Boeing grant teaches students about stormwater stewardship

With support from a Boeing grant in 2022, EarthGen engaged 2,000 students across four Puget Sound school districts in its Stormwater Stewards program.

Why it matters: Middle and high school students learned about watersheds and the impact of stormwater runoff, investigated their local watersheds and then designed and implemented green stormwater infrastructure projects to improve water quality in their community. Students cared for and maintained these rain gardens as part of the program.

Middle school students plant in their rain garden in the Seattle suburb of Burien. (EarthGen photo)

Go deeper: A 2021 grant from Boeing helped EarthGen expand the Stormwater Stewards program into two additional Puget Sound school districts, which worked to add sustainable treatment for approximately 625,000 gallons of water.

Rain gardens under busy Seattle bridge filter water, protect salmon

The Aurora Bridge Bioswale project was designed to clean up polluted stormwater coming off this Seattle bridge. Runoff passes through a series of rain gardens below. The project serves as a model for others that The Nature Conservancy and its partners support, such as the I-5 Ship Canal stormwater park, which is currently being planned with funding from Boeing.

(Photo: Courtney Baxter/The Nature Conservancy)

Our Future

Boeing and Amideast partner to expand STEM access

At the UN Climate Change Conference COP27 held in Sharm El-Sheikh, Egypt, Amideast and Boeing announced an expanded partnership to support more Egyptian young people through STEM education with a focus on sustainability.

Go deeper: The expanded partnership will include STEM programs in robotics, graphics, animation, 3D printing, programming and web development; a STEM entrepreneurship competition; and a new STEM Program for Climate Sustainability, including advocacy efforts like STEM Talks and a sustainability podcast.

Why it matters: This grant from Boeing helps Amideast align STEM activities with Egypt's sustainable development strategy. In line with the UN Sustainable Development Goal (SDG) 4, Quality Education, STEM education fosters creativity and empowers young people to become critical thinkers and problem solvers who can address global challenges.
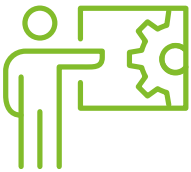
Boeing and Amideast have supported

22,000+

students in Egypt since 2007

Kuljit Ghata-Aura, Boeing president in the Middle East, Türkiye and Africa, and Shahinaz Ahmed, Amideast country director in Egypt (pictured, center), announce an expanded partnership between Boeing and Amideast. (Boeing photo)

This Sustainability Report has been prepared in alignment with the GRI 2021 Standards. The GRI Index below indicates the location of each GRI disclosure within this Sustainability Report, on our external website or other Boeing reports, or it states the information directly. In the SASB Index and TCFD Index, we have aligned our disclosures with the recommended disclosures and metrics in the SASB Aerospace & Defense Standard and the TCFD framework. We will continue to evaluate our disclosure approach moving forward to ensure we are providing relevant information in an efficient and effective manner.

All data within Key ESG Data, GRI, SASB and TCFD indexes is for the period from Jan. 1, 2022, through Dec. 31, 2022, unless otherwise noted.

Boeing Wideband Global SATCOM – 11 satellite. (Boeing image)

REPORTING

Key ESG Data

Environmental Data

Energy[1]	2022		2021		2020	
	Megawatt hours	Terajoules	Megawatt hours	Terajoules	Megawatt hours	Terajoules
Natural gas	1,928,000	6,941	1,712,000	6,163	1,686,000	6,070
Jet kerosene	861,000	3,100	804,000	2,894	544,000	1,958
Fuel oil #2	127,000	457	153,000	551	149,000	536
Motor gasoline	24,000	86	21,000	76	21,000	76
Propane	11,000	40	10,000	36	12,000	43
Liquefied petroleum gas	2,000	7	1,000	4	–	–
Total nonrenewable fuels	2,953,000	10,631	2,701,000	9,724	2,412,000	8,683
Sustainable aviation fuel	9,000	32	4,000	14	2,000	7
Total renewable fuels	9,000	32	4,000	14	2,000	7
Purchased nonrenewable electricity	1,350,000	4,860	1,482,000	5,335	1,686,000	6,070
Purchased renewable electricity[2]	720,000	2,592	574,000	2,066	392,000	1,411
Total purchased electricity	2,070,000	7,452	2,056,000	7,402	2,078,000	7,481
Total energy use	5,033,000	18,119	4,761,000	17,410	4,492,000	16,171

1. Data represents 100% of the company.
2. Renewable electricity data excludes any renewable energy that is part of the grid by default, in alignment with SASB and other frameworks. Notably, Boeing operates in a number of grids that rely significantly on renewable sources.
 • Boeing did not sell any electricity, heating or cooling energy.

