category 7 (employee commuting)		240	232	210
– Category 8 (upstream leased assets)		21	22	43
– Category 9 (downstream transport)		18	18	14
– Category 15 (investments)		915	412	392
OTHER EMISSIONS				
Aircraft Emissions (metric tons from landing/takeoff cycle)				
Nitrogen oxides (NO _x)		19,070	17,773	15,563
Hydrocarbons (HC)		852	847	573
Carbon monoxide (CO)		10,339	9,825	8,271
Ground Emissions From Reporting Facilities (metric tons)				
Carbon monoxide (CO)		39.3	41.4	46.0
Nitrogen oxides (NO _x)		63.1	66.3	61.6
Sulfur oxides (SO _x)		2.3	2.2	1.7
Volatile organic compounds (VOC)		97.2	90.0	76.8
Particulate matter (PM)		7.8	5.5	5.3
Other Emissions (metric tons)				
Ozone-depleting substances		5.6	0.5	1.1

■ Examined by independent accountant KPMG LLP, as described in its report starting on page 83. The 2023 Scope 1 emissions and biogenic emissions data are presented in accordance with the GHG Protocol, in the Greenhouse Gas Emissions Statement for American Airlines Group Inc. and as described in Note 2 on page 85.

■ Reviewed by independent accountant KPMG LLP, as described in its report starting on page 83. The 2023 Scope 2 emissions (market and location-based) are presented in accordance with the GHG Protocol, in the Greenhouse Gas Emissions Statement for American Airlines Group Inc. and as described in Note 2 on page 85.

* Jet fuel emissions represents emissions from mainline operations and wholly owned regional carriers Envoy, PSA and Piedmont.

Select environmental data for 2021 and 2022 have been restated on pages 72–74. This was due to a variety of factors, including a correction to our metrics or use of a more accurate calculation methodology.

In the prior year, KPMG LLP examined the Scope 1 and biogenic emissions and related notes, and reviewed the Scope 2 and Scope 3, Categories 3 and 4, emissions and related notes in the GHG Statement for the year ended December 31, 2022. The GHG Statement and independent accountants' report thereon, dated July 7, 2023, is available on page 68 of our 2022 Sustainability Report.

Environmental Performance	2023	2022	2021
FUEL USE			
Nonrenewable Fuel Use (millions of gallons)			
Jet fuel*	3,890	3,599	2,995
Diesel	3.61	3.76	3.44
Gasoline	4.70	5.03	5.34
Liquid propane gas	0.11	0.09	0.05
Heating oil	0.01	—	0.11
Natural gas (million MMBtu)	1.47	1.49	1.27
Renewable Fuel Use (millions of gallons)			
Jet fuel sourced from sustainable feedstock	2.65	2.55	1.42
Renewable diesel	0.08	0.06	—
Ethanol	0.50	0.55	—
STANDARDIZED ENERGY CONSUMPTION			
Nonrenewable Energy Consumption (thousand MWhs)			
Jet fuel — nonrenewable	141,095	130,520	107,539
Other fuels — nonrenewable	307	324	321
Total fuel — nonrenewable fuels	141,402	130,844	107,860
Electricity consumption — nonrenewable direct	491	345	539
Total nonrenewable energy consumption	141,893	131,189	108,399
Renewable Energy Consumption (thousand MWhs)			
Jet fuel sourced from sustainable feedstock	95	91	51
Other fuels renewable	14	15	—
Direct purchase of renewable electricity	187	179	36
Direct + indirect purchase of renewable electricity**	—	—	244
Total renewable energy consumption	296	285	295

Environmental Performance	2023	2022	2021
STANDARDIZED ENERGY CONSUMPTION (CONTINUED)			
Total Energy Consumption (thousand MWhs)			
Jet fuel	141,190	130,611	107,590
Other fuels	321	339	321
Total fuels	141,511	130,950	107,911
Electricity	678	524	573
Total energy	142,189	131,474	108,484
Renewable Energy as a Percentage of Total Energy			
Renewable jet fuel as a percentage of total jet fuel	0.07%	0.07%	0.05%
Renewable direct electricity as a percentage of total electricity	27.6%	34.2%	6.3%
Renewable direct + indirect electricity as a percentage of total electricity	27.6%	34.2%	42.6%
Renewable direct energy as a percentage of total energy	0.2%	0.2%	0.1%
Renewable direct + indirect energy as a percentage of total energy	0.2%	0.2%	0.3%

Reviewed by independent accountant KPMG LLP, as described in its report starting on page 83. This data is presented in accordance with management-prepared criteria, in the Statement of Select Environmental Indicators for American Airlines Group Inc. and as described in Note 2 on page 90.

* Jet fuel emissions represents emissions from mainline operations and owned regional airlines Envoy, PSA and Piedmont.

** Indirect purchases represent electricity purchased for facilities under American's operational control through airport authorities.

Environmental Performance	2023	2022	2021
INTENSITY PERFORMANCE			
GHG Emissions Intensity			
Passenger CO ₂ e fuel intensity (kg CO ₂ e/passenger kilometer)	0.097	0.096	0.105
Cargo CO ₂ e fuel intensity (kg CO ₂ e/ton kilometer)	0.880	0.958	1.052
SBTi Aviation Tool carbon intensity (life cycle g CO ₂ e/RTK)	1,192	1,195	1,317
Fuel & NO_x Intensity			
Passenger jet fuel consumption intensity (liters/100 passenger kilometers)	3.803	3.792	4.164
Cargo jet fuel consumption intensity (liters/ton kilometers transported)	0.380	0.379	0.416
Passenger NO _x emissions intensity (g of NO _x /passenger kilometer)	0.048	0.049	0.057
Cargo NO _x emissions intensity (g of NO _x /tonne kilometer)	0.483	0.495	0.834
WASTE			
Municipal solid waste*	14,682	13,423	—
Hazardous waste (tons)	1,348	692	692
WATER			
Water withdrawn at major facilities (millions of gallons)**	487	480	465
NOISE			
Percent of aircraft certified as, or meeting, Chapter 3 noise limits	100%	100%	100%
Percent of aircraft certified as, or meeting, Chapter 4 noise limits	100%	100%	100%
Percent of aircraft certified as, or meeting, Chapter 5 noise limits	18%	16%	20%

Environmental Performance	2023	2022	2021
ENVIRONMENTAL COMPLIANCE			
Number of environmental notices of violation	3	15	15
Amount of environmental fines and penalties (thousands of U.S. dollars)**	\$75.7	\$2.0	\$5.7
Spills recorded (1 gallon or greater)	402	330	256

Reviewed by independent accountant KPMG LLP, as described in its report starting on page 83. This data is presented in accordance with management-prepared criteria, in the Statement of Select Environmental Indicators for American Airlines Group Inc. and as described in Note 2 on page 90.

