

American Airlines 2020 Environmental Data

Reporting scope is 100% of business operations under American Airlines Group (AAG) control. AAG includes mainline operations and wholly-owned regionals: Piedmont, PSA, and Envoy.

	2020	2019	2018	2017	2016
DIRECT AND INDIRECT GHG EMISSIONS					
Scope 1 emissions (thousands of metric tons of CO2e)					
Scope 1 emissions - all sources ¹	19,834	41,143	40,276	39,062	38,913
- Gross jet fuel emissions ²	19,639				
- Less: Jet fuel emissions associated with biogenic sources					
- Net jet fuel emissions	-				
- Diesel emissions	31				
- Gasoline emissions	50				
- LP gas emissions	0.2				
- Heating oil emissions	6				
- Natural gas emissions	75				
- Purchased CO2e	33				
Scope 2 emissions (thousands of metric tons of CO2e)					
Scope 2 location-based emissions	258	296	328	326	341
Scope 2 market-based emissions	236	274	-	-	-
Scope 3 emissions (thousands of metric tons of CO2e)					
Scope 3 emissions - all categories ³	9,674	22,042	15,541	-	-
- Category 1 (purchased goods and services)	1,905				
- Category 2 (capital goods)	289				
- Category 3 (fuel and energy-related activities)	6,802				
- Category 5 (waste generated in operations)	2				
- Category 6 (business travel)	58				
- Category 7 (employee commuting)	223				
- Category 8 (upstream leased assets)	52				
- Category 9 (downstream transport)	11				
- Category 15 (investments)	332				
OTHER AIR EMISSIONS					
Aircraft Emissions (metric tons from landing/take-off cycle)					
Nitrous oxide (NOx)	12,061	19,883	19,254	18,965	19,289
Hydro carbons (HC)	514	1,099	1,087	1,073	1,222
Carbon monoxide (CO)	7,474	11,534	11,146	10,898	11,350
Ground Emissions (metric tons)					
Ozone-depleting substances	0.4	1.2	14.5	7.4	14.6
Carbon monoxide (CO) (from reporting facilities)	63.0	40.7	39.5	-	-
Nitrous oxide (NOx) (from reporting facilities)	85.7	64.5	58.9	-	-

Sulfur oxide (SOx) (from reporting facilities)	1.0	1.9	1.5	-	-
Volatile organic compounds (VOC) (from reporting facilities)	81.8	91.7	91.3	-	-
Particulate Matter (PM) (from reporting facilities)	6.8	6.7	11.5	-	-
WASTE					
Hazardous waste (tons)	715	901	783	776	799
WATER					
Water use for AA major facilities, excluding airports (millions of gallons) ⁴	466	495	457	430	467
NOISE					
Percent of aircraft certified as, or meeting, Chapter 3 noise limits	100%	100%	100%	100%	100%
Percent of aircraft certified as, or meeting, Chapter 4 noise limits	100%	100%	98%	97%	95%
Percent of aircraft certified as, or meeting, Chapter 5 noise limits	19%	22%	22%	20%	20%
ENVIRONMENTAL COMPLIANCE					
Number of environmental notices of violation	3	5	9	7	9
Amount of environmental fines and penalties (thousands of dollars)	\$1.5	\$6.5	\$4.8	\$4.8	\$54.7
Spills recorded (1 gallon or greater)	162	429	418	444	-

¹ In 2020, Scope 1 emission factors transitioned from The Climate Registry to the GHG Protocol and EPA Emissions Factor Hub. Prior years were not restated.

² Jet fuel emissions represents emissions from mainline operations and owned regional airlines Envoy, PSA and Piedmont.

³ In 2020, Scope 3 emission factors transitioned from the WRI Scope 3 Tool to the EPA's Supply Chain GHG Emissions Factors for US Industries. Prior years were not restated.

⁴ From municipal water supplies.

American Airlines 2020 Energy and Intensity Data

Reporting scope is 100% of business operations under American Airlines Group (AAG) control. AAG includes mainline operations and wholly-owned regionals: Piedmont, PSA, and Envoy.

	2020	2019	2018	2017	2016
FUEL USE					
Non-Renewable Fuel Use (millions of gallons)					
Jet fuel ¹	2,069.69	4,157	4,072	3,950	3,935
Diesel	1.17	-	-	-	-
Gasoline	4.29	-	-	-	-
LP gas	0.03	-	-	-	-
Heating oil	1.41	-	-	-	-
Natural gas (MMBtu)	0.08	-	-	-	-
Renewable Fuel Use (millions of gallons)					
Jet fuel sourced from sustainable feedstock	0.381	-	-	-	-
STANDARDIZED ENERGY CONSUMPTION					
Non-Renewable Energy Consumption (MWhs)					
Jet fuel - non-renewable	74,351,252	-	-	-	-
Other fuels - non-renewable	750,221	-	-	-	-
Total fuel - non-renewable fuels	75,101,473	149,578,101	-	-	-
Electricity consumption - non-renewable direct	530,202	626,526	674,513	655,791	703,971
Total energy consumption - non-renewable	75,631,675	150,204,627	-	-	-
Renewable Energy Consumption (MWhs)					
Jet fuel sourced from sustainable feedstock	13,598	-	-	-	-
Direct purchase of renewable electricity ²	53,351	51,557	28,136	22,159	-
Direct + indirect purchase of renewable electricity ³	180,463	227,373	154,046	78,780	55,521
Renewable energy consumption	194,061	227,373	154,046	78,780	-
Total Energy Consumption (MWhs)					
Jet fuel	74,364,850	-	-	-	-
Other fuels	750,221	-	-	-	-
Total fuels	75,115,071	149,578,101	-	-	-
Electricity	583,553	853,899	-	-	-
Total energy	75,825,736	150,432,000	-	-	-
Renewable Energy as a Percentage of Total Energy					
Renewable jet fuel as a percent of total total jet fuel	0.018%	-	-	-	-
Renewable direct electricity as a percent of total electricity	9.14%	6.04%	-	-	-
Renewable direct + indirect electricity as a percent of total electricity	30.9%	26.63%	-	-	-
Renewable direct energy as a percent of total energy	0.09%	0.03%	-	-	-
Renewable direct + indirect energy as a percent of total energy	0.26%	0.15%	-	-	-