Emissions[1]	Tons CO_2e	Metric tons CO_2e	Tons CO_2e	Metric tons CO_2e	Tons CO_2e	Metric tons CO_2e
Scope 1 GHG[2,3]	708,000	642,000	675,000	612,000	611,000	554,000
Scope 2 GHG — location-based[2,3]	859,000	779,000	830,000	753,000	840,000	762,000
Scope 2 GHG — market-based[2,3]	442,000	401,000	493,000	447,000	580,000	526,000
Scope 3 GHG — business travel	205,000	186,000	97,000	88,000	101,000	92,000
Scope 3 GHG — use of sold products (Commercial Airplanes)[3,6]	400,000,000	363,000,000	306,000,000	278,000,000	246,000,000	223,000,000
Scope 3 GHG — use of sold products (Defense, Space & Security)[3,6]	24,000,000	22,000,000	24,000,000	22,000,000	22,000,000	20,000,000
Total calculated GHG excluding sold products	1,355,000	1,229,000	1,264,000	1,147,000	1,292,000	1,172,000
Core metrics sites GHG — location-based[4]	724,000	657,000	702,000	637,000	713,000	647,000
Core metrics sites GHG — market-based[4]	323,000	293,000	376,000	341,000	452,000	410,000
GHG Intensity[5]	$0.00002		$0.00002		$0.00002	

1. Emissions (Enterprise Scope 1, Scope 2, and Scope 3 Categories 6 and 11) data is verified by an accredited independent third party to the level of limited assurance, see assurance statements.
2. Scope 1 and Scope 2 data represents 100% of the company.
3. For Scopes 1, 2 and 3, we calculate emissions from CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3 for this data set.
4. Core metrics sites data represents emissions of CO_2, CH_4 and N_2O where we track a subset of emissions from natural gas combustion and purchased electricity associated with sites that represent the majority (70%) of Boeing operations.
5. GHG intensity includes Scope 1 and Scope 2 (market-based) GHG (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3).
6. Use of sold products emissions are based on estimated lifetime emissions of Boeing Commercial Airplanes and Boeing Defense Services product deliveries in 2022, including direct emissions from combustion of fuel (335M tonnes) and indirect emissions from production of fuel (50M tonnes).

Environmental Data

Water[1]	2022			2021			2020		
	Kilogallons	Megaliters	Total water withdrawal from water-stressed areas[2]	Kilogallons	Megaliters	Total water withdrawal from water-stressed areas[2]	Kilogallons	Megaliters	Total water withdrawal from water-stressed areas[2]
OFF-SITE WATER SOURCES									
Surface water withdrawal	687,256	2,601	—%	639,501	2,421	—%	639,167	2,420	—%
Combination of surface water and groundwater withdrawal	405,788	1,536	22%	366,460	1,387	21%	423,353	1,603	22%
Groundwater withdrawal	110,671	419	31%	89,855	340	30%	83,596	316	31%
Reclaimed water (not withdrawn)	2,585	10	—%	3,114	12	—%	2,778	11	—%
Total water withdrawal	**1,203,715**	**4,556**	**10%**	**1,095,816**	**4,148**	**10%**	**1,148,894**	**4,350**	**10%**
ON-SITE WATER SOURCES[3]									
On-site well water use	2,243	8	100%	4,755	18	100%	2,352	9	100%
On-site water reclamation	10,321	39	—%	9,576	36	—%	10,508	40	—%

Boeing does not use seawater.

1. Water data represents approximately 84% of operations by square footage.
2. Water-stressed areas are those with high or extremely high water stress in the World Resources Institute Aqueduct Model.
3. Two locations have on-site water sources — Palmdale (well) and Portland (reclamation).