* Invoiced amounts from our two largest waste service suppliers in U.S. tons.

** Refer to Note 3 of the Statement of Select Environment Indicators on page 91.

*** In September 2023, the Oklahoma Department of Environmental Quality (ODEQ) issued an Alternative Enforcement Letter to American Airlines for alleged noncompliance and areas of concern at its Tulsa Maintenance and Engineering Center, a permitted air pollution control facility under Title V of the Oklahoma Clean Air Act. American continues to work closely with ODEQ to implement an effective compliance plan. The amount paid for 2023 was updated in October 2024.

Community Impact	2023	2022	2021
GLOBAL GIVING			
Total global giving — all sources (millions of U.S. dollars)	\$32.0	\$24.5	\$20.2
—Cash donations (millions of U.S. dollars)	\$8.8	\$9.4	\$6.0
—Total product or services donations, projects/partnerships or similar (millions of U.S. dollars)	\$23.2	\$15.1	\$14.2
VOLUNTEER SUPPORT			
Total volunteer hours (thousand hours)	37	44	20

Flight Safety Performance		2023		2022		2021	
		Mainline	Regional	Mainline	Regional	Mainline	Regional
Number of flights*		1.7 million		1.6 million		1.5 million	
SASB Metrics	Number of aviation accidents**	4	1	4	2	6	2
	Number of enforcement actions from government agencies***	0	1	0	2	0	3
	Number of safety risks and hazardous situations identified†	92	149	116	281	140	332
	Percentage of safety risks and hazardous situations identified that were mitigated‡	100%	100%	100%	98%	100%	99%
Aircraft ground damages (rate per 10,000 departures)		2.3	0.92	2.41	1.01	2.37	0.72
Aviation Safety Action Program reports		15,374	7,101	12,282	7,837	11,295	7,306

* Mainline and wholly owned regional carriers.

** Defined according to the International Civil Aviation Organization (Annex 13) and the National Transportation Safety Board (Part 830). Of the four mainline accidents in 2023, three involved turbulence that caused crew member injuries. The fourth was due to damage from a minor tail strike when the aircraft was landing, which did not result in injuries to passengers or crew members. We also reported the fatality of a team member who struck a jet bridge while driving ground service equipment. In addition to one regional carrier accident involving turbulence that caused injury to a crew member, we also reported the fatality of a team member who was involved in a ground accident.

*** Defined to include enforcement actions by the Federal Aviation Administration, the European Aviation Safety Agency and equivalent national authorities related to the regulation of aviation safety.

† The majority of our risk assessments are performed prior to implementing or revising systems/procedures. American's SMS covers safety risks and hazardous situations related to six areas: flight safety, flight service, ground operations, technical operations (maintenance), security and environmental. The figures reported here include all such risks identified by our SMS.

‡ Our SMS requires that we mitigate identified risks, particularly high risks, to as low as reasonably practicable (ALARP). These systemic and residual risks are monitored, measured and tracked.

Team Member Safety Performance		2023		2022		2021	
		Mainline	Regional	Mainline	Regional	Mainline	Regional
Injury rate*		7.21	5.09	6.89	5.06	6.29	5.13
Lost day rate**		5.90	2.57	4.53	2.37	5.60	2.99
Work-related fatalities		1	1	0	1	0	0

* Total recordable cases per 200,000 hours worked.

** The lost day rate, which the U.S. Occupational Safety and Health Administration calls the Days Away from Work Injury and Illness rate, is calculated as the number of cases multiplied by 200,000 work hours divided by total hours worked.

Gender Diversity of American's Employees Globally	2023			2022			2021		
	Total	Female	Male	Total	Female	Male	Total	Female	Male
Permanent employees	140,465	40%	60%	135,282	40%	60%	127,014	40%	60%
EMPLOYMENT TYPE									
Full time	117,516	39%	61%	113,264	38%	62%	108,801	38%	62%
Part time	22,949	50%	50%	22,018	50%	50%	18,213	49%	51%
EMPLOYEES BY REGION									
United States	134,132	40%	60%	128,897	40%	60%	121,144	39%	61%
Canada	445	46%	54%	389	48%	52%	289	47%	53%
Mexico, Caribbean, Latin America	4,481	60%	40%	4,537	60%	40%	4,347	60%	40%
Europe and Asia	1,407	52%	48%	1,459	53%	47%	1,234	54%	46%
EMPLOYEE CATEGORY									
Director and above	494	30%	70%	495	30%	70%	480	30%	70%
Management and professional	14,560	42%	58%	14,359	43%	57%	13,628	42%	58%
Administrative	2,655	71%	29%	2,616	73%	27%	2,469	73%	27%
Passenger service	22,437	66%	34%	21,960	66%	34%	19,905	66%	34%
Reservations	6,231	75%	25%	6,174	75%	25%	5,687	75%	25%
Maintenance and related	19,054	7%	93%	18,295	7%	93%	17,565	7%	93%
Fleet service	27,560	20%	80%	26,739	19%	81%	24,503	18%	82%
Pilots	18,837	6%	94%	17,683	6%	94%	17,313	5%	95%
Flight attendants	28,637	74%	26%	26,961	74%	26%	25,464	74%	26%

The diversity data shown has been aggregated for presentational purposes and includes mainline employees as well as the employees of our wholly owned regional carriers. Numbers may not add up to 100% due to rounding.