PROGRESS TOWARDS GOALS					
Renewable Energy Goal					
Jet fuel sourced from sustainable feedstock (million gigajoules)	0.05	-	-	-	-
Direct purchase of renewable electricity (million gigajoules)	0.19	0.19	0.10	0.08	-
Cumulative renewable energy used since 2019	0.43	0.19	-	-	-
% of goal achieved to use 2.5 million gigajoules by 2025	17.2%	7.6%	-	-	-
Emissions Intensity Goal					
Intensity improvement since baseline year of 2014	20.2%	-5.3%	-0.052	-0.055	-0.03
INTENSITY PERFORMANCE					
Fuel and NOx Intensity					
Passenger fuel intensity (Liters/100 Passenger Kilometer)	5.424	-	-	-	-
Cargo fuel intensity (Liters/Tonne Kilometer)	0.949	-	-	-	-
Passenger NOx intensity (g of NOx/Passenger Kilometer)	0.075	-	-	-	-
Cargo NOx intensity (g of NOx/Tonne Kilometer)	0.829	-	-	-	-
GHG Emissions Intensity					
Scope 1 Jet Fuel Emissions per 1,000 Revenue Ton Miles	1.98	1.56	1.53	1.56	1.6
Sales intensity (g CO ₂ e from jet fuel per dollar of revenue)	1,133	862	868	879	930
SBTi Aviation Tool carbon intensity (life cycle g CO ₂ e/RTK)	1,888	1,228			

¹ Jet fuel consumption represents jet fuel from mainline operations and owned regional airlines Envoy, PSA and Piedmont.

² Amounts from 2016 to 2018 were restated to reflect the year in which RECs were retired rather than when electricity was purchased.

³ Indirect purchases represent electricity purchased for American's facilities indirectly through airport authorities.



The SCS Greenhouse Gas Footprint Verification Program has conducted a verification of GHG emissions based upon the following objectives, criteria, and scope:

Verification Objectives

- Evaluate the organization’s GHG inventory based per the level of assurance and materiality specified, including assessment of any significant changes and the organization’s GHG-related controls
- Evaluate conformance with specified verification criteria

Verification Criteria

- World Resources Institute/World Business Council for Sustainable Development’s “The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)” dated March 2004
- World Resources Institute/World Business Council for Sustainable Development’s “Scope 2 Guidance Document: An Amendment to the GHG Protocol Corporate Standard” dated 2015
- World Resources Institute/World Business Council for Sustainable Development’s “Corporate Value Chain (Scope 3) Accounting and Reporting Standard” dated 2011
- The Investor CDP Information Request
- ISO 14064-3: 2006 Specification with guidance for the validation and verification of GHG assertions

Verification Scope

- Company: American Airlines Group, Inc.
- Emissions Year: 2020 (Jan 1, 2020 – Dec 31, 2020)
- Geographic Boundary: Worldwide operations under operational control
- Level of Assurance: Limited
- Materiality: +/-5% quantitative threshold for direct and indirect emissions, qualitative based upon requirements specified within referenced criteria

Verification Opinion

This Verification Statement documents that SCS Global Services has conducted verification activities in compliance with ISO 14064-3: Specification with guidance for the validation and verification of greenhouse gas assertions. Based upon the reporting scope, criteria, objectives, and agreed upon level of assurance, SCS has issued the following verification opinion:

- Positive Verification – GHG assertion prepared in all material respects with the reporting criteria
- Negative Verification – GHG assertion was NOT prepared in all material respects with the reporting criteria

Verified Emissions

EMISSIONS SUMMARY - tonnes CO2e					TOTAL (tCO2e)
SCOPE	CO ₂	CH ₄	N ₂ O	HFCs	
SCOPE 1	19,680,132.97	76,892.73	44,213.03	32,959.33	19,834,198.06
SCOPE 2 - LOCATION	256,832.16	408.24	510.16	-	257,750.56
SCOPE 2 - MARKET	249,287.82	408.20	510.13	-	250,206.15
SCOPE 3 - CATEGORY 3	6,802,383.95	←Reported as tCO2e only			6,802,383.95

Signature: *Tavio Benetti*
 Lead Verifier: Tavio Benetti
 Date: May 24th, 2021

Signature: *Nicole Muñoz*
 Independent Reviewer: Nicole Muñoz
 Date: June 4, 2021