Waste[1]	2022	2021	2020
	Metric tons	Metric tons	Metric tons
Hazardous waste incinerated for energy recovery	661	590	747
Hazardous waste incinerated without energy recovery	701	843	1,019
Hazardous waste sent to landfill	2,473	1,977	2,143
Hazardous waste otherwise disposed	3,435	2,651	1,744
Percentage of hazardous waste recycled	0.1%	1.0%	0.4%
Total hazardous waste generated[2]	**7,276**	**6,122**	**5,674**
Nonhazardous waste incinerated for energy recovery	155	286	147
Nonhazardous waste incinerated without energy recovery	81	365	76
Nonhazardous waste sent to landfill	151	149	343
Nonhazardous waste otherwise disposed	7,339	11,138	6,294
Percentage of nonhazardous waste recycled	0.5%	0.4%	1.2%
Total nonhazardous waste generated	**7,765**	**11,981**	**6,943**

1. Waste data represents approximately 83% of operations by square footage.
2. Hazardous waste is determined from U.S. EPA hazardous manifest or equivalent government shipping documents, with profile waste designations determining the type of waste and Management codes determining the disposal method.

Environmental Data

	2022	2021	2020
Waste	Metric tons	Metric tons	Metric tons
Universal waste incinerated without energy recovery	15	2	1
Universal waste incinerated for energy recovery	—	2	1
Universal waste sent to landfill	13	11	10
Universal waste otherwise disposed	880	123	153
Percentage of universal waste recycled	2%	10%	9%
Total universal waste generated[3]	**930**	**155**	**180**
Solid waste incinerated for energy recovery	2,094	2,291	2,633
Solid waste sent to landfill	9,509	7,801	8,888
Percentage of solid waste recycled, reused and composted	82%	78%	72%
Total solid waste generated (includes all recycled, reused and composted materials)	**64,119**	**44,959**	**41,137**
Total waste incinerated for energy recovery	2,910	3,171	3,527
Total waste incinerated without energy recovery	797	1,210	1,095
Total waste sent to landfill	12,146	9,938	11,384
Total waste otherwise disposed	11,654	13,912	8,191
Percentage of total waste recycled	66%	55%	55%
Total waste generated[3]	**80,090**	**63,217**	**53,934**
Waste — Spills			
Number of aggregate spills (all operations)[4]	1	1	0
Quantity spilled (all operations)	40,418 kg	203 kg	0
Quantity of spilled material recovered (all operations)	—	—	—
Waste — Penalties			
Incidents incurring a penalty over $10,000 (all operations)[5]	1	1	1
Total of penalties over $10,000 (all operations)	$22,000	$16,450	$17,410

3. Total waste generated includes all recycled, reused and composted material.

4. Data represents number of federally reportable aggregate spills.

5. **See Page 61** of this report for further details about this incident and penalty.

People

	2022	2021	2020
Health and Well-Being			
Fatalities as a result of work-related injuries[1]	0	0	0
Lost workday case rate, includes COVID-19 cases[2]	1.2	0.53	0.43
Near-miss/hazard ratio to recordable injuries[3]	44:1	39:1	24:1
Found/fixed metric[3]	98%	98%	98%
Health and Safety training courses available	1,096	1,026	950
Global Equity, Diversity and Inclusion[1]			
Employee Representation			
Total Boeing employees	156,000	142,000	141,000
Non-U.S. employees	13%	11%	11%
Total Boeing employees covered by collective bargaining agreements	33%	33%	33%
U.S. employees who are veterans[4]	14.6%	14.6%	14.8%
Female Representation[5,6]			
Overall (Companywide)	24.10%	23.60%	23.20%
Overall (U.S.)	23.80%	23.20%	22.90%
Overall (Non-U.S.)[7]	24.70%	24.60%	24.30%
Board of Directors	25.00%	25.00%	25.00%
Executive Council[8]	19.00%	19.00%	13.60%
Executives	33.20%	33.50%	31.80%
Managers	23.70%	22.80%	22.20%
New hires	25.40%	23.90%	22.00%
Racial and Ethnic Minority Representation[9]			
Overall	35.30%	32.70%	31.20%
Board of Directors	25.00%	25.00%	16.70%
Executive Council[8]	21.10%	33.30%	35.00%
Executives	21.80%	22.50%	20.80%
Managers	27.10%	24.30%	23.00%
New hires	47.50%	42.50%	37.20%
Employee Training[10,11]			
Total hours employee training	5,800,000	3,600,000	
Average employee training hours per learner	33.1	23.6	
Total mandatory employee training hours	1,800,000.00	1,000,000.00	

Employee Health and Well-Being footnotes
1. Represents U.S. data.
2. Represents U.S., Canada, Australia and UK data.
3. Represents global data.