Ethnic Composition of American's U.S. Employees

This information is broken out in detail on pages 77–80.

Black or African American

	2023			2022		
	Total	Female	Male	Total	Female	Male
Total number of U.S. employees	26,747	48%	52%	25,236	48%	52%
Percentage of total U.S. employees	20%	10%	10%	20%	9%	10%
Percentage by category						
Director and above	50	36%	64%	50	38%	62%
Management and professional	2,259	49%	51%	2,180	48%	52%
Administrative	524	79%	21%	499	77%	23%
Passenger service	5,616	70%	30%	5,404	70%	30%
Reservations	1,678	84%	16%	1,648	83%	17%
Maintenance and related	2,142	13%	87%	1,998	14%	86%
Fleet service	9,582	24%	76%	9,033	24%	76%
Pilots	612	4%	96%	543	4%	96%
Flight attendants	4,284	77%	23%	3,881	77%	23%

The diversity data shown has been aggregated for presentational purposes and includes mainline employees as well as the employees of our wholly owned regional carriers. Numbers may not add up to 100% due to rounding.

Asian

	2023			2022		
	Total	Female	Male	Total	Female	Male
Total number of U.S. employees	8,211	41%	59%	7,657	41%	59%
Percentage of total U.S. employees	6%	3%	4%	6%	2%	3%
Percentage by category						
Director and above	46	35%	65%	41	34%	66%
Management and professional	1,722	39%	61%	1,545	39%	61%
Administrative	110	66%	34%	97	73%	27%
Passenger service	1,364	64%	36%	1,343	66%	34%
Reservations	236	72%	28%	227	72%	28%
Maintenance and related	984	5%	95%	917	5%	95%
Fleet service	1,439	10%	90%	1,376	9%	91%
Pilots	505	9%	91%	446	9%	91%
Flight attendants	1,805	74%	26%	1,665	73%	27%

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Ethnic Composition of American's U.S. Employees (continued)

American Indian or Alaskan Native

	2023			2022		
	Total	Female	Male	Total	Female	Male
Total number of U.S. employees	992	32%	68%	942	32%	68%
Percentage of total U.S. employees	1%	0%	1%	1%	0%	0%
Percentage by category						
Director and above	3	0%	100%	2	0%	100%
Management and professional	102	40%	60%	94	41%	59%
Administrative	26	81%	19%	26	96%	4%
Passenger service	106	61%	39%	107	64%	36%
Reservations	19	84%	16%	21	86%	14%
Maintenance and related	389	12%	88%	358	11%	89%
Fleet service	129	21%	79%	133	18%	82%
Pilots	98	9%	91%	90	7%	93%
Flight attendants	120	76%	24%	111	76%	24%

Hispanic or Latino

	2023			2022		
	Total	Female	Male	Total	Female	Male
Total number of U.S. employees	23,944	38%	62%	22,386	38%	62%
Percentage of total U.S. employees	18%	7%	11%	17%	7%	11%
Percentage by category						
Director and above	42	38%	62%	43	44%	56%
Management and professional	2,270	44%	56%	2,128	44%	56%
Administrative	538	64%	36%	534	66%	34%
Passenger service	5,140	66%	34%	4,902	66%	34%
Reservations	792	76%	24%	751	75%	25%
Maintenance and related	3,039	6%	94%	2,804	6%	94%
Fleet service	6,847	17%	83%	6,607	16%	84%
Pilots	1,503	5%	95%	1,201	5%	95%
Flight attendants	3,773	60%	40%	3,416	59%	41%

The diversity data shown has been aggregated for presentational purposes and includes mainline employees as well as the employees of our wholly owned regional carriers. Numbers may not add up to 100% due to rounding.

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Ethnic Composition of American's U.S. Employees (continued)

Native Hawaiian or Other Pacific Islander

	2023			2022		
	Total	Female	Male	Total	Female	Male
Total number of U.S. employees	1,706	48%	52%	1,703	47%	53%
Percentage of total U.S. employees	1%	1%	1%	1%	1%	1%
Percentage by category						
Director and above	0	—	—	0	—	—
Management and professional	131	56%	44%	135	55%	45%
Administrative	53	83%	17%	44	82%	18%
Passenger service	456	69%	31%	474	68%	32%
Reservations	73	89%	11%	91	87%	13%
Maintenance and related	135	9%	91%	123	7%	93%
Fleet service	691	33%	67%	693	31%	69%
Pilots	36	8%	92%	27	4%	96%
Flight attendants	131	58%	42%	116	59%	41%

Two or More Races

	2023			2022		
	Total	Female	Male	Total	Female	Male
Total number of U.S. employees	5,355	48%	52%	4,868	48%	52%
Percentage of total U.S. employees	4%	2%	2%	4%	2%	2%
Percentage by category						
Director and above	16	38%	63%	12	33%	67%
Management and professional	530	46%	54%	514	46%	54%
Administrative	136	76%	24%	132	74%	26%
Passenger service	1,072	65%	35%	1,047	67%	33%
Reservations	183	79%	21%	185	81%	19%
Maintenance and related	520	13%	87%	470	12%	88%
Fleet service	1,067	27%	73%	1,016	25%	75%
Pilots	366	6%	94%	293	6%	94%
Flight attendants	1,465	68%	32%	1,199	67%	33%

The diversity data shown has been aggregated for presentational purposes and includes mainline employees as well as the employees of our wholly owned regional carriers. Numbers may not add up to 100% due to rounding.

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Ethnic Composition of American's U.S. Employees (continued)

White

	2023			2022		
	Total	Female	Male	Total	Female	Male
Total number of U.S. employees	61,285	36%	64%	60,061	36%	64%
Percentage of total U.S. employees	46%	16%	29%	47%	17%	30%
Percentage by category						
Director and above	319	28%	72%	330	27%	73%
Management and professional	6,670	39%	61%	6,718	40%	60%
Administrative	1,057	69%	31%	1,049	73%	27%
Passenger service	5,255	65%	35%	5,288	65%	35%
Reservations	1,122	77%	23%	1,159	76%	24%
Maintenance and related	10,715	6%	94%	10,438	6%	94%
Fleet service	6,478	16%	84%	6,535	16%	84%
Pilots	14,212	6%	94%	13,548	6%	94%
Flight attendants	15,457	77%	23%	14,996	77%	23%

Unknown

	2023			2022		
	Total	Female	Male	Total	Female	Male
Total number of U.S. employees	5,892	35%	65%	6,044	35%	65%
Percentage of total U.S. employees	4%	2%	3%	5%	2%	3%
Percentage by category						
Director and above	15	27%	73%	14	21%	79%
Management and professional	461	41%	59%	501	42%	58%
Administrative	73	64%	36%	81	65%	35%
Passenger service	642	72%	28%	689	68%	32%
Reservations	183	77%	23%	173	76%	24%
Maintenance and related	708	9%	91%	761	8%	92%
Fleet service	1,072	21%	79%	1,093	20%	80%
Pilots	1,505	5%	95%	1,535	5%	95%
Flight attendants	1,233	72%	28%	1,197	72%	28%

The diversity data shown has been aggregated for presentational purposes and includes mainline employees as well as the employees of our wholly owned regional carriers. Numbers may not add up to 100% due to rounding.

Age Composition of American's U.S. Employees	2023			2022			2021		
	Employee Category	Total	Female	Male	Total	Female	Male	Total	Female
Less than 30 years old	21,416	42%	58%	20,071	43%	57%	17,663	41%	59%
From 30–50 years old	53,409	39%	61%	49,987	40%	60%	45,741	39%	61%
More than 50 years old	59,307	39%	61%	58,839	38%	62%	57,740	38%	62%

Employee Turnover and Rate*	2023		2022	
	Turnover	Rate	Turnover	Rate
AAG (GLOBAL)				
Total	23,117	16%	29,263	22%
TURNOVER BY TYPE				
Voluntary	16,407	12%	22,488	17%
Involuntary	6,710	5%	6,775	5%
TURNOVER BY REGION				
United States	21,979	16%	28,147	21%
Canada	90	0%	149	0%
Mexico, Caribbean, Latin America	792	1%	747	1%
Europe and Asia	256	0%	220	0%
TURNOVER BY GENDER				
Female	10,348	7%	13,899	10%
Male	12,764	9%	15,363	11%
Undisclosed	5	0%	1	0%

* Turnover Rate = Turnover/Total Population.

New Employee Hires	2023	2022
AAG (GLOBAL)		
Total	28,836	37,315
NEW EMPLOYEE HIRES BY REGION		
United States	27,760	35,778
Canada	145	252
Mexico, Caribbean, Latin America	739	934
Europe and Asia	192	351
NEW EMPLOYEE HIRES BY GENDER		
Female	12,597	17,942
Male	16,237	19,370
Undisclosed	2	3

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**STATEMENTS AND NOTES ON GREENHOUSE GAS EMISSIONS
AND SELECT ENVIRONMENTAL INDICATORS FOR
AMERICAN AIRLINES GROUP INC.**

Year ended December 31, 2023



KPMG LLP
Suite 1400
2323 Ross Avenue
Dallas, TX 75201-2721

Independent Accountants' Report

To the Board of Directors and Management of American Airlines Group Inc.:

Report on information included in the Statements and Notes on Greenhouse Gas Emissions and Select Environmental Indicators for American Airlines Group Inc. for the year ended December 31, 2023

Examination opinion and review conclusion

We have performed an assurance engagement on the following information in American Airlines Group Inc.'s (the Company) Greenhouse Gas (GHG) Emissions Statement (the GHG Statement) and Statement of Select Environmental Indicators (the Environmental Indicators Statement) and accompanying notes (collectively, the Statements) included in the Company's Sustainability Report for the year ended December 31, 2023 (the Sustainability Report):

Information subject to assurance	Type of assurance	The criteria relevant to the information subject to our assurance
Scope 1 and Biogenic emissions and related notes presented in the GHG Statement	Examination (reasonable assurance)	As described in Note II of the GHG Statement.
Scope 2 and Scope 3 Category 3 and Category 4 emissions and related notes presented in the GHG Statement	Review (limited assurance)	As described in Note II of the GHG Statement.
Environmental Indicators Statement and related notes	Review (limited assurance)	As described in Note II of the Environmental Indicators Statement.

For the purposes of the remainder of our assurance report:

- "Examination Information" refers to the information identified above that was subject to reasonable assurance;
- "Review Information" refers to the information identified above that was subject to limited assurance;
- "Assured Sustainability Information" refers to all information subject to assurance both reasonable assurance and limited assurance; and
- "Applicable Criteria" refers to the criteria relevant to the information subject to assurance as identified above, respectively.

Examination opinion

In our opinion, the Examination Information for the year ended December 31, 2023 is prepared in accordance with the Applicable Criteria, in all material respects.

KPMG LLP, a Delaware limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee.



Review conclusion

Based on our review, we are not aware of any material modifications that should be made to the Review Information for the year ended December 31, 2023 in order for it to be in accordance with the Applicable Criteria.

Our examination opinion and review conclusion on the Assured Sustainability Information does not extend to any other information that accompanies or contains the Assured Sustainability Information and our report.

Basis for opinion and conclusion

Our examination was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants in the versions of AT-C section 105, *Concepts Common to All Attestation Engagements*, and AT-C section 205, *Assertion-Based Examination Engagements*, that are applicable as of the date of our examination. Our review was conducted in accordance with attestation standards established by the AICPA in AT-C section 105, *Concepts Common to All Attestation Engagements*, and AT-C section 210, *Review Engagements*, that are applicable as of the date of our review. We are required to be independent and to meet our other ethical requirements in accordance with relevant ethical requirements related to the engagement. We believe that the evidence we have obtained is sufficient and appropriate to provide a reasonable basis for our examination opinion and review conclusion.

Responsibilities for the Assured Sustainability Information

Management of the Company is responsible for:

- designing, implementing and maintaining internal control relevant to the preparation of the Assured Sustainability Information such that it is free from material misstatement, whether due to fraud or error;
- selecting or developing suitable criteria for preparing the Assured Sustainability Information and appropriately referring to or describing the criteria used; and
- preparing the Assured Sustainability Information in accordance with the Applicable Criteria.