For all Global Equity, Diversity and Inclusion data:
Unless otherwise indicated, data presented are snapshots taken in December of the year referenced.
4. Veteran data reflects the U.S. workforce only based on voluntary, confidential self-identification. A veteran is defined as a person who served in the active military, naval, or air service and who was discharged or released therefrom under conditions other than dishonorable.
5. All data on gender is collected globally.
6. Numbers for gender may not total 100% due to team members who identify as nonbinary or who choose not to disclose.
7. Non-U.S. indicates team members outside the U.S.
8. Executive Council gender data includes both U.S. and non-U.S. leaders.
9. Race and ethnicity data reflects the U.S. workforce only. Numbers may not total 100% due to inclusion of people who choose not to disclose or due to rounding. Racial and ethnic minority representation includes Asian, Black, Hispanic/Latino/a/x, Native American, Pacific Islander and Two or More Races as defined by the U.S. Equal Employment Opportunity Commission.
10. Mandatory and voluntary employee training hours represent different types of learning that are stored in separate data sources. Training data residing in Boeing's Learning Management System (LMS) includes mandatory and compliance training. Voluntary training is not considered mandatory and represents hours spent participating in learning tracked outside of our LMS.
11. Data was first reported in 2021.

People

Employee Training

	2022	2021	2020
Average mandatory employee training hours per learner	10.6	6.8	
Average voluntary employee training hours	25.6	17	

Communities

Community Engagement

	2022	2021	2020
Community giving[1]	$185,700,000	$187,100,000	$234,000,000
Total volunteer hours	366,000	290,000	250,000
Number of community partners	13,371	13,957	13,400
Contributions supporting STEM education and workforce development programs	$61,300,000	$56,300,000	$50,000,000
Total number of organizations receiving contributions supporting STEM education and workforce development programs	682	648	415
Contributions to veterans organizations	$14,100,000	$ 18,700,000	$14,200,000
Total organizations receiving contributions supporting veterans programs	354	416	97
Contributions to organizations supporting racial equity and social justice	$17,557,697	$15,300,000	$15,600,000
Total number of countries where contributions were made	64	70	51
Total international partners receiving contributions	473	459	590
Approximate students reached through Boeing's hands-on STEM learning program FUTURE U	518,229	645,963	5,000,000
Total number of contributions supporting environmental programs	489	482	31

Governance[2]

Ethics Metrics

	2022	2021	2020
Inquiries[3]	2,405	2,167	3,181
Conflict of interest determinations	2,120	1,730	1,864
Investigative requests	3,132	3,503	4,786
Total contacts to Ethics & Business Conduct	**7,657**	**7,400**	**9,831**
Investigative requests with enough information to investigate	2,507	2,896	3,561
Percentage of investigated requests that were substantiated[4,5]	47%	51%	47%

Community Engagement footnotes

1. Community giving is inclusive of Boeing and employee giving.

Ethics Metrics footnotes

2. Data reflects the reporting period of November 2021 through October 2022.
3. Inquiries comprise Requests for Guidance and Information Requests. Requests for Guidance are situations where employees are seeking guidance when facing ethical dilemmas or when they need assistance in understanding company policies or expected behaviors. Information Requests are situations where employees are seeking general information. Both demonstrate awareness of Boeing's Compliance and Ethics program, but Requests for Guidance are viewed as the most positive types of contact.
4. Investigated matters are considered unsubstantiated when investigation findings demonstrate that no misconduct occurred or where there is a lack of evidence to support a finding of misconduct.
5. Ongoing evaluations demonstrate that Boeing's substantiation rate is slightly higher than other published benchmarks, indicating an effective investigation process and informed reporting by company employees.

GRI Index

Boeing has reported in alignment with the GRI Standards for the period of 1/1/2022-12/31/2022.