Inherent limitations in preparing the GHG Statement and the Environmental Indicators Statement

As described in Note IV of the GHG Statement and Note V of the Environmental Indicators Statement, emissions data, intensity, standardized energy and water withdrawn are subject to measurement uncertainties resulting from limitations inherent in the nature of the data and in the methods used for determining such data. The selection by management of different but acceptable measurement techniques could have resulted in materially different measurements.

Our responsibilities

The attestation standards established by the AICPA require us to do the following:

- with respect to our examination:
 - plan and perform the examination to obtain reasonable assurance about whether the Examination Information is in accordance with the Applicable Criteria, in all material respects; and
 - express an opinion on the Examination Information based on our examination.
- with respect to our review:
 - plan and perform the review to obtain limited assurance about whether any material modifications should be made to the Review Information in order for it to be in accordance with the Applicable Criteria; and
 - express a conclusion on the Review Information based on our review.

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We exercised professional judgment and maintained professional skepticism throughout the engagement. We designed and performed our procedures to obtain evidence about the Assured Sustainability Information that is sufficient and appropriate to provide a basis for our examination opinion and review conclusion.

The nature of our examination engagement

The nature, timing, and extent of the procedures selected depended on our judgment, including an assessment of the risks of material misstatement of the Examination Information, whether due to fraud or error. We identified and assessed the risks of material misstatement through understanding the Examination Information and the engagement circumstances. We also obtained an understanding of the internal control relevant to the Examination Information, in order to design procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of internal controls.

The nature of our review engagement and summary of the work we performed as the basis for our conclusion

Our procedures selected depended on our understanding of the Review Information and other engagement circumstances, and our consideration of areas where material misstatements are likely to arise. In carrying out our review engagement, we:

- inquired of management to obtain an understanding of the methodologies and inputs used in preparing the Review Information;
- inspected a selection of supporting records;
- applied analytical procedures;
- recalculated the Review Information based on the Applicable Criteria; and
- evaluated the overall presentation of the Review Information to determine whether it is consistent with the Applicable Criteria and in line with our overall knowledge of, and experience with, the Company.

The procedures performed in a review vary in nature and timing from, and are substantially less in extent than, an examination, the objective of which is to obtain reasonable assurance about whether the subject matter information is in accordance with the criteria, in all material respects, in order to express an opinion. Because of the limited nature of the review engagement, the level of assurance obtained in a review is substantially lower than the assurance that would have been obtained had an examination been performed.

KPMG LLP

Dallas, Texas
July 1, 2024

GREENHOUSE GAS (GHG) EMISSIONS STATEMENT

Year ended December 31, 2023

In metric tons of carbon dioxide equivalent (CO₂e)

Scope 1 emissions	37,532,790
Biogenic emissions	28,065
Scope 2 emissions:	
Location-based method	188,992
Market-based method	125,634
Total Scope 1 and 2 emissions (market-based method)	37,658,424
Selected Scope 3 emissions:	
Category 3, fuel- and energy-related activities	7,775,256
Category 4, upstream transportation and distribution	2,867,275
Total Selected Scope 3 emissions	10,642,531

The accompanying notes on pages 85–89 form an integral part of this GHG Emissions Statement.

NOTES TO THE GREENHOUSE GAS EMISSIONS STATEMENT

Year ended December 31, 2023

1. Reporting entity

American Airlines Group Inc. is a holding company whose primary business activity is the operation of a major network carrier headquartered in Fort Worth, Texas, providing scheduled air transportation for passengers and cargo through its mainline operating subsidiary, American Airlines, Inc., and its wholly owned regional airline subsidiaries, Envoy Aviation Group Inc., PSA Airlines, Inc., and Piedmont Airlines, Inc., as well as contracted third-party regional carriers. American Airlines Group Inc. is hereafter referred to as "American."

2. Basis of presentation

American has prepared its Scope 1, biogenic and Scope 2 greenhouse gas (GHG) emissions for the year ended December 31, 2023, in accordance with the following standards and guidance developed by the World Resources Institute's and World Business Council for Sustainable Development's Greenhouse Gas Protocol standards and guidance (collectively, the GHG Protocol):

- GHG Protocol Corporate Accounting and Reporting Standard (revised edition)
- GHG Protocol Scope 2 Guidance: An Amendment to the GHG Protocol Corporate Standard

In addition to Scope 1, biogenic and Scope 2 emissions, American has elected to present certain Scope 3 emissions in its GHG emissions statement for the year ended December 31, 2023. These Scope 3 emissions have been calculated in accordance with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

3. Organizational boundary

American presents its emissions under the operational control approach, accounting for emissions from operations over which it has the full authority to introduce and implement its operating policies.

4. Use of estimates and estimation uncertainties

American bases its estimates and methodologies on historical performance, available information and various other assumptions that it believes to be reasonable. Emissions data presented are subject to measurement uncertainties resulting from limitations inherent in the nature of the data and in the methods used for determining such data. The selection of different but acceptable measurement techniques can result in materially different measurements. The precision of different measurement techniques may also vary.

5. Operational boundaries

a. Scope 1 emissions

Scope 1 emissions are direct emissions from the combustion of fuel inside the organizational boundary and include the following:

Source	Boundary description
Mobile combustion	Aircraft and ground service equipment
Stationary combustion	Boilers and furnaces
Fugitive emissions	Leaks from air conditioning and refrigeration

b. Biogenic emissions

Biogenic emissions are direct emissions from the combustion of fuels produced by biological processes of living organisms, e.g., plant or animal material, inside the organizational boundary. These include the following:

Source	Boundary description
Sustainable aviation fuel (SAF)	Consumed by aircraft on a mass-balance basis ¹
Renewable diesel fuel	Consumed by ground service equipment on a mass-balance basis
Ethanol	Consumed by ground service equipment on a mass-balance basis

c. Scope 2 emissions

Scope 2 emissions are indirect emissions from the generation of acquired and consumed electricity, steam, heat or cooling occurring at sources outside of the organizational boundary as a consequence of activities from sources inside the organizational boundary, and include the following:

Source	Boundary description
Purchased electricity	Owned and leased office spaces, hangars and hub terminals under operational control
Purchased steam, heat and cooling	Owned and leased office spaces, hangars and hub terminals under operational control

American has Scope 2 reduction targets based on the market-based method.

d. Scope 3 emissions

Scope 3 emissions are indirect emissions from the generation, transportation and use of fuel from sources outside the organizational boundary as a consequence of American's activities. American has elected to include two categories of Scope 3 emissions in its GHG emissions statement.

Source	Boundary description
Category 3, fuel- and energy-related activities (not included in Scope 1 or Scope 2 emissions)	Upstream emissions from jet fuel and renewable fuels attributable to aircraft, ground service equipment and facilities within the organizational boundary
	Upstream emissions from the production, transportation and distribution of electricity consumed in facilities within the organizational boundary
	Upstream emissions from the production and transportation of SAF, including emissions related to feedstock production and indirect land use change
Category 4, upstream transportation and distribution (T&D)	Life cycle emissions attributable to the use of jet fuel by aircraft operated by contracted regional carriers that are outside the organizational boundary

6. Emissions per gas

Emissions data below for selected GHGs in metric tons of gas and in metric tons of CO₂e include only Scope 1 and Scope 2 emissions. American has included in its reporting carbon dioxide, methane, nitrous oxide and hydrofluorocarbons. Perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride have been omitted because they are not material sources of GHGs for the Company.

All amounts are for the year ended December 31, 2023.

	in absolute metric tons of gas			
	Carbon dioxide (CO ₂)	Methane (CH ₄)	Nitrous oxide (N ₂ O)	Hydrofluorocarbon (HFCs)
Scope 1	37,189,243	272	1,046	25
Scope 2				
Location based	188,169	12	2	—
Market based	125,096	8	1	—

	in metric tons of CO ₂ e			
	Carbon dioxide (CO ₂)	Methane (CH ₄)	Nitrous oxide (N ₂ O)	Hydrofluorocarbon (HFCs)
Scope 1	37,189,243	7,599	285,563	50,385
Scope 2				
Location based	188,169	347	476	—
Market based	125,096	228	310	—

7. Base year

American's base year for Scope 1 and Scope 2 (location- and market-based) emissions is 2016. American's base year for Scope 3 emissions is 2019. American selected 2019 as the Scope 3 base year because it is the first year the Company reported emissions data at a level of aggregation that allows for comparability.

The base year is recalculated if there are changes in any of the following that are significant either individually or in aggregate:

- Structural changes in the organizational boundary, including acquisitions and divestments.
- Changes in calculation methodology or improvements in the accuracy of emission factors or activity data that result in a significant impact on the base year emissions data.

¹ Mass balance tracks and accounts for the volume of fuel in a fuel system, such as a common tank or pipeline, but does not track physical fuel molecules.

Significance is defined as changes of greater than 10% of the Company's aggregate Scope 1, Scope 2 or Scope 3, Categories 3 and 4, emissions.

As of December 31, 2023, American has not had any significant structural or methodology changes that warrant recalculating its Scope 1, Scope 2 or Scope 3, Categories 3 and 4, base year emissions.

American's GHG emissions fluctuate over time primarily due to the use of jet fuel in operations.

8. Measurement methodologies

a. Scope 1 emissions

Source	Method	Emissions factor	Inputs
Mobile combustion	Emission factors applied to volumes determined from primary use data or estimated volumes based on primary spend data	<ul style="list-style-type: none"> Volumetric factors are from the Environmental Protection Agency's (EPA) GHG Emissions Factor Hub (March 2024) Mass factors are from the Intergovernmental Panel on Climate Change (IPCC) 2006 Guideline for National Greenhouse Gas Inventories 	Supplier invoices
Stationary combustion	Emission factors applied to volumes determined from primary use data or estimated volumes based on primary spend data	Volumetric factors are from the EPA's GHG Emissions Factor Hub (March 2024)	Supplier invoices
Fugitive emissions	Emission factors applied to mass of gases purchased	IPCC Sixth Assessment Report (March 2023)	<ul style="list-style-type: none"> Supplier invoices Estimated weight Product chemical composition

Methodology description

Emissions from mobile combustion by aircraft are calculated by multiplying the mass of the jet fuel consumed by emission factors. Emissions from all other mobile combustion

are calculated by multiplying volumes consumed by the relevant emission factors. In the event that source documents for volumes are not available, volumes are estimated based on average spend per gallon of fuel consumed. All gasoline consumed in the U.S. is assumed to be blended with 10% ethanol and volumes are adjusted accordingly.

Emissions from stationary combustion are calculated by multiplying volumes consumed by emission factors. In the event that source documents for volumes are not available, volumes are estimated based on average spend per gallon of fuel consumed.

Fugitive emissions are estimated based on the purchase of GHGs (e.g., refrigerants) and chemicals or solvents that contain GHGs. Fugitive emissions are calculated by multiplying the purchased weight of gases by the emissions factors for those gases.

b. Biogenic emissions

Source	Method	Emissions factor	Inputs
SAF	Emission factors applied to volumes determined from primary use data	International Civil Aviation Organization (ICAO) Default Life Cycle Emissions Factors for CORSIA Eligible Fuels (June 2022)	Supplier-provided reports
Renewable diesel fuel	Emission factors applied to volumes determined from primary use data	California Air Resources Board Substitute Pathways and Default Blend Levels for LCFS Reporting for Specific Fuel Transaction Types (2022)	Supplier-provided reports
Ethanol	Emission factors applied to volumes estimated based on U.S. gasoline usage	Carbon Intensity of Corn Ethanol in the United States: state of the science, published in Environmental Research Letters, Volume 16, Number 4 (March 2021)	Actual and estimated domestic gasoline volumes

Methodology description

Emissions from SAF and renewable diesel fuel are calculated by multiplying volumes consumed by the relevant emission factors.