AR = 2022 Annual Report
PS = 2023 Proxy Statement

Disclosure	Disclosure Title	Sustainability Report Section(s)	Additional Reference(s)/Link(s)
GRI 2: General Disclosures			
2-1	Organizational details	Company Profile, Page 10	The Boeing Company is a publicly traded corporation. Our headquarters are located at 929 Long Bridge Drive, Arlington, VA 22202 Boeing Global PS, Page 36
2-2	Entities included in the organization's sustainability reporting		This report includes the operations of The Boeing Company and its subsidiaries. This is consistent with the financial reporting contained in Boeing's 2022 Form 10-K. AR, Exhibit 21 to 10K
2-3	Reporting period, frequency and contact point		Boeing's sustainability report is published annually, with a reporting period from 1/1/2022-12/31/2022 (unless otherwise noted). The reporting period for Boeing's financial reporting aligns with the period for its sustainability reporting. This report was published on 6/14/2023 Boeing Communications Email: media@boeing.com Mailing Address: 929 Long Bridge Drive, Arlington, VA 22202
2-4	Restatements of information		None.
2-5	External assurance		Select environmental data have been externally verified by DNV GL. See statement
2-6	Activities, value chain and other business relationships	Company Profile, Page 10; Responsible Supply Chain, Pages 62-65	GRI Sector: Aerospace and Defense AR, Pages 1, 5, 16, 20, 136-144 PS, Pages 30-32 Boeing Overview Boeing Weapons Statement Boeing Commercial Orders & Deliveries Commercial Services In 2022, Boeing's headquarters relocated from Chicago to Arlington, Virginia
2-7	Employees	Global Equity, Diversity and Inclusion, Pages 24-25; Key ESG Data, Pages 77-78	Boeing 2023 Global Equity, Diversity & Inclusion Report Boeing EEO-1 report Boeing Overview Boeing uses headcount reporting for its global equity, diversity and inclusion data. December data is used for any headcount or representation numbers, and full-year data is used for any promotions, hiring and exits numbers. For our Executive Council and Board of Directors, 2023 data is utilized.
2-8	Workers who are not employees		Information unavailable/incomplete.
2-9	Governance structure and composition	Approach & Governance, Pages 9-17; Governance and Risk Management, Pages 13-14; Global Aerospace Safety, Pages 28-30	Boeing Corporate Governance PS, Pages 6-7, 15-17

AR = 2022 Annual Report
PS = 2023 Proxy Statement

Disclosure	Disclosure Title	Sustainability Report Section(s)	Additional Reference(s)/Link(s)
2-10	Nomination and selection of the highest governance body	Governance and Risk Management, **Pages 13-14**	Board Governance Director Independence Standards Corporate Governance Principles PS, Pages 5-7
2-11	Chair of the highest governance body		The Board chair is not an executive officer of the company. **PS**, Page 15 Board Chair Profile
2-12	Role of the highest governance body in overseeing the management of impacts	Governance and Risk Management, **Pages 13-14**; Innovation and Clean Technology, **Pages 33-48**; Advancing Our Sustainability Journey, **Page 11**	**PS**, Pages 16-17; 19-20; 27 Governance & Public Policy Committee Charter CDP1 Climate Change Submission, C1 series CDP Water Security Submissions, W6 series
2-13	Delegation of responsibility for managing impacts	Governance and Risk Management, **Pages 13-14**	**PS**, Pages 16-17; 19-20; 27 Governance & Public Policy Committee Charter Audit Committee Charter CDP1 Climate Change Submission, C1 series CDP Water Security Submissions, W6 series
2-14	Role of the highest governance body in sustainability reporting	Governance and Risk Management, **Pages 13-14**	**PS**, Page 27 Boeing's sustainability report is reviewed by Boeing's Executive Council, Board of Directors, and the Global Sustainability Council, which comprises leaders across business units within Boeing.
2-15	Conflicts of interest	Ethical and Compliant Business, **Pages 16-17**	**PS**, Pages 22; 24-25 Code of Ethical Business Conduct for Members of the Board of Directors
2-16	Communication of critical concerns	Ethical and Compliant Business, **Pages 16-17**; Key ESG Data, **Page 78**	**PS**, Pages 24-25 Ethical Business Conduct Guidelines Audit Committee Charter Contacting Ethics Critical concerns submitted through external and internal reporting portals are reported by the Chief Compliance Officer to the Chief Executive Officer, Chief Legal Officer, Audit Committee and Board of Directors. For critical concerns, the issue details, findings and response are disclosed. In addition, the data identifies case trends, including reporting channels, case categories, organizations, locations and types of corrective actions taken.
2-17	Collective knowledge of the highest governance body	Governance and Risk Management, **Pages 13-14**	**PS**, Pages 5-7; 19; 27 Governance & Public Policy Committee Charter
2-18	Evaluation of the performance of the highest governance body		**PS**, Pages 21-22 Corporate Governance Principles
2-19	Remuneration policies	Advancing Our Sustainability Journey, **Page 11**	**PS**, Pages 36-55 Corporate Governance Principles
2-20	Process to determine remuneration	Enhancing a Sustainability Culture, **Page 15**	**PS**, Pages 39-42

1. Boeing participates annually in the CDP Climate Report. Our most recent response is available on our website here in accordance with the CDP reporting schedule.