Ethanol volume is calculated based on blended gasoline consumed in the U.S. It is assumed that all gasoline consumed in the U.S. contains 10% ethanol. U.S. gasoline

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volume is based on primary use data. In the event that blended gasoline volumes are not available, the volumes are estimated based on average spend per gallon of fuel consumed.

c. Scope 2 emissions

Source	Method	Emissions factor	Inputs
Purchased electricity	Location based	<ul style="list-style-type: none"> EPA Emissions and Generation Resource Integrated Database (eGRID) factors (January 2024) U.S. Energy Information Administration (EIA) <i>Commercial Buildings Energy Consumption Survey</i> (May 2016) 	<ul style="list-style-type: none"> Utility bills Square footage of buildings
Purchased electricity	Market based	2023 Green-e Residual Mix Emissions Rates	<ul style="list-style-type: none"> Utility bills Square footage of buildings Supporting documentation of Renewable Energy Certificates (REC) from supplier
Purchased steam, heat and cooling	Location based & market based	Volumetric factors are from the EPA's GHG Emissions Factor Hub (March 2024)	Utility bills

Methodology description

Emissions are calculated by multiplying the amount of company-purchased electricity by the appropriate emissions factors. Electricity consumption is based on billed consumption from utility bills. At some locations, electricity is not billed directly and is included in lease payments. In those situations, consumption is estimated by applying leased square footage by electricity consumption factors from the EIA Commercial Buildings Energy Consumption Survey.

Location-based and market-based method estimates are based on their respective grid-average emission factors for defined geographic locations. The market-based method also accounts for RECs retired by electricity providers.

Purchased steam, heat and cooling emissions are calculated by multiplying the amount of company-purchased steam, heat and cooling by the appropriate emissions factors. Steam, heat and cooling consumption is based on billed consumption from utility bills.

d. Scope 3 emissions

Source	Method	Emissions factor	Inputs
Category 3, fuel and energy related activities (not included in Scope 1 or Scope 2)	Volume based	<ul style="list-style-type: none"> Upstream jet fuel factor is derived from the petroleum jet fuel factor in ICAO <i>Default Life Cycle Emissions Factors for CORSIA Eligible Fuels</i> (June 2022), with the Scope 1 emissions removed SAF emissions are based on the ICAO <i>Default Life Cycle Emissions Factors for CORSIA Eligible Fuels</i> (June 2022) T&D loss is based on the Generation Resource Integrated Database (eGRID) factors (January 2024) Upstream emissions from electricity generation are based on International Energy Agency (IEA) <i>Life Cycle Upstream Emission Factors</i> (Pilot Edition, 2023) 	<ul style="list-style-type: none"> Supplier invoices Utility bills Square footage of buildings
Category 4, upstream transportation and distribution	Volume based	GHG Protocol <i>Emission Factors from Cross-Sector Tools</i> (March 2024)	Supplier invoices

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Methodology description

Upstream emissions from petroleum-based jet fuel are calculated by applying the upstream emissions factor, as described in the table immediately above, to petroleum jet fuel consumption.

Upstream emissions from renewable fuels are calculated by applying lifecycle emissions factors, as described in the table immediately above, to the applicable renewable fuel consumption.

Upstream emissions from electricity (T&D loss) are calculated by applying T&D factors from eGRID to estimate electricity loss. eGRID emission factors are then applied to electricity loss to estimate emissions. Upstream emissions from electricity generation are calculated by applying the total upstream factor to electricity consumption.

e. Global warming potentials

Global warming potential for all GHGs were sourced from the Intergovernmental Panel on Climate Change Sixth Assessment Report.

STATEMENT OF SELECT ENVIRONMENTAL INDICATORS

Year ended December 31, 2023

Intensity Metrics for Jet Fuel Consumption	
Passenger jet fuel consumption intensity <i>in liters/100 passenger-kilometers (km)</i>	3.8031
Cargo jet fuel consumption intensity <i>in liters/ton-km</i>	0.3803
Intensity Metrics for Nitrogen Oxide (NO _x) Emissions from Jet Fuel Consumption	
Passenger NO _x emissions intensity <i>in grams of NO_x/passenger-km</i>	0.0483
Cargo NO _x emissions intensity <i>in grams of NO_x/ton-km</i>	0.4825
Standardized Energy Consumption	
Total nonrenewable energy consumption <i>in megawatt-hours</i>	141,892,483
Total renewable energy consumption <i>in megawatt-hours</i>	295,755
Water Withdrawn	
Water withdrawn at major facilities <i>in gallons</i>	487,246,831

The accompanying notes on pages 90–91 form an integral part of this Statement of Select Environmental Indicators.

NOTES TO THE STATEMENT OF SELECT ENVIRONMENTAL INDICATORS

Year ended December 31, 2023

1. Reporting Entity

American Airlines Group Inc. is a holding company whose primary business activity is the operation of a major network carrier headquartered in Fort Worth, Texas, providing scheduled air transportation for passengers and cargo through its mainline operating subsidiary, American Airlines, Inc., and its wholly owned regional airline subsidiaries, Envoy Aviation Group Inc., PSA Airlines, Inc., and Piedmont Airlines, Inc., as well as contracted third-party regional carriers. American Airlines Group Inc. is hereafter referred to as "American."

2. Basis of Presentation

Intensity Metrics for Jet Fuel Consumption

American has prepared its jet fuel consumption intensity metrics for the year ended December 31, 2023, in accordance with management-prepared criteria.

American calculates passenger jet fuel consumption intensity as the ratio of jet fuel consumed in liters for passenger travel to total jet fuel, based on the methodology described in Note 4 below, divided by revenue passenger kilometers (expressed in 100 passenger kilometers).

American calculates cargo jet fuel consumption intensity as the ratio of jet fuel consumed in liters for cargo operations to total jet fuel, based on the methodology described in Note 4 below, divided by cargo ton kilometers.

Intensity Metrics for Nitrogen Oxide (NO_x) Emissions from Jet Fuel Consumption

American has prepared its NO_x emissions intensity metrics for the year ended December 31, 2023, in accordance with management-prepared criteria that are based on the guidance in Global Reporting Initiative 305: Emissions 2016, Disclosure 305-7 Nitrogen oxides (NO_x), sulfur oxides (SO_x), and other significant air emissions.

American calculates passenger NO_x emissions intensity as the ratio of NO_x emitted in grams for passenger travel, based on the methodology described in Note 4 below, divided by revenue passenger kilometers.

American calculates cargo NO_x emissions intensity as the ratio of NO_x emitted in grams for cargo operations, based on the methodology described in Note 4 below, divided by cargo ton kilometers.

Standardized Energy Consumption

American has prepared its standardized energy consumption metrics for the year ended December 31, 2023, in accordance with management-prepared criteria.

American calculates total nonrenewable and renewable energy consumption as total energy, based on sources from the boundary description in Note 3 below, converted to megawatt hours, in accordance with the methodology described in Note 4 below.

Water Withdrawn

American has prepared its water withdrawn metric for the year ended December 31, 2023, in accordance with management-prepared criteria.

American calculates water withdrawn as the sum of reported water withdrawn derived from invoiced data from municipal water suppliers based on the methodology described in Note 4 below.

3. Boundary Description

American has presented jet fuel consumption intensity metrics, NO_x emissions intensity metrics and standardized energy consumption metrics from operations over which it has the authority to introduce and implement its operating policies. Those operations include its mainline operating subsidiary and wholly owned regional subsidiaries.

Water Withdrawn

American has presented water withdrawn as the volume of water withdrawn from municipal water suppliers at American's facilities over which it has control to implement water conservation policies and for which American's volume of water withdrawn is available. This specifically includes hangars, maintenance facilities, office buildings and the single terminal that American operates in its entirety at John F. Kennedy International Airport.

4. Methodology

Intensity Metrics for Jet Fuel Consumption

Jet fuel volume, which is supported by supplier invoices, is allocated between passengers and cargo based on the respective ratio of ton kilometers, as described in the International Air Transport Association's (IATA) *Recommended Practice 1726: Passenger CO₂ Calculation Methodology* (IATA RP 1726). The calculation uses IATA's recommended passenger weight of 100 kilograms as the basis for passenger ton kilometers. Employee travel and company cargo are considered non-revenue payload and are removed from the intensity calculations.

Intensity Metrics for Nitrogen Oxide (NO_x) Emissions from Jet Fuel Consumption

American calculates NO_x mass using the ICAO Databank (June 2023), which includes factors for NO_x emissions during the landing/take-off cycle by engine type. A flight's landing/take-off cycle includes all aircraft activity below 3,000 feet in elevation. Other data points necessary to calculate NO_x emissions, such as aircraft type and departures, are derived from internal data sources.

To calculate NO_x intensities, American allocates NO_x emissions between passengers and cargo based on the respective ratio of ton kilometers, as recommended in IATA RP 1726. The calculation uses IATA's recommended passenger weight of 100 kilograms as the basis for passenger ton kilometers. Employee travel and company cargo are considered non-revenue payload and are removed from the intensity calculations.

Standardized Energy Consumption

The energy density factor for jet fuel is from the Defense Logistics Agency's *Petroleum Quality Information System 2013 Annual Report*, and the energy density factor for SAF is sourced from the results of a SAF sample tested by the supplier in 2023. All other energy density factors (e.g., diesel, gasoline, ethanol and renewable diesel) are sourced from the lower heating values from the Department of Energy's Alternative Fuels Data Center. Factors to convert British thermal units to megawatt hours are from the International Energy Agency website.

Other sources, including heating, cooling and steam consumed, are considered immaterial and are excluded.

Water Withdrawn

The volume of water withdrawn is based on the U.S. definition of gallons.

5. Use of estimates and estimation uncertainties

American bases its estimates and methodologies on historical performance, available information and various other assumptions that it believes to be reasonable. Intensity, standardized energy and water withdrawn data presented are subject to measurement uncertainties resulting from limitations inherent in the nature of the data and in the methods used for determining such data. The selection of different but acceptable measurement techniques can result in materially different measurements. The precision of different measurement techniques may also vary.

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Forward-Looking Statements

Certain of the statements contained in this report should be considered forward-looking statements within the meaning of the Securities Act of 1933, as amended, the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995. These forward-looking statements may be identified by words such as "may," "will," "expect," "intend," "anticipate," "believe," "estimate," "plan," "project," "could," "should," "would," "continue," "seek," "target," "guidance," "outlook," "if current trends continue," "optimistic," "forecast" and other similar words. Such statements include, but are not limited to, statements about the company's plans, objectives, expectations, intentions, estimates and strategies for the future and other statements that are not historical facts. These forward-looking statements are based on the company's current objectives, beliefs and expectations, and they are subject to significant risks and uncertainties that may cause actual results and financial position and timing of certain events to differ materially from the information in the forward-looking statements. These risks and uncertainties include, but are not limited to, those set forth herein as well as in the company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2024 (especially in Part I, Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations and Part II, Item 1A. Risk Factors), and other risks and uncertainties listed from time to time in the company's other filings with the Securities and Exchange Commission. Additionally, there may be other factors of which the company is not currently aware that may affect matters discussed in the forward-looking statements and may also cause actual results to differ materially from those discussed. The company does not assume any obligation to publicly update or supplement any forward-looking statement to reflect actual results, changes in assumptions or changes in other factors affecting these forward-looking statements other than as required by law. Any forward-looking statements speak only as of the date hereof or as of the dates indicated in the statement.

A Note on Materiality

This report contains statements based on hypothetical scenarios and assumptions as well as estimates or topics that are subject to a high level of uncertainty, and these statements should not necessarily be viewed as being representative of current or actual risk or performance, or forecasts of expected risk or performance. While certain matters discussed in this report may be significant, any significance should not be read as necessarily rising to the level of materiality used for the purposes of complying with or reporting pursuant to the U.S. federal securities laws and regulations, even if we use the words "material" or "materiality" in this report.



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Learn more about how American Airlines manages sustainability at www.aa.com/sustainability